

FM Translator W245BC
Application for Construction Permit
License No. BLFT-20061101AAQ
Facility ID No. 138625
December, 2014

Engineering Statement

This engineering statement has been prepared on behalf of WCHZ License, LLC. (WCHZ), Assignee of translator station W245BC, Lauderdale Lakes, FL. and reviewed and filed by Reach Communications, Inc. to relocate W245BC to the WWNN(AM) tower and increase ERP to 250 watts utilizing a directional antenna.

Allotment

W245BC will operate from tower ASR 1029907 near the top of that tower at 119m center of radiation. Since the tower also serves as part of the WWNN(AM) antenna array, during installation of the W245BC antenna, WWNN will determine operating power by the indirect method and, if necessary, request temporary authority to operate with parameters at variance in order to maintain monitoring point values within authorized limits. Because the tower which will hold the W245BC antenna is operating as a grounded folded unipole antenna, little interaction to the WWNN array is expected. Upon completion of the installation, common point impedance measurements on the AM array will be made and a partial proof of performance, as defined by Section 73.154(a) of the Commission's Rules, will be conducted to establish that the AM array has not been adversely affected and an FCC Form 302-AM application for the AM station to return to the direct method of power determination will be filed with the commission.

W245BC will continue to serve the community of Lauderdale Lakes as the relocation is only 2.7km in the direction of Lauderdale Lakes. As demonstrated in Exhibit A, the 60dBu contour of W245BC will be completely contained within the 2mV/m daytime contour of the host station, WSBR(AM) and is contained within 25 miles of the WSBR(AM) transmitter site. W245BC thus qualifies as a fill-in translator for WSBR(AM).

Exhibit B demonstrates that maintaining the directional envelope pattern as shown in Exhibit B1, the proposed operation of W245BC will comply with all pertinent interference requirements to other stations. Exhibit B2 shows contour protection toward other facilities.

Exhibit C demonstrates that this application is compliant with FCC rule 74.1233(a)(1) requiring any minor change of a translator's facilities to continue to provide 1mV/m service to some portion of its previously authorized service area.

Exhibit D demonstrates compliance with 73.1204 (d). There will be no interference to second adjacent stations WPOW (243C) or WFLC (247C) at any populated location. The interfering contour for W245BC will be approximately 93m AGL to either protected second adjacent station.

Exhibit E is a tower sketch of the proposed W245BC FM antenna on the WWNN tower.

Environmental Considerations

WCHZ is proposing to locate W245BC on an existing registered tower and is not proposing to make any tower modifications which would require notification to the FAA.

The proposed W245BC will operate at 250 watts using a one-bay ERI LPX-1E antenna at 119m AGL. For RF compliance, the FCC OET program "FM Model for Windows" was utilized. The worst case antenna, a standard dipole (EPA Type 1) antenna was used in the evaluation. Based upon the above specifications, the worst case RF radiation at 2m AGL will be $0.73\mu\text{W}/\text{cm}^2$ or 0.37% of the maximum allowable public exposure limit which is less than the $10\mu\text{W}/\text{cm}^2$, 5.0% limit as set forth by §1.1307(b)(3), therefore the facility is in compliance with FCC guidelines and is categorically excluded from further environmental processing.

Respectfully Submitted



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Goldman Engineering Management
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214-395-5067

EXHIBIT A- Coverage Contours Proposed, W245BC

W245BC From WWNN Tower (top of taller AM tower @ 119m AGL) 250w DA

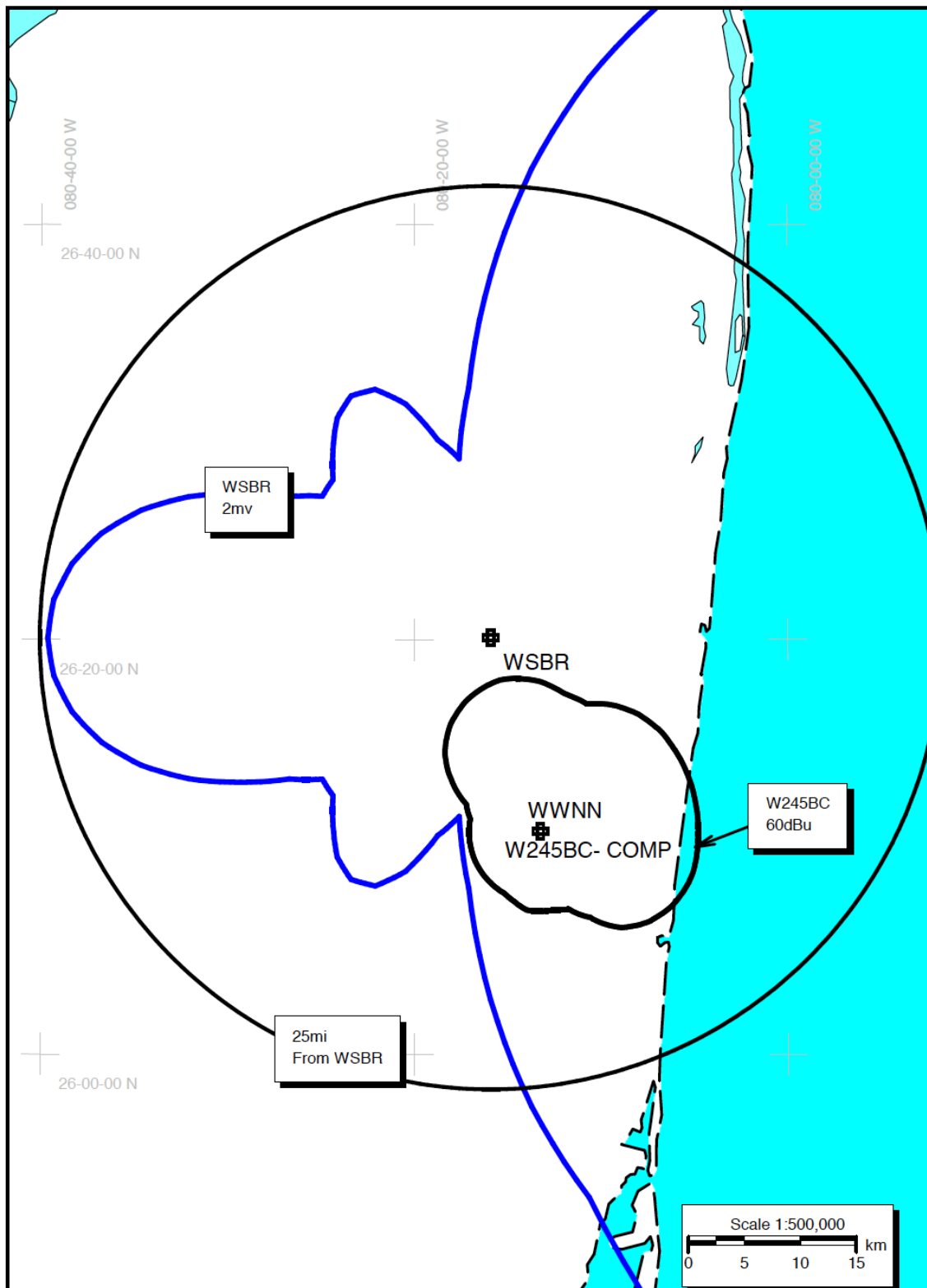


EXHIBIT B- ALLOTMENT

ComStudy 2.2 search of channel 245 (96.9 MHz Class D) at 26-10-46.0 N, 80-13-15.0 W.
119m HAGL, 250w, Directional antenna

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
WPOW	MIAMI	FL 243 C	23.54	0.00	177.2	-25.86 dB 2nd Adj ¹
WFLC	MIAMI	FL 247 C	23.54	0.00	177.2	-25.86 dB 2nd Adj ¹
W242CG	CORAL SPRINGS	FL 242 D	13.13	0.00	329.0	-1.38 dB 3rd Adj ²
W245BF	NORTH MIAMI	FL 245 D	31.08	0.00	164.7	0.39 dB Exh B2
W245AY	PALM SPRINGS	FL 245 D	51.31	0.00	16.7	0.23 dB Exh B2
W245AY	PALM SPRINGS	FL 245 D	51.31	0.00	16.7	1.57 dB Exh B2
WAMR-FM	MIAMI	FL 298 C1	23.54	22.00	177.2	1.5
WAMR-FM	MIAMI	FL 298 C1	23.54	22.00	177.2	1.5
WINK-FM	FORT MYERS	FL 245 C	168.47	0.00	294.6	12.36 dB
WKEZ-FM	TAVERNIER	FL 245 C3	130.96	0.00	192.7	16.84 dB
W244BK	TWENTYMILE BEND	FL 244 D	65.36	0.00	9.7	20.12 dB
W244BK	TWENTYMILE BEND	FL 246 D	66.05	0.00	12.3	20.25 dB
W244BD	STUART	FL 244 D	114.76	0.00	358.2	30.00 dB
W246CP	PORT ST LUCIE	FL 246 D	122.40	0.00	353.6	34.65 dB
WOSN	INDIAN RIVER SHORES	FL 246 C3	173.95	0.00	352.3	37.62 dB

¹- No Interference at ground level, See Exhibit D

²- Allowable 3rd Adjacent incoming interference from W242CG

EXHIBIT B1- Antenna Pattern

W245BC Antenna Pattern

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.915
10.0	0.796
20.0	0.75
30.0	0.866
40.0	0.952
50.0	1.0
60.0	1.0
70.0	1.0
80.0	1.0
90.0	1.0
100.0	1.0
110.0	1.0
120.0	0.915
130.0	0.796
140.0	0.628
150.0	0.39
160.0	0.27
170.0	0.25
180.0	0.25
190.0	0.25
200.0	0.22
210.0	0.2
220.0	0.2
230.0	0.2
240.0	0.2
250.0	0.2
260.0	0.2
270.0	0.2
280.0	0.2
290.0	0.247
300.0	0.423
310.0	0.628
320.0	0.796
330.0	0.915
340.0	0.982
345.0	1.0
350.0	0.982

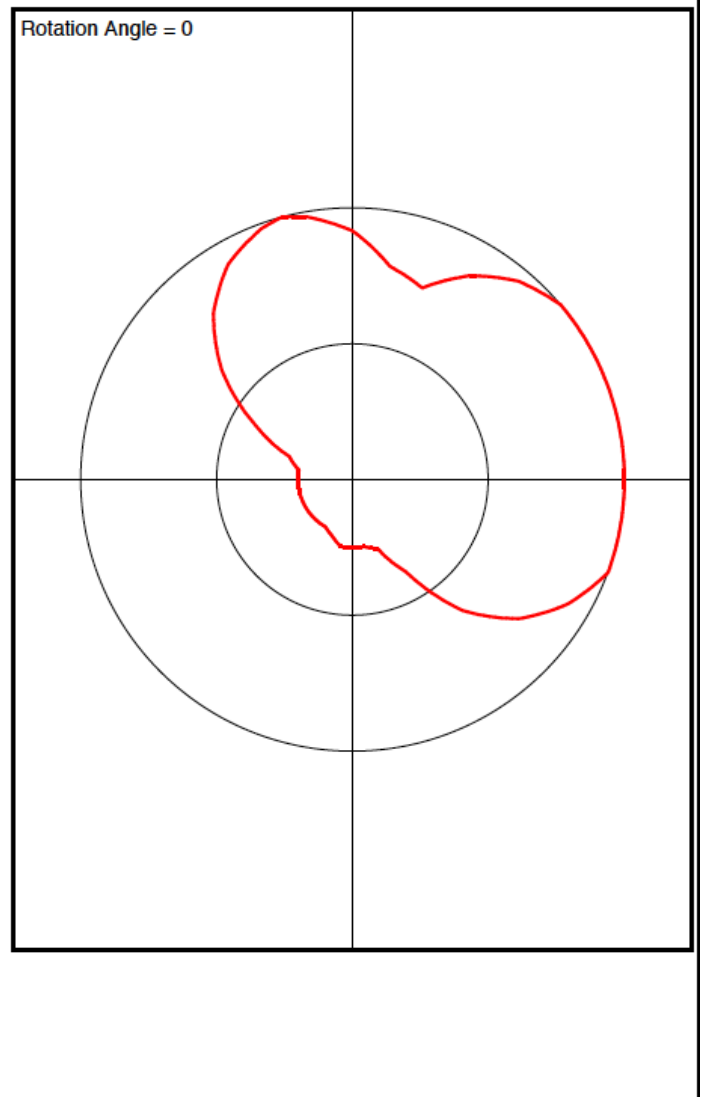
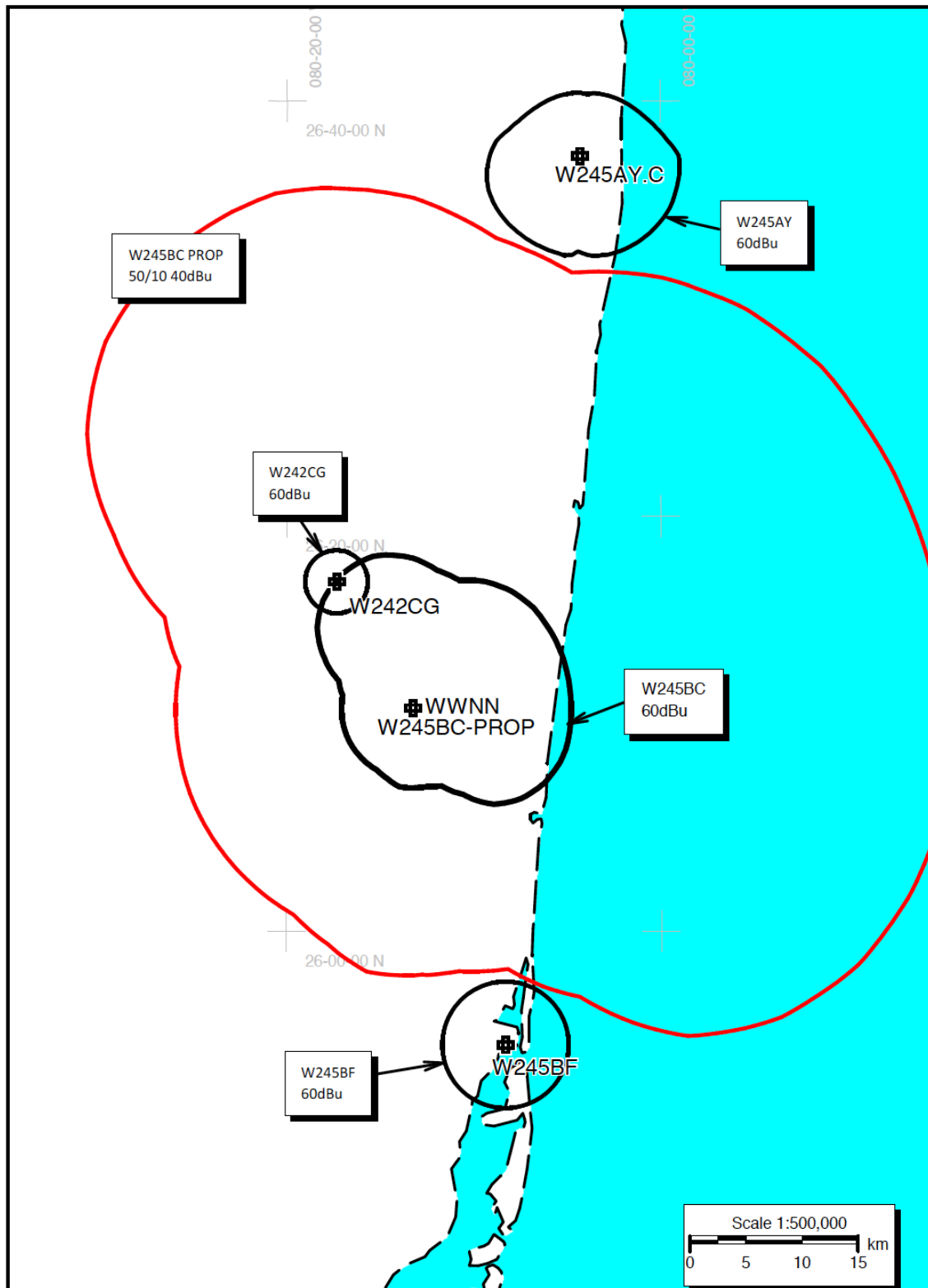


EXHIBIT B2- Contour Protection

W245BC From WWNN Tower (top of taller AM tower @ 119m AGL) 250w DA



74.1233(a)(1) Compliance, W245BC

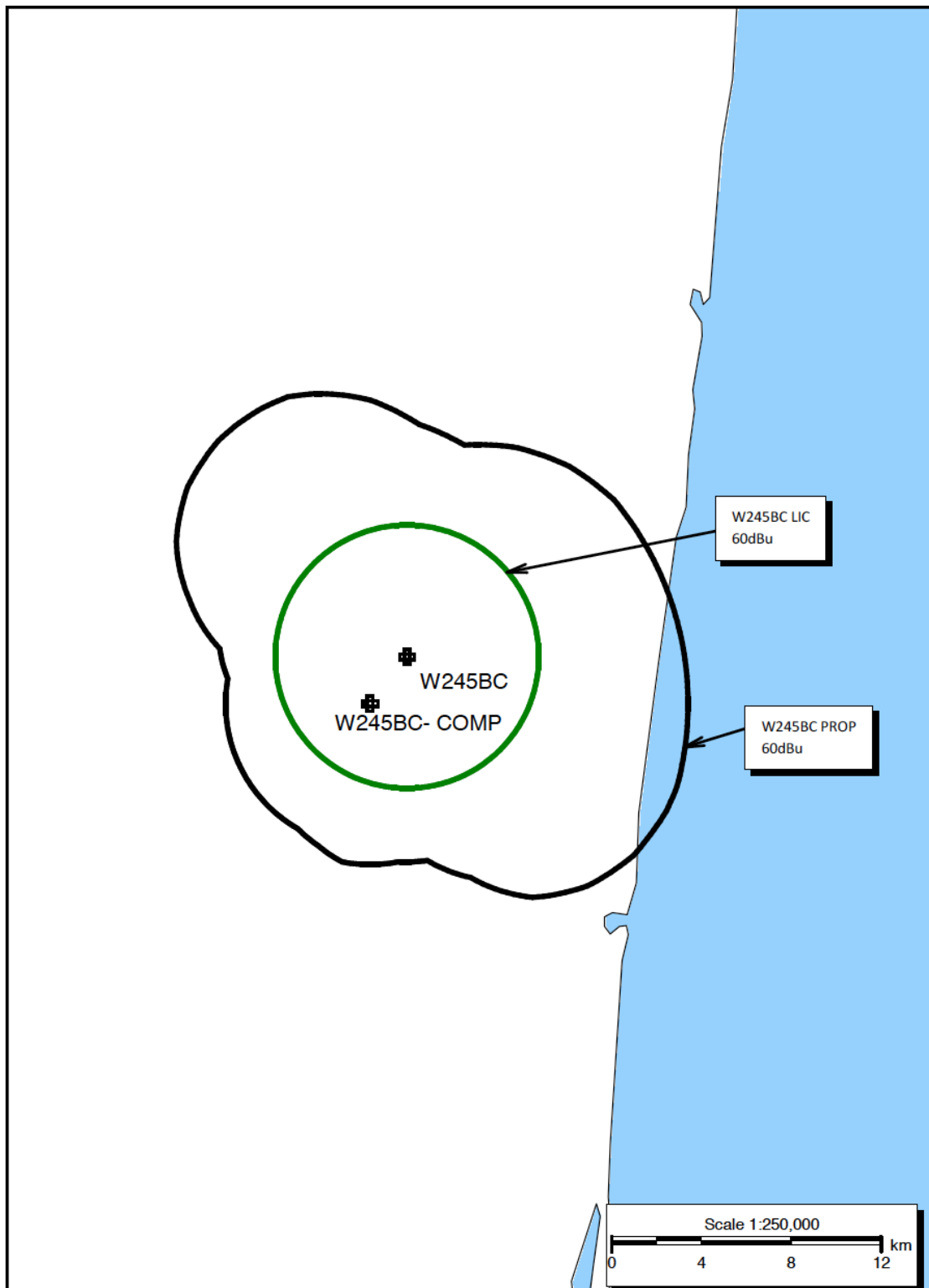


EXHIBIT D1- Second Adjacent Protection WPOW(FM)

W245BC Lauderdale Lakes , FL
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.25
 Translator or LPFM Antenna Height AG = 119 Meters
 W245BC Antenna Model = SHPX1F

Protected Station's Contour = 85.10577 dBu
 Translator's or LPFM's full Interference contour 125.10577

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 = 23.6 km
 Protected Station= WPOW, 100 kW, 308 M Meters COR AMSL
 HIGHLIGHTED IN YELLOW= LOWEST INTERFERING CONTOUR TO WPOW(FM)

Depression Angle From Horizon(Deg) (m)	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
00.00	1.0	1.0	0.2500	061.6143	061.6143	119.000
01.00	1.0	1.0	0.2500	061.6143	061.6049	117.925
02.00	0.999	1.0	0.2495	061.5527	061.5152	116.852
03.00	0.998	1.0	0.2490	061.4911	061.4068	115.782
04.00	0.996	1.0	0.2480	061.3678	061.2184	114.719
05.00	0.993	1.0	0.2465	061.1830	060.9502	113.668
06.00	0.99	1.0	0.2450	060.9982	060.6640	112.624
07.00	0.987	1.0	0.2435	060.8133	060.3600	111.589
08.00	0.983	1.0	0.2416	060.5669	059.9774	110.571
09.00	0.979	1.0	0.2396	060.3204	059.5778	109.564
10.00	0.974	1.0	0.2372	060.0123	059.1006	108.579
11.00	0.968	1.0	0.2343	059.6426	058.5468	107.620
12.00	0.962	1.0	0.2314	059.2730	057.9777	106.676
13.00	0.956	1.0	0.2285	058.9033	057.3936	105.750
14.00	0.949	1.0	0.2252	058.4720	056.7351	104.854
15.00	0.941	1.0	0.2214	057.9791	056.0035	103.994
16.00	0.933	1.0	0.2176	057.4861	055.2592	103.155
17.00	0.925	1.0	0.2139	056.9932	054.5029	102.337
18.00	0.916	1.0	0.2098	056.4387	053.6764	101.559
19.00	0.907	1.0	0.2057	055.8842	052.8395	100.806
20.00	0.897	1.0	0.2012	055.2680	051.9350	100.097
21.00	0.887	1.0	0.1967	054.6519	051.0219	099.415
22.00	0.877	1.0	0.1923	054.0357	050.1011	098.758
23.00	0.866	1.0	0.1875	053.3580	049.1163	098.151
24.00	0.855	1.0	0.1828	052.6802	048.1258	097.573
25.00	0.843	1.0	0.1777	051.9409	047.0744	097.049
26.00	0.831	1.0	0.1726	051.2015	046.0196	096.555
27.00	0.819	1.0	0.1677	050.4621	044.9621	096.091
28.00	0.806	1.0	0.1624	049.6611	043.8482	095.686
29.00	0.793	1.0	0.1572	048.8601	042.7340	095.312
30.00	0.78	1.0	0.1521	048.0592	041.6204	094.970
31.00	0.766	1.0	0.1467	047.1966	040.4553	094.692
32.00	0.752	1.0	0.1414	046.3340	039.2934	094.447
33.00	0.738	1.0	0.1362	045.4714	038.1355	094.235
34.00	0.723	1.0	0.1307	044.5471	036.9313	094.090
35.00	0.709	1.0	0.1257	043.6845	035.7843	093.944
36.00	0.694	1.0	0.1204	042.7603	034.5938	093.866

37.00	0.679	1.0	0.1153	041.8361	033.4118	093.822
38.00	0.664	1.0	0.1102	040.9119	032.2390	093.812
39.00	0.648	1.0	0.1050	039.9261	031.0284	093.874
40.00	0.633	1.0	0.1002	039.0019	029.8772	093.930
41.00	0.617	1.0	0.0952	038.0160	028.6911	094.059
42.00	0.601	1.0	0.0903	037.0302	027.5188	094.222
43.00	0.586	1.0	0.0858	036.1060	026.4062	094.376
44.00	0.57	1.0	0.0812	035.1201	025.2633	094.603
45.00	0.554	1.0	0.0767	034.1343	024.1366	094.863
46.00	0.537	1.0	0.0721	033.0869	022.9841	095.199
47.00	0.521	1.0	0.0679	032.1011	021.8929	095.523
48.00	0.505	1.0	0.0638	031.1152	020.8201	095.877
49.00	0.489	1.0	0.0598	030.1294	019.7667	096.261
50.00	0.473	1.0	0.0559	029.1436	018.7331	096.675
51.00	0.457	1.0	0.0522	028.1577	017.7202	097.117
52.00	0.441	1.0	0.0486	027.1719	016.7287	097.588
53.00	0.425	1.0	0.0452	026.1861	015.7592	098.087
54.00	0.409	1.0	0.0418	025.2002	014.8123	098.613
55.00	0.394	1.0	0.0388	024.2760	013.9242	099.114
56.00	0.378	1.0	0.0357	023.2902	013.0237	099.692
57.00	0.362	1.0	0.0328	022.3044	012.1478	100.294
58.00	0.347	1.0	0.0301	021.3802	011.3298	100.869
59.00	0.332	1.0	0.0276	020.4559	010.5356	101.466
60.00	0.317	1.0	0.0251	019.5317	009.7659	102.085
61.00	0.302	1.0	0.0228	018.6075	009.0211	102.725
62.00	0.288	1.0	0.0207	017.7449	008.3307	103.332
63.00	0.273	1.0	0.0186	016.8207	007.6364	104.013
64.00	0.259	1.0	0.0168	015.9581	006.9956	104.657
65.00	0.245	1.0	0.0150	015.0955	006.3796	105.319
66.00	0.232	1.0	0.0135	014.2945	005.8141	105.941
67.00	0.219	1.0	0.0120	013.4935	005.2723	106.579
68.00	0.206	1.0	0.0106	012.6925	004.7547	107.232
69.00	0.193	1.0	0.0093	011.8916	004.2616	107.898
70.00	0.181	1.0	0.0082	011.1522	003.8143	108.520
71.00	0.169	1.0	0.0071	010.4128	003.3901	109.154
72.00	0.157	1.0	0.0062	009.6734	002.9893	109.800
73.00	0.146	1.0	0.0053	008.9957	002.6301	110.397
74.00	0.135	1.0	0.0046	008.3179	002.2927	111.004
75.00	0.124	1.0	0.0038	007.6402	001.9774	111.620
76.00	0.114	1.0	0.0032	007.0240	001.6993	112.185
77.00	0.104	1.0	0.0027	006.4079	001.4415	112.756
78.00	0.095	1.0	0.0023	005.8534	001.2170	113.275
79.00	0.086	1.0	0.0018	005.2988	001.0111	113.799
80.00	0.077	1.0	0.0015	004.7443	000.8238	114.328
81.00	0.069	1.0	0.0012	004.2514	000.6651	114.801
82.00	0.061	1.0	0.0009	003.7585	000.5231	115.278
83.00	0.054	1.0	0.0007	003.3272	000.4055	115.698
84.00	0.047	1.0	0.0006	002.8959	000.3027	116.120
85.00	0.041	1.0	0.0004	002.5262	000.2202	116.483
86.00	0.035	1.0	0.0003	002.1565	000.1504	116.849
87.00	0.029	1.0	0.0002	001.7868	000.0935	117.216
88.00	0.024	1.0	0.0001	001.4787	000.0516	117.522
89.00	0.02	1.0	0.0001	001.2323	000.0215	117.768
90.00	0.016	1.0	0.0001	000.9858	000.0000	118.014

EXHIBIT D2- SECOND ADJACENT PROTECTION WFLC(FM)

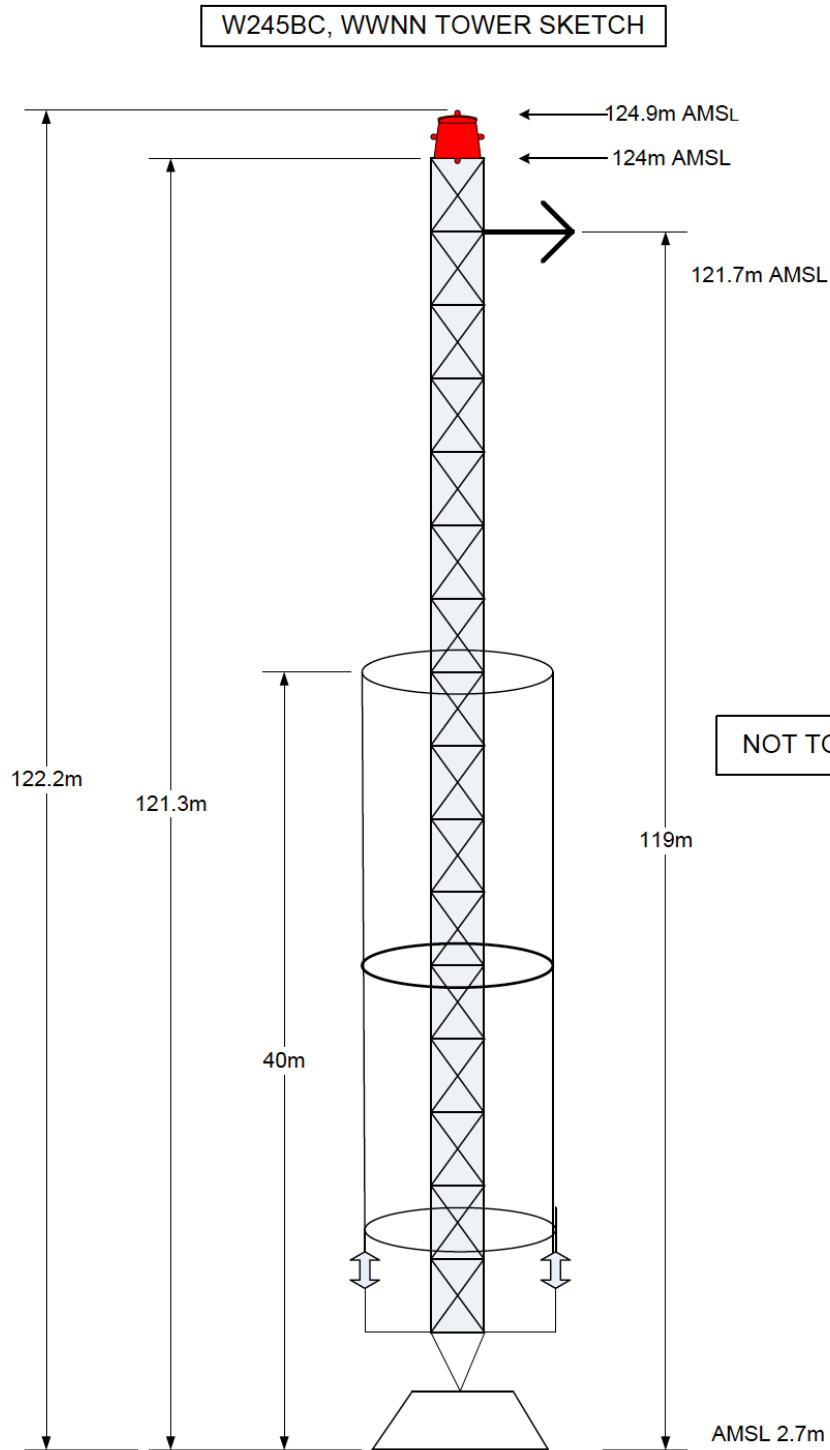
W245BC Lauderdale Lakes , FL
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.25
 Translator or LPFM Antenna Height AG = 119 Meters
 W245BC Antenna Model = SHPX1F

Protected Station's Contour = 85.10577 dBu
 Translator's or LPFM's full Interference contour 125.10577

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 = 23.6 km
 Protected Station= WFLC, 100 kW, 308 M Meters COR AMSL
 HIGHLIGHTED IN YELLOW= LOWEST INTERFERING CONTOUR TO WFLC(FM)

Depression Angle From Horizon(Deg) (m)	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
00.00	1.0	1.0	0.2500	061.6143	061.6143	119.000
01.00	1.0	1.0	0.2500	061.6143	061.6049	117.925
02.00	0.999	1.0	0.2495	061.5527	061.5152	116.852
03.00	0.998	1.0	0.2490	061.4911	061.4068	115.782
04.00	0.996	1.0	0.2480	061.3678	061.2184	114.719
05.00	0.993	1.0	0.2465	061.1830	060.9502	113.668
06.00	0.99	1.0	0.2450	060.9982	060.6640	112.624
07.00	0.987	1.0	0.2435	060.8133	060.3600	111.589
08.00	0.983	1.0	0.2416	060.5669	059.9774	110.571
09.00	0.979	1.0	0.2396	060.3204	059.5778	109.564
10.00	0.974	1.0	0.2372	060.0123	059.1006	108.579
11.00	0.968	1.0	0.2343	059.6426	058.5468	107.620
12.00	0.962	1.0	0.2314	059.2730	057.9777	106.676
13.00	0.956	1.0	0.2285	058.9033	057.3936	105.750
14.00	0.949	1.0	0.2252	058.4720	056.7351	104.854
15.00	0.941	1.0	0.2214	057.9791	056.0035	103.994
16.00	0.933	1.0	0.2176	057.4861	055.2592	103.155
17.00	0.925	1.0	0.2139	056.9932	054.5029	102.337
18.00	0.916	1.0	0.2098	056.4387	053.6764	101.559
19.00	0.907	1.0	0.2057	055.8842	052.8395	100.806
20.00	0.897	1.0	0.2012	055.2680	051.9350	100.097
21.00	0.887	1.0	0.1967	054.6519	051.0219	099.415
22.00	0.877	1.0	0.1923	054.0357	050.1011	098.758
23.00	0.866	1.0	0.1875	053.3580	049.1163	098.151
24.00	0.855	1.0	0.1828	052.6802	048.1258	097.573
25.00	0.843	1.0	0.1777	051.9409	047.0744	097.049
26.00	0.831	1.0	0.1726	051.2015	046.0196	096.555
27.00	0.819	1.0	0.1677	050.4621	044.9621	096.091
28.00	0.806	1.0	0.1624	049.6611	043.8482	095.686
29.00	0.793	1.0	0.1572	048.8601	042.7340	095.312
30.00	0.78	1.0	0.1521	048.0592	041.6204	094.970
31.00	0.766	1.0	0.1467	047.1966	040.4553	094.692
32.00	0.752	1.0	0.1414	046.3340	039.2934	094.447
33.00	0.738	1.0	0.1362	045.4714	038.1355	094.235
34.00	0.723	1.0	0.1307	044.5471	036.9313	094.090
35.00	0.709	1.0	0.1257	043.6845	035.7843	093.944
36.00	0.694	1.0	0.1204	042.7603	034.5938	093.866

37.00	0.679	1.0	0.1153	041.8361	033.4118	093.822
38.00	0.664	1.0	0.1102	040.9119	032.2390	093.812
39.00	0.648	1.0	0.1050	039.9261	031.0284	093.874
40.00	0.633	1.0	0.1002	039.0019	029.8772	093.930
41.00	0.617	1.0	0.0952	038.0160	028.6911	094.059
42.00	0.601	1.0	0.0903	037.0302	027.5188	094.222
43.00	0.586	1.0	0.0858	036.1060	026.4062	094.376
44.00	0.57	1.0	0.0812	035.1201	025.2633	094.603
45.00	0.554	1.0	0.0767	034.1343	024.1366	094.863
46.00	0.537	1.0	0.0721	033.0869	022.9841	095.199
47.00	0.521	1.0	0.0679	032.1011	021.8929	095.523
48.00	0.505	1.0	0.0638	031.1152	020.8201	095.877
49.00	0.489	1.0	0.0598	030.1294	019.7667	096.261
50.00	0.473	1.0	0.0559	029.1436	018.7331	096.675
51.00	0.457	1.0	0.0522	028.1577	017.7202	097.117
52.00	0.441	1.0	0.0486	027.1719	016.7287	097.588
53.00	0.425	1.0	0.0452	026.1861	015.7592	098.087
54.00	0.409	1.0	0.0418	025.2002	014.8123	098.613
55.00	0.394	1.0	0.0388	024.2760	013.9242	099.114
56.00	0.378	1.0	0.0357	023.2902	013.0237	099.692
57.00	0.362	1.0	0.0328	022.3044	012.1478	100.294
58.00	0.347	1.0	0.0301	021.3802	011.3298	100.869
59.00	0.332	1.0	0.0276	020.4559	010.5356	101.466
60.00	0.317	1.0	0.0251	019.5317	009.7659	102.085
61.00	0.302	1.0	0.0228	018.6075	009.0211	102.725
62.00	0.288	1.0	0.0207	017.7449	008.3307	103.332
63.00	0.273	1.0	0.0186	016.8207	007.6364	104.013
64.00	0.259	1.0	0.0168	015.9581	006.9956	104.657
65.00	0.245	1.0	0.0150	015.0955	006.3796	105.319
66.00	0.232	1.0	0.0135	014.2945	005.8141	105.941
67.00	0.219	1.0	0.0120	013.4935	005.2723	106.579
68.00	0.206	1.0	0.0106	012.6925	004.7547	107.232
69.00	0.193	1.0	0.0093	011.8916	004.2616	107.898
70.00	0.181	1.0	0.0082	011.1522	003.8143	108.520
71.00	0.169	1.0	0.0071	010.4128	003.3901	109.154
72.00	0.157	1.0	0.0062	009.6734	002.9893	109.800
73.00	0.146	1.0	0.0053	008.9957	002.6301	110.397
74.00	0.135	1.0	0.0046	008.3179	002.2927	111.004
75.00	0.124	1.0	0.0038	007.6402	001.9774	111.620
76.00	0.114	1.0	0.0032	007.0240	001.6993	112.185
77.00	0.104	1.0	0.0027	006.4079	001.4415	112.756
78.00	0.095	1.0	0.0023	005.8534	001.2170	113.275
79.00	0.086	1.0	0.0018	005.2988	001.0111	113.799
80.00	0.077	1.0	0.0015	004.7443	000.8238	114.328
81.00	0.069	1.0	0.0012	004.2514	000.6651	114.801
82.00	0.061	1.0	0.0009	003.7585	000.5231	115.278
83.00	0.054	1.0	0.0007	003.3272	000.4055	115.698
84.00	0.047	1.0	0.0006	002.8959	000.3027	116.120
85.00	0.041	1.0	0.0004	002.5262	000.2202	116.483
86.00	0.035	1.0	0.0003	002.1565	000.1504	116.849
87.00	0.029	1.0	0.0002	001.7868	000.0935	117.216
88.00	0.024	1.0	0.0001	001.4787	000.0516	117.522
89.00	0.02	1.0	0.0001	001.2323	000.0215	117.768
90.00	0.016	1.0	0.0001	000.9858	000.0000	118.014



Registration 1029907

✦ [Map Registration](#)

Registration Detail

Reg Number	1029907	Status	Constructed
File Number	A0545364	Constructed	10/01/1969
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	26-10-47.0 N 080-13-14.0 W	Address	4431 NW ROCK ISLAND ROAD
City, State	TAMARAC , FL		
Zip	33319	County	BROWARD
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
2.7	122.2
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
124.9	121.3

Painting and Lighting Specifications

FCC Paragraphs 1, 3, 12, 21

FAA Notification

FAA Study	68-MIA-485-OE	FAA Issue Date	09/22/1968
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Owner & Contact Information

FRN	0008518482	Owner Entity Type
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Owner

BEASLEY FAMILY TOWERS, INC. Attention To: CAROLINE BEASLEY 3033 RIVIERA DRIVE, SUITE 200 NAPLES , FL 34103	P: (239)263-5000 F: E:
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Contact

CORBETT , DENNIS P 2000 K ST NW SUITE 600 WASHINGTON , DC 20009	P: (202)429-8970 F: E: DCORBETT@LSL-LAW.COM
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Last Action Status

Status	Constructed	Received	03/29/2007
Purpose	Admin Update	Entered	03/29/2007
Mode	Interactive		