

ENGINEERING EXHIBIT
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
CLEAR CHANNEL BROADCASTING LICENSES, INC.
RADIO STATION WTKT
HARRISBURG, PENNSYLVANIA

March 13, 2007

1460 KHZ 5.0 KW-D, 4.2 KW-N U DA-N

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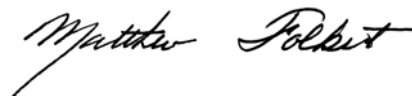
Engineering Statement

The engineering exhibit of which this statement is part was prepared on behalf of Clear Channel Broadcasting Licenses, Inc., the licensee of AM broadcast station WTKT, Harrisburg, Pennsylvania, in support of an application for modification of construction permit covering construction authorized in Permit No. BMP-20050503AAC. This construction permit authorizes operation on 1460 kilohertz, with a daytime power of 5.0 kilowatts utilizing a non-directional antenna and a nighttime power of 4.2 kilowatts employing a directional antenna pattern.

After the completion of field work at the station, it was determined that the nighttime directional antenna pattern would require augmentation. The field strength values on four radials were found to be outside the standard pattern authorized by the construction permit. The proposed augmentation is completely consistent with the FCC Rules, as it will provide the requisite levels of protection to all pertinent stations.

The proposed modified nighttime directional antenna pattern is shown in graphical form on Figure 1 and in tabular form on Figure 2. Figure 3 is a nighttime allocation study for the span of augmentation. As will be noted from the field permissibles shown on Figure 3, the increase in radiation proposed for the WTKT daytime pattern will not result in new interference toward any station.

In all respects, the proposed modified standard pattern complies with the requirements of 47CFR73.152.

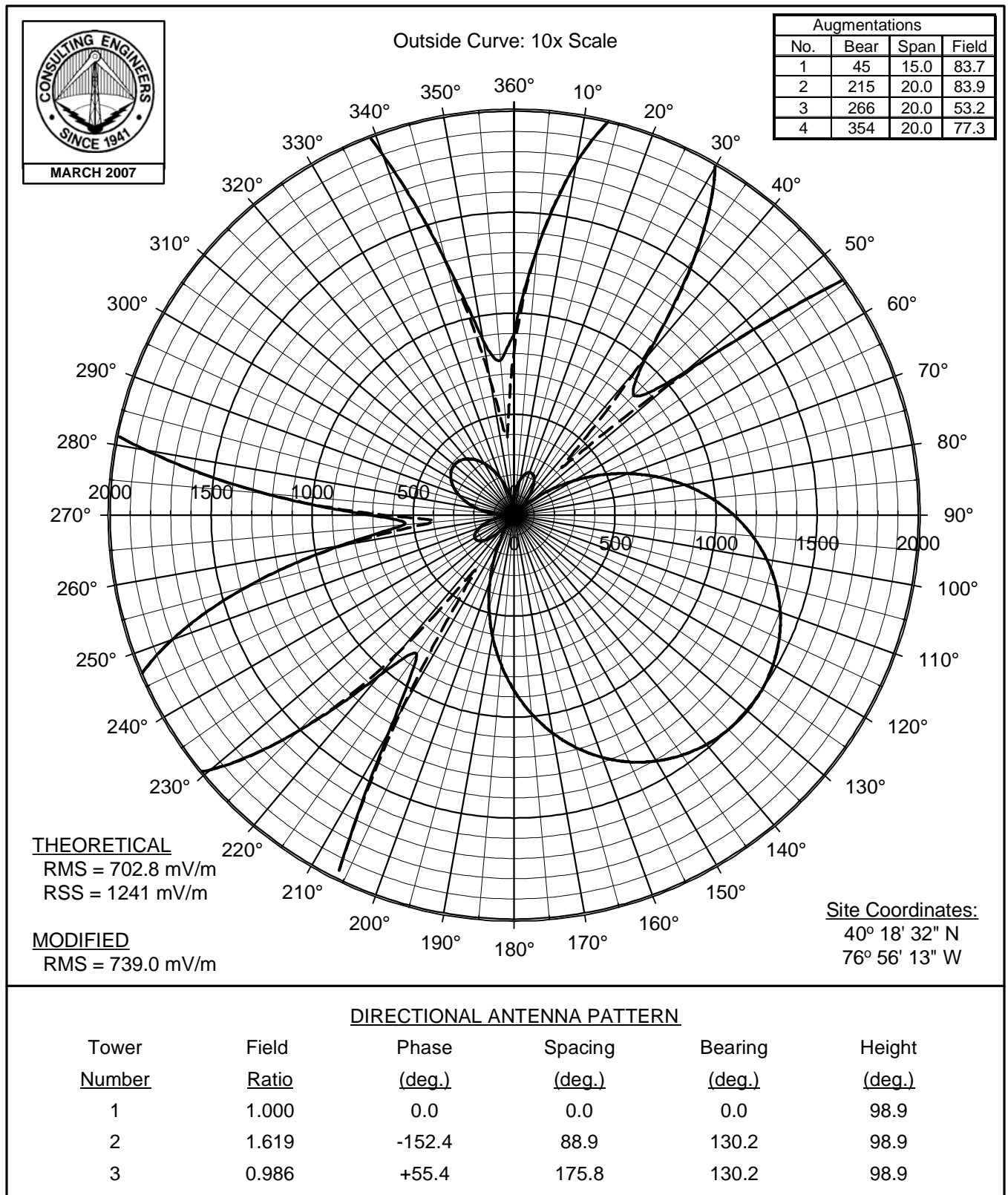
A handwritten signature in black ink, reading "Matthew Folkert". The signature is written in a cursive style with a large, stylized 'M' and 'F'.

Matthew Folkert

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, FL 34237
(941) 329-6000

March 13, 2007

Figure 1



NIGHTTIME HORIZONTAL PLANE MODIFIED STANDARD RADIATION PATTERN

RADIO STATION WTKT
HARRISBURG, PENNSYLVANIA
1460 KHZ 5.0 KW-D, 4.2 KW-N U DA-N

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

TECHNICAL EXHIBIT
APPLICATION FOR
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RADIO STATION WTKT
HARRISBURG, PENNSYLVANIA

1460 KHZ 5.0 KW-D; 4.2 KW-N U DA-N

NIGHTTIME 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	98.9
2	1.619	-152.4	88.9	130.2	98.9
3	0.986	+55.4	175.8	130.2	98.9

Augmentations

<u>No.</u>	<u>Bear (deg.)</u>	<u>Span (deg.)</u>	<u>Field (mV/m)</u>
1	45	15	83.7
2	215	20	83.9
3	266	20	53.2
4	354	20	77.3

<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>Modified RMS (mV/m)</u>
4.2	1.0	702.8	1241	31.0	739.0

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	90	91	94	100	107	114	120
5	132	133	135	138	141	143	144
10	177	177	176	176	174	171	165
15	209	208	206	202	196	188	178
20	224	223	220	213	205	194	181
25	222	220	216	209	199	187	173
30	199	197	193	186	177	165	152
35	156	155	151	146	138	129	119
40	101	101	98.8	95.8	91.8	86.9	81.2
45	83.7	83.2	81.8	79.5	76.4	72.7	68.5
50	109	108	104	97.2	88.9	79.1	68.5
55	213	211	203	191	174	155	134
60	337	333	321	302	277	248	216
65	467	462	446	420	386	346	302
70	600	593	573	540	498	447	391
75	732	723	699	660	608	547	479
80	858	849	821	775	715	644	565
85	978	967	935	884	816	736	647
90	1087	1075	1040	984	910	821	723
95	1185	1172	1135	1074	994	898	791
100	1271	1257	1217	1153	1068	966	852
105	1343	1329	1287	1220	1131	1024	904
110	1402	1387	1344	1275	1183	1072	947
115	1448	1433	1389	1318	1223	1109	981
120	1480	1465	1420	1348	1252	1136	1005
125	1500	1485	1439	1366	1269	1152	1020
130	1507	1492	1446	1373	1275	1157	1025
135	1501	1486	1440	1367	1270	1153	1021
140	1482	1467	1422	1350	1253	1137	1007
145	1451	1436	1392	1320	1226	1111	983
150	1406	1392	1348	1279	1186	1075	950
155	1348	1334	1292	1225	1136	1028	908
160	1277	1263	1223	1159	1073	971	857
165	1192	1180	1142	1081	1000	904	797
170	1095	1083	1048	992	917	828	728
175	987	976	944	892	824	743	653

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	125	126	123	116	106	91.5	74.8
5	142	138	130	120	106	89.7	72.1
10	158	148	136	122	105	87.8	69.6
15	167	153	137	121	103	84.2	66.0
20	167	151	133	115	96.9	78.8	61.3
25	157	141	123	106	88.1	71.2	55.3
30	138	123	107	91.4	76.2	61.7	48.1
35	108	96	84.5	72.7	61.1	50.1	39.7
40	74.9	68.2	61.3	54.1	47.0	39.9	32.9
45	63.9	59.0	54.0	48.9	43.6	38.2	32.6
50	57.7	47.4	38.1	30.3	24.3	20.2	17.6
55	112	90.4	69.9	51.3	35.2	22.3	13.2
60	182	149	117	87.4	61.8	40.3	23.6
65	256	210	166	126	90.5	60.5	36.5
70	332	274	218	166	120	81.3	50.1
75	408	337	269	206	150	102	63.9
80	482	399	319	245	179	123	77.5
85	553	458	367	283	207	143	90.7
90	619	514	412	318	234	162	103
95	678	564	454	351	259	179	115
100	732	610	491	380	281	195	125
105	777	648	523	406	300	209	134
110	815	681	550	427	316	220	142
115	845	706	571	444	329	230	148
120	866	725	586	456	338	236	152
125	879	736	596	463	344	240	155
130	884	740	599	466	346	242	156
135	880	737	596	464	344	241	155
140	868	726	587	457	339	237	153
145	847	708	572	445	330	230	148
150	818	683	552	428	317	221	142
155	781	651	525	407	301	210	135
160	736	613	494	382	282	196	126
165	683	568	457	353	260	181	116
170	624	518	416	321	236	163	104
175	558	463	371	286	210	145	91.7

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	868	859	830	784	724	652	572
185	742	734	709	669	617	555	486
190	611	604	583	550	507	455	398
195	478	472	456	430	395	354	309
200	347	343	331	312	286	256	223
205	223	220	212	199	182	162	140
210	123	122	117	110	101	91.0	79.6
215	83.9	83.4	81.9	79.4	76.2	72.3	67.9
220	104	103	101	98.2	94.2	89.3	83.6
225	151	150	147	142	135	126	116
230	196	195	191	184	174	163	150
235	221	219	215	208	198	186	172
240	225	224	220	214	205	194	181
245	211	210	207	203	197	189	179
250	180	180	179	178	176	172	167
255	136	137	139	141	144	146	146
260	87.4	88.8	92.6	98.6	106	113	120
265	54.6	55.0	56.9	61.6	69.7	80.4	91.8
270	71.2	68.3	60.5	50.5	44.0	47.4	59.7
275	124	119	106	86.4	62.3	39.5	31.8
280	185	179	163	138	107	72.6	41.1
285	242	235	217	188	151	110	68.2
290	291	284	263	231	190	143	95.4
295	331	324	302	267	222	171	118
300	361	353	330	293	246	192	136
305	380	372	347	309	261	205	147
310	386	378	354	315	266	210	151
315	381	373	348	310	261	206	147
320	363	355	332	295	247	193	137
325	334	327	304	269	224	173	120
330	295	287	267	234	193	146	97.4
335	246	239	221	191	154	112	70.5
340	190	184	168	142	111	75.6	43.0
345	129	125	111	91.0	66.2	42.2	32.0
350	87.7	85.0	77.5	67.8	60.3	60.1	68.1
355	76.9	76.8	77.0	78.9	83.6	91.0	100

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	488	404	323	248	182	125	78.6
185	414	342	273	209	152	104	65.0
190	338	279	222	169	123	83.0	51.2
195	262	215	170	129	92.8	62.1	37.6
200	188	153	121	90.4	64.0	41.9	24.6
205	118	94.9	73.4	54.0	37.2	23.6	13.8
210	68.0	56.8	46.6	37.8	30.8	25.4	21.5
215	63.2	58.3	53.2	48.1	42.9	37.6	32.2
220	77.3	70.6	63.6	56.4	49.1	41.8	34.6
225	105	94.0	82.5	71.0	59.8	49.1	39.0
230	136	121	105	90.0	75.1	60.8	47.5
235	156	139	122	105	87.3	70.5	54.8
240	166	150	133	115	96.3	78.2	60.9
245	167	153	137	120	102	83.9	65.7
250	159	149	137	122	105	87.6	69.4
255	144	139	131	120	106	89.6	72.0
260	124	125	122	115	105	90.5	73.9
265	102	109	112	109	102	90.6	75.4
270	74.9	88.1	97.0	100	97.1	88.5	75.2
275	46.0	65.0	80.3	89.0	90.6	85.3	74.1
280	29.0	45.6	65.4	79.0	84.8	82.5	73.4
285	34.1	30.8	51.7	69.5	79.0	79.7	72.4
290	51.5	25.6	40.3	61.1	73.8	77.0	71.5
295	68.7	30.3	31.8	54.1	69.3	74.6	70.6
300	82.3	37.6	26.8	48.9	66.0	72.8	69.9
305	90.9	43.1	24.5	45.7	63.9	71.7	69.4
310	93.9	45.1	23.9	44.5	63.1	71.3	69.2
315	91.3	43.4	24.4	45.5	63.7	71.6	69.4
320	83.1	38.1	26.5	48.5	65.8	72.7	69.8
325	70.0	30.9	31.3	53.6	69.0	74.5	70.5
330	52.9	25.7	39.5	60.4	73.4	76.8	71.4
335	35.3	30.0	50.7	68.8	78.6	79.5	72.4
340	28.5	44.2	64.2	78.3	84.3	82.3	73.3
345	44.7	63.7	79.2	88.4	90.3	85.2	74.1
350	80.2	91.8	100	102	99.0	90.2	76.6
355	108	114	116	113	105	93.1	77.6

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Nighttime Allocation Study

Night Permissible Vertical Radiation From Station:WTKT
Coordinates: 40-18-32 076-56-13

Toward Station	Freq. (kHz)	GC Dist. (km)	Bear (degT)	Angles		Skywav Mult. (mV/m)	50% Ex-RSS (mV/m)	25% Ex-RSS (mV/m)	Req. Prot. (mV/m)	Perm. Vert-Rad mV/m@1km
				Min (deg)	Max (deg)					
WDDY	1460	366.5	44.4	20.6	32.3	158.79	7.05	8.9	2.60	81.9
WHIC	1460	315.8	350.6	23.8	36.4	187.6	8.42	10.51	3.56	95.
WBNS	1460	508.9	267.5	14.6	24.0	107.55	5.56	7.72	1.93	89.8
WRAD	1460	472.7	223.	15.9	25.7	122.28	13.08	16.01	4.00	163.7