

Engineering Statement
In Support of an Application to
Change Antenna Location
KLDC, Denver, Colorado
Facility ID 12364
1220 kHz, 0.50 kW-D/0.014 kW-N, DA-D

The Corporate Engineering Department of the Crawford Broadcasting Company, on behalf of its subsidiary, KLZ Radio, Inc., has prepared this Engineering Statement and associated exhibits to accompany an Application for Construction Permit to change the antenna site, reduce the power and change the antenna system of KLDC, Denver, Colorado.

KLDC is currently authorized as a class D AM station operating on 1220 kHz with 0.66 kW non-directional daytime and 0.011 kW non-directional nighttime at a site located at N39-41-00 and W105-00-24 (NAD27). This site is being decommissioned by the property owner and KLDC must relocate to a new site to continue providing service to Denver.

The instant application proposes in a minor change to relocate KLDC to a site 18.46 km north of the existing site, reduce daytime power to 0.5 kW employing a two-tower directional array, and increase night power to 0.014 kW night using a non-directional antenna.

The proposed site, owned by the licensee, is the same one that has since 1962 been used by KLZ (560 kHz, 5 kW-U, DA, Fac. ID #35088) and since 2005 for the nighttime facility of co-owned KLVZ (810 kHz, 2.2 kW-D/0.43 kW-N, DA-2, Fac. ID #35089). The existing KLZ and KLVZ towers are all vertical, uniform cross-section, steel, guyed radiators. The two KLZ towers are 137 meters in overall height and 135.3 meters above base insulator (91 electrical degrees at 560 kHz and 198.3 degrees at 1220 kHz). The four KLDC-N towers are 61 meters in overall height and 59.6 meters above base insulator (58 electrical degrees at 810 kHz and 87.4 degrees at 1220 kHz). The KLZ towers are currently detuned at 810 kHz, and the KLVZ towers are detuned at 560 kHz.

Tower #3 in the KLVZ night array will be used in common as tower #1 in the KLDC two-tower array. A new tower, also 61 meters in overall height and 59.6 meters above base insulator, will be constructed on a bearing of zero degrees True at a spacing of 87.4 degrees at 1220 kHz from the common tower (KLVZ-N #3). This proposed new tower will also be used as the night non-directional radiator. Because there will be no change in the height of any existing tower and the new tower will not exceed 200 feet (61 meters) in height, no FAA notification or change in the Antenna Structure Registrations is required. All towers are series fed.

Center-of-array NAD27 coordinates for the proposed KLDC two-tower antenna system are N39-50-40.43/W104-57-10.76. The non-directional tower NAD27 coordinates are N39-50-41.43/W104-57-10.76.

The existing ground system consists of 120 equally spaced, buried copper radials about the base of each tower, 92.6 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 base of the towers. The existing KLZ ground system, which consists of 120 equally-spaced, buried copper radials

134.11 meters in length plus a 14.6 meter by 14.6 meter copper ground screen about the base of each tower, will remain in place for both elements in the KLZ directional array.

For the new tower (KLDC #2), the ground system will consist of 120 buried copper radials 61 meters in length except where intersecting radials are shortened and bonded to a transverse strap, or where radials are shortened where encountering the property boundary to the north. A 14.6-meter by 14.6-meter copper ground screen will be installed about the base of the tower. The details of the ground system are shown in Figure 2 herein.

Both KLZ towers will be detuned on both 810 and 1220 kHz. All existing KLVZ towers except #3 will be detuned on both 560 and 1220 kHz. KLVZ #3/KLDC #1 will be detuned on 560 kHz; during night operation, it will also be detuned on 1220 kHz. KLDC #2 will be detuned on both 560 and 810 kHz.

Filters will be employed in the base tuning networks of each tower. Measurements will be made to ensure that intermodulation products are well below the limits set forth in 47 C.F.R. §73.44. Both the KLZ and KLVZ-N facilities were licensed pursuant to the method-of-moments procedure as permitted in 47 C.F.R. §73.151(c). Those proofs-of-performance will be re-run with circuit models accounting for the additional filter and detuning circuitry resulting from the addition of the KLDC antenna to the site. The proposed KLDC facility will likewise be proofed using the method of moments and filter/detuning circuitry will be modeled and included in the proof.

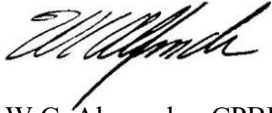
The entire technical operation will be in compliance with all applicable FCC Rules and will be constructed in accordance with the standards of good engineering practice. Both elements of the proposed KLDC antenna system are well in excess of the minimum physical vertical heights specified by 47 C.F.R. §73.189.

There are no population centroids within the daytime 1 V/m contour. The 1 V/m contour falls almost entirely over the tower site property with only a small area to the east that falls over a railroad right of way and another small area to the south that falls over a jogging/bicycle trail and edges onto an unoccupied industrial site. There are no dwellings within the 1 V/m contour. As such, the total population within the 1 V/m contour is less than 300 and the requirement of 47 C.F.R. §73.24(g) is not applicable.

Unauthorized antenna tower access will be restricted by fences with locked gates. These fences will be at least 1 meter from the tower bases as required by OET-65. The antenna towers will be posted with warning signs, and all station personnel and contractors will be required to follow appropriate safety procedures before any work is commenced on the antenna towers, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

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', written in a cursive style.

W.C. Alexander, CPBE, AMD, DRB
Director of Engineering
Crawford Broadcasting Company
Corporate Engineering
2821 S. Parker Road, Suite 1205, Aurora, Co 80014
(303) 433-0104

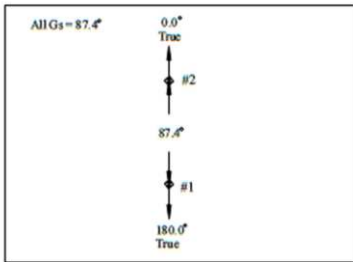
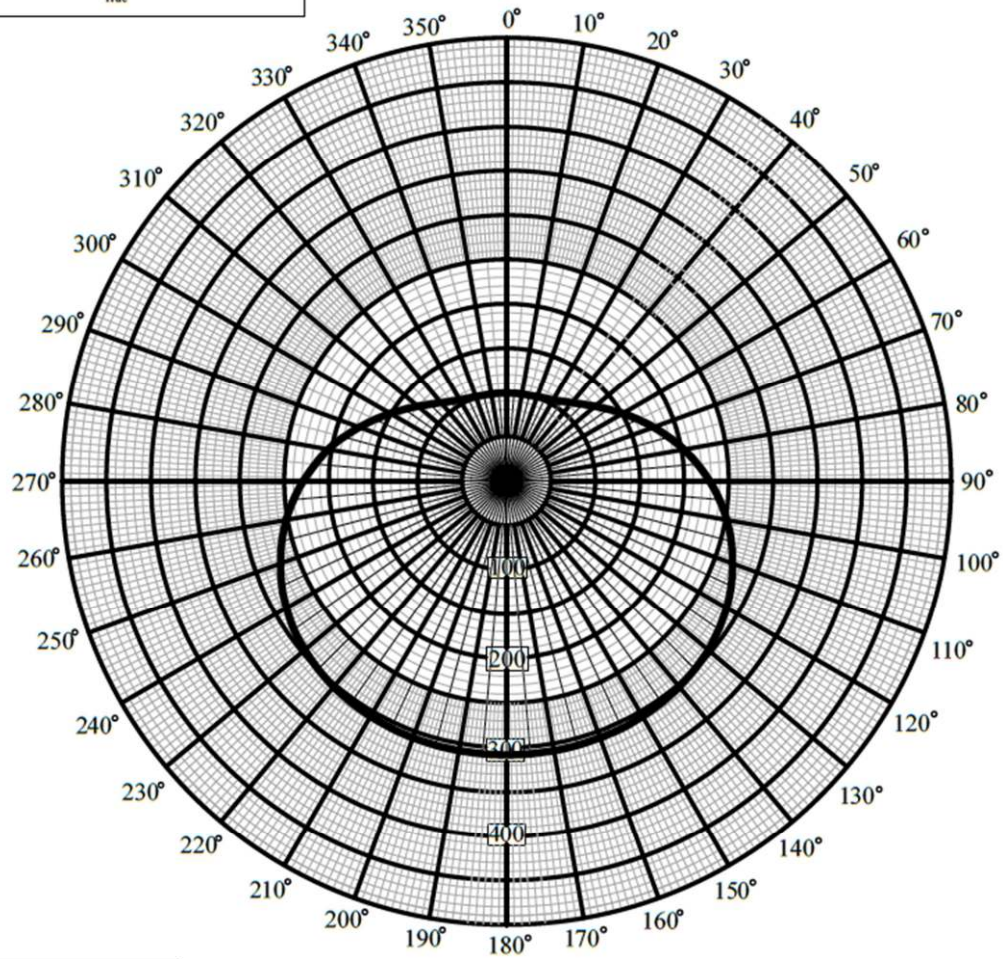


Exhibit 13
Figure 1



Twr.	Field	Phasing
1	1.000	0.0
2	0.518	90.0

RMS(TH) = 217.94
RMS(STD) = 229.08
RSS(TH) = 217.94
Q = 10.00

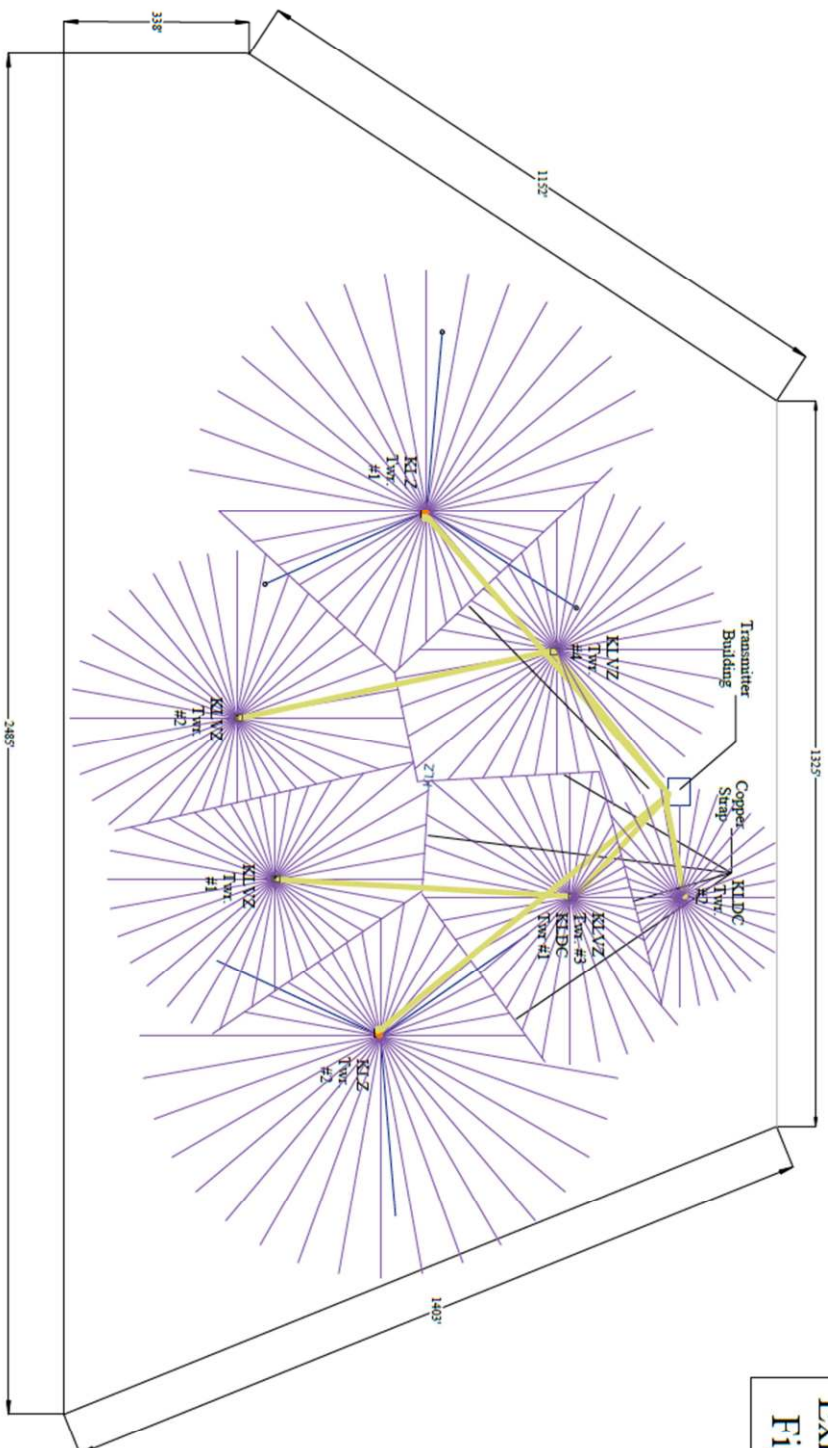
PROPOSED	Proposed Daytime Standard Horizontal Pattern	DATE	11/16/2020
PROJECT	KLDC - Denver, Colorado 1220 kHz, 0.5 kW-D0.014 kW-N, DA-D	BY	WCA
Crawford Broadcasting Company Corporate Engineering 2821 S. Parker Road, Suite 1205, Aurora, CO 80014 (303) 433-0194		APPROVED	
		FOR JARS	

KLDC-P		39-50-40 N	104-57-11 W	0.500 kW	
		Crawford Broadcasting Company			
Twr. No.	Field	Phasing	Spacing	Azimuth	Height
1	1.000	0.0	0.0	0.0	87.4
2	0.518	90.0	87.4	0.0	87.4
RMS 217.94 mV/m		(kilometer)		Q 10.00 mV/m	

Standard Horizontal Plane Radiation Pattern

Azi.	mV/m	Azi.	mV/m
0	98.7	180	308.6
5	98.8	185	308.5
10	99.0	190	308.5
15	99.5	195	308.3
20	100.5	200	308.0
25	102.3	205	307.4
30	105.0	210	306.5
35	109.0	215	305.1
40	114.5	220	303.1
45	121.6	225	300.3
50	130.2	230	296.7
55	140.2	235	292.1
60	151.4	240	286.4
65	163.6	245	279.6
70	176.5	250	271.7
75	189.8	255	262.5
80	203.2	260	252.3
85	216.4	265	241.1
90	229.1	270	229.1
95	241.1	275	216.4
100	252.3	280	203.2
105	262.5	285	189.8
110	271.7	290	176.5
115	279.6	295	163.6
120	286.4	300	151.4
125	292.1	305	140.2
130	296.7	310	130.2
135	300.3	315	121.6
140	303.1	320	114.5
145	305.1	325	109.0
150	306.5	330	105.0
155	307.4	335	102.3
160	308.0	340	100.5
165	308.3	345	99.5
170	308.5	350	99.0
175	308.5	355	98.8

Exhibit 13
Figure 2



7/15/13 10:07	Ground System and Teething	11-1-2007	10666600	WGA	
7/15/13	KLZ KLZV NKLDC Antenna Site				
	CRAWFORD BROAD ASTING COMPANY 4000 E. 10TH AVE DENVER, CO 80202				
	11/15/2007				
	11/15/2007				