

**W281AW
APPLICATION FOR
MINOR MODIFICATIONS
TO SERVE AS A FILL IN FOR
WTPS(AM) - FACILITY #60474**

Allocation discussion:

All exhibits utilize the V-Soft provided FCC 30 second terrain database.

E1	Channel study
E1A	WPZZ analysis
E1B	WURV analysis
E1C	Aerial view of interference area
E2	60 dBu and 2 mV/m contours plot
E3	ASR

A channel study is included demonstrating compliance with §74.1204. Analysis of 2nd adjacent channel station WURV and 3rd adjacent WPZZ are provided below. A plot of the proposed 60 dBu is provided as E2 showing that it is entirely contained within the WTPS 2 mV/m and 40 km circle and that it overlaps the licensed W281AW 60 dBu.

WPZZ and WURV analyses:

The proposed W281AW facility will be located inside the protected contour of 2nd adjacent channel station WURV on 279B and 3rd adjacent WPZZ on 284C1. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site and the vertical elevation pattern for the ERI-100A-66% wavelength spaced antenna.

The WPZZ (50,50) contour at the proposed site is 67.4 dBu and the (50:10) interference contour is 107.4 dBu. Exhibit E1A demonstrates that this interfering contour is at least 21.6 meters above ground.

The WURV contour at the proposed site 69.7 dBu and the (50:10) interference contour is 109.7 dBu. Exhibit E1B demonstrates that this interfering contour is at least 41.1 meters above ground.

A careful examination of the interference area's aerial photograph (see E1C) from Google Earth and Google Street Views reveals that the tallest structures within the interference contour are two stories. Therefore, there is ample clearance from the interference contour.

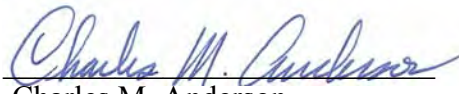
Clearly, these interference contours will not reach any populated area or major highways. Based on this showing a waiver of Section 74.1204 is requested in accordance with Living Way Ministries, Inc. (FCC 08-242).

RF Exposure Calculation:

The proposed facility will be located at an existing tower (ASR#1035322) using a three bay ERI 100A circularly polarized antenna with 2/3 wavelength spacing mounted at 105 meters AGL. The RF contribution of the proposed translator was calculated to be 1.57 $\mu\text{Watts}/\text{cm}^2$ using the formula included below and a worst case vertical factor of 1.0. This is 0.8% of the maximum permissible 200 microwatts/cm² exposure for general population/uncontrolled exposure, and well below 5% of that limit which requires consideration.

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

The proposed translator facility complies with Commission RF radiation limits.


Charles M. Anderson
1519 Euclid Avenue
Bowling Green, KY 42103
270-782-0246

E1 CHANNEL STUDY

REFERENCE CH# 281D - 104.1 MHz, Pwr= 0.25 kW, HAAT= 100.0 M, COR= 139 M DISPLAY DATES
 37 14 02.0 N. Average Protected F(50-50)= 12.86 km DATA 06-24-15
 77 22 39.0 W. Omni-directional SEARCH 06-24-15

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*
281D Petersburg	W281AW	LIC _C_ VA	239.4 59.4	1.45 BLFT20110727AAG	37 13 37.0 77 23 27.0	0.006 72	13.8 105	4.4 Liberty University, Inc.	-25.1*	-46.7*
279B Richmond	WURV	LIC _CY VA	330.0 149.9	35.32 BLH19831117BF	37 30 31.0 77 34 37.0	20.000 256	6.0 325	67.3 Sm-wurv, Llc	15.8	-33.7* (1)
284C1 Crewe	WPZZ	LIC _DCN VA	262.4 82.1	51.63 BLH19920211KA	37 10 15.0 77 57 16.0	100.000 299	9.0 399	67.9 Radio One Licenses, Llc	29.9	-17.4* (2)
281C1 Kill Devil Hills	WCXL	LIC _CX NC	131.0 311.9	184.54 BLH20040324AER	36 08 08.0 75 49 28.0	100.000 296	171.6 296	72.1 Max Radio Of The Carolinas	-0.5	66.5
282D Richmond	W282CA	CP _C_ VA	343.9 163.8	44.08 BMPFT20140723ACW	37 36 52.0 77 30 56.0	0.250	27.5 246	18.2 Edgewater Broadcasting, In	3.1	5.2
281B Waldorf	WPRS-FM	LIC _CX MD	16.7 197.0	160.92 BMLH20070809ABE	38 37 07.4 76 50 39.0	20.000 244	130.3 295	66.5 Radio One Licenses, Llc	17.0	31.9
282C1 Bunn	WFXK	LIC _CX NC	204.9 24.5	146.24 BLH20120508AAW	36 02 20.0 78 03 45.0	100.000 299	105.2 375	72.4 Radio One Licenses, Llc	27.7	53.8
283B Norfolk	WNVZ	LIC _C_ VA	102.6 283.2	97.17 BMLH20040816AAN	37 02 17.6 76 18 28.7	50.000 146	5.9 148	64.8 Entercom License, Llc	77.8	30.7
228C3 Blackstone	WBBC-FM	LIC _CN VA	250.9 70.5	60.48 BLH19971210KE	37 03 14.0 78 01 15.0	17.500 120	0.0 230	0.0 Denbar Communications, Inc	11.5R	49.0M
280L1 White Stone	WWND-LP	CP _ VA	62.3 242.9	96.35 BNPL20131104ARO	37 37 56.1 76 24 27.0	0.100 29		74.9 White Stone Radio Inc		70.4

Terrain database is FCC NGDC 30 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

- (1) See E1B for disproof of interference.
 (2) See E1A for disproof of interference.

E1A WPZZ ANALYSIS

W281AW Petersburg, VA

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 105 Meters

WKJM Antenna Model = 100A-3F 66% SPACED

Protected Station's Contour = 67.39552 dBu

Translator's or LPFM's full Interference contour 107.39552

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 = 51.6 km

Protected Station= WPZZ, 100 kW, 399 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	1.0	1.0	0.2500	473.3627	473.3627	105.000
01.00	0.998	1.0	0.2490	472.4160	472.3440	096.755
02.00	0.992	1.0	0.2460	469.5758	469.2897	088.612
03.00	0.983	1.0	0.2416	465.3155	464.6778	080.647
04.00	0.97	1.0	0.2352	459.1618	458.0433	072.970
05.00	0.953	1.0	0.2271	451.1146	449.3980	065.683
06.00	0.933	1.0	0.2176	441.6474	439.2280	058.835
07.00	0.91	1.0	0.2070	430.7600	427.5492	052.504
08.00	0.883	1.0	0.1949	417.9792	413.9115	046.829
09.00	0.854	1.0	0.1823	404.2517	399.2747	041.761
10.00	0.822	1.0	0.1689	389.1041	383.1928	037.433
11.00	0.787	1.0	0.1548	372.5364	365.6919	033.917
12.00	0.75	1.0	0.1406	355.0220	347.2639	031.187
13.00	0.711	1.0	0.1264	336.5609	327.9348	029.290
14.00	0.67	1.0	0.1122	317.1530	307.7322	028.274
15.00	0.628	1.0	0.0986	297.2718	287.1425	028.060
16.00	0.585	1.0	0.0856	276.9172	266.1898	028.671
17.00	0.541	1.0	0.0732	256.0892	244.8993	030.127
18.00	0.496	1.0	0.0615	234.7879	223.2965	032.447
19.00	0.451	1.0	0.0509	213.4866	201.8555	035.496
20.00	0.406	1.0	0.0412	192.1852	180.5950	039.269
21.00	0.361	1.0	0.0326	170.8839	159.5339	043.761
22.00	0.317	1.0	0.0251	150.0560	139.1295	048.788
23.00	0.273	1.0	0.0186	129.2280	118.9550	054.507
24.00	0.231	1.0	0.0133	109.3468	099.8933	060.525
25.00	0.189	1.0	0.0089	089.4655	081.0833	067.190
26.00	0.149	1.0	0.0056	070.5310	063.3929	074.081
27.00	0.11	1.0	0.0030	052.0699	046.3946	081.361
28.00	0.073	1.0	0.0013	034.5555	030.5107	088.777
29.00	0.038	1.0	0.0004	017.9878	015.7325	096.279
30.00	0.004	1.0	0.0000	001.8935	001.6398	104.053
31.00	0.027	1.0	0.0002	012.7808	010.9553	098.417
32.00	0.056	1.0	0.0008	026.5083	022.4803	090.953
33.00	0.083	1.0	0.0017	039.2891	032.9506	083.602
34.00	0.108	1.0	0.0029	051.1232	042.3830	076.412
35.00	0.131	1.0	0.0043	062.0105	050.7960	069.432
36.00	0.151	1.0	0.0057	071.4778	057.8267	062.986
37.00	0.169	1.0	0.0071	079.9983	063.8895	056.856
38.00	0.185	1.0	0.0086	087.5721	069.0078	051.085

E1A Continued

39.00	0.199	1.0	0.0099	094.1992	073.2065	045.719
40.00	0.21	1.0	0.0110	099.4062	076.1495	041.103
41.00	0.22	1.0	0.0121	104.1398	078.5953	036.678
42.00	0.227	1.0	0.0129	107.4533	079.8534	033.100
43.00	0.233	1.0	0.0136	110.2935	080.6636	029.780
44.00	0.237	1.0	0.0140	112.1870	080.7005	027.068
45.00	0.239	1.0	0.0143	113.1337	079.9976	025.002
46.00	0.24	1.0	0.0144	113.6070	078.9181	023.278
47.00	0.239	1.0	0.0143	113.1337	077.1570	022.259
48.00	0.237	1.0	0.0140	112.1870	075.0677	021.629
49.00	0.233	1.0	0.0136	110.2935	072.3590	021.760
50.00	0.229	1.0	0.0131	108.4001	069.6782	021.961
51.00	0.223	1.0	0.0124	105.5599	066.4310	022.965
52.00	0.217	1.0	0.0118	102.7197	063.2406	024.056
53.00	0.209	1.0	0.0109	098.9328	059.5392	025.989
54.00	0.202	1.0	0.0102	095.6193	056.2036	027.642
55.00	0.193	1.0	0.0093	091.3590	052.4014	030.163
56.00	0.184	1.0	0.0085	087.0987	048.7050	032.792
57.00	0.175	1.0	0.0077	082.8385	045.1171	035.526
58.00	0.166	1.0	0.0069	078.5782	041.6401	038.362
59.00	0.156	1.0	0.0061	073.8446	038.0328	041.703
60.00	0.147	1.0	0.0054	069.5843	034.7922	044.738
61.00	0.137	1.0	0.0047	064.8507	031.4402	048.280
62.00	0.128	1.0	0.0041	060.5904	028.4455	051.502
63.00	0.118	1.0	0.0035	055.8568	025.3585	055.231
64.00	0.109	1.0	0.0030	051.5965	022.6184	058.625
65.00	0.1	1.0	0.0025	047.3363	020.0052	062.099
66.00	0.091	1.0	0.0021	043.0760	017.5206	065.648
67.00	0.083	1.0	0.0017	039.2891	015.3515	068.834
68.00	0.075	1.0	0.0014	035.5022	013.2994	072.083
69.00	0.067	1.0	0.0011	031.7153	011.3657	075.391
70.00	0.06	1.0	0.0009	028.4018	009.7140	078.311
71.00	0.053	1.0	0.0007	025.0882	008.1679	081.279
72.00	0.047	1.0	0.0006	022.2480	006.8750	083.841
73.00	0.041	1.0	0.0004	019.4079	005.6743	086.440
74.00	0.036	1.0	0.0003	017.0411	004.6972	088.619
75.00	0.031	1.0	0.0002	014.6742	003.7980	090.826
76.00	0.026	1.0	0.0002	012.3074	002.9774	093.058
77.00	0.022	1.0	0.0001	010.4140	002.3426	094.853
78.00	0.019	1.0	0.0001	008.9939	001.8699	096.203
79.00	0.015	1.0	0.0001	007.1004	001.3548	098.030
80.00	0.013	1.0	0.0000	006.1537	001.0686	098.940
81.00	0.01	1.0	0.0000	004.7336	000.7405	100.325
82.00	0.008	1.0	0.0000	003.7869	000.5270	101.250
83.00	0.003	1.0	0.0000	001.4201	000.1731	103.590
84.00	0.005	1.0	0.0000	002.3668	000.2474	102.646
85.00	0.004	1.0	0.0000	001.8935	000.1650	103.114
86.00	0.003	1.0	0.0000	001.4201	000.0991	103.583
87.00	0.002	1.0	0.0000	000.9467	000.0495	104.055
88.00	0.002	1.0	0.0000	000.9467	000.0330	104.054
89.00	0.001	1.0	0.0000	000.4734	000.0083	104.527
90.00	0.001	1.0	0.0000	000.4734	000.0000	104.527

MINIMUM

E1B WURV ANALYSIS

W281AW Petersburg, VA
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.25
 Translator or LPFM Antenna Height AG = 105 Meters
 WKJM Antenna Model = 100A-3F 66% SPACED

Protected Station's Contour = 69.66643 dBu
 Translator's or LPFM's full Interference contour 109.66643

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 = 35.3 km
 Protected Station= WURV, 20 kW, 325 M Meters COR AMSL

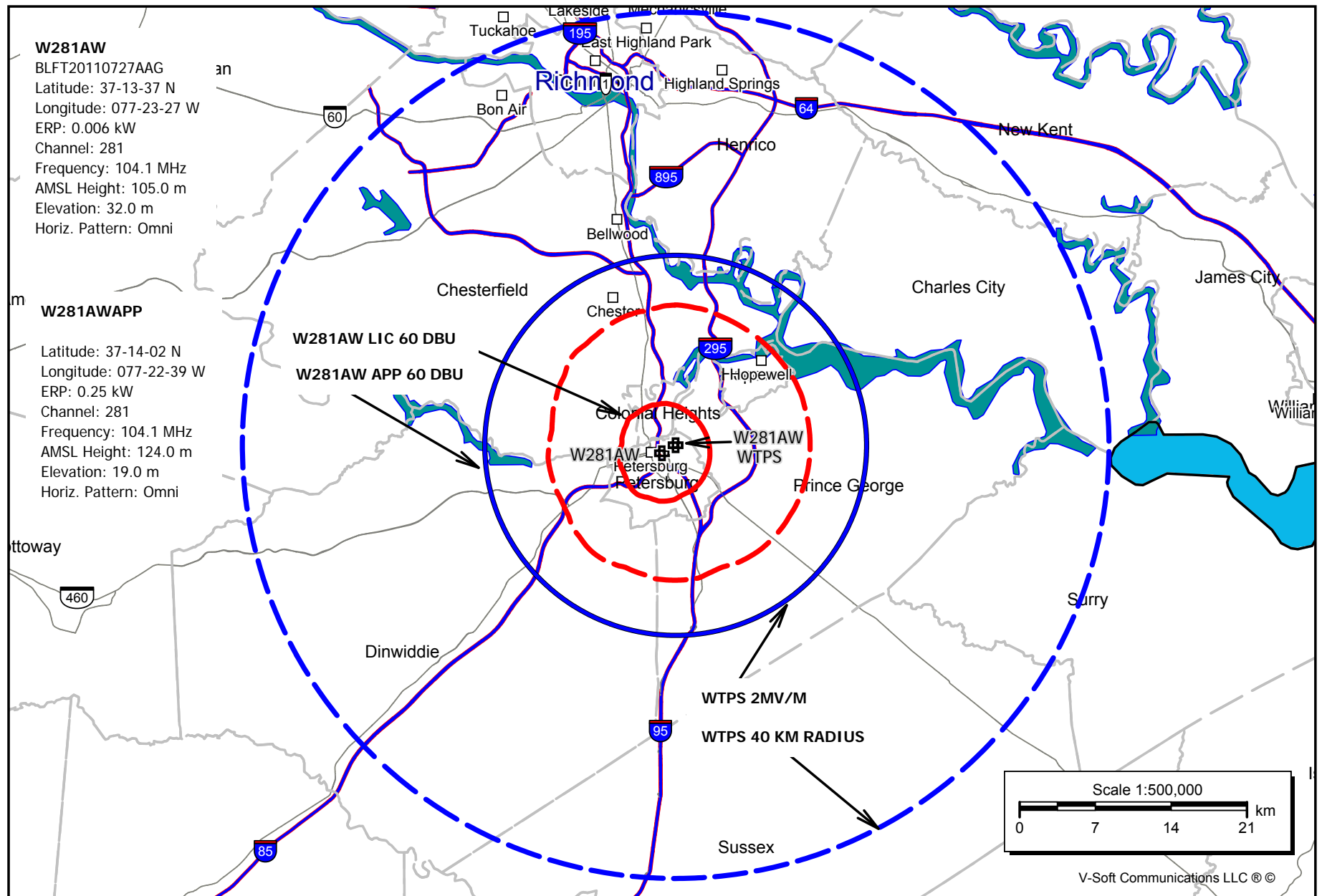
Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)	
00.00	1.0	1.0	0.2500	364.4589	364.4589	105.000	
05.00	0.953	1.0	0.2271	347.3293	346.0076	074.728	
10.00	0.822	1.0	0.1689	299.5852	295.0338	052.978	
15.00	0.628	1.0	0.0986	228.8802	221.0813	045.761	
20.00	0.406	1.0	0.0412	147.9703	139.0466	054.391	
25.00	0.189	1.0	0.0089	068.8827	062.4289	075.889	
30.00	0.004	1.0	0.0000	001.4578	001.2625	104.271	
35.00	0.131	1.0	0.0043	047.7441	039.1097	077.615	
40.00	0.21	1.0	0.0110	076.5364	058.6303	055.803	
45.00	0.239	1.0	0.0143	087.1057	061.5930	043.407	
50.00	0.229	1.0	0.0131	083.4611	053.6477	041.065	MINIMUM
55.00	0.193	1.0	0.0093	070.3406	040.3457	047.380	
60.00	0.147	1.0	0.0054	053.5755	026.7877	058.602	
65.00	0.1	1.0	0.0025	036.4459	015.4027	071.969	
70.00	0.06	1.0	0.0009	021.8675	007.4791	084.451	
75.00	0.031	1.0	0.0002	011.2982	002.9242	094.087	
80.00	0.013	1.0	0.0000	004.7380	000.8227	100.334	
85.00	0.004	1.0	0.0000	001.4578	000.1271	103.548	
90.00	0.001	1.0	0.0000	000.3645	000.0000	104.636	

E1C AERIAL VIEW OF 107.4 (50:10) DBU



E2 CONTOURS

Anderson Communications, LLC



E3 Registration 1035322

 [Map Registration](#)

Registration Detail

Reg Number	1035322	Status	Constructed
File Number	A0656215	Constructed	09/12/1994
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	37-14-03.0 N 077-22-38.0 W	Address	INTERSECTION OF CULPEPPER AND HARE STREET
City, State	PETERSBURG , VA		
Zip	23803	County	PETERSBURG CITY
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
18.9	124.2
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
143.1	123.3

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13

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

FAA Notification

FAA Study	97-AEA-2815-OE	FAA Issue Date	09/25/1997
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Owner & Contact Information

FRN	0007164544	Owner Entity Type	
Assignor FRN	0004986071	Assignor ID	L00049037

Owner

Radio One Licenses, LLC	P: (301)306-1111
Attention To: Sonya Hall-Harris	F:
5900 Princess Garden Parkway	E:
Lanham , MD 20706	

Contact

Hall-Harris , Sonya	P:
	F:
	E:

Last Action Status

Status	Constructed	Received	11/06/2009
Purpose	Change Owner	Entered	11/06/2009
Mode	Interactive		

Related Applications

11/06/2009	A0656215	- Change Owner (OC)
12/09/1997	A0041743	- New (NE)

Output from NADCON for station W281AW

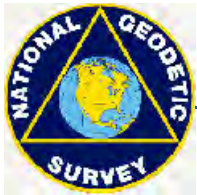
North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

Transformation #: 1 Region: Conus

	Latitude	Longitude
NAD 27 datum values:	37 14 2.46024	77 22 39.06695
NAD 83 datum values:	37 14 3.00000	77 22 38.00000
NAD 27 - NAD 83 shift values:	-0.53976	1.06695(secs.)
	-16.640	26.300 (meters)
Magnitude of total shift:		31.122(meters)



NGS HOME PAGE