RESTON, VA
W249CO
BMPFT-20131121BDM AMENDMENT

This application requests a minor amendment to W249CO application BMPFT-20131121BDM to reduce antenna height. It will continue to serve as a fill in for WAMU.

Allocation discussion:

All exhibits utilize the USGS 3 second terrain database.

E1 Channel study
E1A WMZQ-FM interference analysis
E1B Aerial view
E1C Vertical elevation tabulation
E2 60 dBu and 54 dBu contours

A channel study is included as E1 demonstrating compliance with §74.1204. A plot of the proposed 54 dBu is provided as E2 showing that it is entirely contained within the WAMU 54 dBu contour and that the proposed 60 dBu overlaps the original short form 60 dBu .

WMZQ-FM analysis:

The proposed facility is located inside the WMZQ-FM 2nd adjacent channel 54 dBu. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The WMZQ-FM contour at the site is 82.78 dBu and the proposed 255D interference contour is 122.78 dBu (+40) and based on the reduced ERP of 0.064kW derived from the PSI FML-2 0.625 spaced 2 bay antenna's F factor of 0.507 at a depression angle of 29 degrees, the distance to the contour is 40.7 meters and it falls 21.3 meters above ground level. Exhibit E1B shows that this contour does not reach any occupied buildings or major highways. However, in an abundance of caution, the vertical clearance of the interference contour has been evaluated at 29 degrees and every ten degrees of depression angle through 90.

Depression Angle (Deg.)	F	ERP X F ^{2} kW	Int = 100.45.dBu meters	Vertical Clearance AGL(m) (Int X sin Ang - 41 m)
29	0.507	0.064	40.7	21.3
40	0.233	0.014	19.1	28.7
50	0.043	0.0005	3.6	38.2
60	0.064	0.001	5.1	36.6
70	0.092	0.002	7.2	34.2
80	0.062	0.001	5.1	36.0
90	0.001	0.000	0.0	41.0

Clearly, these interference contours will not reach any populated area or major highways. An aerial view included as exhibit E1C shows that there are no occupied buildings in the interference area and even if there were they would not exceed two stories or 6 meters. Based on this showing, a waiver of Section 74.1204 is requested in accordance with *Living Way Ministries, Inc.* (FCC 08-242).

RF Exposure Calculation:

The proposed 0.073 kW facility will utilize a PSI FML-2 0.625 spaced two bay circularly polarized antenna. The RF contribution of the proposed translator was calculated using an F factor of 0.432 at 39 degrees and the formula included to be 2.1 *u*Watts/cm^2 or 1.1% of the maximum permissible 200 microwatts/cm2 exposure for general population/uncontrolled exposure, and well below 5% of that limit which requires consideration. The proposed translator clearly complies with Commission RF radiation limits.

$$\text{S (RF in } u\text{Watts/cm}^2) = \frac{33.4\,(F^2 - \text{Vertical Factor}) \times (\text{H ERP} + \text{V ERP in Watts})}{R^2\,(\text{distance to radiation center in meters} - 2\text{ m})}$$

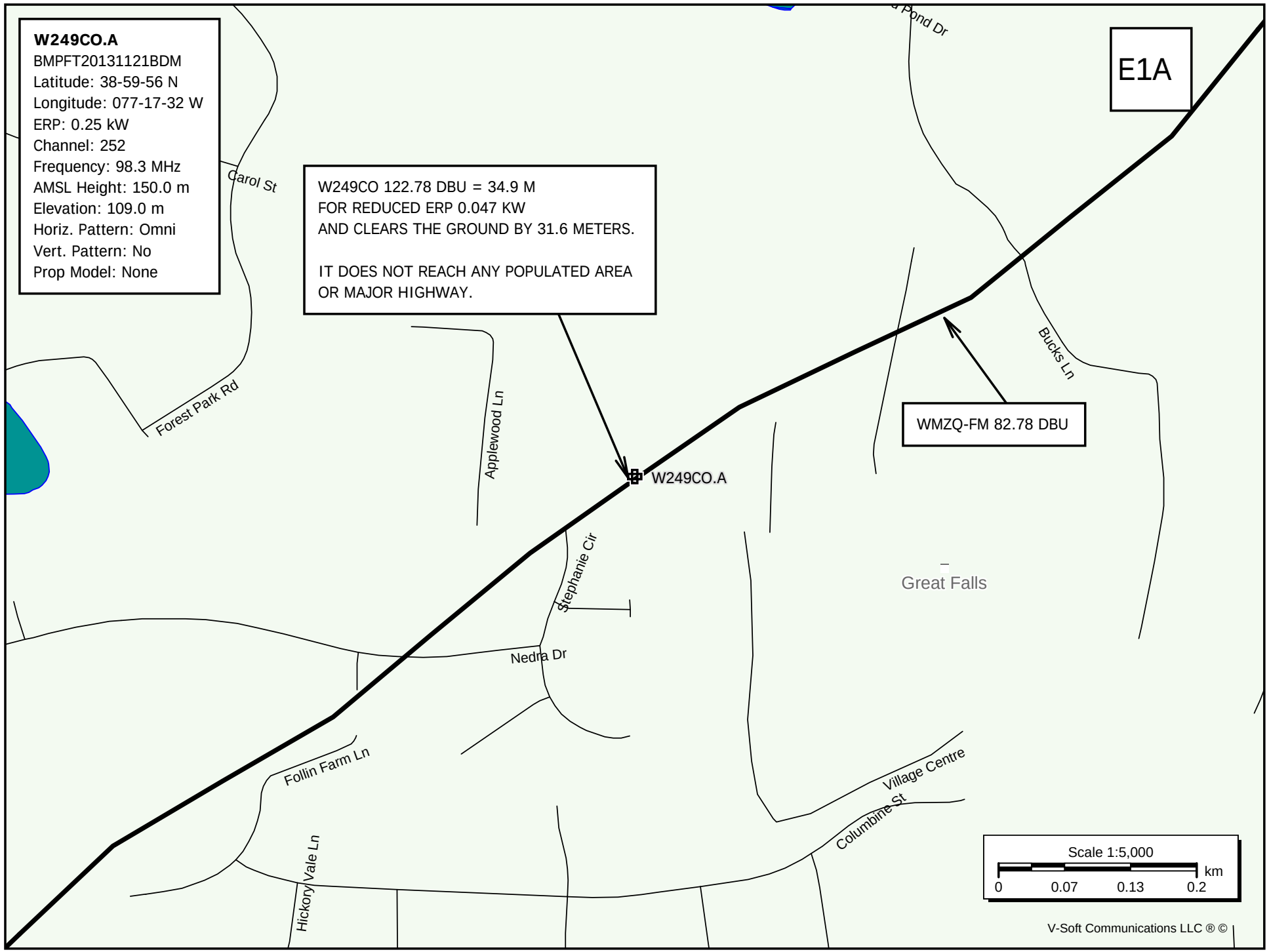
E1 CHANNEL STUDY
Reston Translator, Llc

REFERENCE CH# 252D - 98.3 MHz, Pwr= 0.25 kW, HAAT= 54.0 M, COR= 150 M DISPLAY DATES
38 59 56.0 N. Average Protected F(50-50)= 9.66 km DATA 01-19-14
77 17 32.0 W. Omni-directional SEARCH 01-19-14

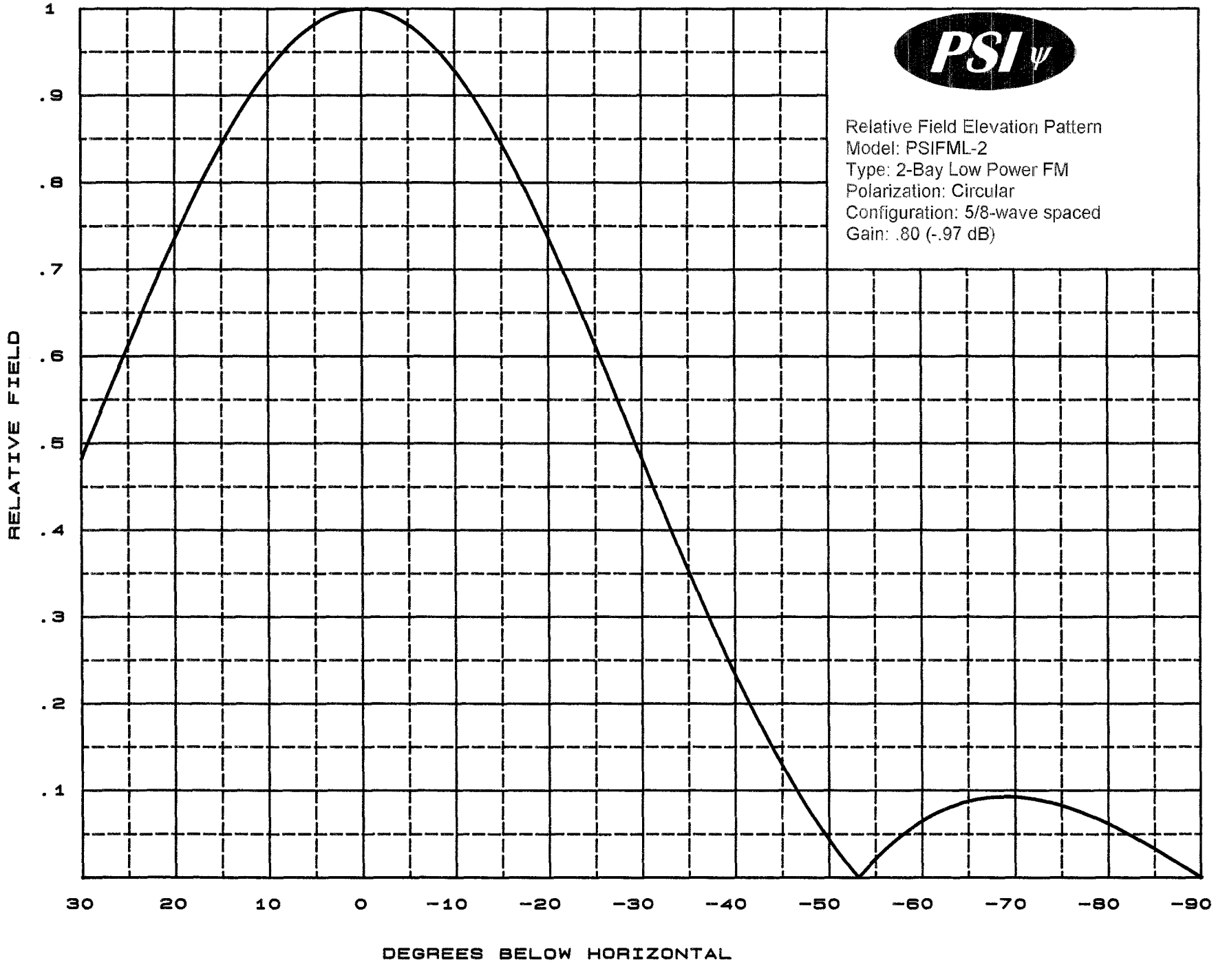
CH CALL / CITY	TYPE ANT / STATE	AZI <--	DIST / FILE #	LAT / LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) / LICENSEE	*IN* (Overlap in km)	*OUT*
254B WMZQ-FM	LIC _CX	147.6	14.74	38 53 13.0	50.000	5.5	61.9	-0.5	-48.7* (1)
Washington	DC	327.6	BMLH20060228AMC	77 12 03.0	149	232	Amfm Radio Licenses, L.l.c		
252D W249CO	APP _C_	0.0	0.00	38 59 56.0	0.250	36.8	10.8	-47.0*	-45.0*
Reston	VA	0.0	BMPFT20131121BDM	77 17 32.0		159	Reston Translator, Llc		
252D W249CO	APP _C_	0.0	0.00	38 59 56.0	0.250	36.8	10.8	-47.0*	-45.0*
Reston	VA	0.0	BMPFT20131121BDM	77 17 32.0		159	Reston Translator, Llc		
252A AL2329	RSV-A ___	282.0	68.92	39 07 30.0	6.000	93.1	32.2	-34.2*	2.8
Stephens City	VA	101.5	RM10627	78 04 26.0	100	297			
252A WKSI-FM	LIC _CX	283.6	86.23	39 10 38.0	1.750	88.6	32.6	-12.5*	20.1
Stephens City	VA	103.0	BLH20040920ADJ	78 15 53.0	188	468	Amfm Radio Licenses, L.l.c		
249D W249CO	CP DV_	0.0	0.00	38 59 56.0	0.073	0.0	1.6	-10.2*	-2.7*
Reston	VA	0.0	BNPFT20130819ACD	77 17 32.0	55	149	Reston Translator, Llc		
252A WSMD-FM	LIC _CN	145.3	79.03	38 24 49.0	3.000	72.2	22.0	-3.8	26.7
Mechanicsville	MD	325.6	BLH19880913KA	76 46 31.0	100	125	Somar Communications, Inc.		
250B WIYY	LIC _CN	55.8	66.71	39 20 05.0	13.500	5.2	62.8	51.9	2.3
Baltimore	MD	236.2	BLH19880914KA	76 39 03.0	288	373	Hearst Stations Inc.		
252D W252BR	CP DC_	54.8	55.95	39 17 15.0	0.010	35.2	9.9	11.6	16.3
Edgemere	MD	235.2	BPFT20131216BVX	76 45 38.0		433	Hope Christian Church Of M		
251L1 NEW	CP ___	210.9	31.89	38 45 09.3	0.100			14.9	14.7
Manassas	VA	30.8	BNPL20131115ASF	77 28 52.3	28	109	Cardinal Newman Society Fo		
249D W249BE	LIC DC_	144.8	24.64	38 49 04.0	0.002	0.1	2.0	14.8	21.5
Alexandria	VA	324.9	BLFT20121107ABW	77 07 41.0	27	79	Metro Radio, Inc.		
253B WYCR	LIC _CX	17.1	99.89	39 51 26.0	10.500	70.7	60.7	19.3	19.1
York-hanover	PA	197.3	BLH20110112ACQ	76 56 54.0	283	462	Radio Hanover, Inc.		
252D W252BR	LIC _V_	69.9	78.04	39 14 13.0	0.005	8.5	2.7	59.3	42.3
Edgemere	MD	250.4	BLFT20070808ADV	76 26 28.0	3	7	Hope Christian Church Of M		

Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. 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.

(1) See E1A, E1B and Technical Report for disproval of interference.


W249CO.A
BMPFT20131121BDM
Latitude: 38-59-56 N
Longitude: 077-17-32 W
ERP: 0.25 kW
Channel: 252
Frequency: 98.3 MHz
AMSL Height: 150.0 m
Elevation: 109.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
E1A
W249CO 122.78 DBU = 34.9 M
FOR REDUCED ERP 0.047 KW
AND CLEARS THE GROUND BY 31.6 METERS.
IT DOES NOT REACH ANY POPULATED AREA
OR MAJOR HIGHWAY.
WMZQ-FM 82.78 DBU
W249CO.A
Carol St
Forest Park Rd
Applewood Ln
Bucks Ln
Stephanie Cir
Great Falls
Nedra Dr
Follin Farm Ln
Village Centre
Columbine St
Hickory Vale Ln
Scale 1:5,000
km
0
0.07
0.13
0.2
V-Soft Communications LLC ® ©

E1B AERIAL VIEW OF INTERFERENCE AREA


PSI ψ
Relative Field Elevation Pattern
Model: PSIFML-2
Type: 2-Bay Low Power FM
Polarization: Circular
Configuration: 5/8-wave spaced
Gain: .80 (-.97 dB)
RELATIVE FIELD
1
.9
.8
.7
.6
.5
.4
.3
.2
.1
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
DEGREES BELOW HORIZONTAL

Propagation Systems Inc.

Elevation Pattern Tabulation
Antenna: PSIFML-2 Special
Bay spacing: 5/8 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.043	-27.325	-10.0	0.928	-0.649
-89.0	0.007	-43.722	-49.0	0.058	-24.659	-9.0	0.941	-0.525
-88.0	0.013	-37.600	-48.0	0.075	-22.534	-8.0	0.953	-0.414
-87.0	0.020	-34.045	-47.0	0.092	-20.741	-7.0	0.964	-0.316
-86.0	0.026	-31.630	-46.0	0.110	-19.196	-6.0	0.974	-0.232
-85.0	0.033	-29.742	-45.0	0.128	-17.833	-5.0	0.982	-0.162
-84.0	0.039	-28.226	-44.0	0.148	-16.602	-4.0	0.988	-0.103
-83.0	0.045	-26.965	-43.0	0.168	-15.492	-3.0	0.993	-0.058
-82.0	0.051	-25.916	-42.0	0.189	-14.474	-2.0	0.997	-0.026
-81.0	0.056	-25.003	-41.0	0.211	-13.531	-1.0	0.999	-0.007
-80.0	0.062	-24.220	-40.0	0.233	-12.657	0.0	1.000	0.000
-79.0	0.067	-23.542	-39.0	0.256	-11.843	1.0	0.999	-0.007
-78.0	0.071	-22.967	-38.0	0.279	-11.085	2.0	0.997	-0.026
-77.0	0.075	-22.464	-37.0	0.303	-10.366	3.0	0.993	-0.058
-76.0	0.079	-22.021	-36.0	0.328	-9.694	4.0	0.988	-0.103
-75.0	0.083	-21.663	-35.0	0.352	-9.059	5.0	0.982	-0.162
-74.0	0.086	-21.350	-34.0	0.378	-8.460	6.0	0.974	-0.232
-73.0	0.088	-21.092	-33.0	0.403	-7.890	7.0	0.964	-0.316
-72.0	0.090	-20.901	-32.0	0.429	-7.349	8.0	0.953	-0.414
-71.0	0.092	-20.770	-31.0	0.455	-6.840	9.0	0.941	-0.525
-70.0	0.092	-20.684	-30.0	0.481	-6.353	10.0	0.928	-0.649
-69.0	0.093	-20.656	-29.0	0.507	-5.893	11.0	0.913	-0.786
-68.0	0.092	-20.699	-28.0	0.534	-5.455	12.0	0.898	-0.937
-67.0	0.091	-20.785	-27.0	0.560	-5.039	13.0	0.881	-1.101
-66.0	0.090	-20.944	-26.0	0.586	-4.643	14.0	0.863	-1.281
-65.0	0.087	-21.182	-25.0	0.612	-4.268	15.0	0.844	-1.475
-64.0	0.084	-21.489	-24.0	0.637	-3.911	16.0	0.824	-1.682
-63.0	0.080	-21.889	-23.0	0.663	-3.573	17.0	0.803	-1.905
-62.0	0.076	-22.394	-22.0	0.687	-3.256	18.0	0.781	-2.143
-61.0	0.070	-23.042	-21.0	0.712	-2.953	19.0	0.759	-2.398
-60.0	0.064	-23.823	-20.0	0.736	-2.667	20.0	0.736	-2.667
-59.0	0.057	-24.818	-19.0	0.759	-2.398	21.0	0.712	-2.953
-58.0	0.050	-26.073	-18.0	0.781	-2.145	22.0	0.688	-3.254
-57.0	0.041	-27.731	-17.0	0.803	-1.905	23.0	0.663	-3.573
-56.0	0.032	-30.030	-16.0	0.824	-1.684	24.0	0.637	-3.911
-55.0	0.021	-33.468	-15.0	0.844	-1.475	25.0	0.612	-4.268
-54.0	0.010	-39.869	-14.0	0.863	-1.281	26.0	0.586	-4.641
-53.0	0.002	-54.807	-13.0	0.881	-1.103	27.0	0.560	-5.036
-52.0	0.015	-36.655	-12.0	0.898	-0.937	28.0	0.534	-5.453
-51.0	0.028	-30.954	-11.0	0.913	-0.786	29.0	0.507	-5.893
						30.0	0.481	-6.353

file: FML 2-bay elevation tabulation
revision: A
Date: 1/28/08

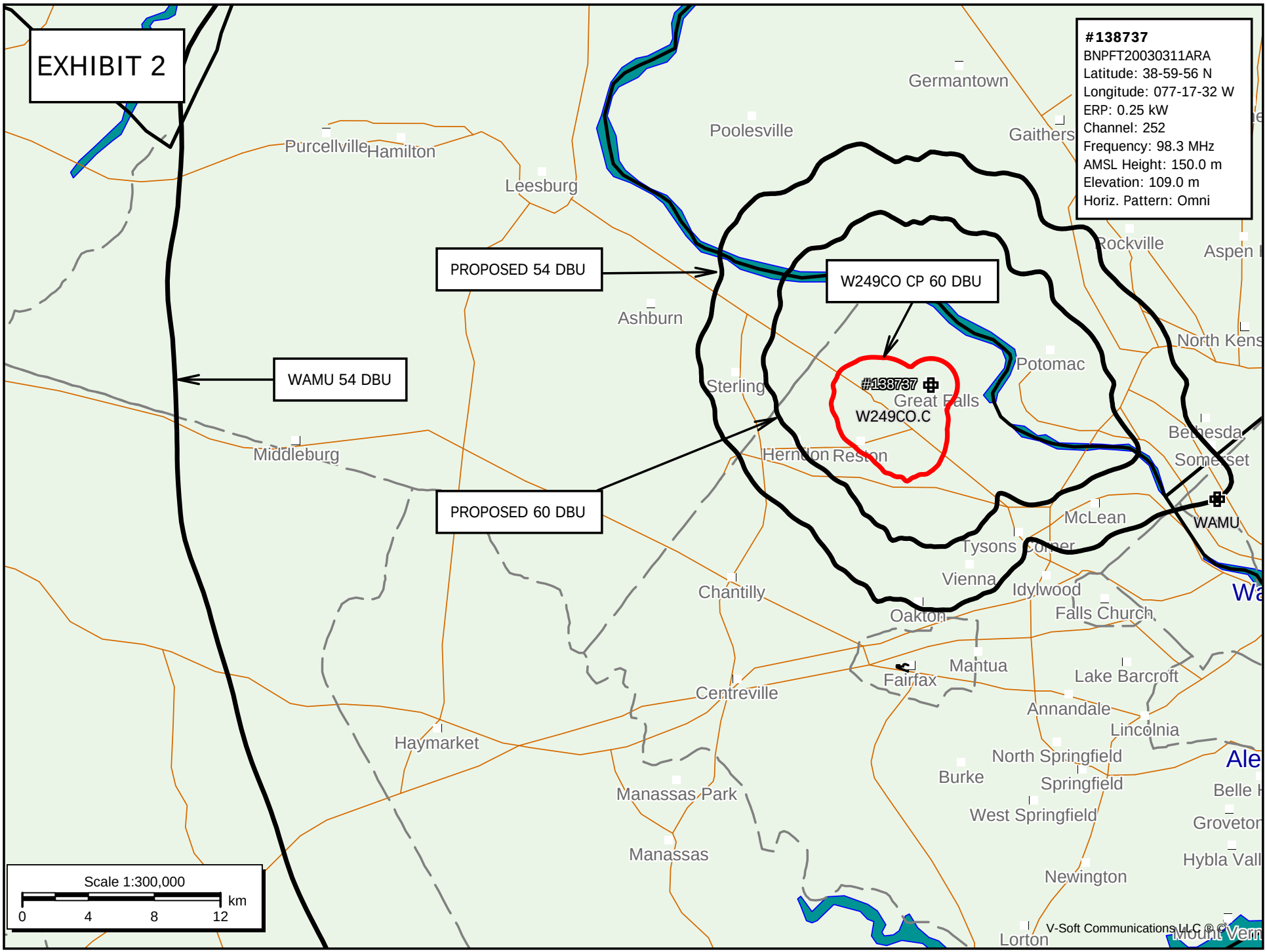


EXHIBIT 2
#138737
BNPFT20030311ARA
Latitude: 38-59-56 N
Longitude: 077-17-32 W
ERP: 0.25 kW
Channel: 252
Frequency: 98.3 MHz
AMSL Height: 150.0 m
Elevation: 109.0 m
Horiz. Pattern: Omni
PROPOSED 54 DBU
W249CO CP 60 DBU
WAMU 54 DBU
PROPOSED 60 DBU
#138737
W249CO.C
WAMU
Germantown
Poolesville
Gaithers
Purcellville
Hamilton
Leesburg
Rockville
Ashburn
Potomac
Sterling
Great Falls
Middleburg
Herndon
Reston
Bethesda
McLean
Tysons Corner
Vienna
Idylwood
Chantilly
Oakton
Falls Church
Mantua
Fairfax
Lake Barcroft
Centreville
Annandale
Lincolnia
Haymarket
North Springfield
Burke
Springfield
Manassas Park
West Springfield
Manassas
Newington
Lorton
Scale 1:300,000
km
0
4
8
12
V-Soft Communications LLC