

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION  
OF CONSTRUCTION PERMIT  
JCE LICENSES, L.L.C.  
RADIO STATION WMEN  
BOCA RATON, FLORIDA

November 22, 2006

640 KHZ 50 KW-D 25 KW-N U DA-2

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Technical Narrative

The technical exhibit of which this narrative is part has been prepared on behalf of JCE Licenses, L.L.C., licensee of AM broadcast station WMEN(formerly WJNA) at Boca Raton, Florida. WMEN is licensed as a Class B station for operation on 640 kilohertz with daytime power of 7.5 kilowatts and nighttime power of 460 watts, operating with different directional antenna patterns during daytime and nighttime hours. WMEN has been issued a construction permit, BMJP-20041029ADW, to increase power to 25 kilowatts both daytime and nighttime utilizing different antenna patterns from a new site. By means of this present application, the licensee proposes to increase daytime power to 50 kilowatts while simplifying the nighttime 25 kilowatt pattern. WMEN proposes to continue to co-locate with existing AM station, WFTL operating on 850 kilohertz.

The proposal is classified as a minor change according to 47 CFR 73.3571(a)(2). As a Class B station operating on one of the channels listed in

73.25(a), the proposal satisfies 47 CFR 73.21(a)(2) which permits operation with a nominal power of not less than 0.25 kilowatt nor more than 50 kilowatts at any time.

#### Proposed Transmitter Locations

The location of the proposed WMEN facility will be co-located with existing station WFTL and is at NAD27 coordinates:

26-32-30 North

80-44-30 West

The antenna site plat is shown on Figure 1.

#### Directional Antenna Systems

A total of nine towers will be employed for the daytime and nighttime directional antenna patterns. Both daytime and the nighttime patterns will utilize six towers with three being in common. As indicated on Figure 2, the radiating elements for towers 1, 5, 6, 8 & 9 are 90.6 meters (297 feet) in height and have an overall height of 92.3 meters (303 feet) above ground level. The radiating element for tower 2 is 102.5 meters (336 feet) in height and has an overall height of 104.2 meters (342 feet) above ground level. The radiating element for tower 3 is 109.6 meters (360 feet) in height and has an overall height of 111.2 meters (365 feet) above ground level. The radiating element for towers 4 & 7 are 112.7 meters (370 feet) in height and has an overall height of 114.6 meters (376 feet) above ground level. A summary of specifications for each of the directional antenna arrays is included herein as Figure 3.

The daytime and nighttime directional antenna patterns have been calculated in accordance with 47 CFR 73.150 assuming a one-ohm lumped loss resistance at the current loop of each tower in the array. The daytime standard

radiation pattern is shown herein as Figure 4 and is tabulated in Figure 5. The nighttime standard radiation pattern is shown herein as Figure 10 and is tabulated in Figure 11.

#### Section 73.24(g)

The provisions of 47 CFR 73.24(g) require that the population within the 1,000 mV/m contour not exceed 300 persons. At the proposed location, during daytime and nighttime hours, the proposed 1,000 mV/m contour encompasses 0 persons thus the requirements of Section 73.24(g) are met.

#### Daytime Coverage

The proposed WMEN daytime field strength contours are depicted on Figure 6 and the existing daytime field strength contours are shown on Figure 7. As indicated on Figure 6, the proposed daytime 5 mV/m contour will completely encompass the city limits of Boca Raton. The Boca Raton city limits depicted were obtained from a map contained in the TIGER 2000 U.S. census files.

#### Daytime Allocation Study

A daytime allocation study was made utilizing a combination of FCC Figure M-3 as shown on Figure 8. Daytime field strength contours were calculated in accordance with 47 CFR 73.183. Figure 9 is a tabulation of the data employed in the calculation of daytime contours. Based on this analysis, the proposed WMEN facility will comply with all relevant allocation criteria.

### Nighttime Coverage

The proposed WMEN nighttime field strength contours are depicted on Figure 12 and the existing daytime field strength contours are shown on Figure 13. As can be seen from Figure 12, the proposed nighttime interference-free contour will provide 100 percent coverage of the area within the city limits of Boca Raton.

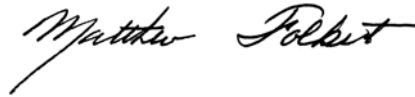
### Nighttime Allocation Study

The proposed WMEN facility will afford nighttime protection to all stations and international allotments operating on 630 kHz, 640 kHz, and 640 kHz. Figure 15 contains pertinent calculation data to support a conclusion that this proposal comports with all nighttime interference protection requirements.

### Environmental Considerations

The proposed WMEN operation was evaluated in conjunction with WFTL in terms of both the electric and magnetic field components which will be present at the base of each tower. Using Figures 1 through 4 of Supplement A to OET Bulletin 65, the worst case interpolated distance at which the electric and magnetic fields would fall below ANSI guidelines is 4 meters. Accordingly, the areas surrounding the base of each tower will be appropriately restricted with a fence having a minimum radius of 4 meters (12 feet) unless data obtained after construction has been completed indicates otherwise. The fence will assure that persons on the property outside the fenced area will not be exposed to radiofrequency field levels in excess of those recommended by the ANSI. In addition, warning signs will be posted.

This statement addresses only human exposure to radiofrequency radiation and not to other non-radiofrequency radiation matters listed in the National Environmental Policy Act of 1969.

A handwritten signature in black ink, reading "Matthew Folkert". The signature is written in a cursive style with a large, stylized 'M' and 'F'.

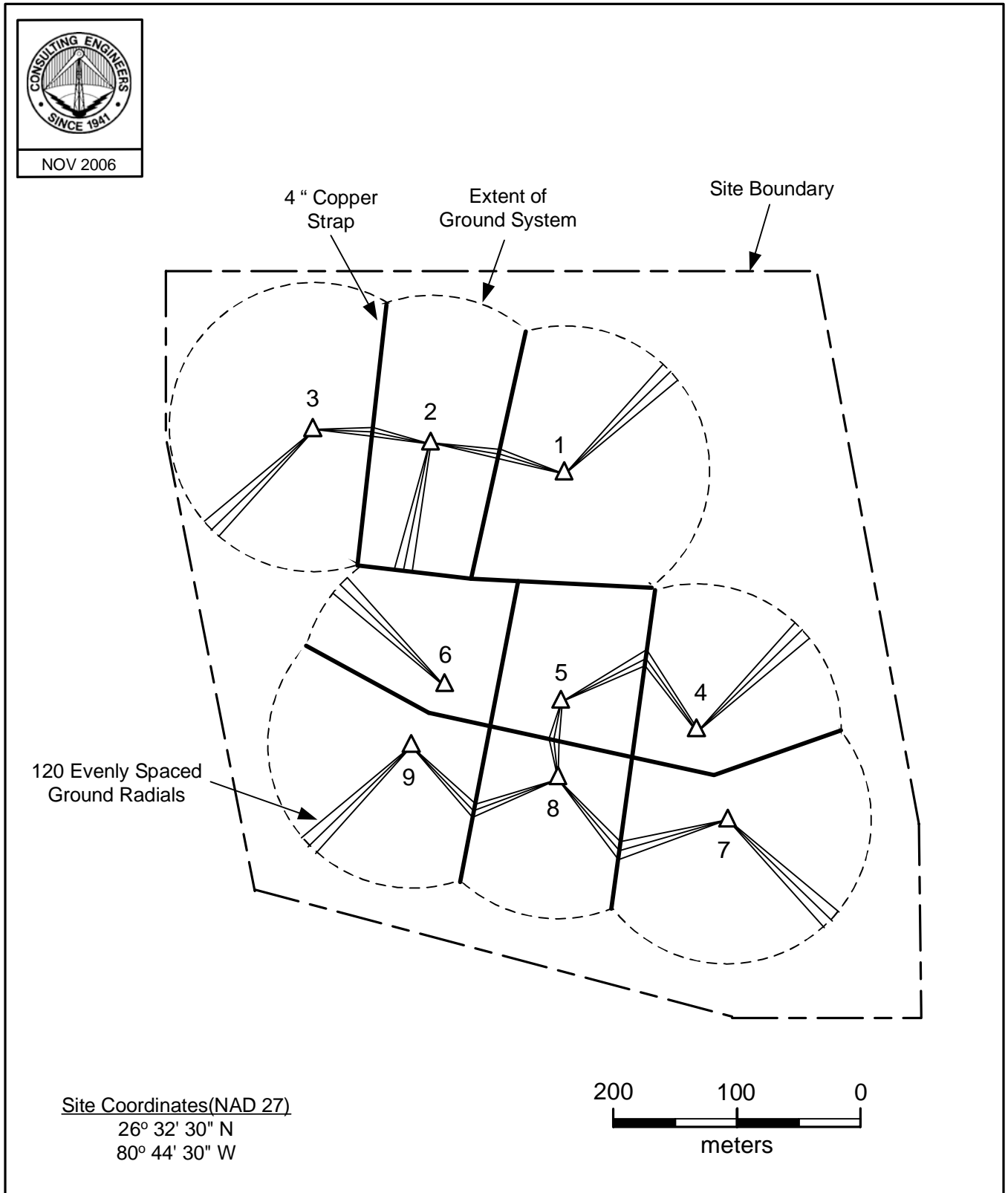
Matthew Folkert  
du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237

(941) 329-6000

November 22, 2006



Figure 1

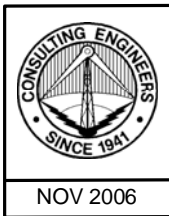


## ANTENNA SITE PLAT

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

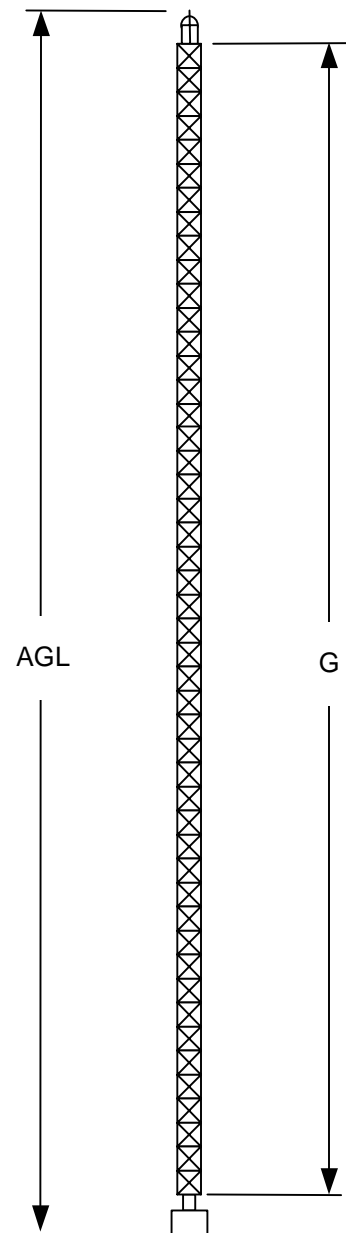
Figure 2



Tower	ASR	G(m)	AGL(m)
1	1203756	90.6	92.3
2	1203759	102.5	104.2
3	1203761	109.6	111.2
4	1203762	112.7	114.6
5	1203764	90.6	92.3
6	1203766	90.6	92.3
7	1220196	112.7	114.6
8	1220198	90.6	92.3
9	1220199	90.6	92.3

Site Coordinates(NAD 27)

26° 32' 30" N  
80° 44' 30" W



Not To Scale

## SKETCH OF ANTENNA ELEMENTS

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Specifications for  
Directional Antenna Systems

Frequency:	640 kHz
Hours of Operation:	Unlimited
Power:	50 kW(Day) 25 kW(Night)
Number of Towers:	6 (Day) 6 (Night)
Type of Tower:	Guyed, Uniform Cross-section, base-insulated
Towers 1,5,6,8 & 9 - height above base insulator	90.6 m (297 ft)
Towers 1,5,6,8 & 9 - overall height	92.3 m (303 ft)
Tower 2 - height above base insulator	102.5 m (336 ft)
Tower 2- overall height	104.2 m (342 ft)
Tower 3 - height above base insulator	109.6 m (336 ft)
Tower 3- overall height	111.2 m (342 ft)

Tower 4 & 7 - height above base insulator 112.7 m (370 ft)

Tower 4 & 7- overall height 114.6 m (376 ft)

Tower Arrangement:

<u>Tower No.</u>	<u>Spacing (deg.)/(m)</u>	<u>Orientation (deg. True)</u>
1	0.0	0.0
2	84.9/110.5	281.0
3	159.6/207.7	279.0
4	174.6/227.2	151.4
5	136.5/177.6	180.9
6	147.1/191.4	210.5
7	231.8/301.6	153.7
8	182.0/236.8	181.2
9	189.5/246.6	210.2

Daytime Element Field Parameters:

<u>Tower No.</u>	<u>Field Ratio</u>	<u>Phase (degrees)</u>
1	1.000	0.0
2	1.820	+111.4
3	1.255	-98.8
4	0.767	-10.6
5	1.088	+77.9
6	0.703	-125.5

Nighttime Element Field Parameters:

<u>Tower No.</u>	<u>Field Ratio</u>	<u>Phase (degrees)</u>
1	1.000	0.0
2	2.337	+144.7
3	1.418	-67.5
7	0.847	-16.6
8	1.569	+115.1
9	0.842	-103.8

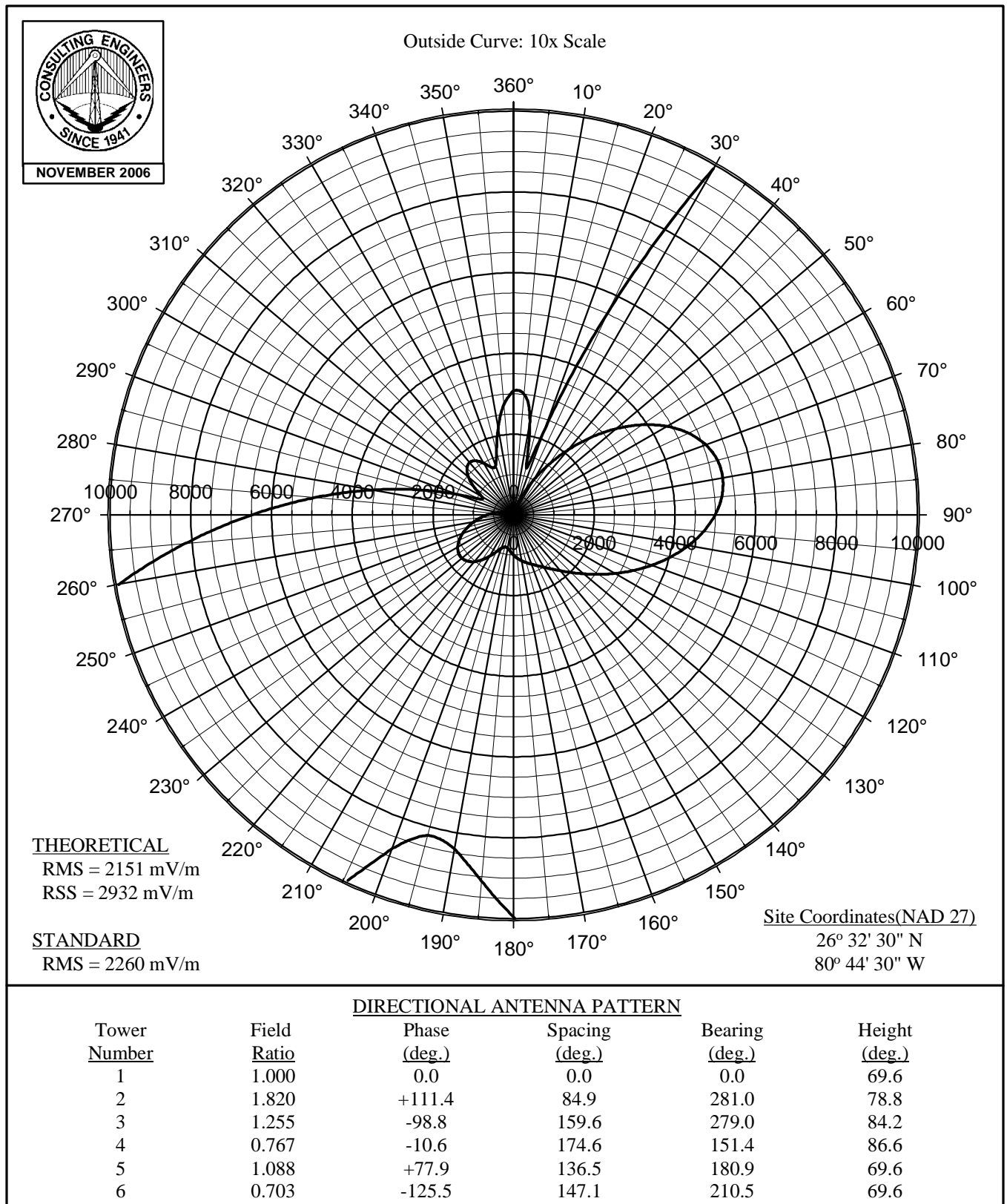
Ground System:

Installed about the base of each tower are 120 evenly spaced, buried copper wire radials (#10 AWG), extending 64.1 meters (210 ft) from all towers except where shortened and bonded to transverse copper strap between towers. In addition, copper strap runs from the transmitter and down the line of towers and is bonded to ground at the base of each tower.

Geographic Coordinates of  
Center of Antenna Array:

26° 32' 30" North Latitude  
80° 44' 30" West Longitude

Figure 4



## PROPOSED DAYTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

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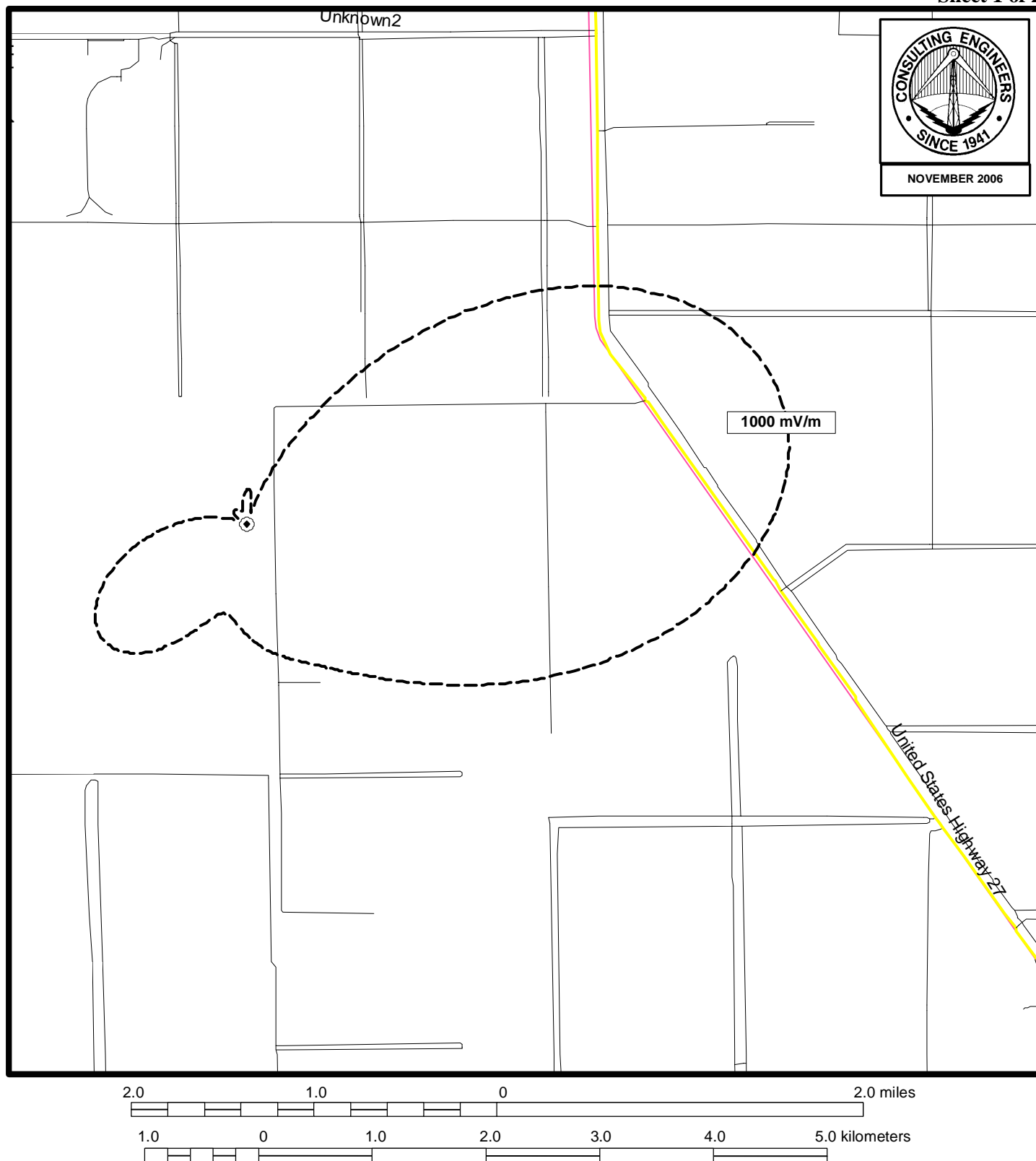
**Figure 5**

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DAYTIME RADIATION PATTERN  
(Radiation Values at One Kilometer)

<u>Tower Number</u>	<u>Field Ratio</u>	<u>Phase (deg.)</u>	<u>Spacing (deg.)</u>	<u>Bearing (deg.)</u>	<u>Height (deg.)</u>		
1	1.000	0.0	0.0	0.0	69.6		
2	1.820	+111.4	84.9	281.0	78.8		
3	1.255	-98.8	159.6	279.0	84.2		
4	0.767	-10.6	174.6	151.4	86.6		
5	1.088	+77.9	136.5	180.9	69.6		
6	0.703	-125.5	147.1	210.5	69.6		
<u>Input Power (kW)</u>	<u>Loop Loss (ohms)</u>	<u>Theo. RMS (mV/m)</u>	<u>Theo. RSS (mV/m)</u>	<u>Q Factor (mV/m)</u>	<u>Standard RMS (mV/m)</u>		
50	1.0	2151	2932	73.3	2260		
<u>Azimuth (mV/m)</u>	<u>Field (mV/m)</u>	<u>Azimuth (mV/m)</u>	<u>Field (mV/m)</u>	<u>Azimuth (mV/m)</u>	<u>Field (mV/m)</u>	<u>Azimuth (mV/m)</u>	<u>Field (mV/m)</u>
0	308	90	4994	180	996	270	647
5	300	95	4726	185	910	275	492
10	233	100	4398	190	841	280	354
15	120	105	4031	195	822	285	237
20	223	110	3647	200	880	290	146
25	552	115	3266	205	1012	295	91.3
30	990	120	2903	210	1185	300	90.7
35	1512	125	2570	215	1363	305	118
40	2094	130	2275	220	1515	310	145
45	2707	135	2021	225	1621	315	163
50	3316	140	1809	230	1671	320	169
55	3886	145	1637	235	1662	325	163
60	4384	150	1498	240	1597	330	147
65	4785	155	1389	245	1485	335	129
70	5069	160	1302	250	1339	340	129
75	5229	165	1227	255	1171	345	163
80	5263	170	1156	260	993	350	219
85	5179	175	1080	265	816	355	274

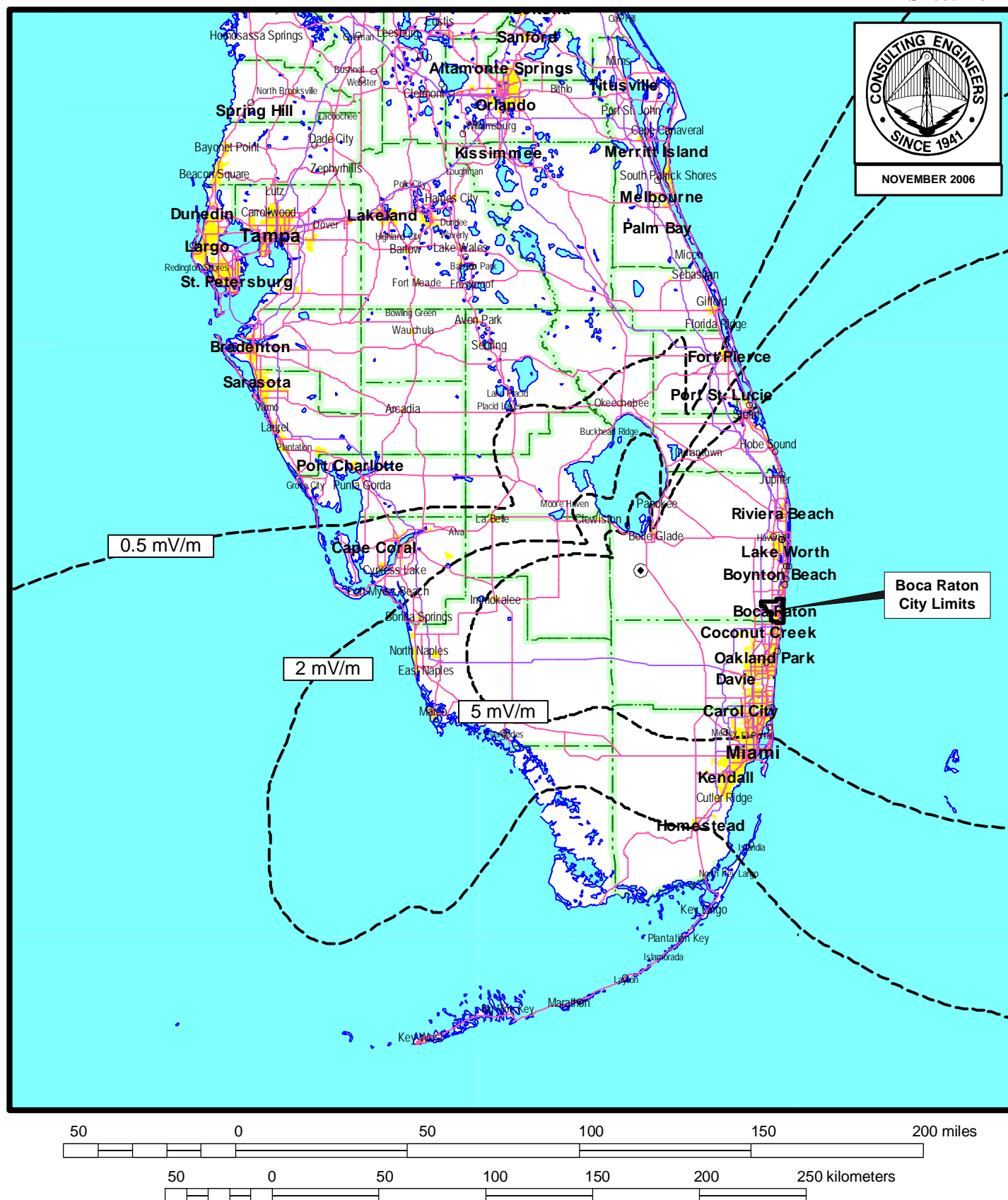


## PROPOSED DAYTIME FIELD STRENGTH CONTOUR

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

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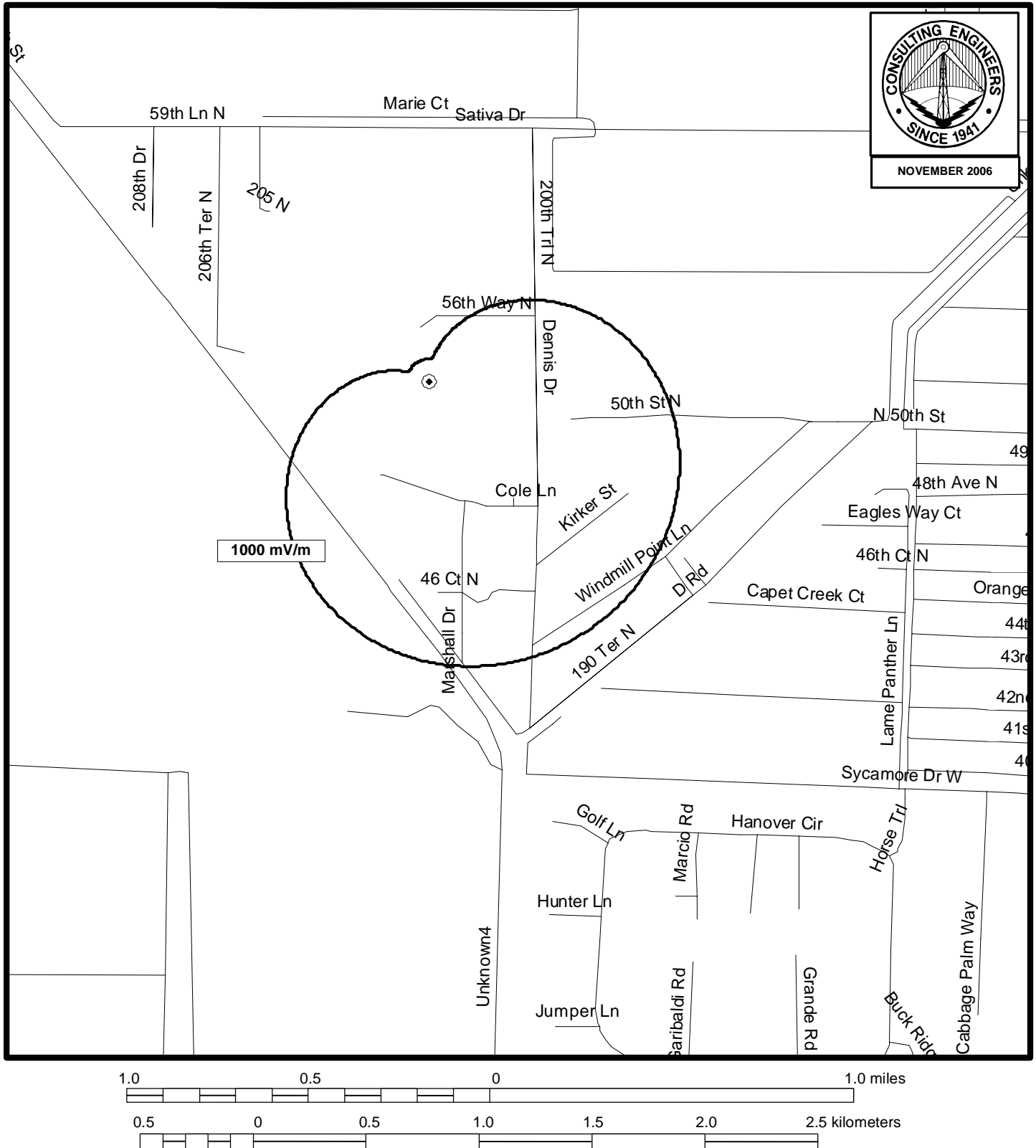




## PROPOSED DAYTIME FIELD STRENGTH CONTOURS

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

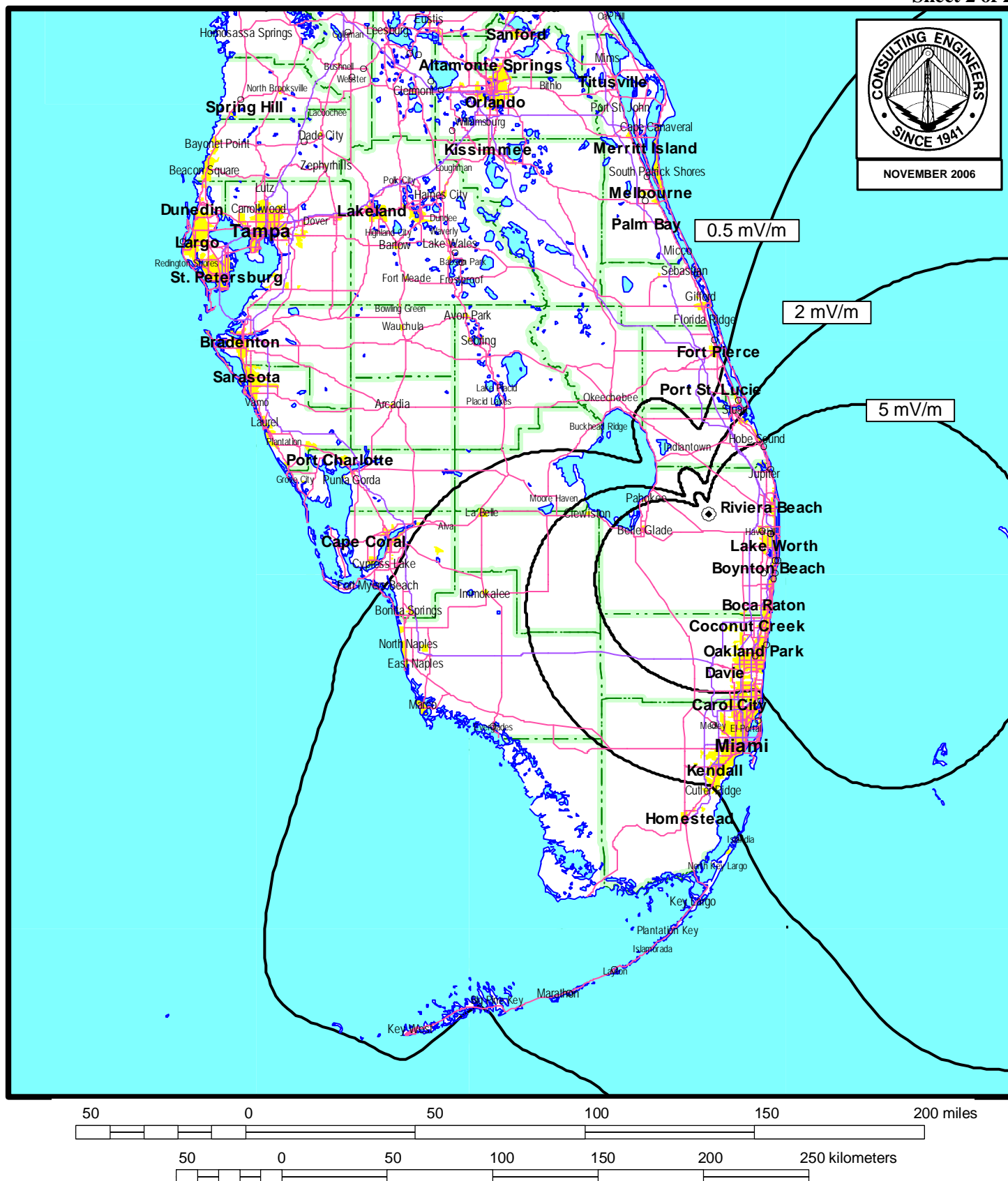
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## EXISTING DAYTIME FIELD STRENGTH CONTOUR

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BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

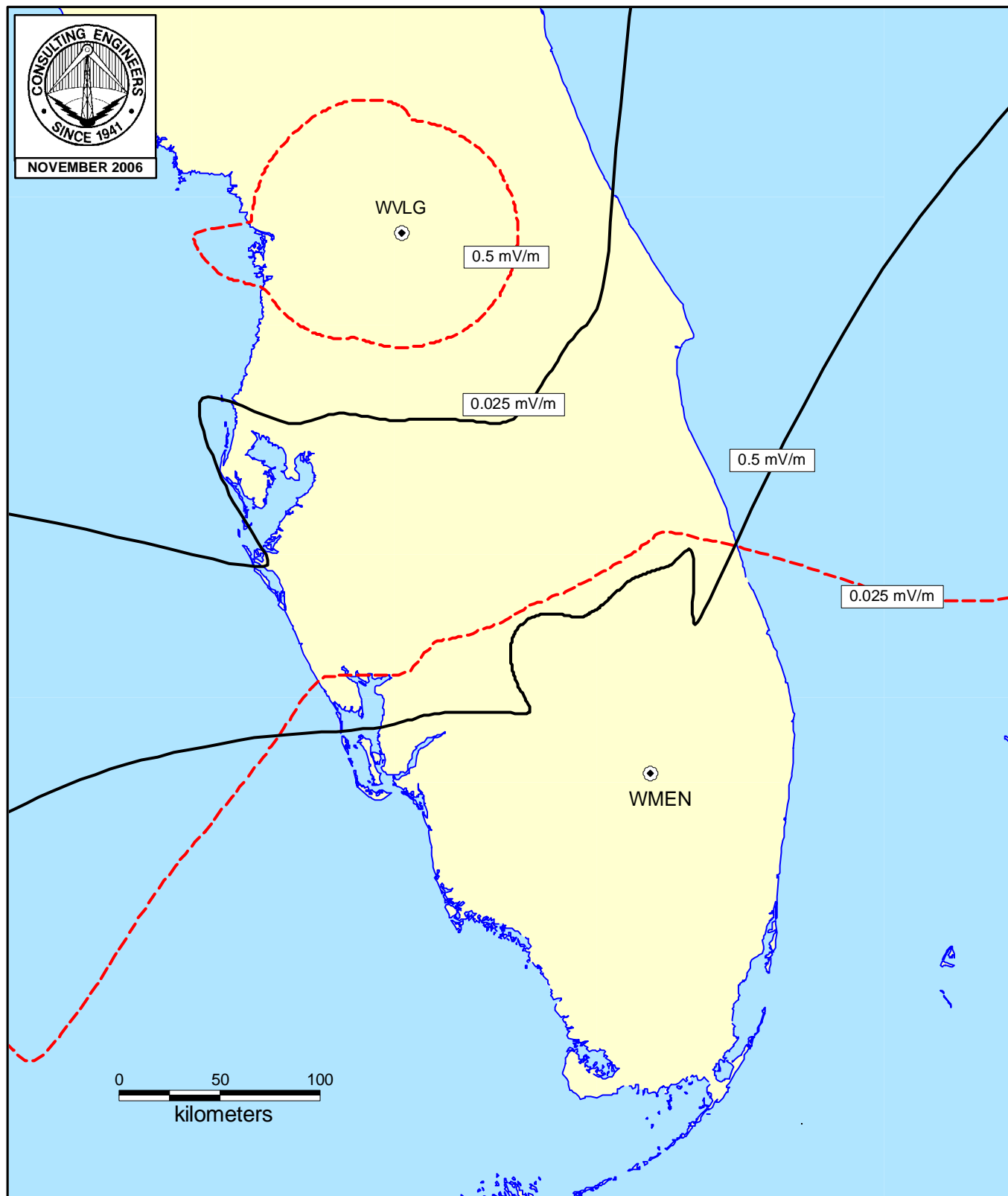
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## EXISTING DAYTIME FIELD STRENGTH CONTOURS

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
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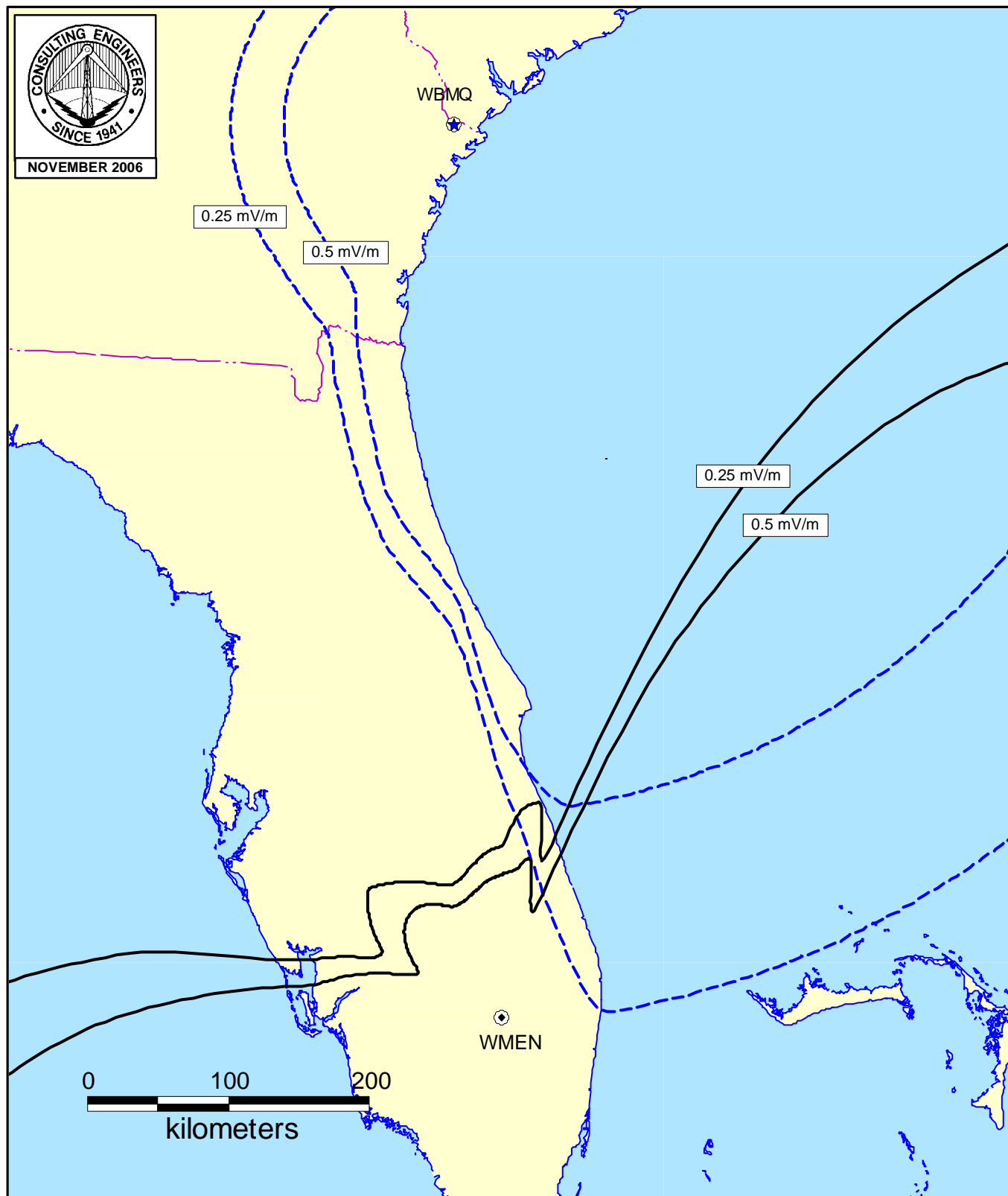
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## **DAYTIME ALLOCATION STUDY**

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
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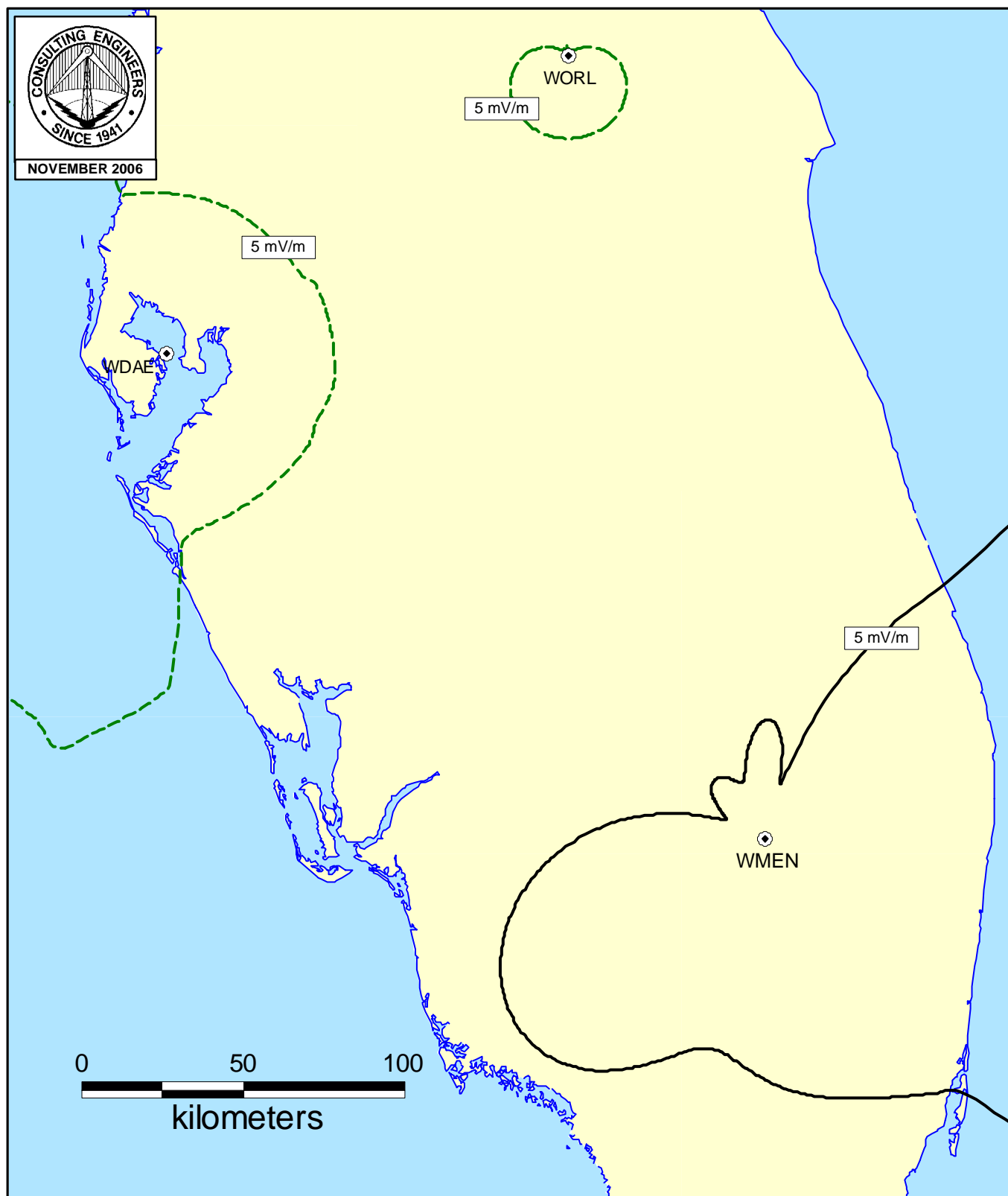
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RADIO STATION WMEN  
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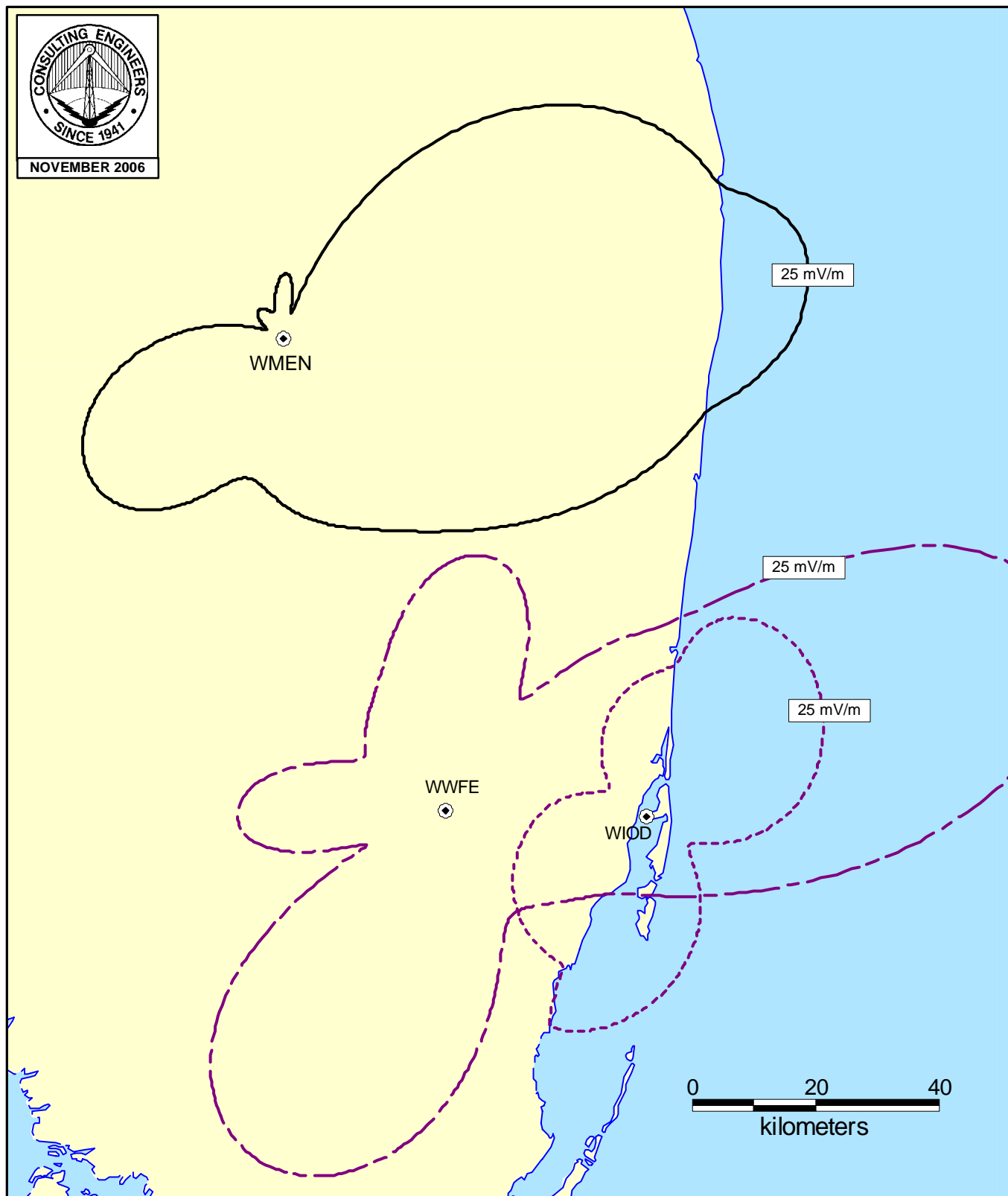
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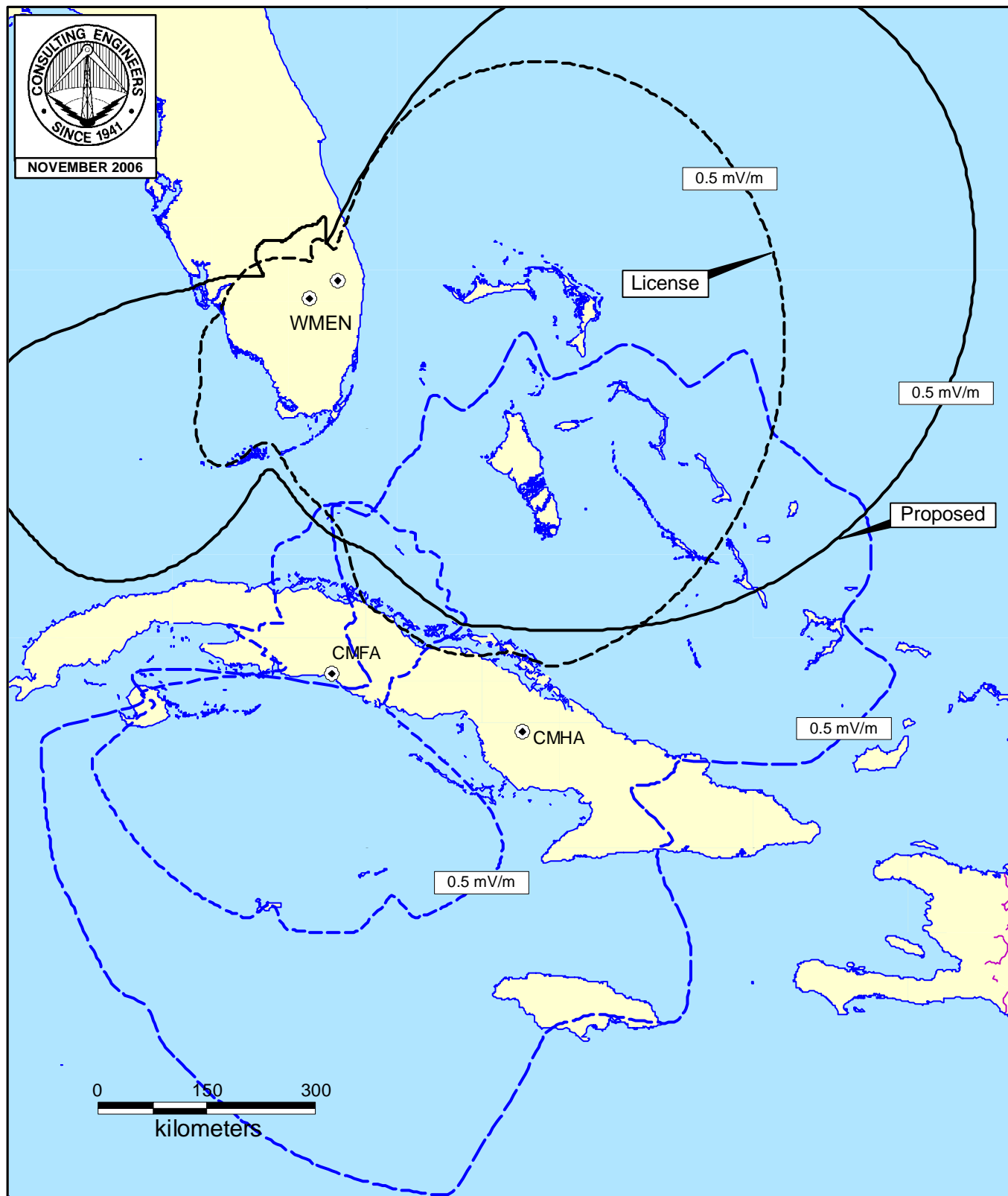


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Tabulation of Data Employed in  
Calculation of Groundwave Contours

Reference Station: WMEN, 640 kHz  
Location: 26-32-30 N, 080-44-30 W

610 kHz

96.5 km WIOD L 25-50-58 N 080-09-18 W 5.0 kW DA2 - 630.9 mV/m@1km  
60.0 mi Azi: 142.7 Class: B Sched: U File #: BL  
Location: MIAMI, FL, US

620 kHz

235.5 km WDAE L 27-52-37 N 082-35-26 W 5.0 kW DAN - 320.3 mV/m@1km  
146.3 mi Azi: 308.5 Class: B Sched: U File #: BL19911118AA  
Location: ST. PETERSBURG, FL, US

630 kHz

614.2 km WBMQ L 32-04-31 N 081-04-17 W 4.8 kW ND2 - 283.5 mV/m@1km  
381.6 mi Azi: 356.9 Class: D Sched: U File #: BL20040913ADI  
Location: SAVANNAH, GA, US  
636.5 km CMHA 21-23-00 N 077-59-00 W 30.0 kW ND1 - 315.2 mV/m@1km  
395.5 mi Azi: 154.4 Class: A Sched: U File #:  
Location: CAMAGUEY 3, , CU

640 kHz

288.1 km WVLG L 28-54-16 N 081-57-36 W 0.93 kW ND2 - 286.5 mV/m@1km  
179.0 mi Azi: 335.1 Class: B Sched: U File #: BL20030804AFN  
Location: WILDWOOD, FL, US  
729.9 km CMLA 20-57-00 N 076-57-00 W 10.0 kW ND1 - 314.1 mV/m@1km  
453.5 mi Azi: 148.8 Class: B Sched: U File #:  
Location: VICTORIA TUN, , CU

650 kHz

494.7 km CMFA 22-05-00 N 080-27-00 W 1.0 kW ND1 - 310.5 mV/m@1km  
307.4 mi Azi: 176.6 Class: C Sched: U File #:  
Location: CIENFUEGOS, , CU

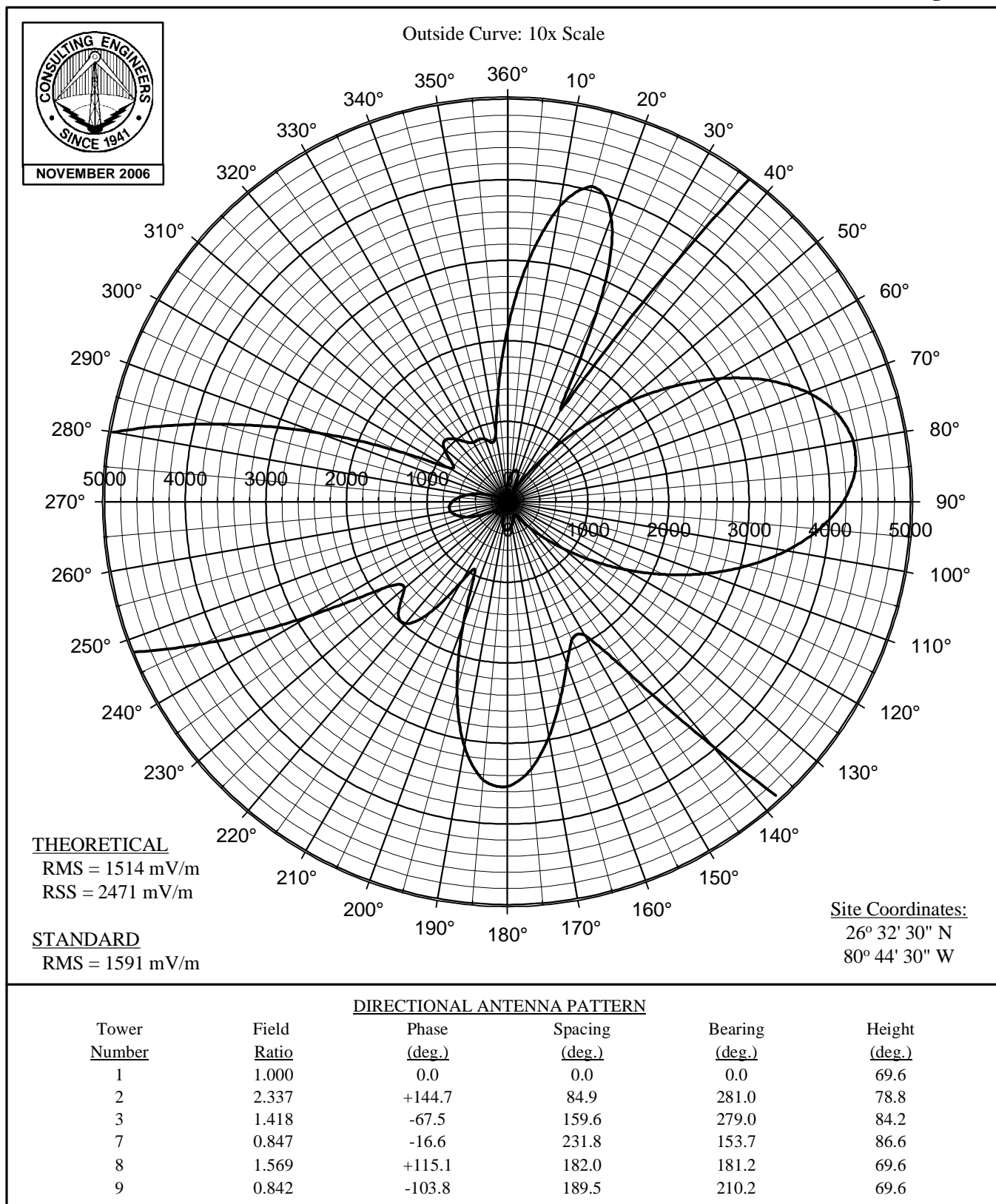
660 kHz

245.8 km WORL L 28-41-35 N 081-20-57 W 1.0 kW DA1 - 291.0 mV/m@1km  
152.7 mi Azi: 345.7 Class: B Sched: U File #: BL19991206ABU  
Location: ALTAMONTE SPRINGS, FL, US

670 kHz

80.1 km WWFE L 25-51-27 N 080-28-52 W 50.0 kW DA2 - 2006.8 mV/m@1km  
49.8 mi Azi: 161.1 Class: B Sched: U File #: BL19890601AC  
Location: MIAMI, FL, US

Figure 10



## PROPOSED NIGHTTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN

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NIGHTTIME RADIATION PATTERN  
(Radiation Values at One Kilometer)

Tower Number	Field Ratio	Phase (deg.)	Spacing (deg.)	Bearing (deg.)	Height (deg.)
1	1.000	0.0	0.0	0.0	69.6
2	2.337	+144.7	84.9	281.0	78.8
3	1.418	-67.5	159.6	279.0	84.2
7	0.847	-16.6	231.8	153.7	86.6
8	1.569	+115.1	182.0	181.2	69.6
9	0.842	-103.8	189.5	210.2	69.6
Input Power (kW)	Loop Loss (ohms)	Theo. RMS (mV/m)	Theo. RSS (mV/m)	Q Factor (mV/m)	Standard RMS (mV/m)
25	1.0	1514	2471	61.8	1591

Standard Radiation Pattern  
(at One Kilometer)

Azimuth Angle (deg)	Elevation Angle in Degrees						
	0 (mV/m)	5 (mV/m)	10 (mV/m)	15 (mV/m)	20 (mV/m)	25 (mV/m)	30 (mV/m)
0	214	213	211	208	202	192	179
5	300	298	291	278	261	238	210
10	372	368	354	332	302	265	222
15	405	398	379	348	306	257	204
20	375	367	344	307	259	204	147
25	266	258	235	199	155	113	90
30	132	130	128	132	149	177	212
35	355	359	371	389	411	433	451
40	783	783	784	785	782	773	756
45	1307	1302	1287	1261	1224	1174	1110
50	1889	1878	1844	1788	1710	1612	1495
55	2489	2471	2417	2329	2209	2061	1889
60	3062	3038	2965	2847	2688	2492	2268
65	3566	3537	3448	3305	3112	2877	2607
70	3965	3932	3833	3672	3455	3190	2888
75	4232	4197	4093	3923	3695	3415	3093
80	4353	4319	4216	4047	3819	3538	3214
85	4328	4295	4199	4042	3826	3559	3247
90	4165	4136	4052	3914	3722	3481	3196
95	3884	3861	3793	3680	3521	3316	3069
100	3511	3495	3446	3362	3241	3080	2879
105	3076	3067	3037	2985	2905	2793	2643
110	2608	2605	2596	2575	2537	2473	2376
115	2134	2138	2147	2157	2158	2141	2095
120	1680	1690	1716	1752	1789	1815	1816
125	1267	1281	1321	1380	1447	1509	1550
130	908	926	977	1054	1145	1235	1309
135	615	636	694	784	892	1003	1100
140	396	417	480	575	693	816	928
145	254	275	336	431	549	675	792
150	191	209	262	348	459	578	692
155	189	202	243	316	412	519	621
160	215	225	259	318	397	487	573
165	253	262	290	338	401	471	539
170	296	304	326	363	410	462	511
175	334	339	355	381	413	448	480

Standard Radiation Pattern  
(at One Kilometer)

Azimuth Angle (deg)	Elevation Angle in Degrees						
	35 (mV/m)	40 (mV/m)	45 (mV/m)	50 (mV/m)	55 (mV/m)	60 (mV/m)	65 (mV/m)
0	162	139	113	84	56.3	35.2	33.0
5	178	143	107	71.9	44.9	37.5	47.9
10	177	131	87.7	54.5	44.8	56.9	70.5
15	149	98.7	62.1	56.0	73.2	90.7	100
20	96.4	68.7	78.5	104	125	136	135
25	101	132	163	185	195	192	176
30	246	273	289	292	281	257	222
35	461	461	448	421	382	331	273
40	728	687	634	569	494	412	328
45	1033	943	841	731	615	499	385
50	1362	1216	1061	901	742	588	444
55	1698	1495	1284	1073	869	677	502
60	2022	1763	1499	1240	992	763	558
65	2314	2007	1696	1393	1106	843	611
70	2558	2214	1866	1527	1207	915	659
75	2742	2373	2000	1635	1291	976	700
80	2857	2479	2094	1715	1355	1025	734
85	2900	2528	2146	1765	1399	1060	760
90	2873	2522	2154	1783	1421	1082	778
95	2783	2464	2123	1771	1422	1089	787
100	2639	2362	2057	1733	1403	1083	788
105	2453	2225	1961	1671	1368	1066	781
110	2240	2062	1844	1592	1319	1038	767
115	2011	1884	1712	1500	1258	1002	747
120	1780	1700	1572	1399	1190	958	722
125	1557	1520	1432	1295	1117	910	693
130	1351	1349	1296	1191	1041	858	660
135	1169	1194	1168	1091	965	805	625
140	1013	1057	1052	995	891	751	589
145	885	939	948	907	820	696	551
150	783	841	856	825	751	642	512
155	705	759	774	749	685	589	473
160	644	689	702	679	622	537	434
165	594	628	635	612	561	486	395
170	550	571	571	548	501	435	356
175	503	514	508	484	442	385	317

Standard Radiation Pattern  
(at One Kilometer)

Azimuth Angle (deg)	Elevation Angle in Degrees						
	0 (mV/m)	5 (mV/m)	10 (mV/m)	15 (mV/m)	20 (mV/m)	25 (mV/m)	30 (mV/m)
180	353	357	367	383	402	423	440
185	346	348	354	362	371	380	388
190	308	309	311	314	317	320	321
195	241	242	242	243	244	244	244
200	159	159	159	160	161	162	164
205	95.1	95.0	94.7	94.3	94.1	94.4	95.6
210	115	114	110	105	97.4	88.7	79.7
215	168	166	161	153	142	129	113
220	197	196	191	183	172	158	142
225	191	190	186	180	172	162	150
230	167	166	162	157	150	144	137
235	186	183	172	157	140	125	115
240	284	277	257	226	189	150	116
245	417	408	379	335	280	219	159
250	548	537	502	448	379	301	222
255	652	639	601	541	463	375	282
260	714	700	661	599	519	426	328
265	725	712	676	617	540	450	353
270	687	676	644	593	525	444	355
275	606	598	574	533	479	412	335
280	497	491	475	448	409	359	299
285	372	370	363	348	326	294	252
290	250	250	250	248	241	225	200
295	146	148	154	160	164	163	152
300	84.1	85.5	90.2	98.1	107	113	111
305	84.0	81.9	77.4	74.8	77.2	81.9	83.3
310	102	98.8	89.5	78.7	71.5	69.4	68.5
315	109	105.0	95.5	83.6	73.3	67.0	62.7
320	102	99.0	91.7	82.3	73.6	66.7	60.8
325	90.8	89.2	84.7	78.8	72.5	66.2	59.7
330	85.1	84.1	81.3	77.0	71.6	65.2	58.6
335	84.9	83.9	80.9	76.1	69.9	63.3	58.2
340	82.6	81.3	77.8	72.6	66.9	62.7	62.1
345	75.9	75.0	72.8	70.4	69.5	71.5	76.4
350	85.0	85.4	86.6	89.1	93.2	98.5	104
355	135	135	137	139	141	142	141



Standard Radiation Pattern  
(at One Kilometer)

Azimuth Angle (deg)	Elevation Angle in Degrees						
	35 (mV/m)	40 (mV/m)	45 (mV/m)	50 (mV/m)	55 (mV/m)	60 (mV/m)	65 (mV/m)
180	451	453	443	420	383	336	279
185	390	387	375	355	325	287	242
190	320	315	305	290	268	240	205
195	243	240	235	225	212	194	171
200	165	166	166	164	159	151	138
205	97.8	101	105	109	111	111	108
210	71.5	65.8	64.1	66.5	71.7	77.2	80.4
215	95.9	78.5	62.5	50.7	46.7	50.5	57.2
220	124	104	83.3	62.6	45.1	36.4	39.3
225	136	119	100	78.8	57.0	38.0	29.4
230	129	119	106	88.7	68.4	46.7	28.9
235	109	106	100	90.4	74.9	54.9	33.9
240	94.5	87.0	86.8	84.8	76.2	60.2	39.7
245	109	78.3	71.2	74.3	73.1	62.6	44.4
250	149	91.8	62.5	62.3	67.0	62.4	47.6
255	195	119	67.0	52.4	59.5	60.4	49.4
260	232	147	79.9	47.7	52.1	57.5	50.2
265	256	167	93.1	48.1	46.0	54.2	50.2
270	263	176	102	50.5	41.7	51.3	49.8
275	255	175	104	52.1	39.0	49.0	49.3
280	232	164	100	51.5	37.6	47.5	48.8
285	201	146	91.5	48.9	37.2	46.8	48.5
290	165	123	79.7	45.1	37.6	47.0	48.4
295	130	100	67.1	41.4	39.0	47.9	48.4
300	100	80.0	55.9	39.2	41.3	49.3	48.6
305	77.6	64.2	47.8	39.3	44.5	51.1	48.8
310	63.8	54.1	43.9	41.8	48.3	53.1	48.9
315	57.1	49.4	43.9	45.9	52.4	55.2	48.8
320	54.4	48.3	46.6	51.0	56.7	57.0	48.4
325	53.5	49.8	51.4	56.9	61.0	58.5	47.3
330	53.9	53.6	58.0	63.5	65.1	59.4	45.6
335	57.1	60.7	66.6	70.5	68.7	59.3	42.9
340	65.9	72.1	77.1	77.6	71.4	58.0	39.2
345	82.8	87.8	89.0	84.1	72.5	54.8	34.4
350	107	107	101	88.7	70.9	49.4	29.6
355	135	125	110	89.5	65.7	42.0	27.5

Figure 12

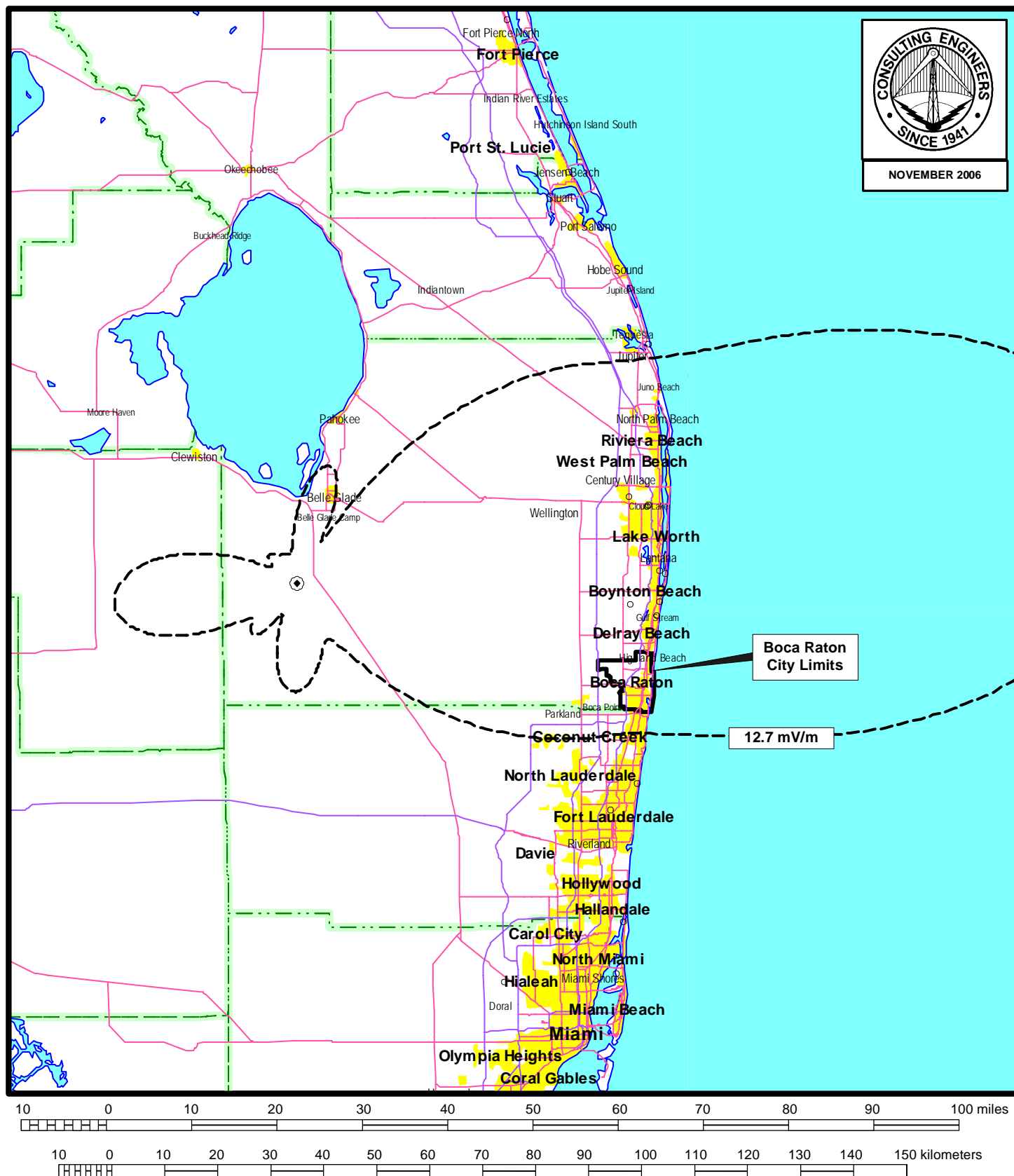
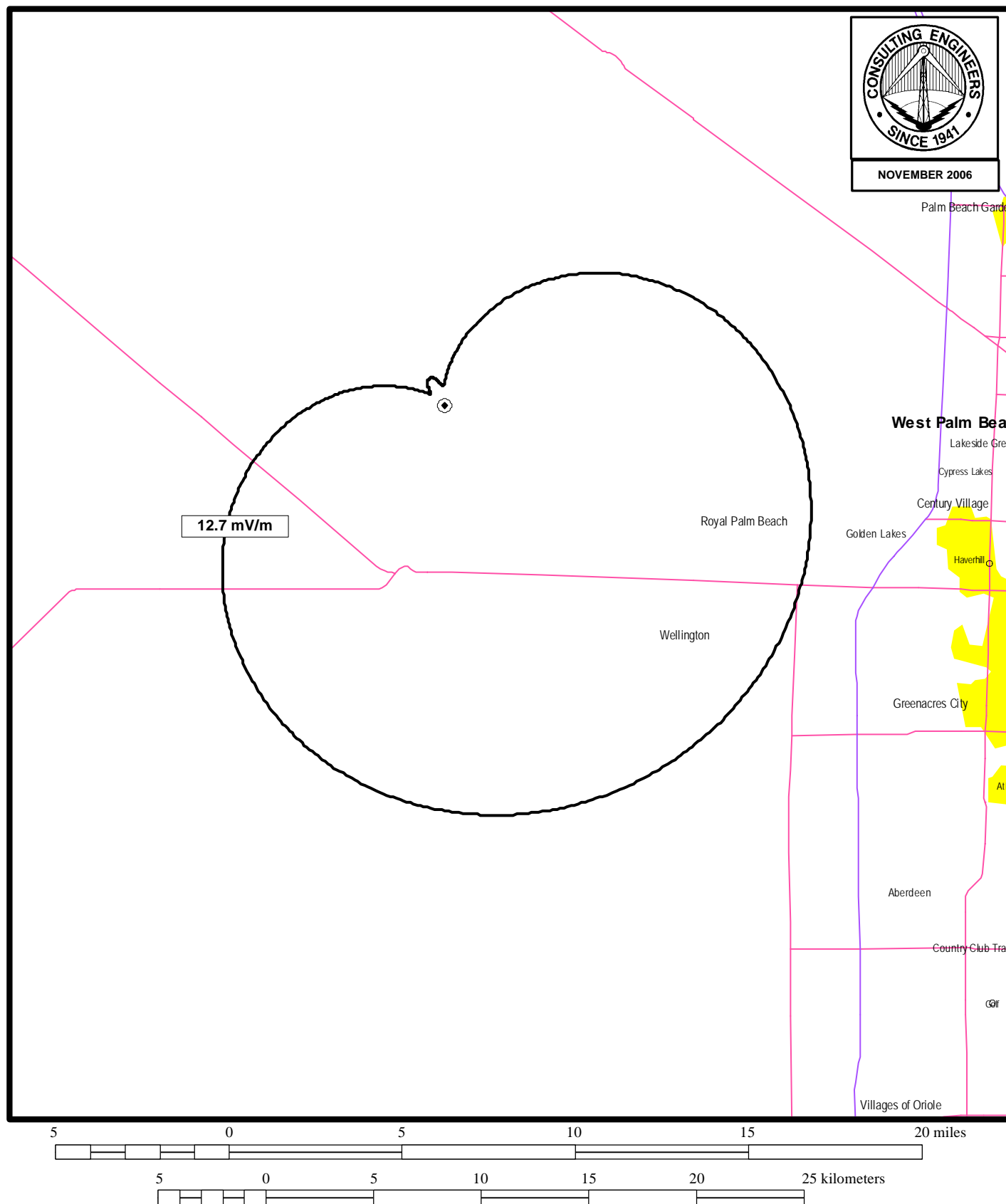


Figure 13



## EXISTING NIGHTTIME COVERAGE CONTOUR

RADIO STATION WJNA(AM)  
 BOCA RATON, FLORIDA  
 640 KHZ 50 KW-D 25 KW-N U DA-2  
 du Treil, Lundin & Rackley, Inc. Sarasota, Florida

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION  
OF CONSTRUCTION PERMIT  
RADIO STATION WMEN  
BOCA RATON, FLORIDA

640 KHZ 50 KW-D 25 KW-N U DA-2

Nighttime Allocation Study

Station Information:

Call: WMEN  
Freq: 640 kHz  
BOCA RATON, FL, US  
Lat: 26-32-30 N  
Lng: 080-44-30 W  
Power: 25.0 kW  
Theo RMS: 1514 mV/m @ 1km

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

Contributors:

Call	Freq (kHz)	City	St	Ct	RSS		
					Limit (mV/m)	(%)	Limit (mV/m)
WVLG	0640	WILDWOOD	FL	US	10.379	100.0	10.379
HCXY1-A	0640	QUITO 3		EC	7.238	69.7	<b>12.654</b>
WGST	0640	ATLANTA	GA	US	4.245	33.5	13.347
KTIB	0640	THIBODAUX	LA	US	2.995	22.4	13.679
WFNC	0640	FAYETTEVILLE	NC	US	2.871	21.0	13.977
WGO	0640	BLOUNTVILLE	TN	US	2.813	20.1	14.257
KFI	0640	LOS ANGELES	CA	US	2.413	16.9	14.460
WSM	0650	NASHVILLE	TN	US	1.924	13.3	14.587
UNK-A	0640	PAD VAN WANI		NS	1.543	10.6	14.669
WWJZ	0640	MOUNT HOLLY	NJ	US	1.487	10.1	14.744

# Night Allocation Protection Report

Call: WMEN  
Freq: 640 kHz  
BOCA RATON, FL, US  
Lat: 26-32-30 N  
Lng: 080-44-30 W  
Power: 25.0 kW  
Theo RMS: 1514 mV/m @ 1km

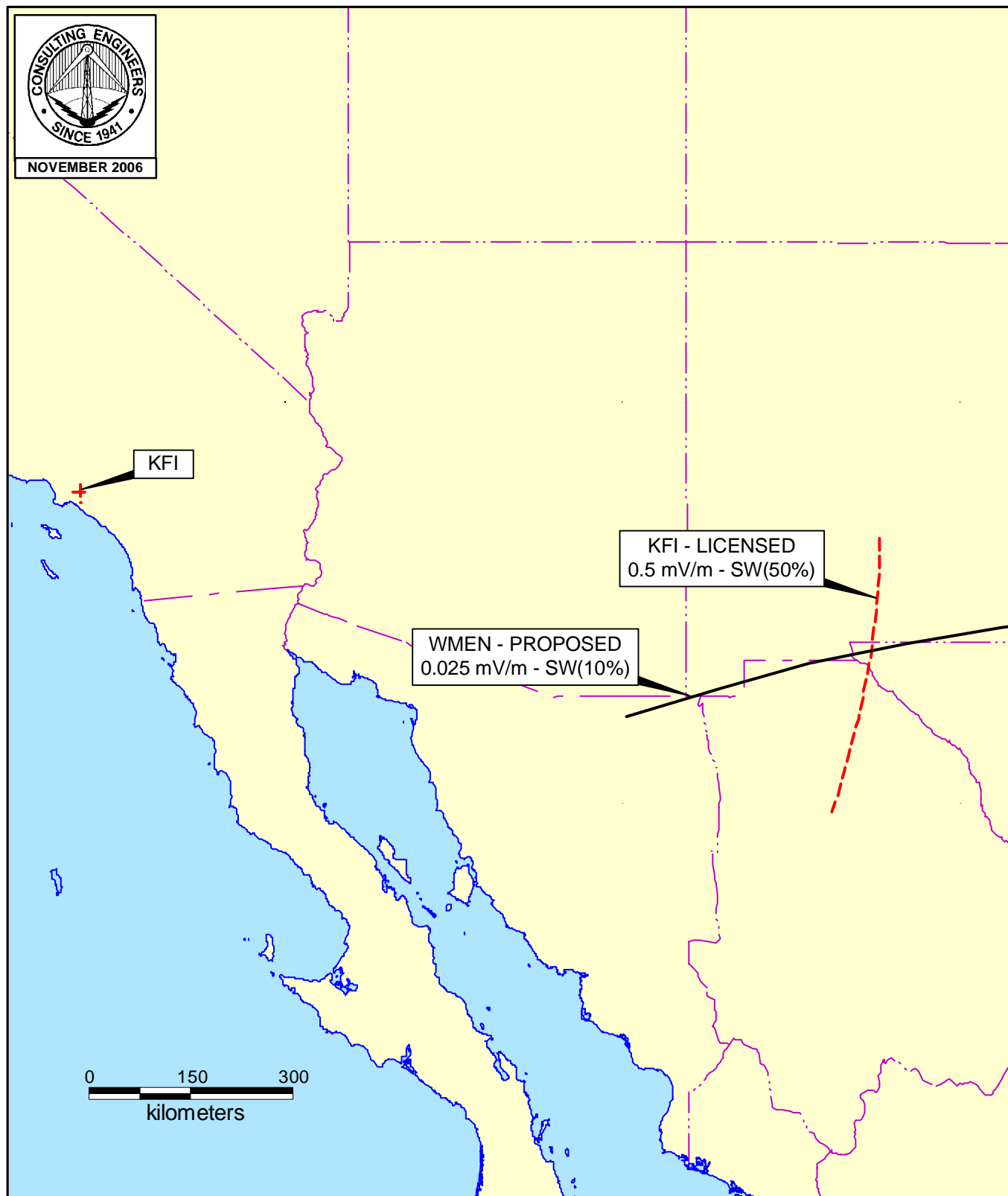
#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	69.6	0	0	0.0	0.0	0.0	0.0
2	2.337	144.7	84.9	281.0	78.8	0	0	0.0	0.0	0.0	0.0
3	1.418	-67.5	159.6	279.0	84.2	0	0	0.0	0.0	0.0	0.0
7	0.847	-16.6	231.8	153.7	86.6	0	0	0.0	0.0	0.0	0.0
8	1.569	115.1	182.0	181.2	69.6	0	0	0.0	0.0	0.0	0.0
9	0.842	-103.8	189.5	210.2	69.6	0	0	0.0	0.0	0.0	0.0

Call Letters	Ct	St	City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
CMLA-D	CU		VICTORIA TUN	37.79	2.42	344.58*	344.21	0.37
TGW-D (90)	GT		VOZDEGUATEMA	13.50	0.73	297.41	295.49	1.92
WVLG	US	FL	WILDWOOD	222.60	2.86	64.24	62.09	2.15
KFI (95)	US	CA	LOS ANGELES	9.60	0.50	260.29	226.99	33.30
WFNC	US	NC	FAYETTEVILLE	48.99	4.17	425.96	363.35	62.61
KTIB	US	LA	THIBODAUX	43.97	2.57	291.75	197.00	94.75
WWJZ	US	PA	HORSHAM TOWNSHI	20.15	2.51	622.64	404.32	218.32
WGST	US	GA	ATLANTA	56.73	3.87	340.78	82.35	258.43
WNNZ	US	MA	WESTFIELD	14.54	1.83	627.82	365.20	262.62
WWJZ	US	NJ	MOUNT HOLLY	20.43	2.85	697.98	387.42	310.56
WCRV	US	TN	COLLIERVILLE	31.35	3.04	485.71	101.73	383.97
WSM (155)	US	TN	NASHVILLE	45.40	0.50	550.61	83.48	467.13
XEWM/A	MX	CS	S.CRISTOBAL DE	19.68	2.56	651.47	164.51	486.96
XEWM1/A	MX	CS	S.CRISTOBAL DE	19.62	2.56	652.68	164.49	488.19
WGOC	US	TN	BLOUNTVILLE	38.49	4.59	596.31	104.80	491.52
WHLO	US	OH	AKRON	19.73	2.67	676.45	168.83	507.62
XETAM/O	MX	TA	CD.VICTORIA	11.46	2.82	1229.96	692.00	537.96
WWLS	US	OK	MOORE	16.47	2.31	700.38	85.73	614.65
XE/O	MX	VC	NAOLINCO	14.11	3.21	1136.47	507.63	628.84
XENQ1/A	MX	HG	TULANCINGO	11.28	2.89	1280.95	593.81	687.14
NEW	US	IN	SHELURN	22.17	3.58	808.08	84.06	724.01
NEW	US	IN	TERRE HAUTE	21.39	3.52	822.00	83.80	738.20
NEW	US	IN	NORTH TERRE HAU	21.39	3.52	822.00	83.80	738.20
NEW	US	IN	TERRE HAUTE	21.39	3.52	822.00	83.80	738.20
NEW	US	IN	TERRE HAUTE	21.39	3.52	822.78	83.87	738.90
NEW	US	IN	WEST TERRE HAUT	21.39	3.52	822.78	83.87	738.90
NEW	US	IN	TERRE HAUTE	21.39	3.52	822.78	83.87	738.90
NEW	US	IN	TERRE HAUTE	21.39	3.52	822.78	83.87	738.90
WMFN	US	MI	ZEELAND	14.75	2.42	820.97	75.41	745.56
WOI	US	IA	AMES	12.21	2.21	905.40	85.76	819.64
HRNN 4-B	HO		TEGUCIGALPA	9.75	1.89	968.64	93.01	875.63
HJBJ-B (65)	CO		S MARTA 4	5.36	1.25	1166.20	260.15	906.05
YVQO-B (305)	VE		PTO LA CRUZ	4.26	1.25	1466.12	460.67	1005.45
NEW	US	WI	RHINELANDER	9.66	2.42	1250.10	79.58	1170.52
NEW	US	WI	RHINELANDER	9.65	2.42	1254.95	79.70	1175.26
WMAL	US	DC	WASHINGTON	25.21	0.86	1697.31	394.81	1302.50

\*Authorized Permissible Level(BMJP-20041029ADW)

**Figure 14**  
**Sheet 3 of 6**

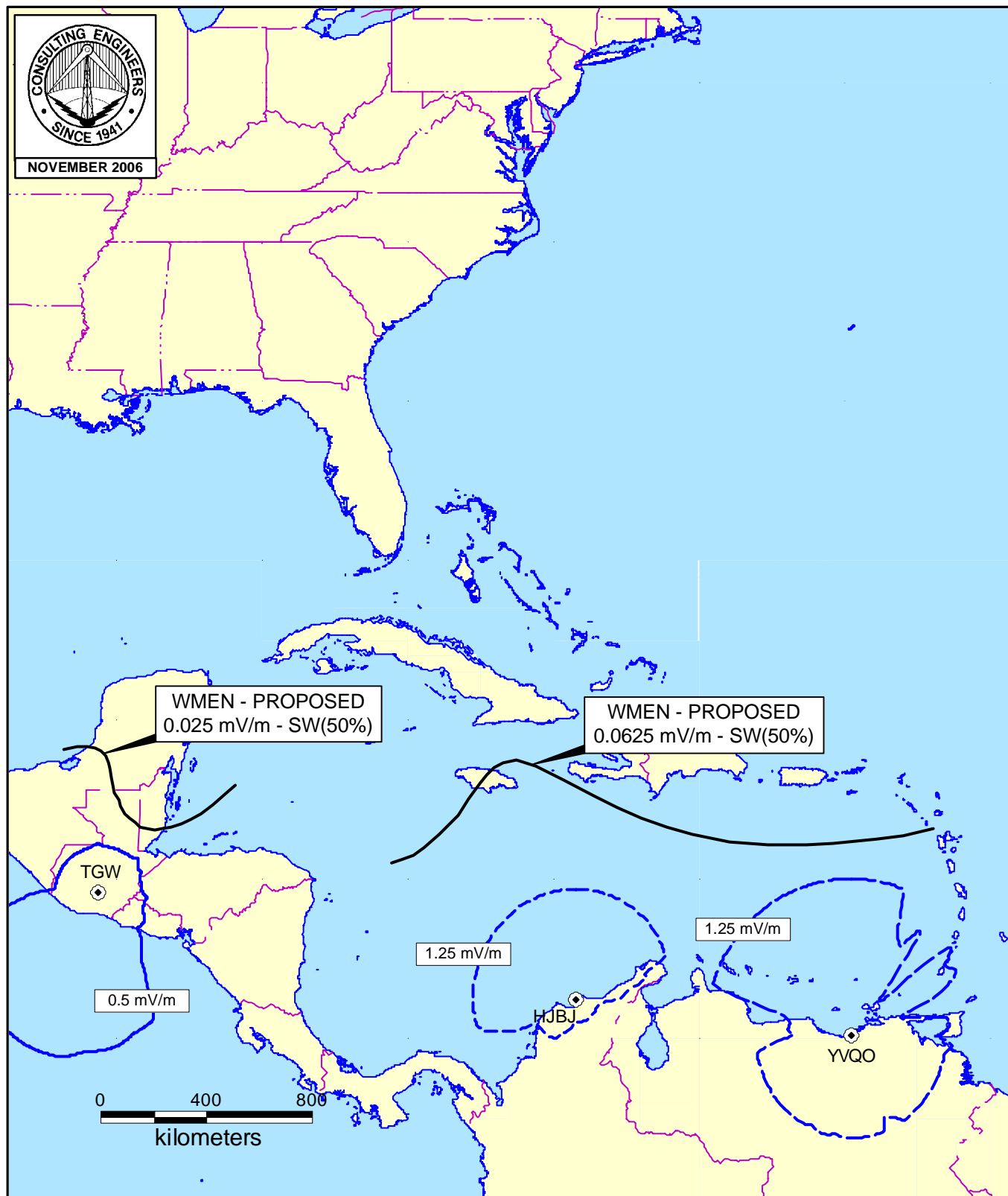
Call Letters	Ct	St	City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
XETY/O	MX	CL	TECOMAN	5.56	2.18	1959.74	654.74	1305.00
CFMJ/A	CA	ON	RICHMOND HILL	13.28	4.29	1613.62	271.74	1341.87
CFMJ/A	CA	ON	RICHMOND HILL	13.28	4.29	1613.62	271.74	1341.87
WMFD	US	NC	WILMINGTON	54.63	2.01	1836.39	389.56	1446.84
XEQ1/O	MX	ZA	FRESNILLO	7.37	3.23	2193.19	724.39	1468.80
KJSL	US	MO	ST. LOUIS	20.68	0.67	1621.93	85.28	1536.65
KYUK (140)	US	AK	BETHEL	0.30	0.10	1653.93S	103.76	1550.17
HCXY1-A (10)	EC		QUITO 3	2.63	1.25	2376.43S	305.29	2071.14
WLAP	US	KY	LEXINGTON	28.62	1.42	2484.28	75.06	2409.22
WUNO	US	PR	SAN JUAN	23.00	2.04	4440.94	1861.94	2579.00
WUNO	US	PR	SAN JUAN	22.84	2.15	4716.49	1858.24	2858.25
WUNO	US	PR	SAN JUAN	23.28	2.34	5026.07	1836.26	3189.81
WUNO	US	PR	SAN JUAN	23.28	2.34	5026.07	1836.26	3189.81
WNEG	US	GA	TOCCOA	51.97	3.41	3283.94	74.27	3209.66
WPRO	US	RI	PROVIDENCE	14.41	1.11	3853.96	279.32	3574.65
DKGVW	US	MT	BELGRADE	3.87	2.99	3868.92	107.59	3761.33
TIQQ-B	CS		S JOSE 4	5.06	4.86	4800.56	292.99	4507.56
XESRD/O	MX	DU	SANTIAGO PAPASQ	5.86	6.09	5196.78	663.82	4532.96
CFOB/A	CA	ON	FORT FRANCES	4.70	4.45	4735.33	83.38	4651.95
KHOW	US	CO	DENVER	7.72	0.77	4979.49	101.78	4877.71
KSLR	US	TX	SAN ANTONIO	20.08	2.55	6348.55	371.10	5977.45
XEHHI/O	MX	CH	HIDALGO DEL PAR	5.85	8.14	6954.16	572.67	6381.49
XEHHI/O	MX	CH	HIDALGO DEL PAR	5.82	8.22	7069.70	571.00	6498.71
HOK 22-B	PM		CPR	4.80	6.94	7237.42	345.50	6891.92
ZP 19-A (335)	PA		CORONEL OVIE	0.32	0.50	7706.26S	184.97	7521.29
ZYK-277-A (330)	BR		PORTO ALEGRE	0.26	0.50	9480.38S	185.80	9294.58
WDGY	US	MN	ST. PAUL	9.41	2.13	11304.87	84.93	11219.94
WDGY	US	WI	HUDSON	9.41	2.13	11304.87	84.93	11219.94
WDGY	US	MN	ST. PAUL	9.41	2.13	11304.87	84.93	11219.94
WDGY	US	MN	ST. PAUL	9.41	2.13	11304.87	84.93	11219.94
NEW	US	NY	MOOERS	10.73	2.99	13937.67	405.30	13532.38
NEW	US	NY	CANANDAIGUA	15.12	4.71	15577.91	361.34	15216.57
NEW/	CA	BC	NELSON	1.86	5.79	15598.47	103.59	15494.89
KGAB	US	WY	ORCHARD VALLEY	7.25	2.28	15713.68	107.17	15606.51
KPLY	US	NV	RENO	3.49	1.24	17746.59	77.87	17668.73
NEW	US	ME	RAYMOND	10.92	4.25	19470.27	321.63	19148.64
WNMT	US	MN	NASHWAUK	7.16	2.79	19460.80	84.03	19376.77
KFXD	US	ID	BOISE	3.47	1.64	23563.27	102.11	23461.16
KTKK	US	UT	SANDY	5.02	2.41	24019.31	91.09	23928.22
KSTE	US	CA	RANCHO CORDOVA	3.38	1.64	24291.62	85.66	24205.96
NEW	US	AZ	CASA GRANDE	6.63	3.32	25066.63	231.06	24835.57
KMTI	US	UT	MANTI	5.43	2.71	24958.65	81.17	24877.48
KTKK	US	UT	KEARNS	4.96	2.49	25097.38	92.24	25005.14
KTKK	US	UT	KEARNS	4.96	2.50	25233.08	92.25	25140.83
KRTR	US	HI	HONOLULU	1.09	0.55	25573.76	383.65	25190.11
CA 64-A	CI		IQUIQUE 1	0.41	2.32	28321.70	266.90	28054.81
UNK-A	BR		STO ANTONIO	0.96	5.44	28433.20	190.09	28243.10
UNK-A	NS		PAD VAN WANI	0.96	6.34	32949.38	1194.28	31755.11
ZYJ590-A	BR		NATAL	0.31	2.26	35905.98	1724.24	34181.74
OAZ4K-A	PE		DEL PACIFICO	0.64	4.52	35266.77	327.92	34938.85
ZYI-240-A	BR		VITORIA	0.25	1.91	37748.49	564.99	37183.50
CP 157-A	BL		MILLUNI	0.48	3.86	40588.15	233.66	40354.49
UNK-A	BR		TANGARA SERR	0.43	3.47	40644.67	202.38	40442.29
WVUV	US	AS	LEONE	1.16	1.01	43506.85	684.23	42822.63
ZYH458-A	BR		ITABUNA	0.28	2.48	43850.48	858.93	42991.55
ZYL-308-A	BR		PARA DE MINA	0.28	2.93	52613.73	424.24	52189.49
KIDD	US	CA	MONTEREY	3.48	3.72	53439.91	119.39	53320.52
UNK-A	BR		BELEM	0.54	6.01	55464.97	1122.84	54342.13
ZYI-418-A	BR		ALTA FLOREST	0.50	5.66	56908.37	290.10	56618.28
ZYH-757-A	BR		GOIANIA	0.33	3.94	58792.49	354.47	58438.03



## **NIGHTTIME ALLOCATION STUDY**

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

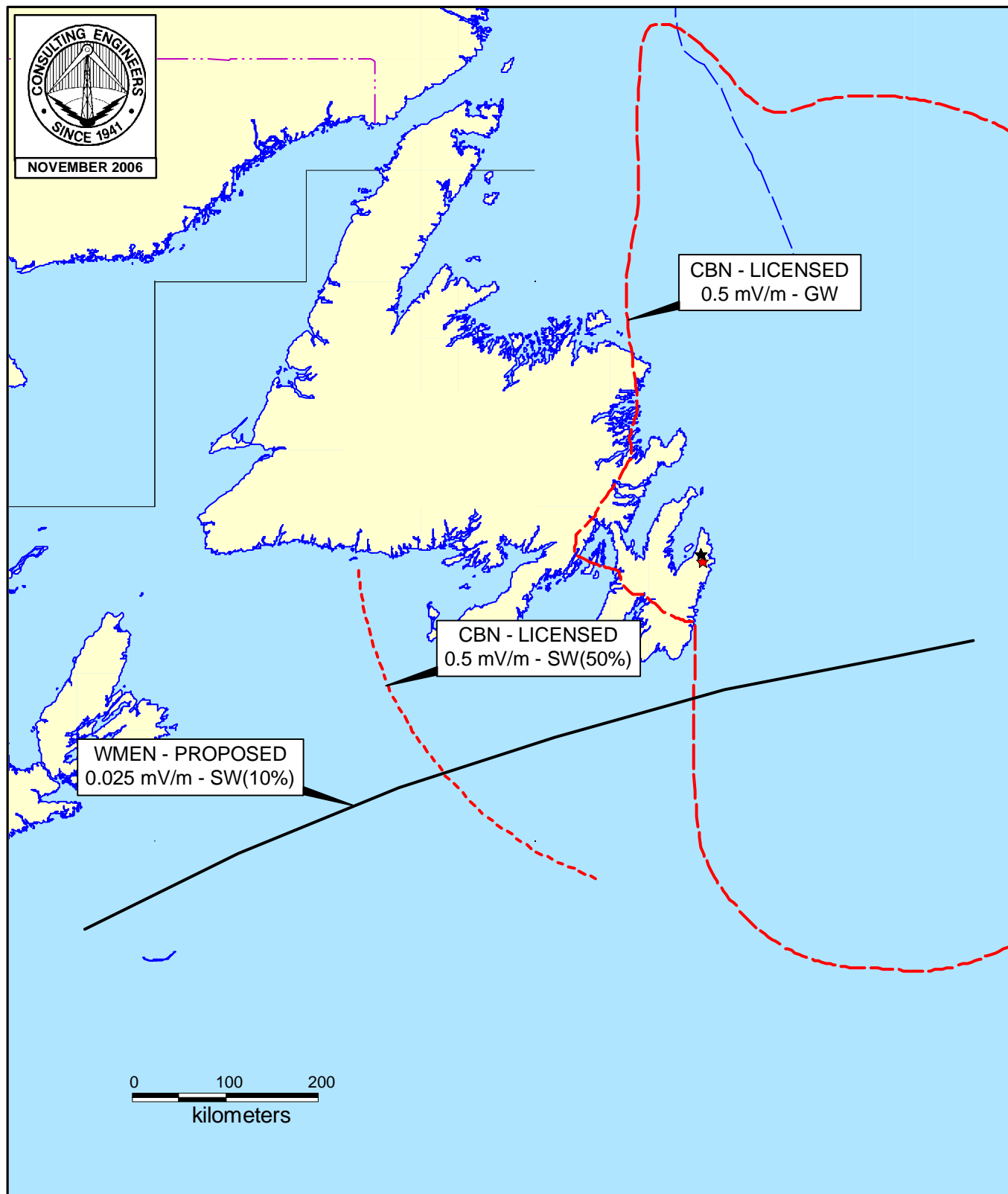


## NIGHTTIME ALLOCATION STUDY

RADIO STATION WMEN  
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## NIGHTTIME ALLOCATION STUDY

RADIO STATION WMEN  
BOCA RATON, FLORIDA  
640 KHZ 50 KW-D 25 KW-N U DA-2

du Treil, Lundin & Rackley, Inc. Sarasota, Florida