

ENGINEERING REPORT COVERING
REQUEST FOR CONSTRUCTION PERMIT
BOB BITTNER BROADCASTING, INC.
FOR WJIB 720 KILOHERTZ
CAMBRIDGE, MASSACHUSETTS

JANUARY 2024

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SUMMARY

The engineering exhibit of which this statement is part was prepared on behalf of Bob Bittner Broadcasting, Inc., hereinafter referred to as "Bittner", in support of an application for construction permit for AM station WJIB Cambridge, Massachusetts. Bittner is the licensee of WJIB. WJIB is licensed to operate as a Class D station on a frequency of 740 kilohertz on an unlimited time basis utilizing a non-directional antenna system with power of 250 watts daytime and 5 watts nighttime. The purpose of this application is to request a frequency change to 720 kilohertz and increase daytime power to 1000 watts and nighttime power to 13 watts. No other changes are proposed.

DAYTIME ALLOCATION CONSIDERATIONS

An allocation study was conducted for the proposed WJIB 1000 watt non-directional daytime operation. The licensed WJIB 740 kilohertz operation receives and causes prohibited contour overlap with co-channel station WNYH Huntingdon, New York and first adjacent channel station WJTO Bath, Maine. The proposed WJIB operation will eliminate the overlap with WNYH. The overlap with WJTO is attributable to long salt water conductivity paths and would still exist with the proposed WJIB facility. However, a concurrently filed construction permit application to change the WJTO frequency to 750 kilohertz will eliminate the overlap. Also, due to long salt water conductivity paths, the proposed WJIB operation will cause and receive a small area of prohibited contour overlap located on the eastern end of Cape Cod in Massachusetts with first adjacent channel station WOR New York, New York and receive prohibited contour overlap in eastern Massachusetts from Canadian co-channel station CHTN Charlottetown, Prince Edward Island which went off the air in 2006. The Commission has traditionally waived overlap areas which are the result of long salt water conductivity paths such as would exist with WOR and CHTN. Accordingly, a waiver of the rules is requested. Figures 1-3 are allocation mappings of the co, first, second and third adjacent channels.

NIGHTTIME ALLOCATION CONSIDERATIONS

The primary nighttime protection consideration for WJIB is Class A co-channel station WGN Chicago, Illinois. Figure 4 is an allocation map showing the proposed WJIB nighttime operation will not cause prohibited contour overlap with WGN.

TECHNICAL DATA AND EXHIBITS

WJIB is licensed to Cambridge, Massachusetts. Figure 5 shows the 5 mV/m contour for the proposed WJIB daytime operation covers 100% of the area of Cambridge. Therefore, the proposal is compliant with Section 73.24(i) of the rules.

Figure 6 plots the 1000 mV/m contour. The population within the 1000 mV/m contour is 256 persons. Therefore, this proposal is compliant with Section 73.24(g) of the blanketing interference rules, as the population within the 1000 mV/m contour is less than 300 persons.

FIELD STRENGTH MEASUREMENTS

All distance to contour calculations used in plotting the allocation maps were based on M-3 soil conductivity data except measured field data was extracted from the FCC files for WHLL Springfield, Massachusetts which is diplexed with WACE Chicopee, Massachusetts and WNTN Cambridge, Massachusetts, which is diplexed with WJIB. In addition, new measured field strength data was obtained for WJIB. The measurement tabulations are graphed on Figures 7-9 and the reference curve graph is shown on Figure 10. Tabulations of the new field measurements are provided in Tables 1-3. The field strength meter used for the measurements was a Potomac Instruments FIM-4100, serial number 134. This meter was compared to a similar meter of recent calibration and found to be in substantial agreement on all pertinent measurement scales. The measurements were taken by G. John Garrett, who has considerable experience taking field measurements for FCC projects, under the direction of the undersigned. A summary of the measured conductivity data is as follows:

WJIB

230° 2.57-3, 3.23-5, 6.23-4, 11.83-5, 21.29-3, 49.43-1

250° 6.92-1.5, 14.66-2, 31.77-1.5, 49.86-1

270° 2.92-8, 3.31-6, 7.52-4, 14.73-2, 31.48-1.5, 41.94-1

Source: New measurement data

WHLL

77° 2.69-1.5, 3.86-2, 7.45-0.5, 20.3-1

145° 2.46-1, 3.7-2, 38.4-0.1

165° 6.96-1, 38.1-0.1

185° 1.68-1, 3.15-1.5, 10.4-0.5, 26.0-0.1, 55.9-0.5

205° 2.92-3, 5.98-1, 15.1-0.5, 60.9-0.1

255° 3.06-1, 6.06-0.5, 20.2-0.1

Source: BP20220511AAH, WACE Construction Permit Application

WNTN

0° 12.4-2, 22.13-3, 31.31-1.5, 49.73-0.5

20° 5.28-2, 25.51-1, 35.7-0.5, 49.45, 1-0.1

40° 9.51-2, 17.22-1.5, 24.95-1, 42.95-1.5

50° 8.5-3, 17.94-2, 35.73-1.5, 46.67-0.1

340° 2.44-1, 3.91-3, 15.27-1.5, 31.71-1, 48.44-0.5

Source: BMP20171017AAD, WNTN Construction permit Application

ANSI RADIATION GUIDELINES

A study of the proposed WJIB facility was conducted with respect to standards set forth in FCC Bulletin OST Number 65, Edition 97-01, regarding human exposure to radiofrequency radiation. The study included the 6.7 kilowatt contribution of co-located station WNTN in addition to the 1 kilowatt power of WJIB. Therefore, the study was conducted for a power level of 7.7 kilowatts using data provided in Tables 1, 2 and 3 of Supplement A, "Predicted Distances for Compliance with FCC Limits". Based on Tables 1, 2 and 3, a distance of 5 meters from the tower would have to be observed to achieve ANSI radiofrequency compliance.

When it is necessary for workers to be within the hazard area near the tower, an appropriate power reduction or temporary cessation of broadcasting will be implemented. Access to the tower is prevented by a fence with a locked gate. Signs, warning of an RF hazard, are conspicuously posted at the site.

DECLARATION

The foregoing was prepared by or under the immediate supervision of Charles A. Hecht of Charles A. Hecht & Associates, Inc., Freehold, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. All statements herein are true and correct of his knowledge except such statements made on information and belief, and as to those statements, he believes them to be true and correct under the penalty of perjury.

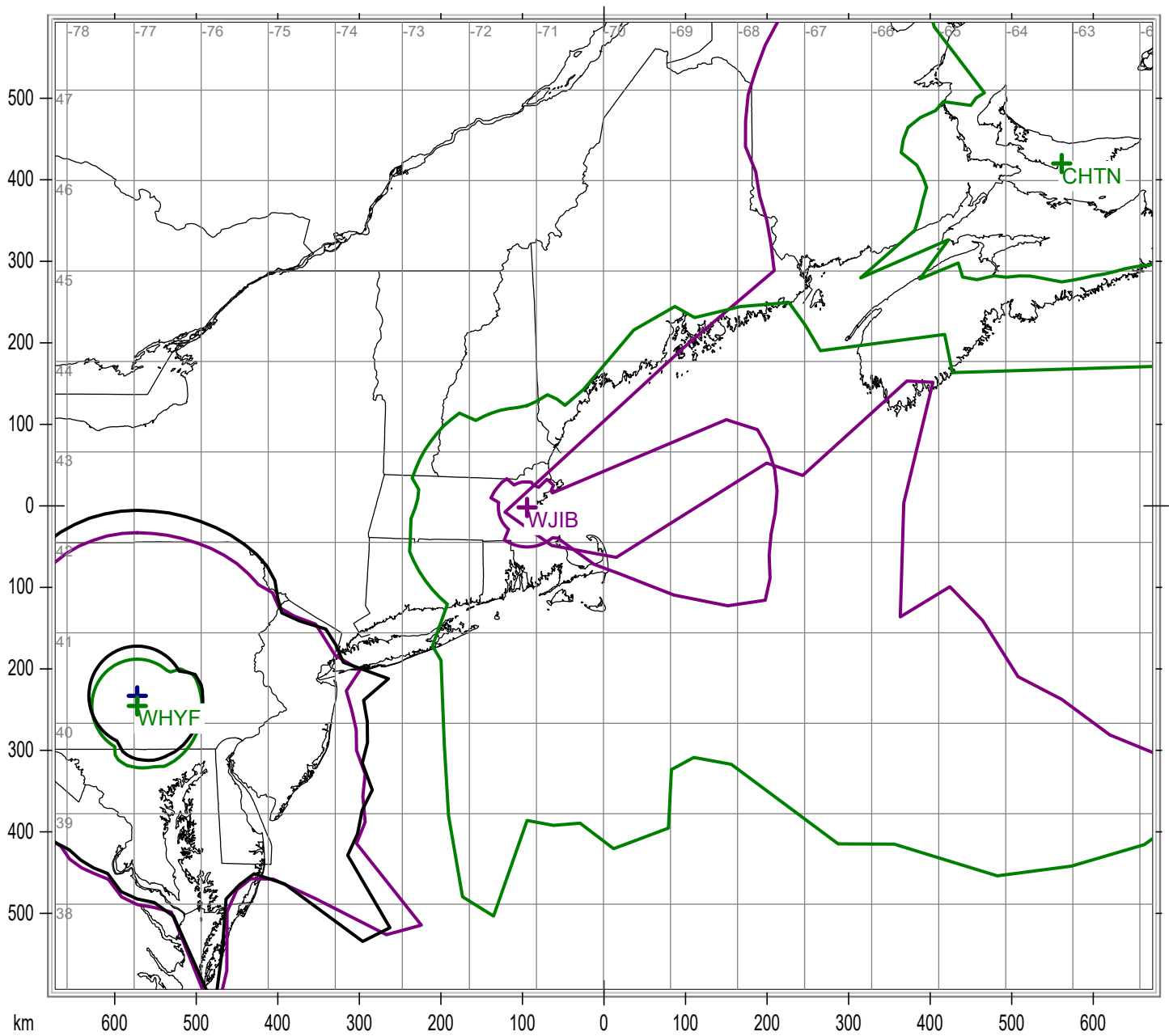
Respectfully submitted,

Charles A. Hecht

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Freehold, New Jersey 07728
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January 31, 2024

FIGURE 1 - DAY CO-CHANNEL ALLOCATION STUDY

SHOWING .5 AND .025 MV/M CONTOURS

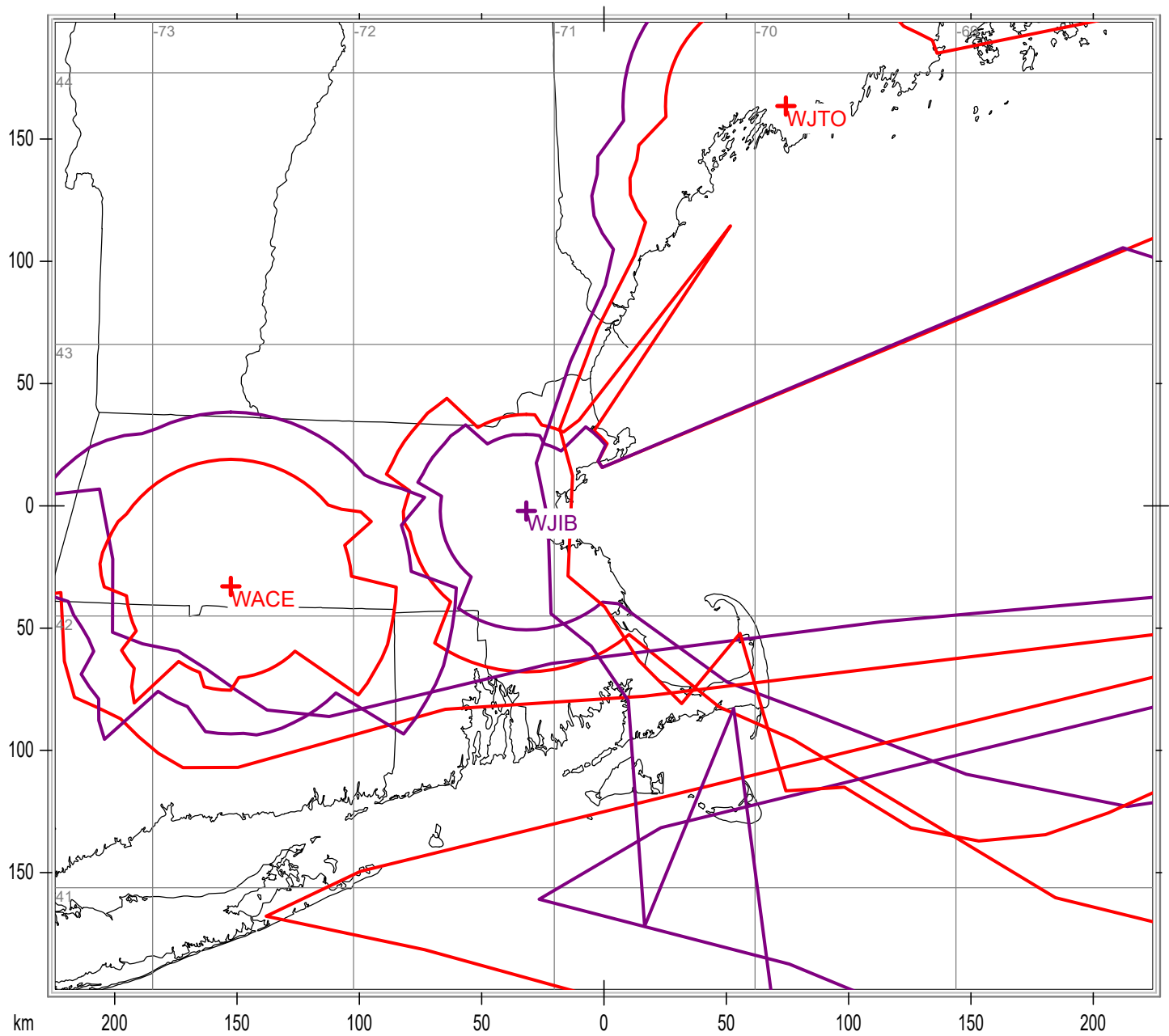


WJIB 720 KILOHERTZ 1 KW ND CAMBRIDGE, MASSACHUSETTS

State Borders Lat/Lon Grid

FIGURE 2 - DAY ADJACENT CHANNEL ALLOCATION MAP

SHOWING .5 AND .25 MV/M CONTOURS

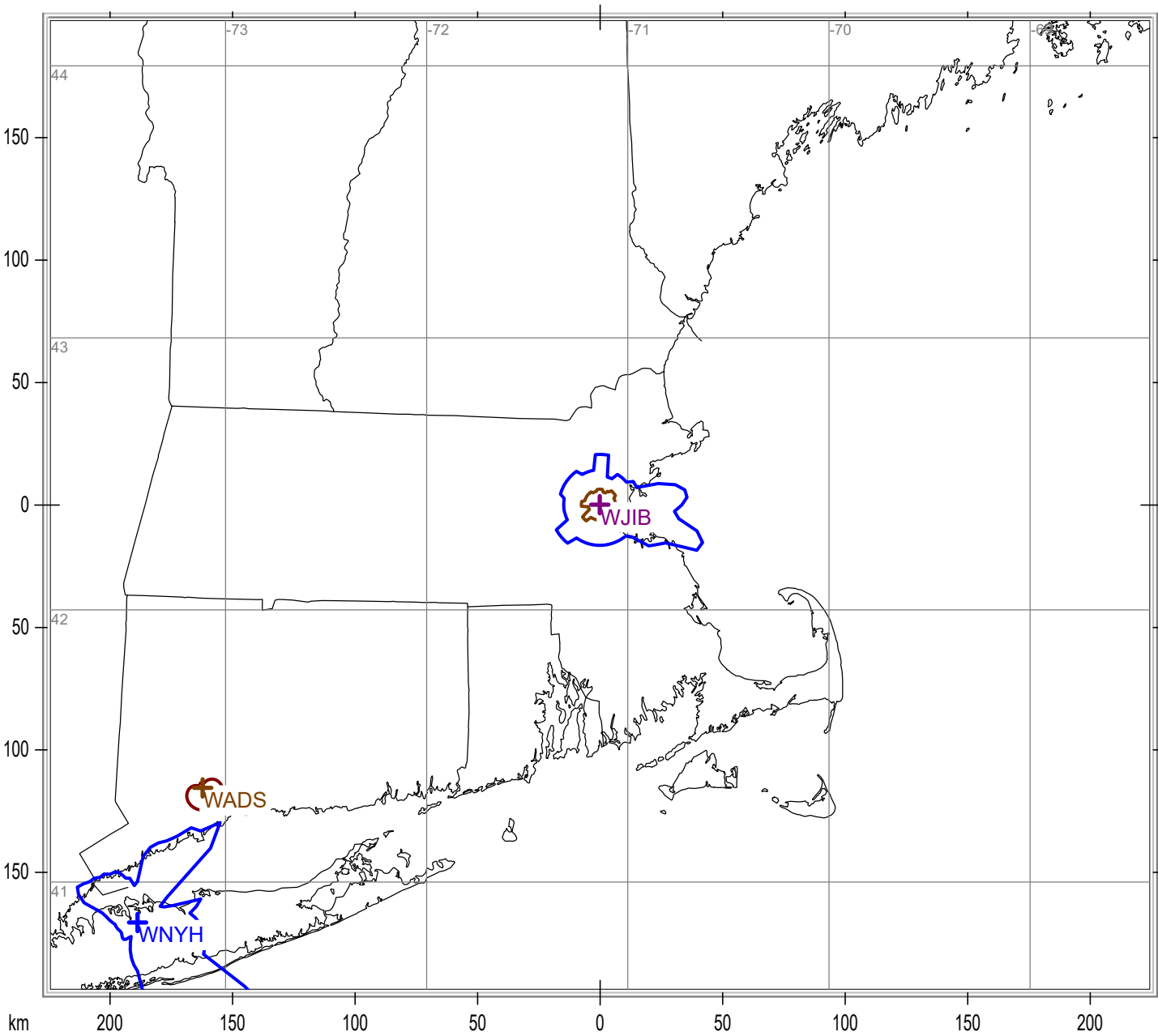


WJIB 720 KILOHERTZ 1 KW ND CAMBRIDGE, MASSACHUSETTS

State Borders Lat/Lon Grid

FIG 3 - 2ND & 3RD ADJACENT CHANNEL ALLOCATION MAP

SHOWING 5 AND 25 MV/M CONTOURS

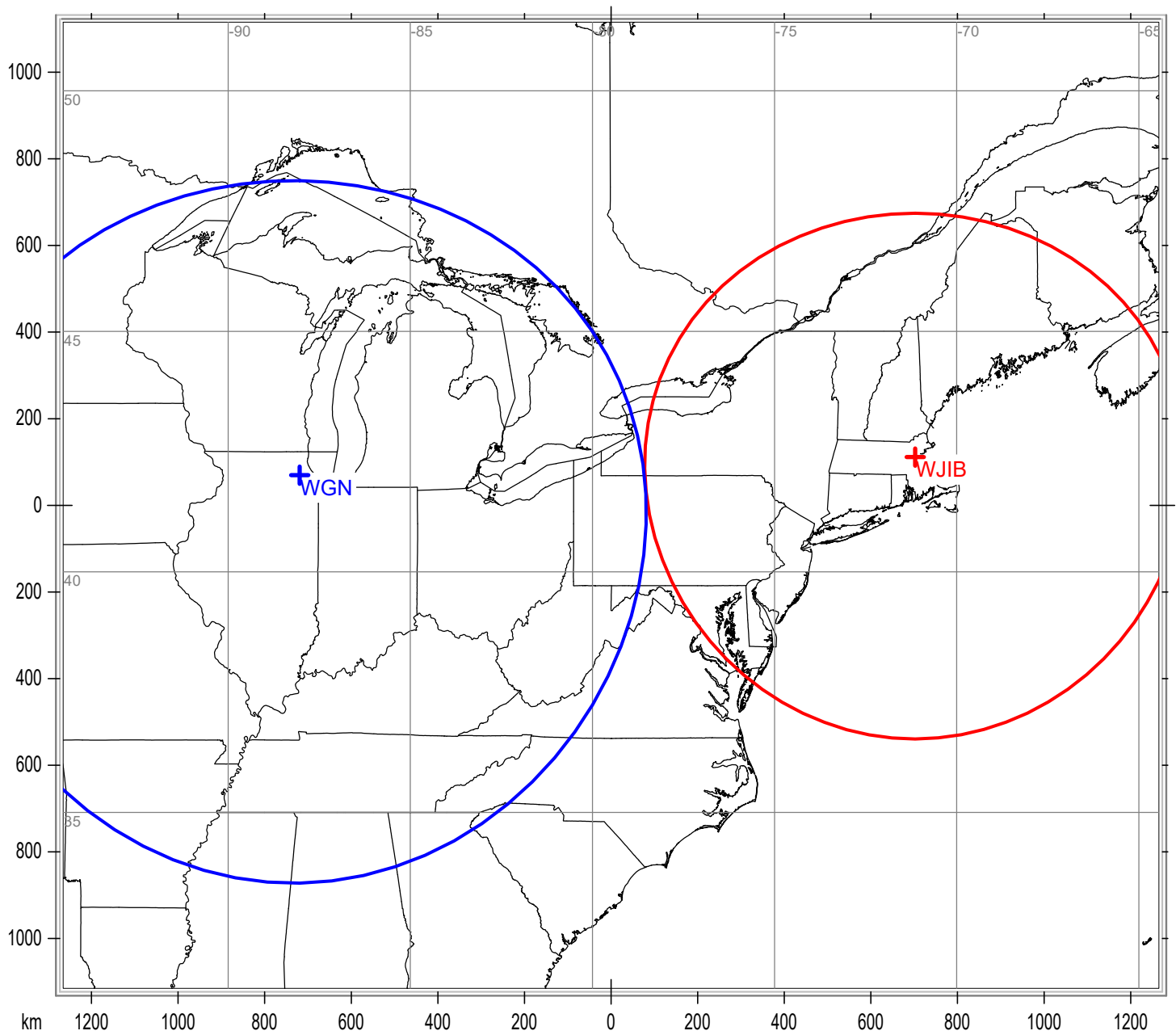


WJIB 720 KILOHERTZ 1 KW ND CAMBRIDGE, MASSACHUSETTS

State Borders Lat/Lon Grid

FIG 4 - CLASS A CO-CHANNEL NIGHT ALLOCATION MAP

SHOWING WGN 50% .5 MV/M AND WJIB .025 MV/M 10% SKYWAVE CONTOURS

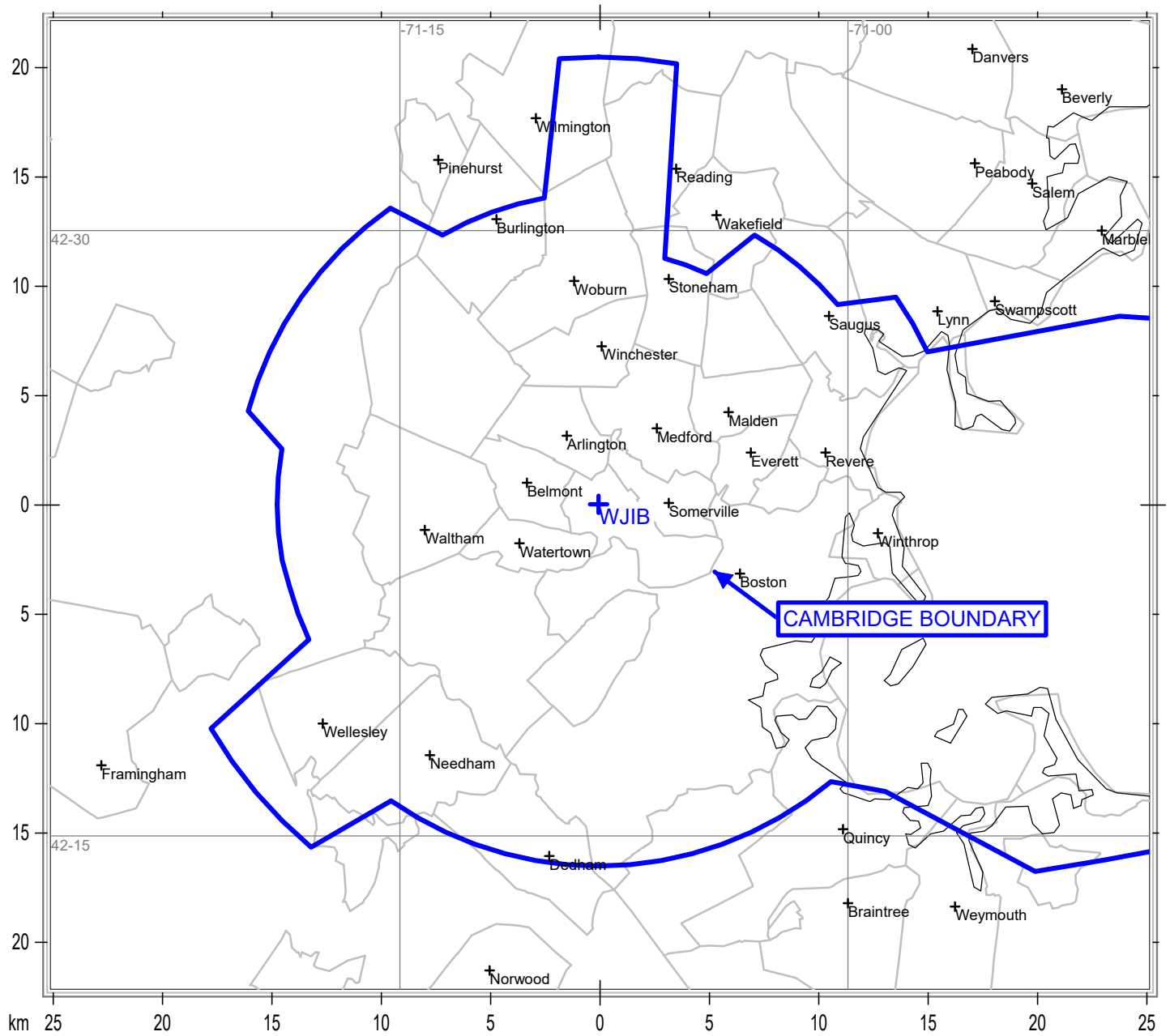


WJIB 720 KILOHERTZ .013 KW ND CAMBRIDGE, MASSACHUSETTS

State Borders Lat/Lon Grid

FIGURE 5 - CITY GRADE SERVICE MAP

SHOWING 5 MV/M CONTOUR



WJIB 720 KILOHERTZ 1 KW ND CAMBRIDGE, MASSACHUSETTS

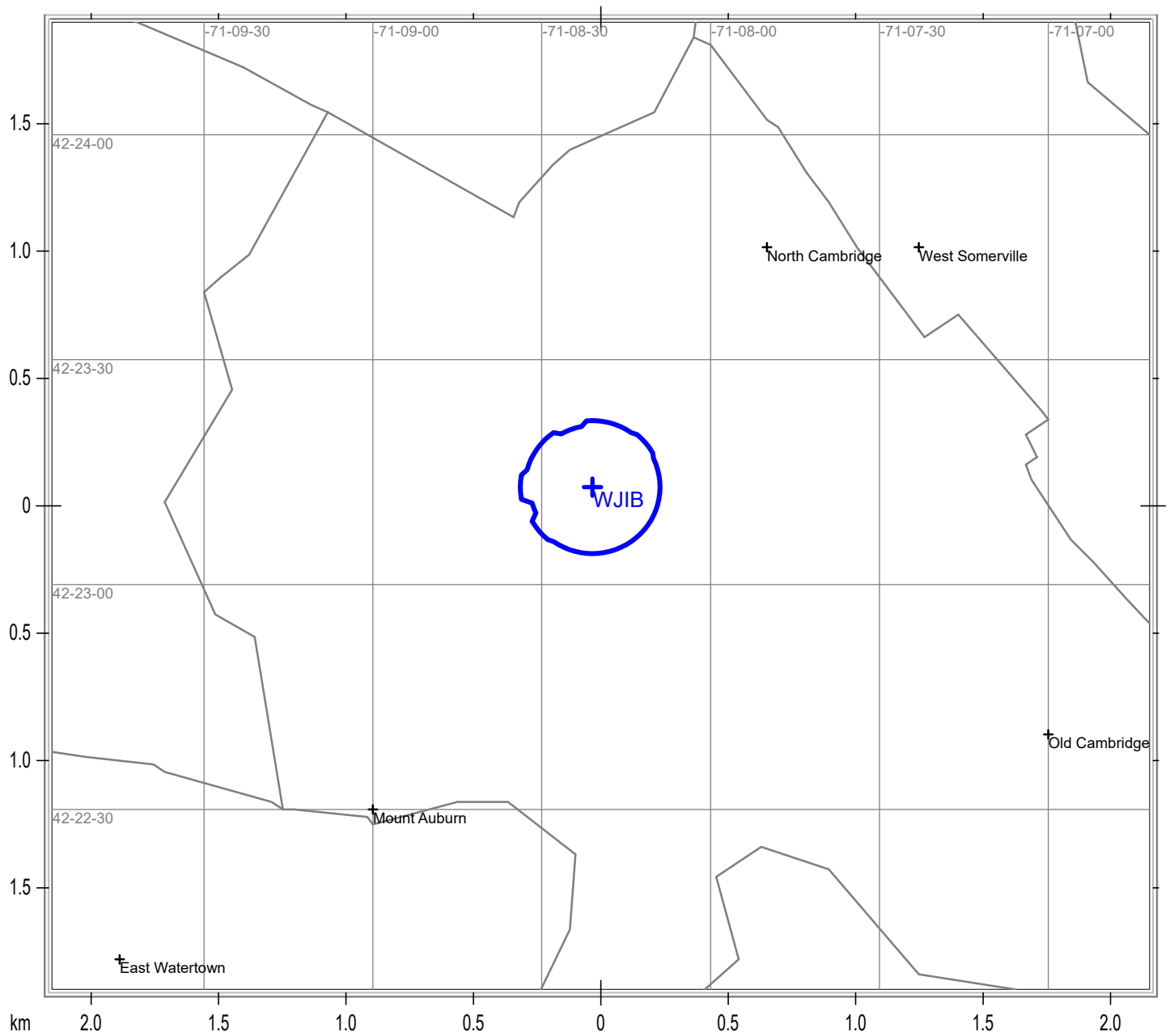
State Borders City Borders Lat/Lon Grid

Map Scale: 1:280000 1 cm = 2.80 km V/H Size: 44.29 x 50.25 km

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FIGURE 6 - 1000 MV/M CONTOUR MAP

POPULATION IN CONTOUR IS 256 PERSONS



WJIB 720 KILOHERTZ 1 KW ND CAMBRIDGE, MASSACHUSETTS

State Borders City Borders Lat/Lon Grid

Map Scale: 1:24000 1 cm = 0.24 km V/H Size: 3.80 x 4.31 km

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TABLE 1

FIELD STRENGTH MEASUREMENTS

0.25 KW DAYTIME NON-DIRECTIONAL

WJIB(AM) 740 KILOHERTZ

CAMBRIDGE, MASSACHUSETTS

JANUARY 2024

230 DEGREES TRUE RADIAL

<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local) 1/28/2024</u>	<u>Field mV/m</u>
1	0.84	915	192
2	1.23	918	111
3	1.59	924	86.7
4	1.96	931	64.4
5	2.16	939	55.4
6	2.30	944	50.6
7	2.57	949	39.9
8	2.89	954	49.4
9	3.06	1001	35.9
10	3.23	1004	43.3
11	3.55	1009	32.8
12	3.93	1018	33.0
13	4.75	1030	20.7
14	5.18	1043	17.5
15	5.77	1051	18.9
16	6.23	1054	18.7
17	6.94	1100	16.0
18	7.45	1108	14.9
19	8.28	1116	13.2
20	9.16	1123	12.0

230 DEGREES TRUE RADIAL

<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local)</u> 1/26/2024	<u>Field mV/m</u>
21	9.94	1129	9.53
22	11.04	1136	9.30
23	11.83	1151	9.59
24	12.52	1156	4.87
25	13.33	1204	5.44
26	14.65	1212	3.03
27	16.14	1219	3.98
28	18.20	1236	2.35
29	19.72	1242	2.64
30	21.29	1251	2.01
31	23.66	1258	1.48
32	25.26	1310	1.11
33	29.06	1317	0.32
34	33.98	1339	0.36
35	37.35	1354	0.24
36	41.91	1407	0.19
37	45.91	1416	0.20
38	49.43	1424	0.13

TABLE 2

FIELD STRENGTH MEASUREMENTS

0.25 KW DAYTIME NON-DIRECTIONAL

WJIB(AM) 740 KILOHERTZ

CAMBRIDGE, MASSACHUSETTS

JANUARY 2024

250 DEGREES TRUE RADIAL

<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local) 1/27/2024</u>	<u>Field mV/m</u>
1	3.39	1003	24.3
2	3.58	1006	20.0
3	4.03	1012	14.8
4	4.26	1017	18.1
5	4.76	1023	20.8
6	5.25	1031	14.1
7	5.72	1038	14.6
8	6.20	1042	8.54
9	6.92	1048	7.32
10	7.49	1059	9.84
11	8.30	1105	6.65
12	9.15	1121	7.83
13	10.90	1141	8.60
14	12.50	1150	4.11
15	13.92	1157	2.63
16	14.66	1202	3.25
17	16.31	1209	2.07
18	17.76	1217	1.33
19	19.58	1224	1.21
20	21.51	1234	1.43

250 DEGREES TRUE RADIAL

<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local)</u> 1/27/2024	<u>Field mV/m</u>
21	23.66	1245	1.27
22	25.85	1254	0.95
23	28.09	1307	0.55
24	29.35	1323	0.66
25	31.77	1334	0.46
26	34.83	1347	0.25
27	37.81	1355	0.31
28	41.57	1407	0.30
29	45.55	1420	0.16
30	49.86	1426	0.16

TABLE 3

FIELD STRENGTH MEASUREMENTS

0.25 KW DAYTIME NON-DIRECTIONAL

WJIB(AM) 740 KILOHERTZ

CAMBRIDGE, MASSACHUSETTS

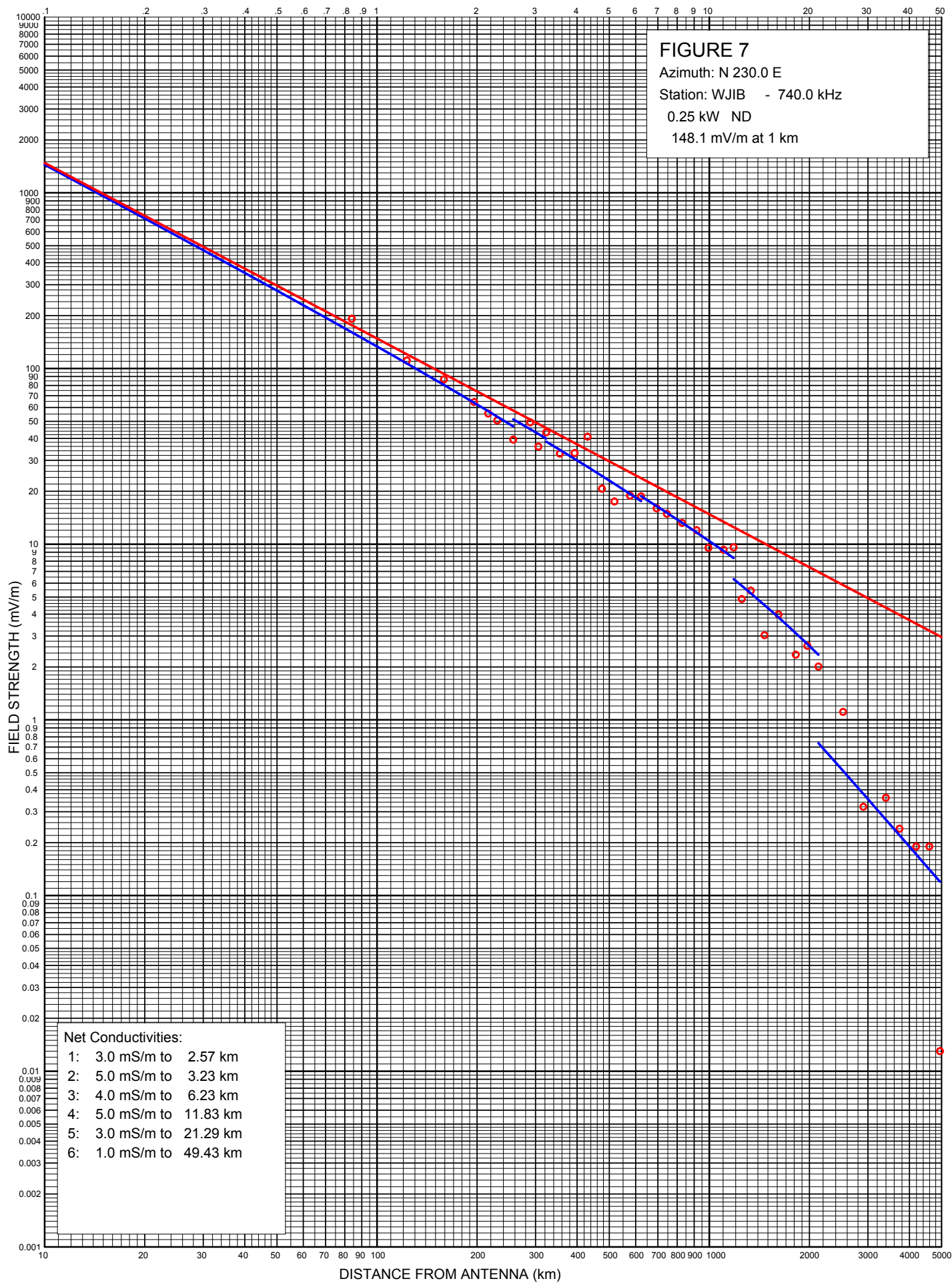
JANUARY 2024

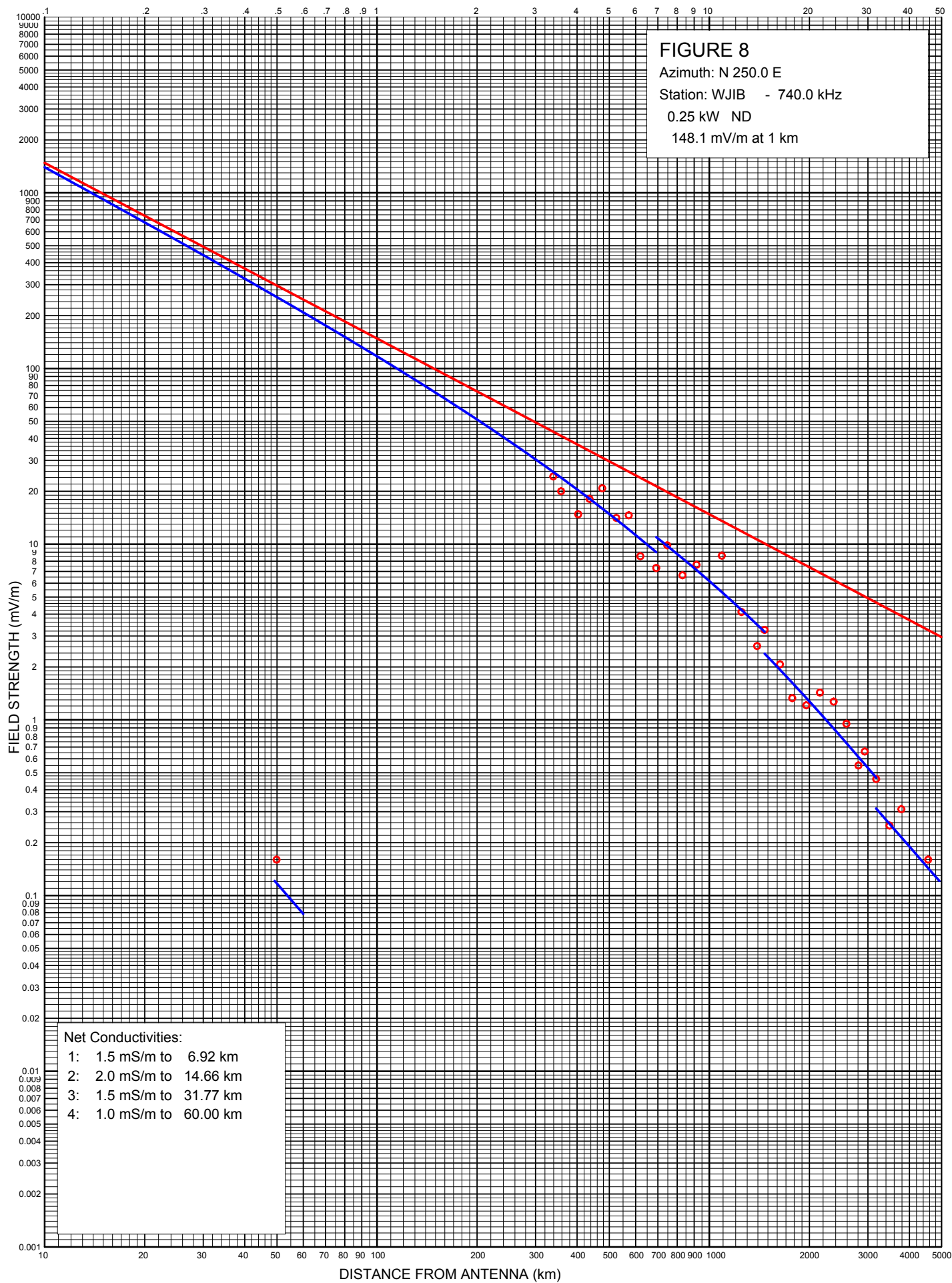
270 DEGREES TRUE RADIAL

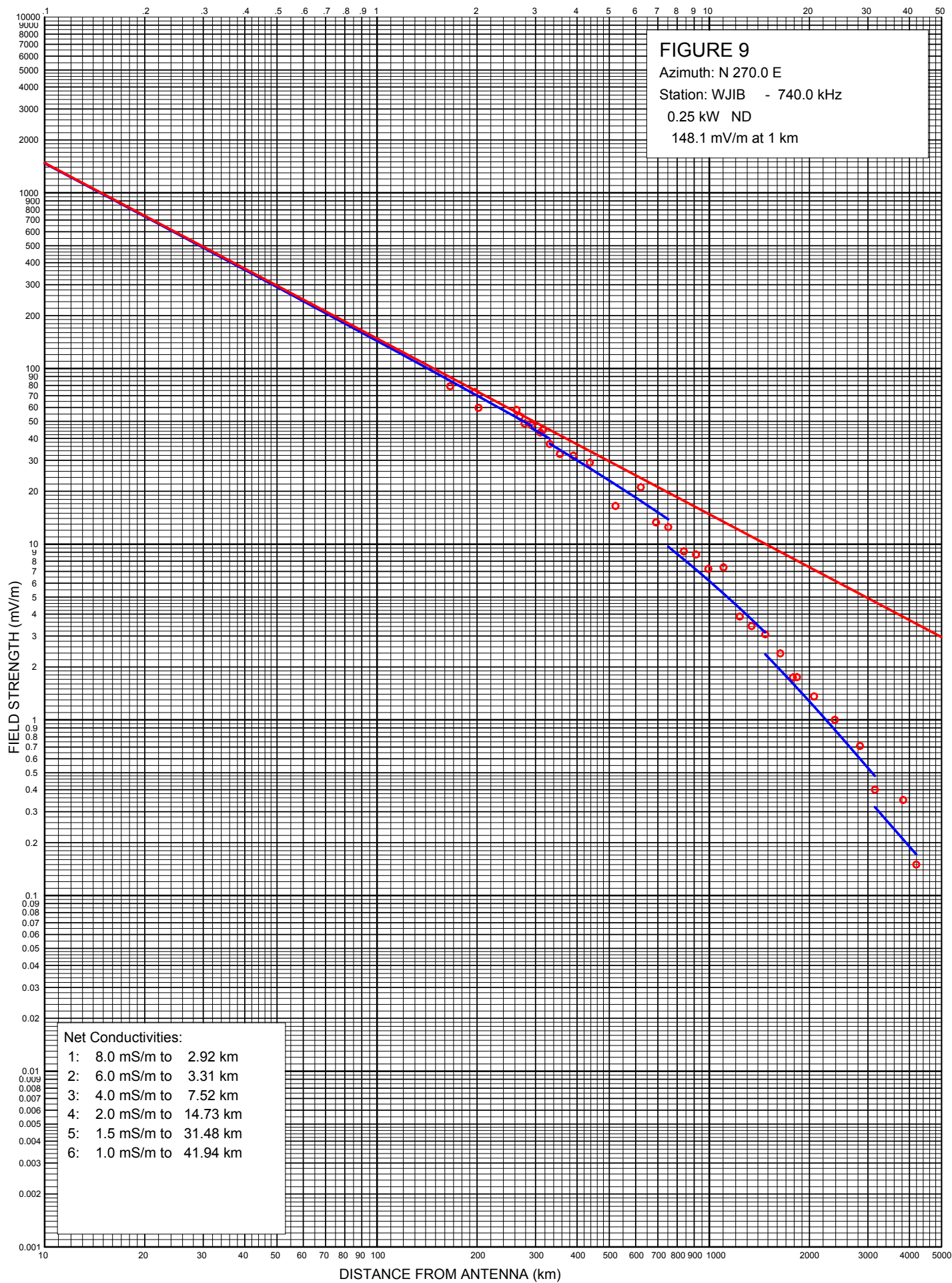
<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local) 2/1/2024</u>	<u>Field mV/m</u>
1	1.66	846	79.3
2	1.97	850	73.4
3	2.02	854	59.7
4	2.63	908	58.1
5	2.69	912	53.4
6	2.78	915	48.6
7	2.92	918	47.5
8	3.10	923	43.2
9	3.16	927	44.9
10	3.31	931	37.2
11	3.56	935	32.6
12	3.90	938	31.9
13	4.37	942	29.1
14	5.22	1004	16.5
15	6.22	1022	21.1
16	6.91	1032	13.3
17	7.52	1038	12.5
18	8.36	1047	9.10
19	9.12	1051	8.73
20	9.93	1100	7.23

270 DEGREES TRUE RADIAL

<u>Point Number</u>	<u>Distance km</u>	<u>Date/Time (local)</u> 2/1/2024	<u>Field mV/m</u>
21	11.03	1110	7.38
22	12.34	1121	3.87
23	13.40	1130	3.42
24	14.73	1136	3.07
25	16.35	1146	2.39
26	17.84	1152	1.74
27	18.35	1200	1.75
28	20.66	1213	1.36
29	23.85	1230	1.00
30	28.41	1254	0.71
31	31.48	1419	0.40
32	38.31	1353	0.35
33	41.94	1343	0.15







Groundwave Field Strength
versus Distance

720 - 760 kHz

Computed for 740 kHz

Relative permittivity = 30.0

