

Engineering Statement  
In Support of an Application to  
Reduce Nighttime Power  
WAUB 6 Auburn, NY  
1590 kHz, 0.5 kW-U, DA-1  
Facility ID No. 43791

The following Engineering Statement and associated exhibits have been prepared to accompany an Application for Construction Permit to reduce nighttime power and employ the daytime directional antenna pattern at night for WAUB, Auburn, New York.

WAUB is currently authorized as a class B AM station operating on 1590 kHz with 0.5 kW directional daytime and 1 kW directional nighttime. 1590 kHz is a regional channel.

The instant application proposes in a minor change to use the existing daytime directional pattern for use at night (DA-1) in order to address problems with the nighttime phasing and coupling system and simplify operations. No changes are proposed to the licensed daytime facilities.

The existing daytime directional array utilizes three vertical, uniform cross-section, steel, guyed radiators 48 meters in overall height and 47.1 meters in height above the base insulator (90 electrical degrees at 1590 kHz). None of the towers employ top loading or sectionalization. All towers are series fed. The nighttime ground system consists of 120 equally-spaced, buried copper radials about the base of each tower, 47.1 meters in length except where intersecting radials are shortened and bonded to a transverse strap. In addition, a 14.6 meter by 14.6 meter square copper ground screen is installed about the bases of the towers.

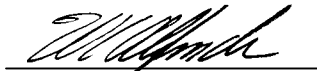
The entire technical operation will be in compliance with all applicable FCC Rules except night community of coverage standards, which is addressed in Exhibit E-14, and will be constructed in accordance with the standards of good engineering practice. All elements of the proposed daytime antenna system are well in excess of the minimum physical vertical heights specified by 47 C.F.R. §73.189. The main element (#2) of the nighttime directional antenna system meets the minimum requirements of 47 C.F.R. §73.189 with respect to both height and effective field strength. The calculated effective field of the nighttime array is 326.54 mV/m at 1 km (adjusted for 1 kW). This value exceeds the 282 mV/m class minimum prescribed by 47 C.F.R. §73.182(m).

Measured conductivity data from the WAUB January 1988 Directional Antenna Proof of Performance was used in the calculation of all contours.

There are no population centroids within the nighttime 1 V/m contour. The total population within the nighttime 25 mV/m contour has been determined to be 17,424 (2010 Census). The area within the 1 V/m contour is rural in nature with a zero population density. There are no houses within the 1 V/m contour. As such, the total population within the 1 V/m contour can be presumed to be well below the threshold of 1% of the population within the 25 mV/m specified in 47 C.F.R. §73.24(g).

The proposed facility is in compliance with all the engineering standards of allocation specified in the Commission's Rules.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'W.C. Alexander', is written over a horizontal line.

W.C. Alexander  
CPBE, AMD, DRB

11-21-2003 06:13

KLDC-D		40-01-41 N	104-49-21 W	2.200 kW	
		Crawford Broadcasting			
Twr. No.	Field	Phasing	Spacing	Azimuth	Height
1	0.525	-127.5	75.9	220.0	77.0
2	1.000	0.0	0.0	0.0	77.0
3	0.510	124.5	75.9	40.0	77.0
RMS	471.72 mV/m	(kilometer)		Q 16.17 mV/m	

## Standard Horizontal Plane Radiation Pattern

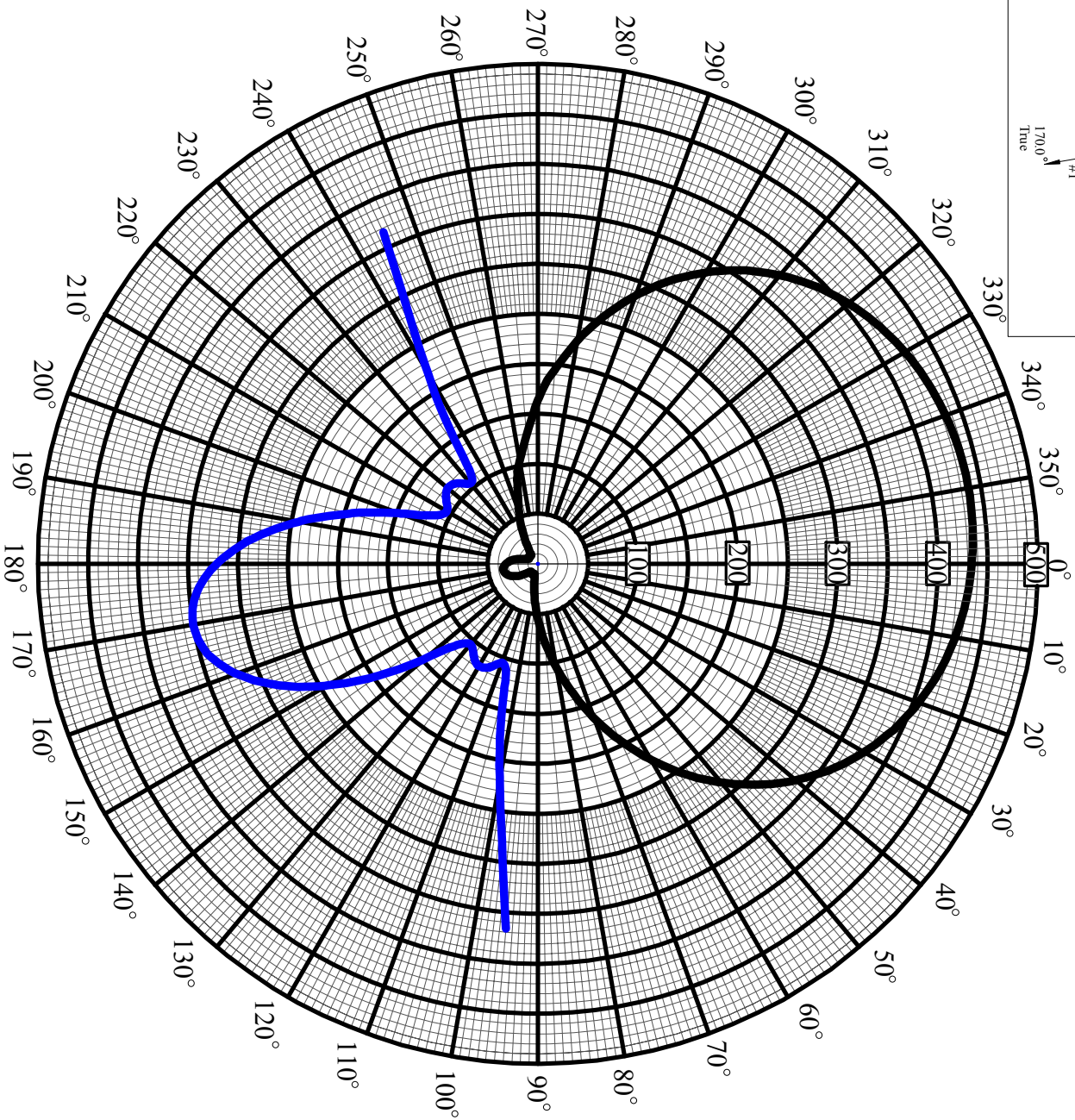
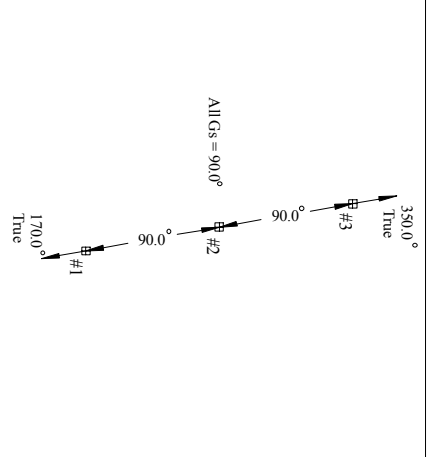
Azi.	mV/m	Azi.	mV/m
0	28.0	180	761.9
5	25.9	185	798.3
10	23.6	190	829.4
15	22.7	195	855.3
20	23.8	200	876.0
25	26.3	205	891.9
30	29.0	210	903.1
35	31.1	215	909.7
40	31.8	220	911.9
45	31.1	225	909.7
50	29.0	230	903.1
55	26.3	235	891.9
60	23.8	240	876.0
65	22.7	245	855.3
70	23.6	250	829.4
75	25.9	255	798.3
80	28.0	260	761.9
85	28.7	265	720.3
90	26.8	270	673.7
95	22.5	275	622.5
100	19.9	280	567.4
105	29.0	285	509.4
110	50.8	290	449.3
115	81.7	295	388.5
120	120.0	300	328.3
125	164.8	305	270.1
130	215.2	310	215.2
135	270.1	315	164.8
140	328.3	320	120.0
145	388.5	325	81.7
150	449.3	330	50.8
155	509.4	335	29.0
160	567.4	340	19.9
165	622.5	345	22.5
170	673.7	350	26.8
175	720.3	355	28.7

11-21-2003 06:08

KLDC-N		39-50-36 N	104-57-08 W	0.227 kW	
		Crawford Broadcasting			
Twr. No.	Field	Phasing	Spacing	Azimuth	Height
1	0.605	180.0	57.0	330.5	58.0
2	1.000	0.0	0.0	0.0	132.0
3	0.635	97.0	80.0	227.0	58.0
RMS 149.12 mV/m		(kilometer)		Q 10.00 mV/m	

## Standard Horizontal Plane Radiation Pattern

Azi.	mV/m	Azi.	mV/m
0	191.3	180	136.1
5	194.0	185	123.9
10	195.2	190	112.1
15	195.2	195	100.7
20	194.1	200	90.1
25	192.2	205	80.2
30	189.7	210	71.4
35	186.9	215	63.8
40	184.2	220	57.5
45	181.9	225	52.7
50	180.3	230	49.1
55	179.8	235	46.6
60	180.4	240	44.8
65	182.5	245	43.0
70	185.9	250	41.0
75	190.6	255	38.2
80	196.3	260	34.3
85	202.7	265	29.1
90	209.4	270	22.7
95	216.0	275	15.6
100	222.1	280	10.7
105	227.3	285	14.9
110	231.3	290	25.8
115	233.9	295	39.1
120	234.9	300	53.7
125	234.2	305	68.9
130	231.7	310	84.4
135	227.4	315	99.9
140	221.5	320	114.8
145	214.0	325	129.1
150	205.2	330	142.3
155	195.2	335	154.3
160	184.3	340	164.9
165	172.7	345	173.9
170	160.7	350	181.4
175	148.4	355	187.1



Twr.	Field	Phasing
1	1,000	0.0
2	1,955	-123.0
3	1,000	+114.0

RMS(TH) = 230.90  
RMS(STD) = 242.67  
RSS(TH) = 276.53  
Q = 10.00

SHORT TITLE	Proposed Standard Horizontal Pattern	DATE	12/05/2014
PROJECT	WAJIB - Auburn, NY 1590 KHz, 0.5 kW TL DA-1	SCALE	1:1
Au Contaire Software, Ltd. Antenna-Array Software & Consulting 18121-C E. Hampden Ave. #216 Aurora, CO 80013 (303) 889-3454		DESIGNED BY	