

Channel-Six - Exhibit #18

December 17, 2005

The first map in this exhibit calculates the existing KMSE population within the area of interference predicted to be caused KAAL-TV6 in Austin, Minnesota. This amounts to 3,180 people. The second map in this exhibit shows the interference area calculated at the new antenna height and power at the newly proposed tower site location. This map study shows that 3,138 people are predicted to be caused interference. Both studies used a study ERP of $ERP(H) + ERP(V)/10$ which is consistent with the use of mixed polarization and is defined in Section 73.525 of the Commission's rules.

Our calculations show that while 20 new people now fall within the newly calculated interference area, 62 people now fall outside the new interference area; therefore, for every new person that was added to the new interference area, more than 2 people were removed from the interference area. The map shows the existing interference area contained by a red line while the newly calculated interference is delineated by a black line. The U.S. 2000 census was used for both studies and the population centroids are shown on the maps. There are no other channel-six TV stations within the, Section 73.525, 235 kilometer cutoff distance for FM channel 204. The U.S.G.S. National Elevation Datum, 3 arc-second, terrain elevation database was used to determine the distance to the appropriate TV protected signal contours and the FM interference signal contours.

Page #4 of this exhibit is a distance to contour table for KAAL-TV, channel-six, showing the pertinent protected signal contours used in this study. Page #5 is a distance to contour table of the FM station's interference contours used in the study. Page #6 is a printout of the operating parameters of KAAL-TV6 and the U/D ratios used in the studies.

Existing KMSE Facilities CH 6 Study, Int. Population 3180

KMSE

BLED19980729KB

Latitude: 44-02-32 N

Longitude: 092-20-26 W

ERP: 0.031 kW

Channel: 204

Frequency: 88.7 MHz

AMSL Height: 518.0 m

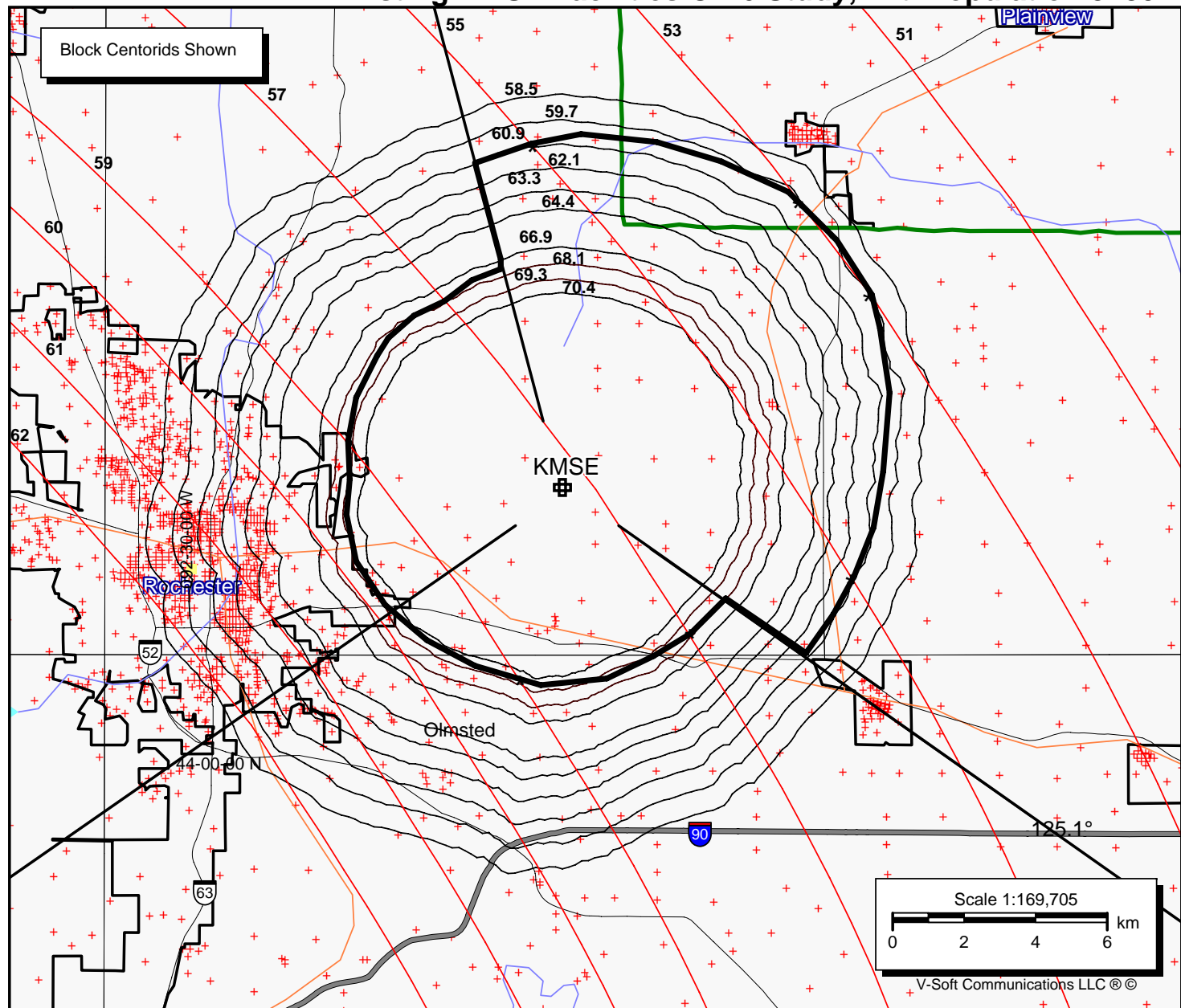
Elevation: 382.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: FCC

Block Centroids Shown



Doug Vernier
721 West 1st Street, Suite A
Cedar Falls, Iowa 50613
Telecommunications Consultants

V-Soft Communications LLC ©

CH 6 -TV Interference Comparison

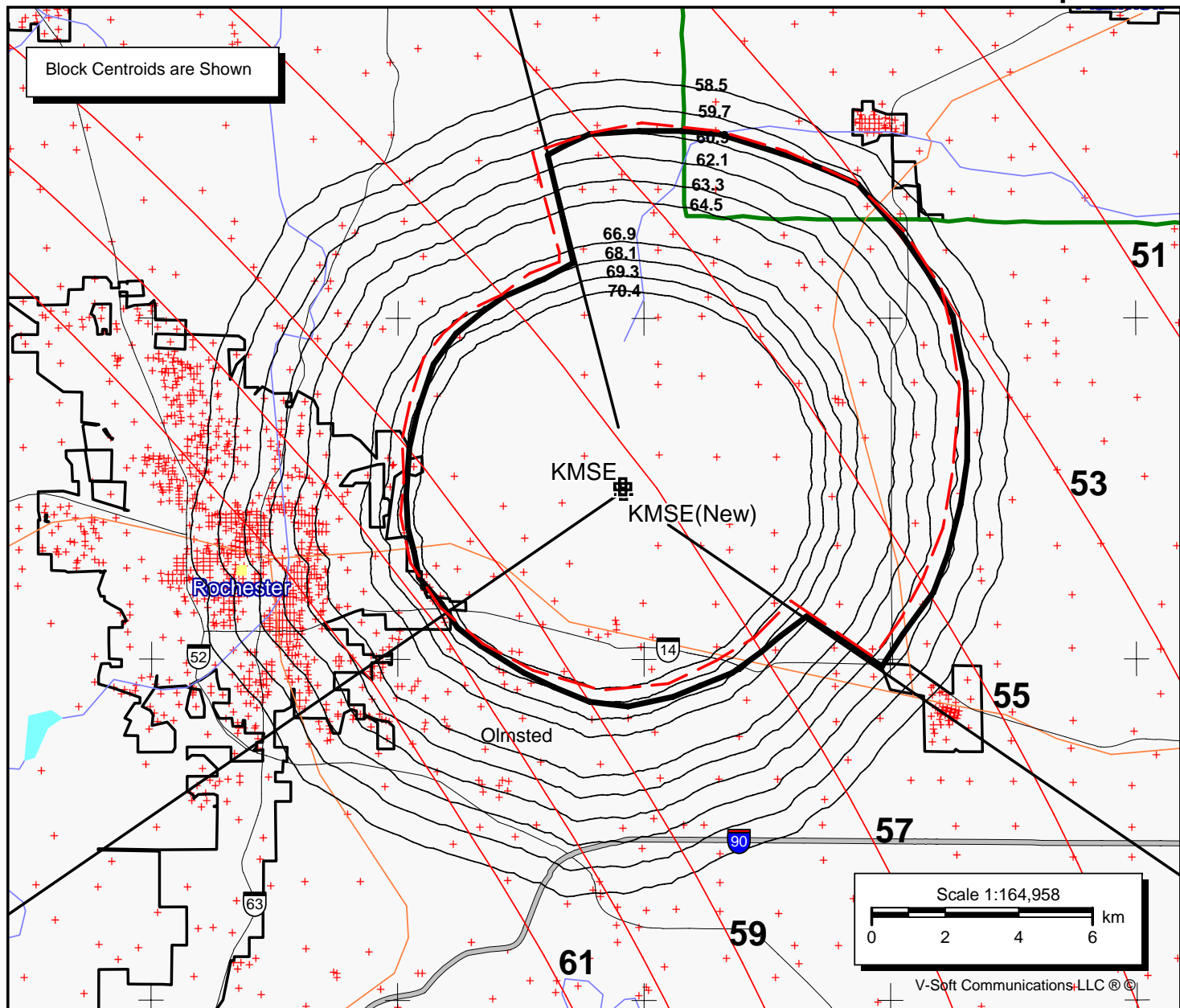
KMSE(New)

Latitude: 44-02-28 N
 Longitude: 092-20-25 W
 ERP: 0.0253 kW
 Channel: 204
 Frequency: 88.7 MHz
 AMSL Height: 543.0 m
 Elevation: 379.8 m
 Horiz. Pattern: Omni
 Vert. Pattern: No
 Prop Model: FCC
 Int. Population 3138
 Int. Gained = 20
 Int. Lost = 62
 Int. Net Gain = 42
 December 19, 2005

KMSE (Existing)

BLED19980729KB
 Latitude: 44-02-32 N
 Longitude: 092-20-26 W
 ERP: 0.31 kW
 Channel: 204
 Frequency: 88.7 MHz
 AMSL Height: 518.0 m
 Elevation: 382.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: No
 Int. Population = 3180

V Doug Vernier
 721 West 1st Street, Suite A
 Cedar Falls, Iowa 50613
 Telecommunications Consultants



N. Lat. = 44 02 32 W. Lng. = 92 20 26 (Existing KMSE, Ch-6 TV interference contour distances)

HAAT and Distance to Contour - FCC Method - NED 03 Arc Sec.

KMSE , Minnesota Public Radio , BLE19980729KB (F1 = F(50-10))

Azi.	AV EL	HAAT	ERP kW	dBk	Field	59.7-F1	62.1-F1	64.5-F1	66.9-F1	68.1-F1	69.3-F1	70.4-F1
000	348.8	169.2	0.0310	-15.09	1.000	10.28	8.95	7.74	6.72	6.26	5.83	5.44
010	351.2	166.8	0.0310	-15.09	1.000	10.20	8.88	7.68	6.67	6.22	5.79	5.40
020	348.6	169.4	0.0310	-15.09	1.000	10.28	8.95	7.74	6.72	6.26	5.83	5.44
030	350.4	167.6	0.0310	-15.09	1.000	10.23	8.90	7.70	6.69	6.23	5.80	5.41
040	346.1	171.9	0.0310	-15.09	1.000	10.37	9.03	7.80	6.77	6.31	5.87	5.48
050	352.1	165.9	0.0310	-15.09	1.000	10.17	8.85	7.66	6.66	6.20	5.77	5.39
060	353.5	164.5	0.0310	-15.09	1.000	10.12	8.81	7.62	6.63	6.18	5.75	5.37
070	364.5	153.5	0.0310	-15.09	1.000	9.74	8.47	7.35	6.40	5.97	5.55	5.18
080	369.0	149.0	0.0310	-15.09	1.000	9.59	8.33	7.24	6.31	5.88	5.47	5.10
090	378.1	139.9	0.0310	-15.09	1.000	9.27	8.04	7.01	6.12	5.70	5.30	4.94
100	374.6	143.4	0.0310	-15.09	1.000	9.39	8.16	7.10	6.20	5.77	5.37	5.00
110	381.8	136.2	0.0310	-15.09	1.000	9.14	7.93	6.93	6.04	5.63	5.23	4.88
120	383.4	134.6	0.0310	-15.09	1.000	9.08	7.89	6.89	6.01	5.60	5.20	4.85
130	390.2	127.8	0.0310	-15.09	1.000	8.84	7.69	6.73	5.87	5.46	5.07	4.72
140	387.7	130.3	0.0310	-15.09	1.000	8.93	7.76	6.79	5.92	5.51	5.12	4.77
150	382.3	135.8	0.0310	-15.09	1.000	9.12	7.92	6.92	6.03	5.62	5.22	4.87
160	379.6	138.4	0.0310	-15.09	1.000	9.21	8.00	6.98	6.09	5.67	5.27	4.91
170	372.3	145.7	0.0310	-15.09	1.000	9.47	8.23	7.16	6.24	5.82	5.41	5.04
180	358.2	159.8	0.0310	-15.09	1.000	9.96	8.67	7.50	6.53	6.09	5.67	5.29
190	356.7	161.3	0.0310	-15.09	1.000	10.02	8.71	7.54	6.56	6.12	5.69	5.32
200	362.4	155.6	0.0310	-15.09	1.000	9.82	8.54	7.40	6.45	6.01	5.59	5.22
210	352.4	165.6	0.0310	-15.09	1.000	10.16	8.84	7.65	6.65	6.20	5.77	5.38
220	344.4	173.6	0.0310	-15.09	1.000	10.42	9.07	7.84	6.80	6.34	5.89	5.50
230	332.4	185.6	0.0310	-15.09	1.000	10.76	9.39	8.12	7.01	6.52	6.06	5.66
240	339.2	178.8	0.0310	-15.09	1.000	10.57	9.22	7.96	6.90	6.42	5.97	5.58
250	321.7	196.3	0.0310	-15.09	1.000	11.05	9.65	8.36	7.20	6.69	6.22	5.80
260	324.3	193.7	0.0310	-15.09	1.000	10.98	9.58	8.30	7.15	6.65	6.18	5.76
270	337.5	180.5	0.0310	-15.09	1.000	10.62	9.26	8.00	6.93	6.45	5.99	5.60
280	341.0	177.0	0.0310	-15.09	1.000	10.52	9.17	7.92	6.86	6.39	5.94	5.55
290	332.2	185.8	0.0310	-15.09	1.000	10.77	9.39	8.12	7.01	6.53	6.07	5.67
300	335.6	182.4	0.0310	-15.09	1.000	10.68	9.31	8.04	6.96	6.48	6.02	5.62
310	330.5	187.5	0.0310	-15.09	1.000	10.81	9.43	8.16	7.04	6.55	6.09	5.69
320	345.7	172.3	0.0310	-15.09	1.000	10.38	9.04	7.81	6.78	6.32	5.87	5.49
330	358.1	159.9	0.0310	-15.09	1.000	9.97	8.67	7.50	6.53	6.09	5.67	5.29
340	356.6	161.4	0.0310	-15.09	1.000	10.02	8.72	7.54	6.57	6.12	5.69	5.32
350	351.3	166.7	0.0310	-15.09	1.000	10.20	8.88	7.68	6.67	6.22	5.78	5.40

Ave El= 355.40 M HAAT= 162.60 M AMSL= 518 M

N. Lat. = 440228 W. Lng. = 922025 (Proposed KMSE Ch-6 Study ERP used)

HAAT and Distance to Contour - FCC Method - NED 03 Arc Sec.

KMSE , Minnesota Public Radio , BLE19980729KB (F1 = F(50-10))

Azi.	AV EL	HAAT	ERP kW	dBk	Field	59.7-F1	62.1-F1	64.5-F1	66.9-F1	68.1-F1	69.3-F1	70.4-F1
000	349.4	193.6	0.0253	-15.97	1.000	10.45	9.10	7.85	6.78	6.30	5.84	5.44
010	351.6	191.4	0.0253	-15.97	1.000	10.39	9.05	7.81	6.75	6.27	5.82	5.42
020	348.7	194.3	0.0253	-15.97	1.000	10.47	9.12	7.86	6.79	6.31	5.85	5.45
030	350.8	192.2	0.0253	-15.97	1.000	10.41	9.07	7.82	6.76	6.28	5.83	5.43
040	348.0	195.0	0.0253	-15.97	1.000	10.49	9.13	7.88	6.80	6.32	5.86	5.46
050	353.8	189.2	0.0253	-15.97	1.000	10.34	8.99	7.76	6.71	6.24	5.79	5.39
060	354.2	188.8	0.0253	-15.97	1.000	10.33	8.98	7.75	6.70	6.23	5.78	5.39
070	363.3	179.7	0.0253	-15.97	1.000	10.08	8.77	7.56	6.56	6.10	5.67	5.28
080	370.8	172.2	0.0253	-15.97	1.000	9.87	8.57	7.41	6.43	5.98	5.56	5.18
090	380.2	162.8	0.0253	-15.97	1.000	9.57	8.30	7.20	6.26	5.83	5.41	5.04
100	374.1	168.9	0.0253	-15.97	1.000	9.77	8.48	7.34	6.37	5.93	5.51	5.14
110	381.3	161.7	0.0253	-15.97	1.000	9.53	8.27	7.18	6.24	5.81	5.39	5.02
120	383.1	159.9	0.0253	-15.97	1.000	9.48	8.22	7.13	6.21	5.78	5.37	5.00
130	390.3	152.7	0.0253	-15.97	1.000	9.24	8.00	6.97	6.07	5.65	5.24	4.88
140	387.4	155.6	0.0253	-15.97	1.000	9.34	8.09	7.04	6.12	5.70	5.29	4.93
150	381.9	161.1	0.0253	-15.97	1.000	9.52	8.26	7.16	6.23	5.80	5.39	5.02
160	379.7	163.3	0.0253	-15.97	1.000	9.59	8.32	7.21	6.27	5.84	5.42	5.05
170	371.8	171.2	0.0253	-15.97	1.000	9.84	8.54	7.39	6.42	5.97	5.55	5.17
180	358.4	184.6	0.0253	-15.97	1.000	10.22	8.88	7.67	6.64	6.17	5.73	5.34
190	356.0	187.0	0.0253	-15.97	1.000	10.28	8.94	7.71	6.67	6.20	5.76	5.37
200	362.5	180.5	0.0253	-15.97	1.000	10.11	8.79	7.58	6.57	6.11	5.68	5.29
210	353.1	189.9	0.0253	-15.97	1.000	10.36	9.01	7.77	6.72	6.25	5.80	5.40
220	344.7	198.3	0.0253	-15.97	1.000	10.57	9.21	7.95	6.86	6.37	5.90	5.50
230	332.4	210.6	0.0253	-15.97	1.000	10.88	9.50	8.21	7.06	6.55	6.07	5.65
240	340.6	202.4	0.0253	-15.97	1.000	10.68	9.31	8.03	6.92	6.43	5.96	5.55
250	319.8	223.2	0.0253	-15.97	1.000	11.19	9.78	8.47	7.28	6.74	6.24	5.80
260	324.3	218.7	0.0253	-15.97	1.000	11.08	9.68	8.38	7.20	6.67	6.18	5.74
270	334.7	208.3	0.0253	-15.97	1.000	10.83	9.44	8.16	7.02	6.51	6.03	5.62
280	340.8	202.2	0.0253	-15.97	1.000	10.67	9.30	8.03	6.92	6.42	5.95	5.54
290	332.5	210.5	0.0253	-15.97	1.000	10.88	9.49	8.21	7.06	6.55	6.06	5.65
300	336.5	206.5	0.0253	-15.97	1.000	10.78	9.40	8.12	6.99	6.49	6.01	5.60
310	329.4	213.6	0.0253	-15.97	1.000	10.96	9.56	8.27	7.11	6.59	6.11	5.68
320	345.8	197.2	0.0253	-15.97	1.000	10.54	9.19	7.92	6.84	6.35	5.89	5.48
330	358.2	184.8	0.0253	-15.97	1.000	10.22	8.89	7.67	6.64	6.17	5.73	5.34
340	356.9	186.1	0.0253	-15.97	1.000	10.26	8.92	7.70	6.66	6.19	5.75	5.36
350	351.8	191.2	0.0253	-15.97	1.000	10.39	9.04	7.80	6.74	6.26	5.81	5.41

Ave El= 355.53 M HAAT= 187.47 M AMSL= 543

N. Lat. = 43 37 42 W. Lng. = 93 09 12

HAAT and Distance to Contour - FCC Method - NED 03 Arc Sec.

KAAL , Kaal-tv, Lic , BLCT2236 - Protected Contours (F5 = 50-50)

Azi.	AV EL	HAAT	ERP kW	dBk	Field	51-F5	53-F5	55-F5	57-F5	59-F5	61-F5
000	374.5	321.5	100.0000	20.00	1.000	95.13	90.39	85.68	80.99	76.32	71.65
010	378.7	317.3	100.0000	20.00	1.000	94.84	90.10	85.38	80.69	76.01	71.35
020	383.3	312.7	100.0000	20.00	1.000	94.52	89.77	85.04	80.35	75.67	71.00
030	384.6	311.4	100.0000	20.00	1.000	94.43	89.68	84.95	80.25	75.57	70.91
040	383.6	312.4	100.0000	20.00	1.000	94.50	89.75	85.02	80.32	75.64	70.98
050	382.2	313.8	100.0000	20.00	1.000	94.60	89.85	85.13	80.43	75.75	71.09
060	378.1	317.9	100.0000	20.00	1.000	94.89	90.15	85.43	80.73	76.06	71.39
070	374.8	321.2	100.0000	20.00	1.000	95.11	90.37	85.66	80.97	76.30	71.63
080	372.1	323.9	100.0000	20.00	1.000	95.28	90.56	85.85	81.17	76.50	71.83
090	370.6	325.4	100.0000	20.00	1.000	95.38	90.66	85.96	81.28	76.61	71.94
100	369.6	326.4	100.0000	20.00	1.000	95.45	90.72	86.03	81.35	76.68	72.01
110	367.1	328.9	100.0000	20.00	1.000	95.61	90.89	86.21	81.54	76.87	72.20
120	367.6	328.4	100.0000	20.00	1.000	95.57	90.86	86.17	81.50	76.83	72.16
130	366.3	329.7	100.0000	20.00	1.000	95.66	90.95	86.27	81.60	76.93	72.26
140	367.5	328.5	100.0000	20.00	1.000	95.59	90.87	86.18	81.51	76.84	72.17
150	370.7	325.3	100.0000	20.00	1.000	95.38	90.65	85.96	81.28	76.60	71.94
160	374.9	321.1	100.0000	20.00	1.000	95.10	90.36	85.65	80.96	76.29	71.62
170	375.7	320.3	100.0000	20.00	1.000	95.05	90.31	85.60	80.91	76.23	71.57
180	376.8	319.2	100.0000	20.00	1.000	94.98	90.23	85.52	80.83	76.15	71.49
190	379.8	316.2	100.0000	20.00	1.000	94.77	90.02	85.30	80.61	75.93	71.27
200	384.9	311.1	100.0000	20.00	1.000	94.41	89.66	84.93	80.23	75.55	70.89
210	385.4	310.6	100.0000	20.00	1.000	94.37	89.62	84.89	80.19	75.52	70.85
220	381.0	315.0	100.0000	20.00	1.000	94.69	89.94	85.22	80.52	75.84	71.18
230	378.9	317.1	100.0000	20.00	1.000	94.83	90.09	85.37	80.68	76.00	71.33
240	378.5	317.5	100.0000	20.00	1.000	94.86	90.12	85.40	80.70	76.03	71.36
250	378.9	317.1	100.0000	20.00	1.000	94.83	90.09	85.37	80.67	76.00	71.33
260	379.1	316.9	100.0000	20.00	1.000	94.82	90.07	85.35	80.66	75.98	71.32
270	376.6	319.4	100.0000	20.00	1.000	94.99	90.25	85.53	80.84	76.16	71.50
280	379.4	316.6	100.0000	20.00	1.000	94.79	90.05	85.33	80.63	75.95	71.29
290	384.0	312.0	100.0000	20.00	1.000	94.47	89.72	85.00	80.30	75.62	70.96
300	384.5	311.5	100.0000	20.00	1.000	94.43	89.68	84.95	80.26	75.58	70.91
310	385.0	311.0	100.0000	20.00	1.000	94.40	89.65	84.92	80.22	75.54	70.88
320	380.7	315.3	100.0000	20.00	1.000	94.70	89.96	85.24	80.54	75.86	71.20
330	375.6	320.4	100.0000	20.00	1.000	95.06	90.32	85.61	80.92	76.24	71.58
340	372.2	323.8	100.0000	20.00	1.000	95.28	90.55	85.85	81.16	76.49	71.82
350	372.2	323.8	100.0000	20.00	1.000	95.28	90.55	85.85	81.16	76.49	71.82

Ave El= 377.10 M HAAT= 318.90 M AMSL= 696 M

Channel-Six TV Protection Study

KAAL LI 06- 2C Dom 100.000 kW 320 M HAAT V HN
Austin MN 696M COR AMSL
Lat= 43 37 42, Lng= 93 09 12
Kaal-tv, Llc BLCT2236
Fac ID# 18285
Dist.=79.87415 km, Azi=235.1°, Rev Azi=54.6°

Direct line HAAT Grade B, 47 dBu= 105.02 km & Grade A= 55.58 km

Distance from reference to Grade B = -25.15 km

Cutoff Dist from Full Service= 235

Maximum Co-located power= 5 kW

KAAL Signal Contour at Reference location = 57.4 dBu

CH. 204, U/D ratio = 4.9 dB, Maximum FM signal = 62.3 dBu , add 6 dB if within angle.

TV/FM D to U values

47.0	56.3	55.0	60.9	63.0	65.7	71.0	71.5	79.0	78.0	87.0	84.7
48.0	56.8	56.0	61.5	64.0	66.3	72.0	72.2	80.0	78.8	88.0	85.6
49.0	57.4	57.0	62.1	65.0	67.0	73.0	73.0	81.0	79.7	89.0	86.4
50.0	57.9	58.0	62.7	66.0	67.7	74.0	73.8	82.0	80.5	90.0	87.3
51.0	58.5	59.0	63.3	67.0	68.5	75.0	74.7	83.0	81.4	91.0	87.3
52.0	59.1	60.0	63.8	68.0	69.2	76.0	75.5	84.0	82.2	92.0	87.3
53.0	59.7	61.0	64.4	69.0	70.0	77.0	76.4	85.0	83.1	93.0	87.3
54.0	60.3	62.0	65.0	70.0	70.7	78.0	77.2	86.0	83.9	94.0	87.3