



ENGINEERING EXHIBIT

**APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
BP-20030804ACR**

**WENNES COMMUNICATIONS STATIONS, INC.
KNEI(AM), WAUKON, IOWA**

NOVEMBER 2004

Prepared by:

**Evans Associates
Consulting Communications Engineers
210 S. Main Street
Thiensville, WI 53092
(262) 242-6000 · Fax (262) 242-6045
E-mail: ben@evansassoc.com
www.evansassoc.com**

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ENGINEERING STATEMENT

This engineering statement, the attached figures, and all calculations relating thereto have been prepared by or under the direction of B. Benjamin Evans, P.E. of Evans Associates, Consulting Communications Engineers in Thiensville, Wisconsin. This exhibit has been prepared on behalf of Wennes Communications Stations, Inc., licensee of AM broadcast station KNEI assigned to Waukon, Iowa. Evans Associates has been retained by Wennes to prepare the instant engineering exhibit to modify a construction permit (BP-20030804ACR) authorizing a frequency change from 1140 KHz to 1160 KHz, and to operate nighttime at low power (ND-2).

PRELIMINARY

KNEI presently operates on 1140 kHz with 1 KW of power daytime only using a single tower (ND-D). KNEI has been authorized to move to 1160 KHz, operate at 0.53 KW day, and to operate at night with 26 watts. The purpose of this application is to request an increase in the authorized daytime power to 0.88 KW. No other changes are proposed herein.

RF EXPOSURE CONSIDERATIONS

A fence with a one-meter inscribed radius will be erected around the tower, with a locked gate and warning signs. This fence will keep the RF exposure level below FCC limits for the general public. Service personnel inside the fence or on the tower will be protected by timed exposure, power reduction, or complete power turn-off.

SIGNAL COVERAGE

The proposed predicted 5 mV/m daytime contour extends well beyond the Waukon city limits in all directions. Thus, the proposed facility will easily serve Waukon with a 5 mV/m signal daytime.



DAYTIME ALLOCATIONS

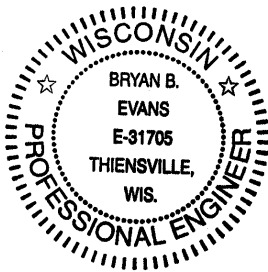
The proposed frequency change can be made in conformance with all FCC technical rules. In order to establish that there would be no contour overlap with KOWZ, 1170 KHz in Waseca, MN, field strength measurements were taken on KNEI on the 270°, 290° and 310° True azimuths. These measurements, herein attached, demonstrate that the conductivities along those paths are lower than shown on the M-3 map. Figure 3 shows the pertinent protected and interference contours of KNEI, as proposed, and KOWZ, with the measured conductivities applied to the calculations. As can be seen, no overlap would result.

On the basis of measurements taken on WYLL, 1160 KHz, Chicago, IL (which were submitted with the original application and are submitted herewith as well), no overlap between KNEI and WYLL would be caused by this proposal (see Figure 2).

This statement and attached figures are true and accurate to the best of my knowledge and belief.

B. Benjamin Evans, P.E.
Consulting Engineer for Wennes Communications Stations, Inc.

November 12, 2004



DISTANCES TO PROPOSED CONTOURS
KNEI(AM), 1160 KHz
WAUKON, IOWA

Coordinates: N 43°-17'-13"; W 91°-28'-06"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :					
		Contour levels in mV/m.					
		1000.000	25.000	5.000	2.000	.500	.250
.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
5.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
10.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
15.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
20.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
25.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
30.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
35.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
40.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
45.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
50.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
55.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
60.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
65.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
70.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
75.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
80.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
85.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
90.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
95.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
100.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
105.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
110.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
115.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
120.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
125.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
130.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
135.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
140.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
145.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
150.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
155.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
160.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
165.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
170.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
175.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
180.0	283.86	.27	5.97	15.21	23.57	43.28	59.76
185.0	283.86	.27	5.97	15.21	23.57	43.28	62.53
190.0	283.86	.27	5.97	15.21	23.57	43.96	64.66
195.0	283.86	.27	5.97	15.21	23.57	46.01	66.70
200.0	283.86	.27	5.97	15.21	23.57	48.38	69.08
205.0	283.86	.27	5.97	15.21	23.57	50.20	70.90

DISTANCES TO PROPOSED CONTOURS
KNEI(AM), 1160 KHz
WAUKON, IOWA

Coordinates: N 43°-17'-13" ; W 91°-28'-06"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :					
		Contour levels in mV/m.					
		1000.000	25.000	5.000	2.000	.500	.250
210.0	283.86	.27	5.97	15.21	23.57	51.61	72.31
215.0	283.86	.27	5.97	15.21	23.92	52.74	73.44
220.0	283.86	.27	5.97	15.21	24.81	53.62	74.32
225.0	283.86	.27	5.97	15.21	25.66	54.48	75.17
230.0	283.86	.27	5.97	15.21	26.46	55.28	75.98
235.0	283.86	.27	5.97	15.21	27.10	55.91	76.61
240.0	283.86	.27	5.97	15.21	27.58	56.40	77.10
245.0	283.86	.27	5.97	15.21	27.97	56.78	77.48
250.0	283.86	.27	5.97	15.26	28.26	57.07	77.77
255.0	283.86	.27	5.97	15.47	28.47	57.28	77.98
259.9	283.86	.27	5.97	15.61	28.60	57.42	78.12
260.1	283.86	.27	8.18	17.15	26.74	52.71	73.38
265.0	283.86	.27	8.18	17.15	26.74	52.71	73.38
270.0*	283.86	.27	8.18	17.15	26.74	52.71	73.38
275.0	283.86	.27	8.18	17.15	26.74	52.71	73.38
279.9	283.86	.27	8.18	17.15	26.74	52.71	73.38
280.1	283.86	.28	7.68	17.15	26.74	48.86	65.53
285.0	283.86	.28	7.68	17.15	26.74	48.86	65.53
290.0*	283.86	.28	7.68	17.15	26.74	48.86	65.53
295.0	283.86	.28	7.68	17.15	26.74	48.86	65.53
299.9	283.86	.28	7.68	17.15	26.74	48.86	65.53
300.1	283.86	.23	5.26	13.00	20.08	43.28	58.42
305.0	283.86	.23	5.26	13.00	20.08	43.28	58.42
310.0*	283.86	.23	5.26	13.00	20.08	43.28	58.42
315.0	283.86	.23	5.26	13.00	20.08	43.28	58.42
319.9	283.86	.23	5.26	13.00	20.08	43.28	58.42
320.1	283.86	.27	5.97	15.21	23.81	52.62	73.32
325.0	283.86	.27	5.97	15.21	23.57	51.06	71.76
330.0	283.86	.27	5.97	15.21	23.57	49.00	69.70
335.0	283.86	.27	5.97	15.21	23.57	46.24	66.94
340.0	283.86	.27	5.97	15.21	23.57	43.28	63.09
345.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
350.0	283.86	.27	5.97	15.21	23.57	43.28	58.42
355.0	283.86	.27	5.97	15.21	23.57	43.28	58.42

* Measured radials. Conductivities applied up to ± 10 degrees of measured radial as per FCC guidelines.

M-3 conductivities applied on all other radials.

Figure 2
Contour Protection Study
Prop. KNEI vs. WYLL

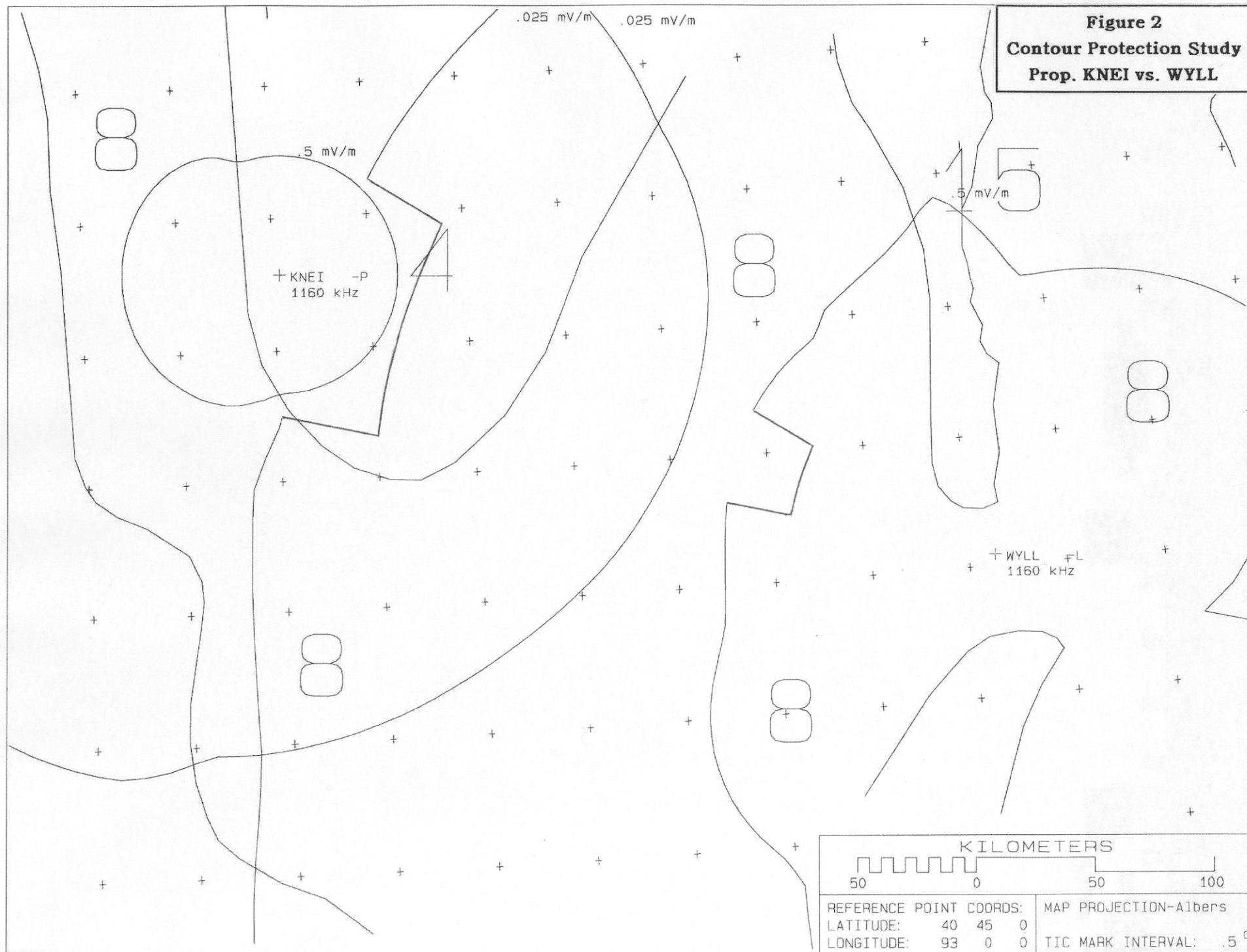


Figure 3 - Contour Protection Study, KNEI vs. KOWZ

KNEI-Prop

Latitude: 43-17-13 N
Longitude: 091-28-06 W
ERP: 0.880 kW
Frequency: 1160 KHz
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

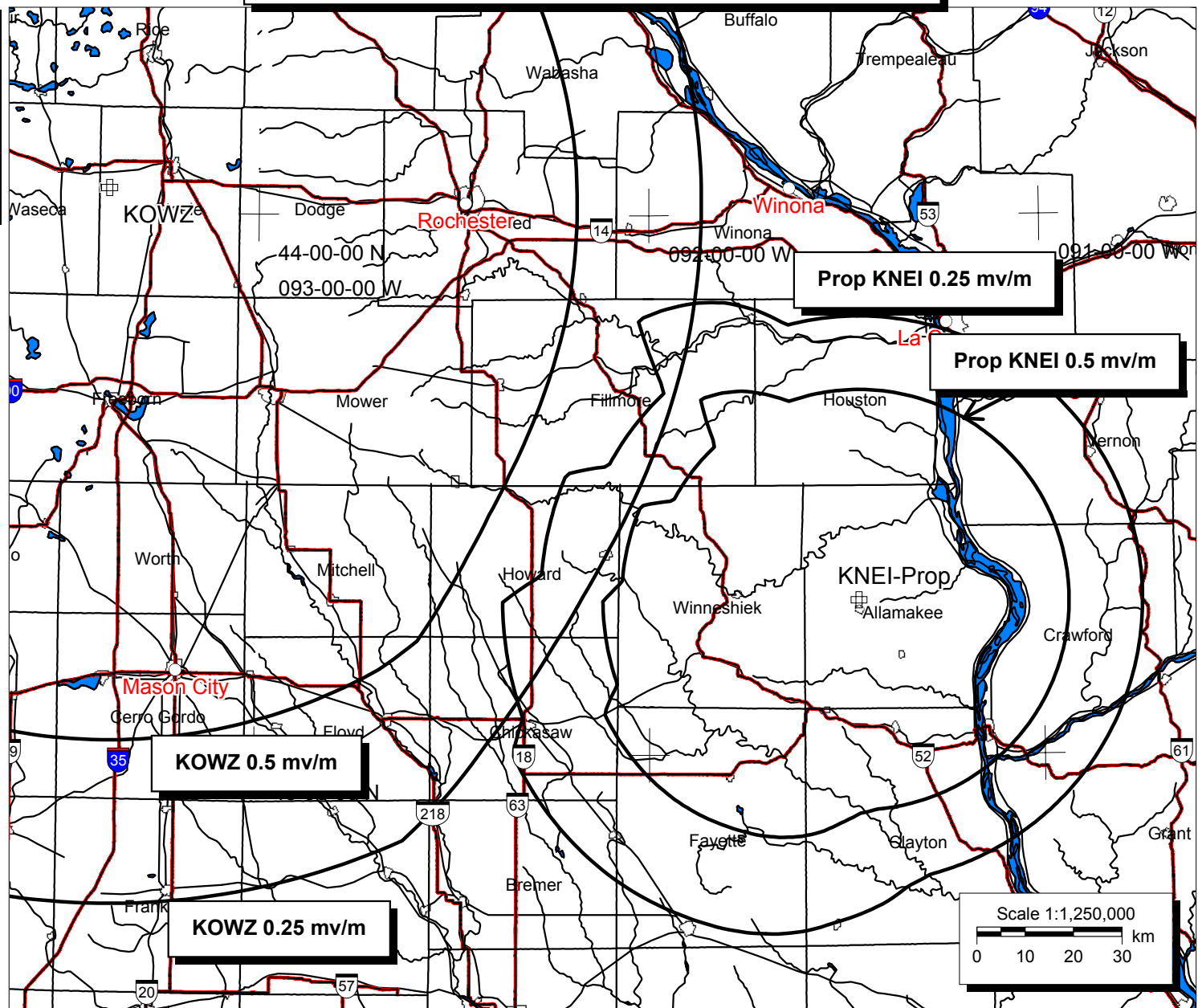
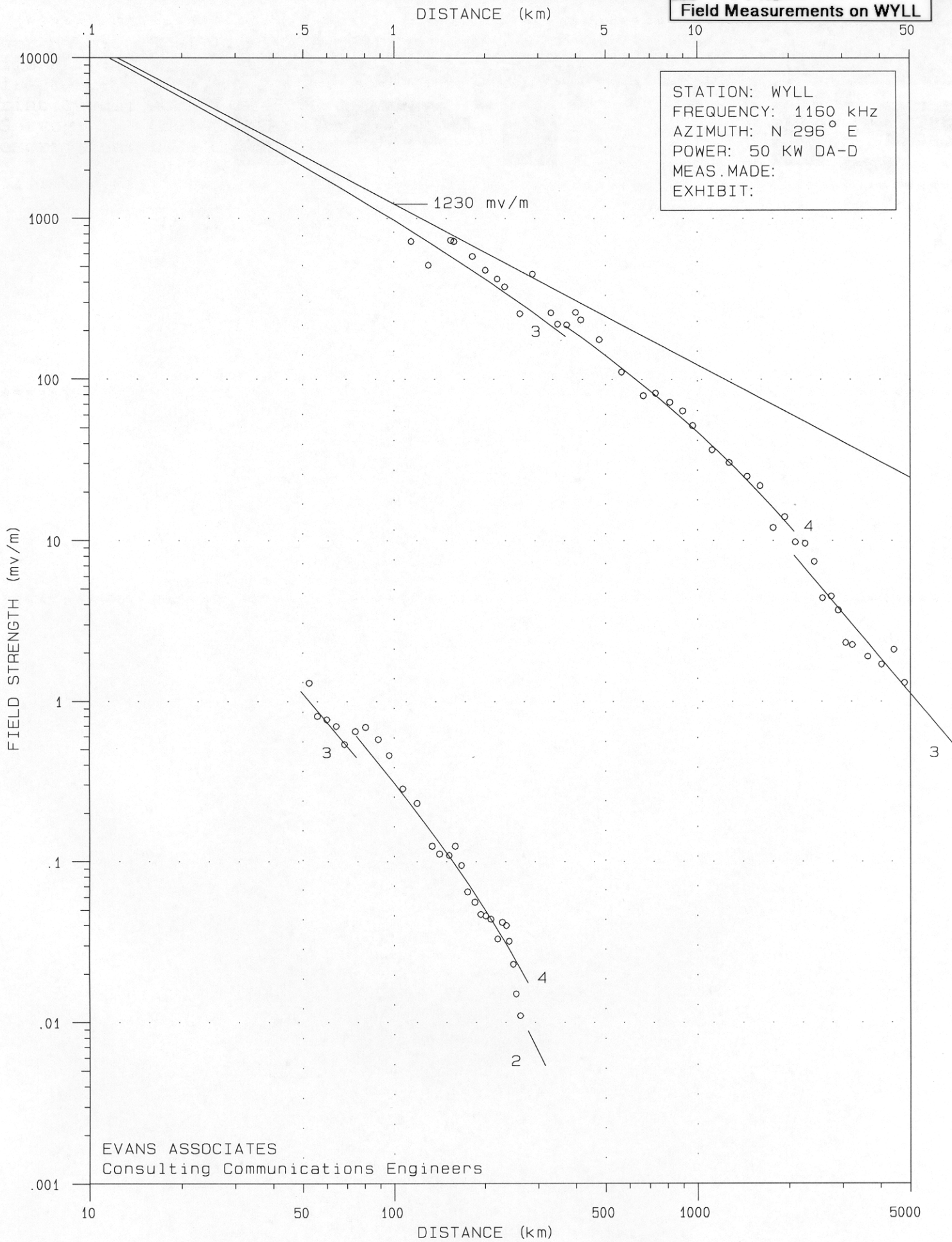


Figure 4-A
Field Measurements on WYLL



Field Strength Measurements
WYLL(AM), 1160 KHz
Chicago, Illinois
296° Radial- Day Pattern

Figure 4-B
Page 1 of 2

<u>Point #</u>	<u>Dist. (Km)</u>	<u>Measured Field (mV/m)</u>
1	1.14	720
2	1.3	510
3	1.54	730
4	1.58	720
5	1.82	580
6	2.01	475
7	2.2	420
8	2.33	375
9	2.61	255
10	2.88	450
11	3.31	258
12	3.48	220
13	3.73	218
14	3.99	260
15	4.15	234
16	4.78	176
17	5.65	111
18	6.66	79
19	7.3	82
20	8.13	72
21	8.95	63.5
22	9.65	51.5
23	11.17	36.5
24	12.7	30.5
25	14.55	25
26	16.03	21.9
27	17.7	12
28	19.31	14
29	20.92	9.8
30	22.53	9.6
31	24.14	7.4
32	25.7	4.4
33	27.5	4.5
34	29	3.7
35	30.6	2.32
36	32.2	2.25
37	36.2	1.9

Points 1-15 and points 50-68 measured 4/30/2003 Points 16-49 measured 6/25/2003.

All points measured by Nels Harvey using a Potomac Instruments FIM-41 Field Strength meter. Distances and azimuth determined by GPS.

Field Strength Measurements
WYLL(AM), 1160 KHz
Chicago, Illinois
296° Radial- Day Pattern

Figure 4-B
Page 2 of 2

<u>Point #</u>	<u>Dist. (Km)</u>	<u>Measured Field (mV/m)</u>
38	40.2	1.7
39	44.2	2.1
40	47.9	1.3
41	52.5	1.3
42	55.8	0.81
43	60	0.77
44	64.4	0.7
45	68.5	0.54
46	74.5	0.65
47	80.6	0.69
48	88.8	0.58
49	96.4	0.46
50	106.8	0.285
51	119.2	0.231
52	133.7	0.125
53	141.3	0.112
54	152.2	0.11
55	159.3	0.125
56	167	0.095
57	175	0.065
58	185	0.056
59	193	0.047
60	201	0.046
61	209	0.044
62	220	0.033
63	228	0.042
64	235	0.04
65	240	0.032
66	248	0.023
67	253	0.015
68	261	0.011

Points 1-15 and points 50-68 measured 4/30/2003 Points 16-49 measured 6/25/2003.

All points measured by Nels Harvey using a Potomac Instruments FIM-41 Field Strength meter. Distances and azimuth determined by GPS.

Figure 5-A-1
Field Measurements on KNEI

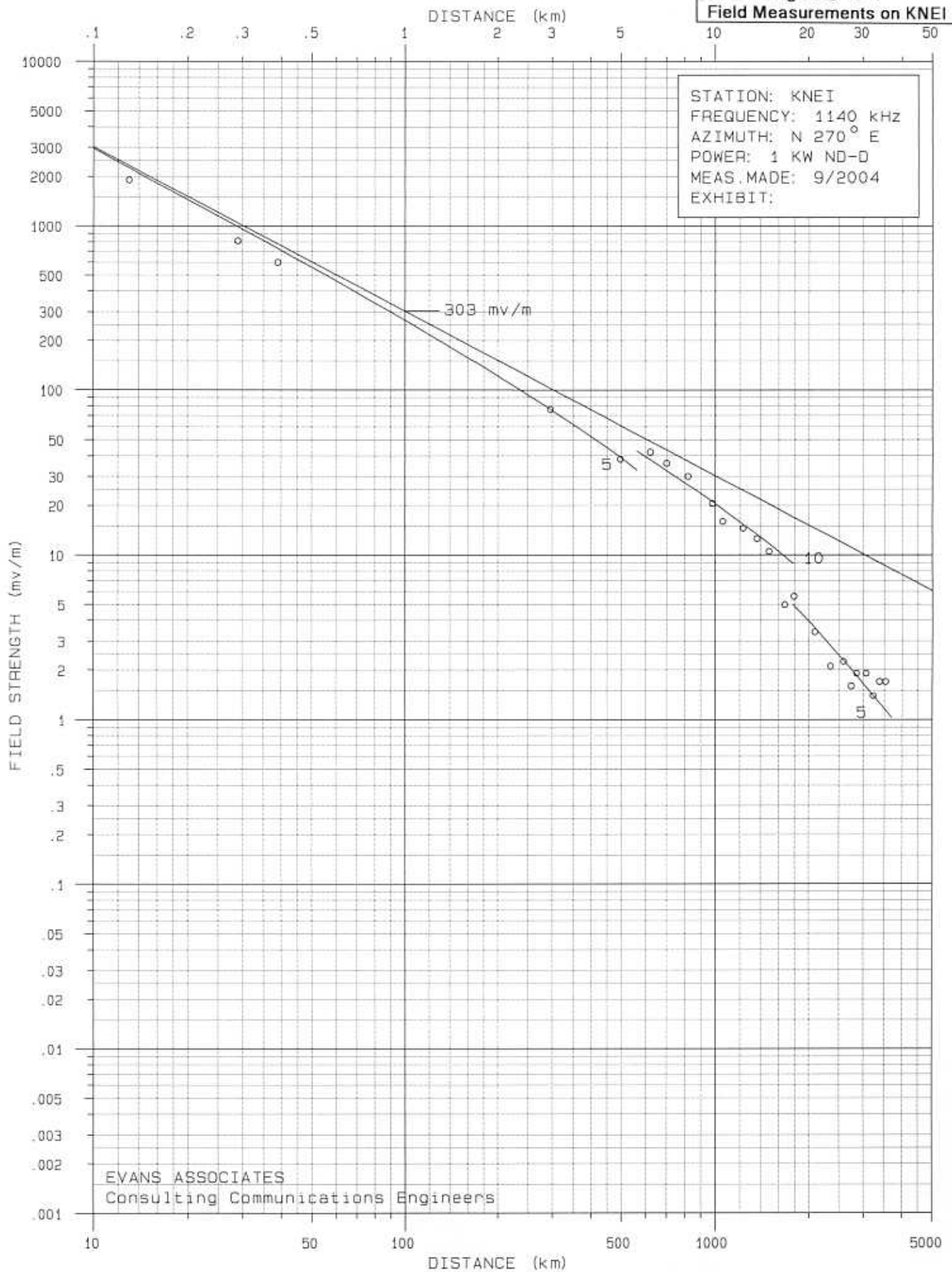


Figure 5-A-2
Field Measurements on KNEI

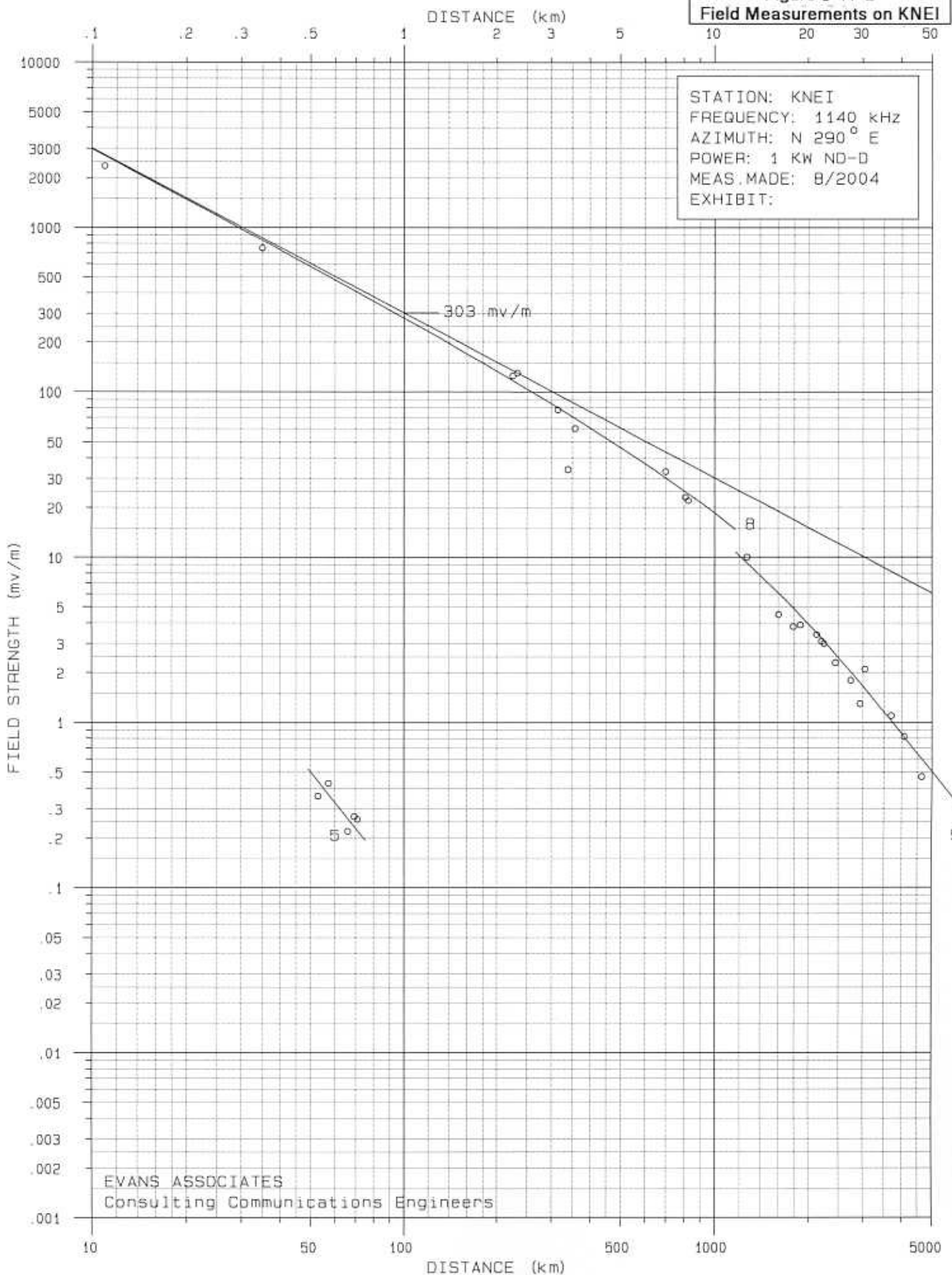
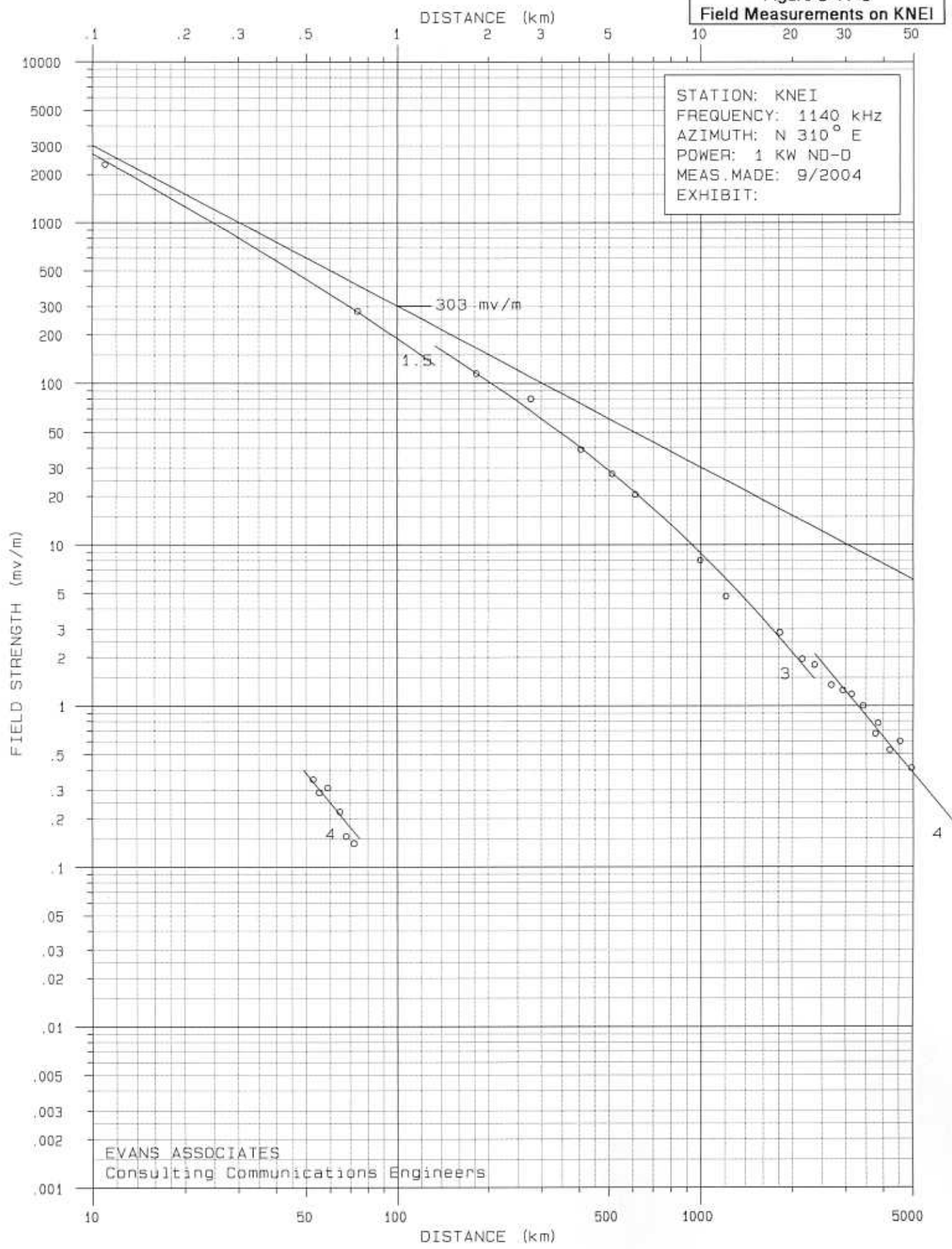


Figure 5-A-3
Field Measurements on KNEI



***Field Strength Measurements
KNEI (AM), 1140 KHz
Waukon, Iowa
270° Radial***

<u>Point #</u>	<u>Distance (km)</u>	<u>Measured Field (mV/m)</u>
1	0.13	1900.0
2	0.29	810.0
3	0.39	600.0
5	2.96	76.0
6	4.97	38.0
7	6.21	42.0
8	7.00	36.0
9	8.21	30.0
10	9.80	20.50
11	10.59	16.00
12	12.31	14.50
13	13.62	12.50
14	14.90	10.50
15	16.74	5.00
16	17.86	5.60
17	20.92	3.40
18	23.50	2.10
19	25.91	2.25
20	27.36	1.60
21	28.49	1.90
22	30.58	1.90
23	32.19	1.40
24	33.80	1.70
25	35.41	1.70

Measurements taken 9/1/2004 through 9/2/2004. All points measured by Rich Egan using a Potomac Instruments FIM-41 Field Strength Meter. Distances and azimuth determined by GPS.

***Field Strength Measurements
KNEI (AM), 1140 KHz
Waukon, Iowa
290° Radial***

<u>Point #</u>	<u>Distance (km)</u>	<u>Measured Field (mV/m)</u>
1	0.11	2350.0
2	0.35	750.0
3	2.25	125.0
4	2.33	130.0
5	3.14	78.0
6	3.40	34.0
7	3.57	60.0
8	6.98	33.0
9	8.08	23.00
10	8.26	22.00
11	12.83	10.00
12	16.03	4.50
13	17.86	3.80
14	18.83	3.90
15	21.24	3.40
16	22.05	3.10
17	22.37	3.00
18	24.46	2.30
20	27.36	1.80
21	29.29	1.30
22	30.42	2.10
24	37.01	1.10
25	40.72	0.82
26	46.35	0.47
27	52.95	0.36
28	57.29	0.43
29	66.14	0.22
30	69.36	0.27
31	70.97	0.26

Measurements taken 8/4/2004 through 8/6/2004. All points measured by Rich Egan using a Potomac Instruments FIM-41 Field Strength Meter. Distances and azimuth determined by GPS.

***Field Strength Measurements
KNEI (AM), 1140 KHz
Waukon, Iowa
310° Radial***

<u>Point #</u>	<u>Distance (km)</u>	<u>Measured Field (mV/m)</u>
1	0.11	2300.0
2	0.74	280.0
3	1.83	115.0
4	2.77	80.0
5	4.06	39.0
6	5.13	27.5
7	6.12	20.5
8	9.98	8.0
9	12.05	4.80
10	18.19	2.85
11	21.57	1.95
12	23.66	1.80
13	26.88	1.35
14	29.45	1.25
15	31.38	1.18
16	34.28	1.00
17	37.66	0.67
18	38.46	0.78
19	42.00	0.53
20	45.38	0.60
21	49.41	0.41
22	52.95	0.35
23	55.36	0.29
24	58.90	0.31
25	64.53	0.22
26	67.75	0.155
27	71.94	0.14

Measurements taken 9/2/2004 through 9/3/2004. All points measured by Rich Egan using a Potomac Instruments FIM-41 Field Strength Meter. Distances and azimuth determined by GPS.

Figure 6-A : KNEI(AM) Proposed Daytime Contours

KNEI

Latitude: 43-17-13 N
Longitude: 091-28-06 W
Power: 0.88 kW
Frequency: 1.16 MHz
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

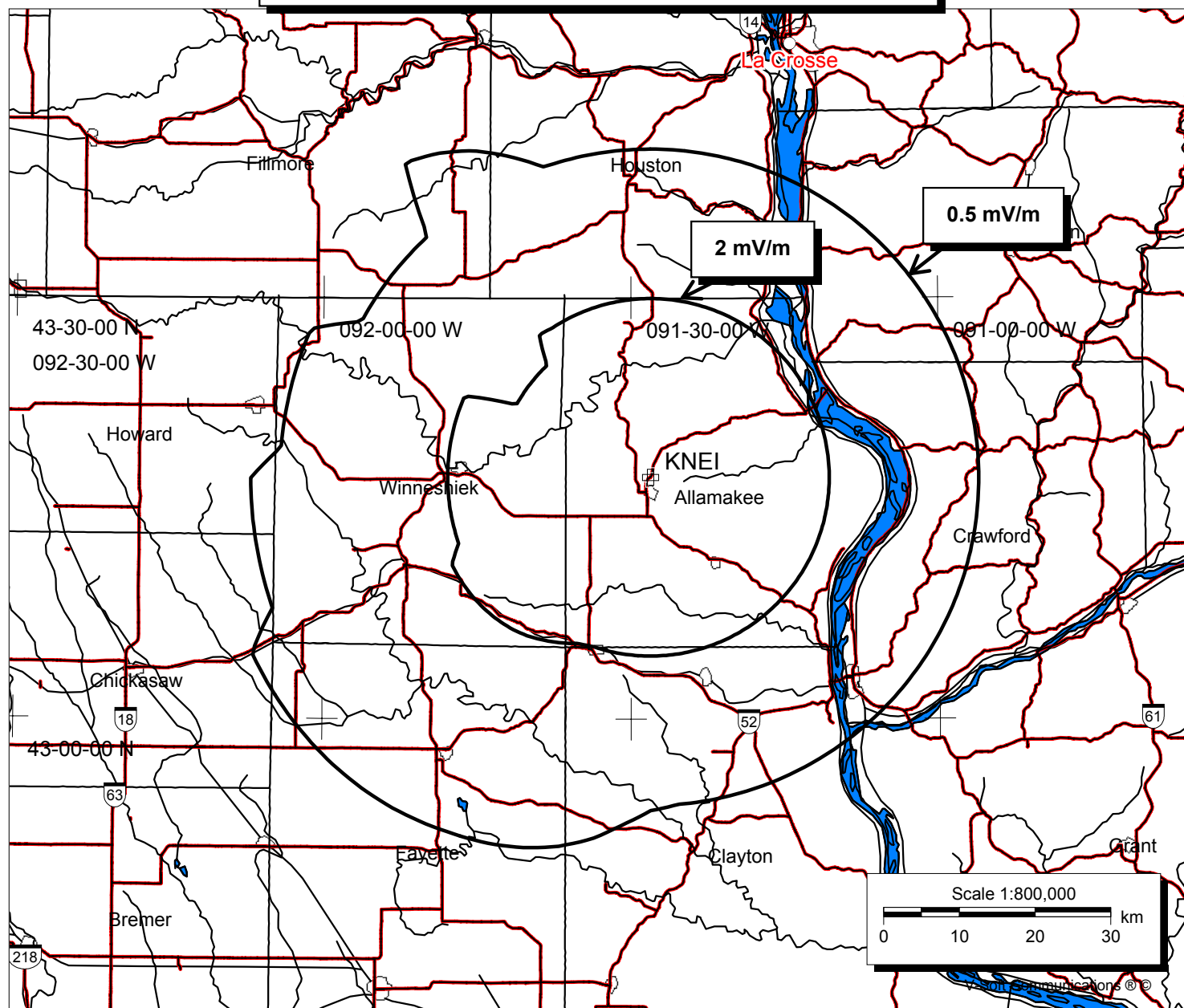


Figure 6-B : KNEI(AM) Proposed Daytime Contours

KNEI

Latitude: 43-17-13 N
Longitude: 091-28-06 W
Power: 0.88 kW
Frequency: 1.16 MHz
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

