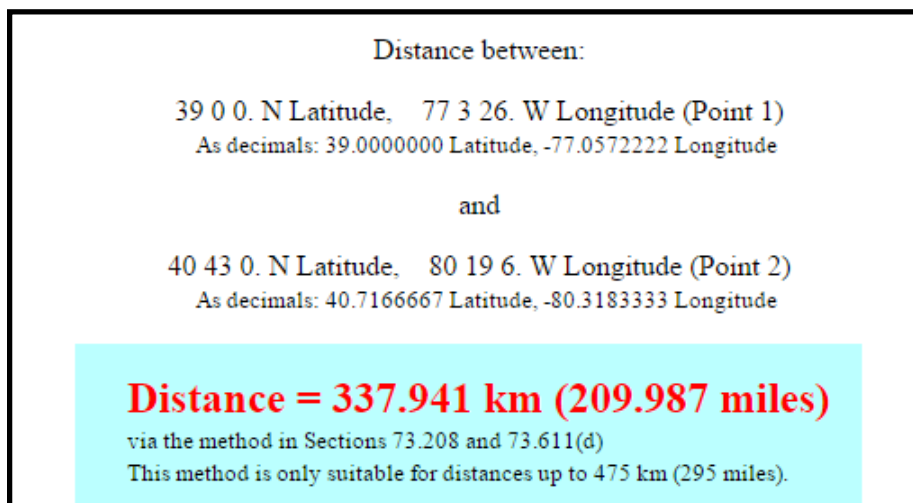


**W240DJ  
MINOR MODIFICATION PER 2<sup>ND</sup> REPORT AND ORDER  
MB DOCKET NO. 13-249**

The modified facility will continue to rebroadcast WOL(AM) at Washington, DC (facility ID # 54713). The proposed facility is located 210 miles from the previously licensed W250BT facility, and remains in compliance with the 250 mile waiver provisions.



**Allocation discussion:**

All exhibits utilize the USGS 3 second terrain database.

- E1 Channel study
- E1A Interference analysis to WHUR-FM
- E1B Interference analysis to WPGC-FM
- E1C Aerial photograph of interference area
- E1D DA pattern
- E2 60 dBu and 2 mV/m contours
- E3 ASR

A channel study is included as E1 demonstrating compliance with §74.1204 with the exception of 2nd adjacent stations WHUR-FM and WPGC-FM. A plot of the proposed 60 dBu contour is provided as E2 showing that it is entirely contained within primary station WOL(AM)'s 25 mile radius.

**WHUR-FM and WPGC-FM analyses:**

The proposed facility will be located inside the protected contour of WHUR-FM on 242B and WPGC-FM on 238B. An interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site.

WHUR-FM places a 98.25 dBu (50:50) contour at the site (E1A). The corresponding interference contour is 138.25 dBu or 13.6 METERS AND 200.5 meters above ground which will clearly not reach any building or major highway (see E1C aerial photograph) .

WPGC-FM places a 79.6 dBu (50:50) contour at the site (see E1B) yielding an interference contour of 119.6 dBu at a minimum of 158.7 meters above ground (E1B).

It is clear from E1A, E1B and E1C that the interference contours will not reach any populated area or major highways. 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 facility will utilize an ERI 100A single bay circularly polarized antenna with a center of radiation at 206 meters AGL on existing tower ASR #1042694. The RF contribution of the proposed translator was calculated using the formula included below to be 0.4  $\mu$ Watts/cm<sup>2</sup> or 0.2% of the maximum permissible 200  $\mu$ Watts/cm<sup>2</sup> exposure for general population/uncontrolled exposure, and well below the 5% of that limit which requires consideration. The proposed translator clearly complies with Commission RF radiation limits.

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



Charles M. Anderson April 4, 2017

# E1 CHANNEL STUDY

REFERENCE CH# 240D - 95.9 MHz, Pwr= 0.25 kW DA, HAAT= 216.6 M, COR= 296 M DISPLAY DATES  
 38 59 59.0 N. Average Protected F(50-50)= 19.27 km DATA 04-05-17  
 77 03 27.0 W. Standard Directional SEARCH 04-05-17

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
240D Washington	W240DJ	LIC DC_	137.0 317.0	6.75 BLFT20161116AAA	38 57 19.0 77 00 15.0	0.100	27.4 152	8.3 Radio One Licenses, Llc	-41.5*	-65.1*
242B Washington	WHUR-FM	LIC _CX DC	199.3 19.2	5.82 BLED20040413AAY	38 57 01.0 77 04 47.0	16.500 244	5.2 318	61.7 The Howard University	-18.1*	-57.7*

See E1A and E1C for disproof of interference to WHUR-FM per *Living Way*.

238B Morningside	WPGC-FM	LIC _C_	140.0 320.1	19.73 BMLH20101108ABS	38 51 49.0 76 54 40.0	50.000 148	6.0 195	65.2 Cbs Radio Inc. of Maryland	-6.9*	-47.5*
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See E1B and E1C for disproof of interference to WPGC-FM per *Living Way*.

240A Glen Burnie	WWIN-FM	LIC _CN MD	61.5 241.8	47.92 BMLH19920325KC	39 12 16.0 76 34 07.0	3.000 91	74.0 113	21.7 Radio One Licenses, Llc	-35.7*	1.3
240A Fairview Beach	WGRQ	LIC _CX VA	205.4 25.1	89.37 BLH20130306AAX	38 16 21.0 77 29 46.0	2.500 158	85.5 216	30.0 Telemedia Broadcasting, In	-15.0	1.1
240A Williamsport	WICL	LIC _C_	317.5 137.0	91.62 BLH19981209KE	39 36 18.0 77 46 49.0	3.300 91	77.0 243	24.2 West Virginia Radio Corpor	-3.0	10.6
294B Manassas	WJFK-FM	LIC DCX VA	225.9 45.8	20.02 BLH20141121AHM	38 52 28.0 77 13 25.0	20.000 223	27.3 312	8.2 Cbs Radio Inc. Of Washingt	14.5R	5.5M
241B Red Lion	WSOX	LIC DCX PA	22.0 202.3	108.61 BLH20041222GDH	39 54 16.0 76 34 48.0	13.500 290	55.1 483	47.9 Radio License Holding Src	36.4	23.9
293B Baltimore	WWMX	LIC _CX MD	43.1 223.4	51.15 BLH20130107ABF	39 20 04.6 76 39 03.1	11.000 288	27.3 371	8.2 Cbs Radio Stations Inc.	14.5R	36.7M

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 restricted contour.  
 Reference station has protected zone issue: AM tower

# E1A WHUR-FM ANALYSIS

W240DJ WASHINGTON, DC

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 206 Meters

W240DJ Antenna Model = ERI-100A-1

Protected Station's Contour = 98.24692 dBu

Translator's or LPFM's full Interference contour 138.24692

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kW

Distance between stations = 5.9 km

Protected Station= WHUR-F, 16.5 kW, 317.8 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.000	1.0	0.2500	013.5714	013.5714	206.000
05.00	0.993	1.0	0.2465	013.4764	013.4251	204.825
10.00	0.974	1.0	0.2372	013.2185	013.0177	203.705
15.00	0.941	1.0	0.2214	012.7707	012.3355	202.695
20.00	0.897	1.0	0.2012	012.1735	011.4394	201.836
25.00	0.843	1.0	0.1777	011.4407	010.3688	201.165
30.00	0.78	1.0	0.1521	010.5857	009.1675	200.707
35.00	0.709	1.0	0.1257	009.6221	007.8820	200.481
40.00	0.633	1.0	0.1002	008.5907	006.5808	200.478
45.00	0.554	1.0	0.0767	007.5185	005.3164	200.684
50.00	0.473	1.0	0.0559	006.4193	004.1262	201.083
55.00	0.394	1.0	0.0388	005.3471	003.0670	201.620
60.00	0.317	1.0	0.0251	004.3021	002.1511	202.274
65.00	0.245	1.0	0.0150	003.3250	001.4052	202.987
70.00	0.181	1.0	0.0082	002.4564	000.8401	203.692
75.00	0.124	1.0	0.0038	001.6829	000.4356	204.374
80.00	0.077	1.0	0.0015	001.0450	000.1815	204.971
85.00	0.041	1.0	0.0004	000.5564	000.0485	205.446
90.00	0.016	1.0	0.0001	000.2171	000.0000	205.783

# E1B WPGC-FM ANALYSIS

W240DJ WASHINGTON, DC

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 206 Meters

W240DJ Antenna Model = ERI 100A-1

Protected Station's Contour = 79.58467 dBu

Translator's or LPFM's full Interference contour 119.58467

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kW

Distance between stations = 19.7 km

Protected Station= WPGC-F, 50 kW, 195 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.000	1.0	0.2500	116.3420	116.3420	206.000
05.00	0.993	1.0	0.2465	115.5276	115.0880	195.931
10.00	0.974	1.0	0.2372	113.3171	111.5956	186.323
15.00	0.941	1.0	0.2214	109.4778	105.7474	177.665
20.00	0.897	1.0	0.2012	104.3588	098.0652	170.307
25.00	0.843	1.0	0.1777	098.0763	088.8873	164.551
30.00	0.78	1.0	0.1521	090.7468	078.5890	160.627
35.00	0.709	1.0	0.1257	082.4865	067.5690	158.688
40.00	0.633	1.0	0.1002	073.6445	056.4149	158.662
45.00	0.554	1.0	0.0767	064.4535	045.5755	160.425
50.00	0.473	1.0	0.0559	055.0298	035.3724	163.845
55.00	0.394	1.0	0.0388	045.8387	026.2920	168.451
60.00	0.317	1.0	0.0251	036.8804	018.4402	174.061
65.00	0.245	1.0	0.0150	028.5038	012.0462	180.167
70.00	0.181	1.0	0.0082	021.0579	007.2022	186.212
75.00	0.124	1.0	0.0038	014.4264	003.7338	192.065
80.00	0.077	1.0	0.0015	008.9583	001.5556	197.178
85.00	0.041	1.0	0.0004	004.7700	000.4157	201.248
90.00	0.016	1.0	0.0001	001.8615	000.0000	204.139



## E1C AERIAL VIEW OF PROPOSED SITE



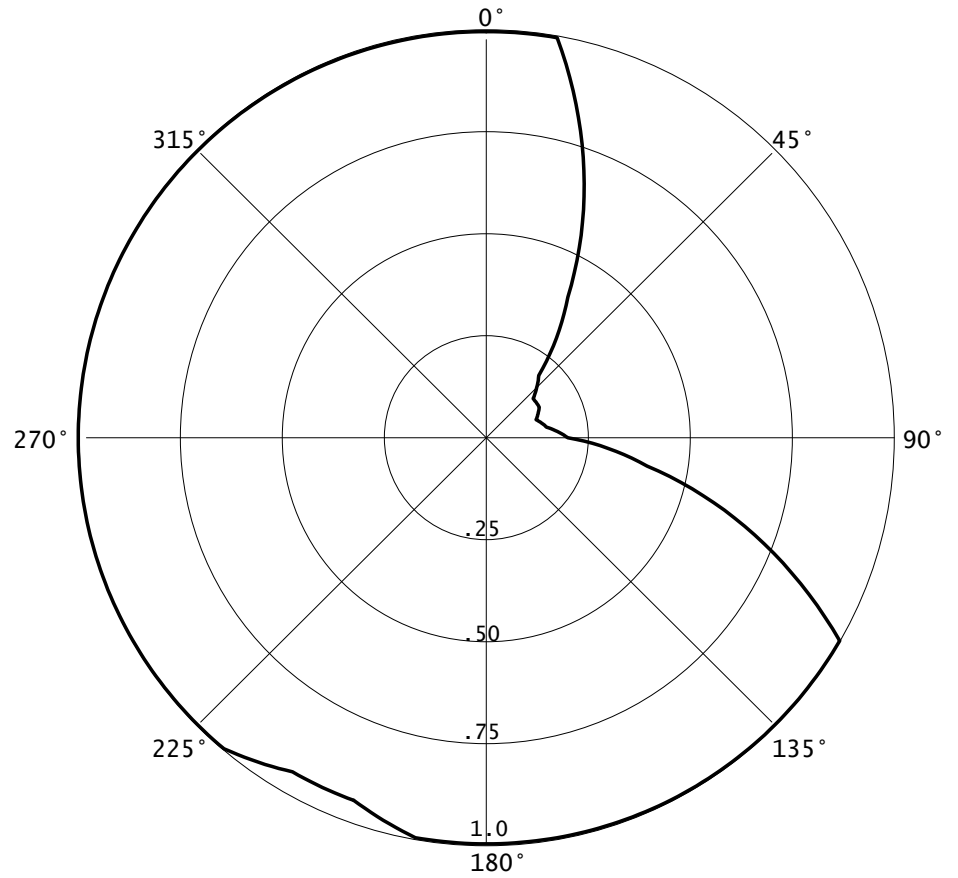
# E1D DA TABULATION

04-05-2017

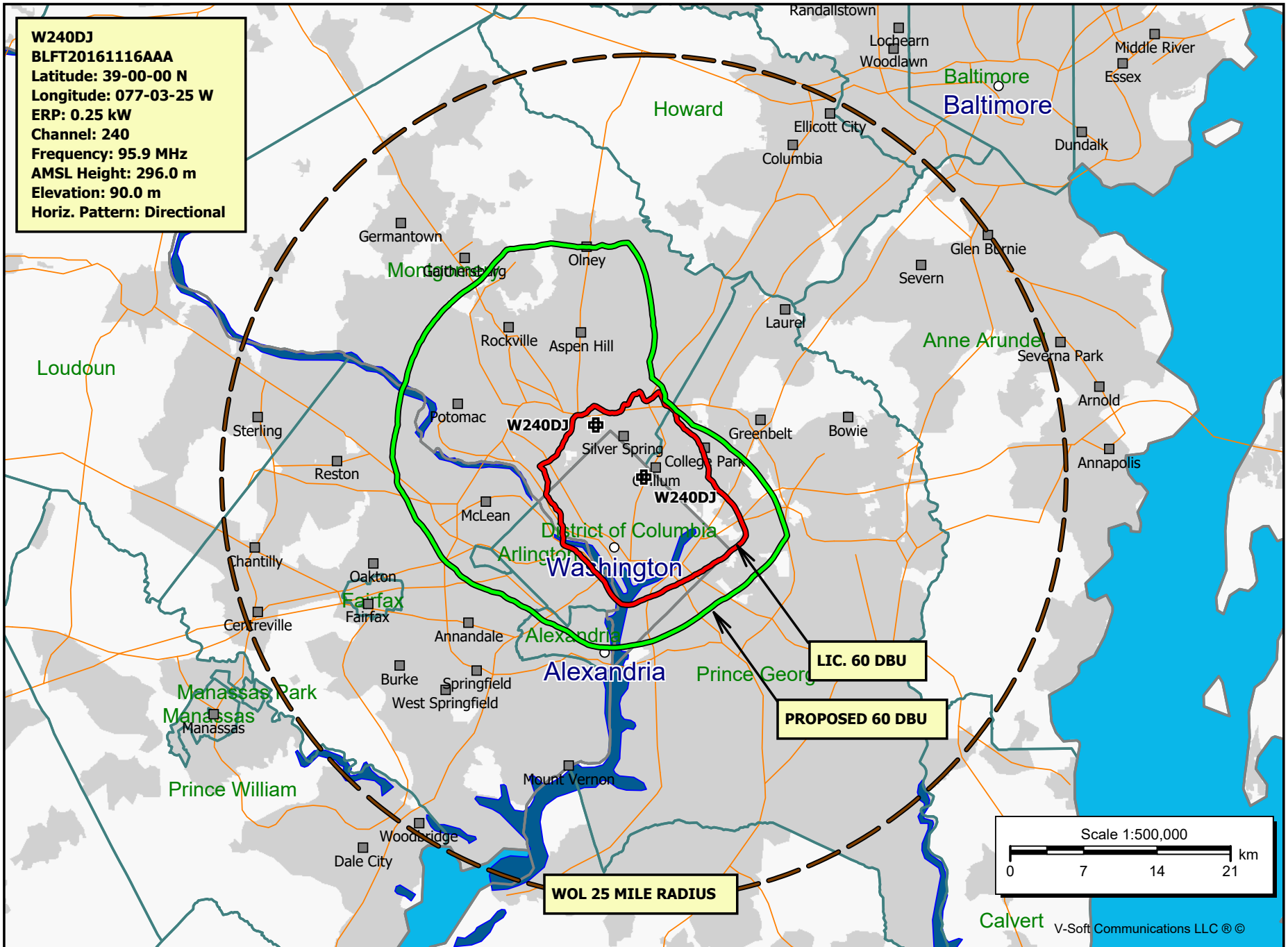
RMS(V)= .869

Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	-06.021	0.250
010	1.000	-06.021	0.250
020	0.700	-09.119	0.122
030	0.400	-13.979	0.040
040	0.200	-20.000	0.010
050	0.150	-22.499	0.006
060	0.150	-22.499	0.006
070	0.130	-23.742	0.004
080	0.150	-22.499	0.006
090	0.200	-20.000	0.010
100	0.400	-13.979	0.040
110	0.700	-09.119	0.122
120	1.000	-06.021	0.250
130	1.000	-06.021	0.250
140	1.000	-06.021	0.250
150	1.000	-06.021	0.250
160	1.000	-06.021	0.250
170	1.000	-06.021	0.250
180	1.000	-06.021	0.250
190	1.000	-06.021	0.250
200	0.950	-06.466	0.226
210	0.950	-06.466	0.226
220	1.000	-06.021	0.250
230	1.000	-06.021	0.250
240	1.000	-06.021	0.250
250	1.000	-06.021	0.250
260	1.000	-06.021	0.250
270	1.000	-06.021	0.250
280	1.000	-06.021	0.250
290	1.000	-06.021	0.250
300	1.000	-06.021	0.250
310	1.000	-06.021	0.250
320	1.000	-06.021	0.250
330	1.000	-06.021	0.250
340	1.000	-06.021	0.250
350	1.000	-06.021	0.250



## E2 CONTOURS





[ASR Registration Search](#)**Registration 1042694** [Map Registration](#)**E3 FCC ANTENNA REGISTRATION****Registration Detail**

Reg Number	1042694	Status	Constructed
File Number	A0941793	Constructed	07/01/1985
EMI	No	Dismantled	
NEPA	No		

**Antenna Structure**

Structure Type 3TA1 - Antenna Tower Array - 1st N = # towers 2nd N =

**Location** (in NAD83 Coordinates)

Lat/Long	39-00-00.0 N 077-03-25.0 W	Address	TWR 1 - CENTER - 8744 BROOKVILLE RD
City, State	SILVER SPRING , MD		
Zip	20910	County	MONTGOMERY
Center of AM Array	39-00-00.0 N 077-03-25.0 W	Position of Tower in Array	

**Heights (meters)**

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
90.3	229.9
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
320.2	211.8

**Painting and Lighting Specifications**

FAA Chapters 4, 9, 13

Paint and Light in Accordance with FAA Circular Number 70/7460-1J

**FAA Notification**

FAA Study	98-AEA-0685-OE	FAA Issue Date	03/27/1998
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**Owner & Contact Information**

FRN	0023451453	Owner Entity Type	Limited Liability Company
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**Owner**

Vertical Bridge Towers, LLC  
 Attention To: FCC Contact  
 750 Park of Commerce Drive  
 Suite 200  
 Boca Raton , FL 33487

P: (561)221-0987  
 F:  
 E: FCC-FAA@verticalbridge.com

**Contact**

Lindeman , Leslie N  
 Attention To: FCC Contact  
 750 Park of Commerce Drive  
 Suite 200  
 Boca Raton , FL 33487

P: (561)221-0987  
 F:  
 E: FCC-FAA@verticalbridge.com

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**Last Action Status**

Status	Constructed	Received	04/21/2015
Purpose	Admin Update	Entered	04/21/2015
Mode	Interactive		

# Output from NADCON for station W240DJ

North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

=====

Transformation #: 1      Region: Conus

	Latitude	Longitude
NAD 27 datum values:	38 59 59.60422	77 03 26.08134
NAD 83 datum values:	39 00 0.00000	77 03 25.00000
NAD 27 - NAD 83 shift values:	-0.39578	1.08134(secs.)
	-12.205	26.020 (meters)
Magnitude of total shift:		28.740(meters)



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