

CONSOLIDATED ENGINEERING STATEMENT

PREPARED IN SUPPORT OF APPLICATION

FOR CONSTRUCTION PERMIT

BLOUNT COMMUNICATIONS, INC.

8/5 kW LS DA-2 U 1590 kHz FACILITY ID No. 5882

WARWICK, RHODE ISLAND

DECEMBER 2012

CONSOLIDATED ENGINEERING STATEMENT

PREPARED IN SUPPORT OF APPLICATION

FOR CONSTRUCTION PERMIT

BLOUNT COMMUNICATIONS, INC.

8/5 kW LS DA-2 U 1590 kHz FACILITY ID No. 5882

WARWICK, RHODE ISLAND

DECEMBER 2012

TABLE OF CONTENTS

FORMS:

FCC Form 301, Section III-A - E-filing

ENGINEERING STATEMENT

EXHIBITS:

- I. Details of antenna system physical configuration.
- II. Daytime horizontal plane standard radiation pattern tabulation and directional antenna theoretical parameters.

FIGURES:

- 1. 1590 kHz co-channel and 1st adjacent channel daytime allocation mapping.
- 2. Predicted daytime 5, 2, and 0.5 mV/m service contour comparison.
- 3. Predicted 5 mV/m daytime contours.
- 4. Predicted 25 & 1,000 mV/m daytime contours.
- 5. Proposed daytime horizontal plane radiation pattern.

CONSOLIDATED ENGINEERING STATEMENT

PREPARED IN SUPPORT OF APPLICATION

FOR CONSTRUCTION PERMIT

BLOUNT COMMUNICATIONS, INC.

8/5 kW LS DA-2 U 1590 kHz FACILITY ID No. 5882

WARWICK, RHODE ISLAND

DECEMBER 2012

TABLE OF CONTENTS

APPENDIX:

1. Ground wave field strength measurement data.
2. Current license, BL-900222AC.

CONSOLIDATED ENGINEERING STATEMENT

PREPARED IN SUPPORT OF APPLICATION

FOR CONSTRUCTION PERMIT

BLOUNT COMMUNICATIONS, INC.

8/5 kW LS DA-2 U 1590 kHz FACILITY ID No. 5882

WARWICK, RHODE ISLAND

DECEMBER 2012

SUMMARY

The following consolidated engineering statement has been prepared in support of an Application for Construction Permit by **BLOUNT COMMUNICATIONS, INC.**, which proposes to increase daytime power for standard broadcast facility WARV Radio, 1590 kHz at Warwick, Rhode Island. FCC ID No. 5882. No change in site, frequency or tower configuration is proposed. No change in the current nighttime facilities is proposed. This is an application for daytime power increase with no change to the authorized nighttime operation. This application is complete with the Forms, Exhibits, Figures and Appendix as found in the Table of Contents and is believed to comply with all applicable FCC Rules, Regulations and Policies unless stated herein.

FCC FORM 301, SECTION III-A

FCC Form 301, Section III-A has been completed. Questions requiring a narrative response are addressed below:

Questions 4d, 5d, 6d

No change in the existing towers is proposed.

Array physical configuration data appears on Exhibit I. Array parameters for daytime are found in Exhibit II and Figure 5. Critical hours operation is not proposed.

No clear channel facilities are located sufficiently close that detailed critical hours calculations are required for the power level proposed.

Section 73.24(g) compliance is achieved due to the relatively rural nature of the site. Population in the proposed 1 V/m daytime contour is 341 persons which is 0.34% of the population in the 25 mV/m contour which envelops 99,325 persons. The applicant pledges to comply fully with *Rule Section 73.88*.

Question 8 *Figure 3* depicts the licensed and proposed daytime 5 mV/m contours. The licensed and proposed 5 mV/m contours cover 100% of the community boundary.

Question 10(a) *Figure 1* depicts the proposed daytime allocation for co and 1st adjacent channels. There are no 2nd or 3rd adjacent channel protections sufficiently close to warrant mapping. There is no prohibited contour overlap on any channel.

Question 11 *Supplement A, Edition 97-01 to OET Bulletin No. 65*, has been referenced concerning appropriate fencing distances.

A 3.7 m by 3.7 m square fence is installed at the #3 west tower, a 6.1 m by 6.1 m square fence is installed at the #2 center tower and a 3 m by 3 m square fence is installed at the #1 east tower. Based on a power level of eight kilowatts, and the array parameters proposed herein, the calculated power at the base of each tower is:

#1 = 1,267 watts

#2 = 6,319 watts

#3 = 414 watts

For the power levels above the installed fence dimensions exceed the *Supplement A, Edition 97-01, Section 1*, requirements. Power will be reduced or transmission will cease when workers are on or near the towers.

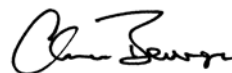
MULTIPLE OWNERSHIP

BLOUNT COMMUNICATIONS, INC., has no other AM or FM media interests in the Providence, Warwick, Pawtucket, Rhode Island Arbitron market. Other owned stations are listed below:

WFIF - Bridgeport, CT Arbitron market
WVNE - Worcester, MA Arbitron market
WDER (AM) - Manchester, NH Arbitron market
WDER-FM - Boston, MA Arbitron market
WBCI - Portland, ME Arbitron market
WSDK - Hartford, CT

CONCLUSION

The foregoing was prepared on behalf of **BLOUNT COMMUNICATIONS, INC** by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The undersigned certifies, under penalty of perjury, that the statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.



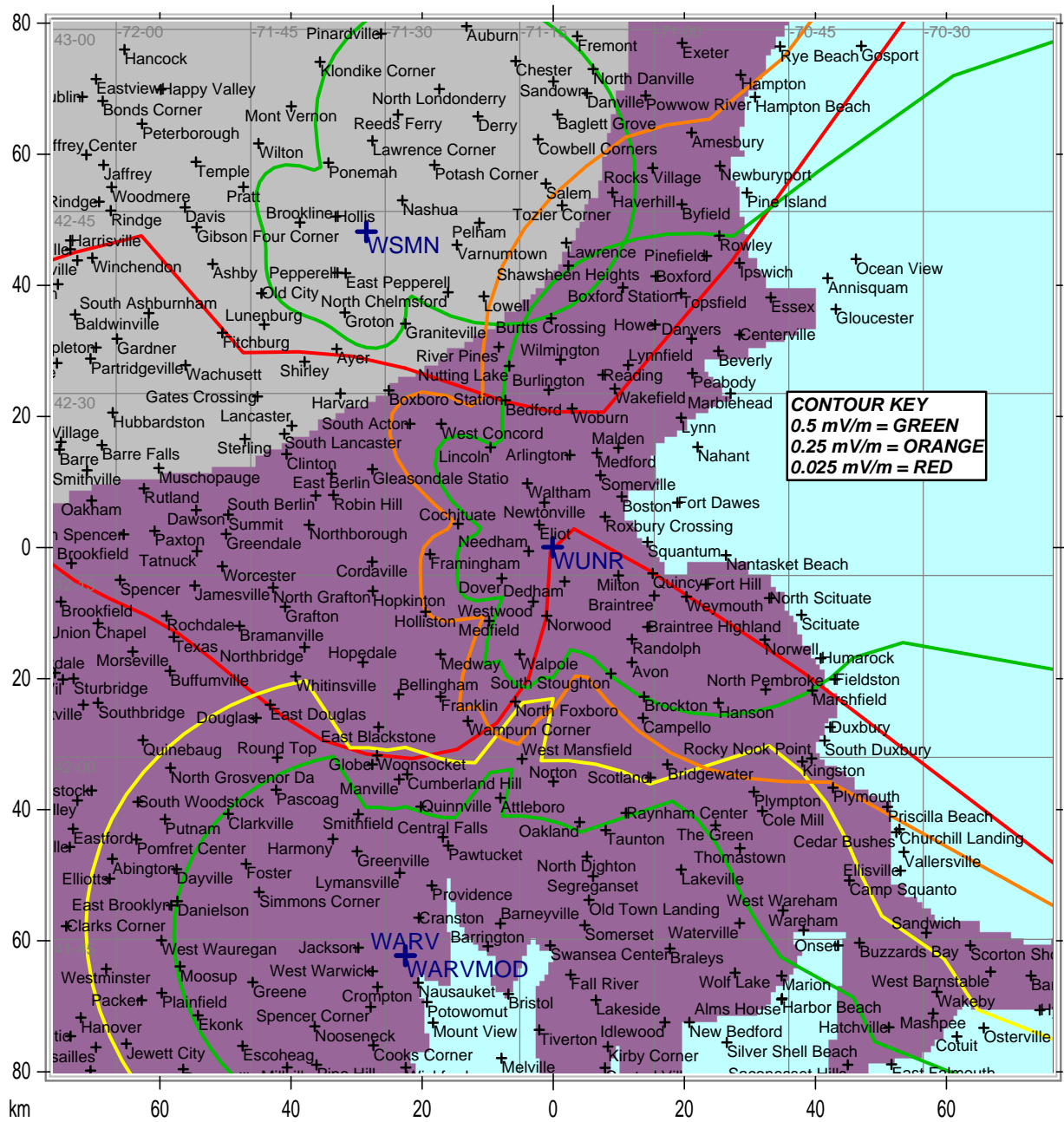
By _____

Clarence M. Beverage

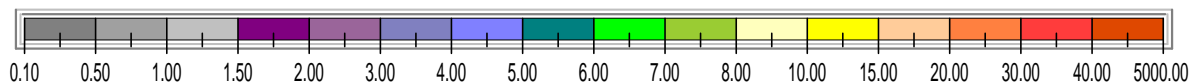
for Communications Technologies, Inc.
Marlton, New Jersey

December 28, 2012

WARV(AM) 1590 KHz 8 kW DA-D WARWICK, RHODE ISLAND

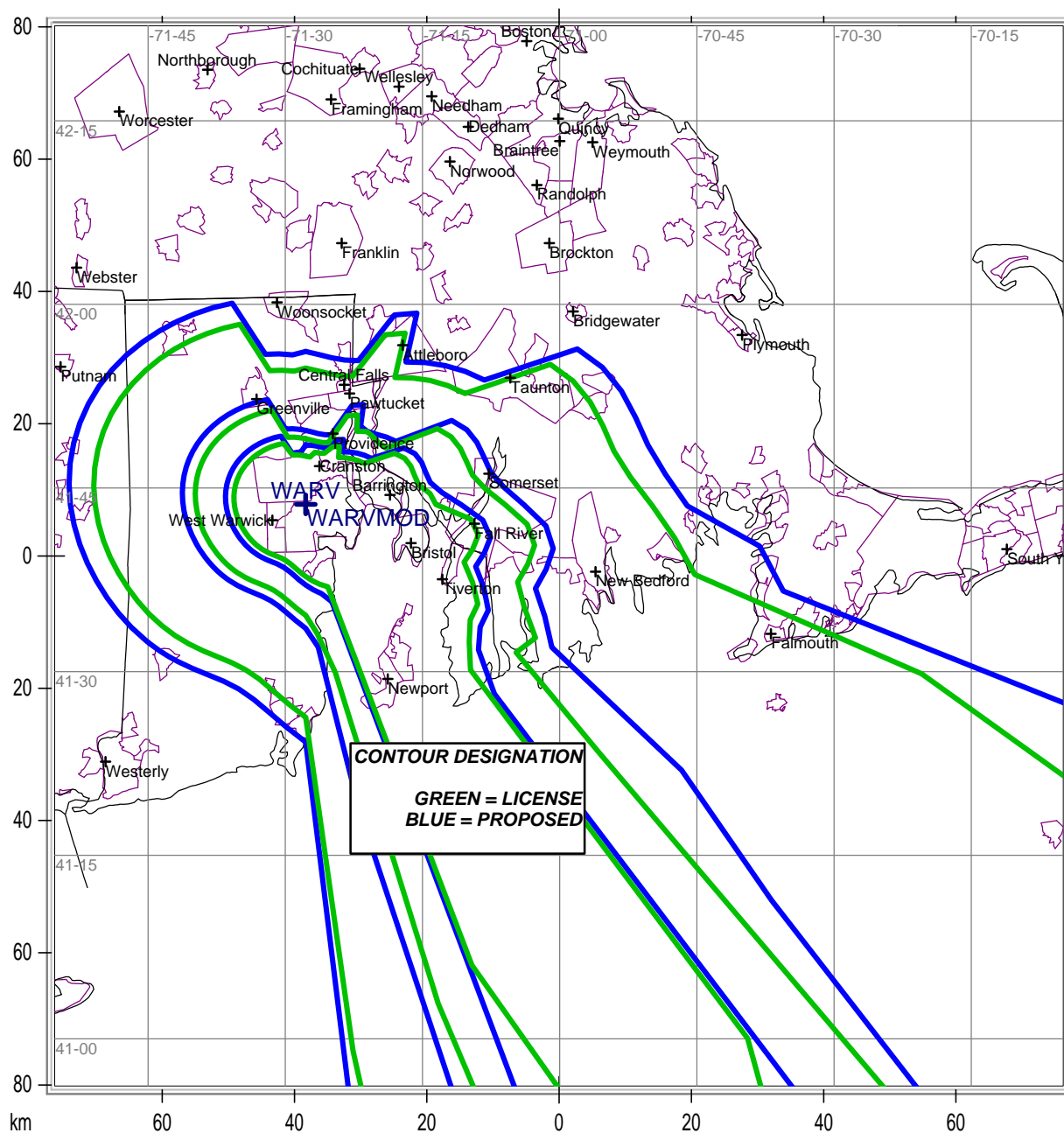


Communications Technologies, Inc. Marlton, New Jersey



— Lat/Lon Grid

WARV(AM) 1590 KHz 8 kW DA-D WARWICK, RHODE ISLAND



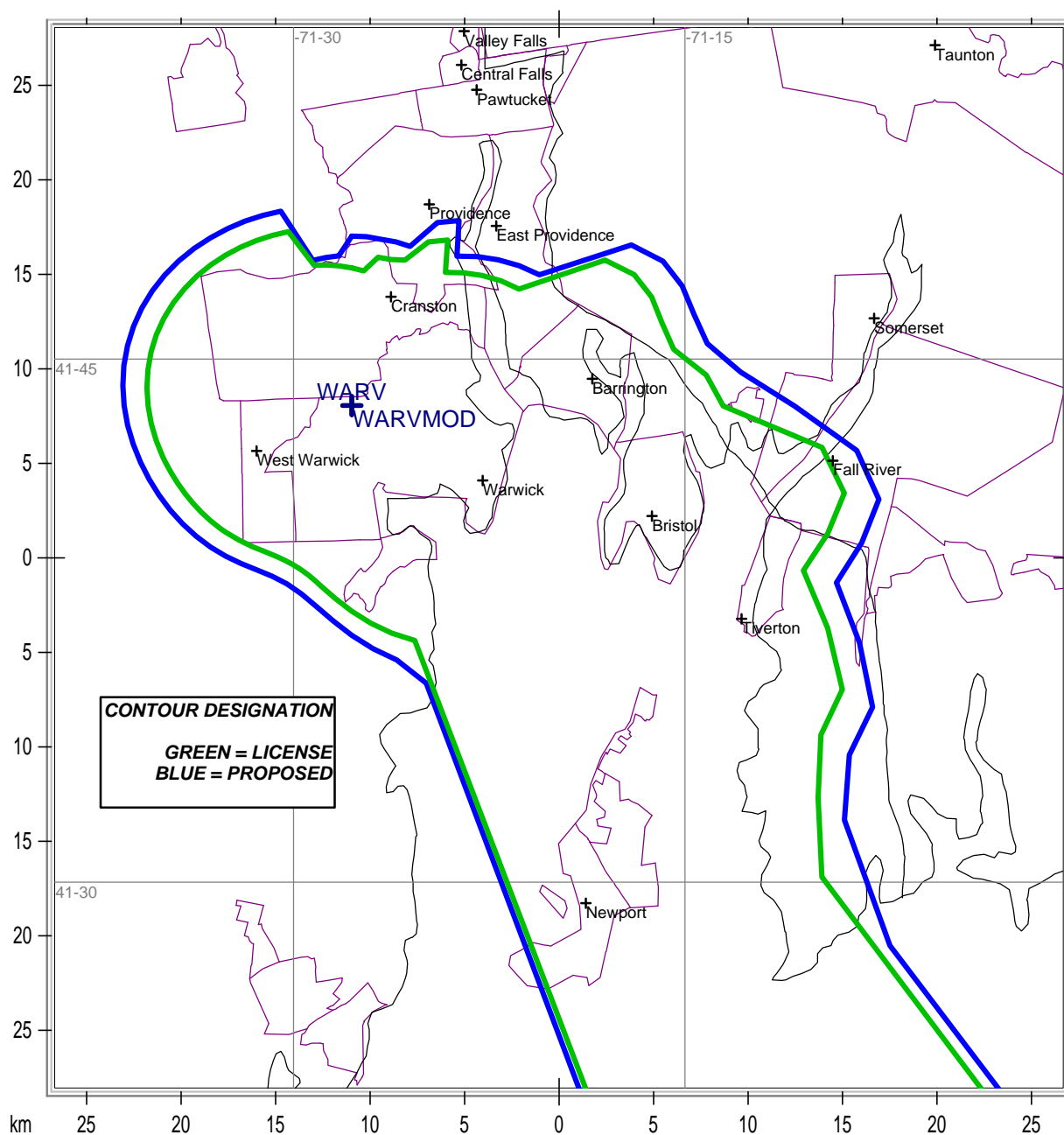
Communications Technologies, Inc. Marlton, New Jersey

State Borders City Borders Lat/Lon Grid

Map Scale: 1:1000000 1 cm = 10.00 km V/H Size: 160.30 x 152.47 km

FIGURE 2

WARV(AM) 1590 KHz 8 kW DA-D WARWICK, RHODE ISLAND



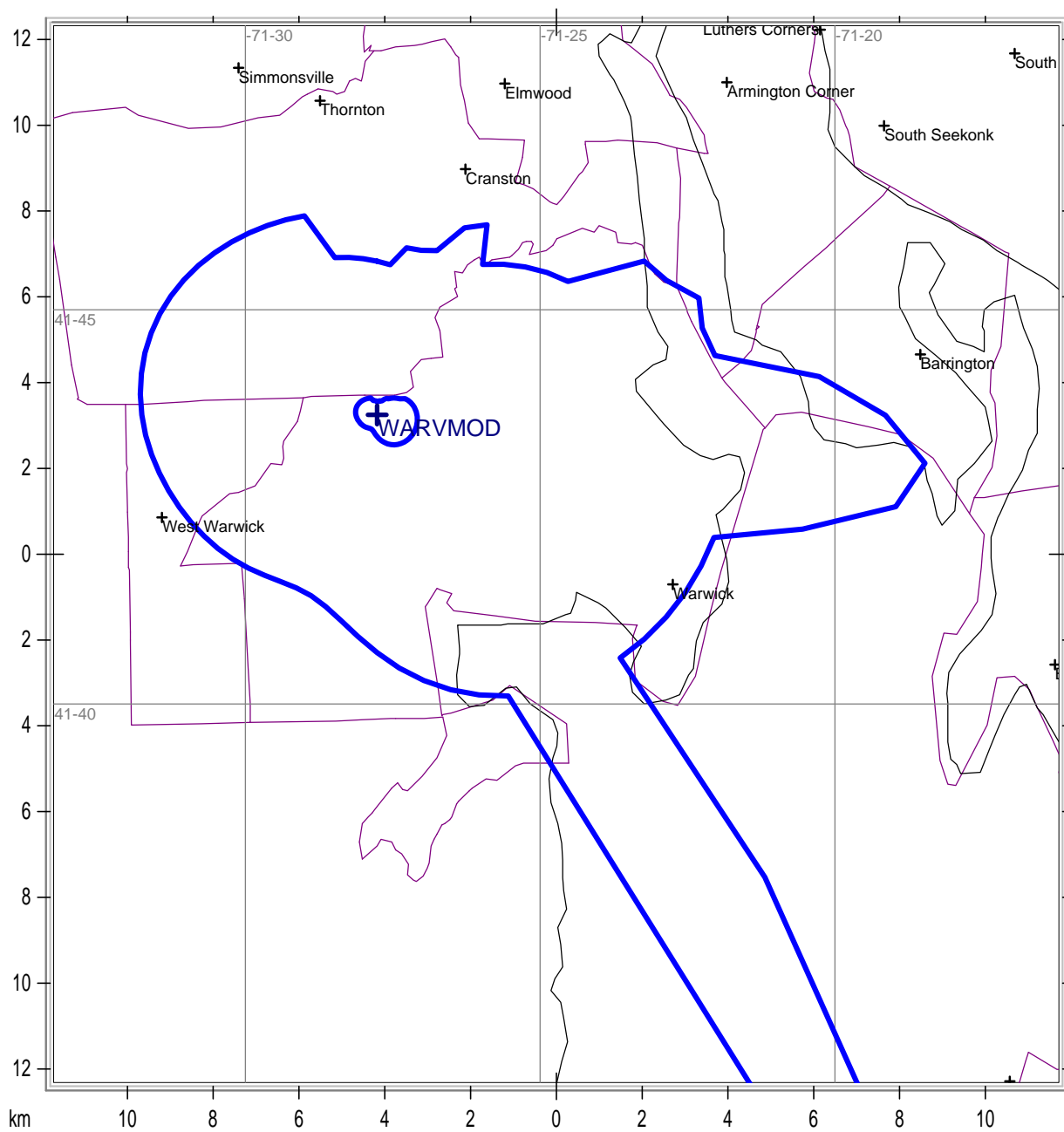
Communications Technologies, Inc. Marlton, New Jersey

State Borders City Borders Lat/Lon Grid

Map Scale: 1:350000 1 cm = 3.50 km V/H Size: 56.11 x 53.36 km

FIGURE 3

WARV(AM) 1590 KHz 8 kW DA-D WARWICK, RHODE ISLAND



Communications Technologies, Inc. Marlton, New Jersey

State Borders City Borders Lat/Lon Grid

EXHIBIT I

PHYSICAL DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM BLOUNT COMMUNICATIONS, INC. PROPOSED 1590 kHz 8 kW DA-D WARWICK, RHODE ISLAND

DECEMBER 2012

TRANSMITTER SITE:
ARRAY CENTER (NAD27)

North Latitude: 41° 43' 40.0"
West Longitude: 71° 27' 46.0"

TOWERS 1 - 3
(Total of one)

Electrical 112.3°
58.82 meters above base (193') tower steel
60.96 meters AGL (200') overall height

RADIATOR TYPE:

Vertical, guyed, uniform cross section towers.

PATTERN ASSUMPTION:

Sinusoidal current distribution in all towers

GROUND SYSTEM:

Each tower employs a ground system consisting of 120 equally spaced #10 soft drawn copper radials varying in length between 23.77 m and 47.27 m plus 120 interspersed radials 15.25 m in length (see current license attached).

ARRAY PARAMETERS:

Daytime Exhibit II - Figure 5

EXHIBIT II

BLOUNT COMMUNICATIONS, INC. AM BROADCAST STATION WARV WARWICK, RHODE ISLAND

1590 kHz 5 kW, 8 kW-LS DA-2

DAYTIME STANDARD RADIATION PATTERN DATA
(Radiation Values at One Kilometer)

TOWER Number	Field Ratio	Phase (deg)	Spacing (deg)	Bearing (deg)	Height (deg)
-----	-----	-----	-----	-----	-----
1	0.368	-108.6	0.0	0.0	112.3
2	1.000	+0.0	90.0	288.0	112.3
3	0.544	+166.9	180.0	288.0	112.3
Input Power (kW)	Loop Loss (ohms)	Theoretical RMS (mV/m)	Q RSS (mV/m)	Standard Factor (mV/m)	Standard RMS (mV/m)
-----	-----	-----	-----	-----	-----
8.00	1.00	959.3	1276.	31.9	1008.

Azimuth (deg)	Field (mV/m)	Azimuth (deg)	Field (mV/m)	Azimuth (deg)	Field (mV/m)	Azimuth (deg)	Field (mV/m)
-----	-----	-----	-----	-----	-----	-----	-----
0	498.	90	1652.	180	726.	270	721.
5	474.	95	1681.	185	629.	275	734.
10	458.	100	1701.	190	548.	280	744.
15	459.	105	1711.	195	491.	285	750.
20	483.	110	1712.	200	462.	290	750.
25	535.	115	1704.	205	457.	295	746.
30	611.	120	1686.	210	470.	300	737.
35	706.	125	1659.	215	493.	305	724.
40	813.	130	1621.	220	518.	310	707.
45	925.	135	1573.	225	544.	315	689.
50	1038.	140	1514.	230	566.	320	670.
55	1147.	145	1443.	235	587.	325	650.
60	1250.	150	1362.	240	607.	330	630.
65	1344.	155	1270.	245	626.	335	611.
70	1428.	160	1169.	250	646.	340	591.
75	1501.	165	1060.	255	666.	345	571.
80	1562.	170	948.	260	685.	350	548.
85	1612.	175	835.	265	704.	355	524.

Call sign: WARV
 Frequency: 1590 kHz
 Power: 8.000 kW
 ERSS: 1276.24 mV/m at 1 km
 Q factor at zero degrees:
 31.90 mV/m at 1 km
 Theoretical pattern RMS:
 959.30 mV/m at 1 km
 Standard pattern RMS:
 1007.82 mV/m at 1 km
 Modified pattern RMS:
 0.00 mV/m at 1 km

Coordinates:
 N41°43'40.00" W71°27'46.00"

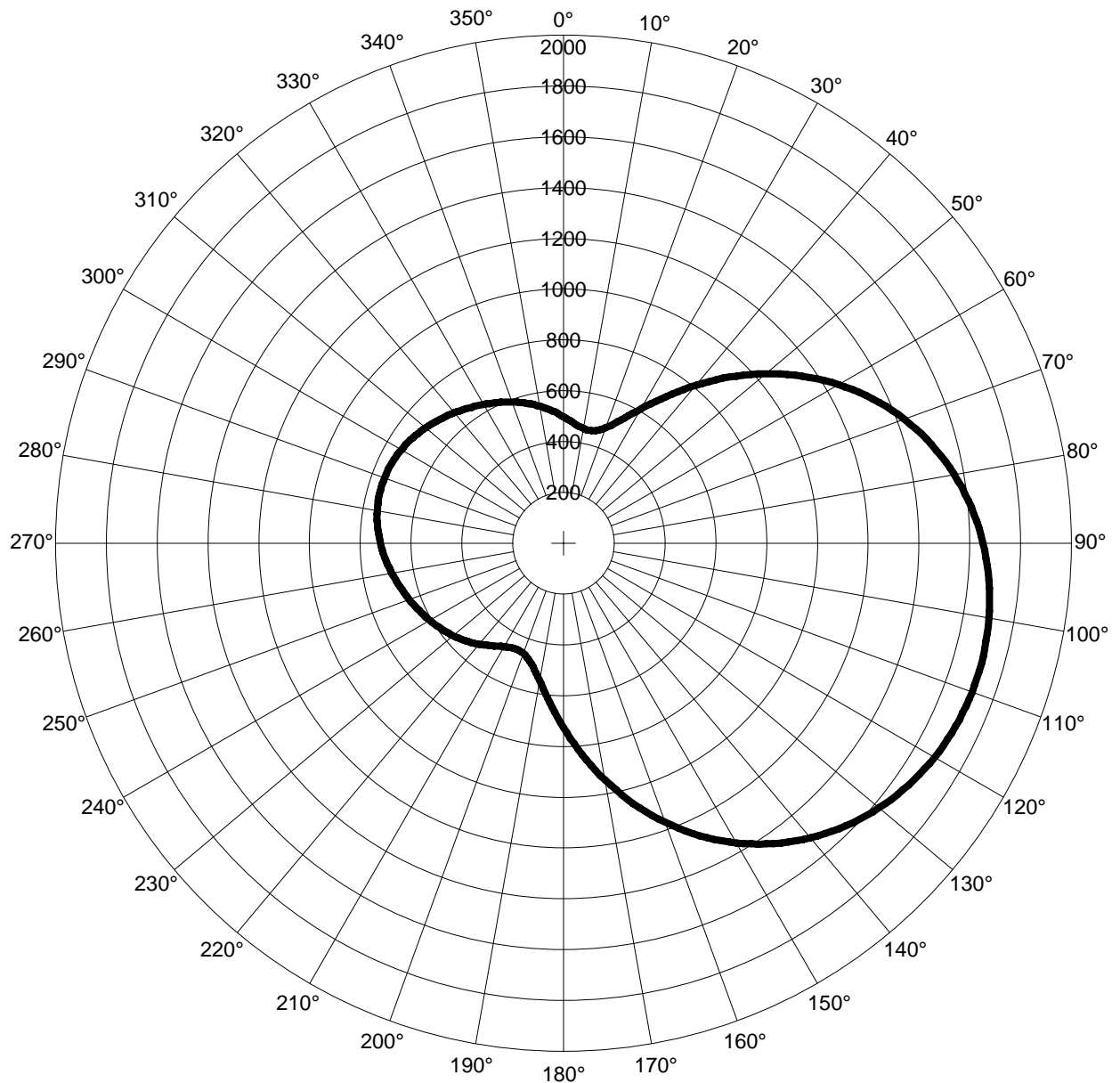
No. of augmentations: 0

TOWER PARAMETERS

	Field	Phase	Spacing	Bearing	Tower	Elec.	Length	Length	Length	Length
##	Ratio	(deg.)	(deg.)	(deg.)	Ref.	Height	Twr. A	Twr. B	Twr. C	Twr. D
					Switch	(deg.)	(deg.)	(deg.)	(deg.)	(deg.)
1	0.368	-108.6	0.0	0.0	0	112.3	0.0	0.0	0.0	0.0
2	1.000	0.0	90.0	288.0	0	112.3	0.0	0.0	0.0	0.0
3	0.544	166.9	180.0	288.0	0	112.3	0.0	0.0	0.0	0.0

Figure 5

HORIZONTAL PLANE PATTERN



Field in mV/m

APPENDIX 1

MEASURED SOIL CONDUCTIVITY & GROUND WAVE FIELD STRENGTH MEASUREMENT DATA

BLOUNT COMMUNICATIONS, INC. AM BROADCAST STATION WARV WARWICK, RHODE ISLAND

1590 kHz 5 kW, 8 kW-LS DA-2

Measured soil conductivity from FCC files has been applied to the distance to contour calculations for WUNR 1600 kHz, Brookline, Massachusetts. That data is tabulated below:

<u>Azimuth</u>	<u>Conductivity</u>	<u>Source</u>
95	2 millisiemens to 5.0 km, 1-13.0 km	WRCA BMP-20021926ACN
115	0.5 - 3 km, 0.1-50.0 km	“
175	1 – 2 km, 0.1 – 50 km, 1.25-70.4 km, 1 – 90.0 km	WXKS BP-20100917ABA
195	2.5 – 3 km, 1.5 – 10 km, 1 – 90.0 km	“

Measured soil conductivity from FCC files, BP-20100505AJC, WSMN, Nashua, New Hampshire has been applied to the distance to contour calculations for WARV 1590 kHz, Warwick, Rhode. That data is found in a nine page report prepared by James Pollock, P.E. dated July 30, 2011 which is attached and incorporates measured soil conductivity on WARV, 1590 kHz, Warwick, Rhode Island on the 10 degree and 355 degree radials.

In July of 2012 field engineer Blair Harden of Milford, Massachusetts, under the direction of this office, took additional field strength measurements extending the WARV 10 degree and 355 degree radials. In September of 2012 Mr. Harden took field strength readings on WUNR on the 135 degree and 155 degree radials, and took field additional strength readings on WARV on a 45 degree radial. This data is tabulated and plotted on the following pages. All readings were taken with a Potomac Instruments FIM-41, serial number 1098 using good engineering practice. Mr. Harden reports that he checked his FIM against FIM 41, s/n 677, last calibrated April, 2011 by PI and it was in perfect agreement.

APPENDIX 1 – Page 2

The soil conductivity data extracted from the field strength measurement data submitted herein for WARV and WUNR is tabulated below and has been used for all distance to contour calculations herein.

<u>Azimuth</u>	<u>Conductivity</u>	<u>Facility</u>
10	1.5 millisiemens to 9.0 km, 0.1 – 15.1 kM, 0.5 – 45.6 kM, 0.1 – 86.3 kM.	WARV
45	1.5 -2.74 kM, 1.0 – 14.43 kM, 0.1 – 47.98 kM	WARV
355	1.0 – 7.98 kM, 0.1 – 82.6 kM	WARV
135	1.5 – 1.71 kM, 2.0 – 2.27 kM, 0.1 – 50.0 kM	WUNR
155	2.0 – 1.97 kM, 3.0 – 4.29 kM, 0.1 – 50.8 kM	WUNR

APPENDIX 1 – Page 3**WARV 45° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
1	0.45	41-45-51.4 71-27-30.4	Point Inaccessible	
2	0.53	41-43-53.1 71-27-28.2	Point Inaccessible	
3	1.21	41-44-8.9 71-27-66	9/26/12 14:51	280 mV
4	1.27	41-44-10 71-27-5.8	9/26/12 14:54	310 mV
5	1.38	41-44-12.9 71-27-2.3	9/22/12 12:57	175 mV
6	1.84	41-44-23.5 71-26-48.0	9/22/12 13:09	170 mV
7	1.96	41-44-26.1 71-26-44.6	9/22/12 13:18	140 mV
8	2.34	41-44-34.9 71-26-32.8	9/22/12 13:32	65 mV
9	2.38	41-44-35.8 71-26-31.5	9/22/12 13:39	100 mV
10	2.74	41-44-43.9 71-26-20.5	9/22/12 13:44	80 mV
11	3.09	41-44-51.9 71-26-9.9	9/22/12 13:48	48 mV
12	3.50	41-45-1.2 71-25-57.3	9/22/12 14:10	31 mV
13	4.50	41-45-24.1 71-25-26.7	9/22/12 14:27	26 mV
14	7.46	41-46-31.7 71-23-55.9	9/22/12 14:39	7.2 mV
15	9.25	41-47-12.6 71-23-0.9	9/22/12 14:48	7.2 mV
16	10.75	41-47-46.8 71-22-14.8	9/22/12 15:12	5.8 mV
16.B	14.43	41-49-11.0 71-20-21.7	9/22/12 15:25	3.1 mV
17	15.45	41-49-34.3 71-19-50.3	9/22/12 15:32	1.7 mV
18	20.22	41-51-23.1 71-17-23.4	9/22/12 15:44	0.52 mV

APPENDIX 1 – Page 4**WARV 45° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
19	23.24	41-52-32.3 71-15-50.8	9/22/12 15:54	0.4 mV
20	28.04	41-54-20.5 71-13-24.2	9/22/12 16:05	0.3 mV
21	32.74	41-56-8.3 71-10-58.4	9/22/12 16:16	0.15 mV
22	37.59	41-57-57.8 71-08-30.1	9/22/12 16:29	0.2 mV
23	44.60	42-00-39.4 71-04-50.7	9/22/12 16:48	0.13 mV
24	46.03	42-01-12.6 71-04-6.2	9/25/12 10:42	0.13 mV
25	46.28	42-01-17.6 71-03-58.3	9/25/12 10:50	0.11 mV
26	47.61	42-01-48.2 71-03-17.5	9/25/12 10:56	0.1 mV
27	47.98	42-01-56.5 71-03-6.0	9/25/12 11:06	0.15 mV

*- NAD 83 datum

APPENDIX 1 – Page 5**WUNR 135° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
1	0.72	42-17-3.5 71-10-56.8	9/23/12 10:25	950 mV
2	0.79	42-17-0.9 71-10-54.6	9/23/12 10:18	950 mV
3	1.02	42-16-56.8 71-10-47.3	9/23/12 10:39	800 mV
4	1.19	42-16-52.7 71-10-42.1	9/23/12 11:01	600 mV
5	1.44	42-16-46.9 71-10-34.2	9/23/12 11:14	260 mV
6	1.54	42-16-44.5 71-10-31.1	9/23/12 11:19	365 mV
7	1.71	42-16-40.7 71-10-25.9	9/23/12 11:27	430 mV
8	1.88	42-16-36.9 71-10-20.7	9/23/12 11:34	360 mV
9	1.98	42-16-34.6 71-10-17.7	9/23/12 11:42	300 mV
10	2.27	42-16-27.8 71-10-08.5	9/23/12 11:52	220 mV
11	4.03	42-15-47.6 71-09-14.3	9/23/12 11:59	68 mV
12	7.38	42-14-30.9 71-07-31.0	9/23/12 12:14	8 mV
13	11.28	42-13-01.5 71-05-30.7	9/25/12 13:57	3.2 mV
14	15.19	42-11-32.0 71-03-30.1	9/23/12 12:44	2.1 mV
15	19.25	42-09-58.8 71-01-25.1	9/23/12 12:57	1.7 mV
16	24.73	42-07-52.9 70-58-36.3	9/23/12 13:09	0.7 mV
17	29.15	42-06-11.5 70-56-20.5	9/23/12 13:23	0.7 mV
18	33.8	42-04-24.6 70-53-57.5	9/23/12 13:34	0.4 mV

APPENDIX 1 – Page 6

WUNR 135° Radial

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
19	40.2	42-01-55.1 70-50-38.0		0.2 mV
20	45.4	41-59-58.5 70-48-01.1	9/23/12 14:03	0.23 mV
21	47.2	41-59-17.4 70-47-07.9	9/23/12 14:11	0.165 mV
22	47.4	41-59-11.4 70-46-59.8	9/23/12 14:16	0.2 mV
23	47.6	41-59-07 70-46-54.1	9/23/12 14:20	0.25 mV
24	48.2	41-58-54.7 70-46-37.5	9/23/12 14:26	0.18 mV
25	50.0	41-58-13.2 70-45-24.3	9/23/12 14:38	0.175 mV

*- NAD 83 datum

APPENDIX 1 – Page 7**WUNR 155° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
1	0.73	42-16-58.6 71-11-05.0	9/23/12 10:30	320 mV
2	0.85	42-16-55.3 71-11-02.7	9/23/12 10:52	365 mV
3	0.95	42-16-52.4 71-11-00.7	9/23/12 10:47	300 mV
4	1.11	42-16-47.8 71-10-57.8	9/23/12 11:06	320 mV
5	1.35	42-16-40.7 71-10-53.1	9/25/12 15:06	185 mV
6	1.70	42-16-30.4 71-10-46.3	9/25/12 14:55	150 mV
7	1.97	42-16-22.5 71-10-41.1	9/25/12 14:50	88 mV
8	2.15	42-16-16.1 71-10-37.4	9/25/12 14:46	80 mV
9	2.51	42-16-06.9 71-10-30.9	9/25/12 14:40	76 mV
10	4.29	42-15-15.1 71-09-56.7	9/25/12 14:26	43 mV
11	7.32	42-13-46.9 71-08-58.8	9/25/12 14:11	6.4 mV
12	12.65	42-11-11.7 71-07-16.6	9/25/12 13:42	1.55 mV
13	18.05	42-06-14.4 71-04-01.5	–	–
13B	22.86	42-06-14.4 71-04-01.5	9/25/12 13:22	0.68 mV
14	27.70	42-03-53.5 71-02-29.1	9/25/12 13:05	0.3 mV
15	33.4	42-01-07.2 71-00-40.4	9/25/12 12:53	0.15 mV
16	37.4	41-59-10.4 70-59-24.2	9/25/12 12:39	0.11 mV
17	42.0	41-56-55.8 70-57-56.4	9/25/12 12:25	0.14 mV
18	47.2	41-54-24.6 70-56-17.9	9/25/12 12:14	95 Uv

APPENDIX 1 – Page 8

WUNR 155° Radial

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
19	47.5	41-54-17.1 70-56-13.1	9/25/12 12:07	95 uV
20	49.2	41-53-27.4 70-55-40.7	9/25/12 11:57	90 uV
21	50.8	41-52-41.1 70-55-10.6	9/25/12 11:47	80 uV

*- NAD 83 datum

APPENDIX 1 – Page 9**WARV 10° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
34	34.52	42-02-02.8 71-23-18.0	9/23/12 10:10	
35	40.22	42-05-02.7 71-22-03.9	9/23/12 10:36	
36	45.60	42-07-54.2 71-21-49.0		
37	50.28	42-10-23.4 71-21-21.7	9/23/12 11:10	
38	54.41	42-12-34.4 71-21-34.5	9/23/12 11:25	
39	59.9	42-15-31.3 71-20-01.4	9/23/12 11:40	
40	65.09	42-18-17.5 71-19-71.3	9/23/12 12:05	
41	69.37	42-20-30.8 71-18-56.1	9/23/12 12:25	
42	75.00	42-23-31.2 71-18-13.7	9/23/12 12:55	
43	80.20	42-26-16.9 71-17-34.6	9/24/12 12:31	
44	85.00	42-28-49.1 71-16-07.9	9/24/12 12:21	
45	86.29	42-28-11.0 71-16-45.6	9/24/12 12:04	

APPENDIX 1 – Page 10**WARV 355° Radial**

Point	Distance in Kilometers	Latitude Longitude*	Date Time	mV/m
33	44.37	42-07-32.3 71-30-31.0	9/22/12 14:40	
34	48.35	42-09-41.1 71-30-48.7	9/22/12 14:22	
35	55.56	42-13-31.4 71-31-14.5	9/22/12 14:07	
36	59.77	42-15-49.5 71-31-30.6	9/22/12 13:59	
37	64.48	42-18-21.6 71-31-50.6	9/22/12 13:48	
38	70.00	42-21-03.3 71-32-10.8	9/22/12 13:35	
39	75.00	42-23-57.4 71-32-35.7	9/22/12 13:15	
40	79.65	42-26-29.7 71-32-44.1	9/22/12 12:51	
41	81.51	42-27-30.2 71-32-53.7	9/22/12 12:36	
42	82.56	42-28-06.9 71-33-00.0	9/22/12 12:15	

Field Strength Measurement Report
WARV
Warwick, Rhode Island.
1590 KHz

James W. Pollock, P.E.
216 Kingsley Court
Mount Laurel, New Jersey 08054

July 30, 2011

Summary:

Field strength measurements were conducted on WARV, Warwick, Rhode Island during the period of July 23, 2011 to July 26, 2011. The measurements were made in accordance with FCC regulations; §73.186.

This report does not offer conclusions or recommendations. It is strictly a list of measurements which contain data as observed and recorded.

Data Tabulation Format.

The field strength measurements in, the form of a spread sheet, as attached, contains information in regard to:

- Line Item Number
 - Self explanatory. It facilitates rapid reference to data of interest.
- Distance Marker
 - Distance from the reference point i.e., the WARV transmitter site.
 - All distances are given in kilometers (kM).
- Date;
 - Day-Month-Year format
- Time
 - A 24 hour clock is used.
 - EDT Local time is reported.
- GPS Longitude (NAD-83)
- GPS Latitude (NAD-83)
 - NAD83 = North American Datum; 1983.
- Field Intensity
 - Field strength is reported in milli-volts-per-meter (mV/m).
- Comments
 - Description of the measurement location in regard to street address, and/or proximity to a prominent landmark. This information is useful for auditing the measurements.

Field Strength Measurement Report
WARV
Warwick, Rhode Island.
1590 KHz

Measurement Protocol

All measurements were recorded during daylight hours within a time frame not earlier than two hours after local sunrise, and not after two hours before sunset.

This time frame is referred to as the Non-Critical Hours.

For WARV, in the month of July, local sunrise is 5:30 AM (EDST) and local sunset is 20:15 PM (EDST). However, it was noticed that WARV changes patterns which are in alignment with the August Sunset and Sunrise times;

Thus, the non-critical hours observed are between 07:45 AM (EDST) and 19:45 (PM) EDST. Daytime measurements were recorded during these hours.

Measurements were recorded with the use of a field strength meter

Manufacturer: Potomac Instruments

Model #FIM-21

Serial Number 722

Calibration Date; June 16, 2010.

Preparer's Statement.

The data in this report, to the best of my knowledge, is accurate.

I have experience in regard to operating and configuring the test equipment in order to perform accurate measurements.

I offer the following credentials:

- Prior experience in making field strength measurements
- Bachelor's degree in mathematics,
- Registered professional engineer licenses in the states of New Jersey and Pennsylvania,.
- Certified Broadcast Technologist certificate from the Society of Broadcast Engineers.
- FCC General Radiotelephone Operator License.

James W. Pollock, P.E.

Date: _____

James W.
Pollock

Digitally signed by James W. Pollock
DN: cn=James W. Pollock, o, ou,
email=jim@jimpollock.net, c=US
Date: 2011.07.31 10:10:31 -04'00'

WARV Transmitter Site:
NAD-27; N41-43-40.0; W71-27-46.0
NAD-83; N41-43-41.3; W71-27-44.7

10 Degree Radial (True)
WARV;
Warwick, Rhode Island.
1590 khz

	Dist Marker	Date	Time Local (EDST)	GPS Latitude (NAD83)	GPS Longitude (NAD83)	Field Strength (mV/m)	Comments
;1	0.470	23-Jul-11	1320	41 43 55.7	71 27 42.0	450	Care New England on Knights Road
;2	0.609	23-Jul-11	1310	41 43 00.1	71 27 39.7	xxx	Pontiac Ave.; Cranston [NOT MEASUREABLE]
;3	1.020	23-Jul-11	1258	41 44 12.5	71 27 38.4	185	Pontiac & Mayfield, parking lot in rear of bldg.
;4	1.240	23-Jul-11	1250	41 44 20.8	71 27 34.1	170	Sharpe Drive; Cranston
;5	1.590	23-Jul-11	1228	41 44 30.8	71 27 32.4	100	Pontiac Ave.; Cranston (see narrative)
;6	1.710	23-Jul-11	1218	41 44 36.3	71 27 31.3	135	Power Road; Cranston
;7	2.080	23-Jul-11	1215	Lat not logged	Lon. not logged	xxx	R.I. State Prison perimeter; Access denied by guard.
;8	2.140	26-Jul-11	0923	41 44 48.7	71 27 30.5	68	Rhode Island DOC, Power Road, rear of building
;9	2.190	23-Jul-11	1210	Lat not logged	Lon. not logged	xxx	R.I. State Prison perimeter; Access denied by guard.
;10	2.580	24-Jul-11	0755	Lat not logged	Lon. not logged	60	Rt 37 Eastbound; Cranston. (early Sunday, lite traffic.)
;11	2.800	23-Jul-11	1155	41 45 10.4	71 27 24.0	58	Rear Parking lot @ 100B Sockanesset Rd; Cranston
;12	3.020	23-Jul-11	1145	41 45 15.9	71 27 21.4	47	Sockanesset Cross Rd & Driveway.
;13	3.250	23-Jul-11	1114	41 45 24.8	71 27 19.8	45	Balsam Court
;14	3.510	23-Jul-11	1100	41 45 33.8	71 27 18.5	33	Garden City Shopping Center.
;15	3.710	23-Jul-11	1054	41 45 39.4	71 27 15.9	34	Cypress Drive
;16	4.000	23-Jul-11	1048	41 45 49.4	71 27 14.3	26	Elm Drive
;17	5.000	24-Jul-11	0847	41 46 19.5	71 27 19.4	10	Grossway Road; Cranston, RI
;18	6.090	24-Jul-11	0900	41 46 55.7	71 27 58.1	6.4	Humbert and Garland Avenues; Cranston
;19	7.000	24-Jul-11	0905	41 47 24.6	17 26 51.6	5.5	Harmon Ave, near Lowell St.;
;20	7.950	24-Jul-11	0914	41 47 54.3	17 26 41.7	5.2	Arlington Ave.
;21	9.010	24-Jul-11	0925	41 48 28.5	71 26 36.0	2.3	Union Ave Between Whitehall & Cumerford St;
;22	10.020	24-Jul-11	0941	41 49 03.6	71 26 26.4	2.2	Westminster St. & Troy St.;
;23	10.960	24-Jul-11	0951	41 49 30.8	71 26 10.2	1.8	Newark St & Valley St.;
;24	11.920	24-Jul-11	1000	41 50 01.6	71 26 14.3	1.3	Winrooth & Parkway Avenues
;25	12.500	24-Jul-11	1011	41 50 08.5	71 26 08.0	1.25	Route 44 & Hilltop Avenue
;26	14.040	24-Jul-11	1024	41 51 09.0	71 26 09.1	1.10	Grand Broadway; Providence
;27	14.670	24-Jul-11	1051	41 51 28.0	71 25 51 8	0.640	Woodward Road & Dakota Street,

Note: Point 10 not used in analysis.

Prepared by:
James W. Pollock, P.E.
216 Kingsley Court
Mount Laurel, NJ 08054
856-722-5313

WARV Transmitter Site:
NAD-27; N41-43-40.0; W71-27-46.0
NAD-83; N41-43-41.3; W71-27-44.7

10 Degree Radial (True)
WARV;
Warwick, Rhode Island.
1590 khz

	Dist. Marker	Date	Time Local (EDST)	GPS Latitude	GPS Longitude	Field Strength (mV)	Comments
;28	15.070	24-Jul-11	1036	41 54 41.1	71 25 50.9	0.590	End of Washington Street; Providence, RI
;29	19.780	24-Jul-11	1111	41 54 09.5	71 25 11.3	0.560	Great Road (Rt 123) Lincoln, RI
;30	20.180	24-Jul-11	1120	41 54 02.4	71 25 11.9	0.430	Bernon Drive; Lincoln, RI
;31	24.930	24-Jul-11	1141	41 56 55.5	71 24 33.4	0.340	Grove Road, near Geo. Washington Park, RI
;32	28.620	24-Jul-11	1215	41 58 53.3	71 25 05.6	0.300	Birchwood Drive, Pawtucket Reservoir; RI
;33	29.530	24-Jul-11	1220	Lat not logged	Lon. not logged	0.280	Reservoir Road, Pawtucket Reservoir; RI
;34	34.520	24-Jul-11	1242	42 02 02.8	71 23 18.0	No Signal.	Route 21. Sheldonville, Ma; High level of EMI noise
;35	40.220	24-Jul-11	1310	42 05 02.7	71 22 03.9	No Signal.	Pear Tree Lane; Franklin, Ma. Hi level of EMI noise
;36	45.600	24-Jul-11	1345	42 07 54.2	71 21 49.0	0.120	River Road; near Norfolk, Ma. Airport runway WARV ??
;37	50.280	24-Jul-11	1405	42 10 23.4	71 21 21.7	No Signal.	Irving St.; Millis, Massachusetts.
;38	54.410	24-Jul-11	1420	42 12 34.4	71 21 34.5	No Signal.	Meadows Road (Rt 27); Medfield, Ma.
;39	59.900	24-Jul-11	1436	42 15 31.3	71 20 01.4	No Signal.	Everett St. & Eliot Street; Natick, Ma
;40	65.090	24-Jul-11	1505	42 18 17.5	71 19 71.3	No Signal.	Route 9; East Natick, Wellesley, Ma
;41	69.370	24-Jul-11	1525	42 20 30.8	71 18 56.1	No Signal.	Highland St.,
;42	75.000	24-Jul-11	1531	42 23 31.2	71 18 13.7	No Signal.	Merriam St. & Willard Road, Silver Hill, Ma
;43	80.200	24-Jul-11	1558	42 26 16.9	71 17 34.6	No Signal.	Cambridge TPKE, Rt 2 Lincoln, Ma.
;44	85.000	24-Jul-11	1700	42 28 49.1	71 16 07.9	No Signal.	Hartwell Road; Bedford, Ma
;45	86.290	24-Jul-11	1633	42 28 11.0	71 16 45.6	No Signal.	Ginger Japanese Restaurant; Great Road, Bedford, Ma

Note: Point 33 not used in analysis. Points 37-45 visited
but reliable signal level below noise floor and thus not
logged.

Prepared by:
James W. Pollock, P.E.
216 Kingsley Court
Mount Laurel, NJ 08054
856-722-5313

WARV Transmitter Site
NAD-27; N41-43-40.0; W71-27-46
NAD-83; N41-43-41.3; W71-27-44.7

355 Degree Radial (True)
WARV
Warwick, Rhode Island
1590 KHz

	Dist Marker	Date	Time Local (EDST)	GPS Latitude (NAD83)	GPS Longitude (NAD83)	Field Strength (mV/m)	Comments
1	0.490	23-Jul-11	1536	41 43 57.1	71 27 47.5	420	Hollow Tree Drive. Cranston, RI
2	0.568	23-Jul-11	1332	41 43 59.6	71 27 47.7	400	Hollow Tree Drive. Cranston, RI
3	0.624	23-Jul-11	1324	41 43 59.4	71 27 46.3	280	End of Samuel Street Cranston, RI
4	0.746	23-Jul-11	1319	41 44 07.8	71 27 48.4	240	Stacy Drive; Cranston, RI
5	0.816	23-Jul-11	1341	41 44 07.9	71 27 45.5	220	Mayfield Avenue Cranston, RI
6	1.150	23-Jul-11	1350	41 44 08.4	71 27 49.3	210	East Street Cranston, RI
7	1.310	23-Jul-11	1405	41 44 23.5	71 27 50.9	195	Foster Road; Rhode Island Correction Campus
8	1.620	23-Jul-11	1410	41 44 30.9	71 27 51.1	190	West Street; Rhode Island Correction Campus
9	1.790	23-Jul-11	1424	41 44 39.2	71 27 51.6	140	Howard Avenue. Cranston, RI
10	2.210	23-Jul-11	1430	41 44 52.2	71 27 54.5	85	Rhode Island Correctional Campus;
11	2.580	24-Jul-11	0803	Lat not logged	Lon. not logged	62	Rt 37 East bound on-ramp.
12	2.650	25-Jul-11	1440	Lat not logged	Lon. not logged	60	Rt 2, Southbound. Lat-Lon not measured; not safe
13	3.000	24-Jul-11	0750	Lat not logged	Lon. not logged	58	Rt 37 West Bound on ramp.
14	3.200	24-Jul-11	0827	41 45 24	71 27 56	40	Hoffman Avenue; Cranston, RI
15	3.500	24-Jul-11	0822	41 45 24	71 27 57.8	22	Belvedere Drive, Cranston, RI
16	4.000	25-Jul-11	1415	41 05 50.2	71 27 59.1	20	East Hill Drive; Cranston RI
17	5.040	25-Jul-11	1407	41 46 24.7	71 27 04.4	12	Meshanticut Valley Pkwy; Cranston
18	6.040	25-Jul-11	1359	41 46 55.1	71 28 07.3	7.3	Soprano Circle; Cranston.
19	7.000	25-Jul-11	1349	41 47 25.6	71 28 16.0	7.0	Northern shore of Randal Pond
20	7.980	25-Jul-11	1330	41 48 00.6	71 28 17.0	3.6	Evergreen Drive.
21	9.050	25-Jul-11	1319	41 48 32.7	71 28 19.5	1.10	Enfield St.
22	10.050	25-Jul-11	1308	41 49 05.2	71 28 22.0	1.20	Edwards Road
23	11.020	25-Jul-11	1248	41 49 37.2	71 28 26.2	1.10	Rt 128 (Border Ave) near Albemarle Ave.
24	11.980	25-Jul-11	1240	41 50 08.3	71 28 28.4	1.30	Clinton Street;

Note: points 11-13 not included in analysis due to lack
of accurate GPS distance data.

Prepared by:
James W. Pollock, P.E.
216 Kingsley Court
Mount Laurel, NJ 08054
856-722-5313

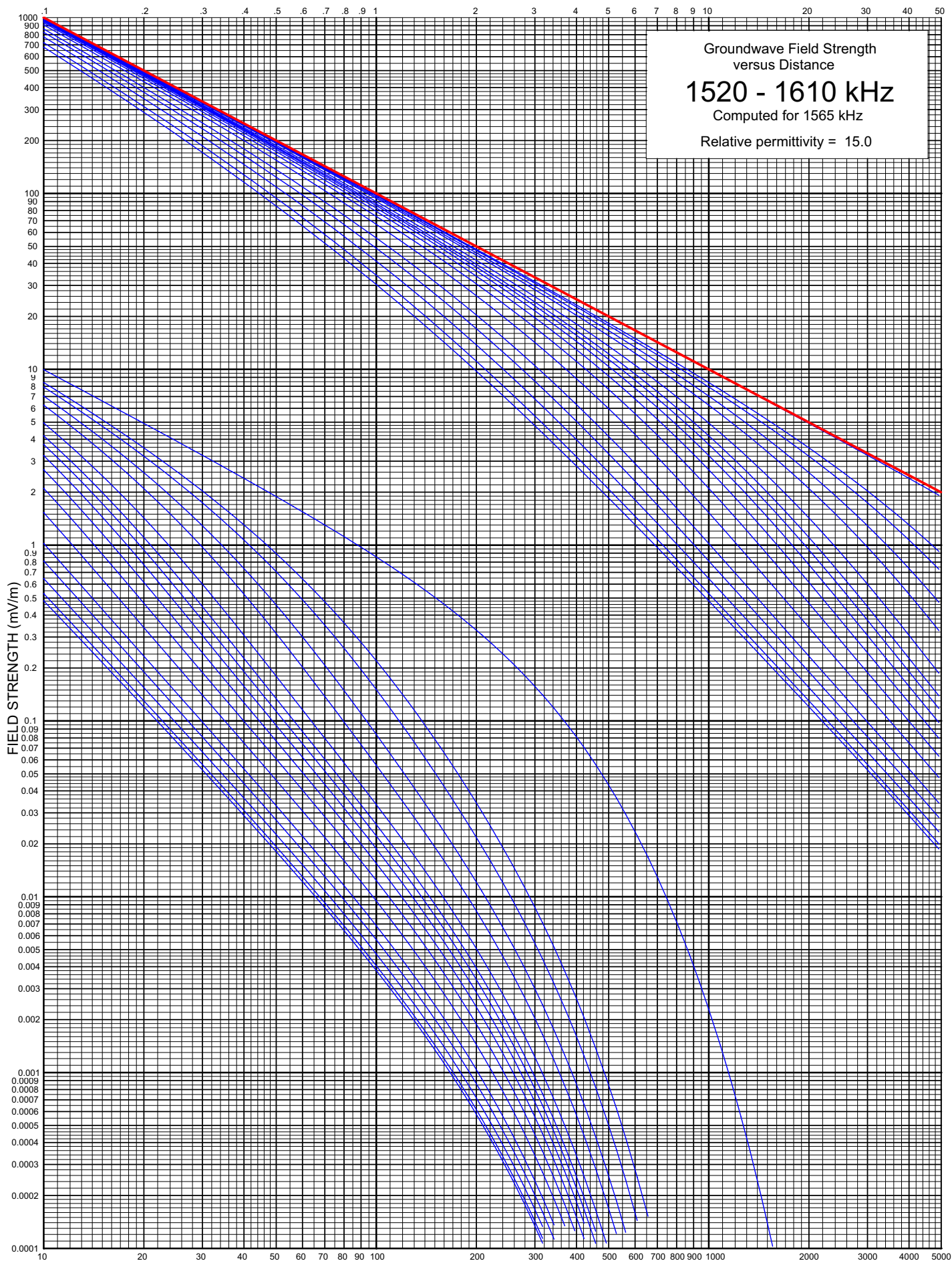
WARV Transmitter Site
 NAD-27; N41-43-40.0; W71-27-46
 NAD-83; N41-43-41.3; W71-27-44.7

355 Degree Radial (True)
 WARV
 Warwick, Rhode Island
 1590 KHz

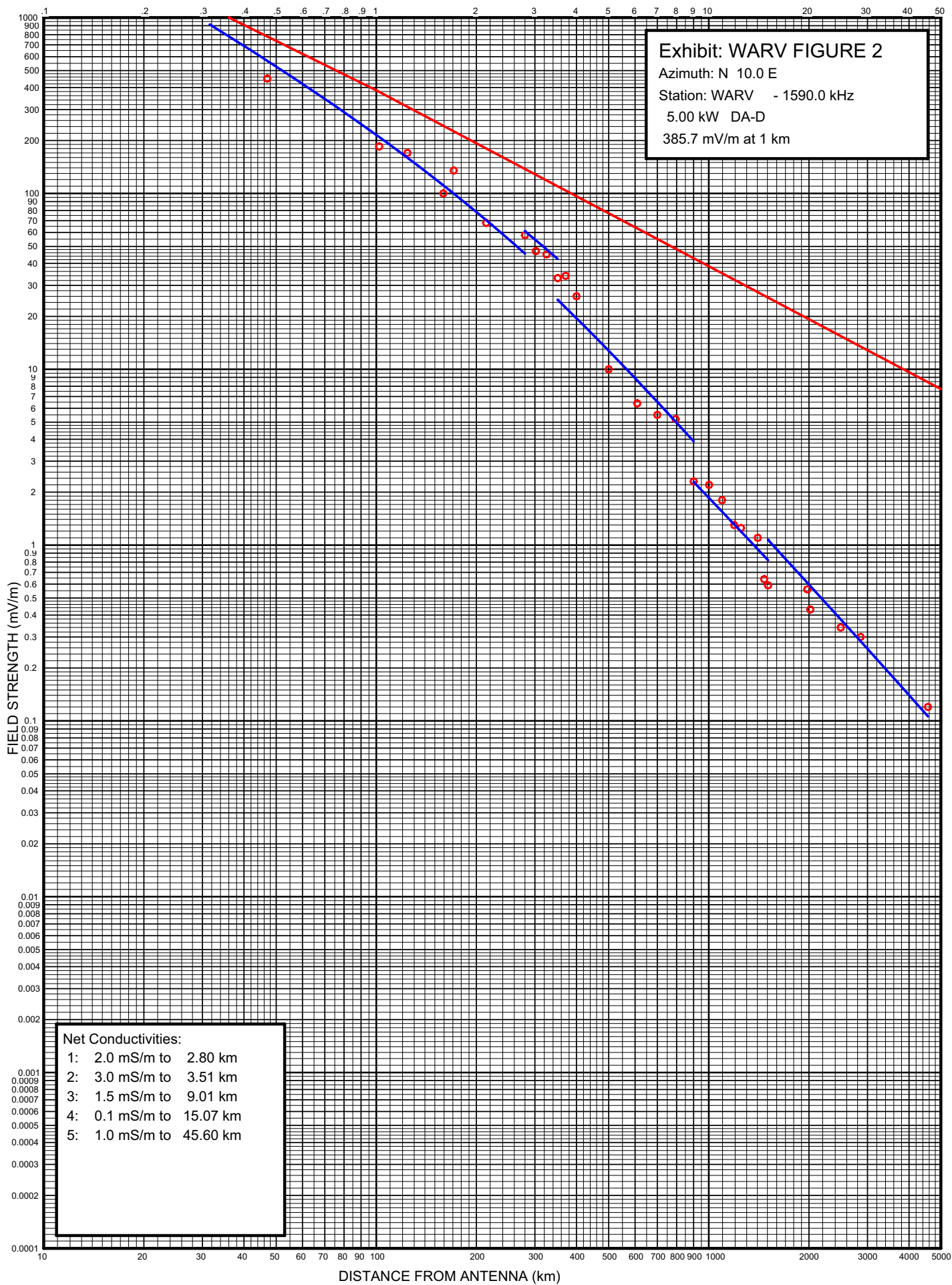
Dist Marker	Date	Time (EDST)	GPS Lat	GPS Long	Field Strength mV/m	Comments
25 13.040	25-Jul-11	1227	41 50 41.6	71 28 34.1	0.950	Humbert & Victor Streets
26 14.000	25-Jul-11	1219	41 51 11.4	71 28 38.2	0.99	Allen Avenue; North Providence, RI
27 15.000	25-Jul-11	1210	41 51 44.6	71 28 40.7	1.09	4th Street; North Providence, RI; Catholic Church.
28 20.880	25-Jul-11	1140	41 54 54.9	71 29 06.8	0.400	Limerock Road.
29 25.350	25-Jul-11	1102	41 57 18.6	71 29 29.5	0.250	Rt 146; near Baskin Robbins; Albion, RI
30 30.500	25-Jul-11	1048	42 00 05.1	71 29 38.3	0.140	Cumberland Hill Rd & Newland Ave. Woonsocket
31 34.200	25-Jul-11	1034	42 02 3.8	71 29 55.0	0.130	Elm Street;
32 40.220	25-Jul-11	1015	42 05 22.8	71 30 26.0	0.072	Bellingham Street; Mendon, Ma
33 44.370	25-Jul-11	1000	42 07 32.3	71 30 31.0	No Signal	Howard Street, Milford, Ma
34 48.350	25-Jul-11	0944	42 09 41.1	71 30 48.7	No Signal	Dilla Street, Milford, Ma
35 55.560	25-Jul-11	0930	42 13 31.4	71 31 14.5	No Signal	Grove Street north of Price Street; Hopkinton, Ma.
36 59.770	25-Jul-11	0916	42 15 49.5	71 31 30.6	No Signal	Cedar Street (Rt 85) Hopkinton, Ma
37 64.480	25-Jul-11	0906	42 18 21.6	71 31 50.6	No Signal	Main St. East of Middle Rd. ; Southborough, Ma
38 70.000	25-Jul-11	0853	42 21 03.3	71 32 10.8	No Signal	Rt 20, Marlboro, Ma.
39 75.000	25-Jul-11	0828	42 23 57.4	71 32 35.7	No Signal	Municipal Drive, Hudson, Ma.
40 79.650	25-Jul-11	0810	42 26 29.7	71 32 44.1	No Signal	Delaney Street; Stow, Ma.
41 81.510	25-Jul-11	0757	42 27 30.2	71 32 53.7	No Signal	Finn Road; Bolton. Ma
42 82.560	25-Jul-11	0748	42 28 06.9	71 33 00.0	No Signal	Eldrige Road, Harvard, Ma

Note: Points 33-42 visited but reliable signal level
 below noise floor and thus not logged.

Prepared by:
 James W. Pollock, P.E.
 216 Kingsley Court
 Mount Laurel, NJ 08054
 856-722-5313



WARV MEASURED DATA AMENDMENT FIGURE 1



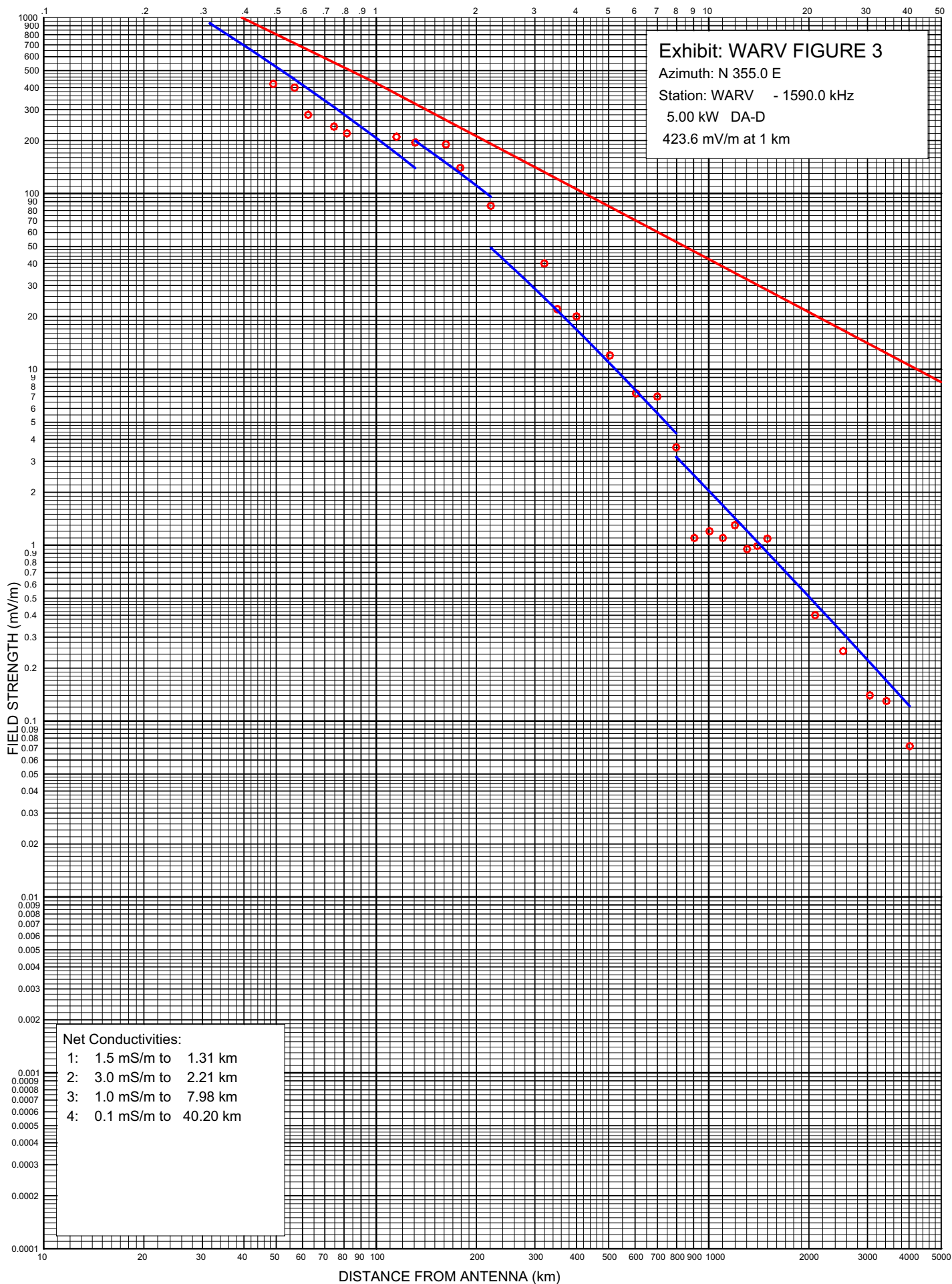
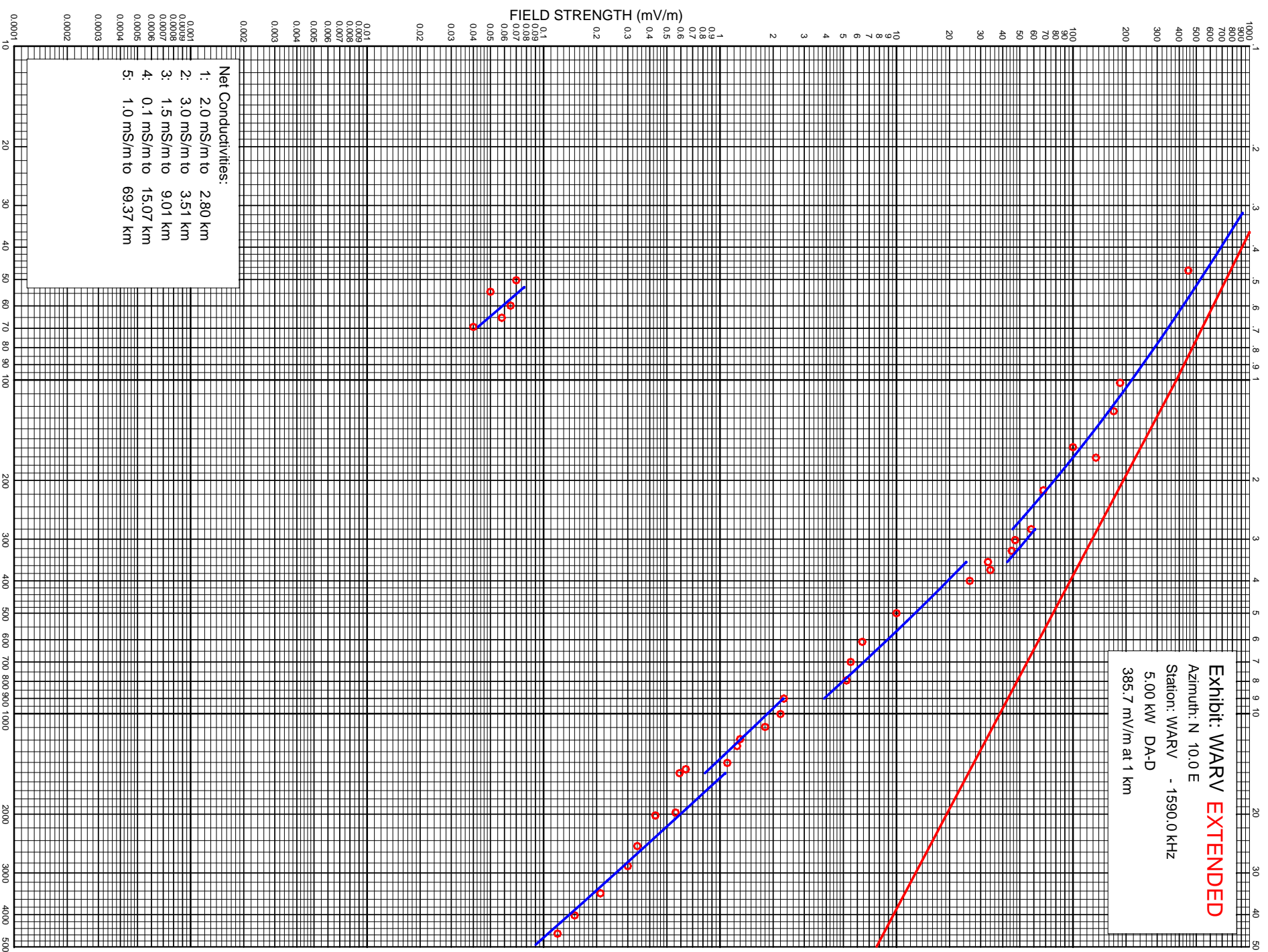
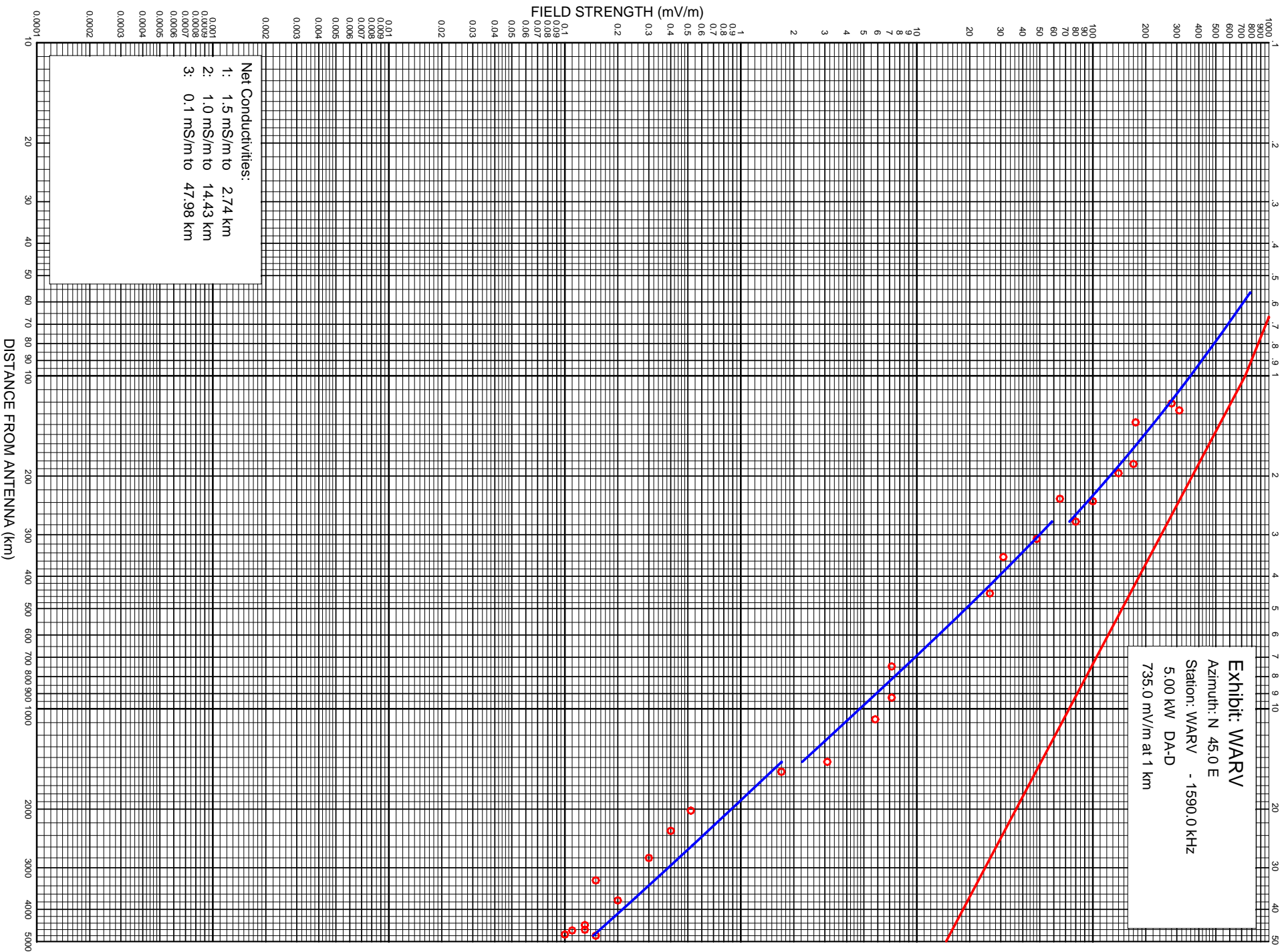


Exhibit: WARV EXTENDED
Azimuth: N 10.0 E
Station: WARV - 1590.0 kHz
5.00 kW DA-D
385.7 mV/m at 1 km





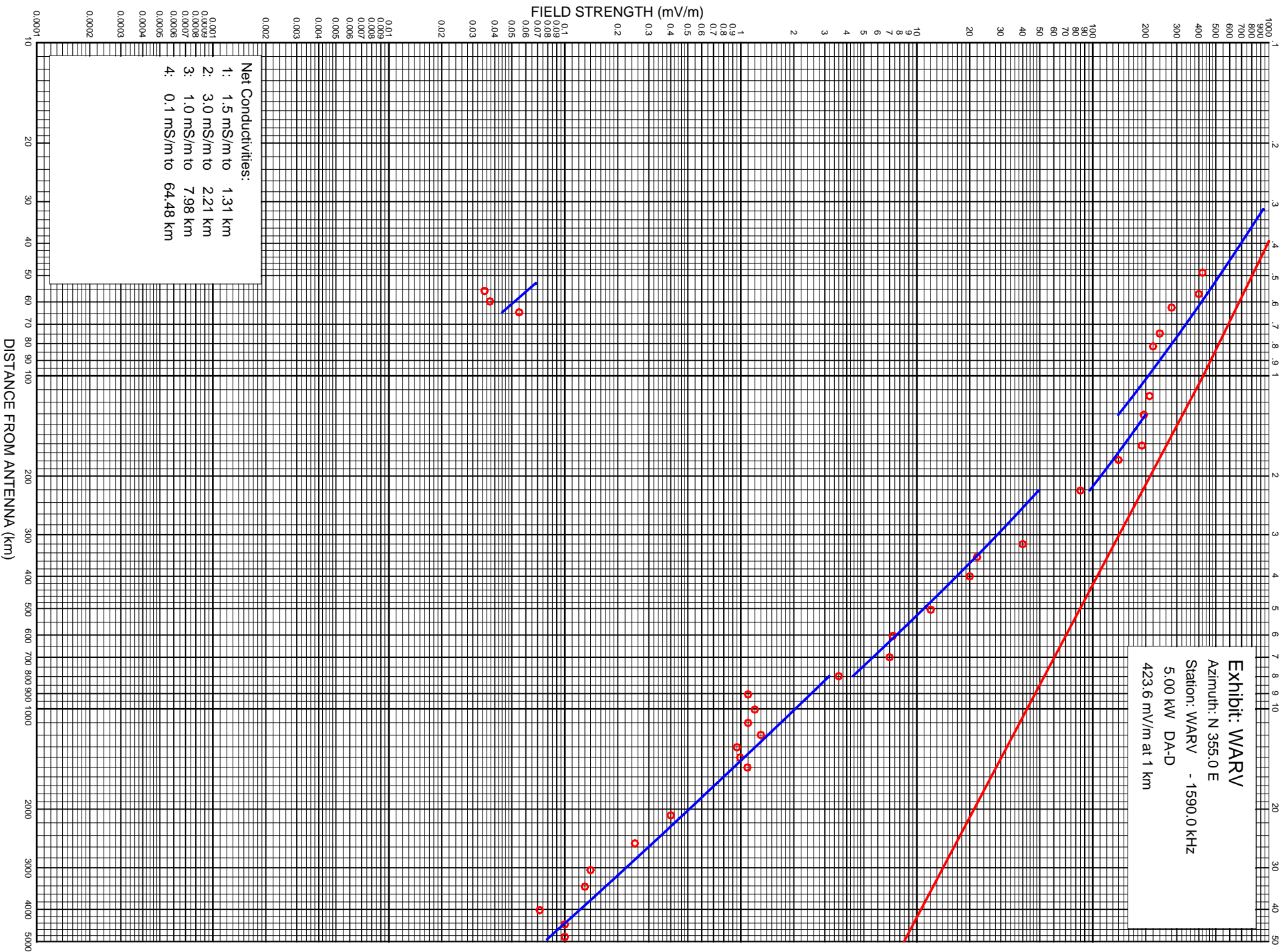
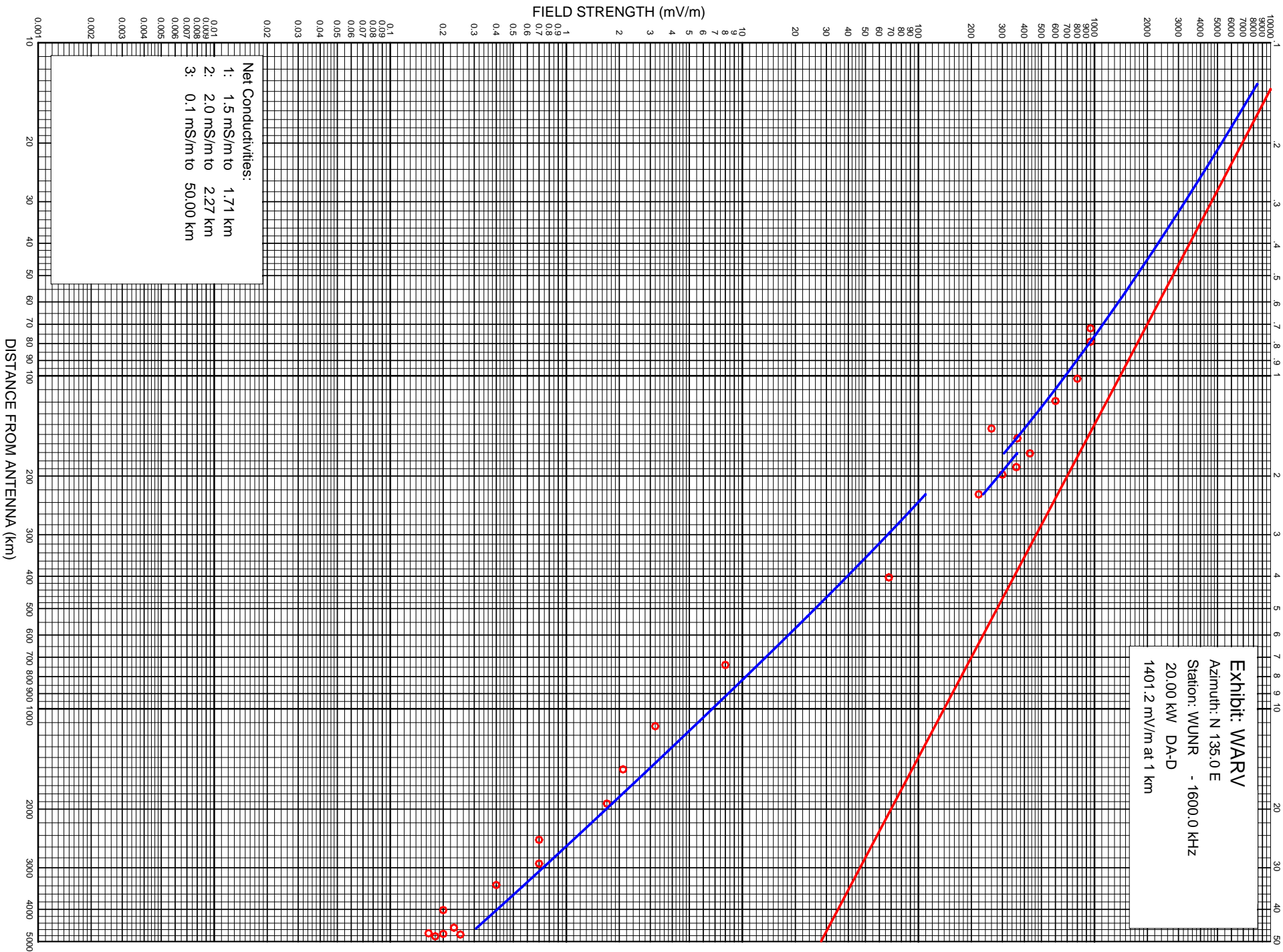
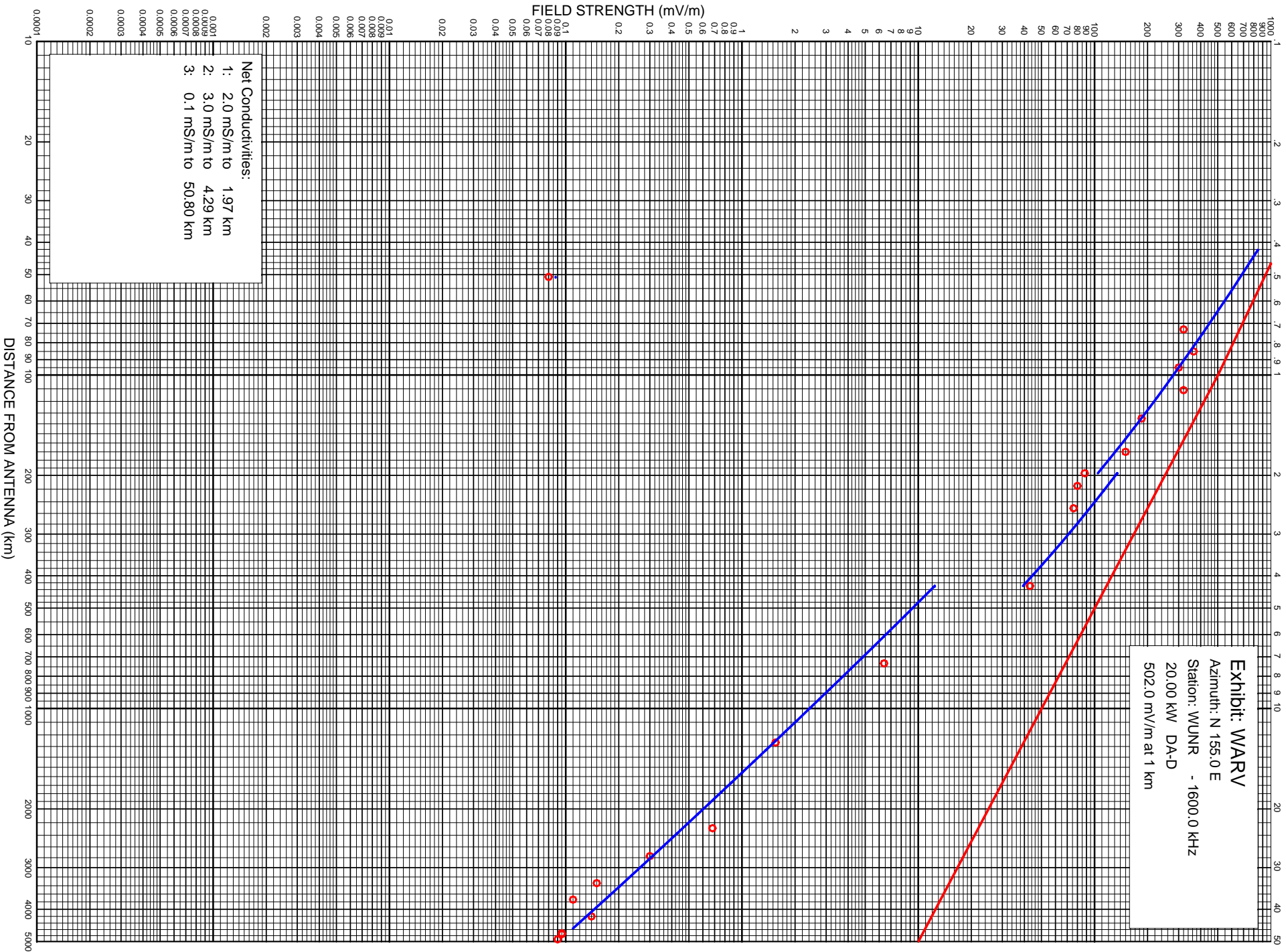


Exhibit: WARV
Azimuth: N 135.0 E
Station: WUNR - 1600.0 kHz
20.00 kW DA-D
1401.2 mV/m at 1 km





UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
AM BROADCAST STATION LICENSE

File No. : BL-900222AC
Call Sign : WARV

LICENSEE:

Blount Communications, Inc.

1. Community of License: Warwick, R.I.
2. Transmitter location: 0.1 mile SE of Center and
Knight St., Kent County
Warwick, Rhode Island
- North latitude: 41° 43' 40"
West longitude: 71° 27' 46"
6. Antenna and ground system: Attached

3. Transmitter(s): Type Accepted. (See Sections 73.1660,
73.1665 and 73.1670 of the Commission's rules)
4. Main Studio location: (See Section 73.1125)
19 Luther Avenue
Kent County
Warwick, Rhode Island
5. Remote control location:
(same)

APPENDIX 2 PAGE 1 OF 4

7. Obstruction marking and lighting specifications - FCC Form 715, paragraphs: None Required

8. Frequency: 1590 kHz

9. Nominal power (kW): 5.0 Day 5.0 Night

Antenna input power (kW):

5.4 Day ☐ Non-directional antenna:
☒ Directional antenna : current 10.4 amperes; resistance 50 ohms.

5.4 Night ☐ Non-directional antenna:
☒ Directional antenna : current 10.4 amperes; resistance 50 ohms.

10. Hours of operation: Specified in BP-890125AD

11. Conditions: Attached

2-20-92 -- SUPERSEDED TO CORRECT NIGHTTIME OPERATING PARAMETERS.

Subject to the provisions of the Communications Act of 1934, as amended, subsequent Acts, Treaties, and Commission rules made thereunder, and further subject to conditions set forth in this license,¹ the LICENSEE is hereby authorized to use and operate the radio transmitting apparatus herein described for the purpose of broadcasting for the term ending 3 AM. Local Time

April 1, 1991

The Commission reserves the right during said license period of terminating this license or making effective any change, or modification of this license which may be necessary to comply with any decision of the Commission rendered as a result of any hearing held under the rules of the Commission prior to the commencement of this license period or any decision rendered as a result of any such hearing which has been designated but not held, prior to the commencement of this license period.

The license is issued on the licensee's representation that the statements contained in the licensee's application are true and that the undertakings therein contained so far as they are consistent herewith, will be carried out in good faith. The licensee shall, during the term of this license, render such broadcasting service as will serve the public interest, convenience, or necessity to the full extent of the privileges herein conferred.

This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequency designated in the license beyond the term hereof, nor in any other manner than authorized herein. Neither the license nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. This license is subject to the right of use or control by the Government of the United States conferred by Section 606 of the Communications Act of 1934, as amended.

FEDERAL
COMMUNICATIONS
COMMISSION



¹ This license consists of this page and pages 2, 3 and 4

Dated: JUN 18 1990

JS/ed

JUN 20 1990

FCC Form 353-A
June 1980

File NO. BL-900222AC

Call Sign: WARV

Date: 3/26/90

1. DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

No. and Type of Elements: Three(3) vertical, guyed, series-excited steel towers of uniform cross-section. Night Theoretical RMS: 753.04 mV/m/km, Augmented RMS: 791.08 mV/m/km. Daytime Theoretical RMS: 756.7 mV/m/km, Standard RMS: 794.98 mV/m/km. Q = 25.2 Day, Q = 22.36 Night.

Height above Insulators: 58.82 m (112.3°)

Overall Height: 61 m

Spacing and Orientation: Three towers spaced 990° between each element of a line bearing 288° True.

Non-Directional Antenna: N/A

Ground System consists of 120 equally spaced, buried, copper radials about the base of each tower varying in length 23.77 m to 47.27 m plus 120 interspersed radials 15.25 m in length.

2. THEORETICAL SPECIFICATIONS

	Tower	#1(SE)	#2(C)	#3(NW)
Phasing:	Night	-120.8°	0°	120.9°
	Day	0°	147.2°	-81.4°
Field Ratio:	Night	0.51	1.0	0.51
	Day	1.0	0.713	0.209

3. OPERATING SPECIFICATIONS

Phase Indication*:	Night	-110°	0°	112°
	Day	-102°	0°	176°
Antenna Base				
Current Ratio:	Night	0.542	1.00	0.404
	Day	0.267	1.00	0.478
Antenna Monitor Sample				
Current Ratio:	Night	0.389	1.00	0.56
	Day	0.255	1.00	0.49

* As indicated by Potomac Instruments AM-19D (210) antenna Monitor.
Antenna sampling system approved under section 73.68(b) rules.

BL-870601AK

WARV

DESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS:

Direction of 230° True North. From the WARV transmitter driveway entrance on Knight Street: go left (south) on Knight Street to Rte 5 North. Make U-turn at blinking light to Rte 5 South. Proceed 2.18 miles to Centerville Road (117 W). Proceed 2.76 miles to 1467 Centerville Road. Turn right into the driveway. Reading is taken in field 30 paces from house. Radial Point No. 12. Distance from the transmitter: 3.45 miles. The field intensity measured at this point should not exceed 2.9 mV/m, Nighttime.

Direction of 249.5° True North. From Monitor Point #1 (230.0°), exit driveway and proceed West on Centerville Road for .45 miles. Turn right (North) on Main Street. Proceed for .92 miles. Turn left (West) on Gough Ave. proceed for .35 miles. Turn left into St. John's Cemetery. Turn right at first intersection. Reading is taken in middle of road just before center intersection. Radial Point No. 12. Distance from the transmitter: 3.75 miles. The field intensity measured at this point should not exceed 1.4 mV/m, Nighttime.

Direction of 320.5° True North. From Monitor Point #3 (346.0°), Exit school entrance and turn left on Phoenix Avenue. Proceed 1.67 miles to Rte. 37 East. (Phoenix merges back into Natick Ave.) On Rte. 37 East proceed .08 miles to exit ramp for 295S. Reading is taken in open area on shoulder of 37E right after 295S on ramp. Radial Point No. 13. Distance from the transmitter: 2.12 miles. The field intensity measured at this point should not exceed 9.8 mV/m, Nighttime.

Direction of 346.0° True North. From Monitor Point #2 (249.5°), exit same road entered into St. John's Cemetery. Turn right down Gough Ave. Turn left on Main Ave. Proceed for .40 miles. Turn right on Pike Ave. Follow Pike until it merges into Providence Ave. .78 miles. Bear right on Providence Ave., proceed 3.14 miles to Oaklawn ave. exit. On Oaklawn Proceed .36 miles to Wilbur. Turn left on Wilbur, proceed .45 miles to Natick Ave., Turn right on Natick (becomes Phoenix) and follow for 1.87 miles. Turn right on the Cranston West High School entrance. Reading is taken 25 paces from road onto ball field. Radial Point No. 13. Distance from the transmitter: 3.35 miles. The field intensity measured at this point should not exceed 2.4 mV/m, Nighttime.

WARVBL-900222ACDESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS

Direction of 11.5 degree True North. From monitor point #1 (204.5 degrees), turn right on Centreville Road, continue for 0.7 miles to exit for 95 North. Drive 95 North for 3.9 miles to exit 14B (Route 37 East). Continue on Route 37 East for 1 mile to Route 2 North. Proceed 1.3 miles and turn right on Delway Road, next to Pizza Hut. Go 0.1 miles on Delway. The measurement is taken in front of 37 Delway. Radial Point No. 14. Distance from the transmitter: 4.72 kilometers. The field intensity measured at this point should not exceed 20.7 mV/m daytime.

Direction of 204.5 degree True North. From WARV transmitter driveway entrance on Knight Street: go left (South) on Knight to Street Route 5 North. Make U-turn at blinking light to Route 5 South. Proceed 2.18 miles to Centreville Road (117West). Proceed 1.20 miles to entrance of tennis courts on left. Reading taken in entrance area. Radial Point No. 7. Distance from the transmitter: 3.85 kilometers. The field intensity measured at this point should not exceed 20.7 mV/m daytime.