



ENGINEERING STATEMENT

OF

JOHN F.X. BROWNE, P.E.

IN SUPPORT OF AN APPLICATION FOR

REPLACEMENT DIGITAL LOW POWER TELEVISION TRANSLATOR

and

Request For Waiver

KCCI

DES MOINES, IA

Background

Des Moines Hearst-Argyle Television, Inc. (KCCI) is the licensee of KCCI-DT which has been authorized to operate its post-transition DTV facility on Channel 8 (BMPCDT-20080616ABN) at Des Moines, IA, with an ERP of 28.3 kW at an HAAT of 597. The tower is located at the following coordinates:

(NAD27)

41° 48' 35" N

93° 37' 16" W

Since the transition, KCCI has received numerous calls from viewers living in the Des Moines area complaining that they are unable to receive the KCCI digital signal on CH 8 using indoor receiving equipment where they previously received the analog signal. KCCI technical staff has worked with many of these callers to resolve the reception problems but it has become apparent that the VHF CH 8 signal is not providing these viewers with the same quality indoor service that either the analog or the pre-transition digital CH 31 facility did. KCCI now wishes to operate a "Replacement Digital Low Power Television Translator" on CH 31 in hopes of providing better service to these viewers.



Antenna System and Tower and ERP

KCCI now proposes to use a side-mounted directional antenna, an ERI ALP8L1-HSH-31 which will be installed on the KCCI tower (ASR#1016799) at an HAAT of 566m with a radiation center height of 856m AMSL. No modification to the ASR or notice to the FAA would be required since the construction would not increase the overall height of the existing structure. The antenna patterns and tabulations are attached as Exhibits 1a-1d and the dBk table is attached as Table 1. The proposed ERP of the "replacement translator" is 15 kW.

Coverage

The entire principal community of Des Moines, IA is well within the predicted F(50,90) 51dBu contour based on the proposed 15 kW ERP.

Request for Waiver

KCCI is also requesting a waiver of 74.794(a)(1) to allow this facility to use a "full-service" emissions mask instead of the "simple" or "stringent" masks as specified in the cited rule. The "full-service" mask reduces out-of-band emissions even further than either the "simple" or "stringent" mask and eliminates all impermissible interference as noted below.

The Commission's objective is to provide an interference-free environment (as defined by the Commission) for other potentially affected stations on adjacent channels. There is no technical basis for not allowing use of the minimum out-of-band requirements required of full-service applicants at the option of the LPTV applicant if doing so, in fact, reduces interference to acceptable levels. Furthermore, the Commission has already granted several such waivers. The use of technology to permit efficient use of the spectrum is foundational in spectrum management. It is also noted that the emissions "mask" is not a piece of hardware; rather, it is a specification which provides the maximum permissible out-of-band radiation. The Commission relaxed this standard for LPTV applicants and should permit the higher standard to be used by applicants willing to do so.



Interference

Studies were conducted with the proposed parameters using software that emulates the software used by the FCC (OET-69 analysis) and utilizing a "full-service" emissions mask. The results of these studies indicate that there are no domestic full service DTV or Class A stations that would receive more than 0.49% new interference and no authorized low power facilities that would be subject to more than 1.99% interference.

Environmental/RFR

The proposed construction does not require preparation of an Environmental Assessment as it does not involve any of the factors listed in Section 1.1306.

The additional ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.000254 mW/cm^2 which is less than 5% of the MPE for public exposure (0.383 mW/cm^2) at the proposed frequency and, therefore, the proposal is excluded from further consideration.

KCCI agrees to comply with the Commission's requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be trained on RFR issues and encouraged to wear personal RFR monitors when on the structure. The tower base is enclosed by a locked security fence and appropriate signage warning of RFR hazards is posted.

**Certification**

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.

John F. X. Browne, P.E.
September 2, 2009

Exhibit 1a

AZIMUTH PATTERN**Type:****ALP-H****Channel:****31****Directivity:****Numeric****dBd****2.46****3.91****Peak(s) at:****Location:****Polarization:****Horizontal**

Note: Pattern shape and directivity may vary with channel and mouting configuration.

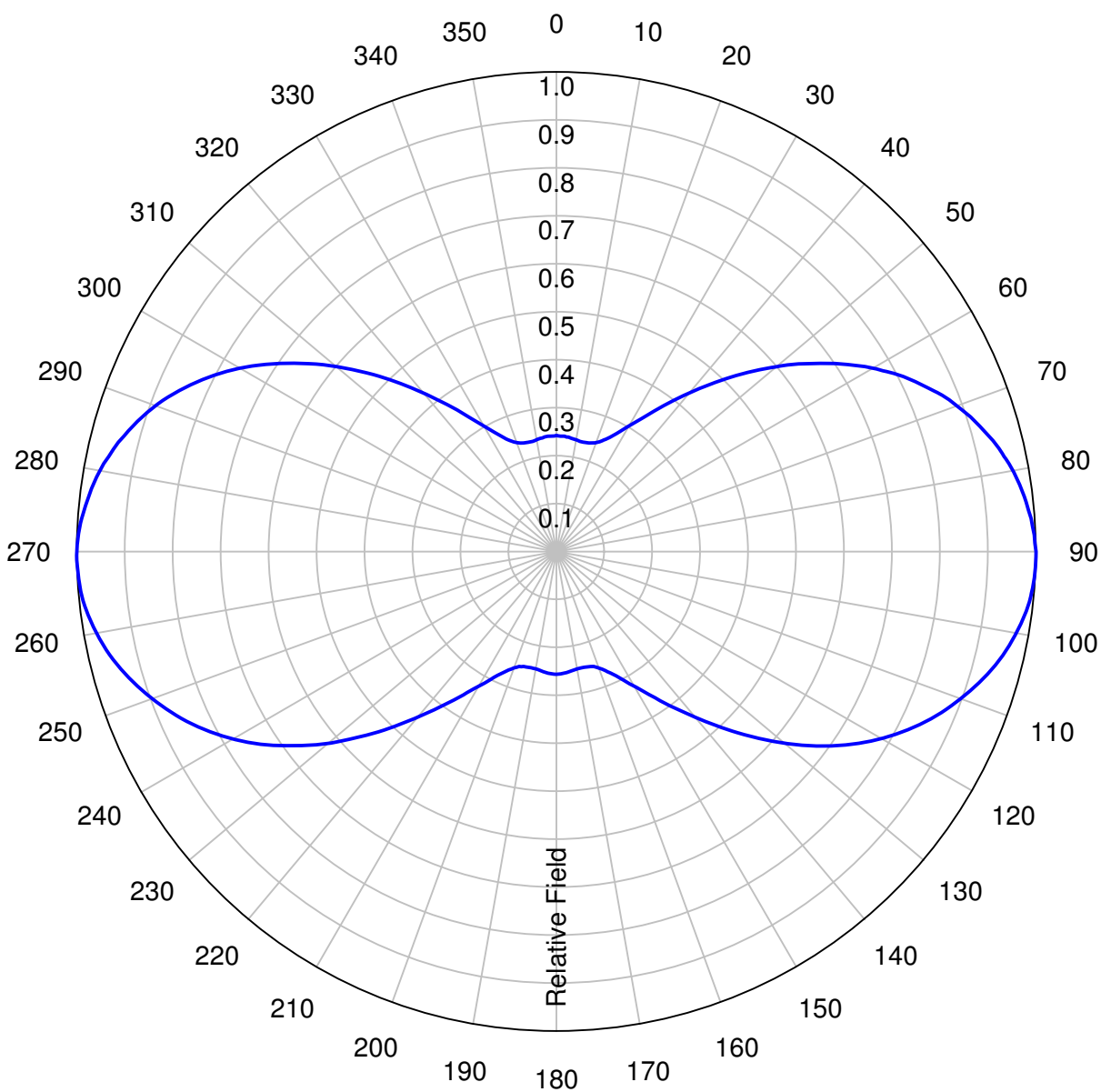
*Preliminary, subject to final design and review.*

Exhibit 1b

TABULATED DATA FOR AZIMUTH PATTERN**Type: ALP-H****Polarization: Horizontal**

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.242	-12.32	92	0.999	-0.01	184	0.254	-11.90	276	0.985	-0.13
2	0.241	-12.36	94	0.997	-0.03	186	0.252	-11.97	278	0.977	-0.20
4	0.241	-12.36	96	0.992	-0.07	188	0.250	-12.04	280	0.967	-0.29
6	0.240	-12.40	98	0.984	-0.14	190	0.248	-12.11	282	0.954	-0.41
8	0.238	-12.47	100	0.974	-0.23	192	0.248	-12.11	284	0.941	-0.53
10	0.237	-12.51	102	0.963	-0.33	194	0.248	-12.11	286	0.925	-0.68
12	0.235	-12.58	104	0.949	-0.45	196	0.249	-12.08	288	0.908	-0.84
14	0.235	-12.58	106	0.933	-0.60	198	0.252	-11.97	290	0.889	-1.02
16	0.236	-12.54	108	0.916	-0.76	200	0.258	-11.77	292	0.868	-1.23
18	0.238	-12.47	110	0.897	-0.94	202	0.266	-11.50	294	0.844	-1.47
20	0.242	-12.32	112	0.877	-1.14	204	0.277	-11.15	296	0.820	-1.72
22	0.248	-12.11	114	0.856	-1.35	206	0.289	-10.78	298	0.793	-2.01
24	0.257	-11.80	116	0.832	-1.60	208	0.306	-10.29	300	0.764	-2.34
26	0.269	-11.40	118	0.807	-1.86	210	0.324	-9.79	302	0.733	-2.70
28	0.284	-10.93	120	0.781	-2.15	212	0.344	-9.27	304	0.701	-3.09
30	0.302	-10.40	122	0.752	-2.48	214	0.368	-8.68	306	0.668	-3.50
32	0.322	-9.84	124	0.722	-2.83	216	0.394	-8.09	308	0.635	-3.94
34	0.346	-9.22	126	0.689	-3.24	218	0.421	-7.51	310	0.600	-4.44
36	0.373	-8.57	128	0.656	-3.66	220	0.451	-6.92	312	0.565	-4.96
38	0.401	-7.94	130	0.622	-4.12	222	0.483	-6.32	314	0.531	-5.50
40	0.432	-7.29	132	0.586	-4.64	224	0.517	-5.73	316	0.497	-6.07
42	0.464	-6.67	134	0.551	-5.18	226	0.551	-5.18	318	0.464	-6.67
44	0.497	-6.07	136	0.517	-5.73	228	0.586	-4.64	320	0.432	-7.29
46	0.531	-5.50	138	0.483	-6.32	230	0.622	-4.12	322	0.401	-7.94
48	0.565	-4.96	140	0.451	-6.92	232	0.656	-3.66	324	0.373	-8.57
50	0.600	-4.44	142	0.421	-7.51	234	0.689	-3.24	326	0.346	-9.22
52	0.635	-3.94	144	0.394	-8.09	236	0.722	-2.83	328	0.322	-9.84
54	0.668	-3.50	146	0.368	-8.68	238	0.752	-2.48	330	0.302	-10.40
56	0.701	-3.09	148	0.344	-9.27	240	0.781	-2.15	332	0.284	-10.93
58	0.733	-2.70	150	0.324	-9.79	242	0.807	-1.86	334	0.269	-11.40
60	0.764	-2.34	152	0.306	-10.29	244	0.832	-1.60	336	0.257	-11.80
62	0.793	-2.01	154	0.289	-10.78	246	0.856	-1.35	338	0.248	-12.11
64	0.820	-1.72	156	0.277	-11.15	248	0.877	-1.14	340	0.242	-12.32
66	0.844	-1.47	158	0.266	-11.50	250	0.897	-0.94	342	0.238	-12.47
68	0.868	-1.23	160	0.258	-11.77	252	0.916	-0.76	344	0.236	-12.54
70	0.889	-1.02	162	0.252	-11.97	254	0.933	-0.60	346	0.235	-12.58
72	0.908	-0.84	164	0.249	-12.08	256	0.949	-0.45	348	0.235	-12.58
74	0.925	-0.68	166	0.248	-12.11	258	0.963	-0.33	350	0.237	-12.51
76	0.941	-0.53	168	0.248	-12.11	260	0.974	-0.23	352	0.238	-12.47
78	0.954	-0.41	170	0.248	-12.11	262	0.984	-0.14	354	0.240	-12.40
80	0.967	-0.29	172	0.250	-12.04	264	0.992	-0.07	356	0.241	-12.36
82	0.977	-0.20	174	0.252	-11.97	266	0.997	-0.03	358	0.241	-12.36
84	0.985	-0.13	176	0.254	-11.90	268	0.999	-0.01	360	0.242	-12.32
86	0.992	-0.07	178	0.255	-11.87	270	1.000	0.00			
88	0.997	-0.03	180	0.256	-11.84	272	0.997	-0.03			
90	1.000	0.00	182	0.255	-11.87	274	0.992	-0.07			

Preliminary, subject to final design and review.

Exhibit 1c

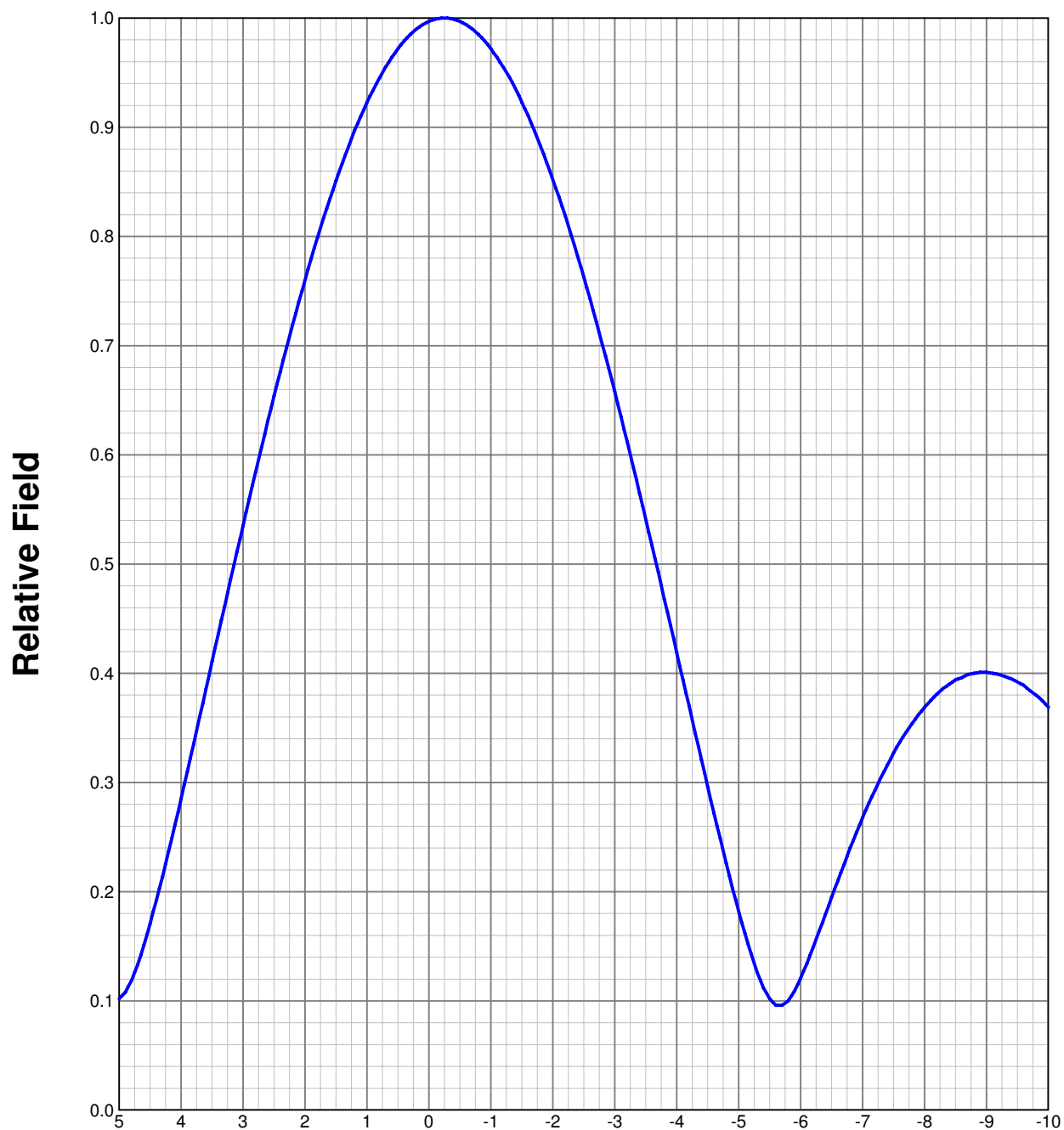
ELEVATION PATTERN**Type:****ALP8L1****Channel:****31****Directivity:****Numeric****dBd****Location:****Main Lobe:****9.05****9.57****Beam Tilt:****-0.25****Horizontal:****9.00****9.54****Polarization:****Horizontal***Preliminary, subject to final design and review.*

Exhibit 1d

TABULATED DATA FOR ELEVATION PATTERN**Type:** ALP8L1**Polarization:** Horizontal

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
5.00	0.102	-19.83	-6.75	0.232	-12.67	-27.00	0.035	-29.12	-50.50	0.053	-25.51	-74.00	0.194	-14.24
4.75	0.126	-17.99	-7.00	0.268	-11.44	-27.50	0.019	-34.42	-51.00	0.064	-23.88	-74.50	0.185	-14.66
4.50	0.171	-15.34	-7.25	0.299	-10.49	-28.00	0.010	-40.00	-51.50	0.073	-22.73	-75.00	0.176	-15.09
4.25	0.225	-12.94	-7.50	0.327	-9.71	-28.50	0.010	-40.00	-52.00	0.079	-22.05	-75.50	0.168	-15.49
4.00	0.285	-10.90	-7.75	0.350	-9.12	-29.00	0.010	-40.00	-52.50	0.084	-21.51	-76.00	0.159	-15.97
3.75	0.348	-9.18	-8.00	0.369	-8.66	-29.50	0.007	-43.10	-53.00	0.086	-21.31	-76.50	0.150	-16.48
3.50	0.411	-7.72	-8.25	0.384	-8.32	-30.00	0.000	-40.00	-53.50	0.086	-21.31	-77.00	0.141	-17.02
3.25	0.474	-6.49	-8.50	0.394	-8.09	-30.50	0.011	-39.17	-54.00	0.083	-21.62	-77.50	0.133	-17.52
3.00	0.535	-5.43	-8.75	0.400	-7.97	-31.00	0.026	-31.70	-54.50	0.078	-22.16	-78.00	0.125	-18.06
2.75	0.595	-4.50	-9.00	0.401	-7.94	-31.50	0.043	-27.33	-55.00	0.071	-22.97	-78.50	0.116	-18.71
2.50	0.654	-3.69	-9.25	0.398	-8.00	-32.00	0.062	-24.15	-55.50	0.062	-24.15	-79.00	0.109	-19.25
2.25	0.708	-2.99	-9.50	0.392	-8.13	-32.50	0.081	-21.83	-56.00	0.051	-25.85	-79.50	0.101	-19.91
2.00	0.760	-2.38	-9.75	0.382	-8.36	-33.00	0.100	-20.00	-56.50	0.040	-27.96	-80.00	0.094	-20.54
1.75	0.808	-1.85	-10.00	0.369	-8.66	-33.50	0.117	-18.64	-57.00	0.031	-30.17	-80.50	0.087	-21.21
1.50	0.851	-1.40	-10.50	0.335	-9.50	-34.00	0.132	-17.59	-57.50	0.027	-31.37	-81.00	0.080	-21.94
1.25	0.889	-1.02	-11.00	0.292	-10.69	-34.50	0.145	-16.77	-58.00	0.034	-29.37	-81.50	0.074	-22.62
1.00	0.923	-0.70	-11.50	0.244	-12.25	-35.00	0.153	-16.31	-58.50	0.048	-26.38	-82.00	0.068	-23.35
0.75	0.950	-0.45	-12.00	0.193	-14.29	-35.50	0.158	-16.03	-59.00	0.064	-23.88	-82.50	0.062	-24.15
0.50	0.972	-0.25	-12.50	0.144	-16.83	-36.00	0.159	-15.97	-59.50	0.082	-21.72	-83.00	0.056	-25.04
0.25	0.988	-0.11	-13.00	0.097	-20.26	-36.50	0.156	-16.14	-60.00	0.101	-19.91	-83.50	0.051	-25.85
0.00	0.997	-0.03	-13.50	0.057	-24.88	-37.00	0.149	-16.54	-60.50	0.119	-18.49	-84.00	0.046	-26.74
-0.25	1.000	0.00	-14.00	0.023	-32.77	-37.50	0.138	-17.20	-61.00	0.137	-17.27	-84.50	0.041	-27.74
-0.50	0.997	-0.03	-14.50	0.001	-60.00	-38.00	0.124	-18.13	-61.50	0.154	-16.25	-85.00	0.037	-28.64
-0.75	0.988	-0.11	-15.00	0.016	-35.92	-38.50	0.107	-19.41	-62.00	0.170	-15.39	-85.50	0.033	-29.63
-1.00	0.972	-0.25	-15.50	0.021	-33.56	-39.00	0.089	-21.01	-62.50	0.186	-14.61	-86.00	0.029	-30.75
-1.25	0.950	-0.44	-16.00	0.019	-34.42	-39.50	0.069	-23.22	-63.00	0.200	-13.98	-86.50	0.025	-32.04
-1.50	0.923	-0.70	-16.50	0.016	-35.92	-40.00	0.050	-26.02	-63.50	0.213	-13.43	-87.00	0.021	-33.56
-1.75	0.890	-1.01	-17.00	0.027	-31.37	-40.50	0.032	-29.90	-64.00	0.224	-13.00	-87.50	0.017	-35.39
-2.00	0.852	-1.39	-17.50	0.051	-25.85	-41.00	0.022	-33.15	-64.50	0.234	-12.62	-88.00	0.014	-37.08
-2.25	0.810	-1.83	-18.00	0.080	-21.94	-41.50	0.027	-31.37	-65.00	0.243	-12.29	-88.50	0.010	-40.00
-2.50	0.763	-2.35	-18.50	0.111	-19.09	-42.00	0.039	-28.18	-65.50	0.250	-12.04	-89.00	0.007	-43.10
-2.75	0.712	-2.96	-19.00	0.142	-16.95	-42.50	0.052	-25.68	-66.00	0.255	-11.87	-89.50	0.003	-50.46
-3.00	0.658	-3.64	-19.50	0.171	-15.34	-43.00	0.063	-24.01	-66.50	0.259	-11.73	-90.00	0.000	-40.00
-3.25	0.601	-4.43	-20.00	0.197	-14.11	-43.50	0.071	-22.97	-67.00	0.262	-11.63			
-3.50	0.541	-5.34	-20.50	0.218	-13.23	-44.00	0.076	-22.38	-67.50	0.263	-11.60			
-3.75	0.481	-6.37	-21.00	0.233	-12.65	-44.50	0.078	-22.16	-68.00	0.263	-11.60			
-4.00	0.419	-7.56	-21.50	0.241	-12.36	-45.00	0.076	-22.38	-68.50	0.262	-11.63			
-4.25	0.357	-8.93	-22.00	0.243	-12.29	-45.50	0.072	-22.85	-69.00	0.260	-11.70			
-4.50	0.296	-10.57	-22.50	0.237	-12.51	-46.00	0.065	-23.74	-69.50	0.256	-11.84			
-4.75	0.237	-12.49	-23.00	0.226	-12.92	-46.50	0.056	-25.04	-70.00	0.252	-11.97			
-5.00	0.182	-14.80	-23.50	0.209	-13.60	-47.00	0.044	-27.13	-70.50	0.247	-12.15			
-5.25	0.135	-17.43	-24.00	0.187	-14.56	-47.50	0.031	-30.17	-71.00	0.241	-12.36			
-5.50	0.102	-19.83	-24.50	0.162	-15.81	-48.00	0.017	-35.39	-71.50	0.234	-12.62			
-5.75	0.098	-20.18	-25.00	0.135	-17.39	-48.50	0.003	-50.46	-72.00	0.227	-12.88			
-6.00	0.121	-18.34	-25.50	0.108	-19.33	-49.00	0.012	-38.42	-72.50	0.219	-13.19			
-6.25	0.157	-16.11	-26.00	0.081	-21.83	-49.50	0.027	-31.37	-73.00	0.211	-13.51			
-6.50	0.195	-14.20	-26.50	0.056	-25.04	-50.00	0.040	-27.96	-73.50	0.203	-13.85			

Preliminary, subject to final design and review.

DIRECTIONAL ANTENNA DATA
KCCI-LD
Rotated 90 Degrees
TABLE #1

Actual Bearing	Pattern Azimuth	Relative Field	ERP (dBk)	CONTOUR(km)
				51 dBu
N000E	0.00	1.000	11.76	65.7
	10.00	0.974	11.53	
	20.00	0.897	10.82	
	30.00	0.781	9.61	
	40.00	0.622	7.64	
N045E	45.00	0.536	6.34	58.7
	50.00	0.451	4.84	
	60.00	0.324	1.97	
	70.00	0.258	-0.01	
	80.00	0.248	-0.35	
N090E	90.00	0.256	-0.07	49.8
	100.00	0.248	-0.35	
	110.00	0.258	-0.01	
	120.00	0.324	1.97	
	130.00	0.451	4.84	
N135E	135.00	0.536	6.34	58.4
	140.00	0.622	7.64	
	150.00	0.781	9.61	
	160.00	0.897	10.82	
	170.00	0.974	11.53	
N180E	180.00	1.000	11.76	66.5
	190.00	0.967	11.47	
	200.00	0.889	10.74	
	210.00	0.764	9.42	
	220.00	0.600	7.32	
N225E	225.00	0.516	6.01	58.4
	230.00	0.432	4.47	
	240.00	0.302	1.36	
	250.00	0.242	-0.56	
	260.00	0.237	-0.74	
N270E	270.00	0.242	-0.56	48.9
	280.00	0.237	-0.74	
	290.00	0.242	-0.56	
	300.00	0.302	1.36	
	310.00	0.432	4.47	
N315E	315.00	0.516	6.01	57.6
	320.00	0.600	7.32	
	330.00	0.764	9.42	
	340.00	0.889	10.74	
	350.00	0.967	11.47	

Maxima: N000E 11.76 dBk
N180E 11.76 dBk
Minima: N257E -0.82 dBk
N283E -0.82 dBk