

APPENDIX H

WPHE FIELD STRENGTH MEASUREMENTS

(Extracted from WPHE (formerly WYIS) 1980
Full Proof of Performance - BL-19800125AA)

TABLE VII-D

Measured Field Strength Data

Station WYIS
Hart Broadcasting Company, Inc.
Phoenixville, Pennsylvania

690 kHz

1 kW

DA-D

Radial 120° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND* mV/m</u> | <u>500 W DA-D* mV/m</u> | <u>1 kW DA-D mV/m</u> |
|------------------|------------------|-----------------------|-------------------------|-----------------------|
| 1 | 0.28 | 310 | | |
| 2 | 0.39 | 235 | | |
| 3 | 0.49 | 186 | | |
| 4 | 0.62 | 150 | | |
| 5 | 0.71 | 124 | | |
| 6 | 0.87 | 85 | | |
| 7 | 0.98 | 90 | | |
| 8 | 1.09 | 82 | | |
| 9 | 1.19 | 75 | | |
| 10 | 1.28 | 66 | | |
| 11 | 1.55 | 50 | 110 | 156 |
| 12 | 1.60 | 49 | 123 | 174 |
| 13 | 1.70 | 47 | 120 | 170 |
| 14 | 1.80 | 47 | 122 | 173 |
| 15 | 1.84 | 35 | 86 | 122 |
| 16 | 1.97 | 43 | 108 | 153 |
| 17 | 2.37 | 32 | 77 | 109 |
| 18 | 2.62 | 25 | 62 | 87.7 |
| 19 | 2.78 | 25 | 60 | 84.9 |
| 20 | 3.16 | 21.5 | 52 | 73.5 |
| 21 | 4.53 | 14 | 31 | 43.8 |
| 22 | 5.33 | 13.5 | 27 | 38.2 |
| 23 | 5.73 | 8.6 | 18 | 25.5 |
| 24 | 6.36 | 5.4 | 12.5 | 17.7 |
| 25 | 6.72 | 3.7 | 9.4 | 13.3 |
| 26 | 7.58 | 3.1 | 7.7 | 10.9 |
| 27 | 8.02 | 3.6 | 9.0 | 12.7 |
| 28 | 8.94 | 3.9 | 9.6 | 13.6 |
| 29 | 9.88 | 2.1 | 5.0 | 7.07 |
| 30 | 10.79 | 2.1 | 5.0 | 7.07 |

TABLE VII-D
(Continued)

Radial 120 ° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND* mV/m</u> | <u>500 W DA-D* mV/m</u> | <u>1 kW DA-D mV/m</u> |
|------------------|------------------|---------------------------|-----------------------------|---------------------------|
| 31 | 12.17 | 1.85 | 4.2 | 5.94 |
| 32 | 13.42 | 1.5 | 3.4 | 4.81 |
| 33 | 14.50 | 1.3 | 2.9 | 4.10 |
| 34 | 15.54 | 1.4 | 3.0 | 4.24 |
| 35 | 17.20 | 0.89 | 2.0 | 2.83 |
| 36 | 18.04 | 0.72 | 1.7 | 2.40 |
| 37 | 19.00 | 0.67 | 1.5 | 2.12 |
| 38 | 19.23 | 0.65 | 1.5 | 2.12 |
| 39 | 19.80 | 0.59 | 1.4 | 1.98 |
| 40 | 20.70 | 0.57 | 1.2 | 1.70 |

Average Ratio 500 W DA-D/250 W-ND = 2.348

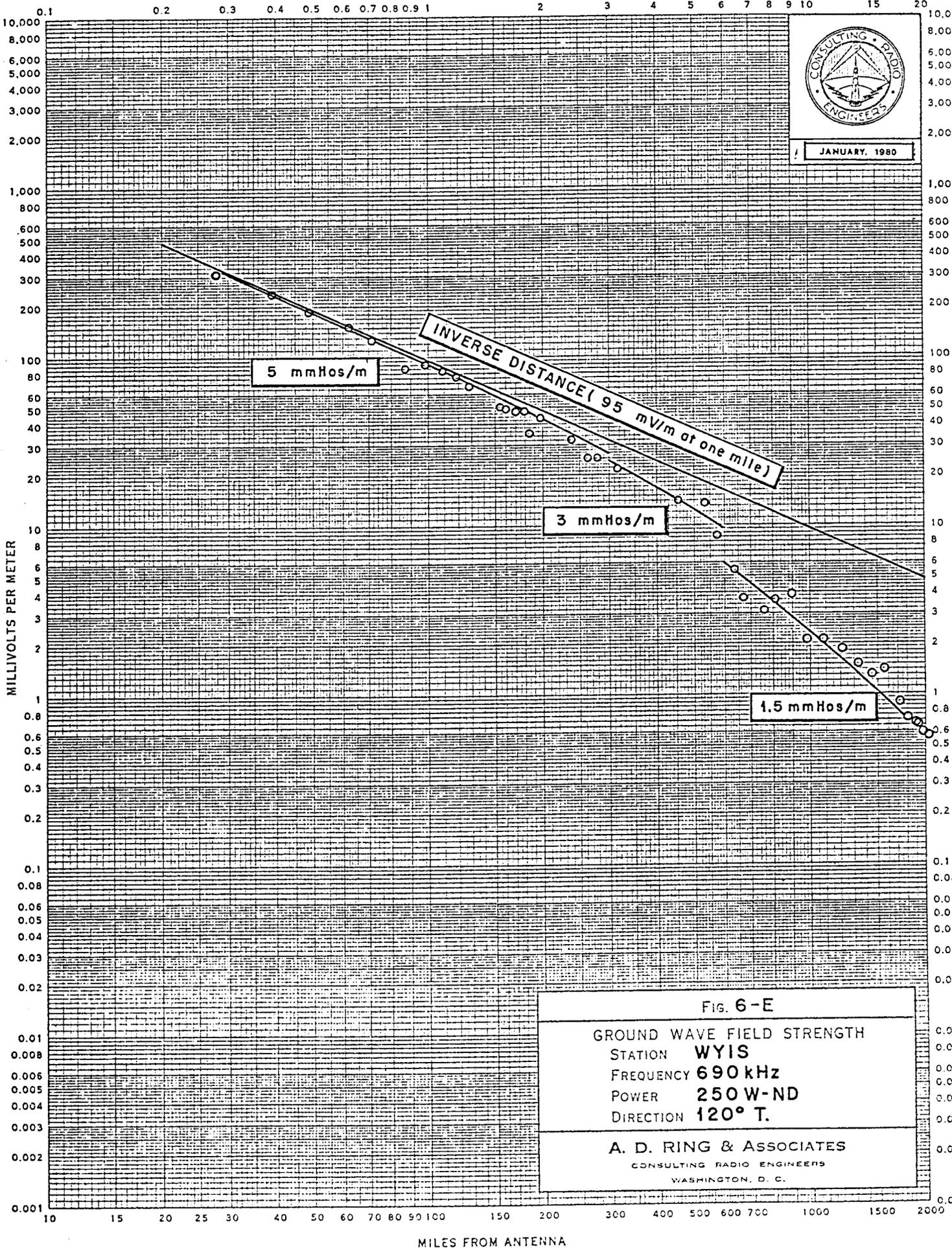
Average Ratio 1 kW DA-D/250 W-ND = 3.321

Non-directional unattenuated field for 250 W = 95 mV/m

Directional unattenuated field for 1 kW = 315 mV/m

*From Proof of Performance dated August 11, 1978

MILES FROM ANTENNA



JANUARY, 1980

K & E 182 70166 D.F.-DM

Fig. 6-E
GROUND WAVE FIELD STRENGTH
 STATION **WYIS**
 FREQUENCY **690 kHz**
 POWER **250 W-ND**
 DIRECTION **120° T.**

A. D. RING & ASSOCIATES
 CONSULTING RADIO ENGINEERS
 WASHINGTON, D. C.

TABLE VII-E

Measured Field Strength Data

Station WYIS
Hart Broadcasting Company, Inc.
Phoenixville, Pennsylvania

690 kHz

1 kW

DA-D

Radial 163 ° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND* mV/m</u> | <u>500 W DA-D* mV/m</u> | <u>1 kW DA-D mV/m</u> |
|------------------|------------------|-----------------------|-------------------------|-----------------------|
| 1 | 0.39 | 220 | | |
| 2 | 0.43 | 195 | | |
| 3 | 0.57 | 132 | | |
| 4 | 0.67 | 129 | | |
| 5 | 0.84 | 98 | | |
| 6 | 1.03 | 72 | | |
| 7 | 1.10 | 86 | | |
| 8 | 1.20 | 70 | | |
| 9 | 1.33 | 63 | | |
| 10 | 1.56 | 51 | 55 | 77.8 |
| 11 | 1.66 | 50 | 54 | 76.4 |
| 12 | 1.77 | 44 | 46 | 65.1 |
| 13 | 1.88 | 39 | 40 | 56.6 |
| 14 | 1.97 | 36 | 36 | 50.9 |
| 15 | 2.07 | 34 | 39 | 55.2 |
| 16 | 2.14 | 28 | 31 | 43.8 |
| 17 | 2.53 | 26 | 28 | 39.6 |
| 18 | 3.11 | 17 | 19 | 26.9 |
| 19 | 3.48 | 11.5 | 12.5 | 17.7 |
| 20 | 4.42 | 8.3 | 9.2 | 13 |
| 21 | 4.93 | 7.5 | 8.2 | 11.6 |
| 22 | 5.39 | 7.1 | 8.0 | 11.3 |
| 23 | 5.98 | 6.1 | 7.5 | 10.6 |
| 24 | 6.58 | 4.9 | 6.0 | 8.49 |
| 25 | 7.17 | 3.4 | 4.2 | 5.94 |
| 26 | 8.17 | 3.3 | 4.0 | 5.66 |
| 27 | 8.80 | 2.65 | 3.2 | 4.53 |
| 28 | 9.22 | 3.0 | 3.6 | 5.09 |
| 29 | 9.60 | 2.5 | 3.0 | 4.24 |
| 30 | 10.47 | 2.4 | 2.85 | 4.03 |

TABLE VII-E
(Continued)

Radial 163 ° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND*</u> mV/m | <u>500 W DA-D*</u> mV/m | <u>1 kW DA-D</u> mV/m |
|----------------------|----------------------|--------------------------|----------------------------|--------------------------|
| 31 | 11.1 | 2.2 | 2.5 | 3.54 |
| 32 | 12.44 | 1.75 | 1.95 | 2.76 |
| 33 | 13.77 | 1.24 | 1.36 | 1.92 |
| 34 | 15.53 | 1.25 | 1.38 | 1.95 |
| 35 | 17.10 | 0.66 | 0.72 | 1.02 |
| 36 | 18.24 | 0.60 | 0.70 | 0.99 |
| 37 | 19.13 | 0.52 | 0.57 | 0.81 |
| 38 | 20.87 | 0.49 | 0.56 | 0.79 |
| 39 | 21.47 | 0.48 | 0.55 | 0.78 |

Average Ratio 500 W DA-D/250 W-ND = 1.129

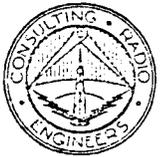
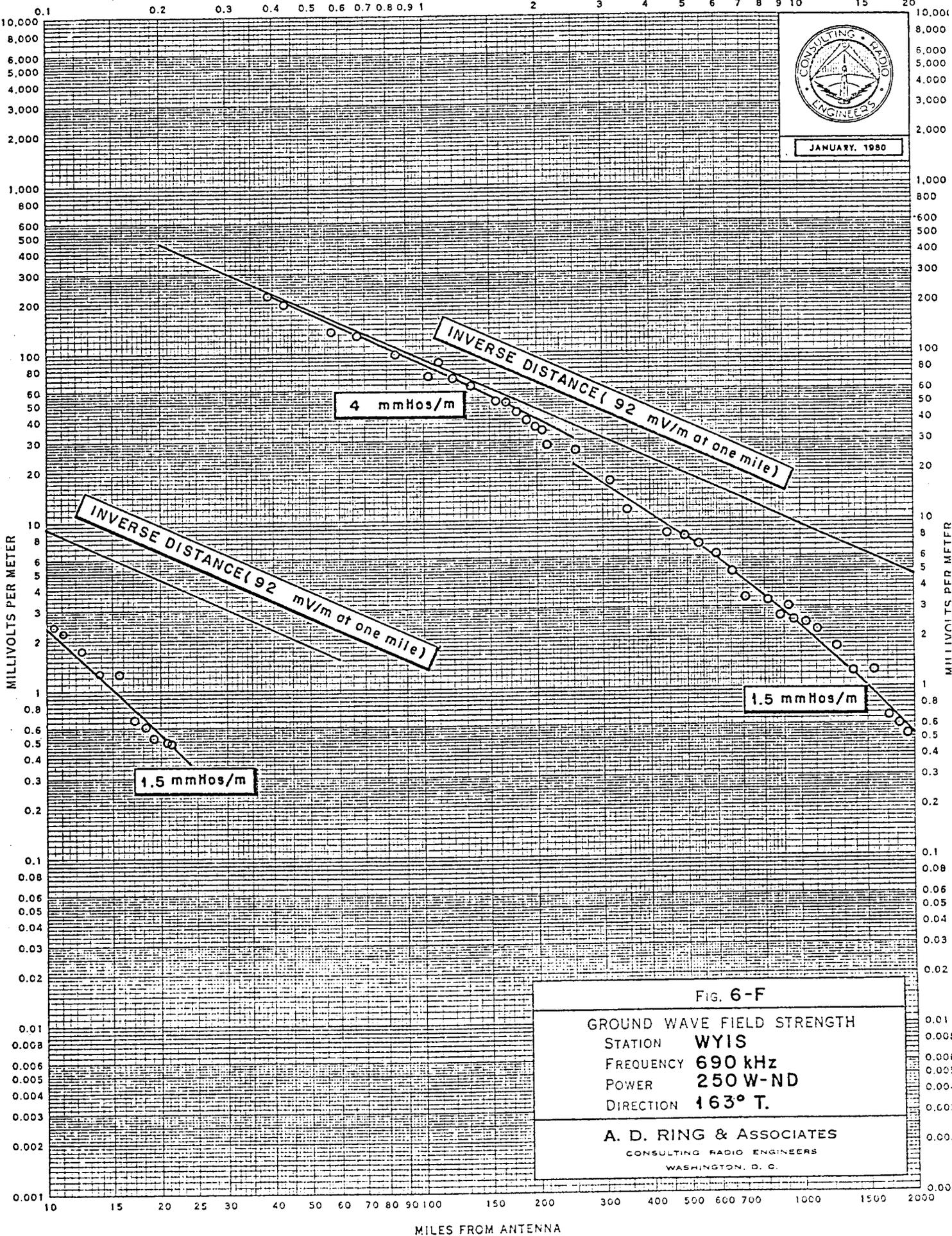
Average Ratio 1 kW DA-D/250 W-ND = 1.597

Non-directional unattenuated field for 250 W = 92 mV/m

Directional unattenuated field for 1 kW = 147 mV/m

*From Proof of Performance dated August 11, 1978

MILES FROM ANTENNA



JANUARY, 1980

K & E 182 70168 9-87-5M

FIG. 6-F
GROUND WAVE FIELD STRENGTH
 STATION **WYIS**
 FREQUENCY **690 kHz**
 POWER **250 W-ND**
 DIRECTION **163° T.**

A. D. RING & ASSOCIATES
 CONSULTING RADIO ENGINEERS
 WASHINGTON, D. C.

MILES FROM ANTENNA

TABLE VII-G

Measured Field Strength Data

Station WYIS
Hart Broadcasting Company, Inc.
Phoenixville, Pennsylvania

690 kHz

1 kW

DA-D

Radial 249° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND*</u> mV/m | <u>500 W DA-D*</u> mV/m | <u>1 kW DA-D</u> mV/m |
|------------------|------------------|--------------------------|----------------------------|--------------------------|
| 1 | 0.43 | 157 | | |
| 2 | 0.54 | 135 | | |
| 3 | 0.71 | 114 | | |
| 4 | 0.80 | 107 | | |
| 5 | 0.90 | 83 | | |
| 6 | 1.03 | 82 | | |
| 7 | 1.16 | 73 | | |
| 8 | 1.23 | 65 | | |
| 9 | 1.31 | 57 | | |
| 10 | 1.36 | 60 | | |
| 11 | 1.60 | 47 | 50 | 70.7 |
| 12 | 1.70 | 43 | 45 | 63.6 |
| 13 | 1.80 | 37 | 39 | 55.2 |
| 14 | 2.03 | 32 | 41 | 58 |
| 15 | 2.33 | 33 | 38 | 53.7 |
| 16 | 2.96 | 22 | 23.5 | 33.2 |
| 17 | 3.47 | 20 | 22 | 31.1 |
| 18 | 3.70 | 16 | 16.9 | 23.9 |
| 19 | 4.54 | 11 | 13 | 18.4 |
| 20 | 4.73 | 10 | 12 | 17 |
| 21 | 5.01 | 11 | 13 | 18.4 |
| 22 | 6.00 | 8.5 | 10.4 | 14.7 |
| 23 | 6.48 | 8.2 | 9.5 | 13.4 |
| 24 | 6.81 | 6.6 | 8.0 | 11.3 |
| 25 | 7.60 | 6.5 | 7.5 | 10.6 |
| 26 | 8.16 | 4.8 | 5.9 | 8.34 |
| 27 | 8.94 | 4.7 | 5.7 | 8.06 |
| 28 | 9.99 | 3.7 | 4.1 | 5.8 |
| 29 | 10.48 | 2.55 | 3.0 | 4.24 |
| 30 | 11.27 | 3.1 | 3.8 | 5.37 |

TABLE VII-G
(Continued)

Radial 249 ° T

| <u>Point No.</u> | <u>Dist. mi.</u> | <u>250 W-ND* mV/m</u> | <u>500 W DA-D* mV/m</u> | <u>1 kW DA-D mV/m</u> |
|------------------|------------------|---------------------------|-----------------------------|---------------------------|
| 31 | 11.83 | 2.3 | 2.8 | 3.96 |
| 32 | 12.35 | 1.8 | 2.2 | 3.11 |
| 33 | 13.64 | 1.5 | 1.85 | 2.62 |
| 34 | 14.16 | 1.45 | 1.85 | 2.62 |
| 35 | 15.16 | 1.1 | 1.30 | 1.84 |
| 36 | 15.38 | 1.12 | 1.35 | 1.91 |
| 37 | 16.46 | 1.03 | 1.23 | 1.74 |
| 38 | 17.03 | 1.05 | 1.26 | 1.78 |
| 39 | 18.13 | 0.58 | 0.74 | 1.05 |
| 40 | 18.83 | 0.53 | 0.64 | 0.91 |
| 41 | 20.23 | 0.37 | 0.45 | 0.64 |
| 42 | 21.42 | 0.33 | 0.40 | 0.57 |
| 43 | 22.82 | 0.41 | 0.52 | 0.74 |
| 44 | 23.27 | 0.45 | 0.53 | 0.75 |
| 45 | 23.97 | 0.49 | 0.58 | 0.82 |
| 46 | 24.83 | 0.46 | 0.57 | 0.81 |

Average Ratio 500 W DA/D250 W-ND = 1.183

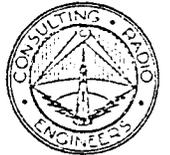
Average Ratio 1 kW DA-D/250 W-ND = 1.673

Non-directional unattenuated field for 250 W = 90 mV/m

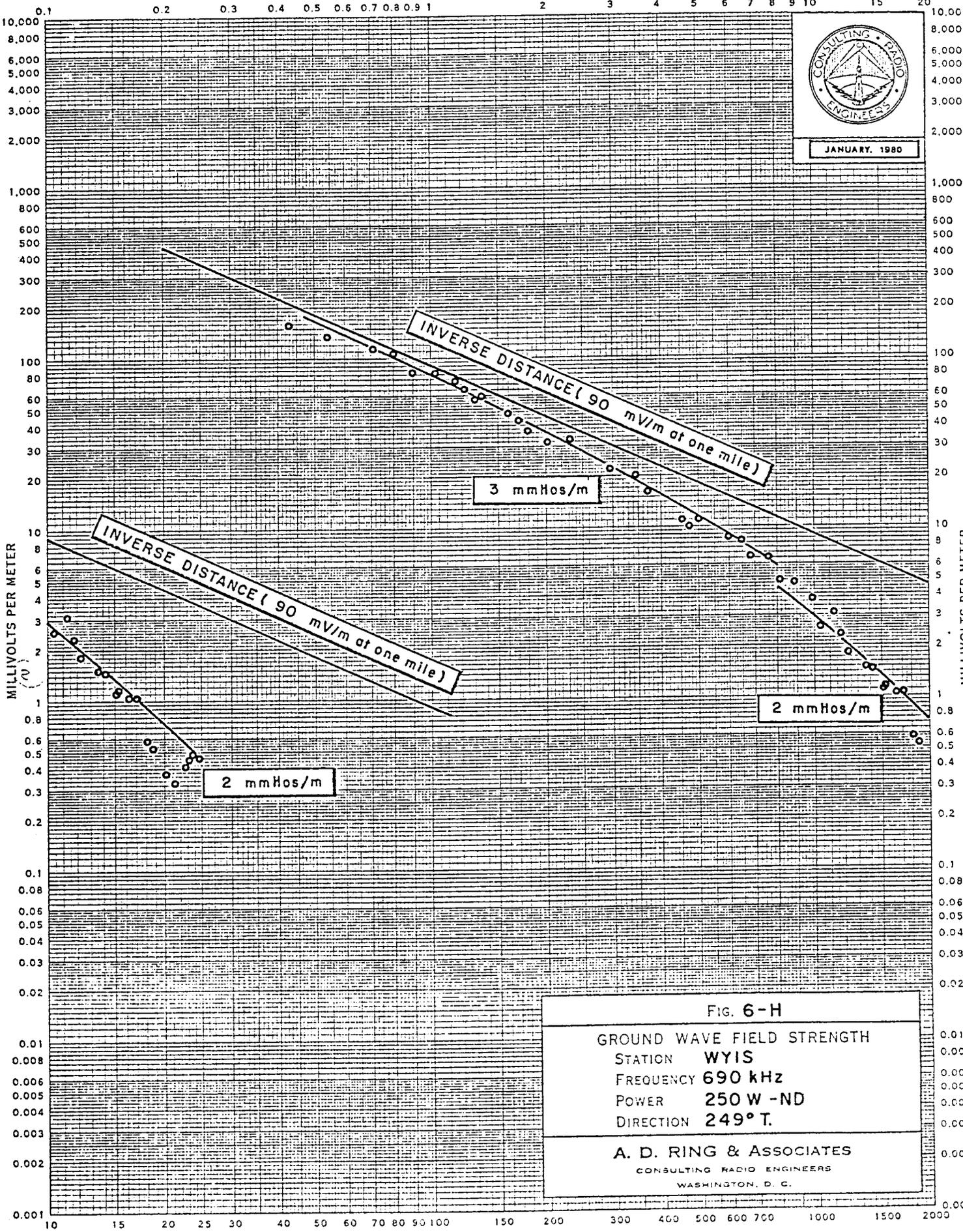
Directional unattenuated field for 1 kW = 150.6 mV/m

* From Proof of Performance dated August 11, 1979

MILES FROM ANTENNA



JANUARY, 1980



K & E 182 70188 D-1-5M

FIG. 6-H
 GROUND WAVE FIELD STRENGTH
 STATION **WYIS**
 FREQUENCY **690 kHz**
 POWER **250 W -ND**
 DIRECTION **249° T.**

A. D. RING & ASSOCIATES
 CONSULTING RADIO ENGINEERS
 WASHINGTON, D. C.

MILES FROM ANTENNA