WHSR(AM)
POMPONO BEACH, FL
#27420

980 KHZ
5.0 kW DA-DAY
2.5 kW-DA NIGHT

MINOR MODIFICATIONS

This technical report is provided in support of minor modifications to WHSR (980 kHz) to be diplexed into three of the six towers in the WWNN (1470 kHz) directional array. The WWNN site is the only feasible option to preserve the WHSR 980 kHz facility. Appropriate diplexing and filtering networks will be installed to assure compliance with the Commission's spurious emissions requirements.

Site day-night	**N 26-10-48.7 W 80-13-14.9 (NAD 27center of array)**
Day Power	**5.0 kW DA - 664.9 mV/m/km standard RMS**
Night power	**2.5 kW DA - 465.0 mV/m/km standard RMS**
Tower(s)	**53.3 m AGL - 51 m radiator - 60° at 980 kHz**

A vertical sketch for all there towers utilized in this proposed facility is provided as E13A, a site plat as E13B, a topographic map as E13C and an aerial photograph as E13E with the day and night 1000 mV/m contours marked. The proposed facility complies with 73.24(g) based on a 2018 1000 mV/m population of 0.25% of the 25 mV/m as documented in exhibit E13D. Required 100% 5 mV/m day coverage of Pompano Beach, FL demonstrated by E14A and 100% night coverage with the 9.7 mV.m night interference free contour in E14B.

Exhibits-pages:

E13A	Vertical sketch - 6
E13B	Site plat - 7
E13C	Site topographic map - 8
E13D	25 mV/m and 1000 mV/mday and night contours - 9
E13E	Aerial photographic view of 1000 mV/m contours - 10
E13F	Day DA pattern and tabulation - 11
E14A	Day 5 mV/m - 13
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E17A	M-3 allocation plot - 15
E17A1-A8	Detailed overlap studies - 17-24
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Day allocation analysis:

All analyses were conducted using V-Soft's AMRPO 2 software.

An M3 allocations map is provided as E17A and detailed analyses as E17A1 through E17A8.

Domestic overlap analysis:

Exhibits E17A1, A2, A3 and A4 demonstrate that incoming and outgoing overlaps over land are decreased by the proposal. M3 and measured conductivities from the Commission's files as documented in E17D and V-Soft's AMPRO 2 were utilized to generate these values which are summarized below.

Facility	**Overlap (sq km)**	**IN**	**OUT**	
	WHSR Licensed	***WHSR-AP***	***WHSR Licensed***	***WHSR-AP***
WMYM	10,068	9,240	10,012	9,568
WAAV	86.9	14.6		
WSVU	13.25	0.0	13.25	0.0

Saltwater path from WAAV:

Exhibit E17A4 demonstrates that the received overlap from WAAV is decreased by the WHSR application. It is also noted that the WAAV overlap is the result of a long saltwater path. Such overlaps have been waived in the past including granted applications.[1] If needed, such a waiver is hereby requested.

Measured conductivities:

Measured ground conductivities for the WMYM and WHSR licensed sites are provided from an application by station WURN on 1020 kHz which previously occupied the WMYM licensed site (see E17D for summary and FCC reference). Conductivities for the WHSR application site (WWNN licensed site) were obtained from the WWNN 302 proofs of performance and are also summarized and referenced in exhibit E17D.

International analysis:

Detailed interference plots demonstrating lack of increased overlap to foreign stations CMBE, CMND, CMGE and CMKE are provided as E17A4-A8.In all cases the overlaps are decreased. The R2 conductivities and old metric curves were utilized in the analyses per international agreements. Measured conductivities for WHSR were not used per advice from FCC staff.

Waiver of §73.37 for increased received overlap from Cuban stations requested if necessary:

The WHSR move is only possible at station WWNN's site and the directional antenna design is constrained by the existing tower configuration. Therefore, it is not possible to design a viable facility without an increased received overlap from Cuban stations. Even greater increased Cuban overlaps have been waived in the past (see WGES, BP-20171101ACH)[2]. Furthermore, foreign overlap is not an issue for US AMs from Canada or Mexico. That would seem to logically apply to Cuba as well.

Therefore, it is concluded that the WHSR application complies with §73.37.

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[1] See WPNS (WNWF) (BP-20130419AA), WEBY (BMP-20130201ABJ), WRHB (BP-20101203AAM), WTHT (BP-20190515AAK), WBMD (BP-20190719AAR), WRSO (BP-20190718AAM), WSMN (BP-20180312ABW and WFPB (BP-20171204ACQ).

[2] Increases in overlap from CMIC from 3,516 sq km to 3,828.5 sq km, from CMBC from 9.288 sq km to 31,222 sq km and from CMAC from 11,544 to 33,483 sq km were approved/waived.

Night Allocation Analysis:

A night operating power of 2.5 kW is proposed. Again, AMPRO 2 was utilized to establish the required clearances as demonstrated in exhibit E18A. The proposed facility provides a night-time interference free 9.7 mV/m contour to all of Pompano Beach, FL. See E14B, E18A, E18B and E18C.

Neither §73.37(d) nor §73.182 appear to require the evaluation of night-time ground wave interference between two stations. However, in an abundance of caution, the night-time interference free contours (NIF) of the WHSR-AP on 980 kHz and first adjacent WMYM on 990 kHz with measured conductivities have been plotted along with their -6 dB interference contours in exhibit E18D. It is clear that there is no overlap.

Ground system:

Each of the towers utilized for WHSR is part of a six tower array on 1470 kHz whose ground system of 120 radials extending from each tower 51 meters or until they intersect those from another tower where they are bonded to a copper strap. Therefore, each of the three towers utilized herein enjoys the entire WWNN ground system. A geometric analysis indicates that the average, effective ground radials for each tower significantly exceed 76.5 meters or 90° at 980 kHz. Therefore, the RMS values of the two directional arrays have not been adjusted.

RF analysis:

The entire WWNN site is secured by a fence around its perimeter. The proposed WHSR 5 kW day and 2.5 kW night facility uses three of the six towers in the WWNN array (see E13B). Tower #1 is closest to the fence at forty-four (44) meters. At that distance it is clear that the RF exposure level from the combined facilities (50 kW on 1470 kHz and 5 kW on 980 kHz) will be well below FCC requirements. The RF worksheet only requires a 4 meter fence for 50 kW at 1470 kHz with a 0.25λ tower and 5 meters for 5 kW at 980 kHz and a 0.17λ tower.

Towers not registered:

Towers #1 (WWNN#1), #2 (WWNN #4) and #3 (WWNN #5) are not registered. Their use in the WWNN day and night arrays have been previously approved by the Commission without the requirement that they be registered. Therefore, since no physical changes in the towers is proposed, it is

respectfully submitted that their FAA approval or FCC registration are not required in order for this application to be granted. It is also noted that the three 51 meter towers are located no more than 102 meters from a registered 128 meter tower (ASR #1302653 built in 1969) which further shields them from registration requirements.

Fencing around site:

Conclusion:

It is concluded that the proposed WHSR facility complies with FCC rules and allocation precedents and policies.

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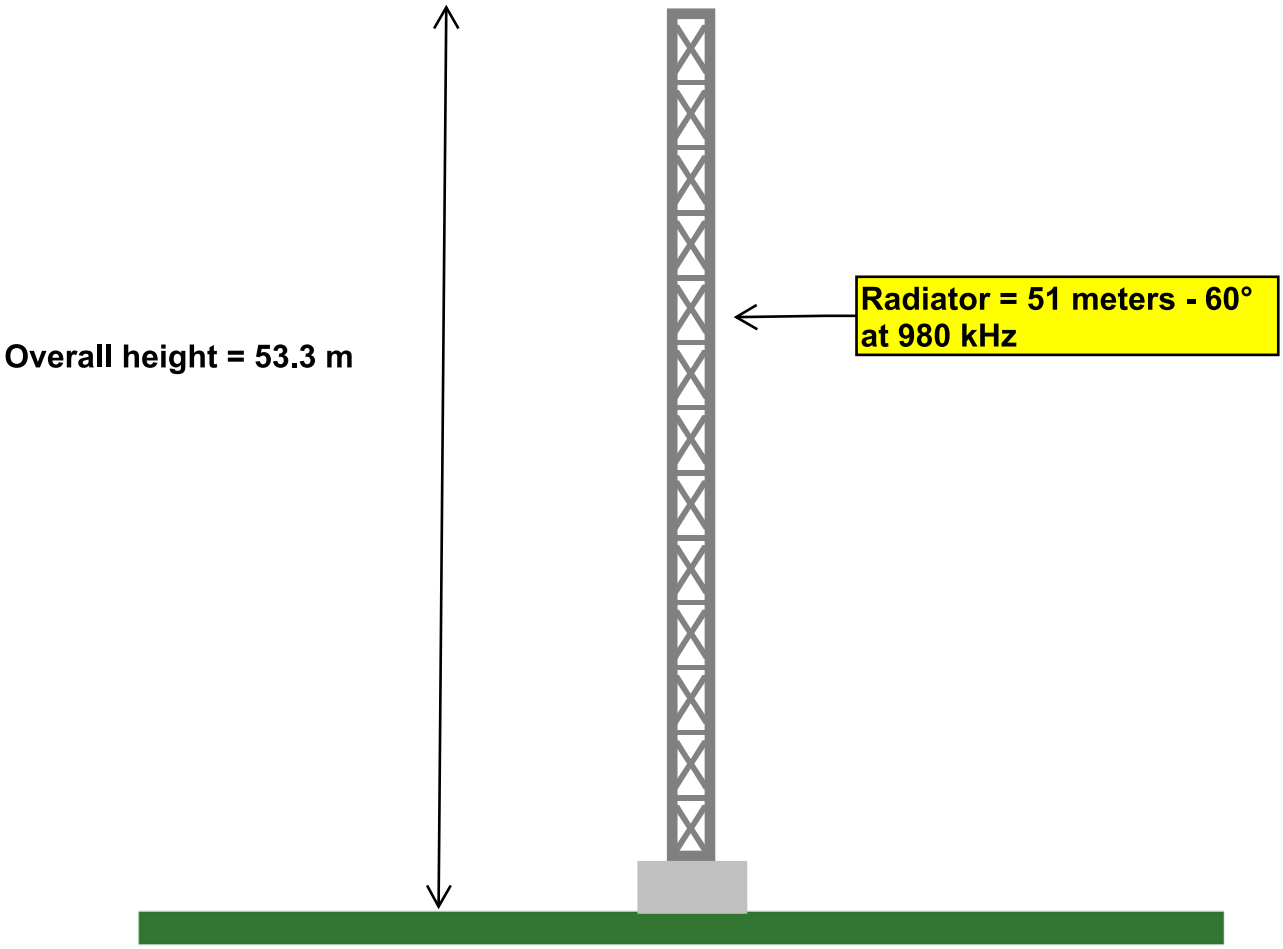
E13A VERTICAL SKETCH

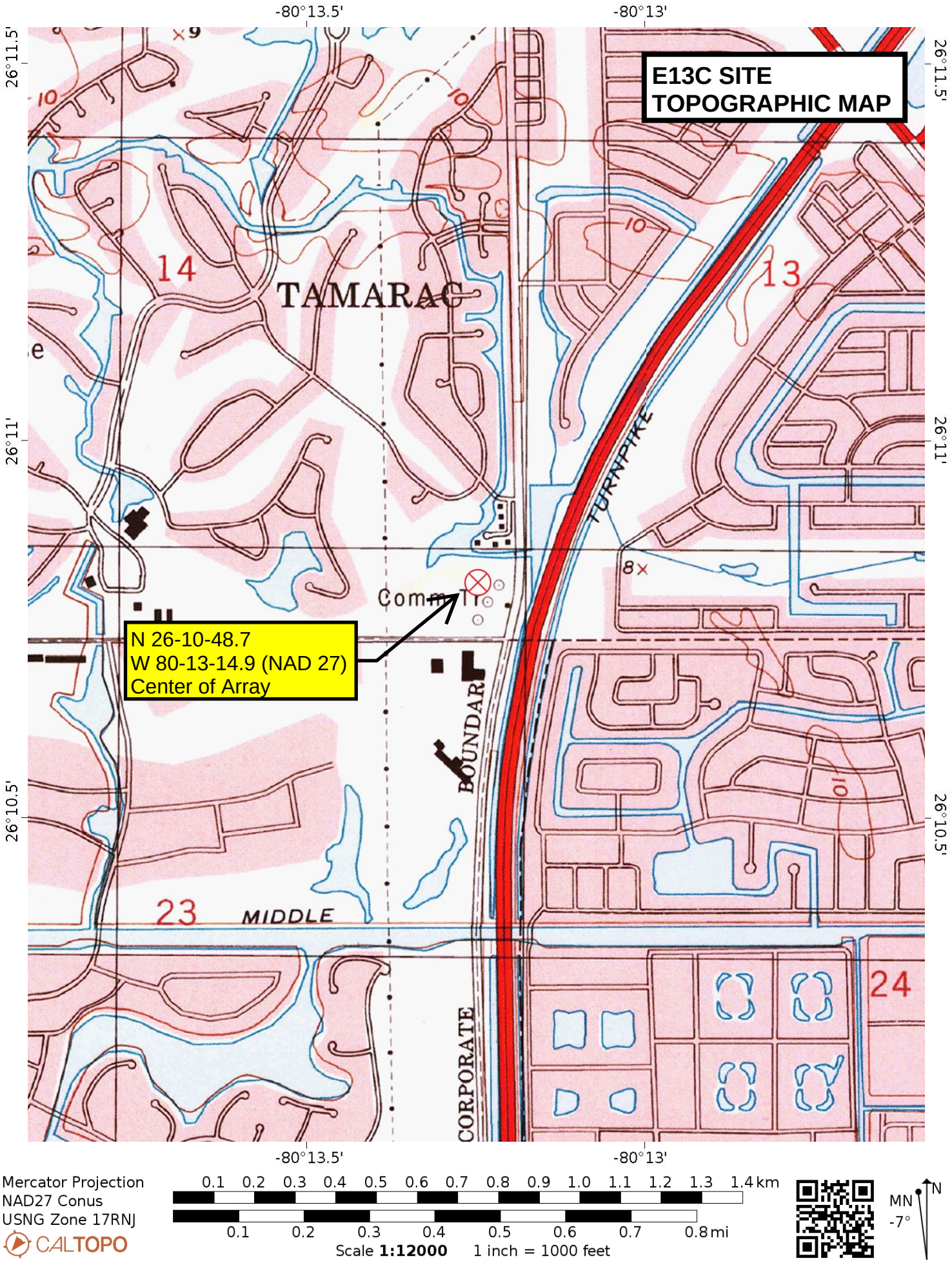
Towers #1, #2 and #3

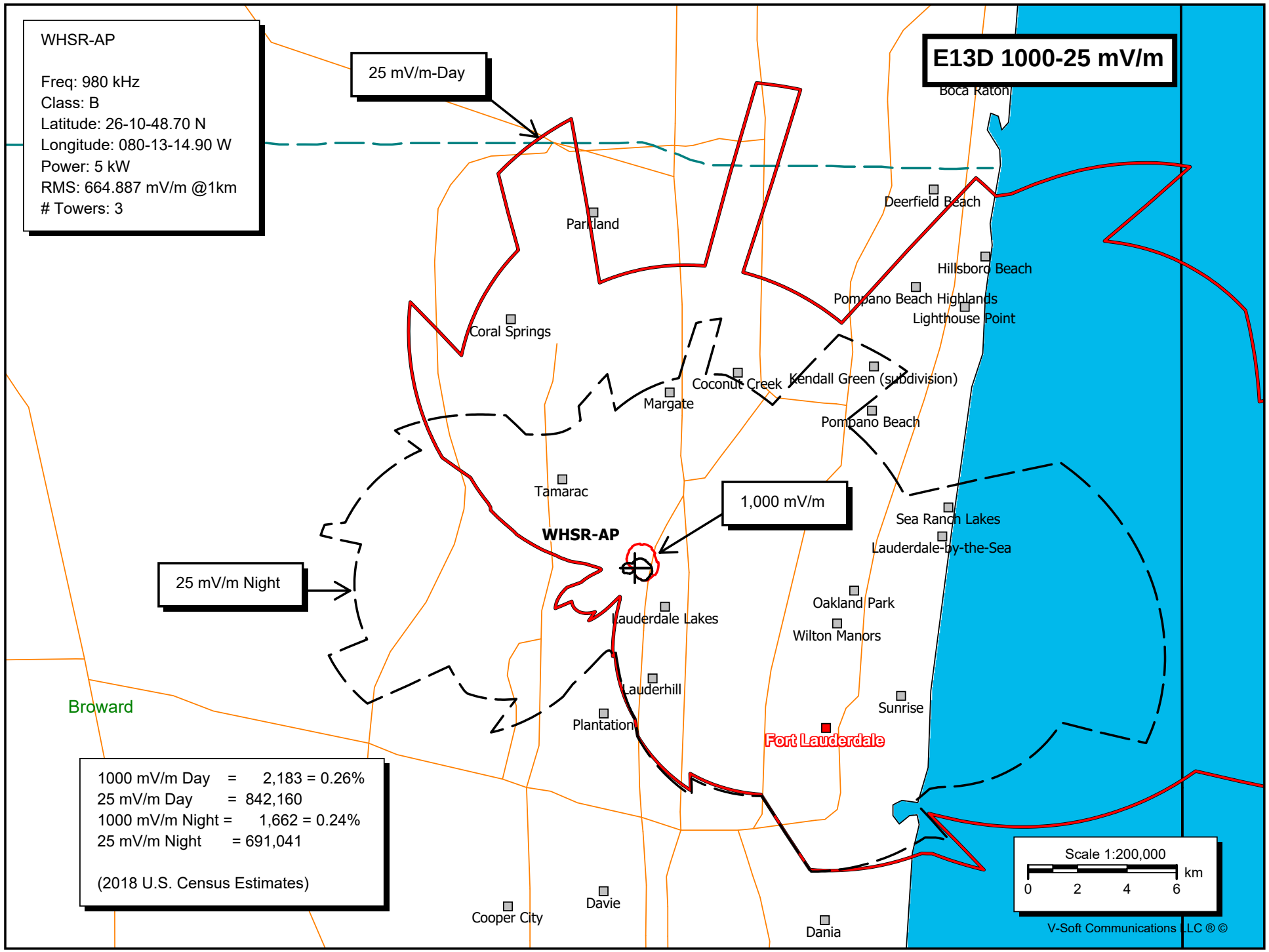


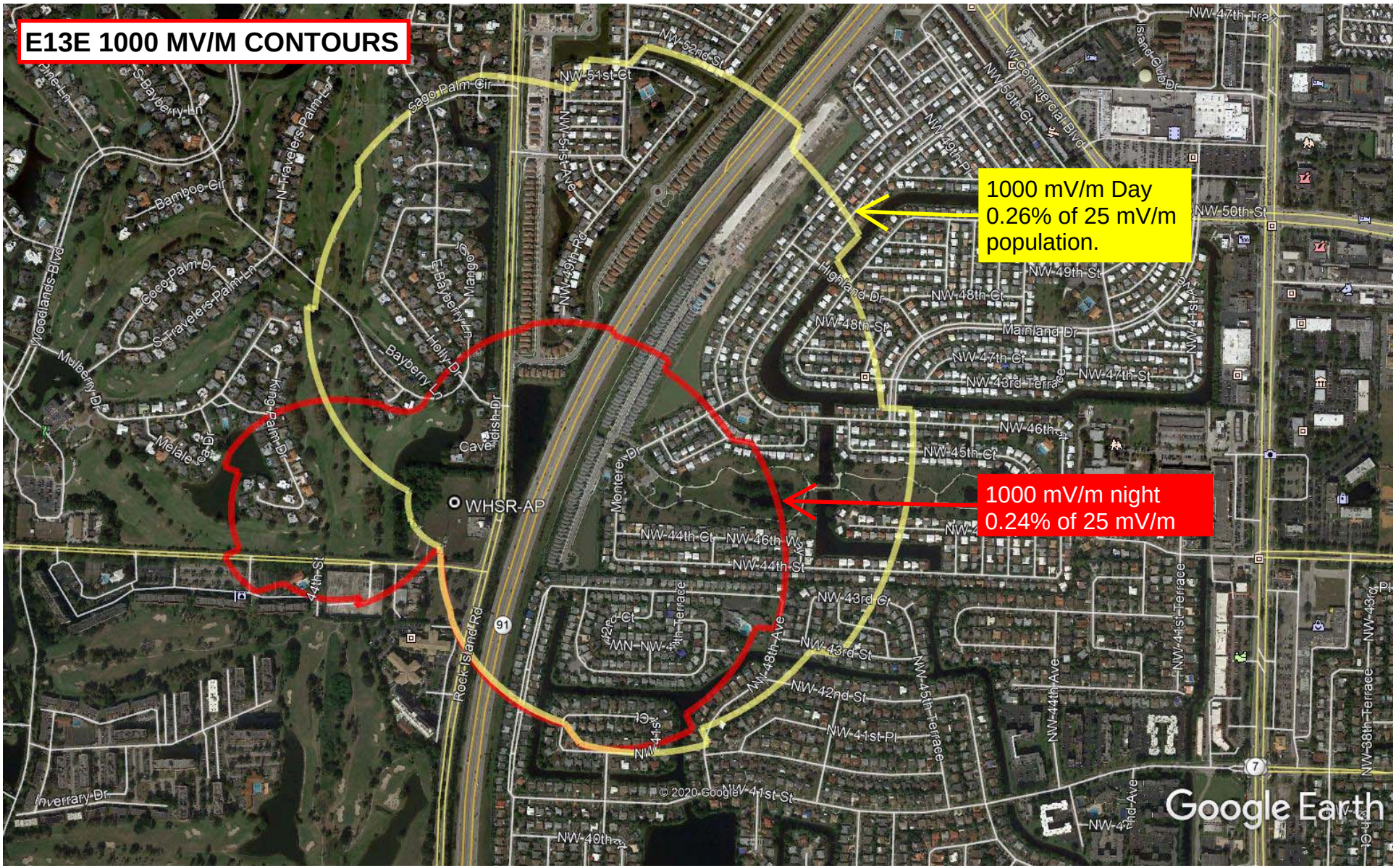
Towers labeled #1, #2 and #3 on exhibit E13B from the existing WWNN (1470 kHz) directional array will be used for the WHSR 980 kHz array. Appropriate combining and filtering networks will be installed to meet spurious emissions requirements.

The existing six tower ground system has been determined to be equivalent to a 90 degree system at 980 kHz.


E13B SITE PLAT
3 towers in the existing WWNN 1470 kHz 6 tower array will be used for the WHSR 980 kHz Day and Night array.
The existing 1470 ground system of 120 radials around each of the 6 towers bonded to copper strap where they intersect has been calculated to be equivalent to a 90 degree ground system at 980 kHz.
#1
#2
#3
Approximate site boundary.
Rock Island Rd
Florida's Turnpike (Toll road)
NW 44th St
91
N
400 ft
Google Earth
© 2020 Google

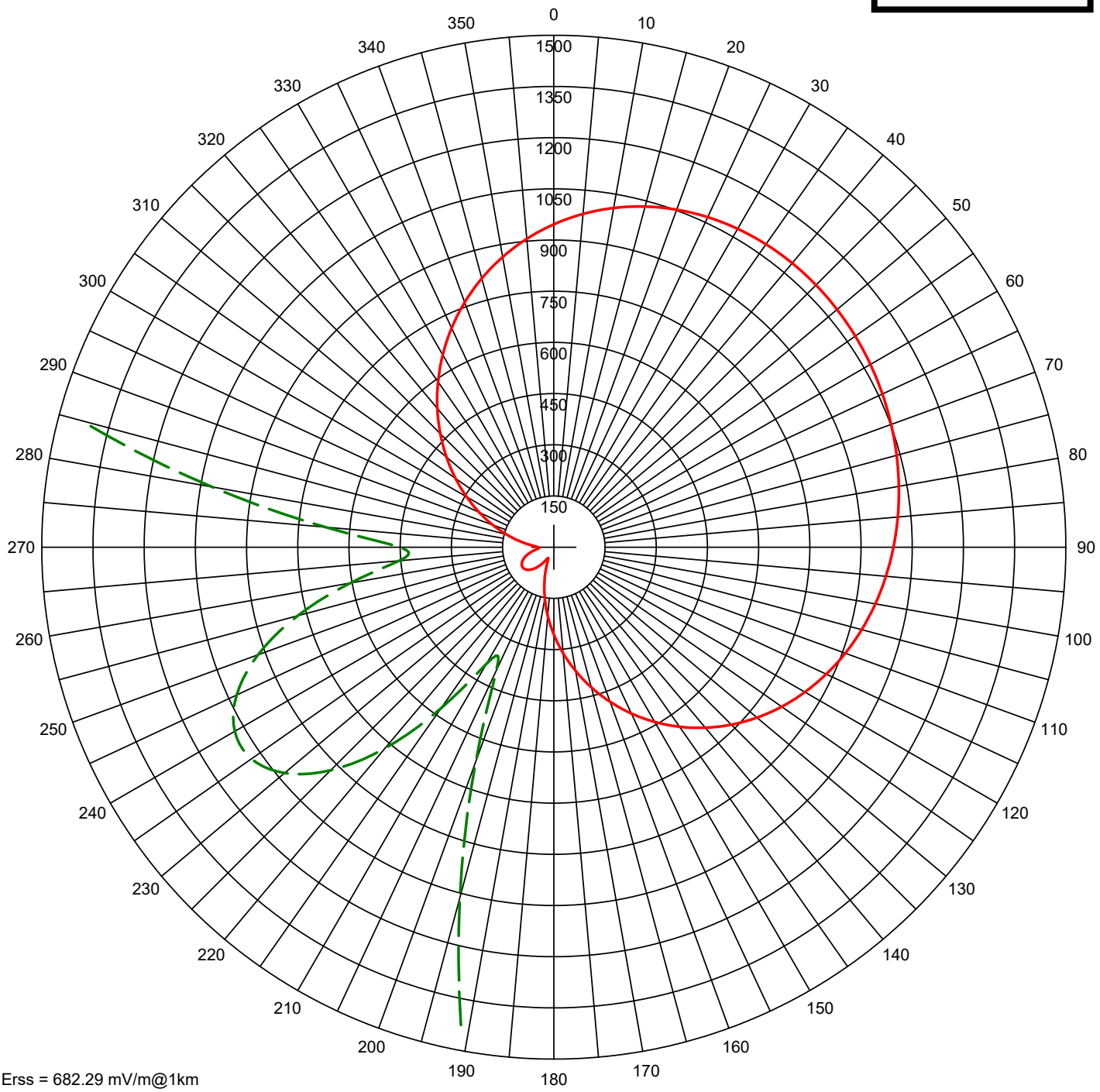

E13C SITE
TOPOGRAPHIC MAP
-80°13.5'
-80°13'
26°11.5'
26°11'
26°10.5'
TAMARAC
14
13
23
24
MIDDLE
TURNPIKE
BOUNDARY
CORPORATE
N 26-10-48.7
W 80-13-14.9 (NAD 27)
Center of Array
Mercator Projection
NAD27 Conus
USNG Zone 17RNJ
CALTOPO
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 km
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 mi
Scale 1:12000 1 inch = 1000 feet
MN -7°
N


WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
25 mV/m-Day
E13D 1000-25 mV/m
Boca Raton
Deerfield Beach
Parkland
Hillsboro Beach
Pompano Beach Highlands
Lighthouse Point
Coral Springs
Coconut Creek
Kendall Green (subdivision)
Margate
Pompano Beach
Tamarac
1,000 mV/m
WHSR-AP
Sea Ranch Lakes
Lauderdale-by-the-Sea
25 mV/m Night
Oakland Park
Lauderdale Lakes
Wilton Manors
Lauderhill
Sunrise
Broward
Plantation
Fort Lauderdale
1000 mV/m Day = 2,183 = 0.26%
25 mV/m Day = 842,160
1000 mV/m Night = 1,662 = 0.24%
25 mV/m Night = 691,041
(2018 U.S. Census Estimates)
Cooper City
Davie
Dania
Scale 1:200,000
km
0 2 4 6
V-Soft Communications LLC ® ©


E13E 1000 MV/M CONTOURS
1000 mV/m Day
0.26% of 25 mV/m
population.
1000 mV/m night
0.24% of 25 mV/m
WHSR-AP
Sago Palm Cir
NW 51st Ct
NW 52nd St
Bamboo Cir
Coco Palm Dr
S Travelers Palm Ln
N Travelers Palm Ln
Woodlands Blvd
Mulberry Dr
Melaleuca Ct
King Palm Dr
Cavendish Dr
Holly Dr
Bayberry Ln
E Bayberry Ln
Mango Cir
NW 49th Rd
NW 51st Ave
Highland Dr
NW 49th St
NW 48th Ct
NW 48th St
Mainland Dr
NW 47th Ct
NW 43rd Terrace
NW 47th St
NW 46th St
NW 45th Ct
Monterey Dr
NW 44th Ct
NW 46th Way
NW 44th St
NW 43rd Ct
NW 43rd St
NW 42nd Ct
NW 42nd St
NW 41st Pl
NW 41st St
NW 48th Ave
NW 45th Terrace
NW 44th Ave
NW 41st Terrace
NW 38th Terrace
NW 43rd Pl
Rock Island Rd
91
44th St
Inverrary Dr
NW 40th
NW 50th St
Commercial Blvd
Island Club Dr
NW 47th Terr
© 2020 Google
Google Earth

AM Directional Pattern

E13F DAY DA



Erss = 682.29 mV/m@1km
Theo RMS: 664.887 mV/m@1km
Std RMS: 698.526 mV/m@1km
Q: 22.361 mV/m@1km

Standard Horizontal Plane Pattern

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.550	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.500	356.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	1.000	112.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: D
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 5.0 kW
Theo RMS: 664.89 mV/m@1km
@ 5.0 kW

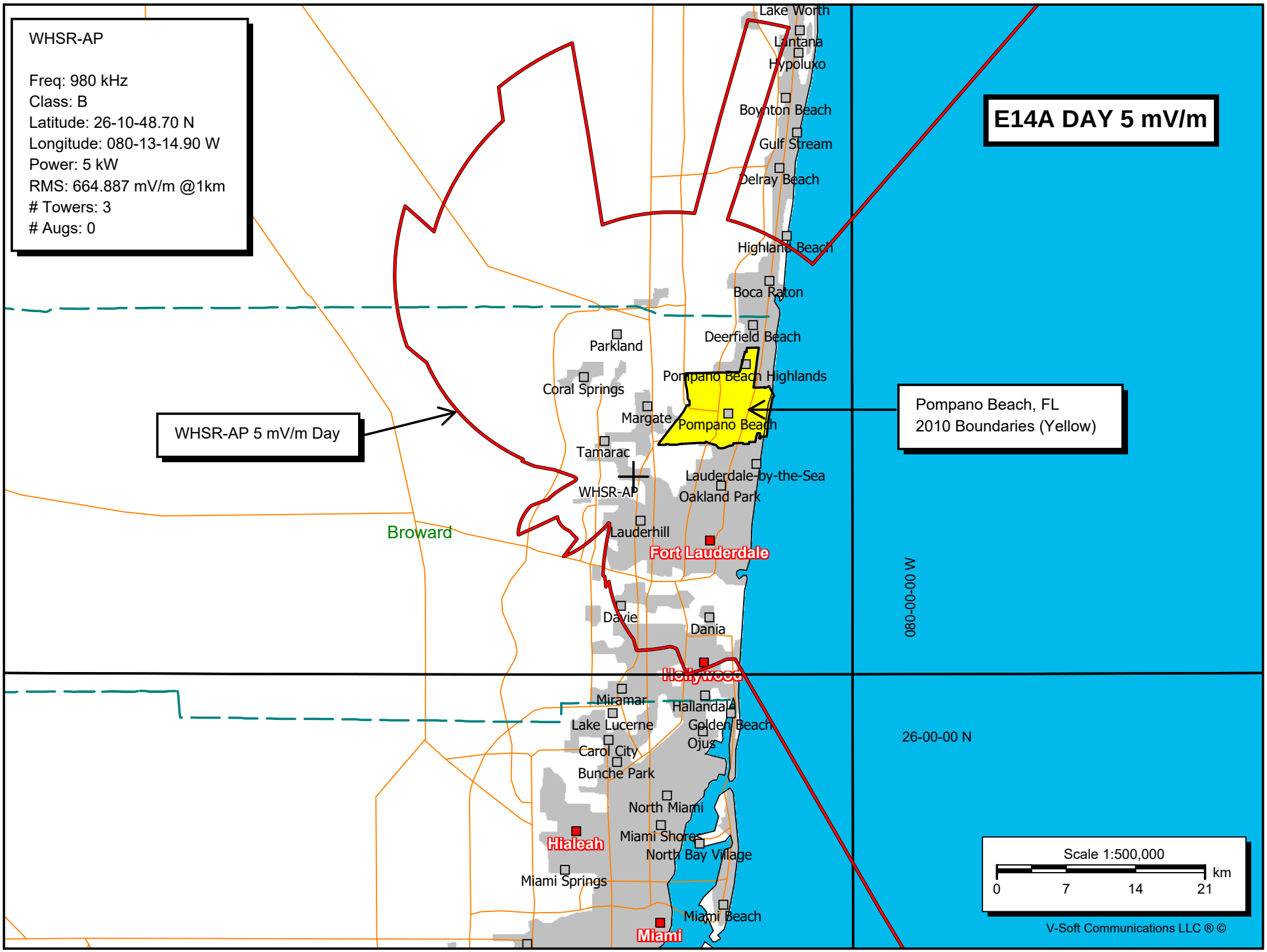
E13F Day DA Tabulation

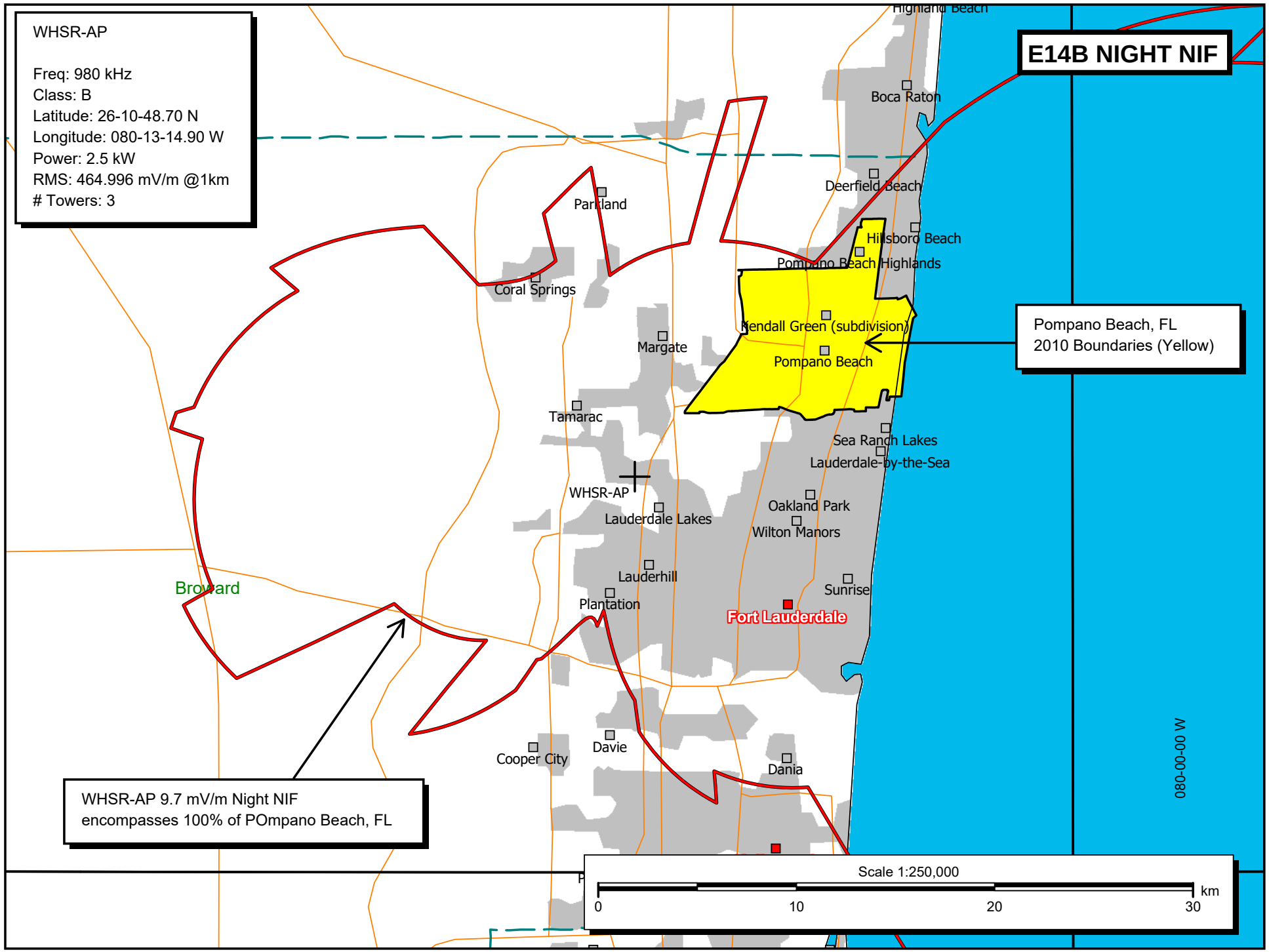
Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: D
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 5.0 kW
Theo RMS: 664.89 mV/m @ 1km @ 5.0 kW

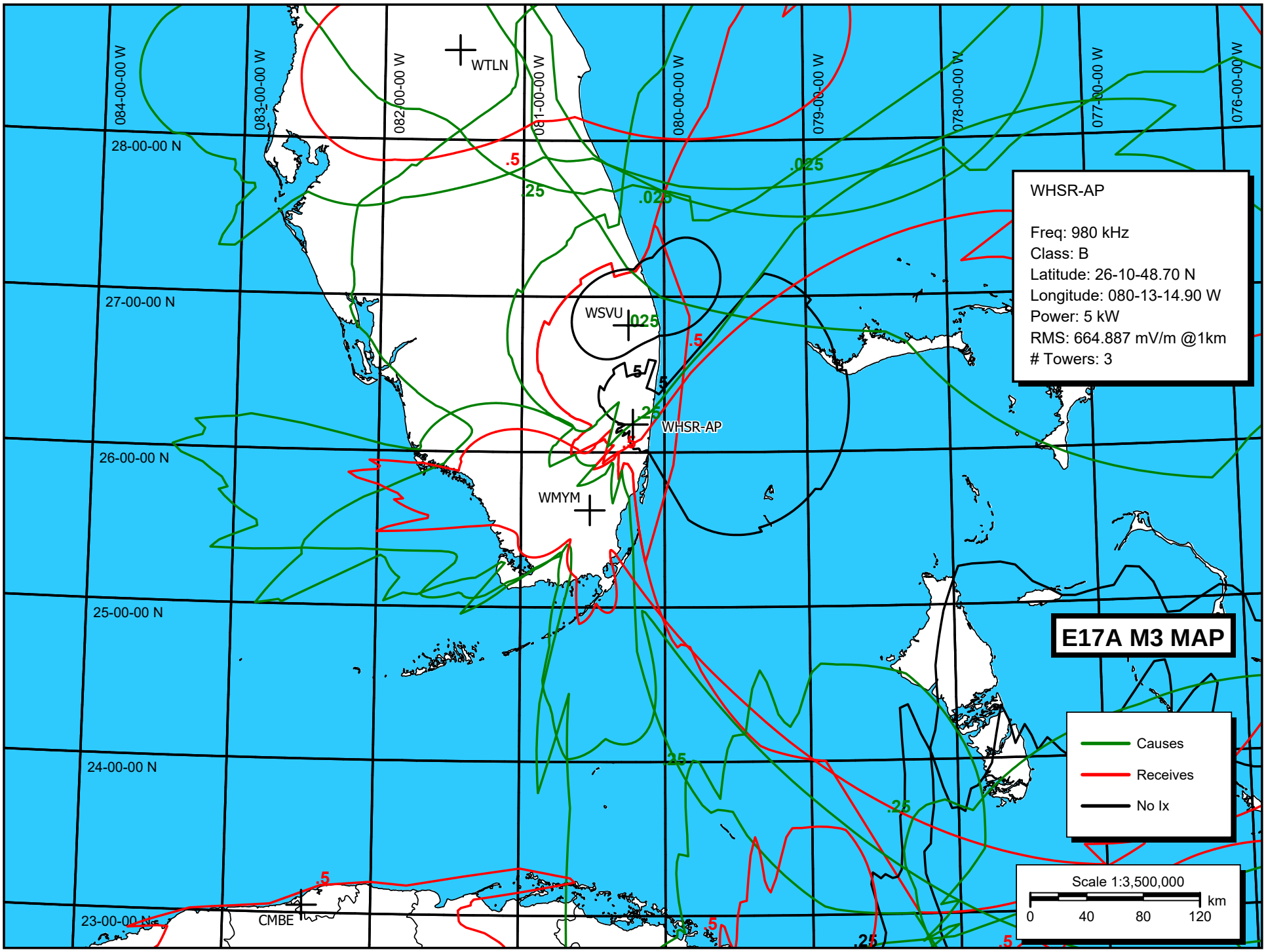
#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.550	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.500	356.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	1.000	112.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

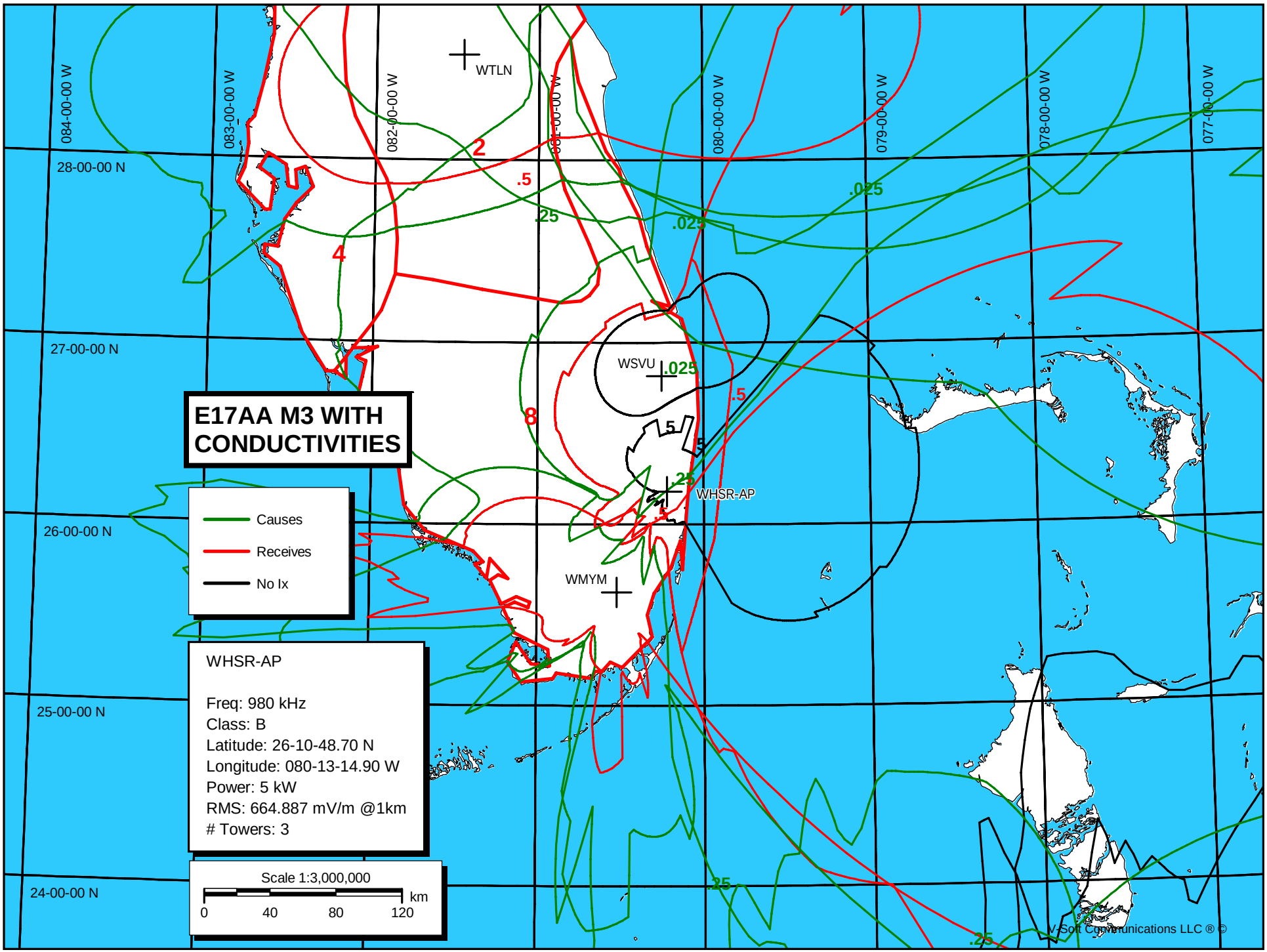
Standard Horizontal Plane Pattern

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	946.13	5.0	980.23	10.0	1009.28
15.0	1033.31	20.0	1052.47	25.0	1067.01
30.0	1077.27	35.0	1083.61	40.0	1086.47
45.0	1086.27	50.0	1083.40	55.0	1078.23
60.0	1071.07	65.0	1062.18	70.0	1051.72
75.0	1039.79	80.0	1026.43	85.0	1011.56
90.0	995.08	95.0	976.79	100.0	956.47
105.0	933.85	110.0	908.65	115.0	880.59
120.0	849.42	125.0	814.92	130.0	776.96
135.0	735.49	140.0	690.58	145.0	642.42
150.0	591.32	155.0	537.73	160.0	482.23
165.0	425.49	170.0	368.29	175.0	311.47
180.0	255.90	185.0	202.49	190.0	152.24
195.0	106.31	200.0	66.75	205.0	39.71
210.0	39.47	215.0	57.68	220.0	76.96
225.0	92.45	230.0	102.95	235.0	108.11
240.0	107.91	245.0	102.51	250.0	92.22
255.0	77.70	260.0	60.51	265.0	45.44
270.0	45.21	275.0	66.97	280.0	101.67
285.0	143.45	290.0	190.21	295.0	240.95
300.0	294.97	305.0	351.64	310.0	410.31
315.0	470.30	320.0	530.86	325.0	591.24
330.0	650.64	335.0	708.27	340.0	763.38
345.0	815.27	350.0	863.34	355.0	907.09


WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
Augs: 0
E14A DAY 5 mV/m
WHSR-AP 5 mV/m Day
Pompano Beach, FL
2010 Boundaries (Yellow)
Lake Worth
Lantana
Hypoluxo
Boynton Beach
Gulf Stream
Delray Beach
Highland Beach
Boca Raton
Deerfield Beach
Parkland
Coral Springs
Pompano Beach Highlands
Margate
Pompano Beach
Tamarac
WHSR-AP
Lauderdale-by-the-Sea
Oakland Park
Broward
Lauderhill
Fort Lauderdale
Davie
Dania
Hollywood
Miramar
Hallandale
Lake Lucerne
Golden Beach
Ojus
Carol City
Bunche Park
North Miami
Miami Shores
Hialeah
North Bay Village
Miami Springs
Miami Beach
Miami
080-00-00 W
26-00-00 N
Scale 1:500,000
km
0
7
14
21
V-Soft Communications LLC ® ©


WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 2.5 kW
RMS: 464.996 mV/m @1km
Towers: 3
E14B NIGHT NIF
Pompano Beach, FL
2010 Boundaries (Yellow)
WHSR-AP 9.7 mV/m Night NIF
encompasses 100% of POmpano Beach, FL
Highland Beach
Boca Raton
Deerfield Beach
Parkland
Hillsboro Beach
Pompano Beach Highlands
Coral Springs
Kendall Green (subdivision)
Margate
Pompano Beach
Tamarac
Sea Ranch Lakes
Lauderdale-by-the-Sea
WHSR-AP
Oakland Park
Lauderdale Lakes
Wilton Manors
Lauderhill
Sunrise
Broward
Plantation
Fort Lauderdale
Davie
Cooper City
Dania
080-00-00 W
Scale 1:250,000
km
0
10
20
30


084-00-00 W
083-00-00 W
082-00-00 W
081-00-00 W
080-00-00 W
079-00-00 W
078-00-00 W
077-00-00 W
076-00-00 W
28-00-00 N
27-00-00 N
26-00-00 N
25-00-00 N
24-00-00 N
23-00-00 N
WTLN
WSVU
WHSR-AP
WMYM
CMBE
.5
.25
.025
5
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
E17A M3 MAP
Causes
Receives
No Ix
Scale 1:3,500,000
km
0
40
80
120


084-00-00 W
083-00-00 W
082-00-00 W
081-00-00 W
080-00-00 W
079-00-00 W
078-00-00 W
077-00-00 W
28-00-00 N
27-00-00 N
26-00-00 N
25-00-00 N
24-00-00 N
WTLN
WSVU
WHSR-AP
WMYM
E17AA M3 WITH CONDUCTIVITIES
Causes
Receives
No Ix
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
Scale 1:3,000,000
0 40 80 120 km
V-Soft Communications LLC ® ©

E17A1 WHSR-AP AM Daytime Overlaps

Reference Station:
Call: WHSR-AP Freq: 980 kHz POMPANO BEACH, FL, US
Lat: 26-10-48.70 N Power: 5.0 kW
Lng: 080-13-14.90 W Theo RMS: 664.89 mV/m @ 1km

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.550	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.500	356.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	1.000	112.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call	Freq	City	ST	Dist	Azi	In	Out
CMND	980	BAYAMO		743.4	151.0	373.01	-13248.00
WMYM	990	KENDALL	FL	68.3	206.1	-9192.0	-9616.00
CMHD	970	CAMAGUEY		587.9	156.4	360.83	-598.25
CMKE	990	HOLGUIN		715.1	146.4	-350.25	-64.0
CMBE	980	ARROYO AREN		414.6	212.8	-9356.0	-40.00
WAAV	980	LELAND	NC	919.5	14.0	-1457.25	0.00
WAZS	980	SUMMERVILLE	SC	759.5	0.2	0.00	0.00
WTLN	990	ORLANDO	FL	292.3	334.9	0.00	0.00
CMGE	990	S SPIRITUS		476.8	170.7	164.12	-311.50
WNNR	970	JACKSONVILLE	FL	487.2	342.7	0.00	0.00
WSVU	960	NORTH PALM B	FL	70.6	357.5	16.94	16.94
WJBW	1000	JUPITER	FL	84.7	7.1	25.69	25.69
WFLA	970	TAMPA	FL	312.5	310.2	45.50	64.69

Overlap areas in sq km in red.

Domestic overlaps are decreased (see E17A2) and utilize M3, metric curves and measured conductivities (appended) for WHSR-AP and WMYM license.

International overlaps do not utilize any measured conductivities. Rather, they are based on the R2 conductivities and "old metric curves".

Exhibits E17A5-A8 demonstrate reduced overlap to all domestic facilities.

E17A2 WHSR Licensed Daytime Overlaps

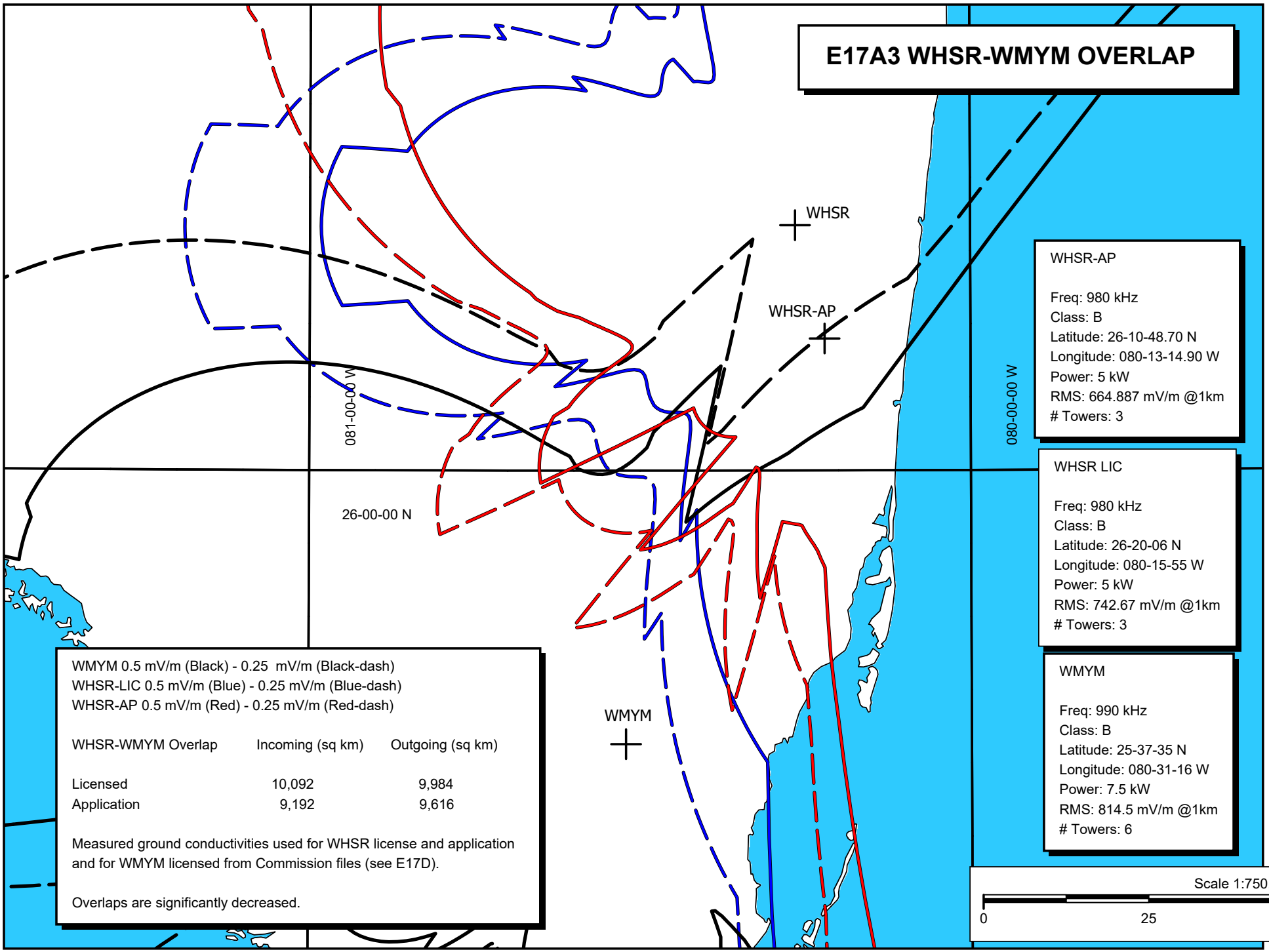
```
Reference Station:
Call: WHSR                Freq: 980 kHz              POMPANO BEACH, FL, US
Lat: 26-20-06 N           Power: 5.0 kW
Lng: 080-15-55 W          Theo RMS: 742.67 mV/m @ 1km
```

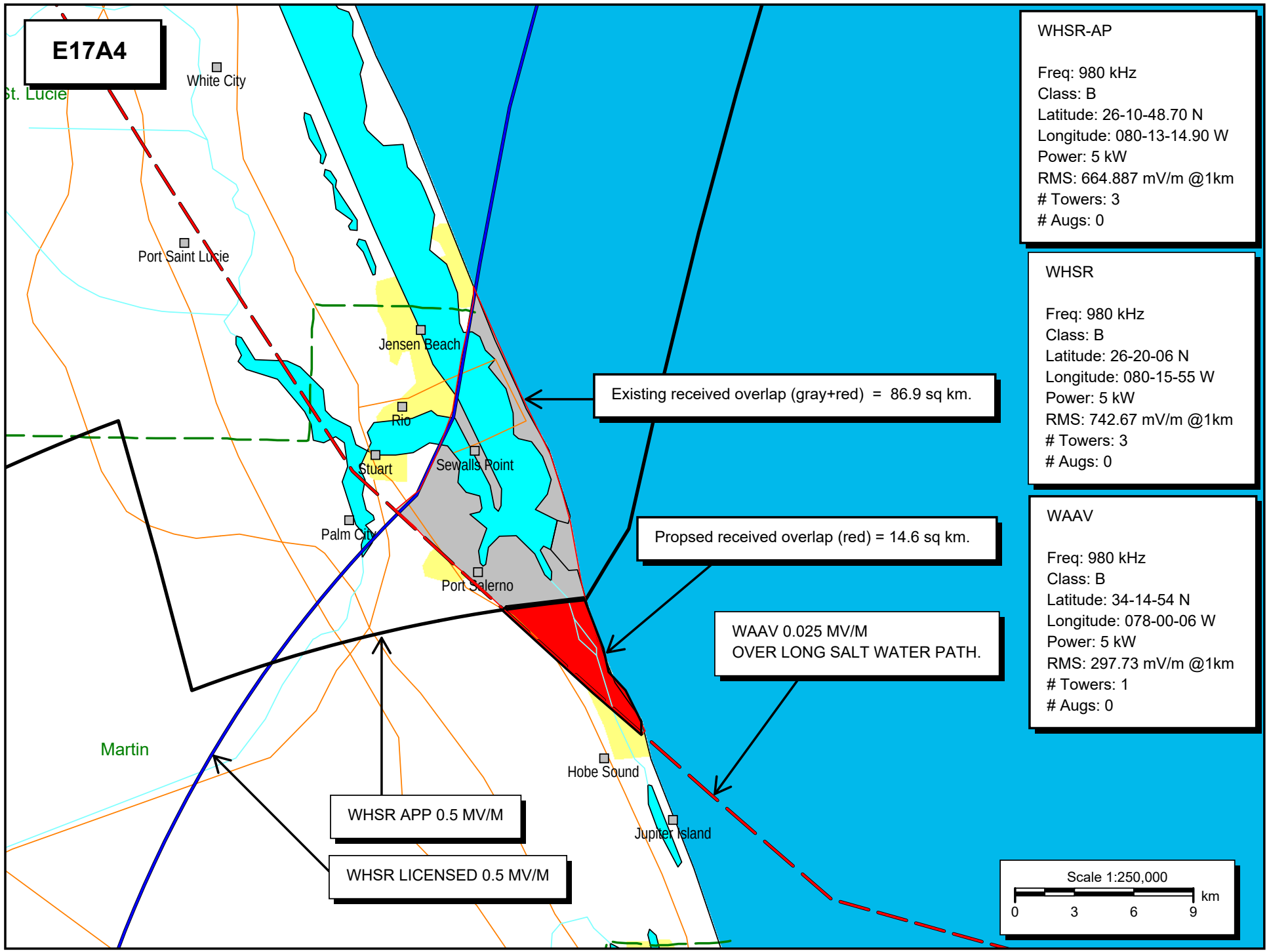
#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.573	-107.6	119.2	90.0	118.4	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	0.0	0.0	118.4	0	0	0.0	0.0	0.0	0.0
3	0.465	107.9	119.2	270.0	118.4	0	0	0.0	0.0	0.0	0.0

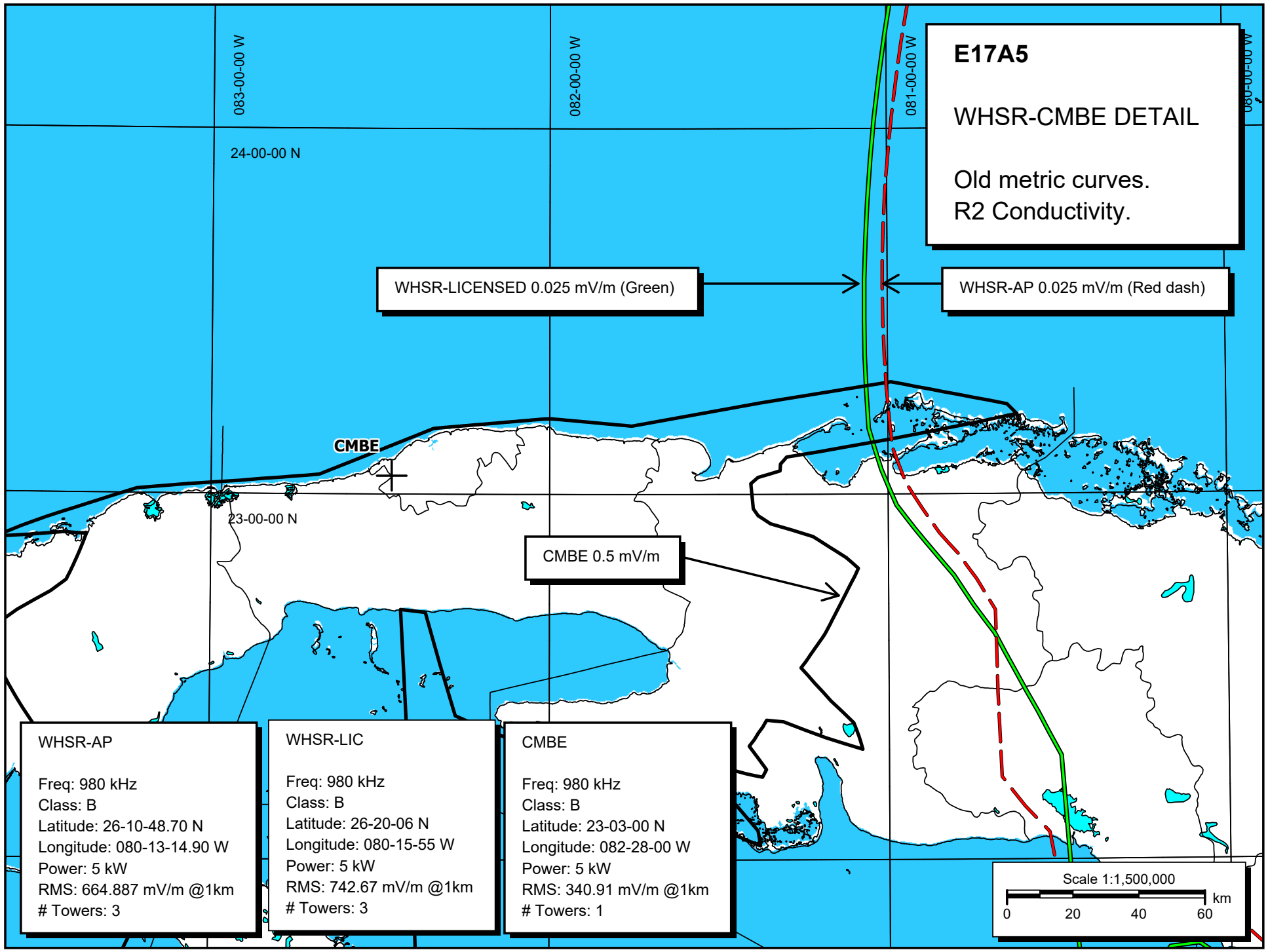
Call	Freq	City	ST	Dist	Azi	In	Out
CMND	980	BAYAMO		760.5	151.3	374.46	-13296.00
WMYM	990	KENDALL	FL	82.6	198.0	-10092.00	- 9976.00
CMHD	970	CAMAGUEY		605.4	156.7	363.45	-4408.00
CMGE	990	S SPIRITUS		494.5	170.5	162.65	-964.25
CMBE	980	ARROYO AREN		426.6	211.0	-6,680.00	-46.75
WSVU	960	NORTH PALM B	FL	53.4	1.4	-13.25	-13.25
WTLN	990	ORLANDO	FL	274.9	334.2	0.00	0.00
CMKE	990	HOLGUIN		731.7	146.9	300.92	-4.50
WNNR	970	JACKSONVILLE	FL	469.5	342.6	0.00	0.00
WAZS	980	SUMMERVILLE	SC	742.4	0.5	0.00	0.00
WJBW	1000	JUPITER	FL	68.5	12.5	0.00	0.00
WAAV	980	LELAND	NC	903.8	14.5	-1485.00	0.00
WFLA	970	TAMPA	FL	298.1	308.3	90.83	125.90
WDVH	980	GAINESVILLE	FL	415.3	330.9	0.00	244.41

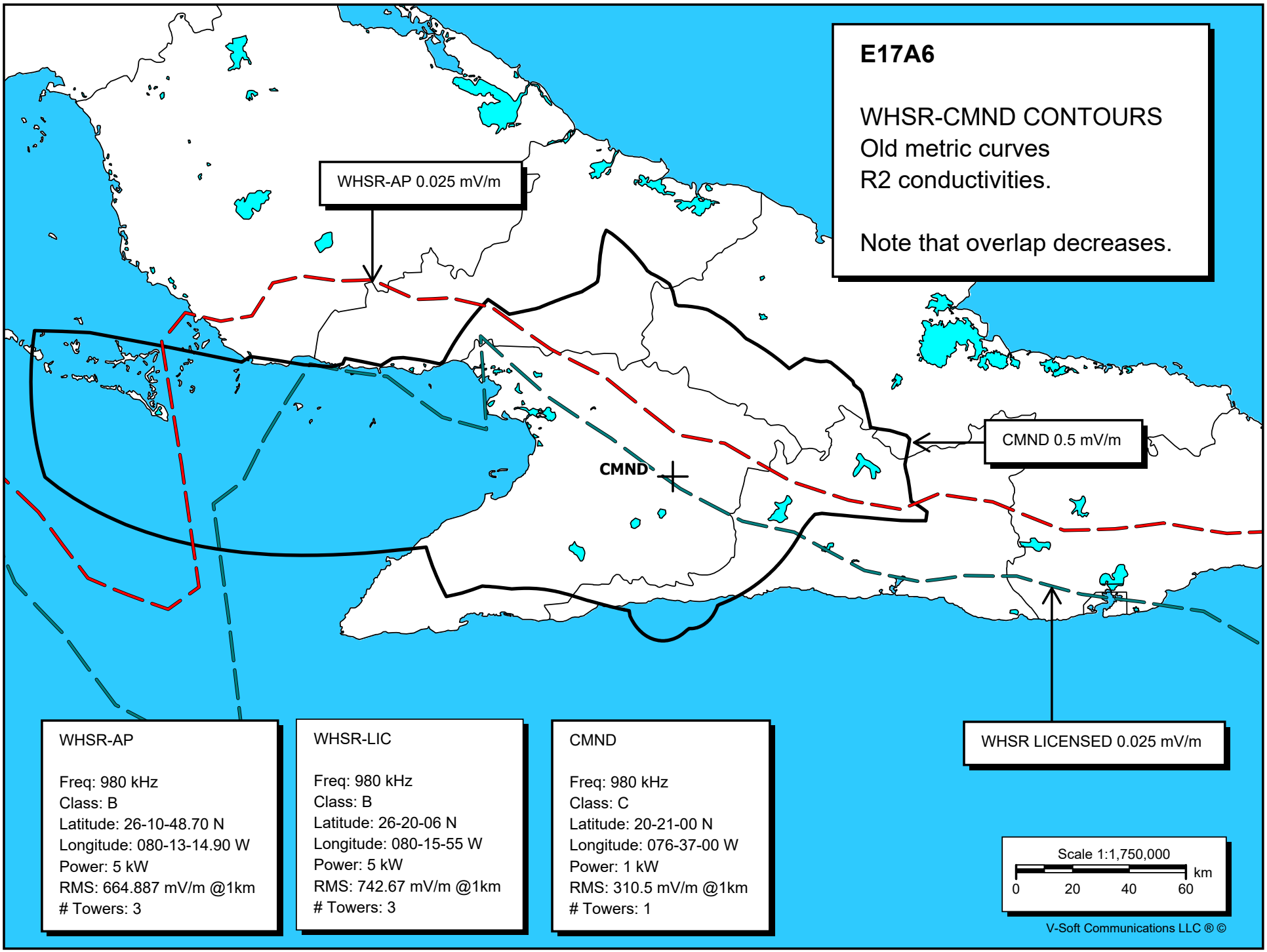
Domestic overlaps in sq km (red) utilize new metric curves, M3 and measured conductivities for WHSR licensed and WMYM licensed facilities.

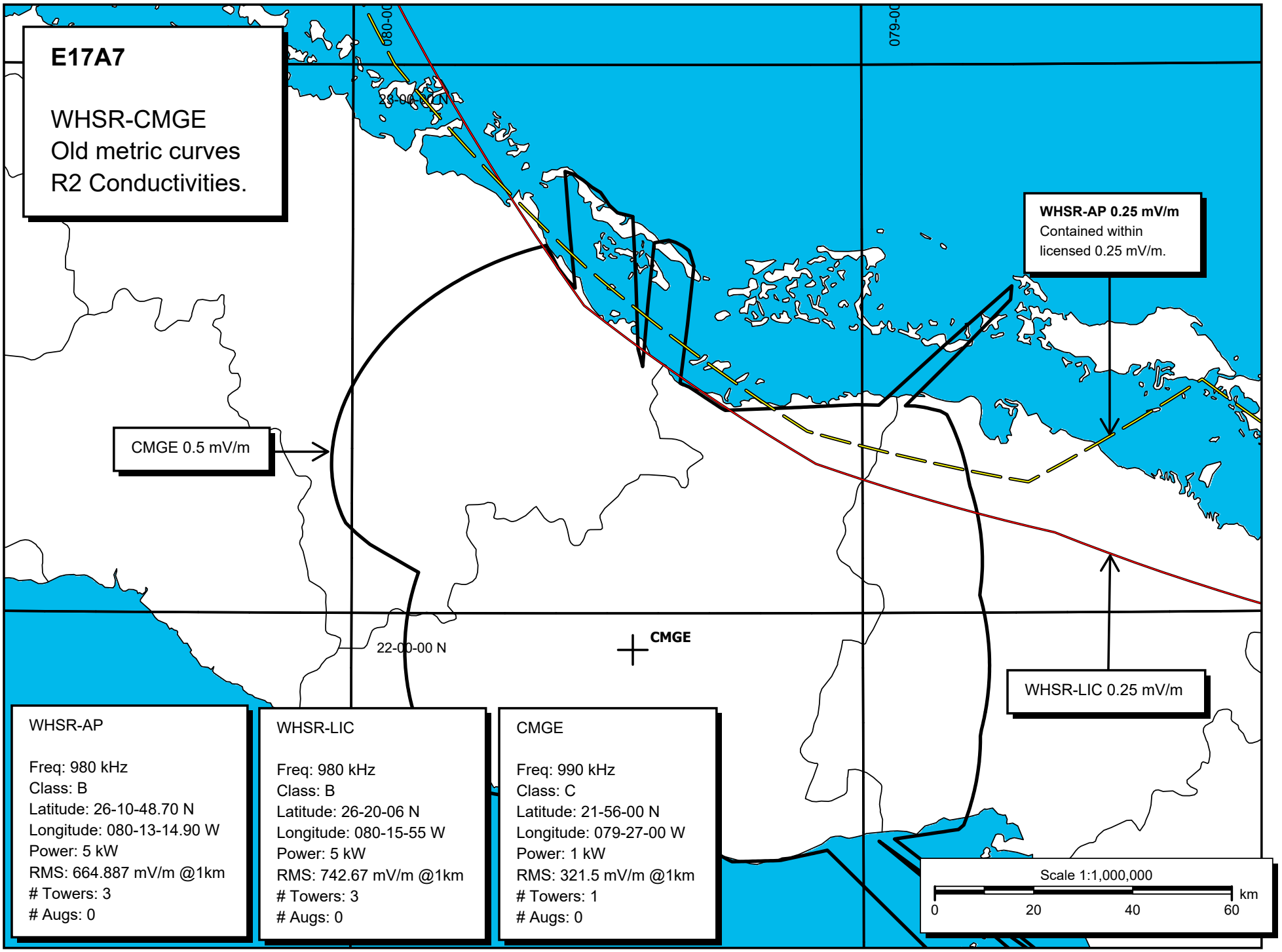
No measured conductivities are used for the international overlaps which also use the R2 conductivity database and the old metric curves in accordance with international agreements.

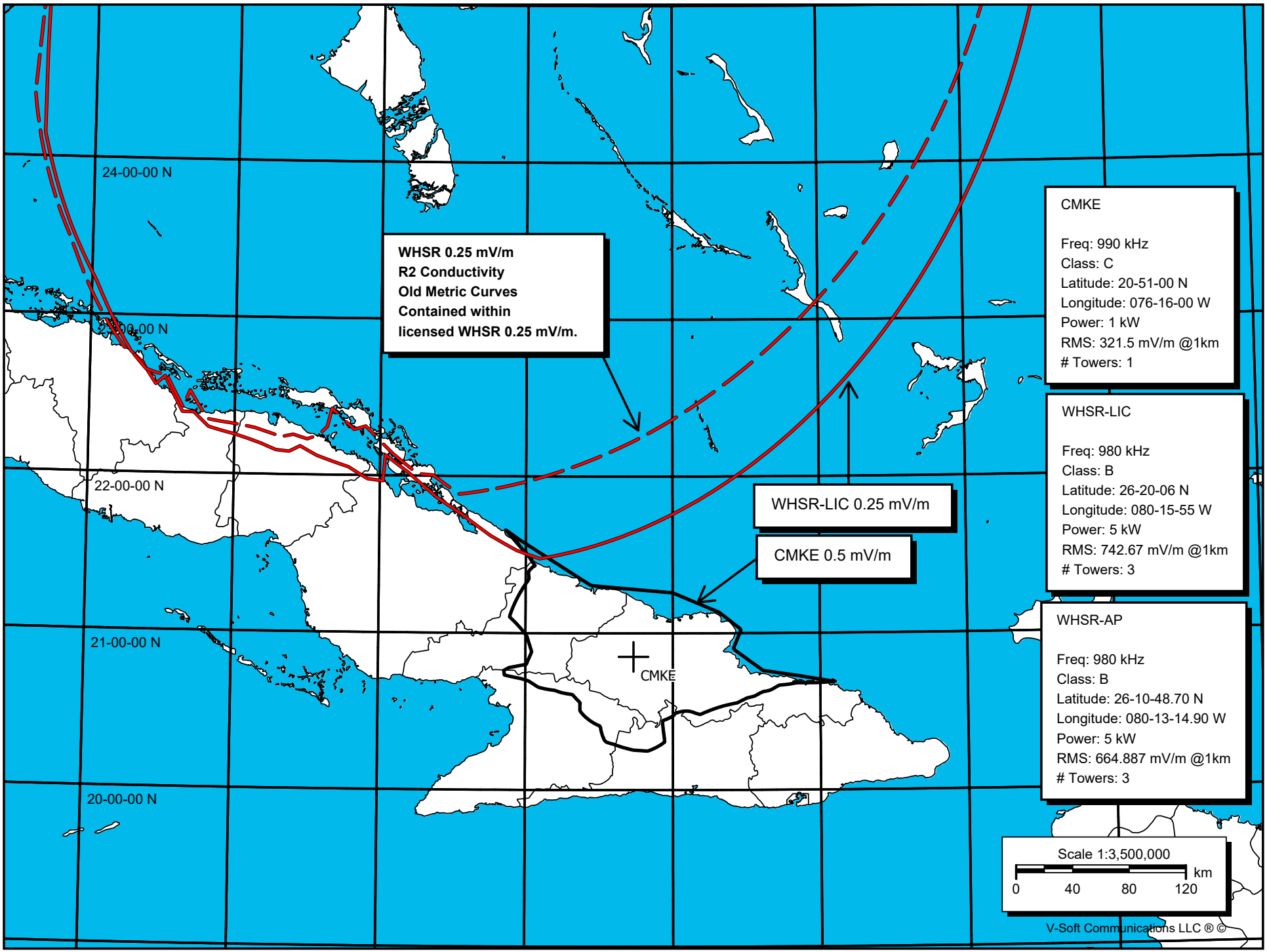

E17A3 WHSR-WMYM OVERLAP
WHSR
WHSR-AP
WMYM
081-00-00 W
080-00-00 W
26-00-00 N
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
WHSR LIC
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
WMYM
Freq: 990 kHz
Class: B
Latitude: 25-37-35 N
Longitude: 080-31-16 W
Power: 7.5 kW
RMS: 814.5 mV/m @1km
Towers: 6
WMYM 0.5 mV/m (Black) - 0.25 mV/m (Black-dash)
WHSR-LIC 0.5 mV/m (Blue) - 0.25 mV/m (Blue-dash)
WHSR-AP 0.5 mV/m (Red) - 0.25 mV/m (Red-dash)
WHSR-WMYM Overlap Incoming (sq km) Outgoing (sq km)
Licensed 10,092 9,984
Application 9,192 9,616
Measured ground conductivities used for WHSR license and application and for WMYM licensed from Commission files (see E17D).
Overlaps are significantly decreased.
Scale 1:750,000
0
25
50

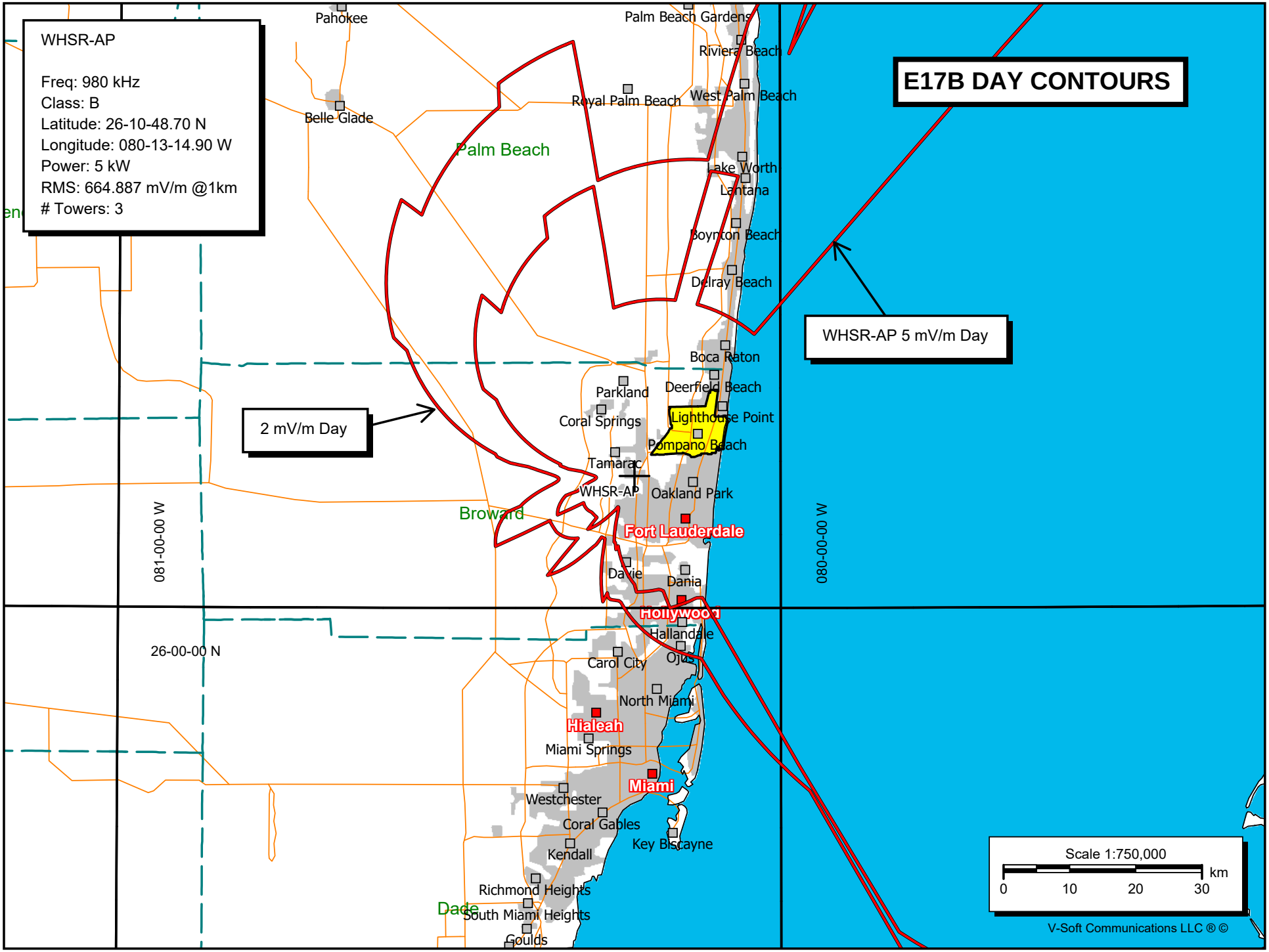

E17A4
White City
St. Lucie
Port Saint Lucie
Jensen Beach
Rio
Stuart
Sewalls Point
Palm City
Port Salerno
Martin
Hobe Sound
Jupiter Island
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
Augs: 0
WHSR
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
Augs: 0
WAAV
Freq: 980 kHz
Class: B
Latitude: 34-14-54 N
Longitude: 078-00-06 W
Power: 5 kW
RMS: 297.73 mV/m @1km
Towers: 1
Augs: 0
Existing received overlap (gray+red) = 86.9 sq km.
Propsed received overlap (red) = 14.6 sq km.
WAAV 0.025 MV/M
OVER LONG SALT WATER PATH.
WHSR APP 0.5 MV/M
WHSR LICENSED 0.5 MV/M
Scale 1:250,000
km
0
3
6
9


E17A5
WHSR-CMBE DETAIL
Old metric curves.
R2 Conductivity.
083-00-00 W
082-00-00 W
081-00-00 W
080-00-00 W
24-00-00 N
23-00-00 N
WHSR-LICENSED 0.025 mV/m (Green)
WHSR-AP 0.025 mV/m (Red dash)
CMBE
CMBE 0.5 mV/m
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
WHSR-LIC
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
CMBE
Freq: 980 kHz
Class: B
Latitude: 23-03-00 N
Longitude: 082-28-00 W
Power: 5 kW
RMS: 340.91 mV/m @1km
Towers: 1
Scale 1:1,500,000
0 20 40 60 km


E17A6
WHSR-CMND CONTOURS
Old metric curves
R2 conductivities.
Note that overlap decreases.
WHSR-AP 0.025 mV/m
CMND 0.5 mV/m
CMND
WHSR LICENSED 0.025 mV/m
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
WHSR-LIC
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
CMND
Freq: 980 kHz
Class: C
Latitude: 20-21-00 N
Longitude: 076-37-00 W
Power: 1 kW
RMS: 310.5 mV/m @1km
Towers: 1
Scale 1:1,750,000
km
0
20
40
60
V-Soft Communications LLC ® ©


E17A7
WHSR-CMGE
Old metric curves
R2 Conductivities.
080-00
079-00
23-00-00 N
WHSR-AP 0.25 mV/m
Contained within
licensed 0.25 mV/m.
CMGE 0.5 mV/m
22-00-00 N
CMGE
WHSR-LIC 0.25 mV/m
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
Augs: 0
WHSR-LIC
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
Augs: 0
CMGE
Freq: 990 kHz
Class: C
Latitude: 21-56-00 N
Longitude: 079-27-00 W
Power: 1 kW
RMS: 321.5 mV/m @1km
Towers: 1
Augs: 0
Scale 1:1,000,000
0
20
40
60
km


24-00-00 N
22-00-00 N
21-00-00 N
20-00-00 N
WHSR 0.25 mV/m
R2 Conductivity
Old Metric Curves
Contained within
licensed WHSR 0.25 mV/m.
WHSR-LIC 0.25 mV/m
CMKE 0.5 mV/m
CMKE
CMKE
Freq: 990 kHz
Class: C
Latitude: 20-51-00 N
Longitude: 076-16-00 W
Power: 1 kW
RMS: 321.5 mV/m @1km
Towers: 1
WHSR-LIC
Freq: 980 kHz
Class: B
Latitude: 26-20-06 N
Longitude: 080-15-55 W
Power: 5 kW
RMS: 742.67 mV/m @1km
Towers: 3
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
Scale 1:3,500,000
0
40
80
120
km
V-Soft Communications LLC ® ©


WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 5 kW
RMS: 664.887 mV/m @1km
Towers: 3
E17B DAY CONTOURS
WHSR-AP 5 mV/m Day
2 mV/m Day
Pahokee
Belle Glade
Palm Beach Gardens
Riviera Beach
Royal Palm Beach
West Palm Beach
Palm Beach
Lake Worth
Lantana
Boynton Beach
Delray Beach
Boca Raton
Parkland
Deerfield Beach
Coral Springs
Lighthouse Point
Pompano Beach
Tamarac
WHSR-AP
Oakland Park
Broward
Fort Lauderdale
Davie
Dania
Hollywood
Hallandale
Carol City
Opa-locka
North Miami
Hialeah
Miami Springs
Miami
Westchester
Coral Gables
Kendall
Key Biscayne
Richmond Heights
South Miami Heights
Goulds
Dade
081-00-00 W
080-00-00 W
26-00-00 N
Scale 1:750,000
km
0
10
20
30
V-Soft Communications LLC ® ©

E17C RELEVANT DAY FACILITIES

Reference Station: WHSR-AP, 980 kHz Location: 26-10-48.70 N, 080-13-14.90 W

***** 960 kHz (-2) *****

70.6 km	**WSVU**	**L**	**26-49-01 N**	**080-15-07 W**	**2.4 kW**	**DA2 - 456.8 mV/m@1km**
43.9 mi			**Azi: 357.5**	**Class: B**	**Sched: U**	**File #: BL20091109ABU**
			Location: NORTH PALM BEACH, FL, US			

***** 970 kHz (-1) *****

312.5 km	**WFLA**	**L**	**28-01-14 N**	**082-36-34 W**	**25.0 kW**	**DA2 - 1627.0 mV/m@1km**
194.2 mi			**Azi: 310.2**	**Class: B**	**Sched: U**	**File #: BL19990916AAP**
			Location: TAMPA, FL, US			
487.2 km	**WNNR**	**L**	**30-23-08 N**	**081-40-04 W**	**1.0 kW**	**DA2 - 288.1 mV/m@1km**
302.7 mi			**Azi: 342.7**	**Class: D**	**Sched: U**	**File #: BL13677**
			Location: JACKSONVILLE, FL, US			
587.9 km	**CMHD**		**21-20-00 N**	**077-52-00 W**	**10.0 kW**	**ND1 - 321.5 mV/m@1km**
365.3 mi			**Azi: 156.4**	**Class: B**	**Sched: U**	**File #:**
			Location: CAMAGUEY, , CU			

***** 980 kHz (CO) *****

414.6 km	**CMBE**		**23-03-00 N**	**082-28-00 W**	**5.0 kW**	**ND1 - 340.9 mV/m@1km**
257.6 mi			**Azi: 212.8**	**Class: B**	**Sched: U**	**File #:**
			Location: ARROYO ARENA, , CU			
743.4 km	**CMND**		**20-21-00 N**	**076-37-00 W**	**1.0 kW**	**ND1 - 310.5 mV/m@1km**
461.9 mi			**Azi: 151.0**	**Class: C**	**Sched: U**	**File #:**
			Location: BAYAMO, , CU			
759.5 km	**WAZS**	**L**	**33-01-57.28 N**	**080-12-00.56 W**	**1.0 kW**	**ND2 - 305.8 mV/m@1km**
472.0 mi			**Azi: 0.2**	**Class: D**	**Sched: U**	**File #: BML20010808ABO**
			Location: SUMMERVILLE, SC, US			
919.5 km	**WAAV**	**L**	**34-14-54 N**	**078-00-06 W**	**5.0 kW**	**DAN - 297.7 mV/m@1km**
571.3 mi			**Azi: 14.0**	**Class: B**	**Sched: U**	**File #: BL19980609KD**
			Location: LELAND, NC, US			

***** 990 kHz (+1) *****

68.3 km	**WMYM**	**L**	**25-37-35 N**	**080-31-16 W**	**7.5 kW**	**DAD - 814.5 mV/m@1km**
42.5 mi			**Azi: 206.1**	**Class: B**	**Sched: U**	**File #: BMML20170328ABI**
			Location: KENDALL, FL, US			
292.3 km	**WTLN**	**L**	**28-34-27 N**	**081-27-46 W**	**50.0 kW**	**DA2 - 2262.0 mV/m@1km**
181.6 mi			**Azi: 334.9**	**Class: B**	**Sched: U**	**File #: BL20070413AHC**
			Location: ORLANDO, FL, US			

E17D WHSR-AP Measured Conductivities

WWNN 1995 Proof (BP-930603AD curves attached)
WWNN 1979 Proof for 170° radial (tabulation attached).

3° 30 to 1.55 km, 8 to 3.25 km,7 to 5.14 km, 4 to 8.63 km, 3 to 29.19 km, 4 to 30.38 km

30° 30 to 1.55 km, 8 to 3.25 km, 7 to 5.14 km, 4 to 8.63 km, 3 to 29.9 km 4 to 30.38 km

65° 4 to 1.13 km, 8 to 1.6 km, 6 to 3.62 km, 5 to 9.75 km, 4 to 13.64 km, 6 to 14.5 km

120° 4 to 0.93 km, 5 to 1.3 km, 8 to 2.34 km, 5 to 4.72 km, 6 to 7.45 km, 5 to 11.28 km, 6 to 12.72 km

161° 3 to 1.81 km, 7 to 2.4 km, 5 to 8.36 km, 4 to 20.72 km, 3 to 29.33 km

170° (Reanalyzed) 3 to 1.6 km, 8 to 6.0 km, 5 to 17.6 km, 3 to 32.2 km

188.5° 2 to 0.95 km, 3 to 1.42 km, 4 to 19.08 km, 3 to 28.52 km, 2 to 31.88 km

198° 6 to 10.5 km, 5 to 32.2 km

232° 2 to 1.18 km, 3 to 5.76 km, 4 to 8.47 km, 3 to 14.49 km, 2 to 24.02 km, 3 to 27.13 km

265° 3 to 2.9 km, 5 to 9.37 km

289° 10 to 1.15 km, 6 to 2.55 km, 7 to 3.6 km, 8 to 5.09 km, 7 to 6.31 km, 6 to 8.23 km

310° 10 to 16.1 km

330° 4 to 1.15 km, 5 to 4.6 km, 6 to 7.21 km, 5 to 13.75 km

E17 D WHSR Licensed Measured Conductivities

From WMYM granted application BP-20150706ACS (summarized and referenced from BL-20050203AEN and BP-970314AH)

40° 20 to 1.6 km, 15 to 17.8 km, 10 to 19.7 km, 7 to 24.9 km

90° 10 to 1.0 km, 7 to 1.5 km, 10 to 2.6 km, 10 to 2.6 km, 7 to 5.5 km, 8 to 9.1 km, 15 to 12.0 km

140° 15 to 1.1 km, 8 to 3.0 km, 7 to 8/9 km, 8 to 15.2 km, 7 to 26 km

210° 8 to 1.5 km, 20 to 1.8 km, 15 to 3.2 km, 30 to 25 km

226° 30 to 1.8 km, 20 to 2.9 km, 30 to 25.0 km

270° 7 to 0.9 km, 3 to 1.3 km, 5 to 2.0 km, 7 to 3.3 km, 10 to 6.0 km, 20 to 9.0 km, 40 to 18.0 km

314° 30 to 1.9 km, 6 to 3.1 km, 8 to 7.7 km, 15 to 13.7 km, 20 to 19.0 km

330° 30 to 2.4 km, 20 to 9.7 km, 30 to 25.8 km

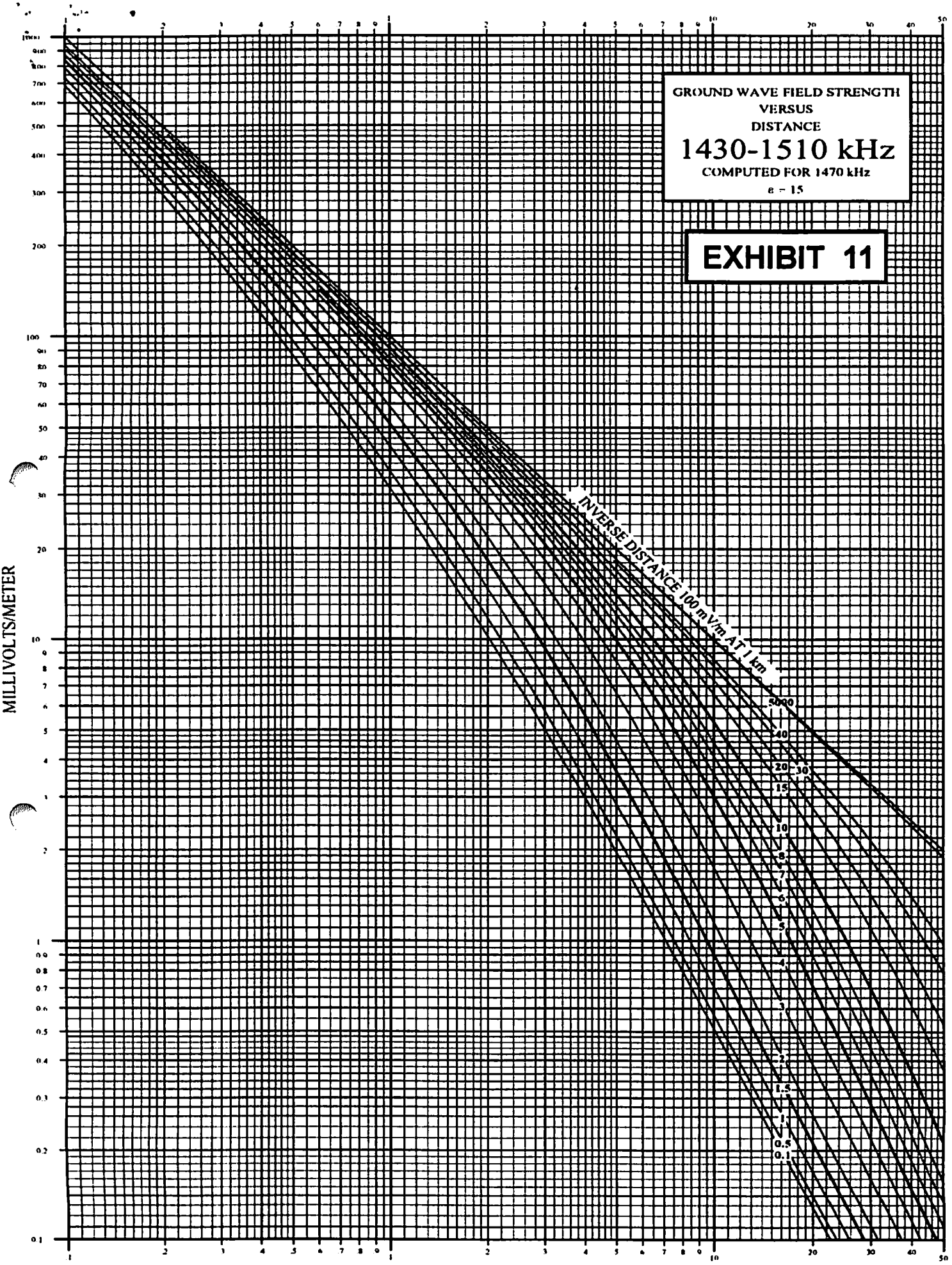
359.5° 15 to 0.9 km, 4 to 1.3 km, 5 to 2.0 km, 10 to 3.2 km, 15 to 6.0 km, 10 to 11.0 km, 15 to 18.0 km

E17 D WMYM Licensed Measured Conductivities

From WMYM granted application BP-20150706ACS (summarized and referenced from BP-201408AFR and BL-20010406ABC)

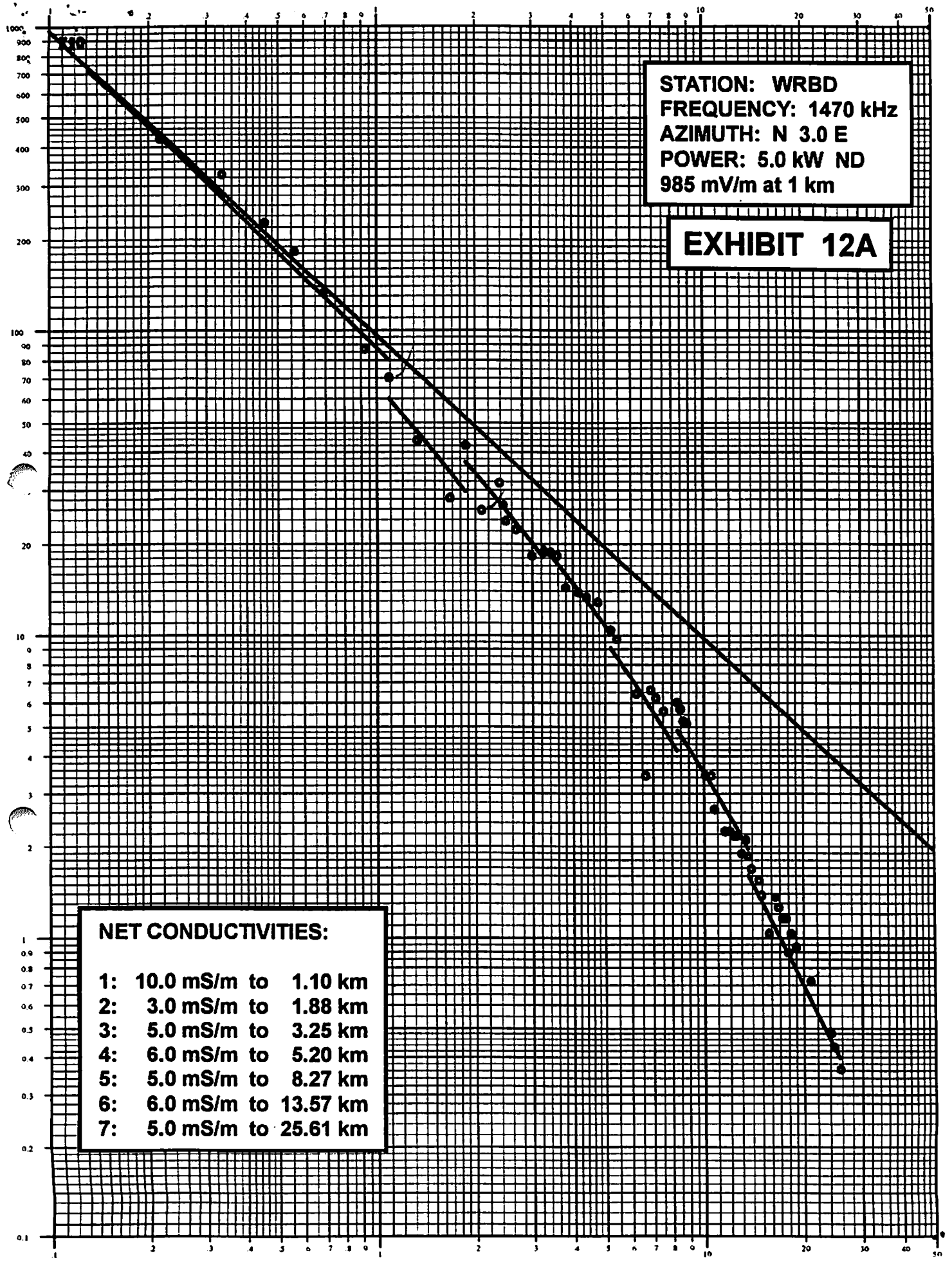
25°	3 to 50 km
45°	5 to 50 km
65°	5 to 24 km, 3 to 41 km
85°	4 to 3 km, 6 to 20.0 km
115°	4 to 3 km, 5 to 23.3 km
143°	4 to 2.9 km, 6 to 23 km
174.5°	7 to 7 km, 6 to 22.5 km
180.5	6 to 10 km, 5 to 23.2 km
235°	3 to 2.9 km, 5 to 22 km
252.5°	3 to 3 km, 5 to 23 km
283.5°	4 to 3 km, 5 to 12 km, 7 to 23 km
300°	6 to 13 km, 8 to 23 km
345.5°	4 to 2.9 km, 5 to 12 km, 8 to 23 km
354°	3 to 3 km, 5 to 12 km, 7 to 23 km

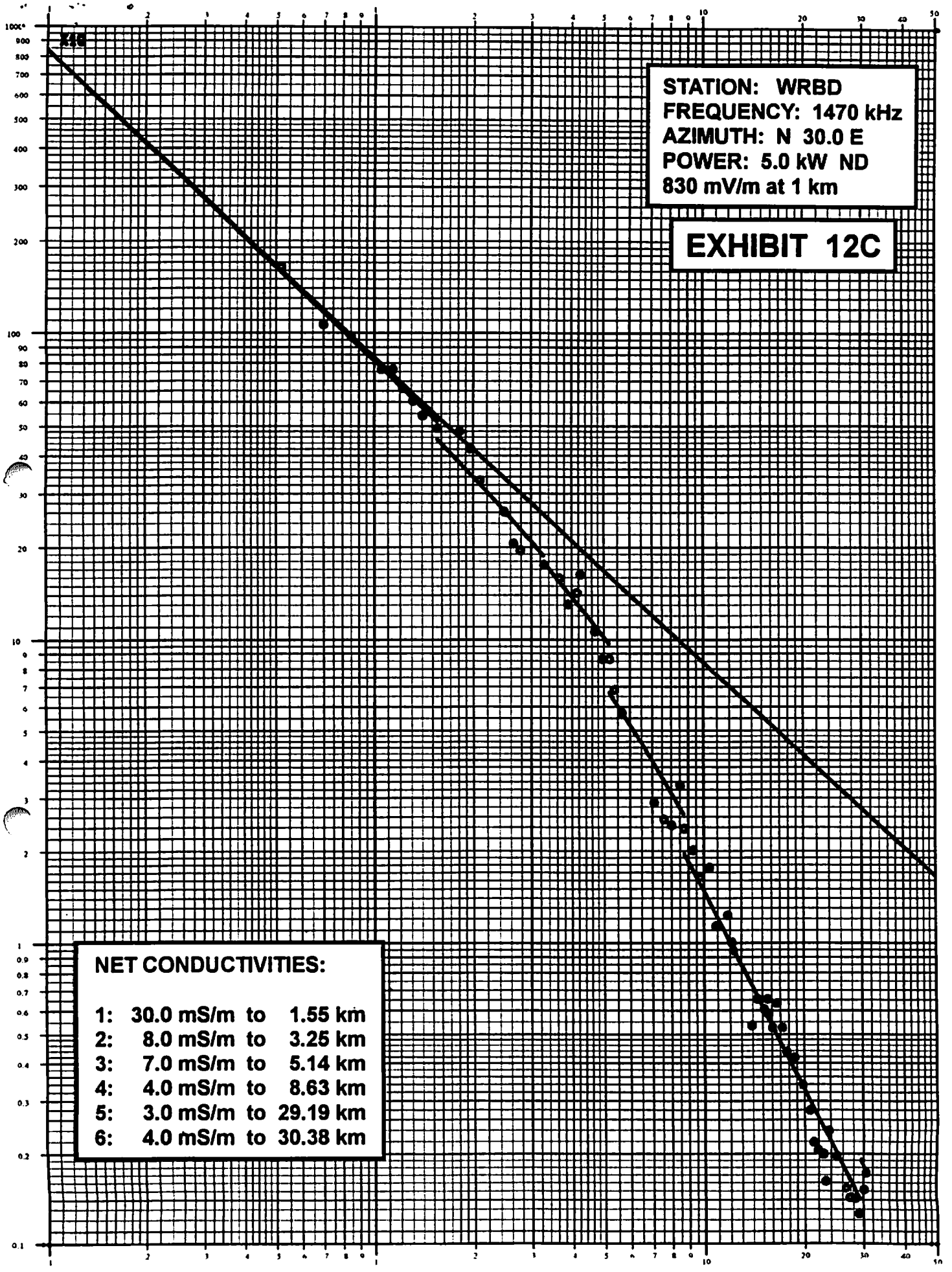
KILOMETERS FROM ANTENNA

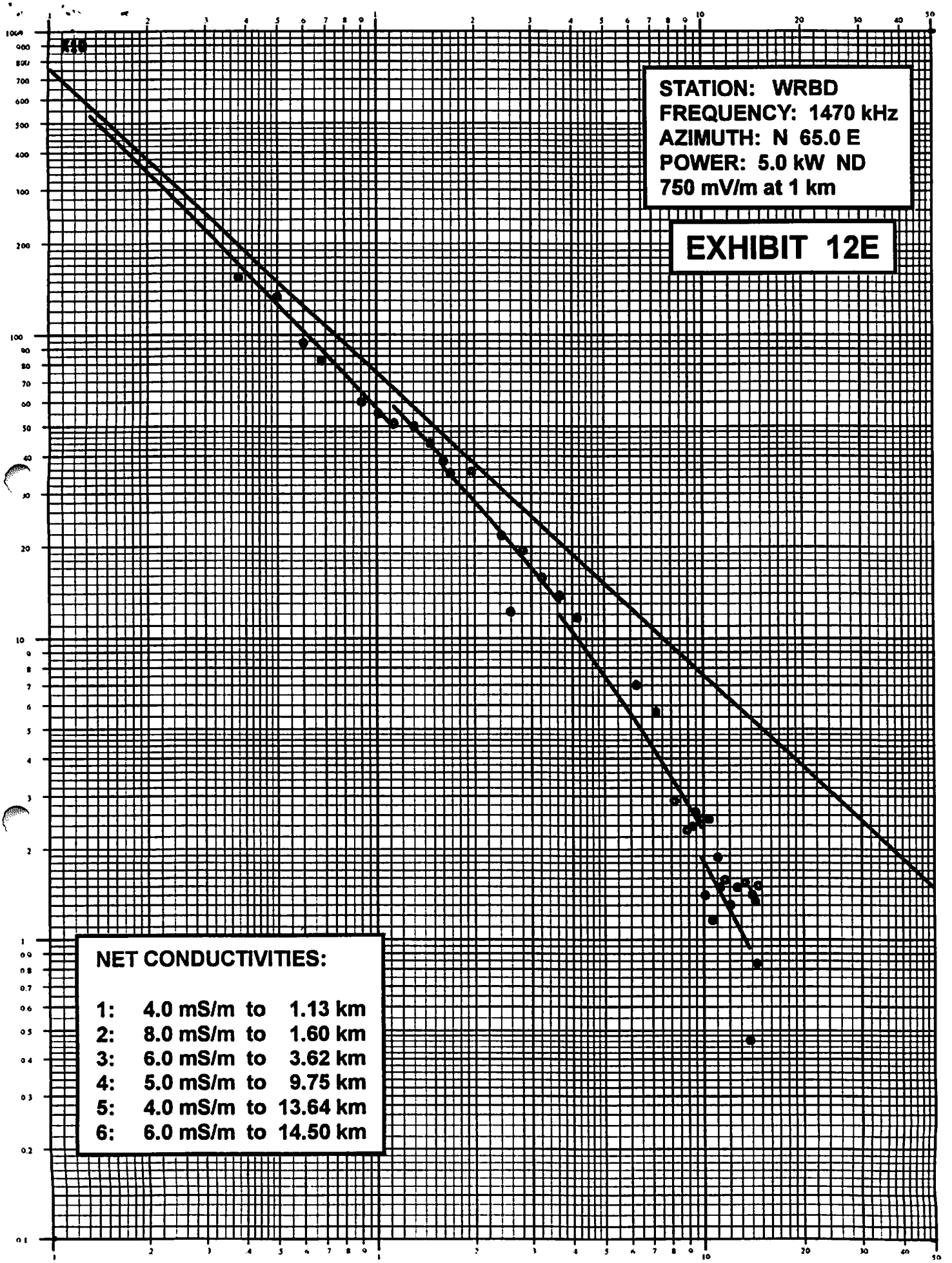


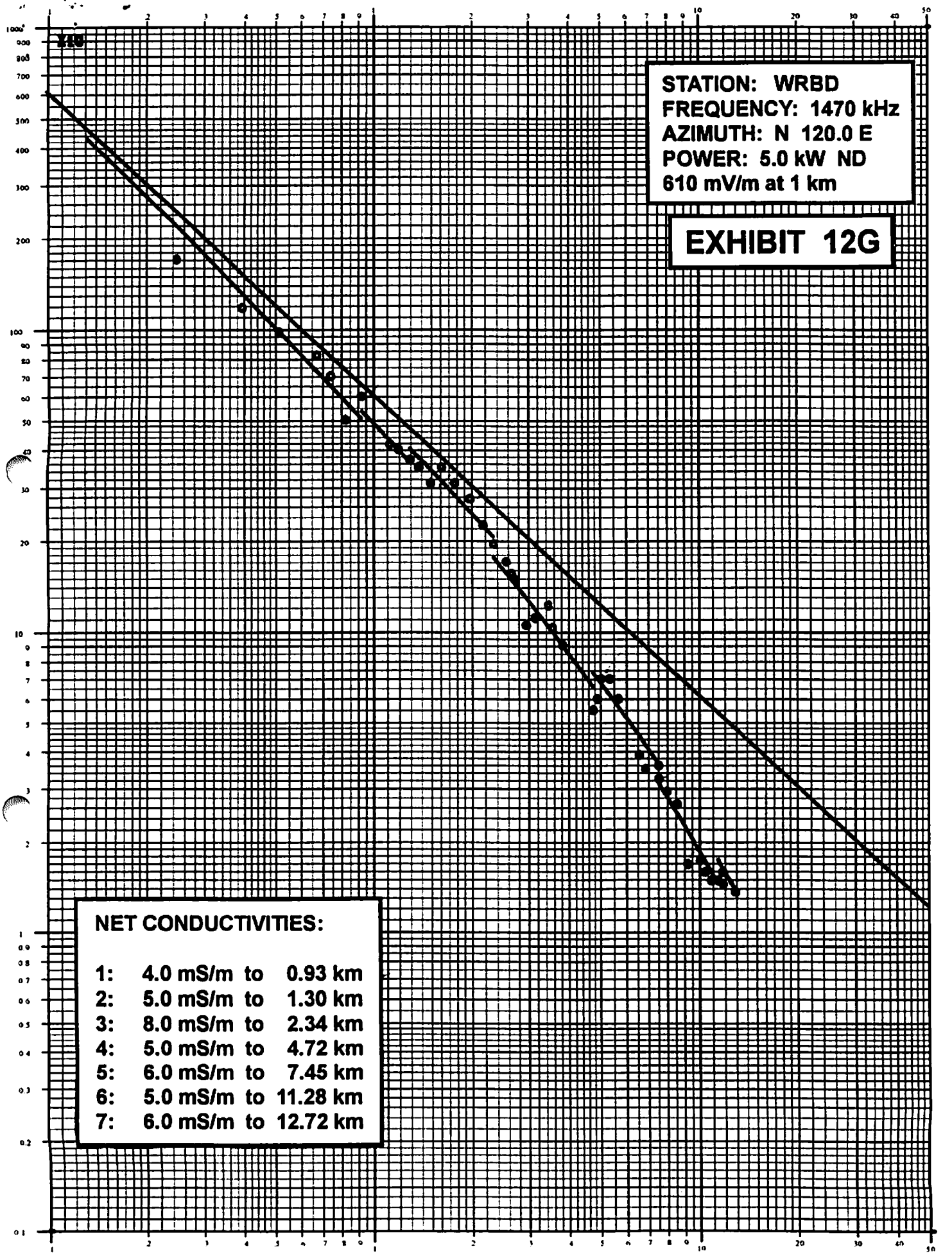
KILOMETERS FROM ANTENNA

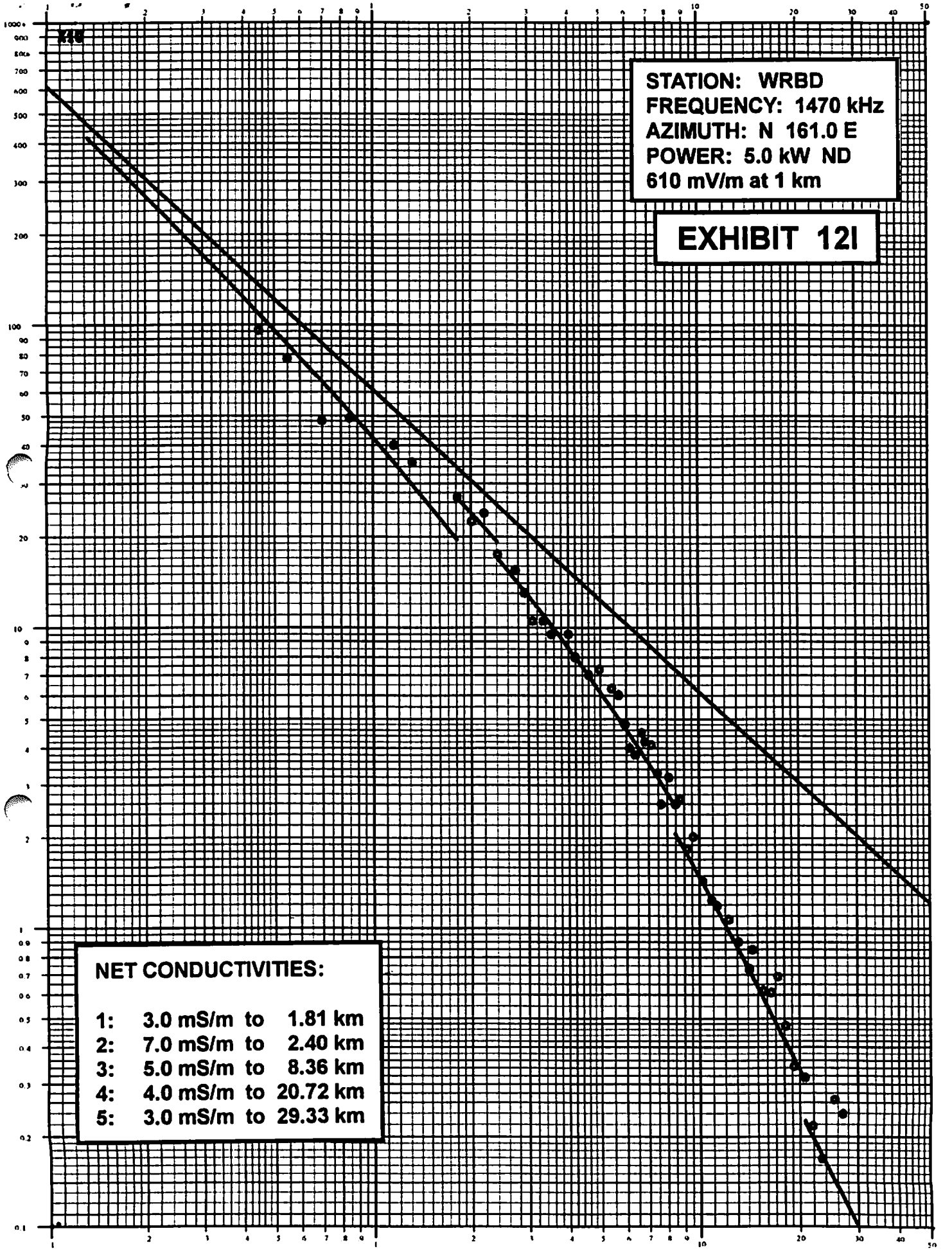
GRAPH 18-A

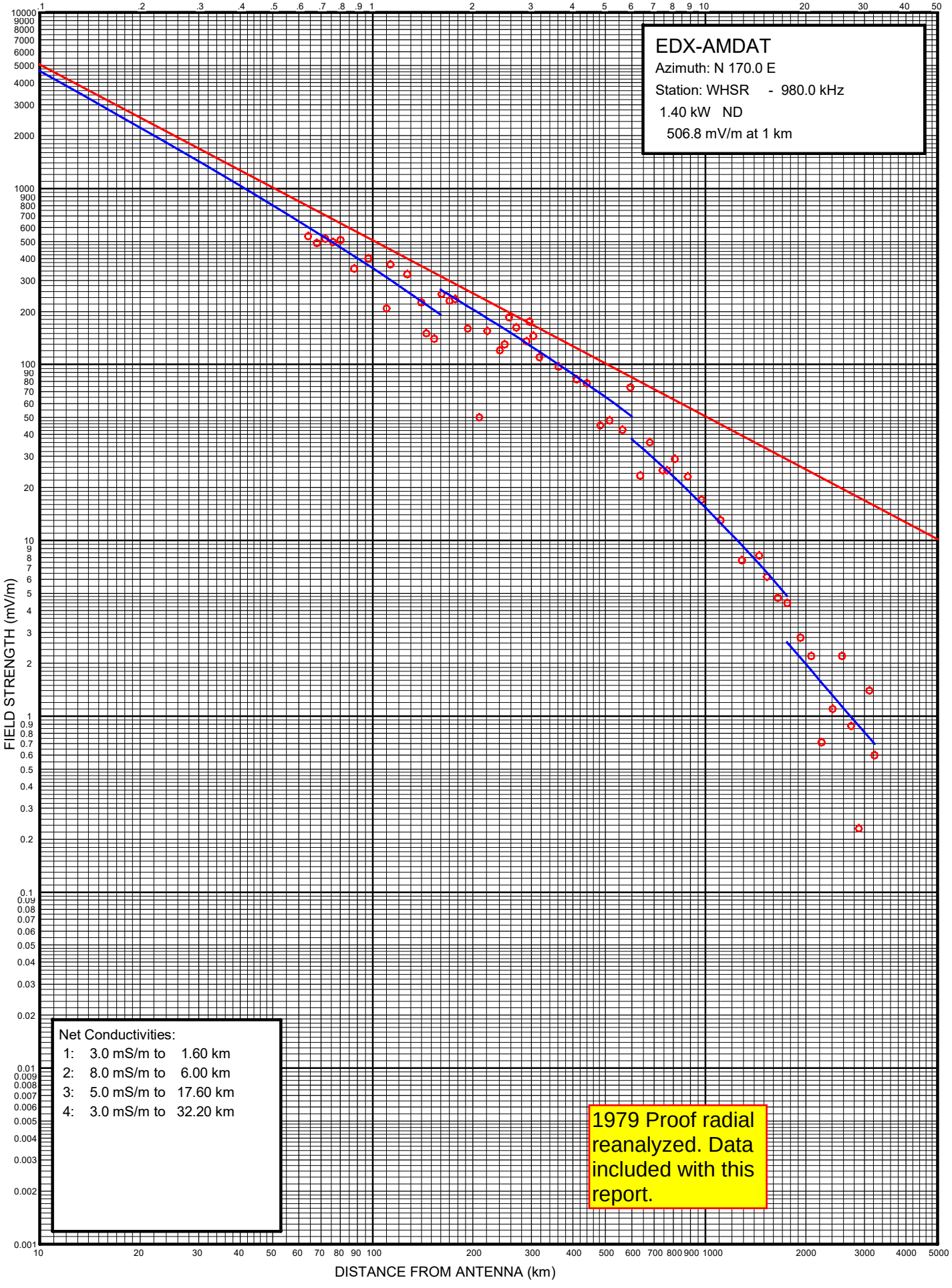

STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 3.0 E
POWER: 5.0 kW ND
985 mV/m at 1 km
EXHIBIT 12A
NET CONDUCTIVITIES:
1: 10.0 mS/m to 1.10 km
2: 3.0 mS/m to 1.88 km
3: 5.0 mS/m to 3.25 km
4: 6.0 mS/m to 5.20 km
5: 5.0 mS/m to 8.27 km
6: 6.0 mS/m to 13.57 km
7: 5.0 mS/m to 25.61 km

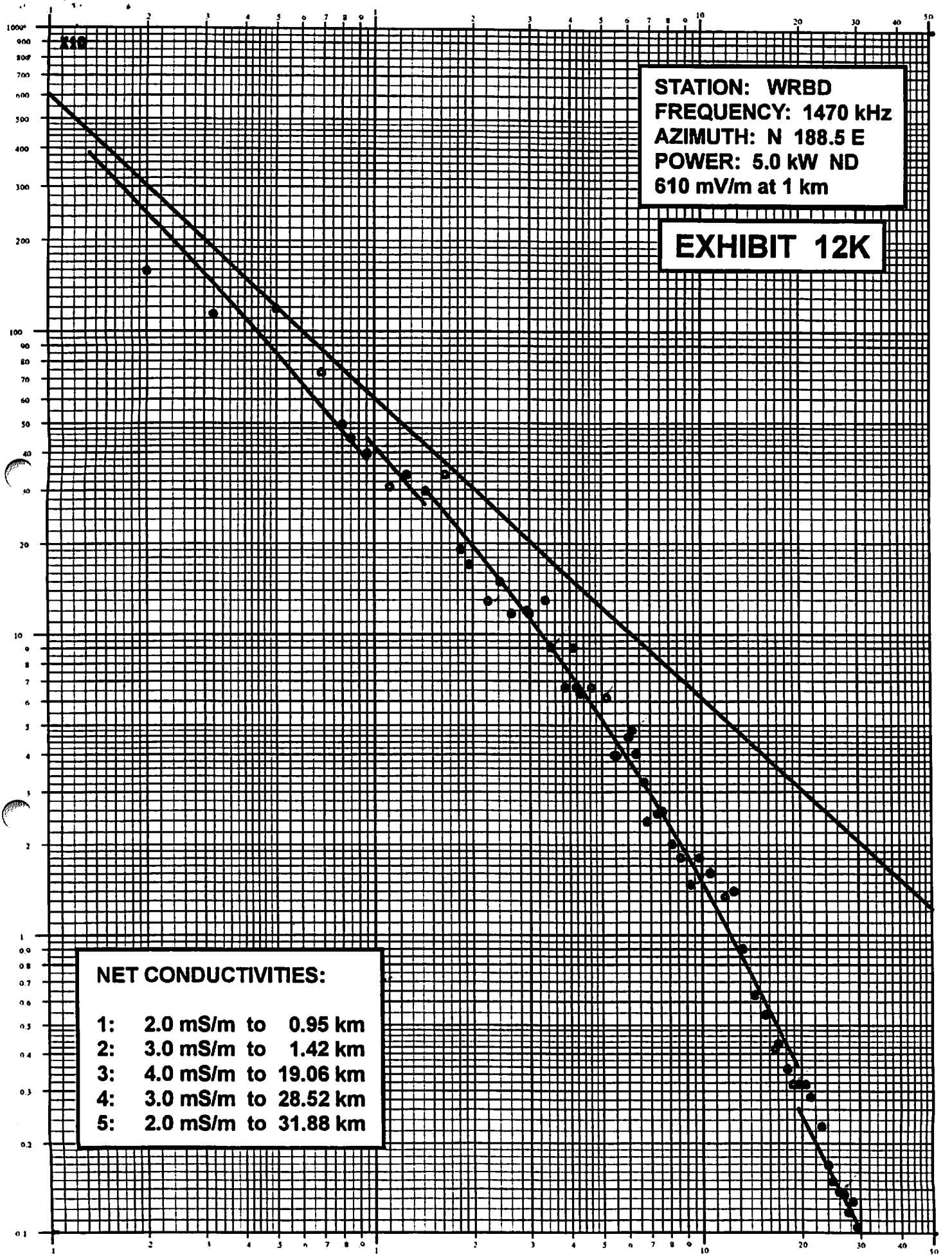

STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 30.0 E
POWER: 5.0 kW ND
830 mV/m at 1 km
EXHIBIT 12C
NET CONDUCTIVITIES:
1: 30.0 mS/m to 1.55 km
2: 8.0 mS/m to 3.25 km
3: 7.0 mS/m to 5.14 km
4: 4.0 mS/m to 8.63 km
5: 3.0 mS/m to 29.19 km
6: 4.0 mS/m to 30.38 km

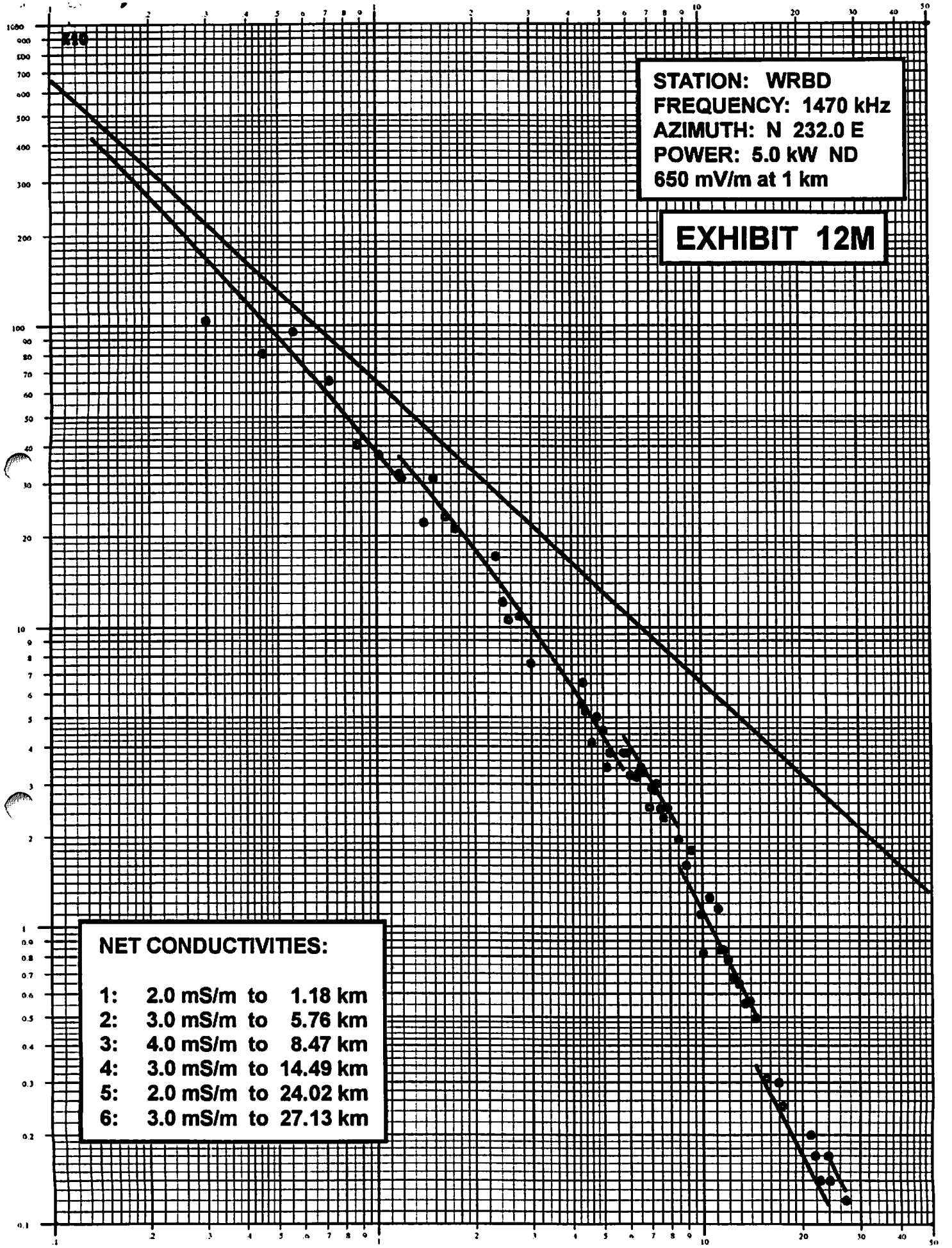

STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 65.0 E
POWER: 5.0 kW ND
750 mV/m at 1 km
EXHIBIT 12E
NET CONDUCTIVITIES:
1: 4.0 mS/m to 1.13 km
2: 8.0 mS/m to 1.60 km
3: 6.0 mS/m to 3.62 km
4: 5.0 mS/m to 9.75 km
5: 4.0 mS/m to 13.64 km
6: 6.0 mS/m to 14.50 km

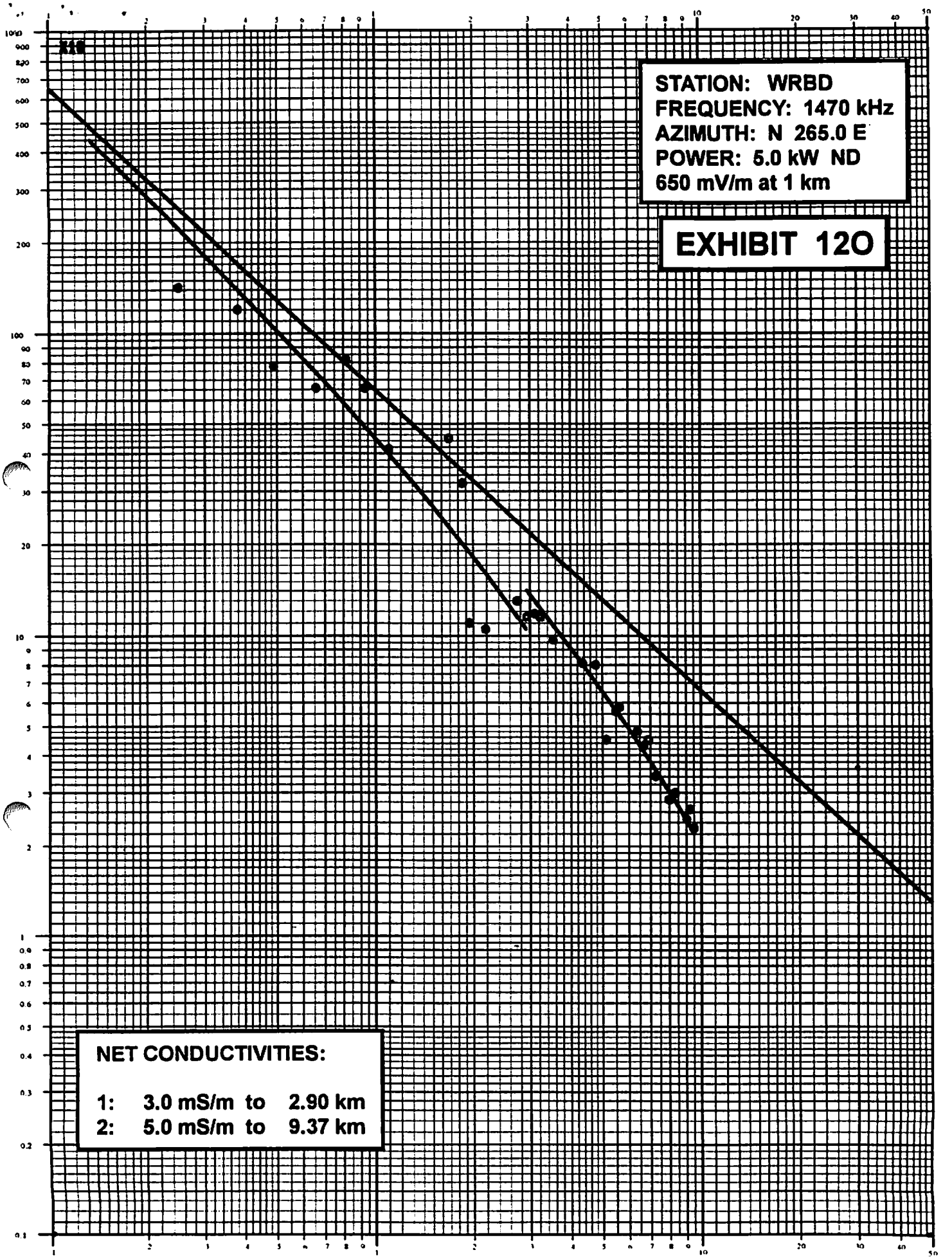

STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 120.0 E
POWER: 5.0 kW ND
610 mV/m at 1 km
EXHIBIT 12G
NET CONDUCTIVITIES:
1: 4.0 mS/m to 0.93 km
2: 5.0 mS/m to 1.30 km
3: 8.0 mS/m to 2.34 km
4: 5.0 mS/m to 4.72 km
5: 6.0 mS/m to 7.45 km
6: 5.0 mS/m to 11.28 km
7: 6.0 mS/m to 12.72 km

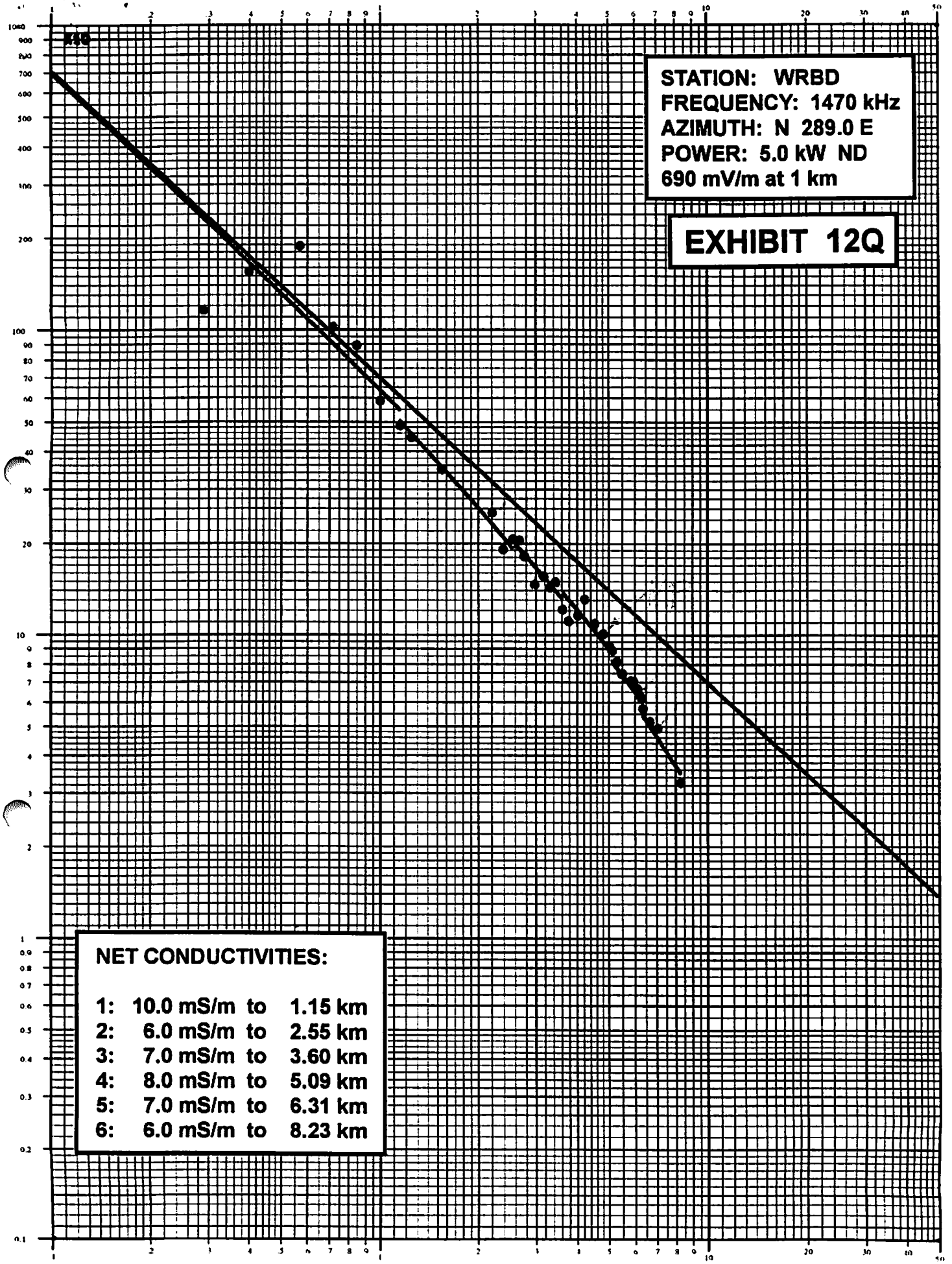

STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 161.0 E
POWER: 5.0 kW ND
610 mV/m at 1 km
EXHIBIT 12I
NET CONDUCTIVITIES:
1: 3.0 mS/m to 1.81 km
2: 7.0 mS/m to 2.40 km
3: 5.0 mS/m to 8.36 km
4: 4.0 mS/m to 20.72 km
5: 3.0 mS/m to 29.33 km

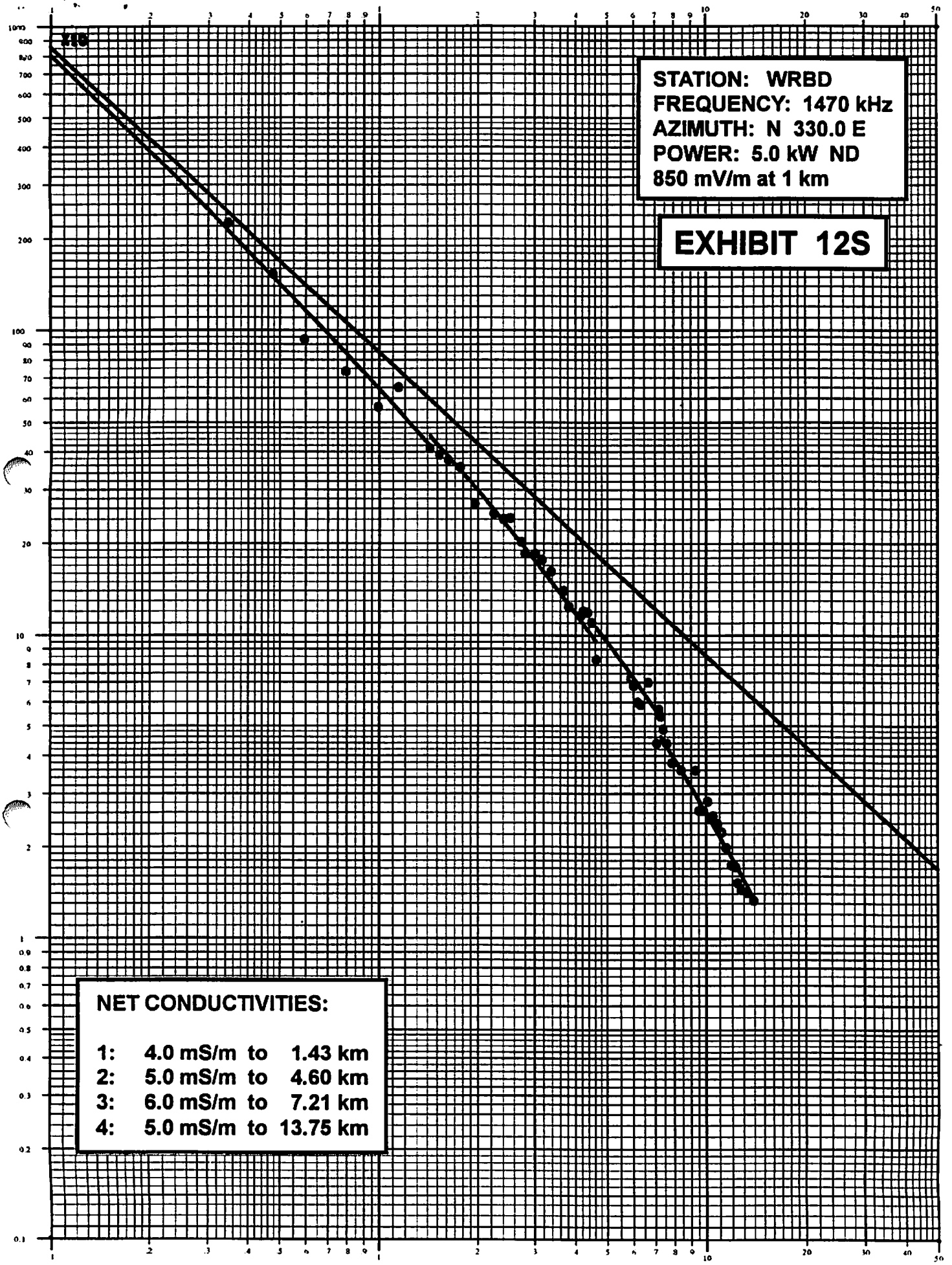

EDX-AMDAT
Azimuth: N 170.0 E
Station: WHSR - 980.0 kHz
1.40 kW ND
506.8 mV/m at 1 km
FIELD STRENGTH (mV/m)
DISTANCE FROM ANTENNA (km)
Net Conductivities:
1: 3.0 mS/m to 1.60 km
2: 8.0 mS/m to 6.00 km
3: 5.0 mS/m to 17.60 km
4: 3.0 mS/m to 32.20 km
1979 Proof radial reanalyzed. Data included with this report.


STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 188.5 E
POWER: 5.0 kW ND
610 mV/m at 1 km
EXHIBIT 12K
NET CONDUCTIVITIES:
1: 2.0 mS/m to 0.95 km
2: 3.0 mS/m to 1.42 km
3: 4.0 mS/m to 19.06 km
4: 3.0 mS/m to 28.52 km
5: 2.0 mS/m to 31.88 km


STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 232.0 E
POWER: 5.0 kW ND
650 mV/m at 1 km
EXHIBIT 12M
NET CONDUCTIVITIES:
1: 2.0 mS/m to 1.18 km
2: 3.0 mS/m to 5.76 km
3: 4.0 mS/m to 8.47 km
4: 3.0 mS/m to 14.49 km
5: 2.0 mS/m to 24.02 km
6: 3.0 mS/m to 27.13 km


STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 265.0 E
POWER: 5.0 kW ND
650 mV/m at 1 km
EXHIBIT 120
NET CONDUCTIVITIES:
1: 3.0 mS/m to 2.90 km
2: 5.0 mS/m to 9.37 km


STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 289.0 E
POWER: 5.0 kW ND
690 mV/m at 1 km
EXHIBIT 12Q
NET CONDUCTIVITIES:
1: 10.0 mS/m to 1.15 km
2: 6.0 mS/m to 2.55 km
3: 7.0 mS/m to 3.60 km
4: 8.0 mS/m to 5.09 km
5: 7.0 mS/m to 6.31 km
6: 6.0 mS/m to 8.23 km


STATION: WRBD
FREQUENCY: 1470 kHz
AZIMUTH: N 330.0 E
POWER: 5.0 kW ND
850 mV/m at 1 km
EXHIBIT 12S
NET CONDUCTIVITIES:
1: 4.0 mS/m to 1.43 km
2: 5.0 mS/m to 4.60 km
3: 6.0 mS/m to 7.21 km
4: 5.0 mS/m to 13.75 km

MEASUREMENT DATA WWNN 1.4 KW ND 170 DEGREES

	WHSR		
	980	170 DEGREE	
	56	1	
	ND		
1	0.64	535	1979 WWNN Proof.
2	0.68	490	Dates and times
3	0.72	518	from original
4	0.76	495	documents attached.
5	0.8	510	
6	0.88	350	
7	0.97	400	
8	1.1	208	
9	1.13	370	
10	1.27	325	
11	1.4	225	
12	1.45	150	
13	1.53	140	
14	1.61	251	
15	1.7	230	
16	1.77	235	
17	1.93	160	
18	2.09	50	
19	2.21	155	
20	2.41	120	
21	2.49	130	
22	2.57	185	
23	2.7	162	
24	2.9	135	
25	2.96	175	
26	3.04	145	
27	3.17	110	
28	3.62	97	
29	4.1	82	
30	4.4	78	
31	4.83	45	
32	5.15	48	
33	5.63	42.5	
34	5.95	74	
35	6.37	23.3	
36	6.8	36	
37	7.43	25	
38	7.66	25	
39	8.09	29	
40	8.85	23	
41	9.73	17	
42	11.1	13	
43	12.86	7.7	

WWNN 170 Degree tabulation continued.

44	14.5	8.2
45	15.3	6.2
46	16.5	4.7
47	17.6	4.4
48	19.3	2.8
49	20.8	2.2
50	22.3	0.71
51	24.1	1.1
52	25.7	2.2
53	27.4	0.88
54	28.9	0.23
55	31.1	1.4
56	32.2	0.6

RADIO STATION WRBD
POMPANO BEACH, FLORIDA
ANTENNA PROOF OF PERFORMANCE 1979
FIELD INTENSITY MEASUREMENTS ALONG RADIAL N170°E

Point No.	Distance Miles	1.4 kW ND Date	Time	mV/m
1	.400	11/10/78	1022	535
2	.425	11/10/78	1019	490
3	.450	11/10/78	1015	518
4	.475	11/10/78	1008	495
5	.500	11/10/78	1000	510
6	.550	11/10/78	0955	350
7	.600	11/09/78	1719	400
8	.650	11/09/78	1712	208
9	.700	11/09/78	1709	370
10	.790	11/09/78	1659	325
11	.870	11/09/78	1635	225
12	.900	11/09/78	1648	150
13	.950	11/09/78	1643	140
14	1.00	11/09/78	1635	251
15	1.050	11/09/78	1630	230
16	1.100	11/12/78	1525	235
17	1.200	11/12/78	1521	160
18	1.300	11/12/78	1517	50
19	1.375	11/12/78	1510	155
20	1.500	11/12/78	1505	120
21	1.550	11/12/78	1501	130
22	1.600	11/12/78	1455	185
23	1.680	11/12/78	1452	162
24	1.800	11/12/78	1447	135
25	1.840	11/12/78	1443	175
26	1.890	11/12/78	1438	145
27	1.970	11/12/78	1435	110

WWNN 1979 170 Degree original radial data from BR-3780-BL-14228.
Non-directional data reanalyzed and included above.

Figure 7

N170°E

Point No.	Distance Miles	1.4 kW ND Date	Time	mV/m	5 kW DA-D Date	Time	mV/m	Ratio(R)	Log R	2.5 kW DA-N Date	Time	mV/m	Ratio(R)	Log R
		1979												
28	2.250	4/11	1825	97	4/11	1824	44	.4536	-.3433	4/11	1823	30	.3093	-.5097
29	2.55	4/11	1819	82	4/11	1820	33	.4024	-.3958	4/11	1818	25	.3049	-.5159
30	2.73	4/11	1808	78	4/11	1809	34	.4359	-.3606	4/11	1807	23.5	.3013	-.5210
31	3.0	4/11	1750	45	4/11	1759	17	.3778	-.4228	4/11	1757	12.5	.2778	-.5563
32	3.2	4/11	1734	48.0	4/11	1744	18	.3750	-.4260	4/11	1742	11.5	.2396	-.6205
33	3.50	4/11	1731	42.5	4/11	1732	15.5	.3647	-.4381	4/11	1730	9.4	.2212	-.6553
34	3.70	4/11	1725	74	4/11	1726	30.5	.4122	-.3849	4/11	1724	19	.2568	-.5905
35	3.96	4/11	1716	23.3	4/11	1715	8.55	.3670	-.4354	4/11	1714	5.35	.2269	-.6390
36	4.22	4/11	1600	36	1/11	1600	14.5	.4028	-.3949	4/11	1705	7.6	.2111	-.6755
37	4.62	4/18	1250	25	4/18	1255	17	.6800	-.1675	4/18	1256	6.50	.2600	-.5850
		1978												
38	4.76	11/24	1215	25	1/11	1518	12	.4800	-.3188	4/11	1651	5.8	.2320	-.6345
39	5.03	11/24	1222	29	1/11	1509	13	.4483	-.3485	4/11	1643	6.6	.2276	-.6429
40	5.50	11/24	1234	23	1/11	1453	9.2	.4000	-.3979	4/11	1632	5.025	.2185	-.6606
41	6.05	11/24	1250	17	1/11	1438	7.4	.4353	-.3612	4/11	1625	4.0	.2353	-.6284
42	6.5	11/24	1305	13	1/11	1424	5.8	.4462	-.3505	4/11	1615	3.25	.2500	-.6021
		1979												
43	7.99	4/18	1232	7.7	4/18	1230	4.15	.5390	-.2684	4/18	1231	2.45	.3182	-.4973
		1978												
44	9.0	11/24	1403	8.2	1/11	1352	3.85	.4695	-.3284	4/11	1549	2.4	.2927	-.5336
45	9.503	11/24	1510	6.2	1/11	1327	3.1	.5000	-.3010	4/11	1544	1.6	.2581	-.5883
46	10.25	11/24	1550	4.7	1/11	1312	2.4	.5106	-.2919	4/11	15/32	1.275	.2713	-.5666
47	10.96	11/24	1605	4.4	1/11	1302	2.2	.5000	-.3010	4/11	1524	1.3	.2955	-.5295

Figure 7A

N170°E

Point No.	Distance Miles	1.4 kW ND			5 kW DA-D					2.5 kW DA-N				
		Date 1979	Time	mV/m	Date	Time	mV/m	Ratio(R)	Log R	Date	Time	mV/m	Ratio(R)	Log R
48	12.0	1/11	1249	2.8	1/11	1249	1.4	.5000	-.3010	4/11	1509	.73	.2607	-.5838
49	12.9	4/11	1453	2.2	4/11	1454	1.1	.5000	-.3010	4/11	1452	.59	.2682	-.5716
50	13.85	4/11	1432	.71	4/11	1431	.325	.4577	-.3394	4/11	1430	.23	.3239	-.4895
51	15.0	4/11	1411	1.1	4/11	1412	.505	.4591	-.3381	4/11	1410	.345	.3136	-.5036
52	16.0	1/11	1035	2.2	1/11	1053	1.0	.4545	-.3424	4/11	1345	.69	.3136	-.5036
53	17.0	1/11	1033	.88	1/11	1033	.45	.5114	-.2913	4/11	1330	.305	.3466	-.4602
54	17.95	4/18	1131	.23	4/18	1130	.09	.3913	-.4075	4/18	1132	.07	.3043	-.5166
55	19.3	4/11	1210	1.4	4/11	1212	.625	.4464	-.3502	4/11	1208	.42	.3000	-.5229
56	20.0	4/18	1114	.60	4/18	1113	.275	.4583	-.3388	4/11	1136	.21	.3500	-.4559

Figure 7B

MEASURED CONDUCTIVITY TABLE

WHSR

Source	Radial	Cond	Dis(km)	Cond	Dis(km)	Cond	Dis(km)	Cond	Dis(km)	Cond	Dis(km)	Cond	Dis(km)	Cond	Dis(km)
BL20050203AEN	40	5.0M	0.9	4.0M	1.6	5.0M	2.6	10.0M	15	8.0M	18				
	90	6.0M	1.3	8.0M	2	20.0M	3.4	10.0M	10	8.0M	17				
	140	7.0M	0.9	5.0M	1.2	8.0M	2.8	7.0M	7.5	6.0M	18				
	226.5	5.0M	0.9	7.0M	1.3	8.0M	2.0	10.0M	3.4	30.0M	6	20.0M	12.0	30.0M	18
	270	7.0M	0.9	3.0M	1.3	5.0M	2.0	7.0M	3.3	10.0M	6	20.0M	9.0	40.0M	18
	314	30.0M	0.9	20.0M	1.2	10.0M	1.9	6.0M	3.8	7.0M	7	10.0M	11.0	15.0M	18
	359.5	15.0M	0.9	4.0M	1.3	5.0M	2.0	10.0M	3.2	15.0M	6	10.0M	11.0	15.0M	18
BP-970314AH	40	20.0M	1.6	15.0M	7.8	10.0M	19.7	7.0M	24.9						
	90	10.0M	1.0	7.0M	1.5	10.0M	2.6	7.0M	5.5	15.0M	12	8.0M	19.1		
	140	15.0M	1.1	8.0M	3.0	7.0M	8.9	8.0M	15.2	7.0M	26				
	210	8.0M	1.5	20.0M	1.8	15.00M	3.2	30.0M	25.0						
	226	30.0M	1.8	20.0M	2.9	30.0M	24.8								
	270	6.0M	1.5	8.0M	2.4	10.0M	3.3	30.0	28.4						
	314	30.0M	1.9	6.0M	3.1	8.0M	7.7	15.0M	13.7	20.0M	19				
	330	30.0M	2.4	20.0M	9.7	30.0M	25.8								

WHSR Licensed site conductivities used and approved in WMYM grant of BP-201404AFR.
Yellow highlighted radials used for WHSR application overlap analysis to WMYM.

Measured Ground Conductivity Data

WURN 1020 kHz Kendall, FL

WMYM measured conductivities at former WURN 1020 kHz site (now WMYM 990 kHz site). These data were used in WMYM application BP-20150706ACS.

Originals included herein from WURN (now WLVJ) 1020 application BP-201408AFR.

Radial	Source
25°	NEW
45°	NEW
65°	NEW
85°	NEW
115°	BL-20010406ABC
143°	BL-20010406ABC
174.5°	BL-20010406ABC
180.5°	BL-20010406ABC
235°	BL-20010406ABC
252.5°	BL-20010406ABC
283.5°	BL-20010406ABC
300°	BL-20010406ABC
345.5°	BL-20010406ABC
354°	BL-20010406ABC

WURN FIELD MEASUREMENTS 1020 AM 25°

25 DEGREE RADIAL	COORDINATES	1020 KHz LEVEL	FULL SCALE	1040 KHz LEVEL	FULL SCALE
1 KM	LAT: 25° 38 ' 08" N LONG: 80° 30' 59" W	0.39 V	1V		
2 KM	LAT: 25° 38 ' 41" N LONG: 80° 30' 43" W	0.2 V	1V		
3 KM	LAT: 25° 39 ' 13" N LONG: 80° 30' 26" W	0.95 V	1V		
4 KM	NO ACCESS				
5 KM	LAT: 25° 40 ' 17" N LONG: 80° 29' 53" W	72 mV	100 mV	0.4 mV	10 mV
6 KM	NO ACCESS				
7 KM	LAT: 25° 41 ' 21" N LONG: 80° 29' 20" W	69 mV	100 mV	0.7 mV	1 mV
8 KM	NO ACCESS				
9 KM	LAT: 25° 42 ' 26" N LONG: 80° 28' 46" W	23 mV	100 mV	0.8 mV	1 mV
10 KM	NO ACCESS				
11 KM	NO ACCESS				
12 KM	NO ACCESS				
13 KM	NO ACCESS				
14 KM	NO ACCESS				
15 KM	LAT: 25° 45 ' 39" N LONG: 80° 27' 6" W	20 mV	100 mV	1.55 mV	10 mV
16 KM	NO ACCESS				
17 KM	NO ACCESS				
18 KM	NO ACCESS				
19 KM	LAT: 25° 47' 47.92" N LONG: 80° 59.31" W	3 mV	100 mV	0.95 mV	10 mV
20 KM	NO ACCESS				
21 KM	NO ACCESS				
22 KM	NO ACCESS				
23 KM	NO ACCESS				
24 KM	NO ACCESS				
25 KM	NO ACCESS				
26 KM	NO ACCESS				
27 KM	NO ACCESS				

WURN FIELD MEASUREMENTS 1020 AM 45°

45 DEGREE RADIAL	COORDINATES	1020 KHz LEVEL	FULL SCALE	1040 KHz LEVEL	FULL SCALE
1 KM	LAT: 25° 38 ' 06" N LONG: 80° 30' 43" W	0.4 V	1V		
2 KM	LAT: 25° 38 ' 22" N LONG: 80° 30' 22" W	0.25 V	1V		
3 KM	NO ACCESS				
4 KM	NO ACCESS				
5 KM	LAT: 25° 39 ' 38" N LONG: 80° 28' 49" W	0.2 V	1 V		
6 KM	NO ACCESS				
7 KM	NO ACCESS				
8 KM	LAT: 25° 40' 49" N LONG: 80° 27' 39"W	100 mV	100 mV	0.2 mV	10 mV
9 KM	LAT: 25° 41' 13" N LONG: 80° 27' 14" W	90 mV	100 mV	1 mV	1 mV
10 KM	LAT: 25° 41' 39" N LONG: 80° 26' 46" W	85 mV	100 mV	0.2 mV	10 mV
11 KM	LAT: 25° 42' 02" N LONG: 80° 26' 19" W	70 mV	100 mV	0.5 mV	10 mV
12 KM	LAT: 25° 42' 22" N LONG: 80° 25' 57" W	60 mV	100 mV	0.15 mV	10 mV
13 KM	LAT: 25° 42' 50" N LONG: 80° 25' 26" W	62 mV	100 mV	0.6 mV	10 mV
14 KM	LAT: 25° 43' 14" N LONG: 80° 24' 58" W	50 mV	100 mV	0.4 mV	10 mV
15 KM	LAT: 25° 43' 44" N LONG: 80° 24' 29" W	39 mV	100 mV	1.0 mV	10 mV
16 KM	LAT: 25° 44' 04" N LONG: 80° 24' 06" W	30 mV	100 mV	0.7 mV	10 mV
17 KM	LAT: 25° 44' 27" N LONG: 80° 23' 38" W	37 mV	100 mV	0.65 mV	10 mV
18 KM	LAT: 25° 44' 50" N LONG: 80° 23' 11" W	37 mV	100 mV	1 mV	10 mV
19 KM	NO ACCESS				
20 KM	LAT: 25° 45' 42" N LONG: 80° 22' 14" W	21.5 mV	100 mV	1.8 mV	10 mV
21 KM	LAT: 25° 46' 05" N LONG: 80° 21' 48" W	22 mV	100 mV	1.05 mV	10 mV
22 KM	LAT: 25° 46' 21" N LONG: 80° 21' 32" W	25.5 mV	100 mV	1.05 mV	10 mV
23 KM	LAT: 25° 46' 59" N LONG: 80° 20' 48" W	18 mV	100 mV	1.8 mV	10 mV
24 KM	LAT: 25° 47' 18" N LONG: 80° 20' 27" W	13 mV	100 mV	0.75 mV	10 mV
25 KM	LAT: 25° 47' 43" N LONG: 80° 20' 03" W	10.5 mV	100 mV	2 mV	10 mV
26 KM	LAT: 25° 48' 09" N LONG: 80° 19' 38" W	0.95 mV	100 mV	0.6 mV	10 mV
27 KM	LAT: 25° 48' 30" N LONG: 80° 19' 06" W	12 mV	100 mV	1.95 mV	10 mV

WURN FIELD MEASUREMENTS 1020 AM 65°

65 DEGREE RADIAL	COORDINATES	1020 KHz LEVEL	FULL SCALE	1040 KHz LEVEL	FULL SCALE
1 KM	LAT: 25° 37' 48" N LONG: 80° 30' 42" W	0.6 V	10 V		
2 KM	NO ACCESS				
3 KM	LAT: 25° 38' 15" N LONG: 80° 29' 40" W	0.25 V	1 V		
4 KM	LAT: 25° 38' 40" N LONG: 80° 28' 48" W	0.29 V	1 V		
5 KM	NO ACCESS				
6 KM	NO ACCESS				
7 KM	NO ACCESS				
8 KM	LAT: 25° 39' 31" N LONG: 80° 26' 40"W	0.14 V	1 V	1 mV	1 mV
9 KM	LAT: 25° 39' 40" N LONG: 80° 26' 20" W	0.125 V	1 V	0.85 Mv	1 mV
10 KM	LAT: 25° 39' 55" N LONG: 80° 25' 44" W	0.05 V	1 V		
11 KM	LAT: 25° 40' 08" N LONG: 80° 25' 10" W	100 mV	100 mV		
12 KM	LAT: 25° 40' 22" N LONG: 80° 24' 36" W	99 mV	100 mV	0.02 mV	10 mV
13 KM	LAT: 25° 40' 36" N LONG: 80° 24' 03" W	80 mV	100 mV	0.025 mV	10 mV
14 KM	LAT: 25° 40' 51" N LONG: 80° 23' 29" W	74 mV	100 mV	0.04 mV	10 mV
15 KM	NO ACCESS				
16 KM	LAT: 25° 41' 21" N LONG: 80° 22' 26" W	64 mV	100 mV	0.02 mV	10 mV
17 KM	NO ACCESS				
18 KM	LAT: 25° 41' 46" N LONG: 80° 21' 18" W	46 mV	100 mV	1 mV	1 mV
19 KM	LAT: 25° 41' 58" N LONG: 80° 20' 44" W	25 mV	100 mV	1 mV	1 mV
20 KM	NO ACCESS				
21 KM	LAT: 25° 42' 32" N LONG: 80° 19' 34" W	24 mV	100 mV	0.8 mV	1 mV
22 KM	LAT: 25° 42' 37" N LONG: 80° 19' 01" W	32 mV	100 mV	0.1 mV	10 mV
23 KM	LAT: 25° 42' 55" N LONG: 80° 18' 30" W	24 mV	100 mV	0.03 mV	10 mV
24 KM	LAT: 25° 43' 10" N LONG: 80° 17' 59" W	22 mV	100 mV	0.75 mV	1 mV
25 KM	LAT: 25° 43' 25" N LONG: 80° 17' 23" W	16 mV	100 mV	0.85 mV	1 mV
26 KM	LAT: 25° 43' 38" N LONG: 80° 16' 50" W	8 mV	100 mV	1 mV	1 mV
27 KM	LAT: 25° 43' 53" N LONG: 80° 16' 16" W	11 mV	100 mV	0.4 mV	10 mV

WURN FIELD MEASUREMENTS 1020 AM 85°

85 DEGREE RADIAL	COORDINATES	1020 KHz LEVEL	FULL SCALE	1040 KHz LEVEL	FULL SCALE
1 KM	LAT: 25° 37' 40" N LONG: 80° 30' 42" W	0.7 V	10 V		
2 KM	NO ACCESS				
3 KM	LAT: 25° 37' 45" N LONG: 80° 29' 30" W	0.5 V	1 V		
4 KM	LAT: 25° 37' 70" N LONG: 80° 28' 53" W	0.24 V	1 V		
5 KM	NO ACCESS				
6 KM	NO ACCESS				
7 KM	LAT: 25° 37' 55" N LONG: 80° 27' 04"W	0.24 V	1 V	0.7 mV	1 mV
8 KM	LAT: 25° 37' 53" N LONG: 80° 26' 23"W	0.12 V	1 V	0.75 mV	1 mV
9 KM	LAT: 25° 38' 01" N LONG: 80° 25' 52" W	0.12 V	1 V	0.95 mV	1 mV
10 KM	LAT: 25° 38' 00" N LONG: 80° 25' 16" W	100 mV	100 mV	0.80 mV	1 mV
11 KM	LAT: 25° 38' 14" N LONG: 80° 23' 55" W	0.18 mV	1 V	0.45 mV	1 mV
12 KM	LAT: 25° 38' 14" N LONG: 80° 22' 51" W	76 mV	100 mV	0.02 mV	10 mV
13 KM	LAT: 25° 38' 18" N LONG: 80° 22' 16" W	90 mV	100 mV	1 mV	1 mV
14 KM	LAT: 25° 38' 21" N LONG: 80° 21' 41" W	72 mV	100 mV	1 mV	1 mV
15 KM	LAT: 25° 38' 27" N LONG: 80° 20' 30" W	62 mV	100 mV	noise	
16 KM	LAT: 25° 38' 30" N LONG: 80° 19' 46" W	58 mV	100 mV	1 mV	1 mV
17 KM	LAT: 25° 38' 33" N LONG: 80° 19' 16" W	54 mV	100 mV	0.62 mV	1 mV
18 KM	LAT: 25° 38' 35" N LONG: 80° 18' 41" W	40 mV	100 mV	0.65 mV	1 mV
19 KM	LAT: 25° 38' 35" N LONG: 80° 18' 05" W	26 mV	100 mV	0.3 mV	1 mV
20 KM	LAT: 25° 38' 40" N LONG: 80° 17' 25" W	35 mV	100 mV	0.7 mV	1 mV

Last measured point: SW Guadalajara St. 62 Avenue

28 KM	NO ACCESS				
29 KM	NO ACCESS				
30 KM	LAT: 25° 53 ' 41" N LONG: 80° 22' 56" W	3.8 mV	10 mV	0.8 mV	10 mV
31 KM	LAT: 25° 54 ' 08" N LONG: 80° 22' 40" W	3.2 mV	10 mV	2.05 mV	10 mV
32 KM	NO ACCESS				
33 KM	NO ACCESS				
34 KM	NO ACCESS				
35 KM	LAT: 25° 56 ' 36" N LONG: 80° 21' 27" W	2.5 mV	10 mV	3.25 mV	10 mV
36 KM	NO ACCESS				
37 KM	NO ACCESS				
38 KM	LAT: 25° 57 ' 55" N LONG: 80° 20' 42" W	1.25 mV	10 mV	3.5 mV	10 mV
39 KM	LAT: 25° 59 ' 02" N LONG: 80° 20' 05" W	0.5 mV	10 mV	3.7 mV	10 mV
40 KM	LAT: 25° 59 ' 36" N LONG: 80° 20' 03" W	0.2 mV	10 mV	4.0 mV	10 mV
41 KM	LAT: 26° 00' 28" N LONG: 80° 19' 28" W	0.5 mV	1 mV	3.8 mV	10 mV
42 KM	LAT: 26° 00' 45" N LONG: 80° 19' 20" W	0.8 mV	1 mV	4.2 mV	10 mV
43 KM	NO ACCESS				
44 KM	LAT: 26° 01' 22" N LONG: 80° 18' 56" W	0.2 mV	10 mV	4.25 mV	10 mV
45 KM	LAT: 26° 01' 45" N LONG: 80° 18' 40" W	0.2 mV	10 mV	5.0 mV	10 mV
46 KM	NO ACCESS				
47 KM	LAT: 26° 02' 49" N LONG: 80° 18' 10" W	0.6 mV	1 mV	4.85 mV	10 mV
48 KM	NO ACCESS				
49 KM	LAT: 26° 03' 52" N LONG: 80° 17' 39" W	0.7 mV	1 mV	7.6 mV	10 mV
50 KM	NO ACCESS				
51 KM	NO ACCESS				
52 KM	NO ACCESS				
53 KM	LAT: 26° 05' 07" N LONG: 80° 17' 00" W	0.5 mV	1 mV	8 mV	10 mV

28 KM	LAT: 25° 48' 55" N LONG: 80° 18' 36" W	12 mV	100 mV	0.65 mV	10 mV
29 KM	LAT: 25° 49' 21" N LONG: 80° 18' 09" W	5 mV	100 mV	2.2 mV	10 mV
30 KM	NO ACCESS				
31 KM	LAT: 25° 50 ' 09" N LONG: 80° 19' 15" W	9 mV	10 mV	1.5 mV	10 mV
32 KM	LAT: 25° 50 ' 03" N LONG: 80° 16' 56" W	10 mV	10 mV	0.8 mV	10 mV
33 KM	LAT: 25° 50 ' 58" N LONG: 80° 16' 23" W	10 mV	10 mV	2.2 mV	10 mV
34 KM	LAT: 25° 51 ' 22" N LONG: 80° 15' 56" W	8 mV	10 mV	2.25 mV	10 mV
35 KM	LAT: 25° 51' 44" N LONG: 80° 15' 28" W	7 mV	10 mV	1.4 mV	10 mV
36 KM	LAT: 25° 52 ' 11" N LONG: 80° 15' 00" W	7 mV	10 mV	1.82 mV	10 mV
37 KM	LAT: 25° 52' 38" N LONG: 80° 14' 30" W	6 mV	10 mV	1.0 mV	10 mV
38 KM	LAT: 25° 52' 58" N LONG: 80° 14' 03" W	5 mV	10 mV	1.45 mV	10 mV
39 KM	LAT: 25° 53 ' 22" N LONG: 80° 13' 36" W	6 mV	10 mV	1.6 mV	10 mV
40 KM	LAT: 25° 53' 49" N LONG: 80° 13' 11" W	4.8 mV	10 mV	1.95 mV	10 mV
41 KM	LAT: 25° 54' 14" N LONG: 80° 12' 41" W	3.4 mV	10 mV	1.0 mV	10 mV
42 KM	LAT: 25° 54' 37" N LONG: 80° 12' 16" W	3.6 mV	10 mV	1.5 mV	10 mV
43 KM	LAT: 25° 54 ' 58" N LONG: 80° 11' 47" W	3.5 mV	10 mV	1.4 mV	10 mV
44 KM	NO ACCESS				
45 KM	NO ACCESS				
46 KM	LAT: 25° 56 ' 11" N LONG: 80° 10' 29" W	2.5 mV	10 mV	2.4 mV	10 mV
47 KM	NO ACCESS				
48 KM	NO ACCESS				
49 KM	NO ACCESS				
50 KM	LAT: 25° 57 ' 47" N LONG: 80° 08' 39" W	1.2 mV	10 mV	3.2 mV	10 mV

Last measured point: 203 St NE Biscayne Blvd.

28 KM	LAT: 25° 44' 07" N LONG: 80° 15' 42" W	8 mV	100 mV	0.7 mV	1 mV
29 KM	LAT: 25° 44' 19" N LONG: 80° 15' 10" W	9 mV	10 mV	1 mV	1 mV
30 KM	LAT: 25° 44' 32" N LONG: 80° 14' 37" W	0.5 mV	10 mV	0.8 mV	1 mV
31 KM	LAT: 25° 44 ' 48" N LONG: 80° 14' 02" W	7.5 mV	10 mV	0.75 mV	1 mV
32 KM	LAT: 25° 45 ' 04" N LONG: 80° 13' 26" W	7.8 mV	10 mV	0.3 mV	10 mV
33 KM	LAT: 25° 45' 16" N LONG: 80° 12' 54" W	8 mV	10 mV	0.6 mV	1 mV
34 KM	LAT: 25° 45' 29" N LONG: 80° 12' 23" W	6.0 mV	10 mV	0.9 mV	1 mV
35 KM	LAT: 25° 45 ' 45" N LONG: 80° 11' 50" W	3.0 mV	10 mV	0.27 mV	1 mV
36 KM	LAT: 25° 45' 55" N LONG: 80° 11' 24" W	0.8 mV	1 mV	0.4 mV	10 mV
37 KM	NO ACCESS				
38 KM	NO ACCESS				
39 KM	NO ACCESS				
40 KM	LAT: 25° 47' 07" N LONG: 80° 08' 27" W	5.2 mV	10 mV	2.75 mV	10 mV
41 KM	LAT: 25° 47' 20" N LONG: 80° 07' 56" W	2.8 mV	10 mV	0.65 mV	1 mV

Last measured point: Washington Ave. 16 St. Miami Beach

INSTRUMENT: POTOMAC FIM-21

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(1925-2011)

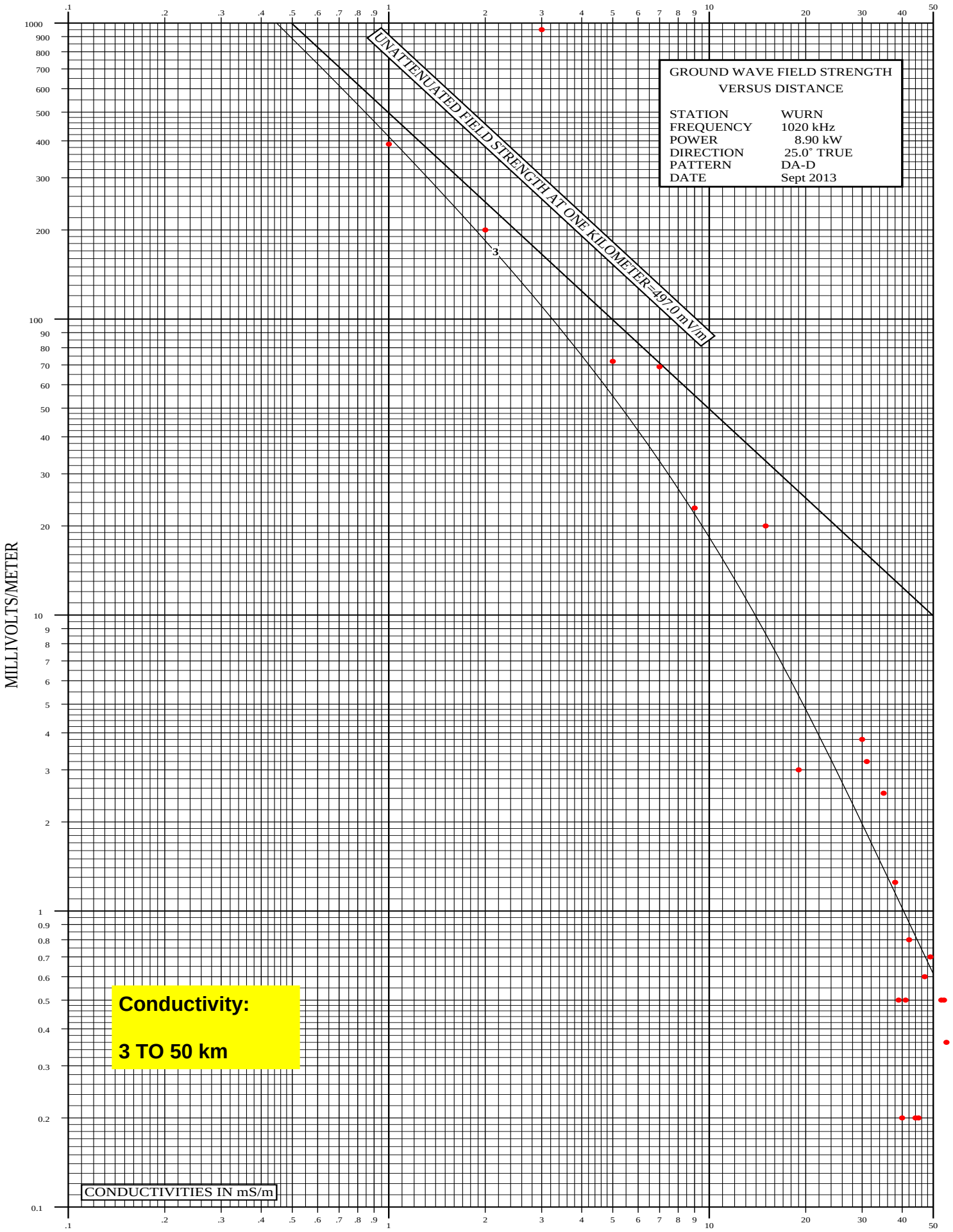
CALIBRATION CHECK CERTIFICATE

Readings of the Potomac Instruments FIM-21 sn. 1198 were checked against the readings of two identical instruments and found to agree within the instrument's rated accuracy subsequent to the field measurements contained in this report.

The reference meters were FIM-21s sn. 744, calibrated by the manufacturer on 7/23/2013 and sn. 558, calibrated by the manufacturer on 8/27/2013.

The field strength measurements of the WURN 25, 45, 65, and 85 degree radials were made by José Zerpa, an engineering employee of the licensee of WURN. Measurements were taken in the Autumn of 2013 on September 30 (25°), October 2 (45°), October 4 (65°) and October 8 (85°). The measurements were made strictly according to the requirements of §73.153 and §73.186 of the Commission's rules, employing topographic maps and GPS readings for establishment of distance and bearing, employing Potomac Instruments FIM-21 sn. 1198. Mr. Zerpa is an experienced and qualified engineer, with substantial experience in this type of measurement work.

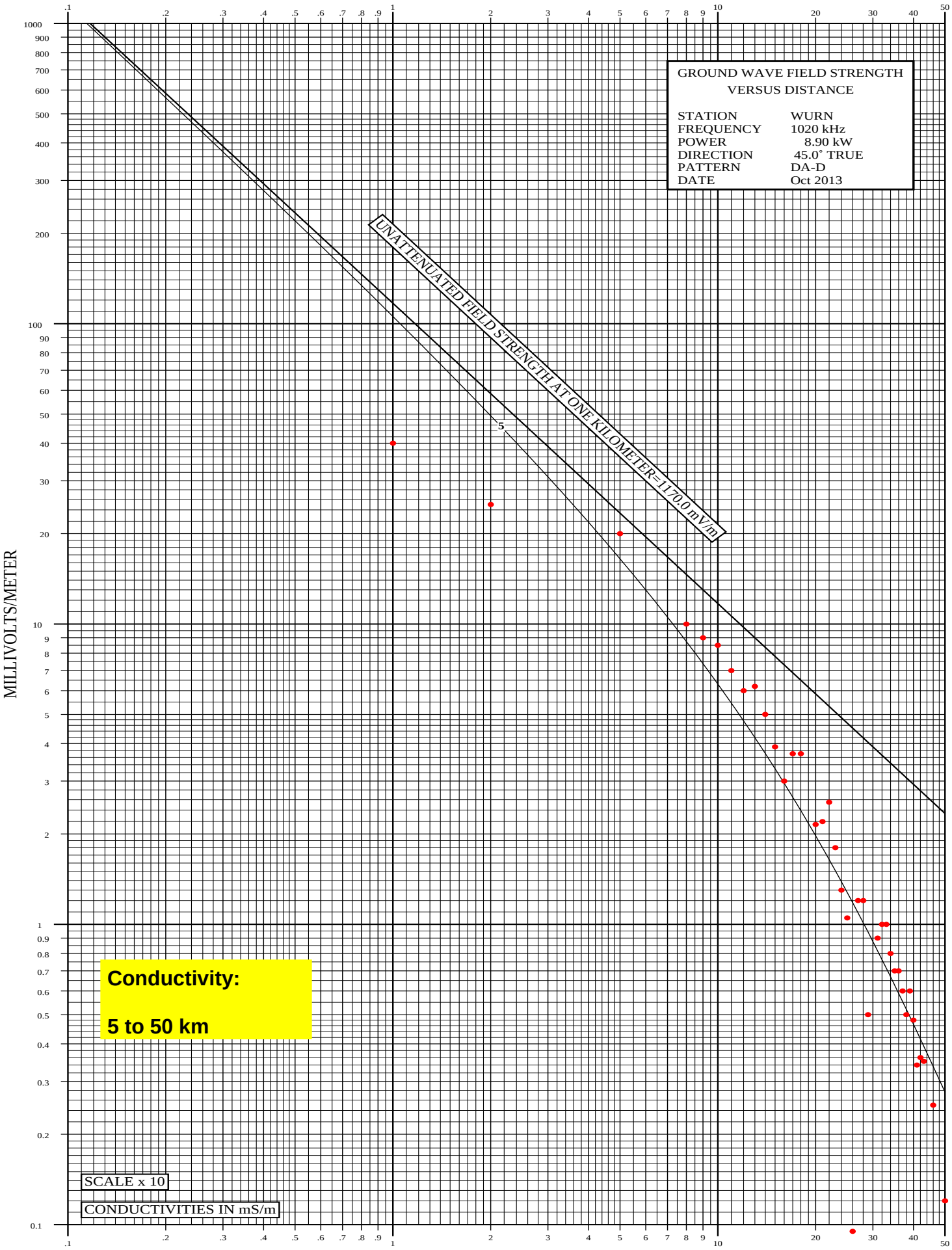
KILOMETERS FROM ANTENNA



KILOMETERS FROM ANTENNA

Hatfield & Dawson Consulting Engineers

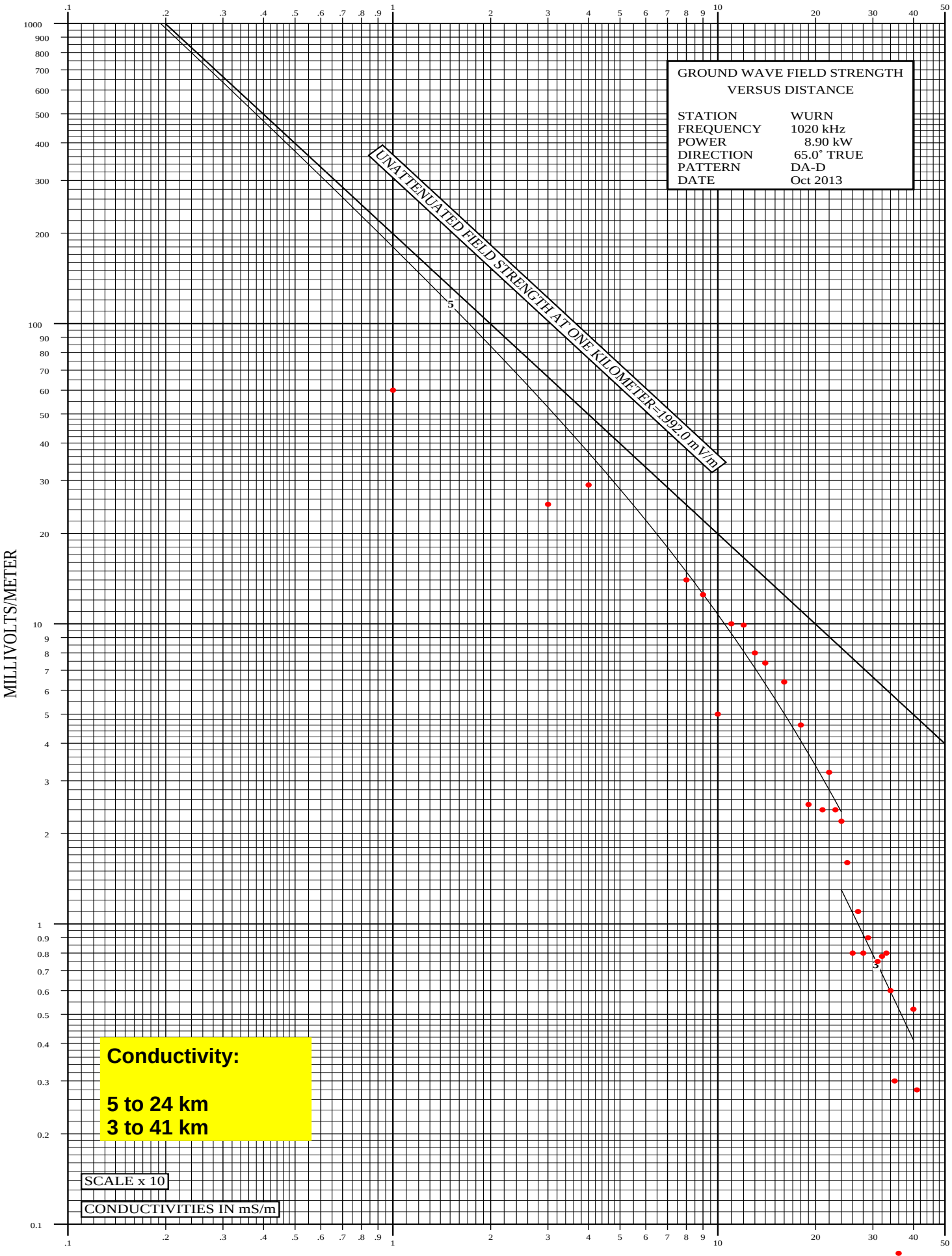
KILOMETERS FROM ANTENNA



KILOMETERS FROM ANTENNA

Hatfield & Dawson Consulting Engineers

KILOMETERS FROM ANTENNA



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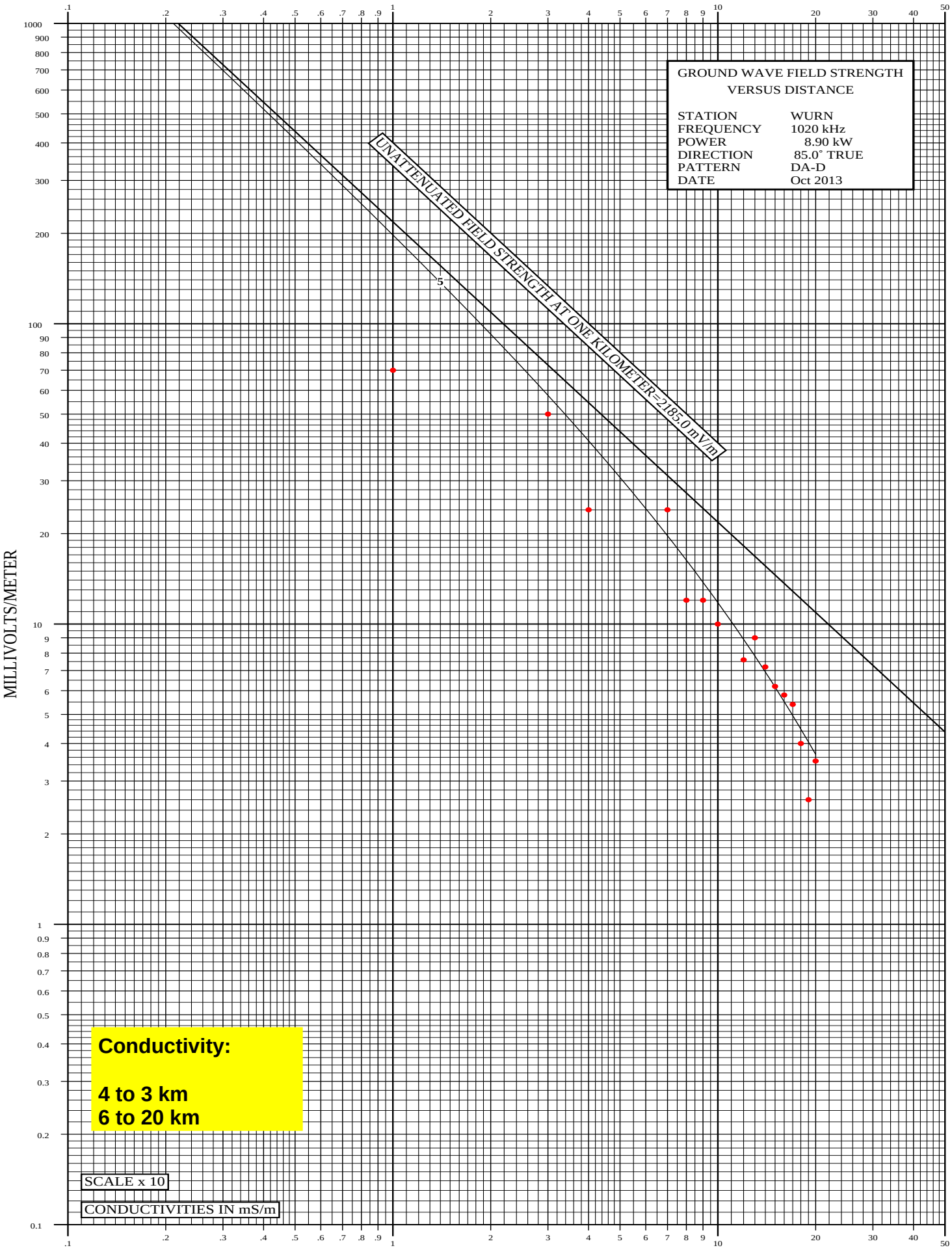
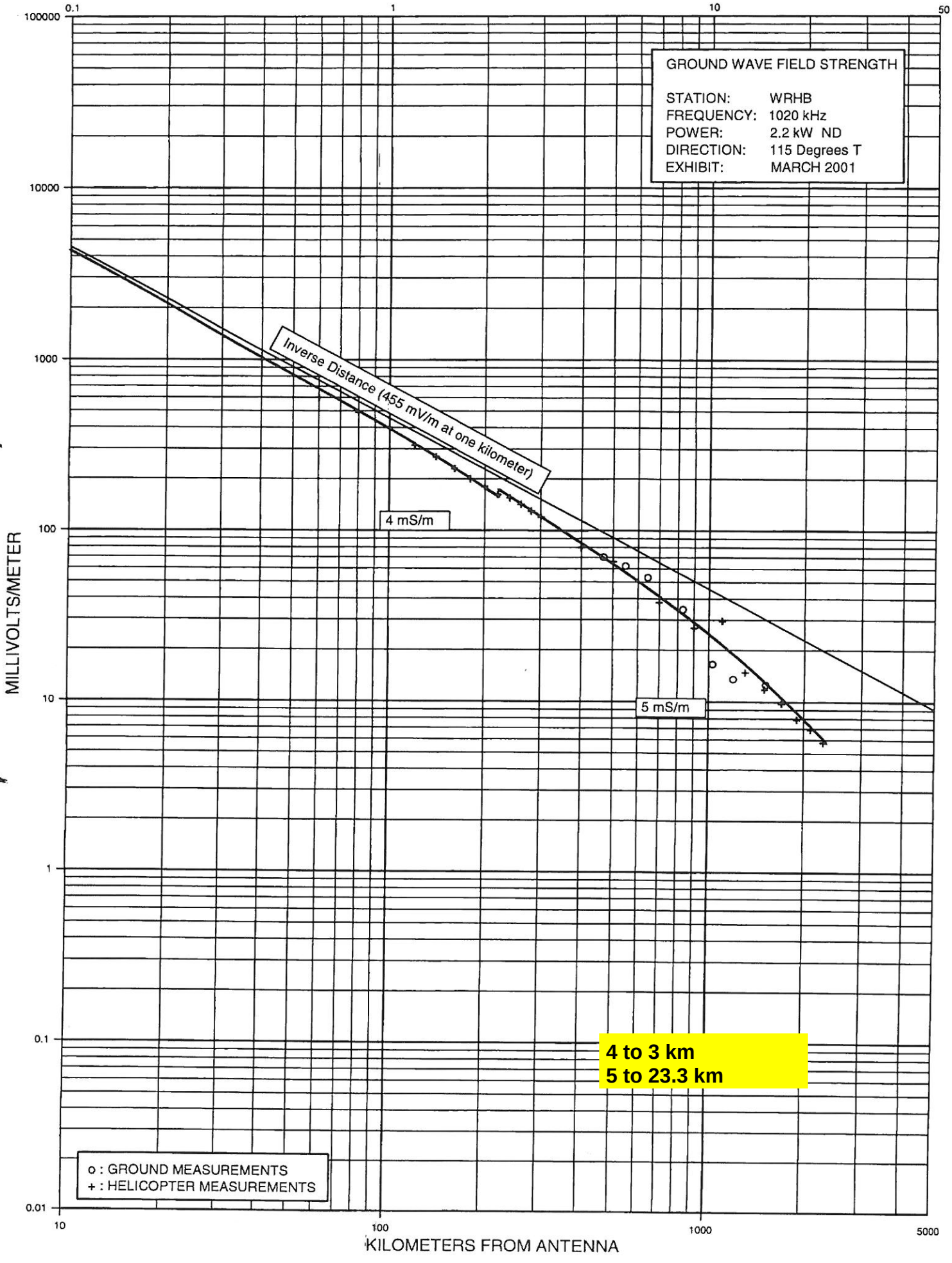


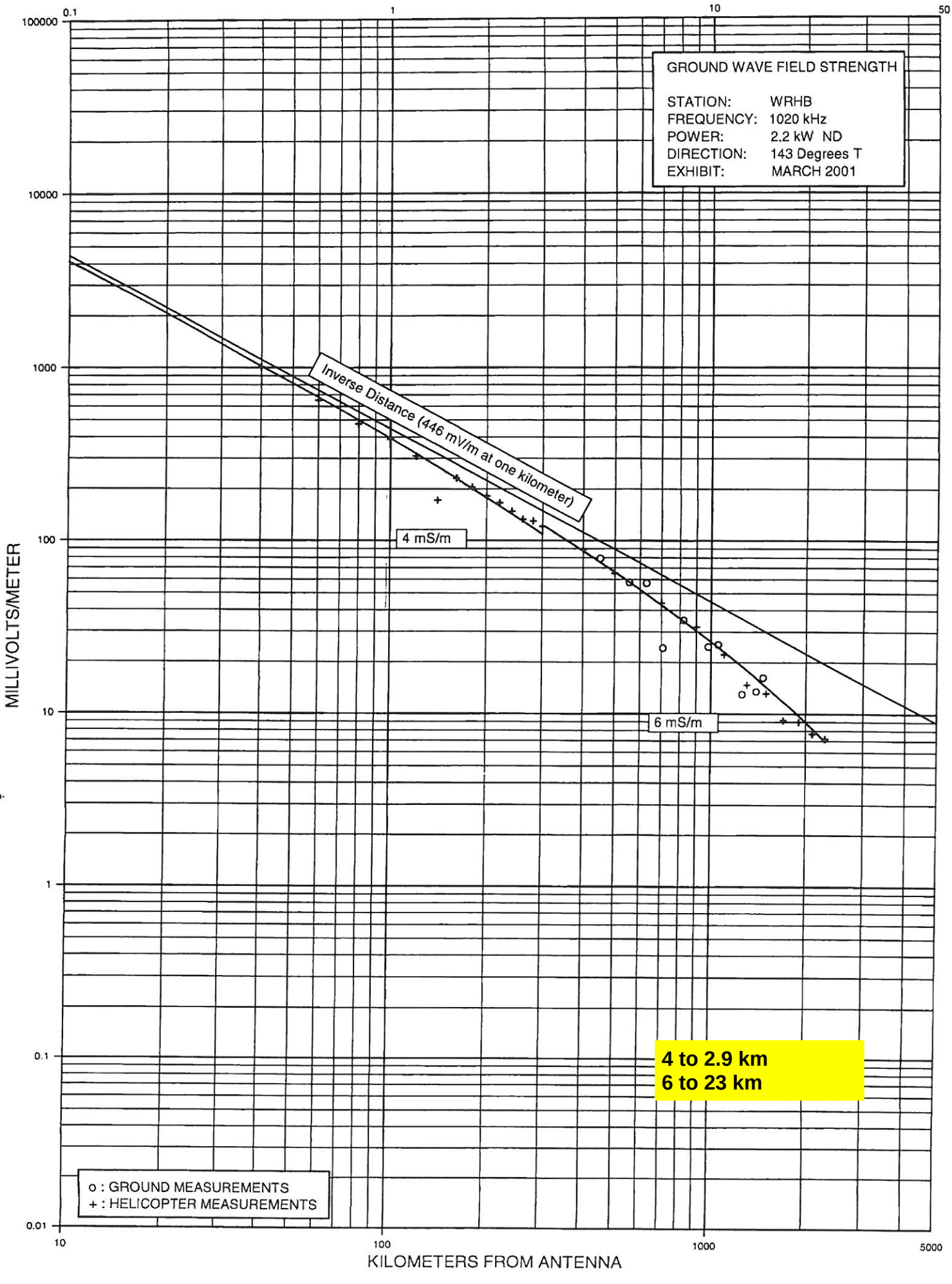
KILOMETERS FROM ANTENNA

Hatfield & Dawson Consulting Engineers

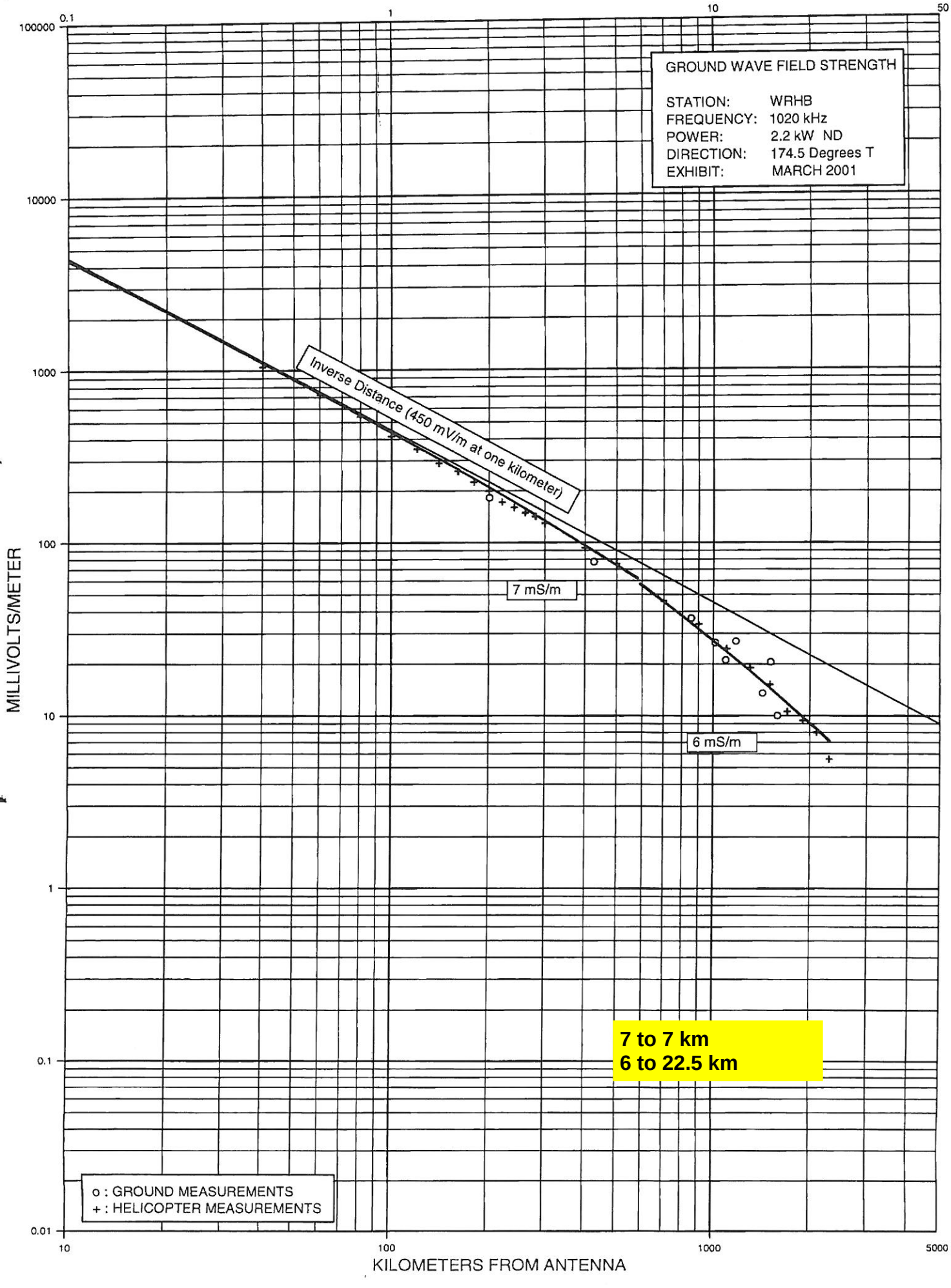
KILOMETERS FROM ANTENNA



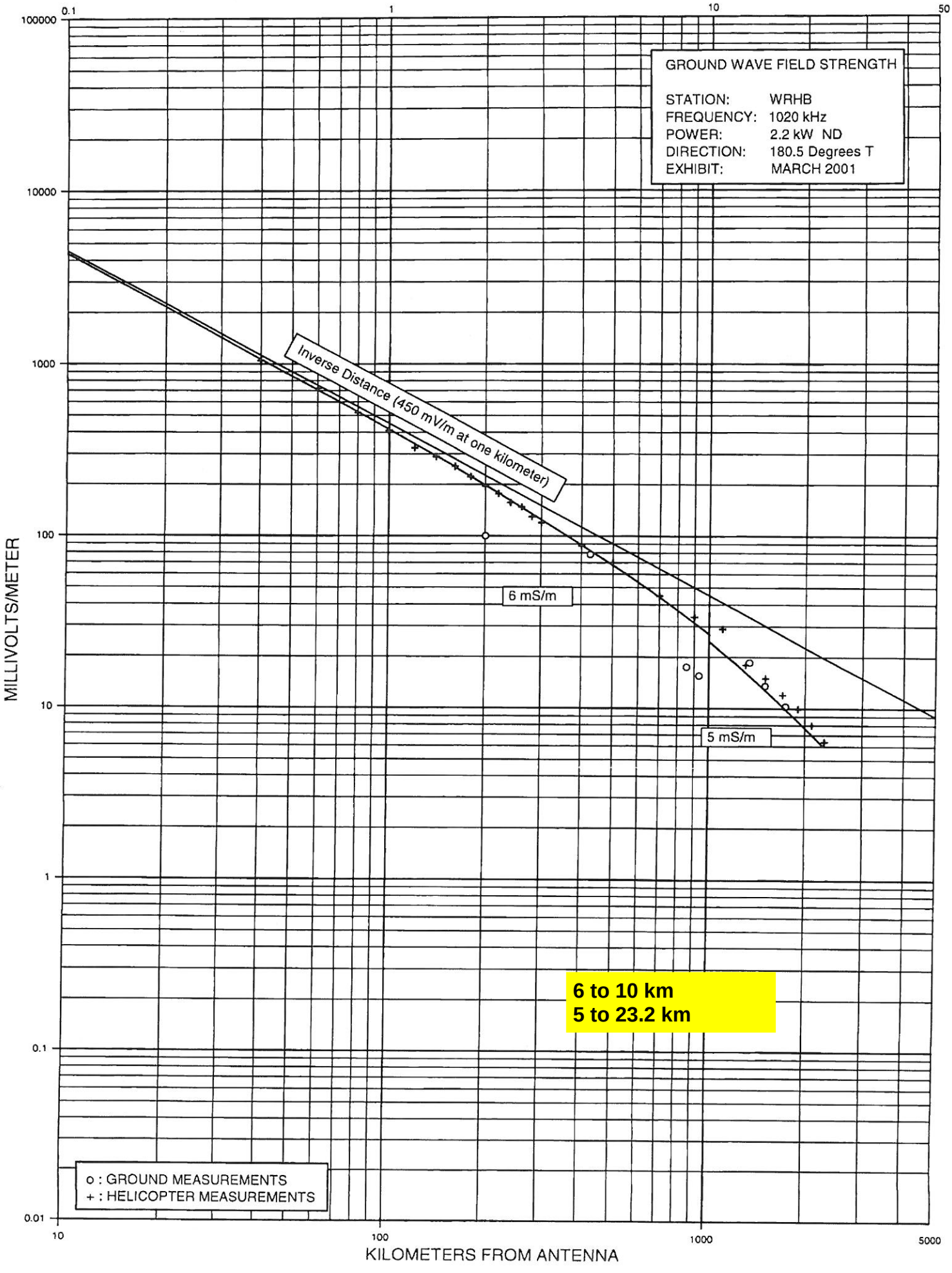
4 to 3 km
5 to 23.3 km


GROUND WAVE FIELD STRENGTH
STATION: WRHB
FREQUENCY: 1020 kHz
POWER: 2.2 kW ND
DIRECTION: 143 Degrees T
EXHIBIT: MARCH 2001
Inverse Distance (446 mV/m at one kilometer)
4 mS/m
6 mS/m
4 to 2.9 km
6 to 23 km
o : GROUND MEASUREMENTS
+ : HELICOPTER MEASUREMENTS
MILLIVOLTS/METER
KILOMETERS FROM ANTENNA
0.1
1
10
50
100000
10000
1000
100
10
1
0.1
0.01
10
100
1000
5000

KILOMETERS FROM ANTENNA

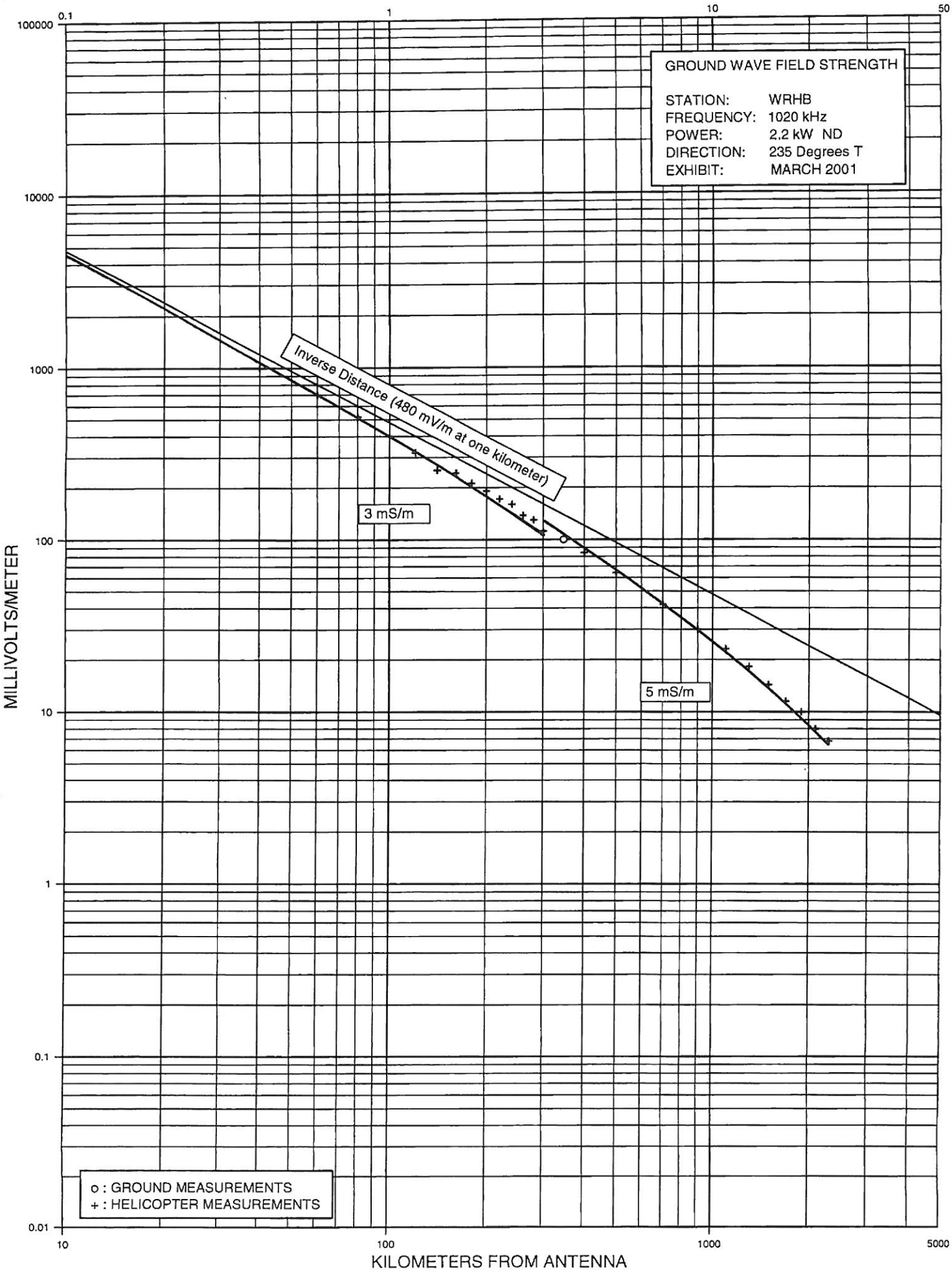


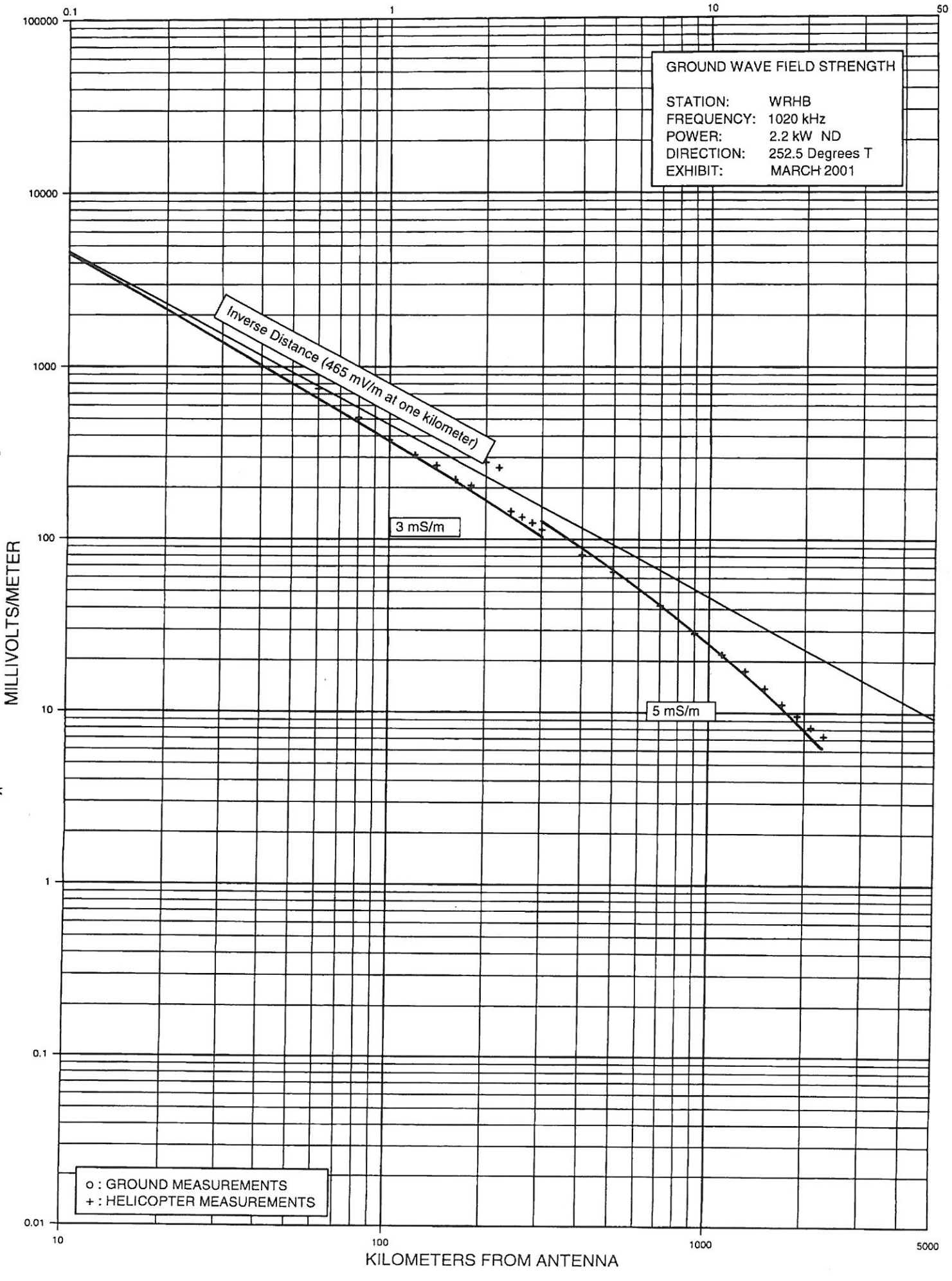
7 to 7 km
6 to 22.5 km

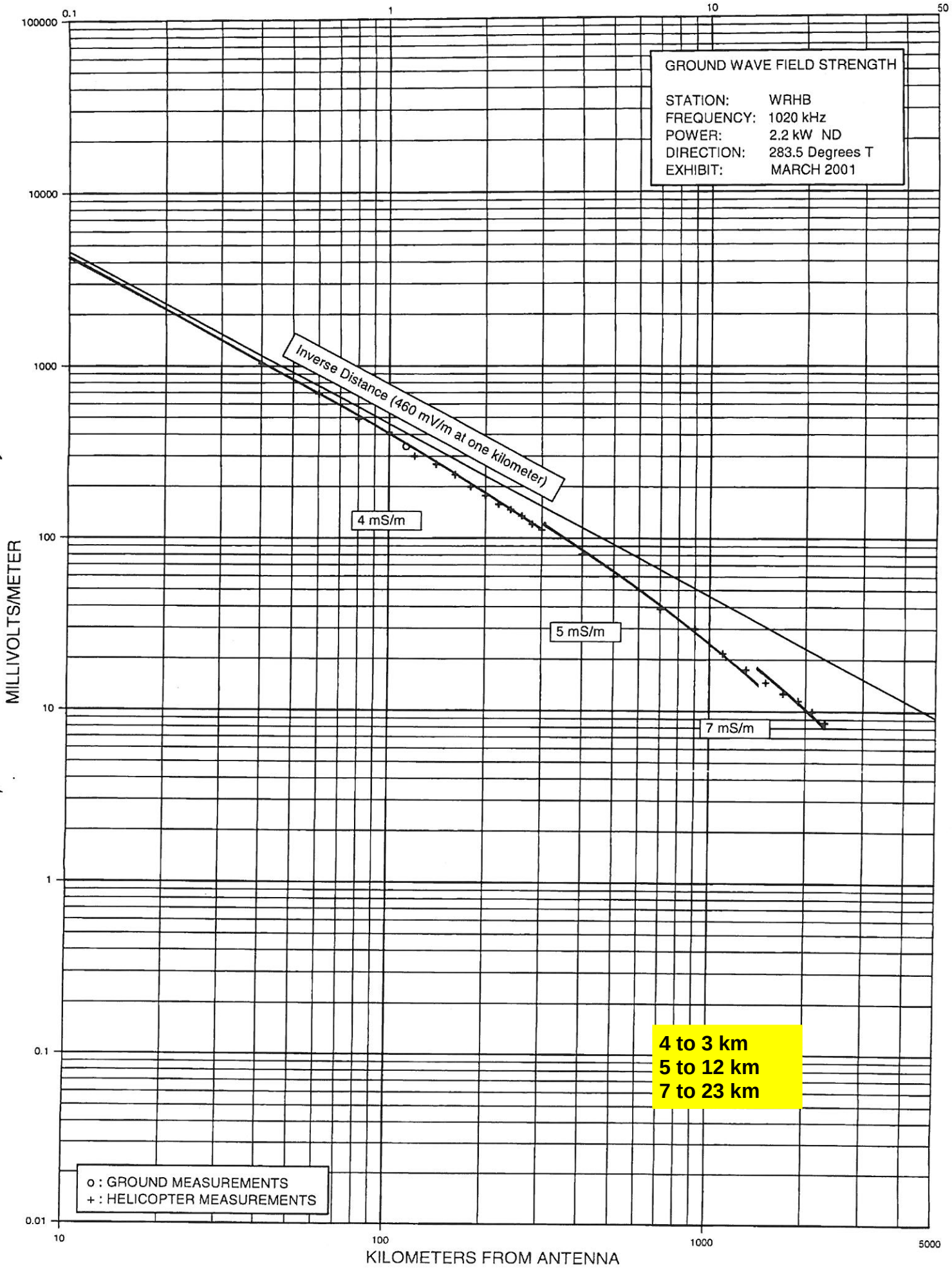


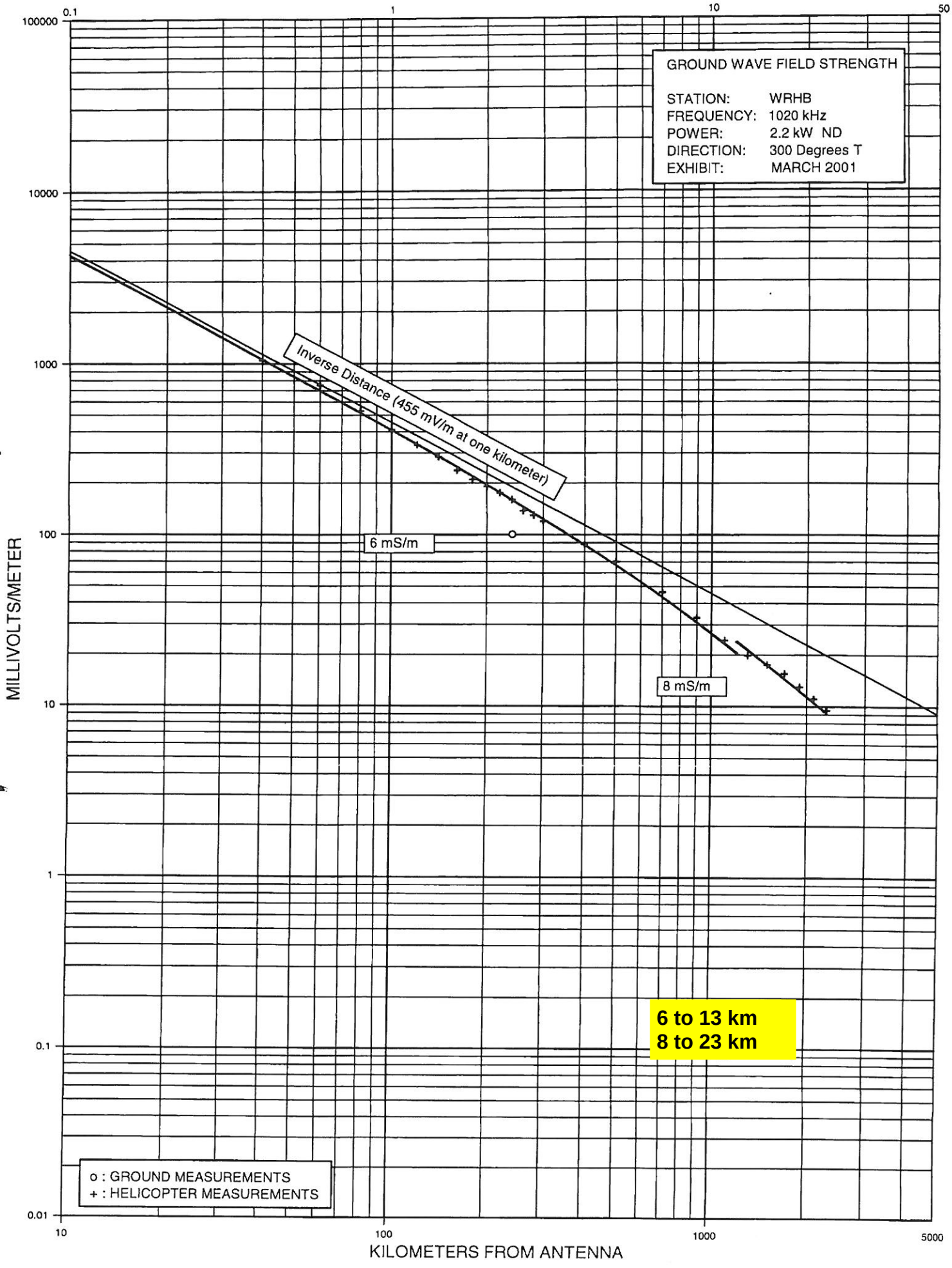
6 to 10 km
5 to 23.2 km

KILOMETERS FROM ANTENNA

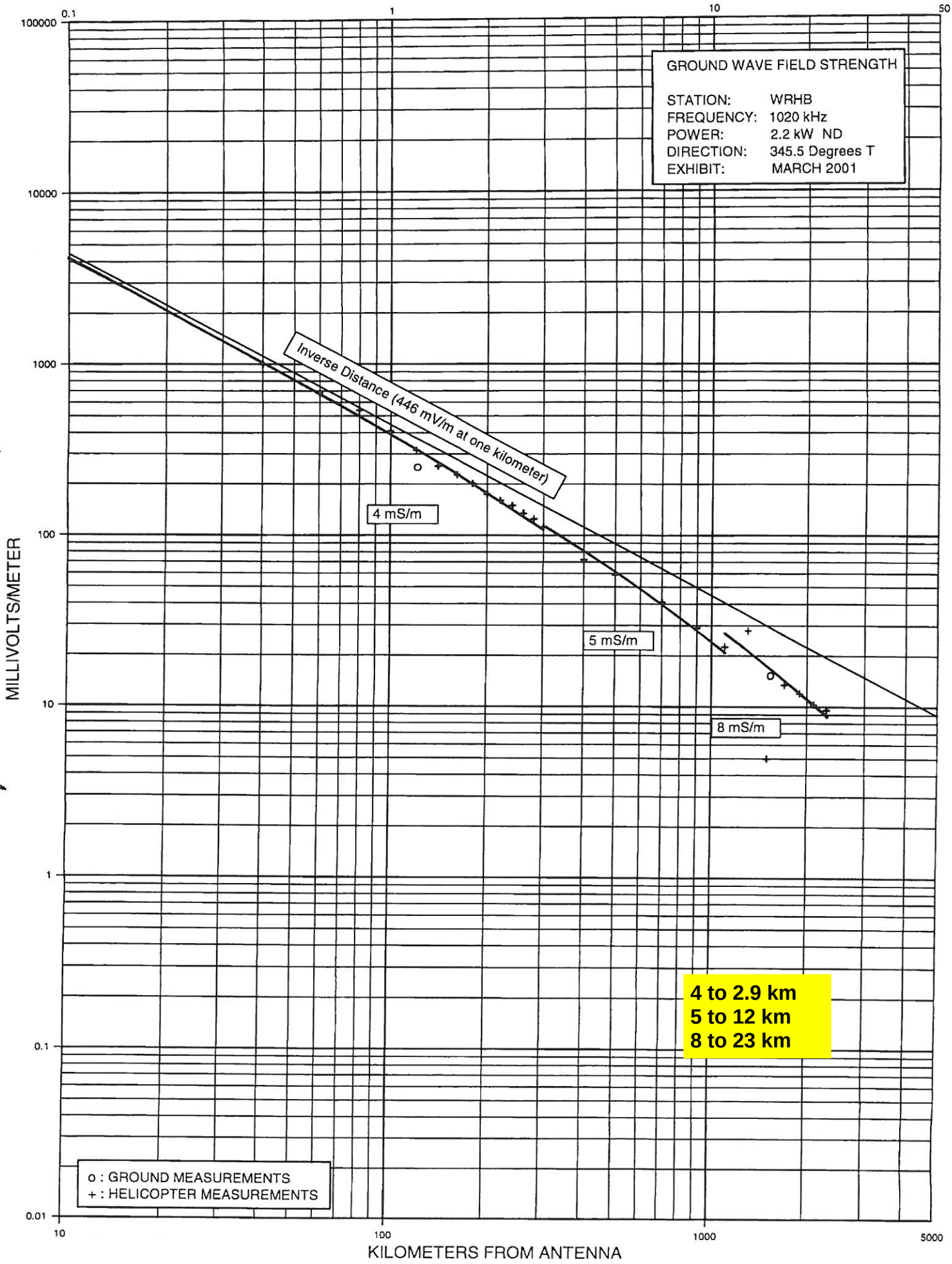



GROUND WAVE FIELD STRENGTH
STATION: WRHB
FREQUENCY: 1020 kHz
POWER: 2.2 kW ND
DIRECTION: 252.5 Degrees T
EXHIBIT: MARCH 2001
Inverse Distance (465 mV/m at one kilometer)
3 mS/m
5 mS/m
o : GROUND MEASUREMENTS
+ : HELICOPTER MEASUREMENTS
MILLIVOLTS/METER
KILOMETERS FROM ANTENNA
0.1
1
10
50
100000
10000
1000
100
10
1
0.1
0.01
10
100
1000
5000

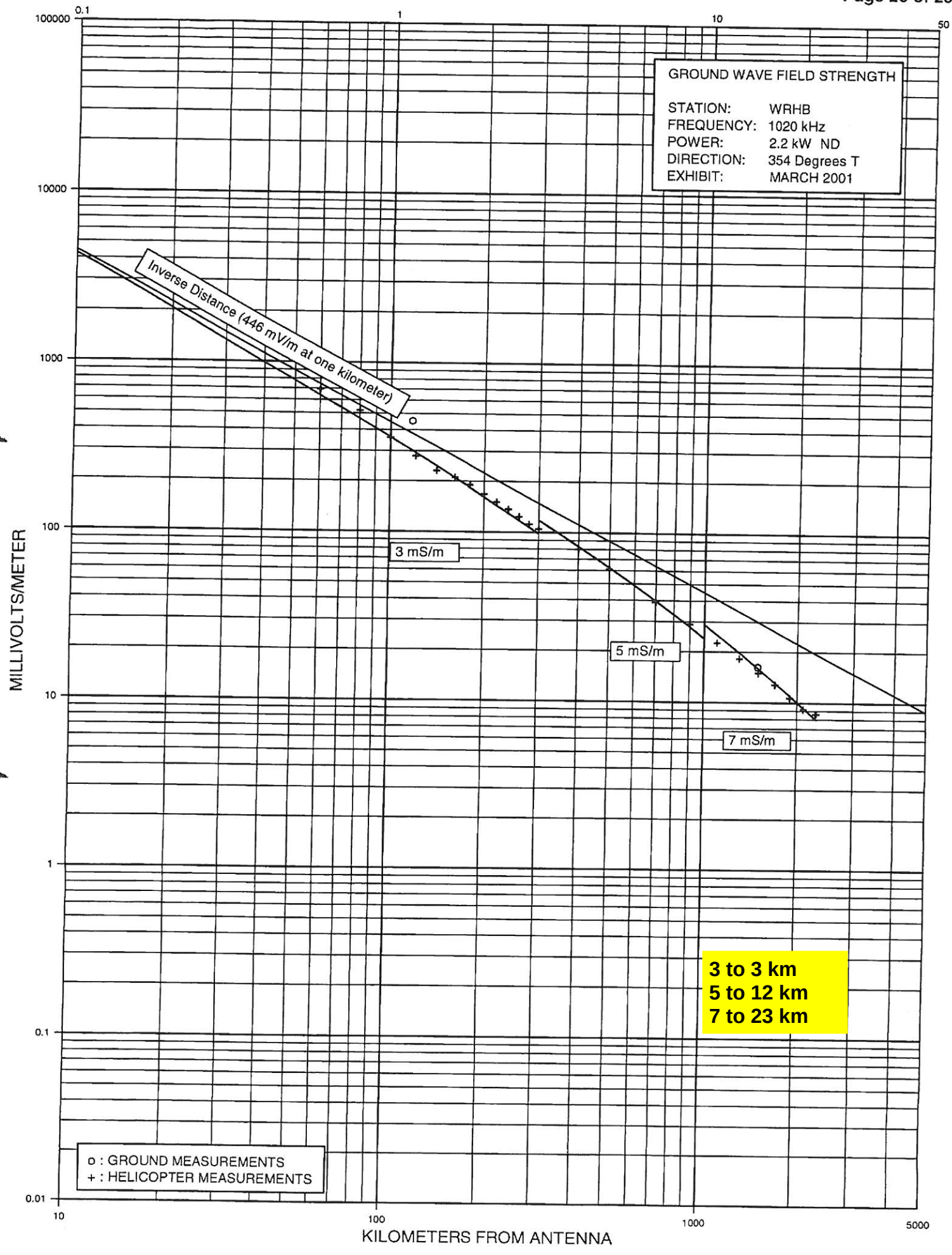

GROUND WAVE FIELD STRENGTH
STATION: WRHB
FREQUENCY: 1020 kHz
POWER: 2.2 kW ND
DIRECTION: 283.5 Degrees T
EXHIBIT: MARCH 2001
Inverse Distance (460 mV/m at one kilometer)
4 mS/m
5 mS/m
7 mS/m
4 to 3 km
5 to 12 km
7 to 23 km
o : GROUND MEASUREMENTS
+ : HELICOPTER MEASUREMENTS
MILLIVOLTS/METER
KILOMETERS FROM ANTENNA
0.1
1
10
50
100000
10000
1000
100
10
1
0.1
0.01
10
100
1000
5000


GROUND WAVE FIELD STRENGTH
STATION: WRHB
FREQUENCY: 1020 kHz
POWER: 2.2 kW ND
DIRECTION: 300 Degrees T
EXHIBIT: MARCH 2001
Inverse Distance (455 mV/m at one kilometer)
6 mS/m
8 mS/m
6 to 13 km
8 to 23 km
o : GROUND MEASUREMENTS
+ : HELICOPTER MEASUREMENTS
MILLIVOLTS/METER
KILOMETERS FROM ANTENNA
0.1
1
10
50
100000
10000
1000
100
10
1
0.1
0.01
10
100
1000
5000

KILOMETERS FROM ANTENNA



4 to 2.9 km
5 to 12 km
8 to 23 km



3 to 3 km
5 to 12 km
7 to 23 km

E18A WHSR-AP Night Allocation Protection Report To Relevant Facilities

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call Letters	Ct	St	City	Azi (deg)	Ang Low (deg)	Ang High (deg)	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
WTEM	US	DC	WASHINGTON	11.23	2.38	6.06	24.53	1.814	369.75	364.50	5.25
50% = 6.822, 25% = 7.318; ZYH-707-A=5.44 WBGG=4.12 WILK=1.93 WOFX=1.81											
CMND-D	CU		BAYAMO	149.68	12.73	12.73	37.06	4.289	578.75	573.33	5.42
50% = 5.106, 25% = 5.998; WHSR=4.29 HJNL-A=2.77 HIFA-C=2.23 HOR 57-A=2.22											
CMBE-D	CU		ARROYO ARENA	213.59	23.81	23.81	55.74	2.055	184.38	177.44	6.93
50% = 3.693, 25% = 4.662; HRZC 2-A=2.37 WHSR=2.06 KQUE=1.95 WRNE=1.82 HOR 57-A=1.61 XEQO/A=1.48											
WTOT	US	FL	MARIANNA	317.31	9.86	17.00	77.94	4.304	276.09	263.57	12.52
50% = 11.992, 25% = 15.237; WYFN=7.37 WWTB=6.92 ZYH-707-A=6.45 WTEM=5.92 WHSR=4.30 KQUE=4.22 WRNE=4.12											
WRNE	US	FL	GULF BREEZE	307.07	8.04	14.30	63.48	4.716	371.40	332.41	38.98
50% = 15.468, 25% = 19.377; WYFN=13.34 WTOT=7.83 WWTB=6.43 ZYH-707-A=6.27 KQUE=5.77 WTEM=4.72											
KMBZ	US	MO	KANSAS CITY	320.58	0.00	2.57	14.54	1.207	415.10	256.57	158.53
50% = 3.989, 25% = 4.827; ZYH-707-A=3.99 KFWB=1.73 WTEM=1.70 HOR 57-A=1.22											

E18A NIGHT ALLOCATION REPORT - PAGE 2

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WMYM            US FL KENDALL           206.07     64.39     73.85    436.62    2.010    230.20     40.90    189.29
   50% = 5.944, 25% = 8.041; WNML=3.68 WTLN=3.58 WNTP=2.99 HOU 44-A=2.56 HISA-C=2.52 KZZB=2.48
   XEPI/A=2.32 HCEW2-A=2.22

WAAV            US NC LELAND             12.82      6.79     12.45     52.72    6.200    587.99    368.48    219.51
   50% = 22.983, 25% = 24.799; WTEM=19.36 WWTB=12.39 WYFN=6.68 ZYH-707-A=6.49

WYFN            US TN NASHVILLE         332.79      3.59      7.77     31.56    3.050    483.19    219.02    264.17
   50% = 8.881, 25% = 12.328; WTEM=5.74 ZYH-707-A=5.14 WITY=4.41 WGTK=3.97 KSGM=3.88 KMBZ=3.48 KQUE=3.30
   WTOT=3.16 WAAV=3.05

WFLA            US FL TAMPA             311.41     24.01     36.68    208.94    2.235    534.74    243.08    291.66
   50% = 7.56, 25% = 8.97; WGTK=6.49 KSYL=3.87 WBGG=2.58 KCFO=2.43 XEDF/A=2.40 WNYM=2.23

WTLN            US FL ORLANDO           335.55     25.49     38.53    220.77    2.113    478.61    174.41    304.20
   50% = 6.733, 25% = 8.453; WNML=5.88 WMYM=3.28 WNTP=2.85 KZZB=2.76 KWAM=2.41 XEPI/A=2.14

KQUE            US TX ROSENBURG-RICHM   288.36      1.60      4.97     23.31    4.164    893.37    459.21    434.16
   50% = 13.424, 25% = 16.657; WYFN=10.55 KMBZ=8.30 WRNE=5.60 ZYH-707-A=5.29 XENR/A=4.40 XEFF/A=4.30

KSGM            US IL CHESTER           327.18      1.65      5.04     21.61    2.896    669.94    229.49    440.45
   50% = 9.554, 25% = 11.899; KMBZ=6.95 WYFN=6.55 ZYH-707-A=4.56 KQUE=3.33 WTEM=3.16 WGTK=2.90

WILK            US PA WILKES-BARRE       12.14      0.91      4.04     17.68    3.068    867.40    369.19    498.21
   50% = 11.204, 25% = 12.271; WTEM=9.39 WOFX=6.11 ZYH-707-A=5.01

WWTB            US VA BRISTOL           351.47      4.34      8.86     35.81    5.842    815.70    267.45    548.25
   50% = 20.442, 25% = 23.368; WTEM=14.88 WONE=14.01 WYFN=9.51 WAAV=6.15

KFWB            US CA LOS ANGELES       292.84      0.00      0.00      4.35    1.307   1504.22    434.76   1069.46
   50% = 4.543, 25% = 5.229; ZYH-707-A=2.86 XECL/A=2.53 KHTY=2.47 KMBZ=1.60 KTCR=1.48 KMIN=1.39
```

E18B WHSR-AP NIF Calculation

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

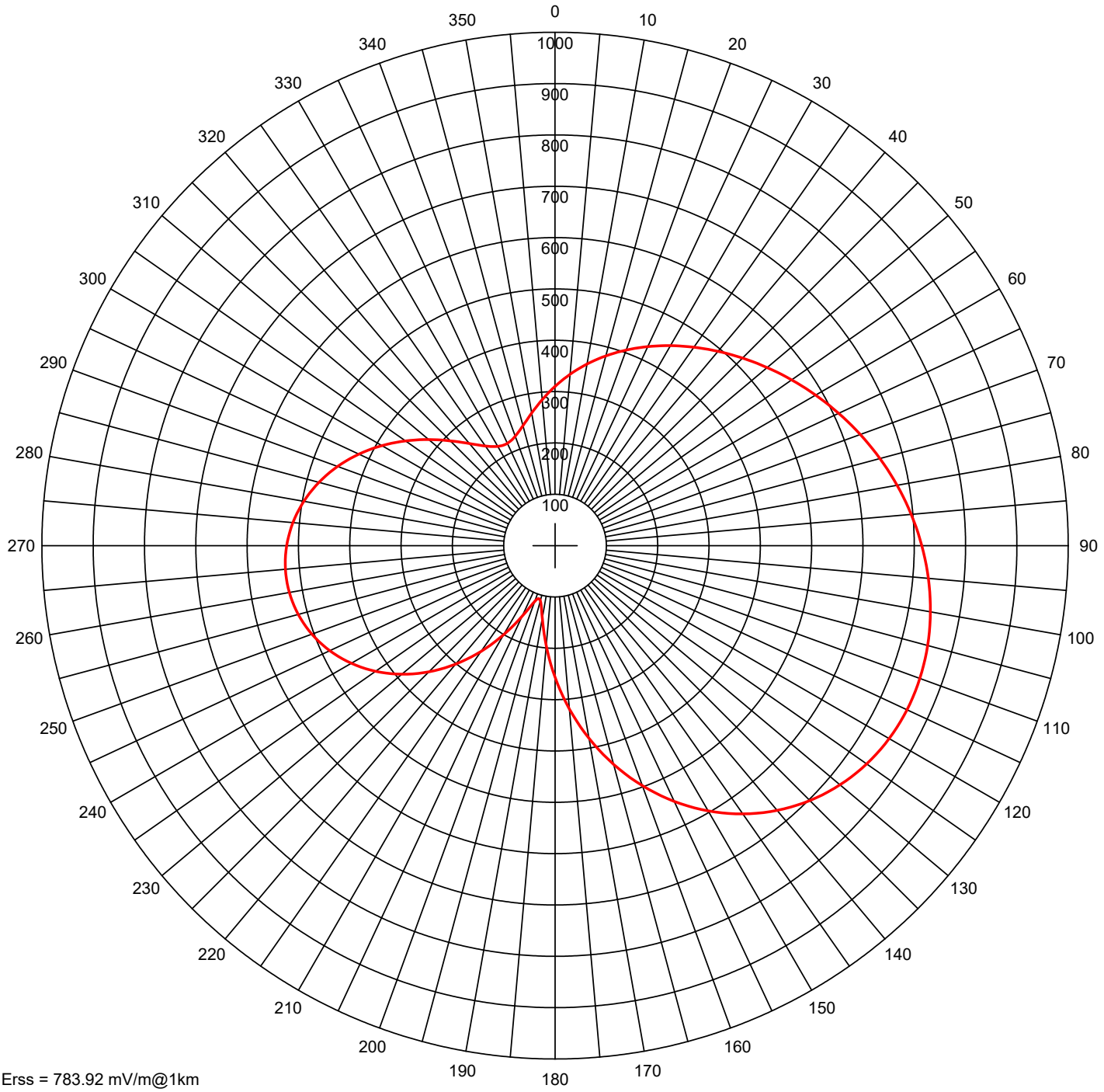
Standard: FCC Rules (1992 Skywave Propagation Model) [10%]

Contributors:

Call	Freq (kHz)	City	St	Ct	Dist (km)	Azi (deg)	Theta Min (deg)	Theta Max (deg)	Max V-Rad (mV/m)	SW Mult (uV/m)	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYH-707-0980		BRASILIA		BR	5831.4	322.7	0.0	0.0	10742.97	3.94	8.461	100.0	8.461
WTEM	0980	WASHINGTON	DC	US	1453.0	193.0	2.4	6.1	968.43	24.53	4.751	56.1	**9.704**

E18C NIGHT DA

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

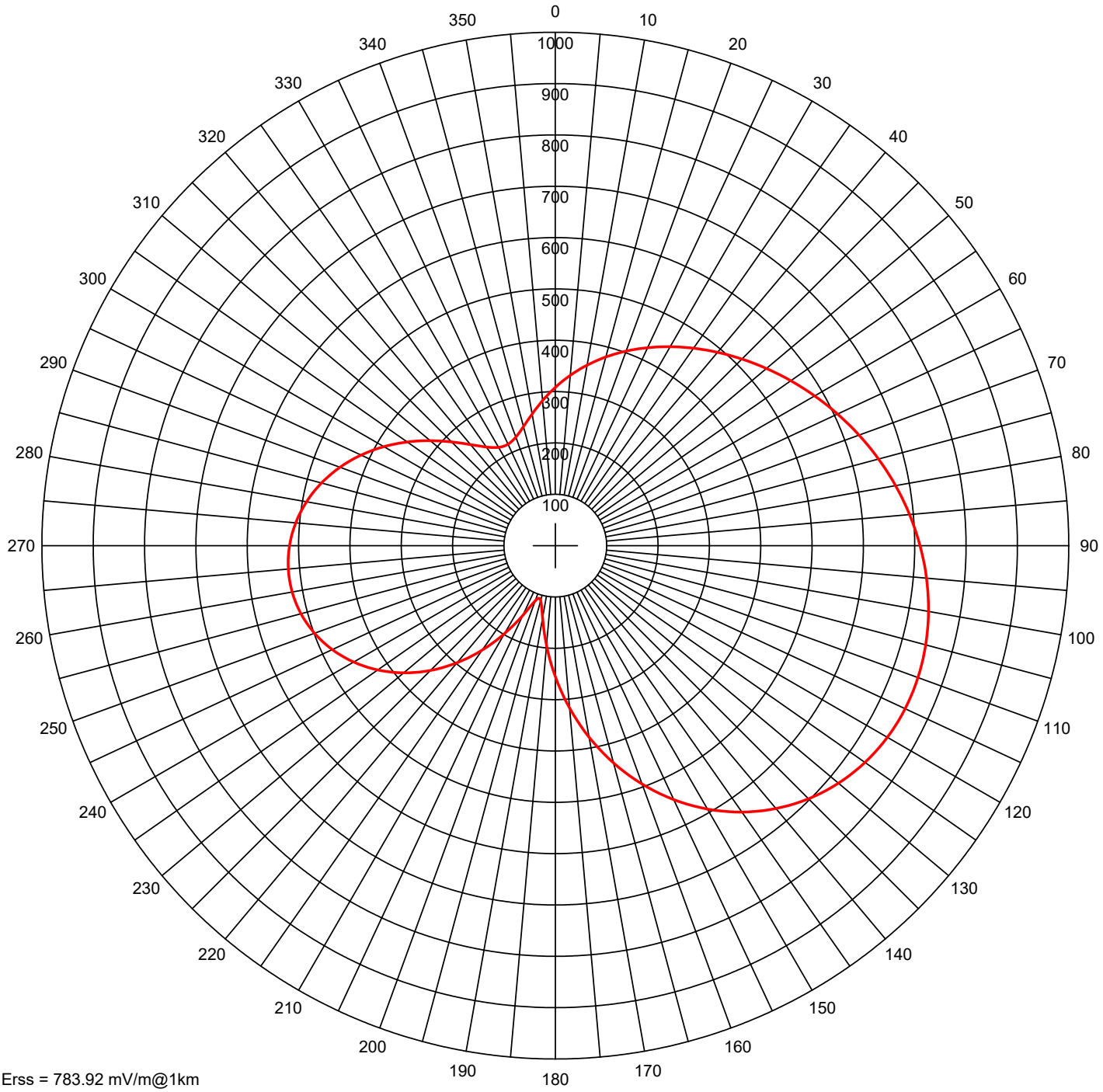
Standard Horizontal Plane Pattern

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

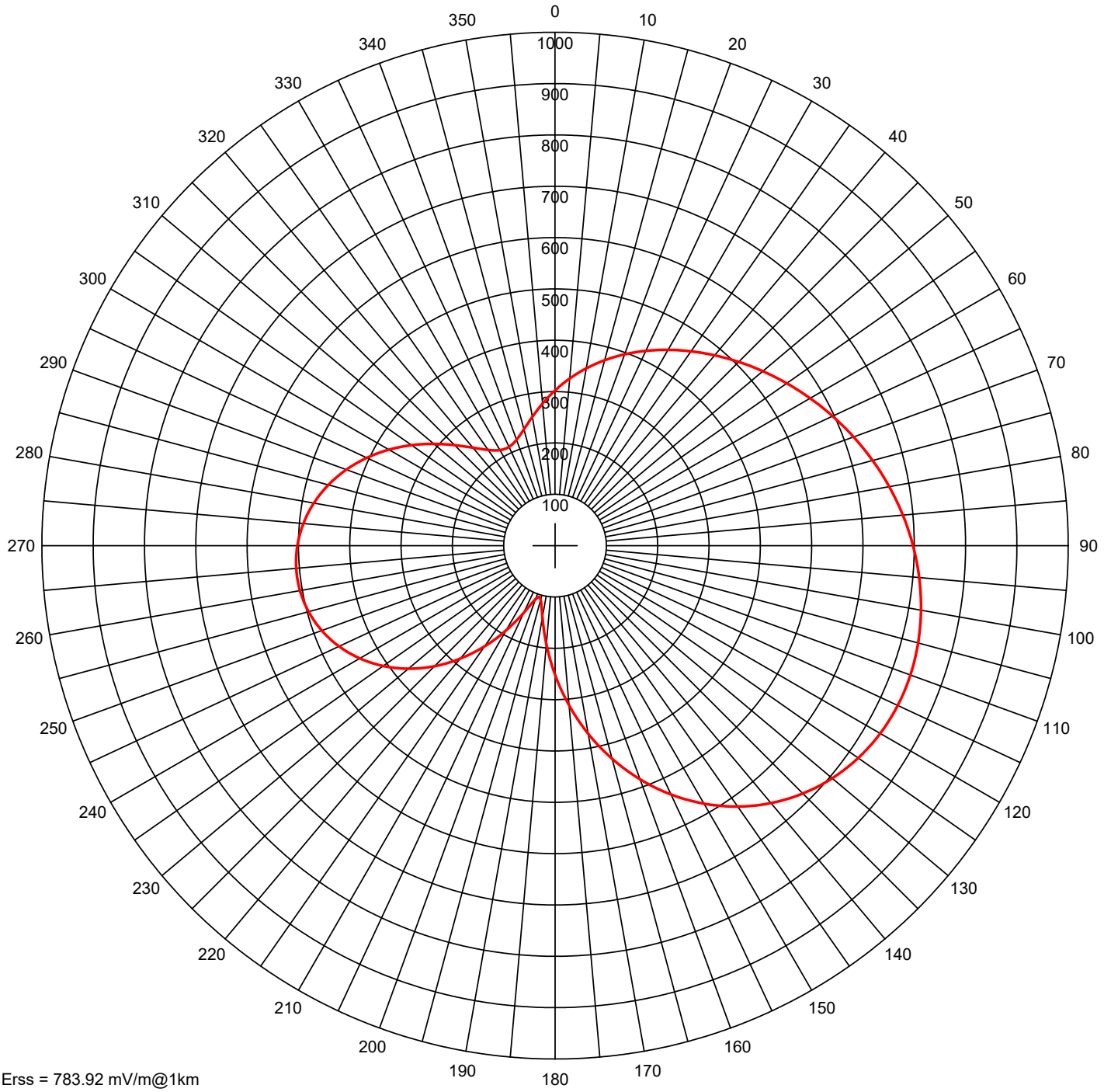
Standard Pattern at Theta = 5.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

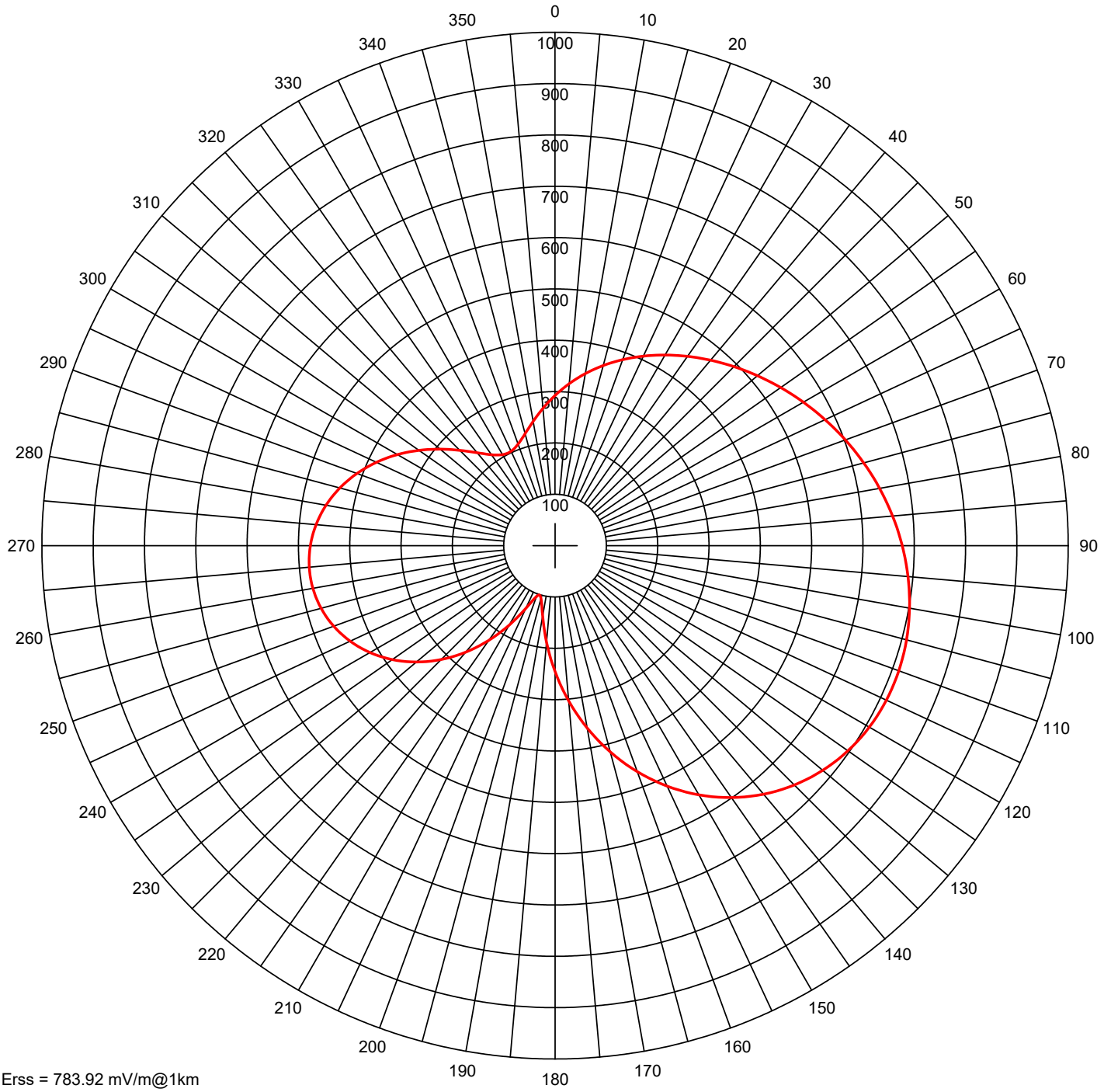
Standard Pattern at Theta = 10.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

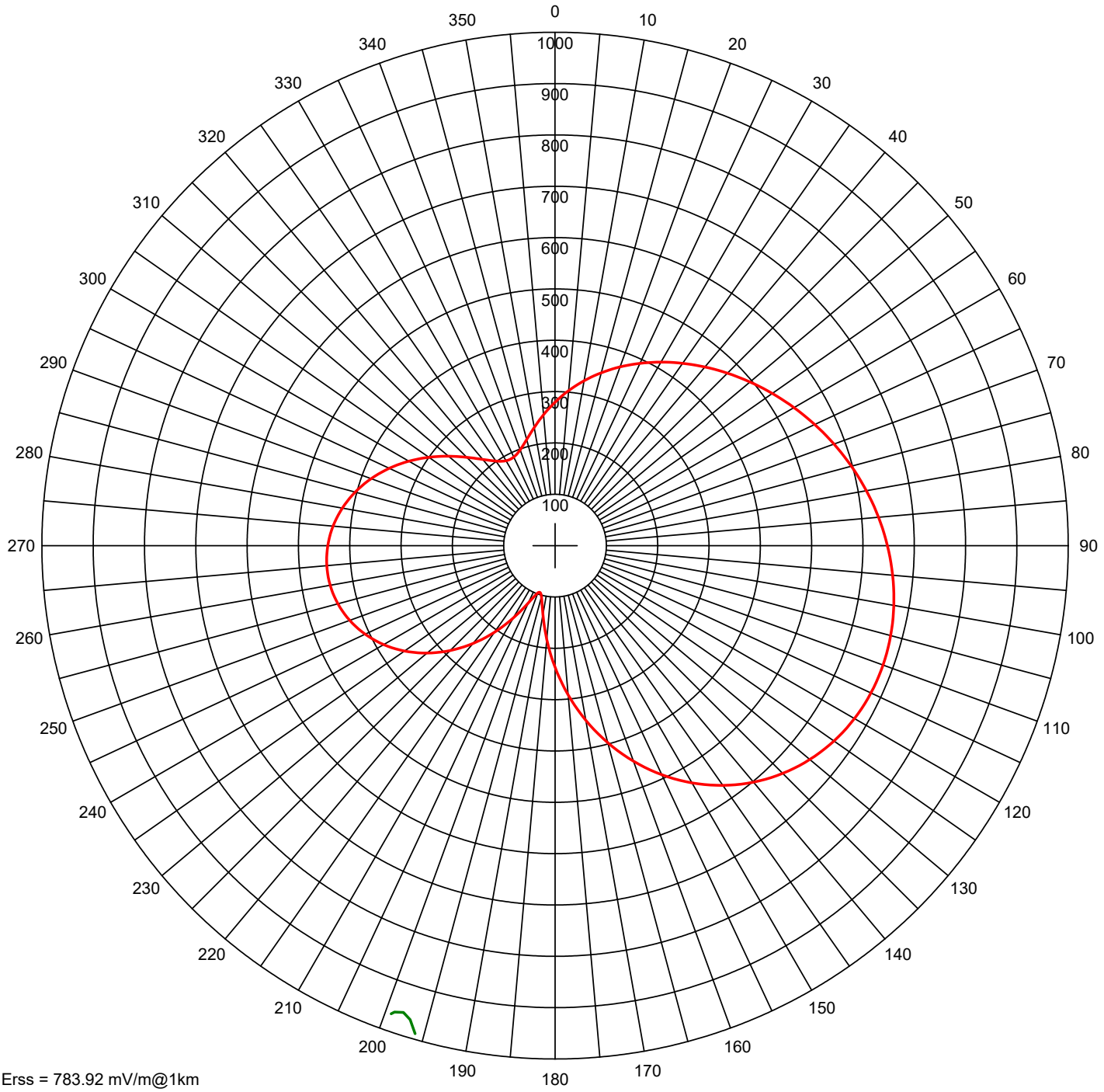
Standard Pattern at Theta = 15.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

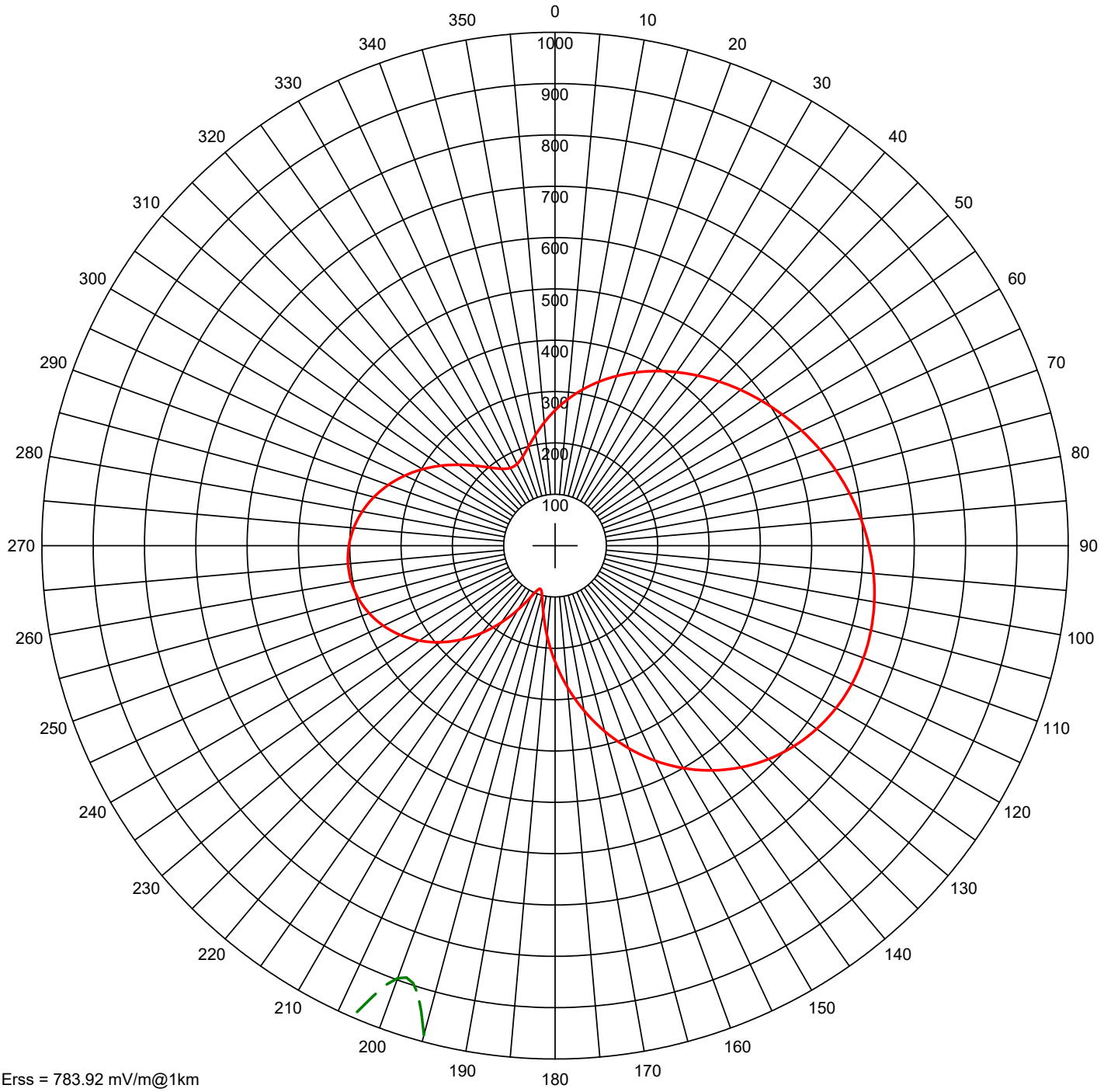
Standard Pattern at Theta = 20.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

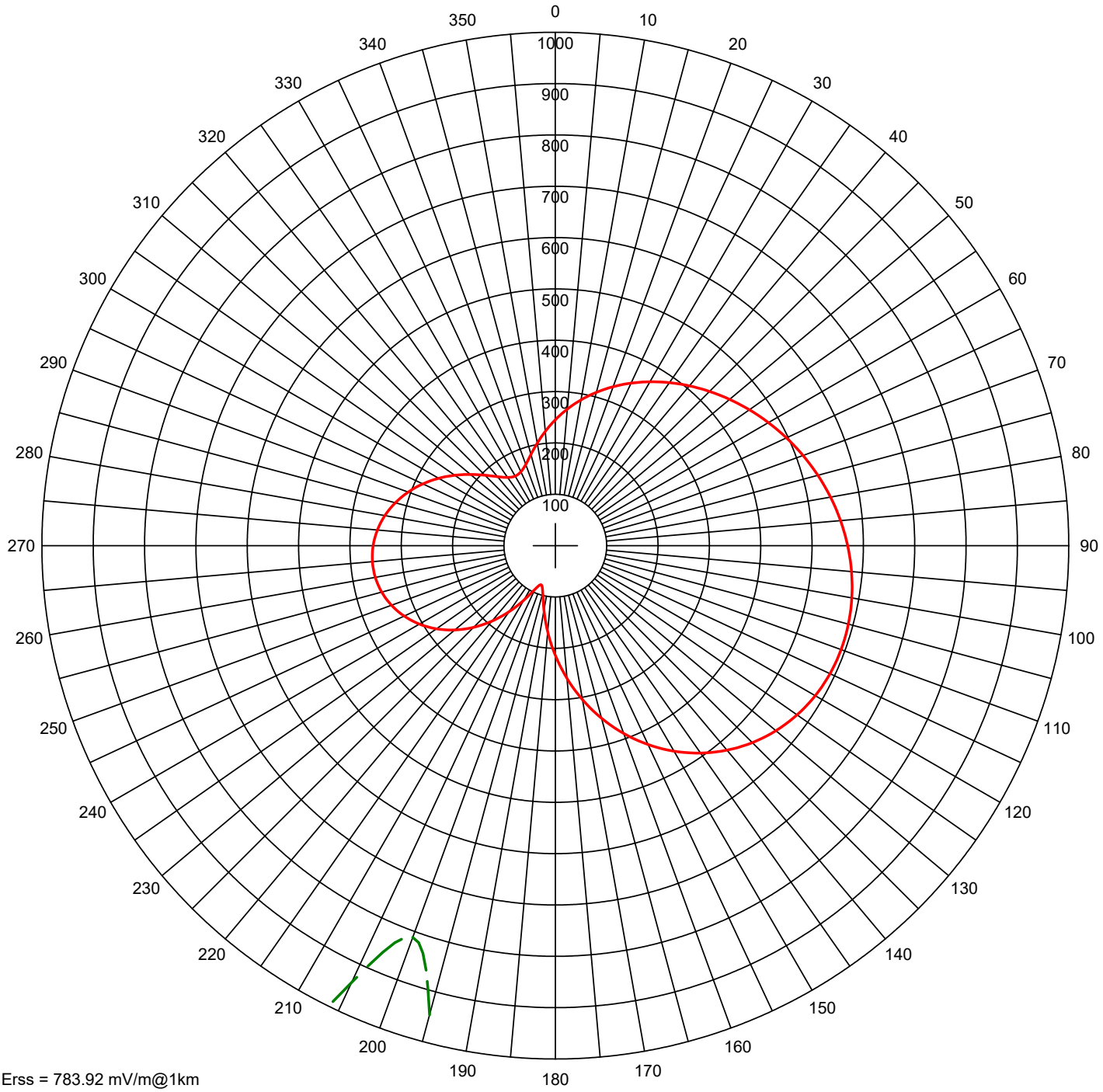
Standard Pattern at Theta = 25.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

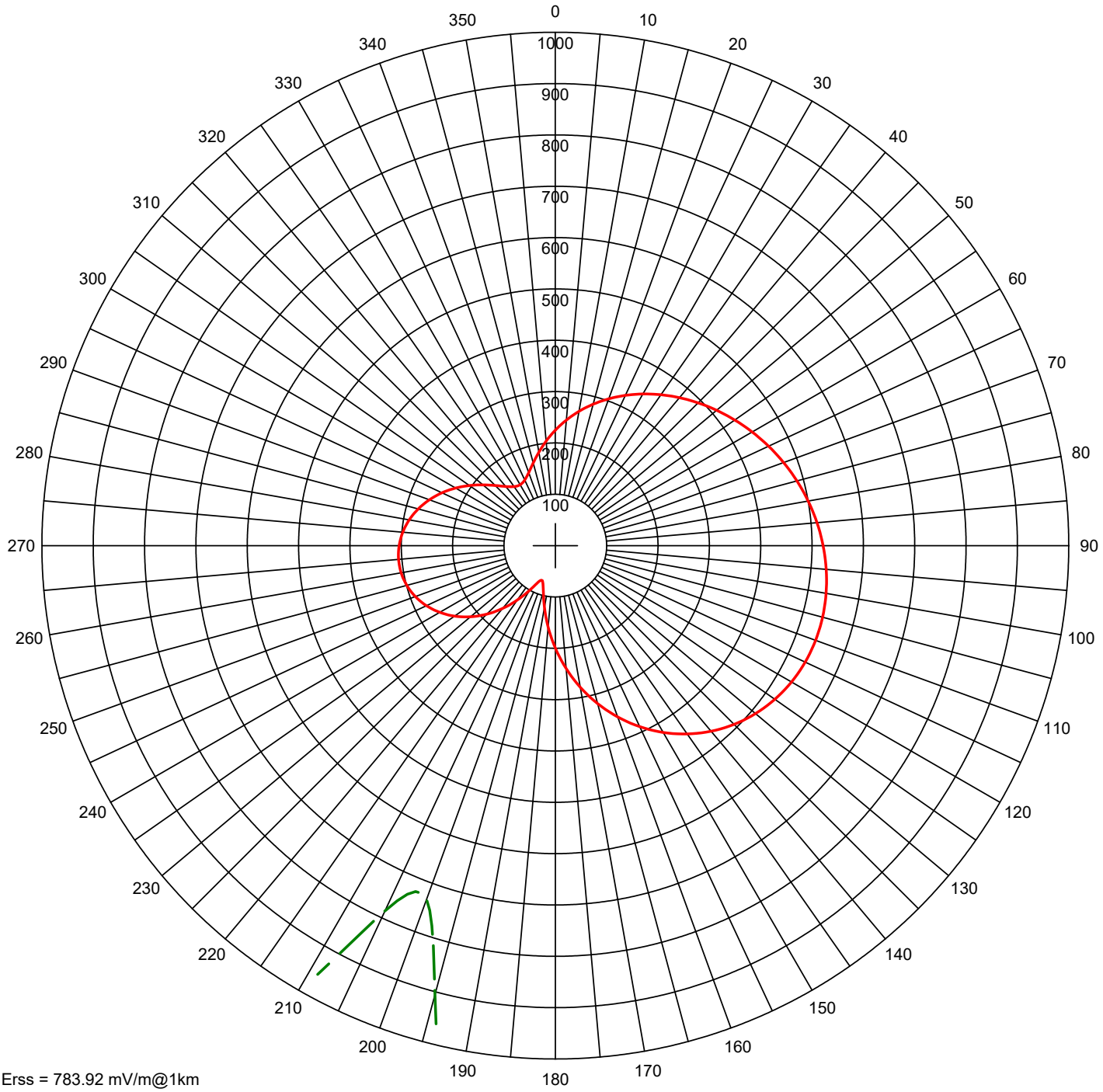
Standard Pattern at Theta = 30.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

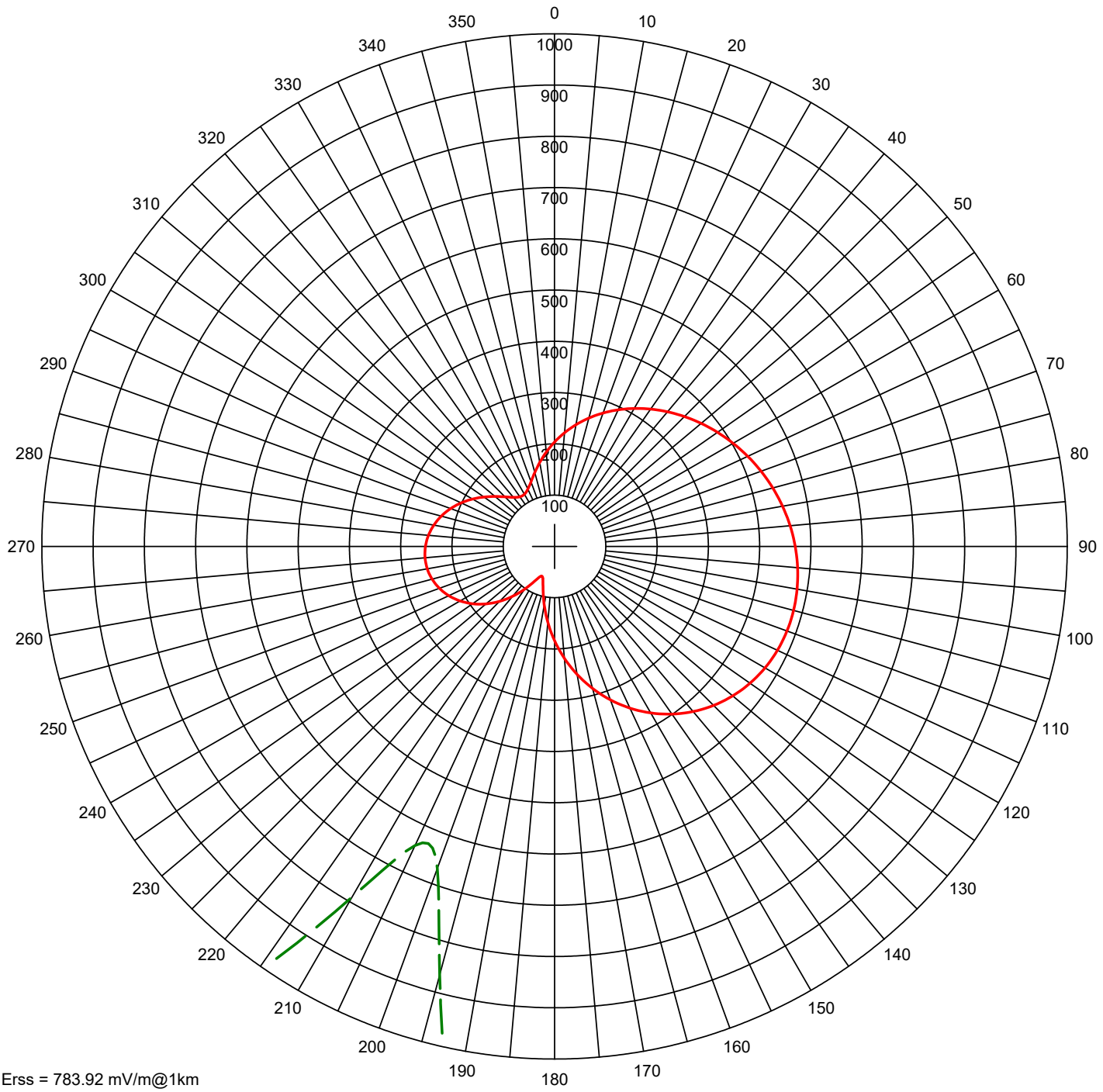
Standard Pattern at Theta = 35.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

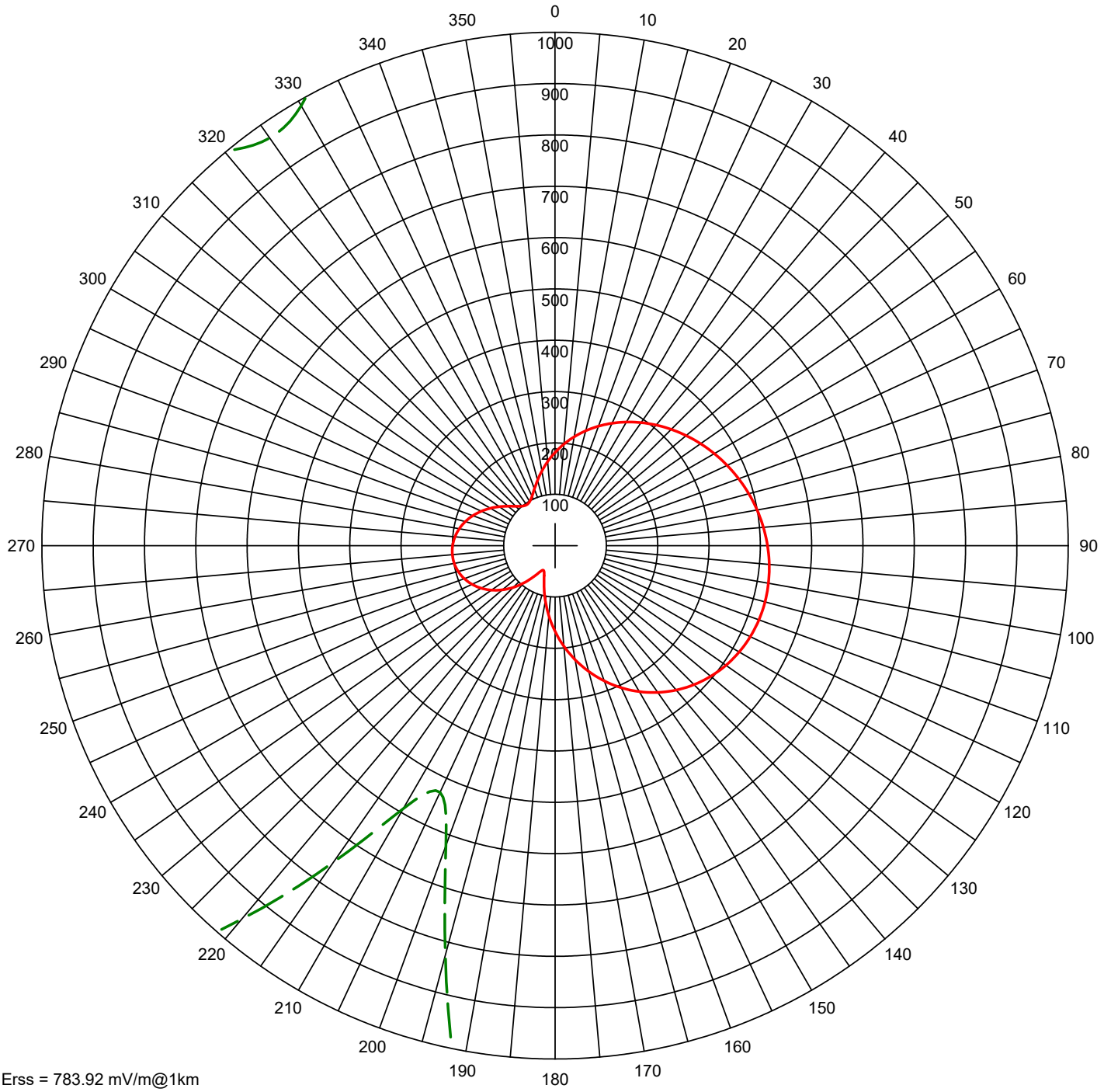
Standard Pattern at Theta = 40.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

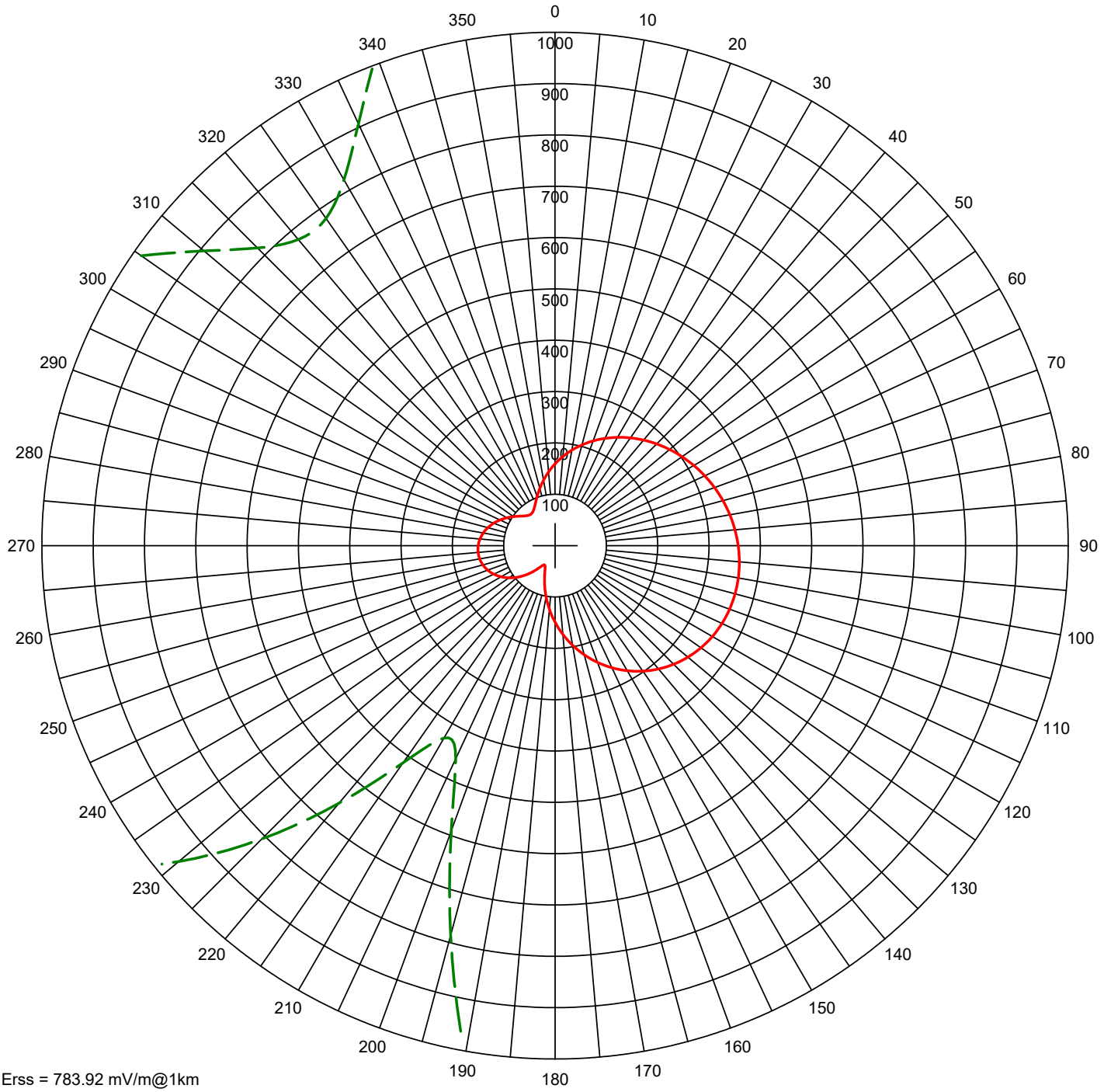
Standard Pattern at Theta = 45.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

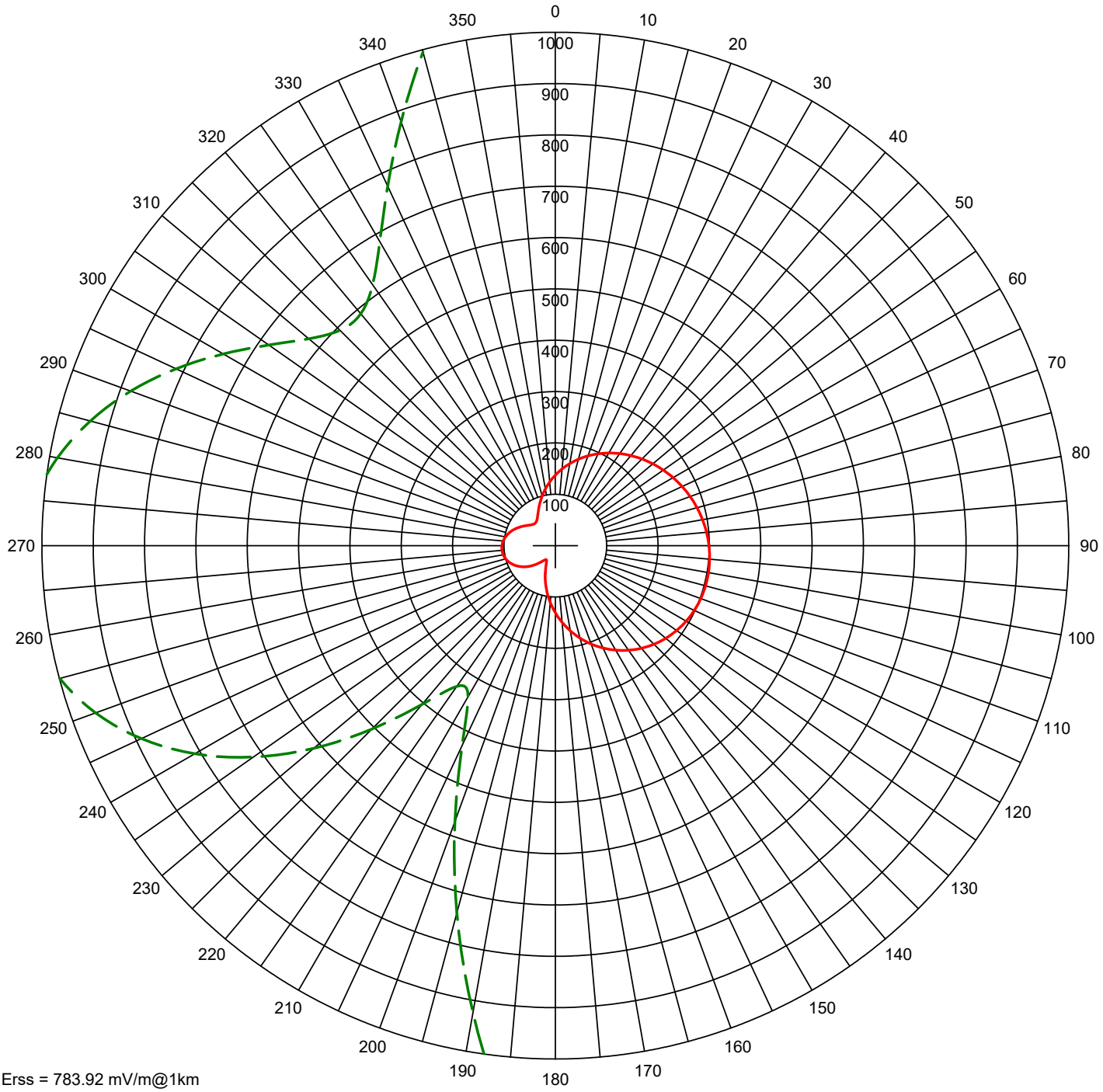
Standard Pattern at Theta = 50.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

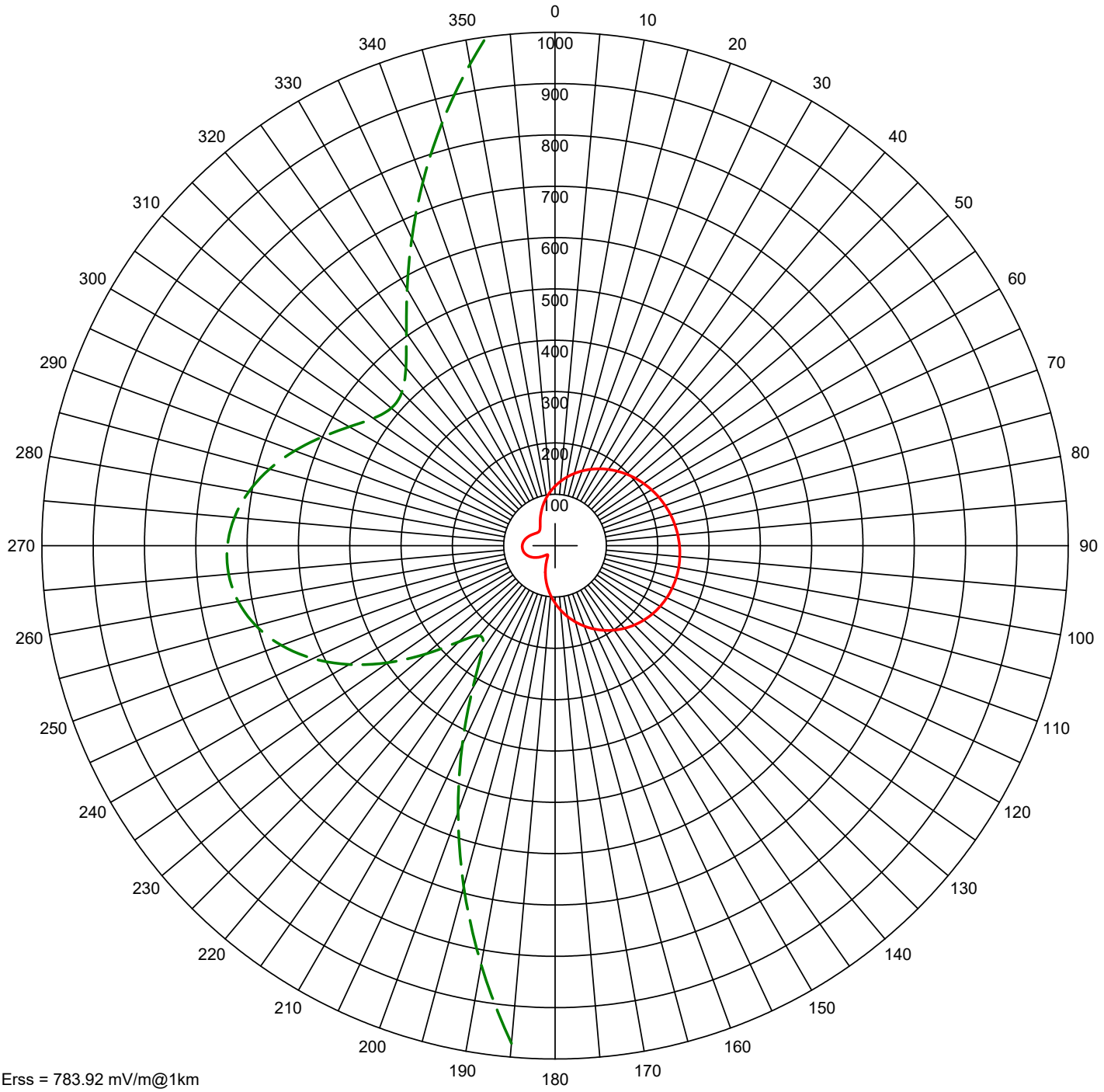
Standard Pattern at Theta = 55.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Directional Pattern



Erss = 783.92 mV/m@1km
Theo RMS: 464.996 mV/m@1km
Std RMS: 488.679 mV/m@1km
Q: 19.598 mV/m@1km

Standard Pattern at Theta = 60.00 Degrees

Pattern (mV/m @ 1km)
Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Call: WHSR-WWNN
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m@1km
@ 2.5 kW

AM Night DA Tabulations

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Horizontal Plane Pattern

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	310.20	5.0	334.92	10.0	359.13
15.0	382.62	20.0	405.42	25.0	427.71
30.0	449.75	35.0	471.80	40.0	494.05
45.0	516.65	50.0	539.62	55.0	562.93
60.0	586.41	65.0	609.86	70.0	632.98
75.0	655.44	80.0	676.84	85.0	696.76
90.0	714.73	95.0	730.23	100.0	742.74
105.0	751.70	110.0	756.57	115.0	756.79
120.0	751.86	125.0	741.35	130.0	724.89
135.0	702.23	140.0	673.26	145.0	638.02
150.0	596.71	155.0	549.71	160.0	497.59
165.0	441.09	170.0	381.17	175.0	319.07
180.0	256.46	185.0	196.07	190.0	143.34
195.0	110.88	200.0	115.69	205.0	151.83
210.0	200.39	215.0	251.51	220.0	301.21
225.0	347.62	230.0	389.69	235.0	426.76
240.0	458.39	245.0	484.27	250.0	504.19
255.0	518.02	260.0	525.73	265.0	527.33
270.0	522.94	275.0	512.75	280.0	497.06
285.0	476.26	290.0	450.91	295.0	421.71
300.0	389.57	305.0	355.64	310.0	321.36
315.0	288.58	320.0	259.56	325.0	236.94
330.0	223.22	335.0	219.94	340.0	226.79
345.0	241.77	350.0	262.18	355.0	285.58

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 5.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	308.19	5.0	332.84	10.0	356.99
15.0	380.43	20.0	403.18	25.0	425.42
30.0	447.40	35.0	469.37	40.0	491.53
45.0	514.01	50.0	536.86	55.0	560.01
60.0	583.32	65.0	606.58	70.0	629.51
75.0	651.76	80.0	672.96	85.0	692.67
90.0	710.43	95.0	725.74	100.0	738.07
105.0	746.89	110.0	751.63	115.0	751.76
120.0	746.80	125.0	736.30	130.0	719.90
135.0	697.36	140.0	668.58	145.0	633.59
150.0	592.60	155.0	545.98	160.0	494.29
165.0	438.27	170.0	378.86	175.0	317.29
180.0	255.21	185.0	195.29	190.0	142.87
195.0	110.30	200.0	114.46	205.0	149.91
210.0	197.89	215.0	248.50	220.0	297.75
225.0	343.75	230.0	385.46	235.0	422.22
240.0	453.60	245.0	479.26	250.0	499.02
255.0	512.75	260.0	520.41	265.0	522.01
270.0	517.67	275.0	507.59	280.0	492.04
285.0	471.44	290.0	446.33	295.0	417.41
300.0	385.58	305.0	351.97	310.0	318.04
315.0	285.60	320.0	256.90	325.0	234.56
330.0	221.08	335.0	217.97	340.0	224.92
345.0	239.92	350.0	260.29	355.0	283.64

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 10.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	302.22	5.0	326.67	10.0	350.63
15.0	373.90	20.0	396.49	25.0	418.57
30.0	440.36	35.0	462.11	40.0	483.99
45.0	506.14	50.0	528.59	55.0	551.29
60.0	574.09	65.0	596.80	70.0	619.15
75.0	640.79	80.0	661.37	85.0	680.47
90.0	697.63	95.0	712.38	100.0	724.20
105.0	732.56	110.0	736.95	115.0	736.84
120.0	731.76	125.0	721.28	130.0	705.08
135.0	682.93	140.0	654.71	145.0	620.47
150.0	580.42	155.0	534.92	160.0	484.50
165.0	429.89	170.0	372.00	175.0	311.99
180.0	251.47	185.0	192.96	190.0	141.49
195.0	108.61	200.0	110.87	205.0	144.26
210.0	190.51	215.0	239.62	220.0	287.51
225.0	332.30	230.0	372.95	235.0	408.80
240.0	439.40	245.0	464.45	250.0	483.75
255.0	497.17	260.0	504.66	265.0	506.27
270.0	502.08	275.0	492.30	280.0	477.20
285.0	457.18	290.0	432.78	295.0	404.68
300.0	373.76	305.0	341.13	310.0	308.21
315.0	276.77	320.0	249.03	325.0	227.55
330.0	214.78	335.0	212.17	340.0	219.39
345.0	234.44	350.0	254.72	355.0	277.88

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 15.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	292.53	5.0	316.61	10.0	340.24
15.0	363.20	20.0	385.50	25.0	407.28
30.0	428.75	35.0	450.10	40.0	471.52
45.0	493.11	50.0	514.90	55.0	536.85
60.0	558.84	65.0	580.65	70.0	602.05
75.0	622.71	80.0	642.29	85.0	660.40
90.0	676.60	95.0	690.44	100.0	701.44
105.0	709.10	110.0	712.92	115.0	712.43
120.0	707.17	125.0	696.77	130.0	680.91
135.0	659.38	140.0	632.09	145.0	599.08
150.0	560.56	155.0	516.88	160.0	468.53
165.0	416.21	170.0	360.77	175.0	303.31
180.0	245.32	185.0	189.11	190.0	139.21
195.0	105.96	200.0	105.20	205.0	135.20
210.0	178.62	215.0	225.26	220.0	270.95
225.0	313.78	230.0	352.70	235.0	387.05
240.0	416.40	245.0	440.45	250.0	458.99
255.0	471.90	260.0	479.14	265.0	480.75
270.0	476.81	275.0	467.51	280.0	453.14
285.0	434.07	290.0	410.82	295.0	384.06
300.0	354.61	305.0	323.57	310.0	292.28
315.0	262.47	320.0	236.29	325.0	216.22
330.0	204.60	335.0	202.82	340.0	210.47
345.0	225.60	350.0	245.71	355.0	268.55

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 20.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	279.46	5.0	302.99	10.0	326.11
15.0	348.60	20.0	370.44	25.0	391.76
30.0	412.72	35.0	433.50	40.0	454.24
45.0	475.05	50.0	495.94	55.0	516.87
60.0	537.74	65.0	558.34	70.0	578.46
75.0	597.81	80.0	616.06	85.0	632.85
90.0	647.78	95.0	660.43	100.0	670.35
105.0	677.08	110.0	680.19	115.0	679.21
120.0	673.77	125.0	663.49	130.0	648.12
135.0	627.46	140.0	601.44	145.0	570.12
150.0	533.67	155.0	492.44	160.0	446.89
165.0	397.65	170.0	345.50	175.0	291.47
180.0	236.87	185.0	183.78	190.0	136.08
195.0	102.57	200.0	97.93	205.0	123.27
210.0	162.81	215.0	206.11	220.0	248.82
225.0	288.99	230.0	325.57	235.0	357.90
240.0	385.56	245.0	408.24	250.0	425.75
255.0	437.98	260.0	444.88	265.0	446.48
270.0	442.87	275.0	434.24	280.0	420.85
285.0	403.06	290.0	381.36	295.0	356.38
300.0	328.93	305.0	300.01	310.0	270.92
315.0	243.31	320.0	219.24	325.0	201.07
330.0	191.03	335.0	190.36	340.0	198.59
345.0	213.81	350.0	233.65	355.0	256.03

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 25.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	263.47	5.0	286.24	10.0	308.63
15.0	330.43	20.0	351.62	25.0	372.28
30.0	392.53	35.0	412.53	40.0	432.38
45.0	452.18	50.0	471.93	55.0	491.60
60.0	511.07	65.0	530.21	70.0	548.78
75.0	566.53	80.0	583.18	85.0	598.39
90.0	611.80	95.0	623.03	100.0	631.68
105.0	637.34	110.0	639.62	115.0	638.12
120.0	632.50	125.0	622.44	130.0	607.71
135.0	588.17	140.0	563.74	145.0	534.49
150.0	500.60	155.0	462.37	160.0	420.23
165.0	374.74	170.0	326.61	175.0	276.73
180.0	226.28	185.0	177.01	190.0	132.13
195.0	98.70	200.0	89.68	205.0	109.20
210.0	143.89	215.0	183.05	220.0	222.10
225.0	259.01	230.0	292.72	235.0	322.57
240.0	348.14	245.0	369.15	250.0	385.41
255.0	396.79	260.0	403.27	265.0	404.86
270.0	401.66	275.0	393.83	280.0	381.63
285.0	365.40	290.0	345.59	295.0	322.79
300.0	297.76	305.0	271.43	310.0	245.03
315.0	220.11	320.0	198.62	325.0	182.79
330.0	174.70	335.0	175.40	340.0	184.32
345.0	199.61	350.0	219.06	355.0	240.79

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 30.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	245.10	5.0	266.86	10.0	288.27
15.0	309.15	20.0	329.44	25.0	349.19
30.0	368.51	35.0	387.49	40.0	406.23
45.0	424.79	50.0	443.18	55.0	461.36
60.0	479.24	65.0	496.67	70.0	513.48
75.0	529.43	80.0	544.27	85.0	557.71
90.0	569.43	95.0	579.10	100.0	586.37
105.0	590.88	110.0	592.30	115.0	590.29
120.0	584.54	125.0	574.81	130.0	560.90
135.0	542.69	140.0	520.14	145.0	493.31
150.0	462.37	155.0	427.59	160.0	389.35
165.0	348.15	170.0	304.60	175.0	259.47
180.0	213.75	185.0	168.89	190.0	127.40
195.0	94.63	200.0	81.22	205.0	93.90
210.0	122.82	215.0	157.16	220.0	191.98
225.0	225.13	230.0	255.52	235.0	282.52
240.0	305.69	245.0	324.77	250.0	339.57
255.0	349.99	260.0	355.97	265.0	357.55
270.0	354.81	275.0	347.90	280.0	337.06
285.0	322.60	290.0	304.95	295.0	284.64
300.0	262.37	305.0	239.00	310.0	215.67
315.0	193.83	320.0	175.32	325.0	162.23
330.0	156.40	335.0	158.66	340.0	168.33
345.0	183.62	350.0	202.53	355.0	223.41

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 35.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	224.93	5.0	245.41	10.0	265.56
15.0	285.23	20.0	304.34	25.0	322.93
30.0	341.06	35.0	358.79	40.0	376.19
45.0	393.31	50.0	410.14	55.0	426.64
60.0	442.74	65.0	458.30	70.0	473.19
75.0	487.20	80.0	500.10	85.0	511.67
90.0	521.61	95.0	529.66	100.0	535.51
105.0	538.88	110.0	539.46	115.0	536.99
120.0	531.23	125.0	521.96	130.0	509.04
135.0	492.37	140.0	471.94	145.0	447.81
150.0	420.12	155.0	389.13	160.0	355.15
165.0	318.61	170.0	280.03	175.0	240.06
180.0	199.50	185.0	159.50	190.0	121.92
195.0	90.56	200.0	73.36	205.0	78.52
210.0	100.75	215.0	129.65	220.0	159.79
225.0	188.80	230.0	215.56	235.0	239.41
240.0	259.94	245.0	276.90	250.0	290.10
255.0	299.44	260.0	304.88	265.0	306.43
270.0	304.18	275.0	298.27	280.0	288.91
285.0	276.39	290.0	261.07	295.0	243.47
300.0	224.18	305.0	204.03	310.0	184.06
315.0	165.61	320.0	150.40	325.0	140.33
330.0	137.01	335.0	140.97	340.0	151.37
345.0	166.53	350.0	184.70	355.0	204.48

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 40.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	203.54	5.0	222.44	10.0	241.05
15.0	259.21	20.0	276.86	25.0	294.01
30.0	310.68	35.0	326.92	40.0	342.77
45.0	358.24	50.0	373.34	55.0	388.01
60.0	402.20	65.0	415.80	70.0	428.67
75.0	440.67	80.0	451.60	85.0	461.26
90.0	469.43	95.0	475.88	100.0	480.36
105.0	482.64	110.0	482.48	115.0	479.67
120.0	474.01	125.0	465.36	130.0	453.59
135.0	438.64	140.0	420.52	145.0	399.28
150.0	375.06	155.0	348.06	160.0	318.55
165.0	286.90	170.0	253.52	175.0	218.94
180.0	183.79	185.0	148.94	190.0	115.71
195.0	86.58	200.0	66.86	205.0	64.38
210.0	78.99	215.0	101.88	220.0	126.96
225.0	151.57	230.0	174.48	235.0	195.00
240.0	212.75	245.0	227.45	250.0	238.95
255.0	247.15	260.0	252.00	265.0	253.52
270.0	251.77	275.0	246.90	280.0	239.07
285.0	228.56	290.0	215.68	295.0	200.89
300.0	184.74	305.0	167.96	310.0	151.52
315.0	136.67	320.0	124.99	325.0	118.19
330.0	117.52	335.0	123.18	340.0	134.19
345.0	149.01	350.0	166.19	355.0	184.62

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 45.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	181.48	5.0	198.53	10.0	215.30
15.0	231.66	20.0	247.57	25.0	263.00
30.0	277.97	35.0	292.49	40.0	306.58
45.0	320.24	50.0	333.46	55.0	346.21
60.0	358.41	65.0	369.99	70.0	380.84
75.0	390.82	80.0	399.81	85.0	407.62
90.0	414.09	95.0	419.03	100.0	422.25
105.0	423.57	110.0	422.81	115.0	419.81
120.0	414.42	125.0	406.53	130.0	396.07
135.0	382.99	140.0	367.30	145.0	349.07
150.0	328.41	155.0	305.48	160.0	280.52
165.0	253.81	170.0	225.69	175.0	196.55
180.0	166.90	185.0	137.33	190.0	108.75
195.0	82.65	200.0	62.14	205.0	53.03
210.0	59.15	215.0	75.30	220.0	95.01
225.0	115.05	230.0	133.98	235.0	151.10
240.0	165.99	245.0	178.39	250.0	188.14
255.0	195.15	260.0	199.39	265.0	200.85
270.0	199.60	275.0	195.76	280.0	189.47
285.0	180.97	290.0	170.55	295.0	158.59
300.0	145.61	305.0	132.26	310.0	119.45
315.0	108.33	320.0	100.35	325.0	96.94
330.0	98.94	335.0	106.15	340.0	117.50
345.0	131.70	350.0	147.60	355.0	164.39

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 50.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	159.25	5.0	174.17	10.0	188.84
15.0	203.15	20.0	217.06	25.0	230.54
30.0	243.59	35.0	256.19	40.0	268.36
45.0	280.08	50.0	291.33	55.0	302.08
60.0	312.28	65.0	321.85	70.0	330.71
75.0	338.76	80.0	345.90	85.0	351.98
90.0	356.89	95.0	360.48	100.0	362.61
105.0	363.15	110.0	361.97	115.0	358.95
120.0	353.99	125.0	347.01	130.0	337.97
135.0	326.85	140.0	313.67	145.0	298.47
150.0	281.36	155.0	262.48	160.0	242.00
165.0	220.14	170.0	197.16	175.0	173.36
180.0	149.09	185.0	124.79	190.0	101.00
195.0	78.59	200.0	59.13	205.0	45.81
210.0	43.29	215.0	51.65	220.0	65.50
225.0	80.81	230.0	95.76	235.0	109.47
240.0	121.51	245.0	131.62	250.0	139.63
255.0	145.46	260.0	149.06	265.0	150.45
270.0	149.66	275.0	146.80	280.0	142.00
285.0	135.46	290.0	127.42	295.0	118.25
300.0	108.38	305.0	98.45	310.0	89.30
315.0	82.01	320.0	77.84	325.0	77.82
330.0	82.27	335.0	90.64	340.0	101.92
345.0	115.10	350.0	129.40	355.0	144.24

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 55.0 Degrees Elevation

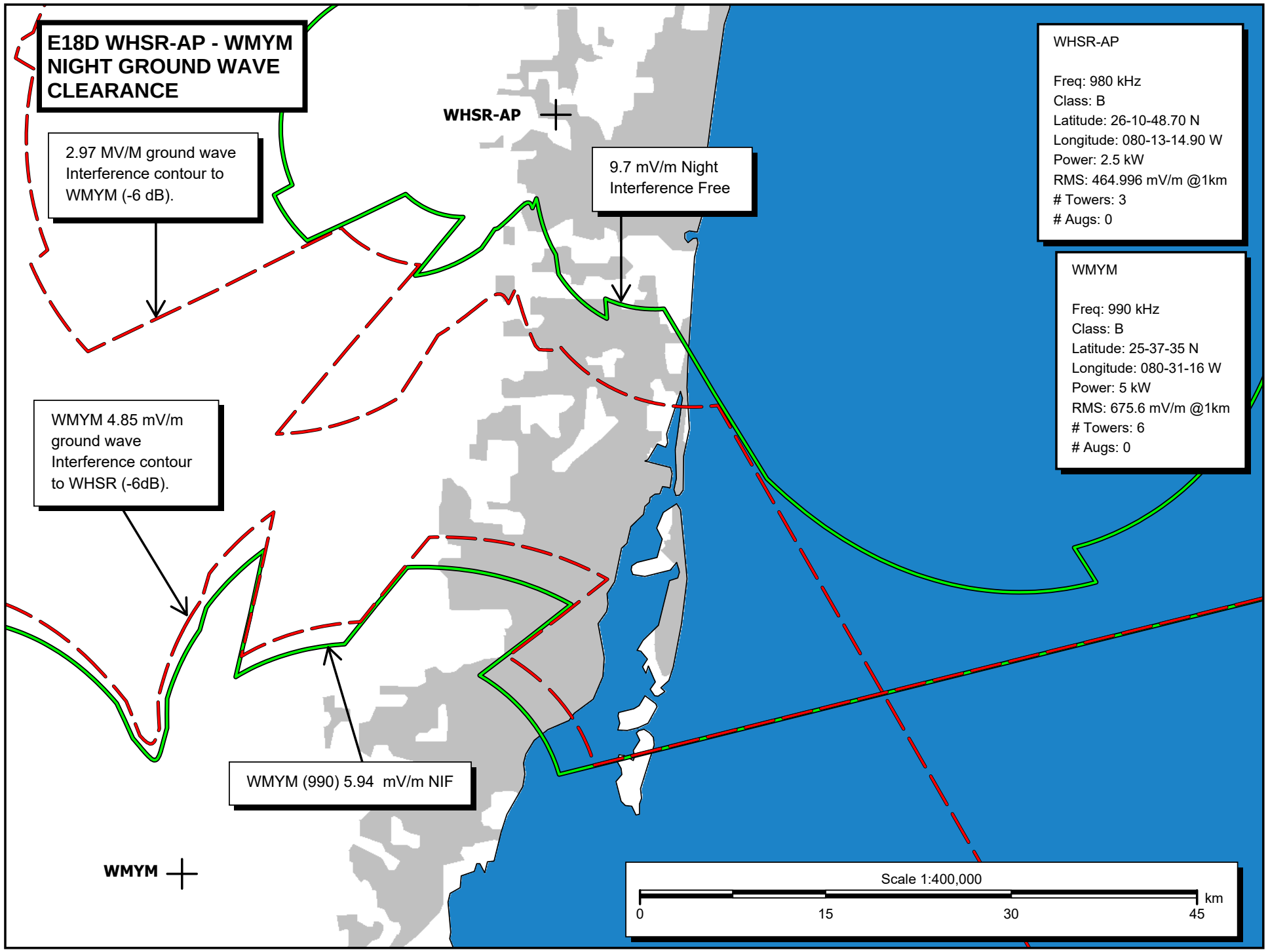
Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	137.24	5.0	149.82	10.0	162.18
15.0	174.24	20.0	185.96	25.0	197.30
30.0	208.26	35.0	218.80	40.0	228.94
45.0	238.64	50.0	247.88	55.0	256.63
60.0	264.85	65.0	272.48	70.0	279.46
75.0	285.71	80.0	291.15	85.0	295.69
90.0	299.22	95.0	301.67	100.0	302.92
105.0	302.88	110.0	301.47	115.0	298.61
120.0	294.23	125.0	288.29	130.0	280.76
135.0	271.63	140.0	260.94	145.0	248.72
150.0	235.06	155.0	220.06	160.0	203.85
165.0	186.61	170.0	168.51	175.0	149.77
180.0	130.65	185.0	111.42	190.0	92.41
195.0	74.09	200.0	57.15	205.0	42.92
210.0	33.99	215.0	33.45	220.0	40.33
225.0	50.54	230.0	61.44	235.0	71.80
240.0	81.07	245.0	88.95	250.0	95.27
255.0	99.94	260.0	102.92	265.0	104.20
270.0	103.83	275.0	101.88	280.0	98.47
285.0	93.77	290.0	88.01	295.0	81.50
300.0	74.67	305.0	68.14	310.0	62.69
315.0	59.32	320.0	58.95	325.0	62.04
330.0	68.37	335.0	77.22	340.0	87.83
345.0	99.55	350.0	111.90	355.0	124.54

Call: WHSR-AP
Freq: 980 kHz
POMPANO BEACH, FL, US
Hours: N
Lat: 26-10-48.70 N
Lng: 080-13-14.90 W
Power: 2.5 kW
Theo RMS: 465.00 mV/m @ 1km @ 2.5 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	60.0	0	0	0.0	0.0	0.0	0.0
2	0.750	-171.0	60.0	285.0	60.0	0	0	0.0	0.0	0.0	0.0
3	0.460	-258.0	98.3	250.0	60.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 60.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	115.74	5.0	125.85	10.0	135.78
15.0	145.47	20.0	154.88	25.0	163.98
30.0	172.75	35.0	181.18	40.0	189.23
45.0	196.90	50.0	204.16	55.0	210.97
60.0	217.30	65.0	223.11	70.0	228.36
75.0	232.98	80.0	236.93	85.0	240.13
90.0	242.53	95.0	244.06	100.0	244.65
105.0	244.26	110.0	242.81	115.0	240.27
120.0	236.60	125.0	231.77	130.0	225.78
135.0	218.63	140.0	210.33	145.0	200.95
150.0	190.52	155.0	179.13	160.0	166.89
165.0	153.90	170.0	140.29	175.0	126.21
180.0	111.83	185.0	97.32	190.0	82.89
195.0	68.76	200.0	55.23	205.0	42.74
210.0	32.07	215.0	24.76	220.0	22.91
225.0	26.50	230.0	32.81	235.0	39.74
240.0	46.30	245.0	52.05	250.0	56.76
255.0	60.32	260.0	62.69	265.0	63.85
270.0	63.84	275.0	62.71	280.0	60.58
285.0	57.60	290.0	54.00	295.0	50.08
300.0	46.29	305.0	43.25	310.0	41.66
315.0	42.22	320.0	45.22	325.0	50.51
330.0	57.63	335.0	66.04	340.0	75.32
345.0	85.15	350.0	95.27	355.0	105.51


E18D WHSR-AP - WMYM NIGHT GROUND WAVE CLEARANCE
WHSR-AP
2.97 MV/M ground wave Interference contour to WMYM (-6 dB).
9.7 mV/m Night Interference Free
WHSR-AP
Freq: 980 kHz
Class: B
Latitude: 26-10-48.70 N
Longitude: 080-13-14.90 W
Power: 2.5 kW
RMS: 464.996 mV/m @1km
Towers: 3
Augs: 0
WMYM
Freq: 990 kHz
Class: B
Latitude: 25-37-35 N
Longitude: 080-31-16 W
Power: 5 kW
RMS: 675.6 mV/m @1km
Towers: 6
Augs: 0
WMYM 4.85 mV/m ground wave Interference contour to WHSR (-6dB).
WMYM (990) 5.94 mV/m NIF
WMYM
Scale 1:400,000
0
15
30
45
km