

Village of Trumansburg)

Tompkins County) SS:

State of New York)

William J. Sitzman, being duly sworn upon his oath, deposes and states that:

He is president of and a consulting communications engineer with the firm Independent Broadcast Consultants, Inc., with offices at 110 County Rd. #146, Trumansburg, New York 14886-9721.

His qualifications are a matter of record with the Federal Communications Commission, having filed numerous technical and engineering reports with them in the past which were accepted for filing and subsequently were granted approval.

The facts contained in this report subscribed by him are true of his own personal knowledge, except those stated on information and belief, and those facts he verily believes to be true.



Subscribed and sworn to before me this 27th day of December, 2006.



NOTARY PUBLIC

MARSHA L. GEORGIA
Notary Public, State of New York
No. 4791735
Qualified in Tompkins County
Commission Expires Sept. 30, 182009

JEFFREY G. DRESS
Radio Station KKAG
Fargo, ND
740 kHz, 50 kW-D, 7.5 kW-CH 0.94 kW-N, DA-3, U

ENGINEERING STATEMENT

This report, with attached exhibits, provides supporting information for a request for augmentation to the daytime/critical hours and nighttime patterns of KKAG, Fargo, ND. Jeffrey G. Dress, permittee of KKAG, is filing this instant application in conjunction with its application for station license covering CP # BNP-20010703AAO.

This request for augmentation conforms to the standards of section 73.152 as modified by the Report and Order in MM Docket No. 93-177, adopted 14 February, 2001. The augmented daytime/critical hours pattern will neither cause nor receive prohibitive overlap with any other station and the augmented nighttime pattern will not enter into the RSS calculations of any other station.

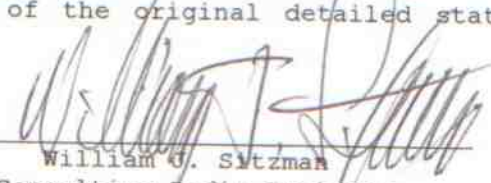
When the daytime/critical hours pattern was being tuned, proper location and depth of pattern minima could only be accomplished with the western main lobe being greater than the standard pattern. Since there are no protection requirements in that direction, it is entirely reasonable to augment the pattern in that direction.

The nighttime pattern is being augmented at an azimuth where no protection requirements exist. Due to the tight suppression of minima toward co-channel Class A station CHWO, Toronto, ON, the excessive radiation at 344 degrees could not be reduced without exceeding the standard pattern envelope toward CHWO.

It is noted that when the M-3 daytime allocation map Figure 7A was drafted, there appears to be some minor overlap of the KKAG 0.25 mV/m with the KWOA 0.5 mV/m contour at 162 degrees true. This appears to be grandfathered from the CP and further no augmentation is requested at that bearing. Figure 7B shows the detailed contours of KKAG and 730 kHz facility CKDM, Dauphin, MB. Radial measurements by Canadian engineer Robert Kowalchuk confirm absence of any mutual overlap between KKAG and CKDM.

It is also pointed out that FCC Form 301, Page 11, Paragraph 11 normally requires a statement of environmental considerations. Since this was previously addressed in the original application for construction permit to the effect that the applicant will comply with FCC and ANSI standards regarding exposure of the general public and maintenance workers relating to non-ionizing RF radiation, a repeat of the original detailed statement is regarded as redundant.

December 27, 2006


William G. Sitzman
Consulting Radio Engineer

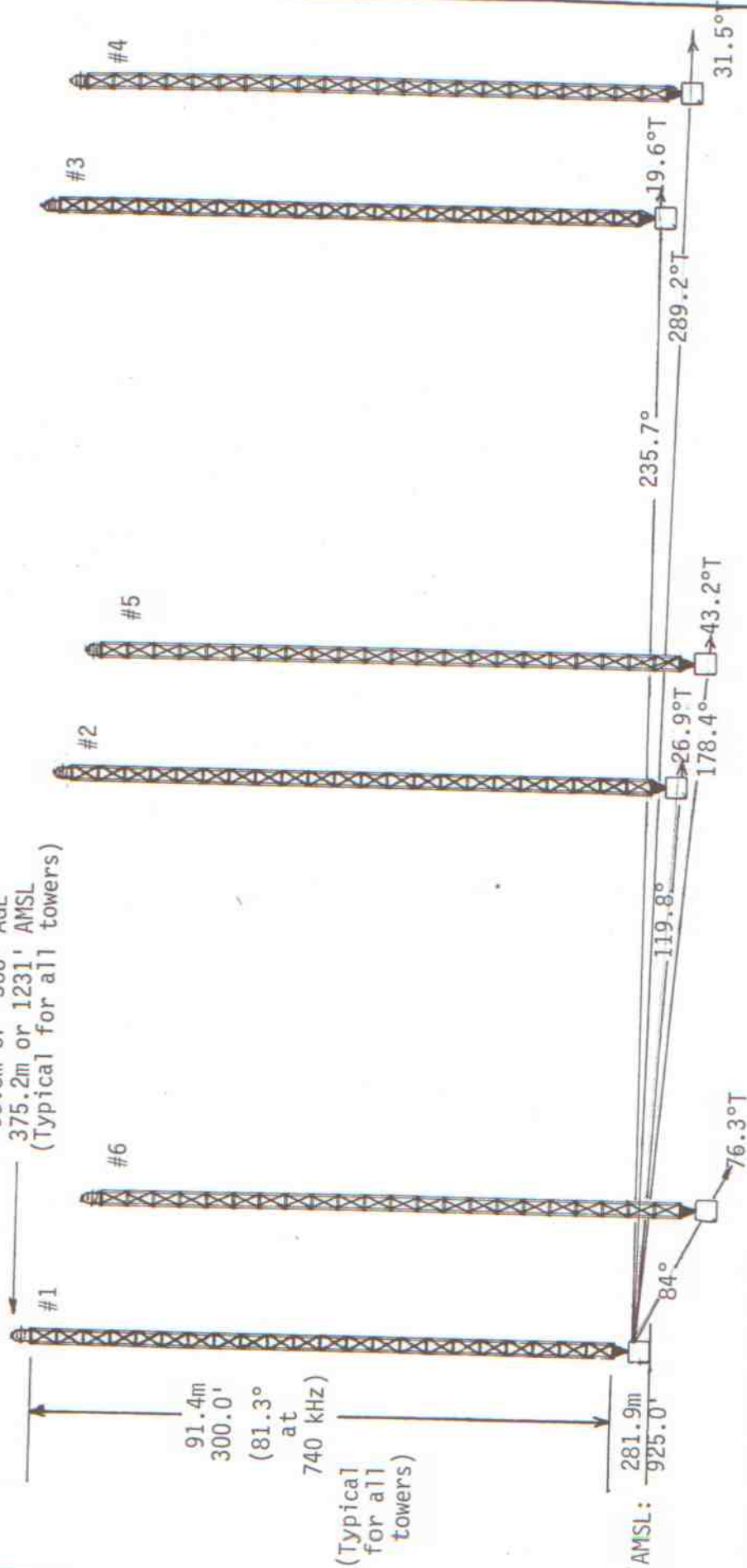
VERTICAL PLAN SKETCH OF CONSTRUCTED KKAG-CP ANTENNA SYSTEM

N 46° 58' 29"
W 96° 30' 12"
(NAD-27)

Radio Station KKAG
Fargo, North Dakota
740 kHz.
50 kW-D, 7.5 kW-CH, 0.94 kW-N, DA-3, U
December 2006

93.3m or 306' AGL
375.2m or 1231' AMSL
(Typical for all towers)

91.4m
300.0'
(81.3°
at
740 kHz)
(Typical
for all
towers)



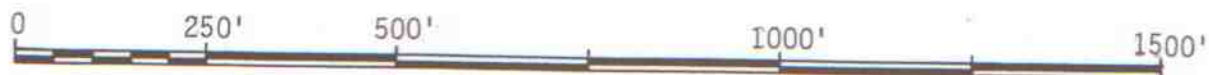
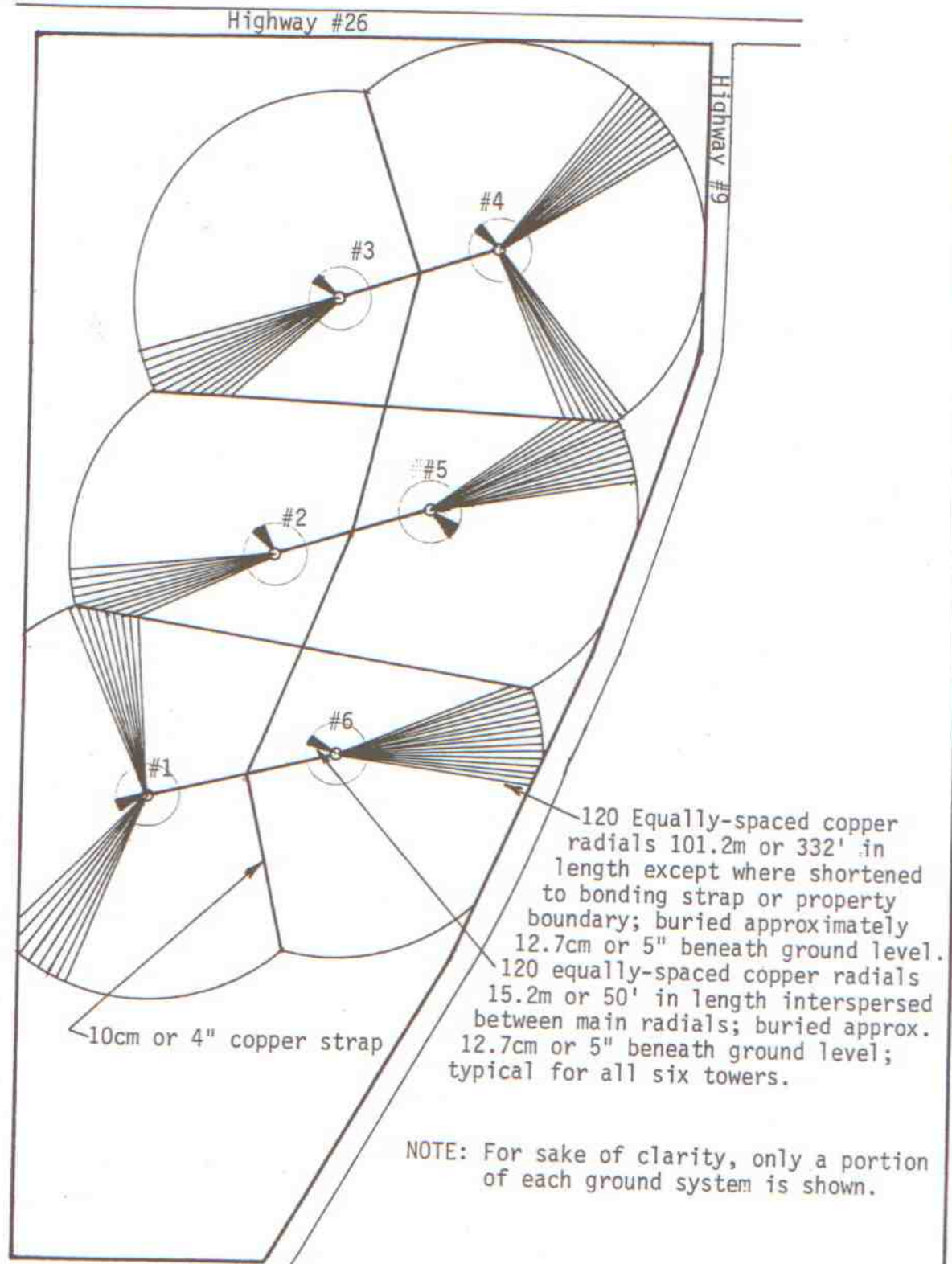
NOTE: Not drawn to scale

PLAT OF PROPERTY, TOWER LOCATION AND GROUND SYSTEM

N 46° 58' 29"

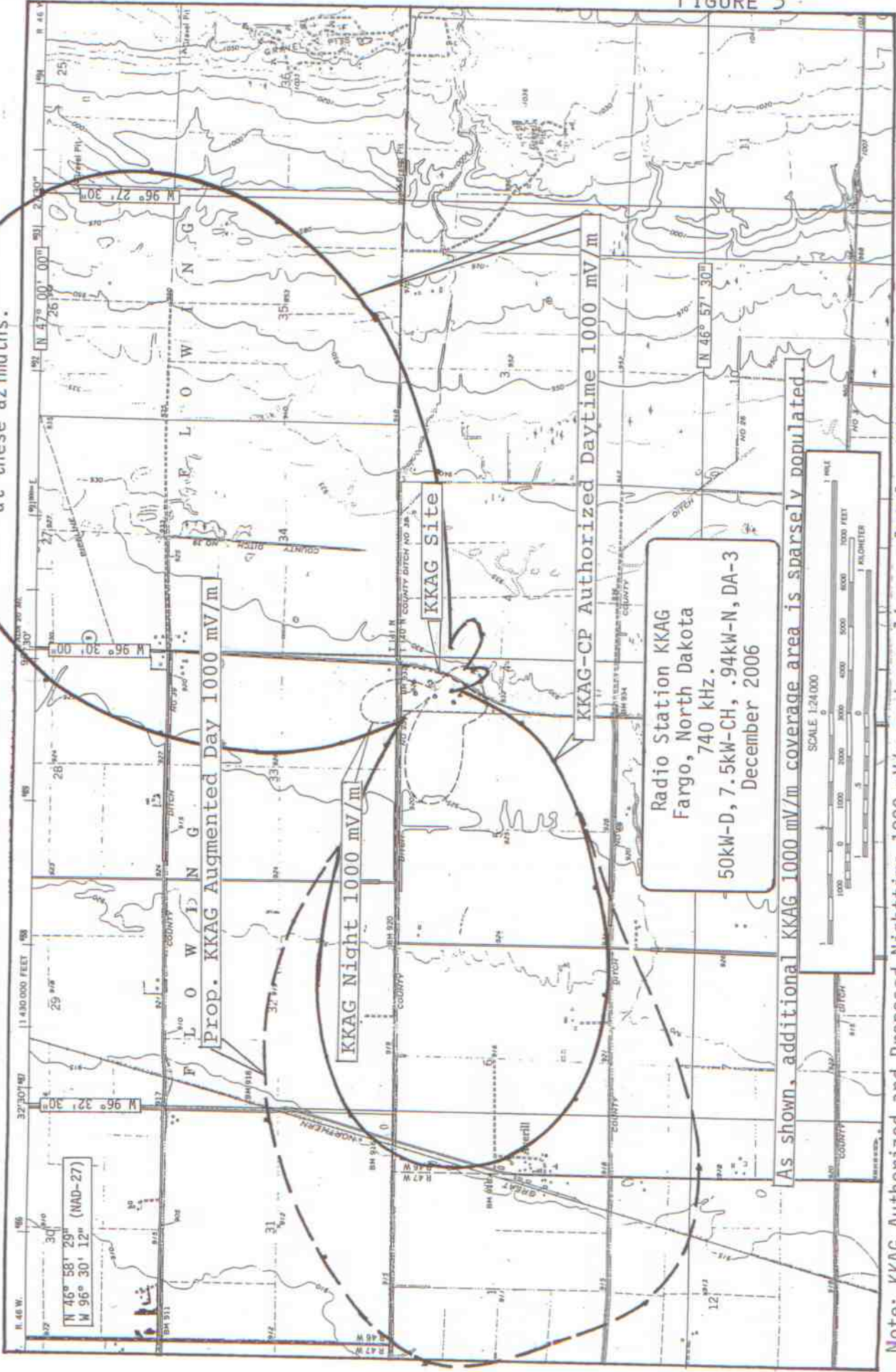
W 96° 30' 12"

(NAD-27)



PROPOSED KKAG 1000 MV/M BLANKETING CONTOURS

No augmentations proposed at these azimuths.



Note: KKAG Authorized and Proposed Nighttime 1000 mV/m contours lie completely within Daytime 1000 mV/m contour. Therefore, only the Proposed Daytime 1000 mV/m contour changes are shown on this map.

PERMITTED KKAG DAYTIME HORIZONTAL PLANE STANDARD PATTERN

Callsign : KKAG
 Coordinates : 46-58-29.0 N, 96-30-12.0 W (Non-Augmented)
 Comments :
 Frequency (KHz): 740
 Power (w): 50000.000
 Pattern : CD
 Efficiency : 2236.796 mV/M
 Desc : DA3
 City/State : FARGO, ND
 ARN :
 Licensee : JEFFREY G. DRESS

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	0.494	287.7	0.0	0.0	81.3	0.0
2	0.739	169.7	119.8	26.9	81.3	0.0
3	1.000	0.0	235.7	19.6	81.3	0.0
4	0.505	185.8	289.2	31.5	81.3	0.0
5	0.642	17.2	178.4	43.2	81.3	0.0
6	0.311	48.0	84.0	76.3	81.3	0.0

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	2662.770	75	3047.006	150	276.111	225	1625.190	300	1325.133	
5	3005.916	80	2562.307	155	329.687	230	1888.313	305	879.642	
10	3329.170	85	2043.374	160	362.935	235	2174.416	310	482.295	
15	3624.971	90	1515.643	165	356.311	240	2472.704	315	188.621	
20	3887.226	95	1008.899	170	306.461	245	2766.480	320	266.034	
25	4110.696	100	559.261	175	220.607	250	3034.816	325	507.142	
30	4290.360	105	245.778	180	127.461	255	3254.773	330	753.684	
35	4420.921	110	291.234	185	146.335	260	3403.965	335	1013.869	
40	4496.524	115	458.581	190	285.910	265	3463.273	340	1300.436	
45	4510.787	120	555.591	195	453.149	270	3419.433	345	1616.546	
50	4457.177	125	568.142	200	627.244	275	3267.186	350	1956.390	
55	4329.745	130	510.481	205	804.028	280	3010.610	355	2309.176	
60	4124.184	135	409.364	210	985.614	285	2663.328			
65	3839.101	140	304.374	215	1178.080	290	2247.420			
70	3477.322	145	250.967	220	1389.147	295	1791.055			

0.0 ohm K : 2465.942
 RMSS : 2350.674
 RSS : 3728.412
 Q : 93.21

1.0 ohm K : 2332.962
 RMSt : 2236.796

This standard radiation pattern authorized and constructed (license application pending) at KKAG, Fargo, ND per FCC Construction Permit BNP-20010703AA0.

PROPOSED KKAG DAYTIME HORIZONTAL PLANE MODIFIED STANDARD PATTERN

Callsign : KKAG
 Coordinates : 46-58-29.0 N, 96-30-12.0 W (Augmented)
 Comments :
 Frequency (KHz): 740
 Power (w): 50000.000
 Pattern : CD
 Augmented
 Efficiency : 2236.796 mV/M
 Desc : DA3
 City/State : FARGO, ND
 ARN :
 Licensee : JEFFREY G. DRESS

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	0.494	287.7	0.0	0.0	81.3	0.0
2	0.739	169.7	119.8	26.9	81.3	0.0
3	1.000	0.0	235.7	19.6	81.3	0.0
4	0.505	185.8	289.2	31.5	81.3	0.0
5	0.642	17.2	178.4	43.2	81.3	0.0
6	0.311	48.0	84.0	76.3	81.3	0.0

Brng	Span	mV/M
247.0	40.0	4500.00
268.0	40.0	4800.00
288.0	40.0	3380.00
316.5	40.0	201.30

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	2662.770	75	3047.006	150	276.111	225	1625.190	300	1918.382	
5	3005.916	80	2562.307	155	329.687	230	2053.741	305	1040.459	
10	3329.170	85	2043.374	160	362.935	235	2976.971	310	493.351	
15	3624.971	90	1515.643	165	356.311	240	3848.862	315	222.604	
20	3887.226	95	1008.899	170	306.461	245	4396.240	320	289.655	
25	4110.696	100	559.261	175	220.607	250	4560.362	325	515.686	
30	4290.360	105	245.778	180	127.461	255	4633.189	330	755.925	
35	4420.921	110	291.234	185	146.335	260	4705.738	335	1013.965	
40	4496.524	115	458.581	190	285.910	265	4776.861	340	1300.436	
45	4510.787	120	555.591	195	453.149	270	4763.872	345	1616.546	
50	4457.177	125	568.142	200	627.244	275	4504.628	350	1956.390	
55	4329.745	130	510.481	205	804.028	280	4068.816	355	2309.176	
60	4124.184	135	409.364	210	985.614	285	3600.477			
65	3839.101	140	304.374	215	1178.080	290	3237.460			
70	3477.322	145	250.967	220	1389.147	295	2693.450			

0.0 ohm K	: 2465.942	1.0 ohm K	: 2332.962
RMSs	: 2350.674	RMSt	: 2236.796
RSS	: 3728.412		

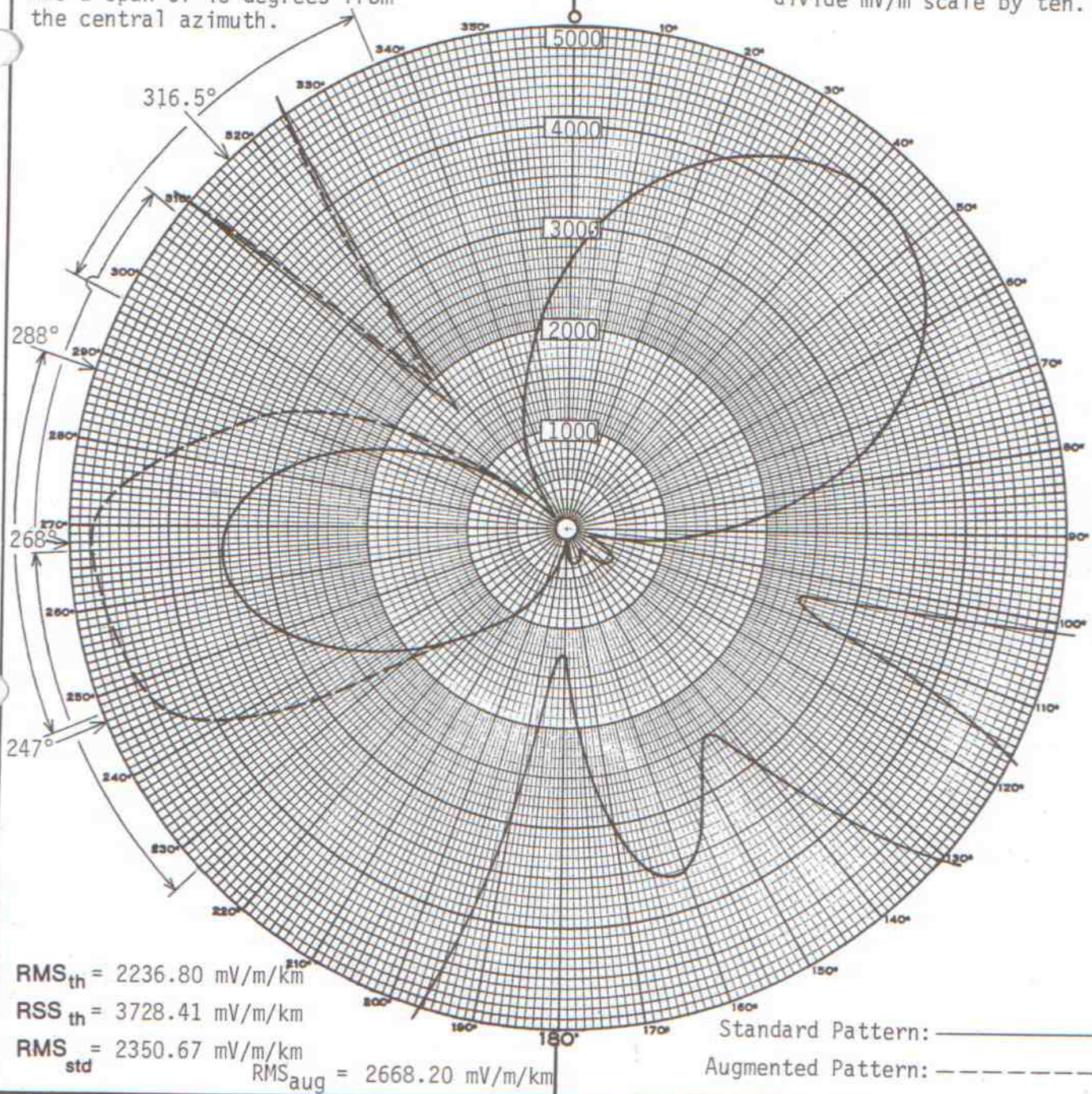
Q : 93.21
 RMS-Aug : 2668.201

FIGURE 4C

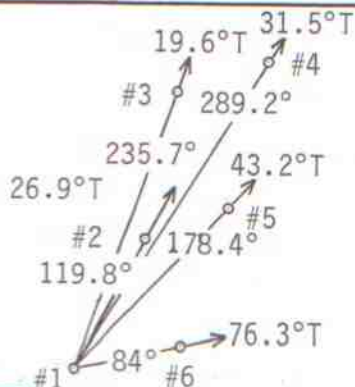
Each of the four augmentations has a span of 40 degrees from the central azimuth.

mV/m/kilometer

For expanded scale pattern divide mV/m scale by ten.



PROPOSED AUGMENTED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



Theoretical Specs:

Twr.#	Ratio/Phase
1	0.494/-72.3°
2	0.739/+169.7°
3	1.000/±0°
4	0.505/-174.2°
5	0.642/+17.2°
6	0.311/+48.0°

G = 81.3° = 300' = 91.4m
 (same all towers)

STATION	KKAG
LOCATION	Fargo, ND
FREQUENCY	740 kHz.
POWER	50,000 watts
LATITUDE	N 46° 58' 29"
LONGITUDE	W 96° 30' 12"
MODE	Daytime
PATTERN	415050-D-P
DATE	12-15-2006

INDEPENDENT BROADCAST CONSULTANTS
 TRUMANSBURG, NEW YORK

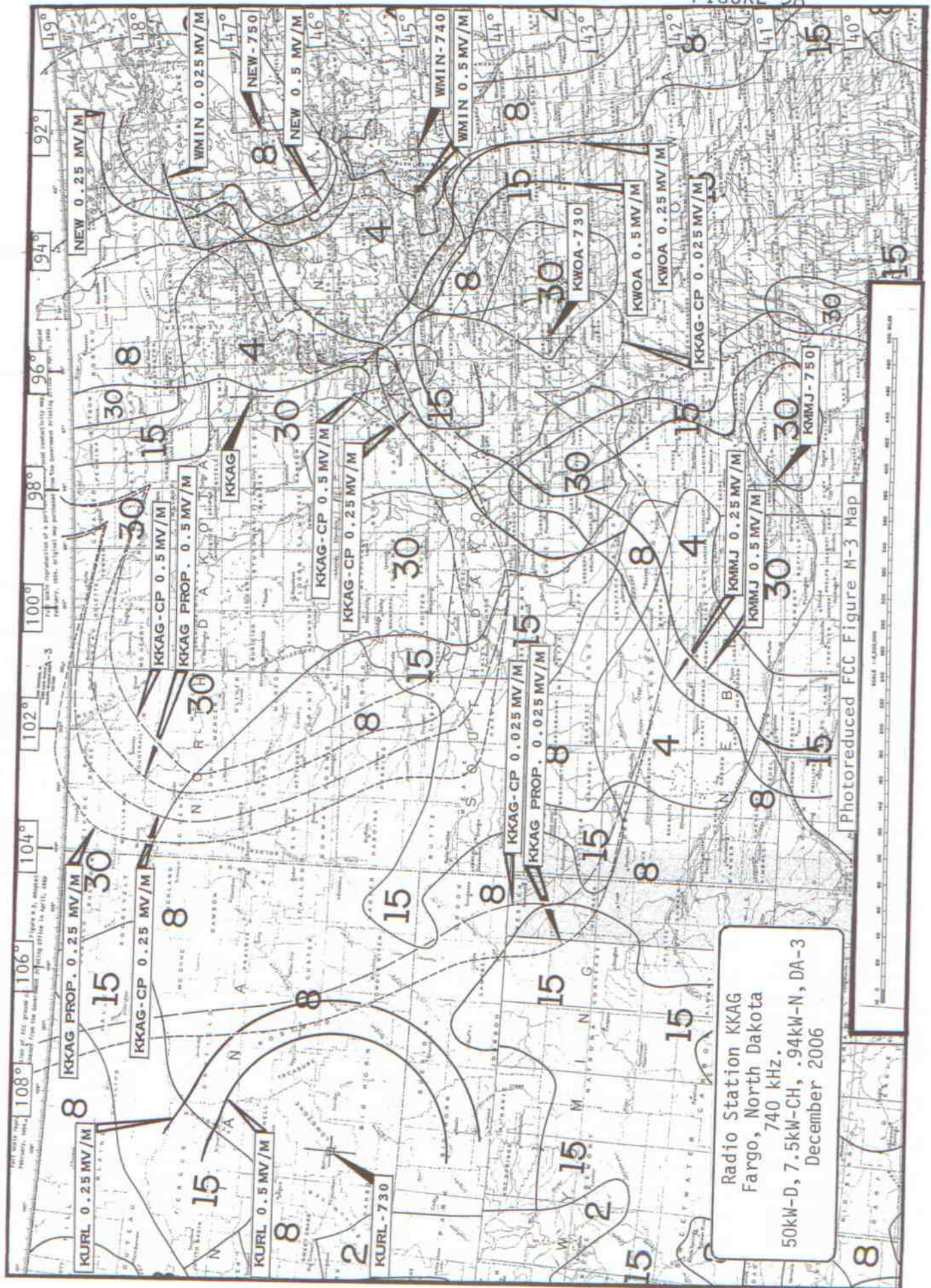


FIGURE 5B

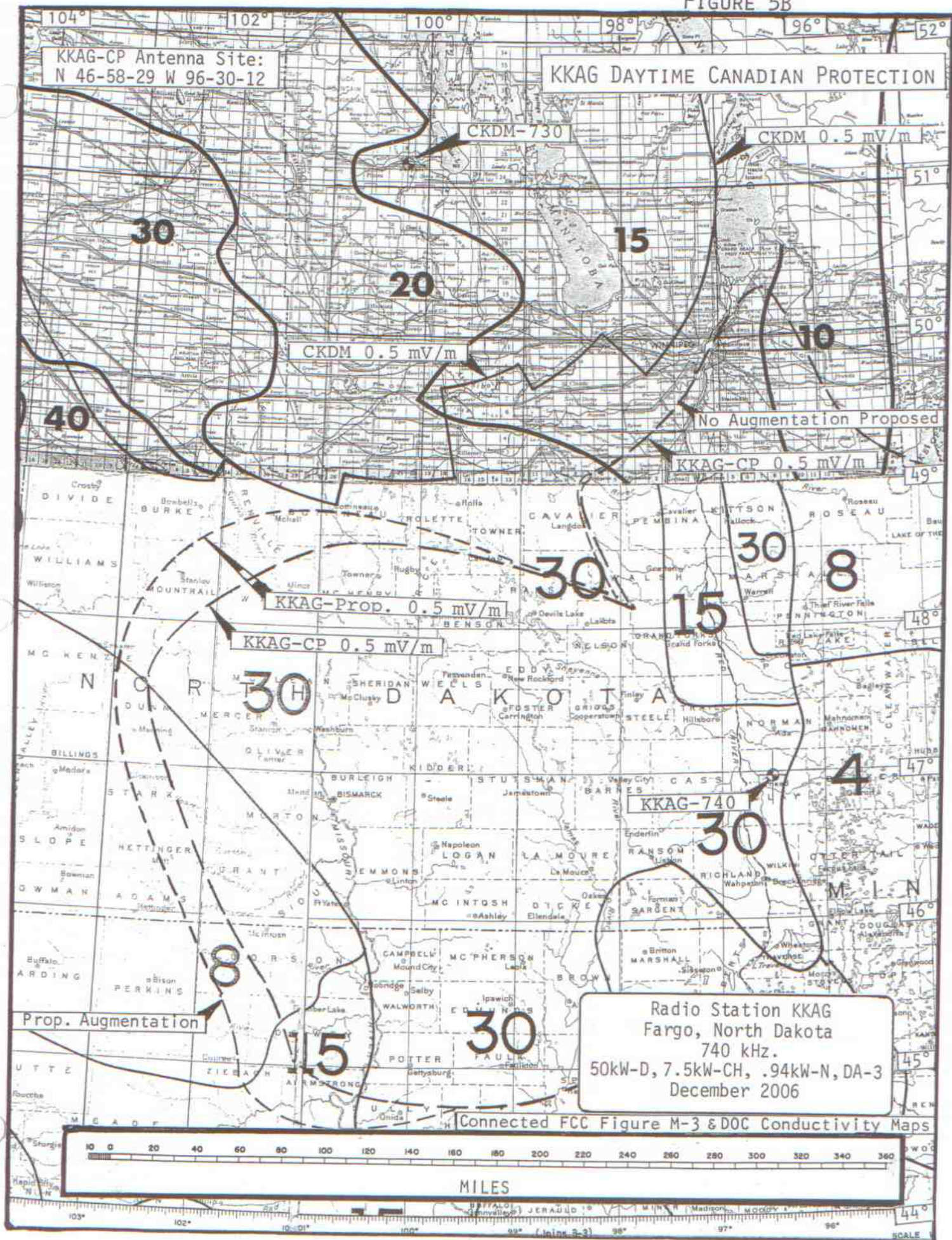


TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

KKAG(CP) - Fargo, ND

CP Facilities: 740 kHz; 50 kW-D, 7.5 kW-CH, 0.94 kW-N, DA-3, U
(Augmentation Requested)

Azimuth	Inverse Field *		Soil Conductivity (mS/m)
	Standard	Augmented	
0°T	2662.77	---	M-3: 30 - 53.1 km, 15 - 90.9 km, 30 - 223.2 km, 15 - 282.7 km, 10 - 340.0 km, 15 - 402.3 km, 10 - Rem.
10°T	3329.17	---	M-3: 30 - 53.6 km, 15 - 79.3 km, 4 - 84.7 km, 8 - 227.2 km, 10 - 501.6 km, 1 - 565.5 km, 10 - Remainder
20°T	3887.23	---	M-3: 30 - 56.5 km, 4 - 88.7 km, 8 - 238.7 km, 1 - Rem.
30°T	4290.36	---	M-3: 30 - 47.0 km, 4 - 98.8 km, 8 - 261.8 km, 1 - Rem.
40°T	4496.52	---	M-3: 30 - 34.0 km, 4 - 114.6 km, 8 - 250.3 km, 1 - Rem.
50°T	4457.18	---	M-3: 30 - 21.2 km, 4 - 143.1 km, 8 - 268.6 km, 1 - Rem.
60°T	4124.18	---	M-3: 30 - 15.9 km, 4 - 165.4 km, 8 - 331.5 km, 1 - Rem.
70°T	3477.32	---	M-3: 30 - 11.9 km, 4 - 177.0 km, 8 - 383.7 km, 1 - Rem.
80°T	2562.31	---	M-3: 30 - 11.3 km, 4 - 187.2 km, 8 - Remainder
90°T	1515.64	---	M-3: 30 - 10.0 km, 4 - 203.9 km, 8 - 511.1 km, 4 - Rem.
100°T	559.26	---	M-3: 30 - 9.7 km, 4 - 225.6 km, 8 - 371.8 km, 4 - Rem.
110°T	291.23	---	M-3: 30 - 9.7 km, 4 - 277.6 km, 8 - 306.6 km, 4 - Rem.
120°T	555.59	---	M-3: 30 - 9.8 km, 4 - 653.9 km, 8 - Remainder
130°T	510.48	---	M-3: 30 - 9.8 km, 4 - 403.8 km, 8 - 503.7 km, 4 - 670.0 km, 8 - Remainder
140°T	304.37	---	M-3: 30 - 11.6 km, 4 - 339.2 km, 15 - 479.4 km, 8 - Rem.
150°T	276.11	---	M-3: 30 - 13.4 km, 4 - 268.3 km, 8 - 374.5 km, 15 - 382.7 km, 30 - 418.3 km, 15 - Remainder
160°T	362.94	---	M-3: 30 - 17.7 km, 4 - 186.0 km, 15 - 276.6 km, 8 - 316.7 km, 30 - 487.6 km, 15 - Remainder
170°T	306.46	---	M-3: 30 - 149.2 km, 15 - 344.9 km, 30 - 405.4 km, 15 - 656.3 km, 30 - Remainder
180°T	127.46	---	M-3: 30 - 141.0 km, 15 - 416.7 km, 30 - 445.5 km, 15 - 636.0 km, 30 - Remainder
190°T	285.91	---	M-3: 30 - 119.7 km, 15 - 357.0 km, 30 - 463.5 km, 15 - 703.6 km, 15 - Remainder
200°T	627.24	---	M-3: 30 - 106.7 km, 15 - 310.3 km, 30 - 465.7 km, 15 - 495.4 km, 8 - 550.7 km, 4 - 608.2 km, 30 - Rem.
210°T	985.61	---	M-3: 30 - 98.5 km, 15 - 249.9 km, 30 - 442.6 km, 15 - 497.1 km, 8 - 556.8 km, 4 - 740.6 km, 15 - Rem.

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

KKAG(CP) - Fargo, ND

CP Facilities: 740 kHz; 50 kW-D, 7.5 kW-CH, 0.94 kW-N, DA-3, U
(Augmentation Requested)

Azimuth	Inverse Field *			Soil Conductivity (mS/m)
	Standard	Augmented		
220°T	1389.15	---	M-3:	30 - 96.6 km, 15 - 195.5 km, 30 - 394.1 km, 15 - 507.8 km, 8 - 556.5 km, 4 - 776.5 km, 8 - Rem.
230°T	1888.31	2053.74	M-3:	30 - 98.2 km, 15 - 173.8 km, 30 - 408.6 km, 15 - 517.4 km, 8 - 659.0 km, 15 - 696.8 km, 8 - Rem.
240°T	2472.70	3848.86	M-3:	30 - 345.7 km, 15 - 628.0 km, 8 - 737.4 km, 15 - Remainder
250°T	3034.82	4560.36	M-3:	30 - 329.6 km, 8 - 565.7 km, 15 - 644.2 km, 8 - 778.6 km, 15 - 861.5 km, 8 - 991.4 km, 15 - Rem.
260°T	3403.97	4705.74	M-3:	30 - 347.3 km, 8 - 1031.6 km, 2 - Remainder
270°T	3419.43	4763.87	M-3:	30 - 397.2 km, 8 - Remainder
280°T	3010.61	4068.82	M-3:	30 - 489.2 km, 8 - 740.3 km, 15 - 965.6 km, 8 - Rem.
290°T	2247.42	3237.46	M-3:	30 - 727.8 km, 15 - 729.0 km, 30 - Remainder
300°T	1325.13	1918.38	M-3:	30 - 516.8 km, 40 - 693.9 km, 30 - Remainder
310°T	482.30	493.35	M-3:	30 - 345.2 km, 20 - 476.0 km, 30 - Remainder
320°T	266.03	289.66	M-3:	30 - 67.3 km, 15 - 120.7 km, 30 - 287.6 km, 20 - 348.9 km, 15 - 387.9 km, 20 - Remainder
330°T	753.68	755.93	M-3:	30 - 61.3 km, 15 - 157.7 km, 30 - 252.3 km, 20 - 281.5 km, 15 - 392.2 km, 20 - 480.7 km, 15 - 551.0 km, 20 - Remainder
340°T	1300.44	---	M-3:	30 - 56.2 km, 15 - 370.1 km, 10 - 455.9 km, 15 - 475.2 km, 10 - 547.1 km, 15 - 644.3 km, 10 - Remainder
350°T	1956.39	---	M-3:	30 - 53.1 km, 15 - 557.7 km, 10 - Remainder

Source of soil conductivity data; FCC Figure M-3 map or Canadian DOC soil conductivity maps for Canadian territory; significant Canadian fresh water bodies assigned conductivity values of 10 mS/m unless otherwise designated in compliance with DOC instructions.

*KKAG Standard Pattern Inverse Fields listed as specified for the 50 kW Daytime Pattern under FCC Construction Permit BNP-20010703AAQ; license application pending. Augmented Modified Standard Pattern Inverse Fields are those specified in this application.

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

WMIN - Hudson, WI

740 kHz; 2.5 kW, DA-D

<u>Azimuth</u>	<u>Inverse Field</u> mV/m/km	<u>Soil Conductivity (mS/m)</u>
*204.5°T	307.96	Meas: 2 - 65.5 km; M-3: 15 - Remainder
*214.5°T	275.97	Meas: 2 - 65.5 km; M-3: 15 - 171.2 km, 30 - 284.2 km, 15 - Remainder
224.5°T	318.42	Meas: 2 - 65.5 km; M-3: 15 - 158.7 km, 30 - 293.4 km, 15 - Remainder
*228.5°T	357.42	Meas: 2 - 2.8 km, 1.5 - 80.0 km, 2 - 103.5 km; M-3: 15 - 162.7 km, 30 - 291.6 km, 15 - Remainder
*238.5°T	478.39	Meas: 2 - 25.0 km, 1.5 - 76.0 km, 2 - 117.0 km; M-3: 15 - 123.9 km, 8 - 178.8 km, 30 - 298.1 km, 15 - 358.7 km, 30 - 421.3 km, 15 - Remainder
*248.5°T	596.89	Meas: 2 - 116.6 km; M-3: 4 - 127.3 km, 8 - 207.3 km, 30 - 240.9 km, 15 - 368.9 km, 30 - Remainder
258.5°T	689.64	Meas: 2 - 116.6 km; M-3: 4 - 145.0 km, 8 - 210.7 km, 15 - 401.1 km, 30 - Remainder
260.0°T	700.76	M-3: 4 - 148.5 km, 8 - 209.2 km, 15 - 405.2 km, 30 - Rem.
270.0°T	755.76	M-3: 4 - 205.0 km, 15 - 425.3 km, 30 - Remainder
280.0°T	779.68	Meas: 2 - 52.0 km, 1 - 69.0 km; M-3: 4 - 235.6 km, 15 - 427.0 km, 30 - Remainder
*290.0°T	776.66	Meas: 2 - 52.0 km, 1 - 69.0 km; M-3: 4 - 278.1 km, 30 - 354.5 km, 15 - 428.4 km, 30 - Remainder
300.0°T	750.24	Meas: 2 - 52.0 km, 1 - 69.0 km; M-3: 4 - 327.8 km, 30 - Rem.
310.0°T	702.75	Meas: 2 - 46.0 km, 1 - 69.5 km; M-3: 4 - 356.6 km, 30 - 418.9 km, 15 - Remainder
*320.0°T	637.59	Meas: 2 - 46.0 km, 1 - 69.5 km; M-3: 4 - 387.2 km, 8 - 424.5 km, 30 - Remainder
330.0°T	564.47	Meas: 2 - 46.0 km, 1 - 69.5 km; M-3: 4 - 350.8 km, 8 - Rem.
340.0°T	506.77	M-3: 4 - 131.5 km, 8 - Remainder
350.0°T	498.95	M-3: 4 - 109.1 km, 8 - 386.2 km, 1 - Remainder
0.0°T	553.78	M-3: 4 - 107.0 km, 8 - 371.9 km, 1 - 378.2 km, 8 - 385.9 km, 1 - Remainder
10.0°T	639.49	M-3: 4 - 118.5 km, 8 - 354.4 km, 1 - Remainder
17.0°T	692.90	Meas: 2 - 22.0 km, 1.5 - 57.9 km; M-3: 4 - 131.6 km, 8 - 352.0 km, 1 - Remainder
*27.0°T	733.19	Meas: 2 - 22.0 km, 1.5 - 57.9 km; M-3: 4 - 168.2 km, 8 - 380.1 km, 1 - Remainder

WMIN - Hudson, WI

740 kHz; 2.5 kW, DA-D

<u>Azimuth</u>	<u>Inverse Field</u> mV/m/km	<u>Soil Conductivity</u> (mS/m)
37.0°T	716.94	Meas: 2 - 22.0 km, 1.5 - 57.9 km; M-3: 4 - 234.8 km, 8 - 414.4 km, 10 - Remainder
40.0°T	700.97	M-3: 4 - 236.4 km, 8 - Remainder

* Indicates measured radial; measurements and analysis included with WMIN February 2005 construction permit application BP-20050207ABY and/or the June 30, 2005 technical amendment to said application. The referenced data and analysis were subsequently accepted by the Commission, with the WMIN application granted and subsequently licensed. All data tabulations and graph analysis are available on the Commission's electronic database, but will be supplied to accompany this instant application should processing staff request.

[The above-referenced WMIN data was measured from either WMIN's antenna system in conjunction with its 2004 antenna proof-of-performance, or from the former WDGY, 630 kHz, operating at the currently-licensed WMIN site.]

Please Note: The authorized KKAG, Fargo, ND construction permit, BNP-20010703AAO, whose daytime pattern this instant application seeks to augment, was processed and granted by the Commission prior to the filing or grant of the WMIN construction permit application for what are now the licensed WMIN facilities. The pattern augmentations proposed herein are generally NOT at azimuths toward the protected or potentially interfering WMIN contours.

Neither KKAG nor its engineer(s) makes any representation for the completeness nor accuracy of the WMIN measurement data, its analysis, or the allocation study which led to the grant of its construction permit BP-20050207ABY. Nonetheless, said engineering was approved by Commission staff. Should staff discover any overlap between WMIN and KKAG daytime contours during its review of this request for daytime pattern augmentation, KKAG's permittee respectfully requests said overlap be considered grandfathered and waived.

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

FIGURE 6C

KWOA - Worthington, MN

730 kHz; 1 kW-D, 158 w-N, U

Inverse Field (Daytime): 352.4 mv/m/km

<u>Azimuth</u>	<u>Soil Conductivity (mS/m)</u>
250°T	M-3: 30 - 21.1 km, 15 - 81.1 km, 30 - 220.2 km, 15 - 256.7 km, 8 - 343.0 km, 4 - Remainder
260°T	M-3: 30 - 26.2 km, 15 - 83.9 km, 30 - 253.8 km, 15 - 319.9 km, 8 - Rem.
270°T	M-3: 30 - 27.0 km, 15 - 90.5 km, 30 - 292.6 km, 15 - Remainder
280°T	M-3: 30 - 26.9 km, 15 - 131.2 km, 30 - 293.4 km, 15 - Remainder
290°T	M-3: 30 - 25.8 km, 15 - 164.3 km, 30 - Remainder
300°T	M-3: 30 - 24.5 km, 15 - 220.3 km, 30 - Remainder
310°T	M-3: 30 - 24.0 km, 15 - 248.8 km, 30 - Remainder
320°T	M-3: 30 - 24.3 km, 15 - 297.3 km, 30 - Remainder
330°T	M-3: 30 - 27.8 km, 15 - 347.1 km, 30 - Remainder
340°T	M-3: 30 - 30.9 km, 15 - 286.6 km, 30 - Remainder
350°T	M-3: 30 - 36.5 km, 15 - 227.9 km, 30 - Remainder
0°T	M-3: 30 - 42.2 km, 15 - 195.2 km, 4 - Remainder
10°T	M-3: 30 - 57.3 km, 15 - 156.9 km, 4 - Remainder
20°T	M-3: 30 - 85.5 km, 8 - 156.4 km, 4 - Remainder
30°T	M-3: 30 - 86.6 km, 8 - 155.5 km, 4 - Remainder
40°T	M-3: 30 - 88.5 km, 8 - 155.6 km, 4 - Remainder
50°T	M-3: 30 - 95.8 km, 8 - 158.0 km, 4 - Remainder
60°T	M-3: 30 - 106.9 km, 8 - 153.5 km, 15 - 233.2 km, 4 - Remainder
70°T	M-3: 30 - 123.8 km, 15 - 245.9 km, 8 - 360.5 km, 4 - Remainder
80°T	M-3: 30 - 142.6 km, 15 - 242.9 km, 8 - 323.5 km, 4 - Remainder
90°T	M-3: 30 - 140.0 km, 15 - 241.4 km, 8 - 321.7 km, 4 - Remainder
100°T	M-3: 30 - 136.8 km, 15 - 250.4 km, 8 - 335.9 km, 4 - Remainder

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

FIGURE 6D

KURL - Billings, MT

730 kHz; 5 kW-D, 0.236 kW-N, ND-U

Daytime NDA Inverse Field: 634.082 mV/m/km & 5 kW.

<u>Azimuth</u>	<u>Soil Conductivity (mS/m)</u>
350°T	M-3: 8 - 100.4 km, 15 - 257.0 km, 8 - 359.8 km, 30 - 405.6 km, 15 - 456.4 km, 20 - Remainder
0°T	M-3: 8 - 128.4 km, 15 - 266.5 km, 8 - 355.2 km, 30 - 427.3 km, 40 - 459.5 km, 30 - Remainder
10°T	M-3: 8 - 177.2 km, 15 - 282.4 km, 8 - 360.5 km, 30 - 415.5 km, 40 - 429.7 km, 30 - Remainder
20°T	M-3: 8 - 220.5 km, 15 - 339.1 km, 8 - 381.3 km, 30 - Remainder
30°T	M-3: 8 - 255.2 km, 15 - 415.2 km, 30 - 523.0 km, 40 - Remainder
40°T	M-3: 8 - 329.1 km, 15 - 380.9 km, 30 - 495.0 km, 40 - Remainder
50°T	M-3: 8 - 421.6 km, 30 - Remainder
60°T	M-3: 8 - 472.0 km, 30 - Remainder
70°T	M-3: 8 - 517.4 km, 30 - Remainder
80°T	M-3: 8 - Total distance
90°T	M-3: 8 - Total distance
100°T	M-3: 8 - 275.8 km, 8 - Remainder
110°T	M-3: 8 - 276.2 km, 15 - 297.9 km, 8 - 424.1 km, 15 - 517.9 km, 8 - Rem.
120°T	M-3: 8 - 474.9 km, 15 - 517.4 km, 8 - Remainder
130°T	M-3: 8 - 209.5 km, 15 - 431.8 km, 8 - Remainder
140°T	M-3: 8 - 225.3 km, 15 - 458.5 km, 8 - Remainder
150°T	M-3: 8 - 276.5 km, 15 - 500.5 km, 8 - Remainder
160°T	M-3: 8 - 285.2 km, 15 - 466.5 km, 2 - Remainder
170°T	M-3: 8 - 262.5 km, 15 - 517.4 km, 2 - Remainder
180°T	M-3: 8 - 257.5 km, 15 - 346.7 km, 2 - 363.9 km, 15 - Remainder

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

KMMJ - Grand Island, NE

750 kHz; 10.5 kW, DA-U

Azimuth	Inverse Field mv/m/km	Soil Conductivity (mS/m)
260°T	1560.80	Meas: 6 - 32.2 km; M-3: 15 - 37.5 km, 30 - 240.3 km, 15 - Rem.
*270°T	1560.80	Meas: 6 - 32.2 km; M-3: 15 - 35.6 km, 30 - 233.7 km, 15 - 333.6 km, 8 - Remainder
280°T	1555.38	Meas: 6 - 32.2 km; M-3: 15 - 36.9 km, 30 - 199.2 km, 4 - 406.8 km, 8 - Remainder
290°T	1542.17	M-3: 15 - 39.1 km, 30 - 172.2 km, 4 - 412.0 km, 8 - Rem.
300°T	1516.81	M-3: 15 - 42.2 km, 30 - 149.7 km, 4 - 423.3 km, 8 - 466.4 km, 15 - Remainder
310°T	1473.85	Meas: 8 - 32.2 km; M-3: 15 - 48.3 km, 30 - 117.3 km, 4 - 249.6 km, 8 - Remainder
*320°T	1407.88	Meas: 8 - 32.2 km; M-3: 15 - 57.9 km, 30 - 92.1 km, 4 - 188.6 km, 8 - 339.6 km, 15 - Remainder
330°T	1314.85	Meas: 8 - 32.2 km; M-3: 15 - 76.0 km, 4 - 151.3 km, 8 - 237.7 km, 15 - Remainder
340°T	1193.28	M-3: 15 - 77.9 km, 4 - 130.2 km, 8 - 199.4 km, 15 - 262.2 km, 30 - 324.8 km, 15 - 360.8 km, 30 - Rem.
350°T	1045.06	M-3: 15 - 86.9 km, 4 - 118.0 km, 15 - 131.8 km, 8 - 172.2 km, 15 - 211.0 km, 30 - Remainder
0°T	875.64	Meas: 8 - 32.2 km; M-3: 15 - 182.3 km, 30 - 370.0 km, 15 - Remainder
* 10°T	693.60	Meas: 8 - 32.2 km; M-3: 15 - 196.3 km, 30 - 304.0 km, 15 - Remainder
20°T	509.67	Meas: 8 - 32.2 km; M-3: 15 - 207.3 km, 30 - 286.1 km, 15 - Remainder
30°T	336.20	M-3: 15 - 315.8 km, 30 - 416.0 km, 8 - Remainder
40°T	189.45	M-3: 15 - 305.9 km, 30 - 428.1 km, 8 - Remainder
41°T	177.32	Meas: 8 - 32.2 km; M-3: 15 - 306.3 km, 30 - 429.4 km, 8 - Remainder
* 51°T	108.34	Meas: 8 - 32.2 km; M-3: 15 - 305.5 km, 30 - 404.1 km, 15 - Remainder
61°T	146.61	Meas: 8 - 32.2 km; M-3: 15 - Remainder
70°T	195.91	M-3: 15 - 22.9 km, 30 - 90.0 km, 15 - Remainder
75°T	215.60	Meas: 20 - 32.2 km; M-3: 30 - 101.2 km, 15 - Remainder

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

KMMJ - Grand Island, NE

750 kHz; 10.5 kW, DA-U

<u>Azimuth</u>	<u>Inverse Field</u> mv/m/km	<u>Soil Conductivity (mS/m)</u>
* 85°T	243.01	Meas: 20 - 32.2 km; M-3: 30 - 123.0 km, 15 - Remainder
95°T	215.60	Meas: 20 - 32.2 km; M-3: 30 - 147.7 km, 15 - 192.5 km, 30 - 251.4 km, 15 - Remainder
105°T	169.98	M-3: 15 - 10.8 km, 30 - 145.2 km, 15 - 191.5 km, 30 - 254.9 km, 15 - Remainder

* Measured radial; source is KMMJ April 1958 antenna proof-of-performance to implement licensed facility; data on file.

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

Proposed NEW AM - Duluth, MN 750 kHz; 7 kW-D, 0.5 kW-N, DA-2, U
(BNP-20050118ADT)

<u>Azimuth</u>	<u>Inverse Field</u> mV/m/km	<u>Soil Conductivity (mS/m)</u>
180°T	143.24	M-3: 8 - 64.2 km, 4 - 221.3 km, 8 - Remainder
190°T	121.89	M-3: 8 - 71.9 km, 4 - 243.2 km, 8 - 258.5 km, 15 - Rem.
200°T	221.70	M-3: 8 - 83.0 km, 4 - 234.8 km, 15 - Remainder
210°T	321.81	M-3: 8 - 93.8 km, 4 - 273.6 km, 15 - 285.5 km, 8 - Rem.
220°T	398.73	M-3: 8 - 100.6 km, 4 - 278.7 km, 8 - Remainder
230°T	447.33	M-3: 8 - 101.4 km, 4 - 296.0 km, 8 - 310.3 km, 15 - Rem.
240°T	465.92	M-3: 8 - 101.2 km, 4 - 302.6 km, 15 - Remainder
250°T	454.02	M-3: 8 - 101.9 km, 4 - 314.5 km, 30 - Remainder
260°T	411.93	M-3: 8 - 106.2 km, 4 - 311.7 km, 30 - Remainder
270°T	341.00	M-3: 8 - 112.7 km, 4 - 318.8 km, 30 - Remainder
280°T	245.15	M-3: 8 - 124.1 km, 4 - 306.1 km, 30 - Remainder
290°T	140.15	M-3: 8 - 145.0 km, 4 - 323.2 km, 15 - Remainder
300°T	122.16	M-3: 8 - 191.5 km, 4 - 293.9 km, 8 - Remainder
310°T	251.66	M-3: 8 - Total distance
320°T	418.36	M-3: 8 - Total distance
330°T	591.11	M-3: 8 - 218.9 km, 1 - Remainder
340°T	757.84	M-3: 8 - 218.5 km, 1 - Remainder
350°T	910.30	M-3: 8 - 188.1 km, 1 - 193.4 km, 8 - 199.2 km, 1 - Rem.
0°T	1042.81	M-3: 8 - 174.8 km, 1 - Remainder
10°T	1152.24	M-3: 8 - 163.2 km, 1 - Remainder

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

CKDM - Dauphin, MB

730 kHz; 10 kW-D, 5 kW-N, DA-N, U

Daytime NDA Inverse Field: 946.2 mV/m/km @ 10 kW.

<u>Azimuth</u>	<u>Soil Conductivity (mS/m)</u>
40°T	DOC: 15 - 27.4 km, 10 - 36.5 km, 15 - 68.2 km, 10 - 84.0 km, 15 - 179.1 km, 10 - Remainder
50°T	DOC: 15 - 27.4 km, 10 - 35.9 km, 15 - 59.2 km, 10 - 64.2 km, 15 - 74.8 km, 10 - 82.4 km, 15 - 90.1 km, 10 - 94.3 km, 15 - 180.2 km, 10 - Remainder
60°T	DOC: 15 - 24.8 km, 10 - 34.9 km, 15 - 81.3 km, 10 - 91.4 km, 15 - 96.6 km, 10 - 107.8 km, 15 - 170.1 km, 10 - 189.9 km, 15 - 209.2 km, 10 - Remainder
70°T	DOC: 15 - 24.8 km, 10 - 37.0 km, 15 - 79.0 km, 10 - 88.5 km, 15 - 93.3 km, 10 - 103.0 km, 15 - 116.2 km, 10 - 126.0 km, 15 - 214.0 km, 10 - 383.2 km, 1 - Remainder
80°T	DOC: 15 - 24.1 km, 10 - 39.4 km, 15 - 78.1 km, 10 - 99.5 km, 15 - 202.0 km, 10 - 212.1 km, 15 - 397.5 km, 10 - 335.1 km, 1 - Remainder
90°T	DOC: 15 - 24.0 km, 10 - 42.2 km, 15 - 89.3 km, 10 - 105.7 km, 15 - 232.4 km, 10 - 344.4 km, 1 - Remainder
100.0°T	DOC: 15 - 25.7 km, 10 - 38.3 km, 15 - 84.8 km, 10 - 88.8 km, 15 - 93.0 km, 10 - 97.7 km, 15 - 112.7 km, 10 - 118.3 km, 15 - 226.6 km, 10 - 354.1 km, 1 - Remainder
110°T	Meas: 15 - 290.0 km; DOC: 10 - 378.5 km, 1 - Remainder
*120°T	Meas: 15 - 290.0 km; DOC: 15 - 308.2 km, 10 - 412.8 km, 1 - 426.2 km, 8 - 470.1 km, 1 - 518.7 km, 8 - Remainder
130°T	Meas: 40 - 20.0 km, 5 - 120.0 km, 8 - 169.0 km, 10 - 242.0 km; DOC: 15 - 365.0 km, 30 - 372.4 km, 8 - Remainder
*140°T	Meas: 40 - 20.0 km, 5 - 120.0 km, 8 - 169.0 km, 10 - 242.0 km; DOC: 15 - 399.4 km, 30 - 462.7 km, 8 - 480.7 km, 4 - Remainder
150°T	Meas: 40 - 20.0 km, 5 - 120.0 km, 8 - 169.0 km, 10 - 242.0 km; DOC: 20 - 274.4 km, 30 - 411.8 km, 15 - 465.8 km, 30 - Remainder
*160°T	Meas: 8 - 245.0 km; DOC: 20 - 254.1 km, 30 - Remainder
170°T	Meas: 10 - 7.0 km, 40 - 20.0 km, 8 - 100.0 km, 10 - 160.0 km, 15 - 261.0 km; DOC: 30 - Remainder
*180°T	Meas: 10 - 7.0 km, 40 - 20.0 km, 8 - 100.0 km, 10 - 160.0 km, 15 - 261.0 km; DOC: 30 - Remainder
190°T	Meas: 10 - 7.0 km, 40 - 20.0 km, 8 - 100.0 km, 10 - 160.0 km, 15 - 261.0 km; DOC: 30 - 493.9 km, 8 - Remainder

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

CKDM - Dauphin, MB

730 kHz; 10 kW-D, 5 kW-N, DA-N, U

Daytime NDA Inverse Field: 946.2 mV/m/km @ 10 kW.

<u>Azimuth</u>	<u>Soil Conductivity (mS/m)</u>
*200°T	Meas: 20 - 255.0 km, 17.5 - 284.0 km; DOC: 30 - 434.6 km, 8 - Remainder
210°T	Meas: 20 - 255.0 km, 17.5 - 284.0 km; DOC: 30 - 425.4 km, 8 - Rem.
220°T	DOC: 15 - 37.7 km, 20 - 153.0 km, 30 - 271.2 km, 40 - 305.5 km, 30 - 434.3 km, 8 - Remainder
230°T	DOC: 15 - 40.6 km, 20 - 154.2 km, 30 - 273.9 km, 40 - 357.3 km, 30 - 467.2 km, 15 - 523.5 km, 8 - Remainder
240°T	DOC: 15 - 40.9 km, 20 - 154.5 km, 30 - 305.9 km, 40 - 341.3 km, 15 - Remainder
250°T	DOC: 15 - 41.0 km, 20 - 133.3 km, 30 - Remainder
260°T	DOC: 15 - 39.9 km, 20 - 133.1 km, 30 - Remainder

* Indicates measured radial; measurements and analysis included with this application.

Soil conductivity values derived from Canadian DOC soil conductivity maps over Canadian territory and FCC Figure M-3 maps over the United States.

Over Canada, significant fresh water bodies are assigned a conductivity value of 10 mS/m unless otherwise designated in compliance with Canadian DOC map instructions.

TABLE OF AZIMUTHS, INVERSE FIELDS AND SOIL CONDUCTIVITIES

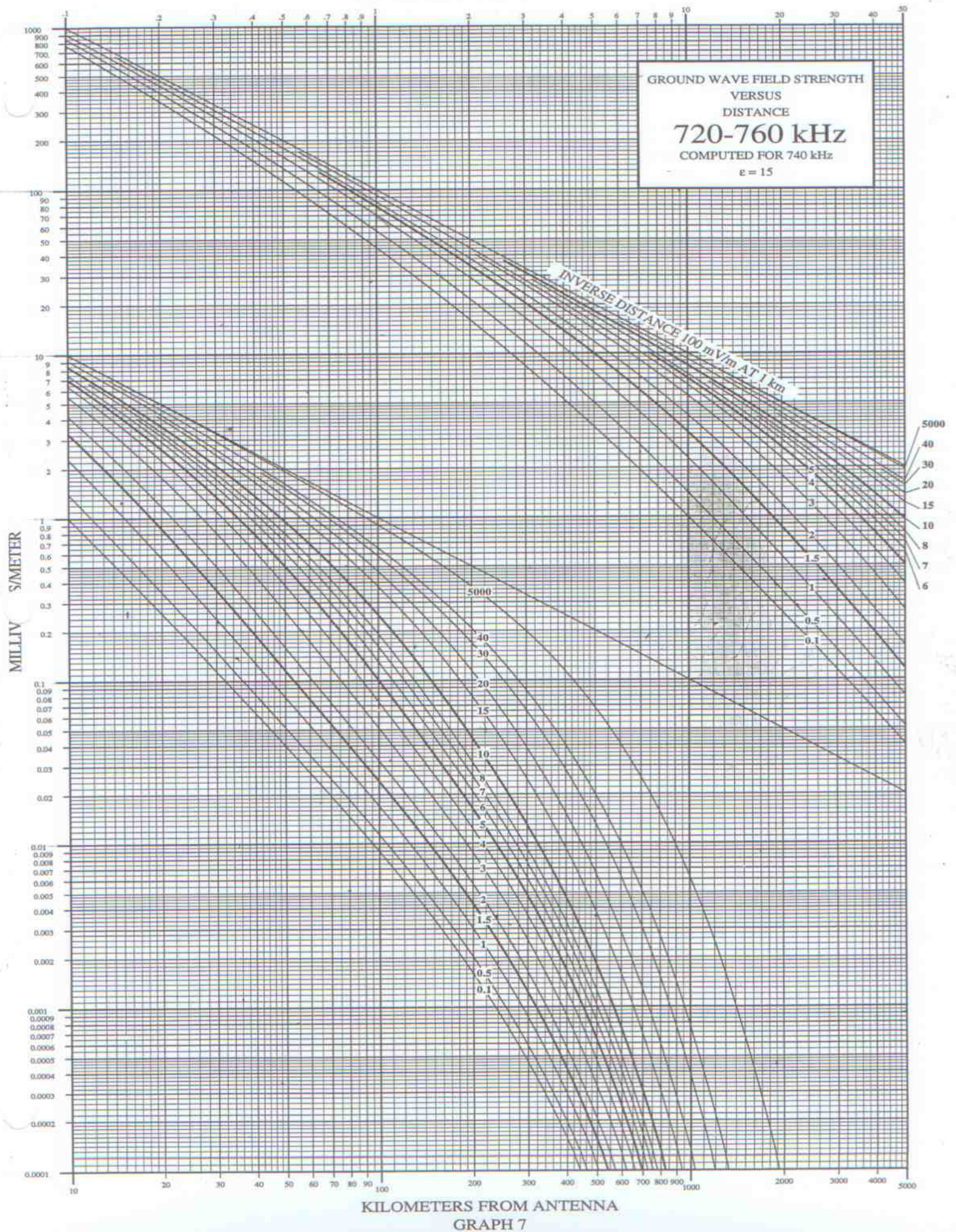
CHWO - Toronto, ON;

740 kHz; 50 kW, ND-U

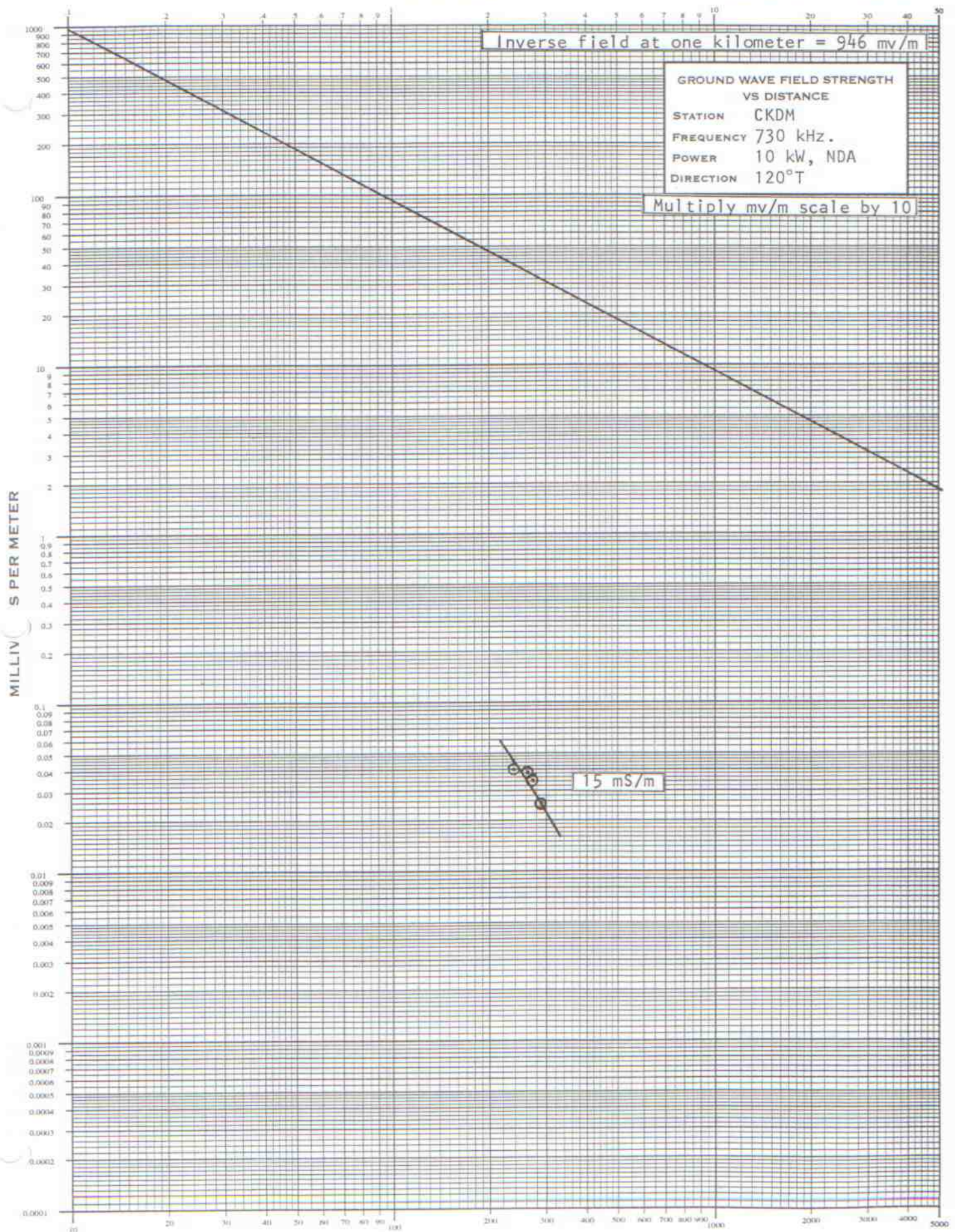
Inverse Field: 2634.4 mv/m/km @ 50 kW.

<u>Azimuth</u>	<u>Soil Conductivity (mS/m)</u>
270°T	M-3: 5 - 54.1 km, 10 - 110.1 km, 15 - 149.8 km, 10 - Remainder
280°T	M-3: 5 - 56.0 km, 10 - 114.3 km, 15 - 153.0 km, 10 - Remainder
290°T	M-3: 5 - 26.1 km, 10 - 32.2 km, 8 - 48.8 km, 5 - 63.7 km, 10 - 99.3 km, 5 - 127.1 km, 15 - 162.5 km, 10 - Remainder
300°T	M-3: 5 - 20.9 km, 10 - 32.0 km, 8 - 54.9 km, 5 - 152.4 km, 15 - 161.3 km, 10 - 223.4 km, 8 - Remainder
310°T	M-3: 5 - 17.7 km, 10 - 32.0 km, 8 - 56.2 km, 5 - 159.5 km, 10 - 262.3 km, 8 - Remainder
315°T	M-3: 5 - 16.1 km, 10 - 32.2 km, 8 - 57.0 km, 5 - 130.7 km, 4 - 162.5 km, 10 - 363.7 km, 4 - 371.8 km, 10 - 434.7 km, 1 - Rem.
320°T	M-3: 5 - 15.9 km, 10 - 31.7 km, 8 - 57.9 km, 5 - 117.6 km, 4 - 183.8 km, 10 - 310.6 km, 4 - 347.6 km, 10 - 380.4 km, 1 - Rem.
330°T	M-3: 5 - 14.5 km, 10 - 32.3 km, 8 - 61.6 km, 5 - 104.6 km, 4 - 145.2 km, 10 - 278.3 km, 4 - 294.5 km, 10 - 308.8 km, 2 - 316.9 km, 10 - 321.9 km, 2 - 352.6 km, 1 - Remainder
340°T	M-3: 5 - 13.8 km, 10 - 35.1 km, 8 - 65.5 km, 5 - 100.1 km, 4 - 112.5 km, 10 - 278.7 km, 1 - 338.3 km, 2 - 437.6 km, 1 - Rem.
350°T	M-3: 5 - 14.3 km, 10 - 37.0 km, 8 - 70.7 km, 5 - 101.2 km, 4 - 102.8 km, 10 - 199.9 km, 1 - 329.6 km, 2 - 411.7 km, 1 - Rem.
360°T	M-3: 5 - 14.5 km, 10 - 42.2 km, 8 - 77.7 km, 5 - 123.4 km, 4 - 175.4 km, 1 - 302.7 km, 2 - 392.8 km, 1 - Remainder

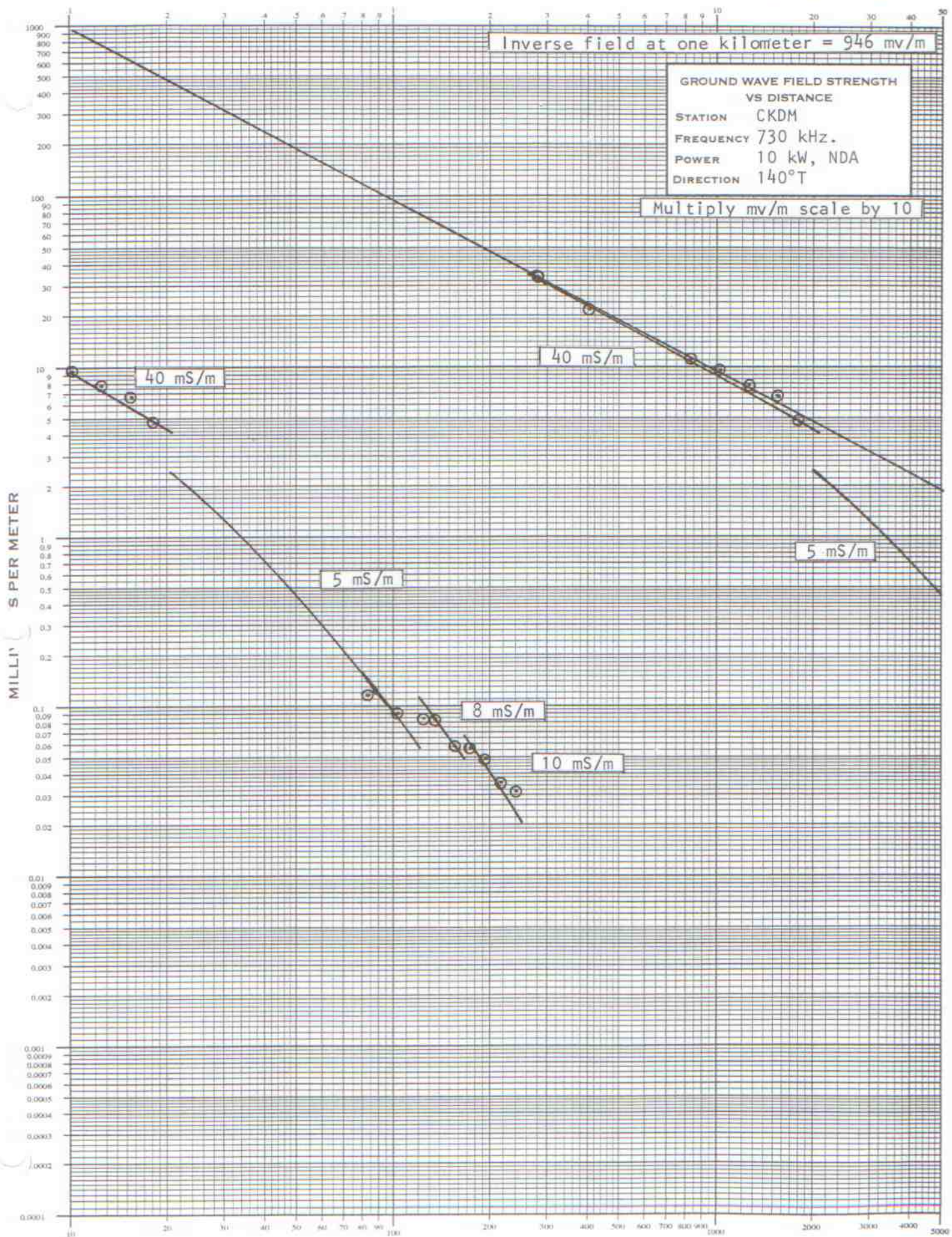
Source of soil conductivity data: FCC Figure M-3 or DOC Soil conductivity maps for Canadian territory.



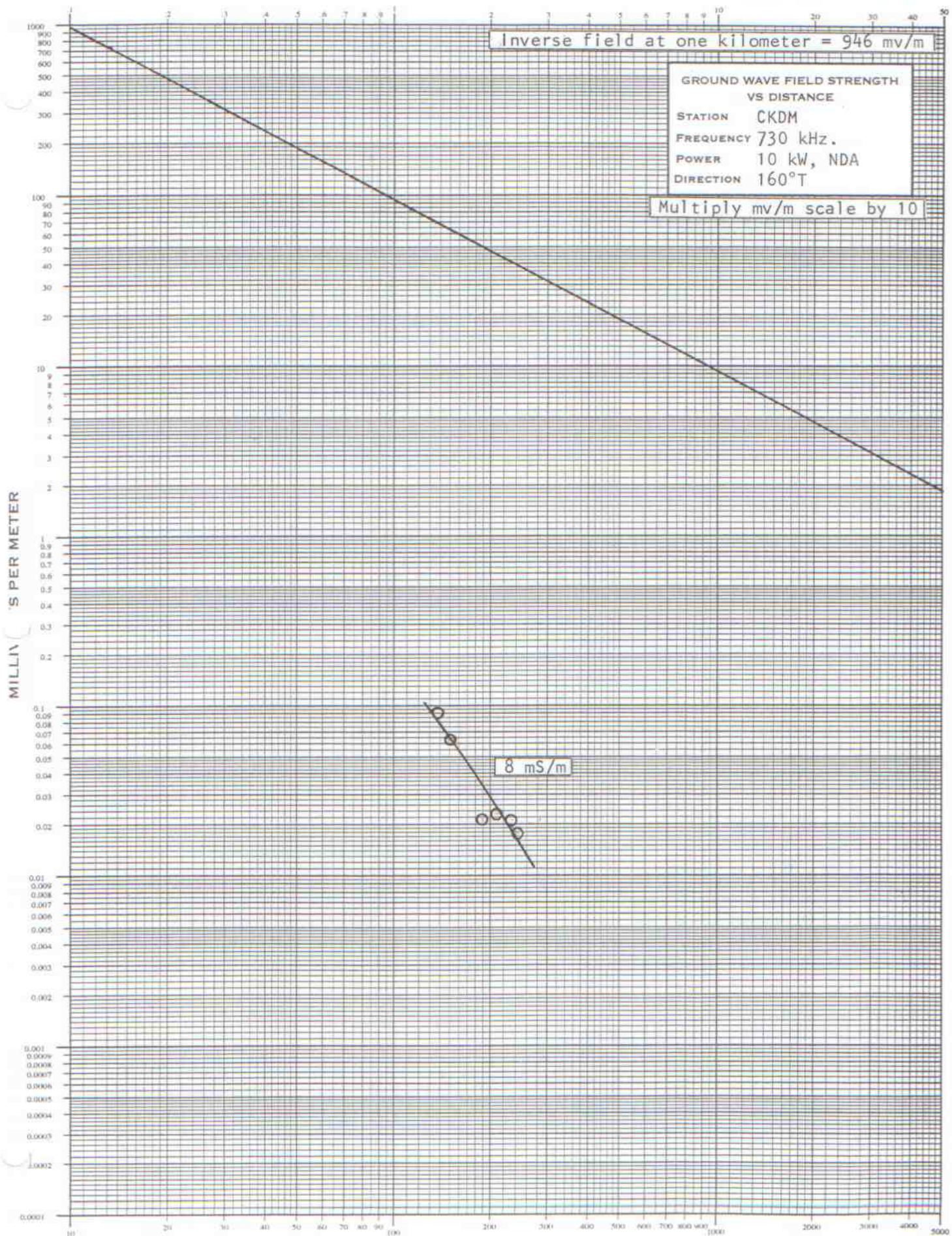
INDEPENDENT BROADCAST
CONSULTANTS, INC.



[illegible]



[illegible]





110 COUNTY RD. 146, TRUMANSBURG, NY 14886-9721
TEL: (607) 273-2970 • FAX: (607) 273-5125

FIGURE 8D PAGE 1

FIELD INTENSITY MEASUREMENTS

STATION CKDM RADIAL 180 °T

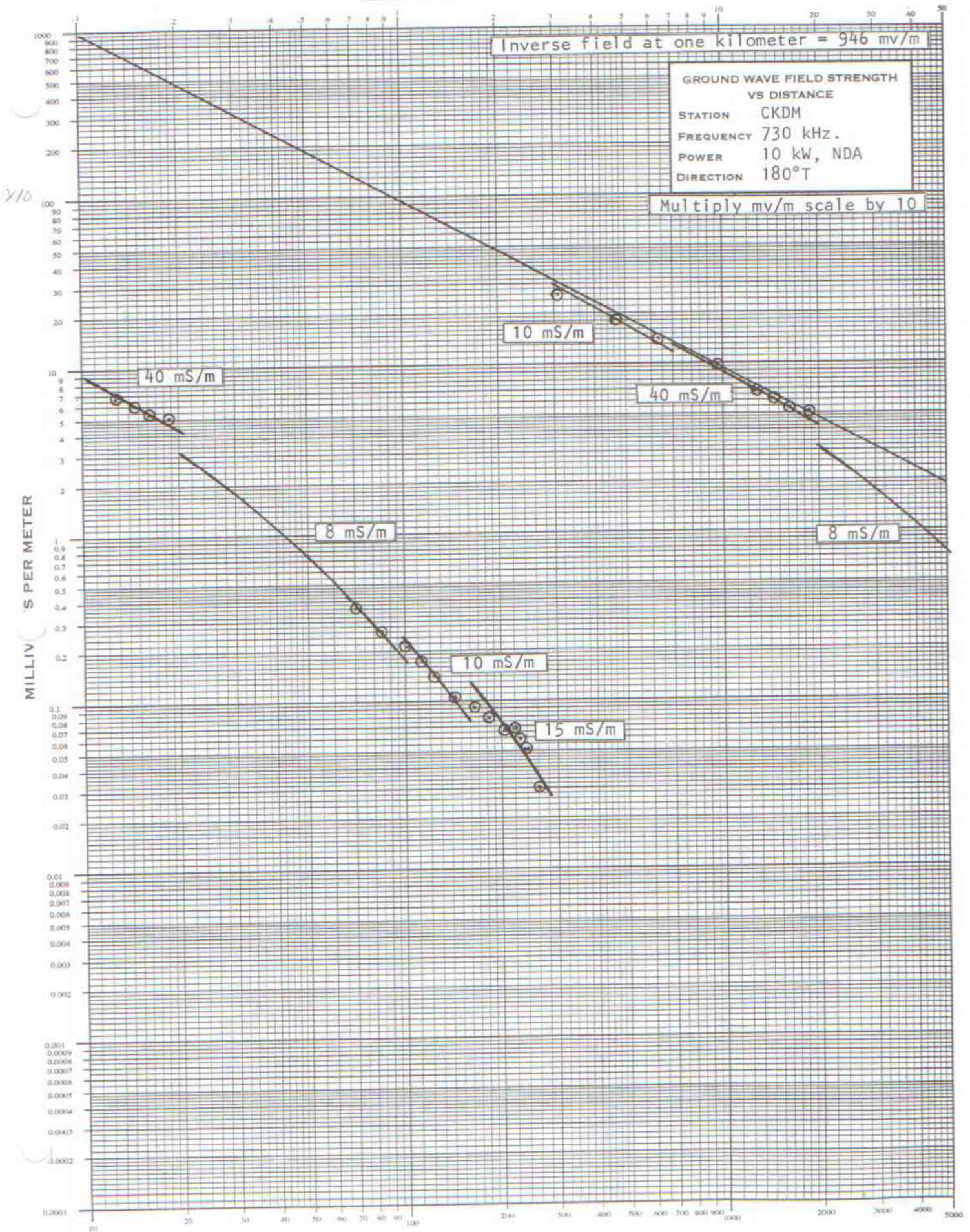
POWER 10 kW. NDA X POWER _____ DA-D□ DA -N□ DA -I□

FREQUENCY 730 KHZ ENGINEER Robert Kowalchuk

FIELD INTENSITY METER FIM-41/Ser. 776 CAL 02/07/96

FIELD INTENSITY METER _____ CAL _____

[illegible]



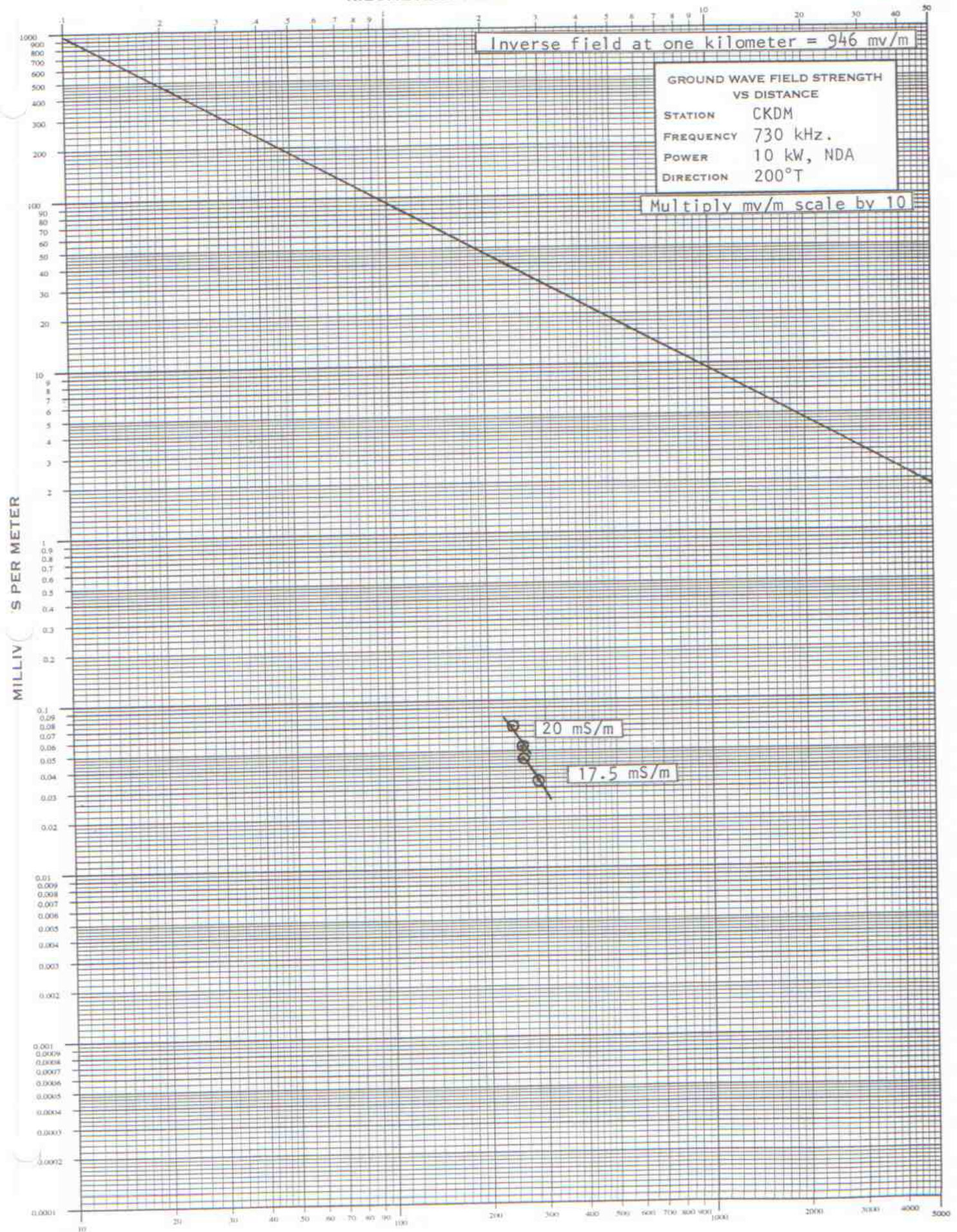


110 COUNTY RD. 146, TRUMANSBURG, NY 14886-9721
TEL: (607) 273-2970 • FAX: (607) 273-5125

FIGURE 8E PAGE 1
FIELD INTENSITY MEASUREMENTS

STATION CKDM RADIAL 200 °T
POWER 10 kW. NDA X POWER DA-DQ DA-ND DA-1D
FREQUENCY 730 KHZ ENGINEER Robert Kowalchuk
FIELD INTENSITY METER FIM-41/Ser. 776 CAL 02/07/96
FIELD INTENSITY METER CAL

[illegible]



PERMITTED KKAG NIGHTTIME HORIZONTAL PLANE STANDARD PATTERN

Callsign : KKAG
 Coordinates : 46-58-29.0 N, 96-30-12.0 W (Non-Augmented)
 Comments :
 Frequency (KHz): 740
 Power (w): 940.000
 Pattern : CN
 Efficiency : 288.670 mV/M
 Desc : DA3
 City/State : FARGO, ND
 ARN :
 Licensee : JEFFREY G. DRESS

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	81.3	0.0
2	0.480	274.0	119.8	26.9	81.3	0.0
3	1.543	70.7	235.7	19.6	81.3	0.0
4	1.550	178.4	289.2	31.5	81.3	0.0
5	0.786	4.3	178.4	43.2	81.3	0.0
6	0.930	126.1	84.0	76.3	81.3	0.0

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	296.193	75	23.910	150	305.142	225	327.655	300	251.452	
5	260.328	80	16.330	155	314.941	230	336.334	305	144.984	
10	220.948	85	18.425	160	319.530	235	357.519	310	50.314	
15	180.122	90	24.292	165	321.264	240	391.512	315	80.928	
20	139.628	95	26.856	170	322.470	245	435.453	320	165.637	
25	101.042	100	24.988	175	324.845	250	484.338	325	238.931	
30	65.935	105	25.676	180	329.041	255	532.244	330	295.318	
35	36.633	110	41.826	185	334.620	260	573.184	335	333.454	
40	20.588	115	71.942	190	340.366	265	601.641	340	353.720	
45	27.388	120	109.998	195	344.785	270	612.973	345	357.660	
50	39.134	125	151.687	200	346.581	275	603.797	350	347.575	
55	46.433	130	193.269	205	345.043	280	572.309	355	326.158	
60	47.808	135	231.443	210	340.356	285	518.529			
65	43.496	140	263.642	215	333.870	290	444.376			
70	34.713	145	288.323	220	328.307	295	353.578			
0.0 ohm K			157.838	1.0 ohm K			152.232			
RMSS			303.301	RMSt			288.670			
RSS			416.807							

$\square Q$: 10.42

This standard radiation pattern authorized and constructed (license application pending) at KKAG, Fargo, ND per FCC Construction Permit BNP-20010703AA0.

PROPOSED KKAG NIGHTTIME HORIZONTAL PLANE MODIFIED STANDARD PATTERN

Callsign : KKAG
 Coordinates : 46-58-29.0 N, 96-30-12.0 W (Augmented)
 Comments :
 Frequency (KHz): 740
 Power (w): 940.000
 Pattern : CN
 Augmented
 Efficiency : 288.670 mV/M
 Desc : DA3
 City/State : FARGO, ND
 ARN :
 Licensee : JEFFREY G. DRESS

Tower	Field	Phase	Spang	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	81.3	0.0
2	0.480	274.0	119.8	26.9	81.3	0.0
3	1.543	70.7	235.7	19.6	81.3	0.0
4	1.550	178.4	289.2	31.5	81.3	0.0
5	0.786	4.3	178.4	43.2	81.3	0.0
6	0.930	126.1	84.0	76.3	81.3	0.0

Brng	Span	mV/M
344.0	40.0	410.00

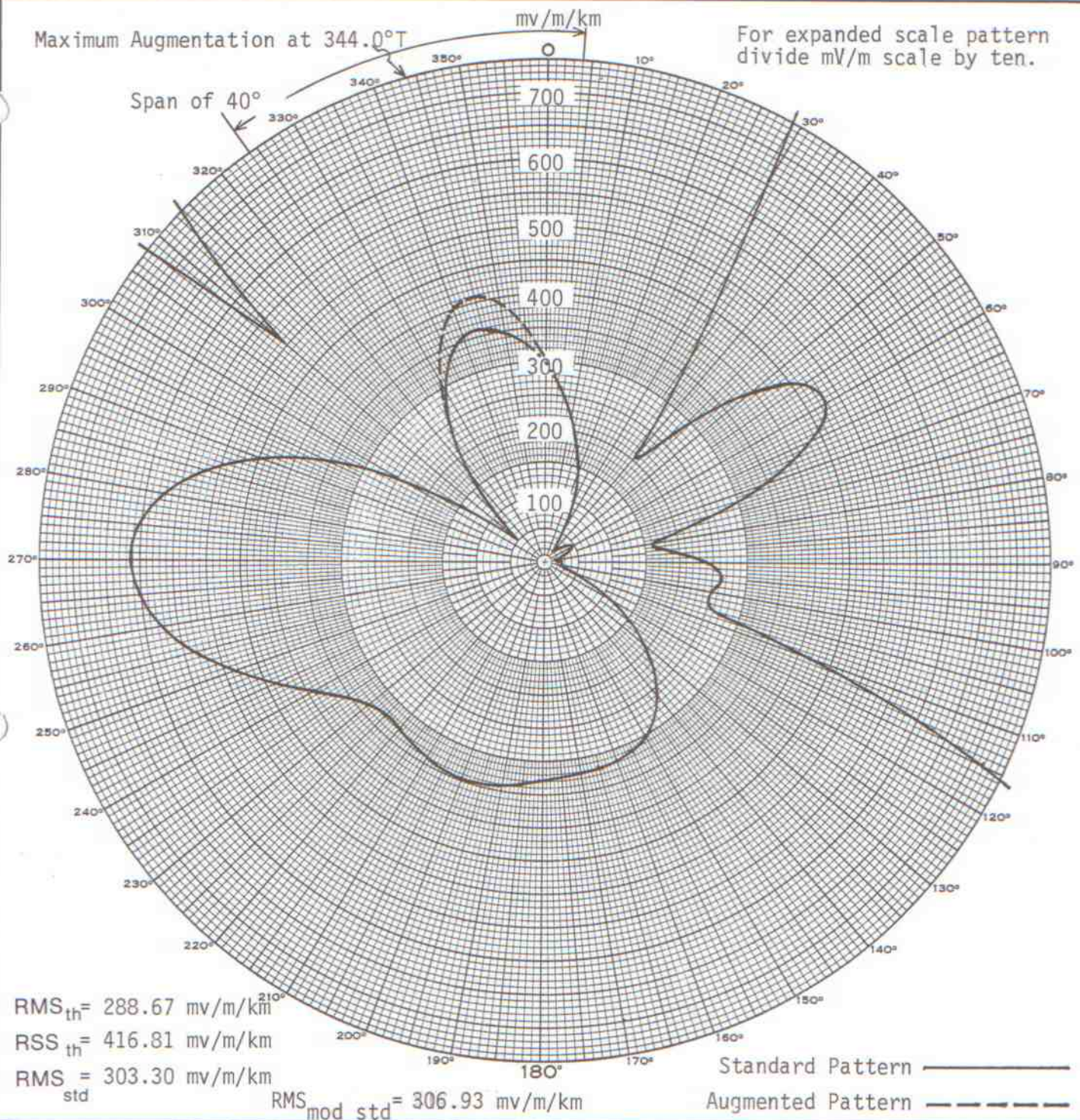
Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	302.554	75	23.910	150	305.142	225	327.655	300	251.452	
5	260.329	80	16.330	155	314.941	230	336.334	305	144.984	
10	220.948	85	18.425	160	319.530	235	357.519	310	50.314	
15	180.122	90	24.292	165	321.264	240	391.512	315	80.928	
20	139.628	95	26.856	170	322.470	245	435.453	320	165.637	
25	101.042	100	24.988	175	324.845	250	484.338	325	239.444	
30	65.935	105	25.676	180	329.041	255	532.244	330	308.922	
35	36.633	110	41.826	185	334.620	260	573.184	335	366.404	
40	20.588	115	71.942	190	340.366	265	601.641	340	401.487	
45	27.388	120	109.998	195	344.785	270	612.973	345	409.337	
50	39.134	125	151.687	200	346.581	275	603.797	350	390.474	
55	46.433	130	193.269	205	345.043	280	572.309	355	351.000	
60	47.808	135	231.443	210	340.356	285	518.529			
65	43.496	140	263.642	215	333.870	290	444.376			
70	34.713	145	288.323	220	328.307	295	353.578			

0.0 ohm K	: 157.838	1.0 ohm K	: 152.232
RMSs	: 303.301	RMSt	: 288.670
RSS	: 416.807		

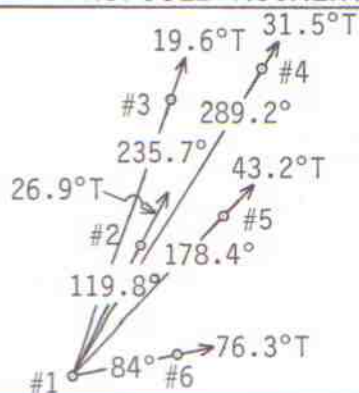
Q : 10.42

RMS-Aug : 306.93

FIGURE 9C



PROPOSED AUGMENTED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



Theoretical Specs:

Twr. #	Ratio/Phase
1	1.000/±0°
2	0.480/-86.0°
3	1.543/+70.7°
4	1.550/+178.4°
5	0.786/+4.3°
6	0.930/+126.1°

G = 81.3° = 300' = 91.4m
 (same all towers)

STATION	KKAG
LOCATION	Fargo, ND
FREQUENCY	740 kHz.
POWER	940 watts
LATITUDE	N 46° 58' 29"
LONGITUDE	W 96° 30' 12"
MODE	Nighttime
PATTERN	415050-N-P
DATE	12-14-2006

INDEPENDENT BROADCAST CONSULTANTS
 TRUMANSBURG, NEW YORK

FIGURE 10A

AM Allocation Study

Coordinates : 46-58-29.0 N 96-30-12.0 W
 Frequency : 740
 Initial PWR: 0.940
 Initial Inv Field: 288.67 mV/m

SITE INFO		BEARING	CALL	LIM	CLASS	SLANT DIST	GEOMAG MIDPT	AZIMUTH TO	GND RAD	MIN ELEV	MAX ELEV	MAX RAD	SWAVE FLD SWAVE FLD	LIMITATION ALLOWABLE	RSS LIMIT 50%	RSS LIMIT 25%
61.2	NEW	5104.713			B	2639.0	62.8	61.2	47.2	0.0	0.0	47.2	0.004957	0.047	12.104	12.104
74.3	CHCM	4400.488			B	3092.5	60.3	74.3	25.5	0.0	0.0	25.5	0.003376	0.017	5.942	6.600
97.3	WKKK	5399.689			B	930.9	56.8	97.3	26.4	6.9	12.7	24.8	0.032673	0.016	13.227	14.114
100.1	CHWO	9.357			A	1356.1	292.0	100.1	0.0	0.0	0.0	0.0	0.261596	0.025	0.000	0.000
115.8	WJYM	10379.243			D	1209.3	55.0	115.8	0.0	0.0	0.0	0.0	0.021966	0.035	16.583	18.239
122.7	ZVH-	1950.824			A	8798.1	323.9	122.7	0.0	4.2	8.6	77.5	0.001282	0.025	0.000	0.000
128.8	WTAC	14940.793			B	44.9	34.9	128.8	183.3	0.0	0.0	183.3	0.002823	0.104	33.746	33.746
136.0	WTE	49049.255			B	3797.2	44.9	136.0	238.2	0.0	0.0	238.2	0.000834	0.040	16.364	16.364
140.4	WSB	1745.846			B	1786.1	328.5	140.4	0.0	0.0	0.0	0.0	0.014320	0.250	0.000	0.000
141.9	WYNC	611.468			A	4667.3	334.6	141.9	0.0	0.0	0.0	0.0	0.004089	0.025	0.000	0.000
142.5	WSBR	3624.175			B	2708.8	47.7	142.5	276.9	0.0	0.0	276.9	0.006446	0.357	16.235	18.689
142.7	WQTM	2977.244			B	2434.2	48.7	142.7	278.1	0.0	0.0	278.1	0.007678	0.427	15.959	18.286
143.6	WMTK	12686.167			B	2550.2	48.2	143.6	282.0	0.0	0.0	282.0	0.007158	0.040	6.181	7.265
144.0	HJNS	583.271			A	4594.8	335.9	144.0	0.0	0.0	0.0	0.0	0.004286	0.025	0.000	0.000
144.2	ZP38	99999.000			C	9079.6	22.5	144.2	285.0	0.0	0.0	285.0	0.000150	0.009	4.712	5.464
146.1	ZP54	99999.000			C	9098.4	21.9	146.1	292.7	0.0	0.0	292.7	0.000150	0.009	5.332	6.121
147.7	CH27	99999.000			B	9530.2	19.7	147.7	298.5	0.0	0.0	298.5	0.000140	0.008	3.084	3.084
147.7	WMSF	2974.246			B	6943.2	30.3	147.7	298.5	0.0	0.0	298.5	0.012345	0.015	14.312	14.312
148.2	W54.0	99999.000			B	1859.6	50.3	148.2	300.0	0.3	3.2	300.0	0.000223	0.014	24.399	29.373
154.0	HJHB	880.231			B	7469.0	26.9	154.0	313.4	0.0	0.0	313.4	0.002840	0.025	6.500	6.500
155.6	KSDU	5705.480			A	1421.4	51.4	155.6	315.8	2.7	6.5	315.8	0.019849	0.125	8.785	9.060
160.0	XECA	21035.032			B	3032.2	44.6	160.0	319.5	0.0	0.0	319.5	0.003527	0.225	29.673	32.560
163.0	XE	43711.255			B	3143.5	43.8	163.0	320.8	0.0	0.0	320.8	0.003153	0.202	55.130	57.444
171.6	KOMC	923.485			B	1531.2	50.3	171.6	323.1	2.0	5.5	323.1	0.018203	1.175	11.725	13.448
173.0	XEKV	38007.702			B	3245.5	42.7	173.0	323.7	0.0	0.0	323.7	0.002857	0.185	43.438	48.372
175.4	KTRH	1150.920			B	1906.3	48.5	175.4	325.1	0.1	2.9	325.1	0.012855	0.836	9.011	11.836
177.4	XE	29038.238			B	3385.0	41.9	177.4	326.6	0.0	0.0	326.6	0.002729	0.178	31.695	32.699
179.1	KWNG	483.214			B	1227.7	51.5	179.1	328.1	4.0	8.4	328.1	0.026312	1.720	8.108	10.171
181.2	XEGF	28097.700			B	2953.9	43.7	181.2	330.3	0.0	0.0	330.3	0.003750	0.248	42.148	47.361
189.4	KKDA	2212.184			B	1593.1	49.8	189.4	330.3	0.0	0.0	330.3	0.006217	0.422	2.662	3.056
189.9	KWFJ	30436.173			B	2400.7	46.1	189.9	339.7	0.0	0.0	339.7	0.0067390	0.443	75.694	75.694
192.5	XELT	23684.375			B	689.7	53.9	192.5	341.3	10.8	18.4	341.3	0.004140	0.284	11.545	11.545
194.4	XE	17382.935			B	2836.5	44.1	194.4	342.9	0.0	0.0	342.9	0.002890	0.199	39.221	39.221
196.6	XEQN	22859.578			B	3195.7	42.5	196.6	344.4	0.0	0.0	344.4	0.005844	0.404	20.097	21.712
198.0	XEVA	16053.915			B	2472.6	45.8	198.0	345.7	0.0	0.0	345.7	0.003499	0.242	53.439	53.439
207.2	XE	17018.010			B	3043.2	43.3	207.2	346.3	0.0	0.0	346.3	0.009056	0.627	22.467	23.341
209.6	XEZA	12480.232			B	2110.3	47.1	209.6	346.4	0.5	0.5	346.4	0.007480	0.514	61.649	64.110
209.7	XEHS	12434.442			B	2626.8	45.6	209.7	347.1	0.0	0.0	347.1	0.005011	0.342	41.092	42.732
210.2	XE	11345.010			B	1894.9	45.7	210.2	348.9	0.0	0.0	348.9	0.005114	0.349	25.014	26.393
212.2	XE	11686.958			B	1894.9	45.7	212.2	349.1	0.0	0.0	349.1	0.012857	0.088	25.434	26.959
220.1	KVOR	383.779			B	2840.5	44.8	220.1	349.7	0.1	3.0	349.7	0.012857	0.281	11.100	11.669
222.6	KIDR	3568.378			B	2358.6	47.2	222.6	350.1	0.0	0.0	350.1	0.004126	0.436	19.289	21.511
227.0	KVFC	709.312			B	1118.8	52.5	227.0	351.1	0.0	0.0	351.1	0.006578	0.436	31.993	35.372
239.6	KOAL	7734.658			B	1469.6	49.3	239.6	352.2	5.0	9.8	352.2	0.01049	1.947	7.910	9.158
243.4	NEW	32609.895			B	2130.8	52.4	243.4	352.6	2.4	6.0	352.6	0.018584	1.225	28.389	31.542
253.1	KHWG	34483.013			B	1118.2	50.8	253.1	358.7	2.6	6.4	358.7	0.018500	0.144	9.381	10.545
254.6	KCBS	681.438			B	1991.0	52.1	254.6	359.1	0.0	1.7	359.1	0.009092	0.080	20.306	21.719
263.3	KBSU	3553.712			B	2340.9	51.3	263.3	359.3	0.0	2.4	359.3	0.007031	0.743	26.200	26.200
274.5	KXL	15333.066			B	1606.6	54.2	274.5	359.3	1.6	4.9	359.3	0.012860	0.153	3.417	3.833
279.7	KERR	8863.249			B	2005.3	55.0	279.7	360.5	0.0	2.3	360.5	0.007300	0.088	8.509	8.955
292.1	NEW	3039.342			B	1342.5	56.4	292.1	365.6	3.2	7.2	365.6	0.015820	0.181	10.460	11.217
306.6	CBX	217.508			B	1853.4	57.7	306.6	367.3	1.8	1.8	367.3	0.013542	1.102	16.464	16.464
316.0	NEW	4786.199			B	1407.3	59.2	316.0	367.3	4.7	4.7	367.3	0.032370	0.722	2.816	3.083
324.0°						2896.5	62.7	324.0°	37.4	0.0	0.0	37.4	0.003930	0.077	7.524	7.876

Proposed KKAG Augmentation Span Begins (rotating clockwise)

Center of Proposed KKAG Augmentation Span

Proposed KKAG Augmentation Span Ends (rotating clockwise)

[No Notified Stations or Proposals]

[324.0°] - 4.0°

NIGHTTIME CLIPPING STUDY DATA SHEET

STATION Prop. New LOCATION Fargo, ND SITE: N 46° 58' 29" W 96° 30' 12" DATE 01-13-97
12-14-06

Call	Latitude	Longitude	Dist(km)	Bear(°T)	RSS	Req-Pro	θmin	θmax	MPL	SWF	Max mv/m @ θ
CHWO -O	54-03-01	79-49-03	1412.5	50.0	---	0.500	4.5	4.5	---	31.16	80.2s
-220	42-06-14	81-28-04	1306.0	109.0	---	0.728	5.4	5.4	---	38.08	95.6s
-230	41-42-05	82-44-50	1238.6	113.2	---	0.962	6.0	6.0	---	43.01	111.8s
-260	43-13-38	82-18-48	1186.9	105.4	---	0.706	6.5	6.5	---	47.00	75.1s
-280	43-51-04	82-10-46	1168.7	102.1	---	0.657	6.7	6.7	---	48.46	67.8s
-316	50-35-05	91-17-27	553.7	41.6	---	0.500	17.8	17.8	---	117.03	21.4s
-320	51-08-36	90-33-11	634.2	40.9	---	0.500	15.4	15.4	---	107.21	23.3s
-323	51-32-13	89-56-57	694.8	40.7	---	0.500	13.8	13.8	---	99.92	25.0s
-330	52-21-44	88-22-43	836.0	41.3	---	0.500	11.0	11.0	---	82.54	30.3s
-340	53-16-56	85-47-15	1034.9	43.4	---	0.500	8.2	8.2	---	60.62	41.2s
-350	53-51-20	82-53-09	1227.7	46.5	---	0.500	6.1	6.1	---	43.82	57.0s
CHWO -A	44-05-10	81-45-32	1190.4	100.3	---	0.554	6.5	6.5	---	46.74	59.3s
-B	45-12-40	81-43-22	1154.6	94.4	---	0.805	6.8	6.8	---	49.64	81.1s
-C	45-53-25	83-29-23	1003.3	92.1	---	1.015	8.5	8.5	---	63.83	79.5s
-D	46-27-40	84-30-45	914.9	89.2	---	1.017	9.8	9.8	---	72.51	70.1
-E	46-58-45	84-46-18	889.1	85.7	---	1.006	10.2	10.2	---	75.42	66.7s
-F	47-42-50	85-56-30	799.3	80.2	---	0.951	11.7	11.7	---	86.50	55.0s
-G	48-00-00	89-30-23	537.7	75.2	---	0.731	18.4	18.4	---	119.16	30.7s
-H	48-07-00	90-44-00	451.1	71.5	---	0.658	22.0	22.0	---	132.59	24.8s
-I	48-05-50	91-33-30	391.5	69.6	---	0.608	25.2	25.2	---	145.50	20.9s
-J	48-13-30	92-22-47	338.9	64.3	---	0.557	28.7	28.7	---	159.66	17.4s
-K	48-28-10	92-41-00	330.5	58.4	---	0.527	29.4	29.4	---	162.52	16.2s
-L	48-37-40	93-05-05	314.5	53.0	---	0.500	30.6	30.6	---	167.94	14.9s
-M	49-00-00	92-49-14	354.6	49.2	---	0.500	27.6	27.6	---	154.73	16.2s
-N	49-30-00	92-24-49	412.9	45.7	---	0.500	24.0	24.0	---	140.65	17.8s
-O	50-00-00	91-56-27	475.4	43.3	---	0.500	20.9	20.9	---	128.43	19.5s
CBX	53-19-10	113-26-43	1393.0	306.6	2.801	1.253	4.7	4.7	---	32.34	193.7f
Pt.A	54-56-22	112-26-50	1419.5	314.4	2.801	1.253	4.5	4.5	---	30.79	203.5f
Pt.B	53-57-30	111-32-08	1312.7	311.8	2.801	1.253	5.3	5.3	---	37.62	166.5f
Pt.C	53-04-46	111-55-25	1289.7	307.4	2.801	1.253	5.5	5.5	---	39.24	159.7f
Pt.D	52-39-43	113-40-27	1379.8	303.6	2.801	1.253	4.8	4.8	---	33.20	188.7f
KVOR	39-05-02	104-42-41	1110.8	220.1	9.158	2.289	5.0	9.8	52.5	29.83	383.8
Pt.A	38-40-20	104-28-15	1127.5	217.9	9.158	2.289	4.7	9.4		28.82	397.1
Pt.B	39-03-45	104-29-55	1092.6	219.3	9.158	2.289	5.0	9.9		30.24	378.5
Pt.C	39-16-15	104-37-55	1079.8	220.5	9.158	2.289	5.2	10.0		30.74	372.3
Pt.D	39-16-45	104-46-15	1085.9	221.0	9.158	2.289	5.1	10.0		30.43	376.1
KRMG	36-04-50	96-17-09	1211.3	179.1	8.981	2.245	4.0	8.4	51.5	26.32	426.6
Pt.A	36-01-00	95-03-30	1224.2	173.9	8.981	2.245	3.9	8.3		25.75	435.9
Pt.B	36-14-45	95-36-10	1195.2	176.1	8.981	2.245	4.2	8.6		26.81	418.7
Pt.C	36-19-05	96-29-10	1184.8	179.9	8.981	2.245	4.3	8.7		27.27	411.6
Pt.D	36-09-10	96-42-50	1203.3	180.9	8.981	2.245	4.1	8.5		26.62	421.7
Pt.E	35-23-25	97-22-45	1290.0	183.6	8.981	2.245	3.5	7.6		23.87	470.3

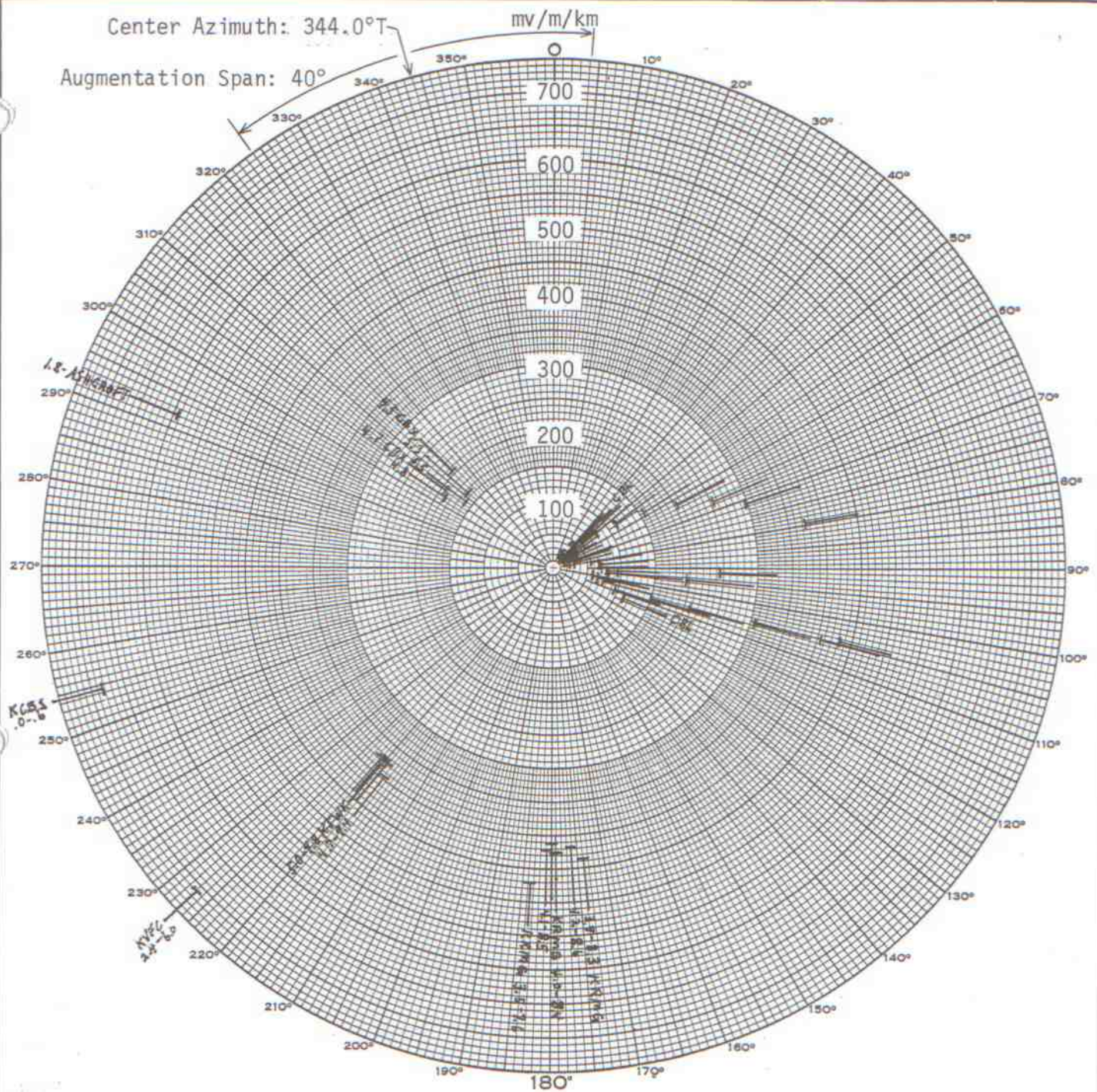
Data Submitted with KKAG Authorizing Construction Permit Applications
1997 & 2001; Analysis Accepted by the Commission

NIGHTTIME CLIPPING STUDY DATA SHEET

Call	Latitude	Longitude	Dist(km)	Bear(°T)	RSS	Req-Pro	Θmin	Θmax	MPL	SWF	Max mv/m @ Θ
	Supplemental CHWO 50% Skywave Protection Points										
S-A'	53-54-26	82-13-20	1267.6	47.3	---	0.500	5.7	5.7	---	40.859	61.19
S-B'	50-00-00	89-53-08	592.1	53.0	---	0.600	16.6	16.6	---	112.388	26.69
S-C'	52-28-05	84-25-49	1059.0	50.4	---	0.600	7.9	7.9	---	58.402	51.37
S-D'	52-55-57	81-17-25	1270.2	53.0	---	0.600	5.7	5.7	---	40.668	73.77
S-E'	48-57-53	91-00-00	465.4	59.6	---	0.600	21.3	21.3	---	130.140	23.05
S-F'	51-33-22	87-13-50	842.8	49.4	---	0.600	10.9	10.9	---	81.894	36.63
S-G'	50-00-00	87-47-03	724.6	59.2	---	0.700	13.2	13.2	---	95.946	36.48
S-H'	51-50-00	82-18-45	1157.4	57.0	---	0.700	6.8	6.8	---	49.413	70.83
S-I'	52-00-00	80-00-00	1312.5	58.8	---	0.700	5.3	5.3	---	37.634	93.00
S-J'	49-05-30	89-03-32	601.1	64.2	---	0.700	16.3	16.3	---	111.294	31.45
S-K'	51-06-15	85-25-00	928.0	56.3	---	0.700	9.6	9.6	---	71.349	49.05
S-L'	50-00-00	85-36-00	870.0	63.3	---	0.800	10.5	10.5	---	78.210	51.14
S-M'	50-55-33	82-18-35	1123.3	61.8	---	0.800	7.1	7.1	---	52.600	76.05
S-N'	51-06-57	80-00-00	1284.3	62.9	---	0.800	5.6	5.6	---	39.634	100.92
S-O'	50-00-00	81-33-40	1149.0	67.5	---	0.900	6.9	6.9	---	50.109	89.80

G-A	42-32-19	80-05-27	1383.2	104.9	---	2.20	5.1	5.1	---	32.99	333.40
G-B	42-13-48	82-04-37	1255.4	109.6	---	0.50	5.8	5.8	---	41.75	59.87
G-C	42-27-35	82-31-23	1210.9	109.4	---	0.50	6.3	6.3	---	45.14	55.39
G-D	42-53-06	82-27-42	1193.0	107.3	---	0.80	6.4	6.4	---	46.53	85.96
G-E	43-35-10	81-41-34	1216.1	102.6	---	2.1	6.2	6.2	---	44.74	234.70
G-F	44-18-51	81-35-54	1193.7	98.9	---	1.2	6.4	6.4	---	46.48	129.10
G-G	45-04-08	81-30-00	1175.6	94.9	---	0.5	6.6	6.6	---	47.94	52.15
G-H	45-33-06	80-18-52	1252.1	91.3	---	0.5	5.9	5.9	---	42.00	59.53

Data Submitted with KKAG	July 2002 Amendment to	Authorizing Construction Permit Application
	Analysis Accepted by	the Commission



NIGHTTIME PROTECTION CONSTRAINTS

As Depicted on this Polar Graph, NO STATIONS OR PROPOSALS Impose Nighttime Interference Constraints of less than 750 mV/m within the Proposed KKAG Nighttime Augmentation Span of 324.0°T through 4.0°T.

(1997 reference to CBL now applies to CHWO, which now operates with identical Class A Canadian facilities.)

STATION	Proposed New
LOCATION	Fargo, ND
FREQUENCY	740 kHz.
POWER	
LATITUDE	N 46° 58' 29"
LONGITUDE	W 96° 30' 12"
MODE	Nighttime
PATTERN	-----
DATE	January 21, 1997
(Augmented: December 20, 2006)	
INDEPENDENT BROADCAST CONSULTANTS	
TRUMANSBURG, NEW YORK	

CHWO CRITICAL HOURS ANALYSIS

Radio Station KKAG
 Fargo, ND
 740 kHz; 50 kW-D, 7.5 kW-CH, 0.94 kW-N, DA-3, U

<u>CHWO Contour Point</u>	<u>Bearing from CHWO</u>	<u>CHWO 0.1 mV/m Contour Dist. (km) Dist. (mi)</u>	<u>Contour Coordinates</u>	<u>Dist./ Bear.fr. KKAG</u>	<u>Max. Allowed KKAG mV/m/km</u>	<u>KKAG Theta Angle</u>	<u>Prop. KKAG mV/m/km @ Theta</u>
A	270.0°T	152.8 km* 95.0 mi*	43-33-34 81-42-51	1215.7 km 102.8 °T	804.1	0.0° 6.2°	137.65 139.29
B	300.0°T	163.3 km* 101.5 mi*	44-17-41 81-35-43	1194.6 km 99.0 °T	785.1	0.0° 6.4°	248.77 247.22
C	315.2°T	374.5 km 232.7 mi	45-54-53 83-13-46	1022.5 km 91.8 °T	630.3	0.0° 8.3°	514.77 501.30
D	320.2°T	346.7 km 215.4 mi	45-56-05 82-41-19	1063.0 km 91.2 °T	666.7	0.0° 7.8°	538.70 525.97
E	330.3°T	363.2 km 225.7 mi	46-23-19 82-09-53	1094.1 km 88.2 °T	694.7	0.0° 7.5°	660.29 644.80
F	336.9°T	359.8 km 223.6 mi	46-32-14 81-39-40	1129.9 km 87.0 °T	726.9	0.0° 7.1°	709.44 694.23
G	340.0°T	352.3 km 218.9 mi	46-32-29 81-23-42	1150.0 km 86.9 °T	745.0	0.0° 6.9°	713.54 699.06
H	344.5°T	337.8 km 209.9 mi	46-29-45 81-00-00	1180.6 km 86.9 °T	772.5	0.0° 6.6°	713.54 700.28
I	360.0°T	287.4 km 178.6 mi	46-09-36 79-49-11	1276.0 km 88.0 °T	858.4	0.0° 5.7°	668.47 659.33

CHWO (formerly CBL) Critical Hours protection points detailed in KKAG original authorizing Construction Permit Application BNP-20010703AAO (as amended); data and analysis accepted by the Commission and on file.

Note: As tabulated above, the KKAG protection arc toward CHWO during Critical Hours spans azimuths: 86.9°T (Points G & H) clockwise to 102.8°T (Point A). This application proposes NO AUGMENTATION of the KKAG Daytime or Critical Hours patterns in this span.

* Designates farthest CHWO contour point at that azimuth on Canadian land area. CHWO signal strength at this "Border Point" is greater than 0.1 mV/m.