

Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Groundwave Interference Protection
FCC Form 301 §III-A, Question 10.a.

The proposed facility meets all FCC Rules pertaining to groundwave protection of all existing stations, permits, and applications, including those stations listed in the table below. Contour maps are included as noted when helpful to demonstrate protection.

Contours have been projected using measured conductivities for six stations: WSNR (licensed), WHEN, WIP, WSNR, WEJL, and WPRO. The attached Exhibit 14F lists these data and indicates their sources. Detailed studies were performed for these stations to ensure that the proposed facilities met FCC protection requirements. Where measured conductivity data was not available for these stations, and for all other stations, contours have been projected using M3 data.

The licensed WSNR facility has existing contour overlap with two other stations (WIP and WPRO) and, as permitted by FCC Rules, the proposed facility maintains but does not increase the land area of those overlaps. Exhibit 14C provides a detailed summary of this situation.

<u>Station</u>	<u>Frequency</u>	<u>Class</u>	<u>Location</u>	<u>FCC File No.</u>	<u>Map</u>
Co-Channel					
WHEN	620 kHz	B	Syracuse, NY	BP19990713AB	Ex. 14B
WKHB	620 kHz	B	Irwin, PA	BL20010416ABD	
WVMT	620 kHz	B	Burlington, VT	BL19881229AE	
First-Adjacent Channel					
WIP	610 kHz	B	Philadelphia, PA	BL19861110AE	Ex. 14C
WSNR	610 kHz	B	Torrington, CT	BL-10511	Ex. 14C
WEJL	630 kHz	D	Scranton, PA	BL19980904AE (lic) BP19990713AG (CP)	Ex. 14C Ex. 14C
WPRO	630 kHz	B	Providence, RI	BL19801215AH	Ex. 14C
Second-Adjacent Channel					
WICC	600 kHz	B	Bridgeport, CT	BL-13712	Ex. 14D
WWJZ	640 kHz	B	Mount Holly, NJ	BMP19921207AC (CP) BP19991012ACD (app)	Ex. 14D Ex. 14D
Third-Adjacent Channel					
WARM	590 kHz	B	Scranton, PA	BL19820930AD	Ex. 14E
WROW	590 kHz	B	Albany, NY	Facility ID #54853*	Ex. 14E
WJLT	650 kHz	D	Ashland, MA	BP19990521AT	

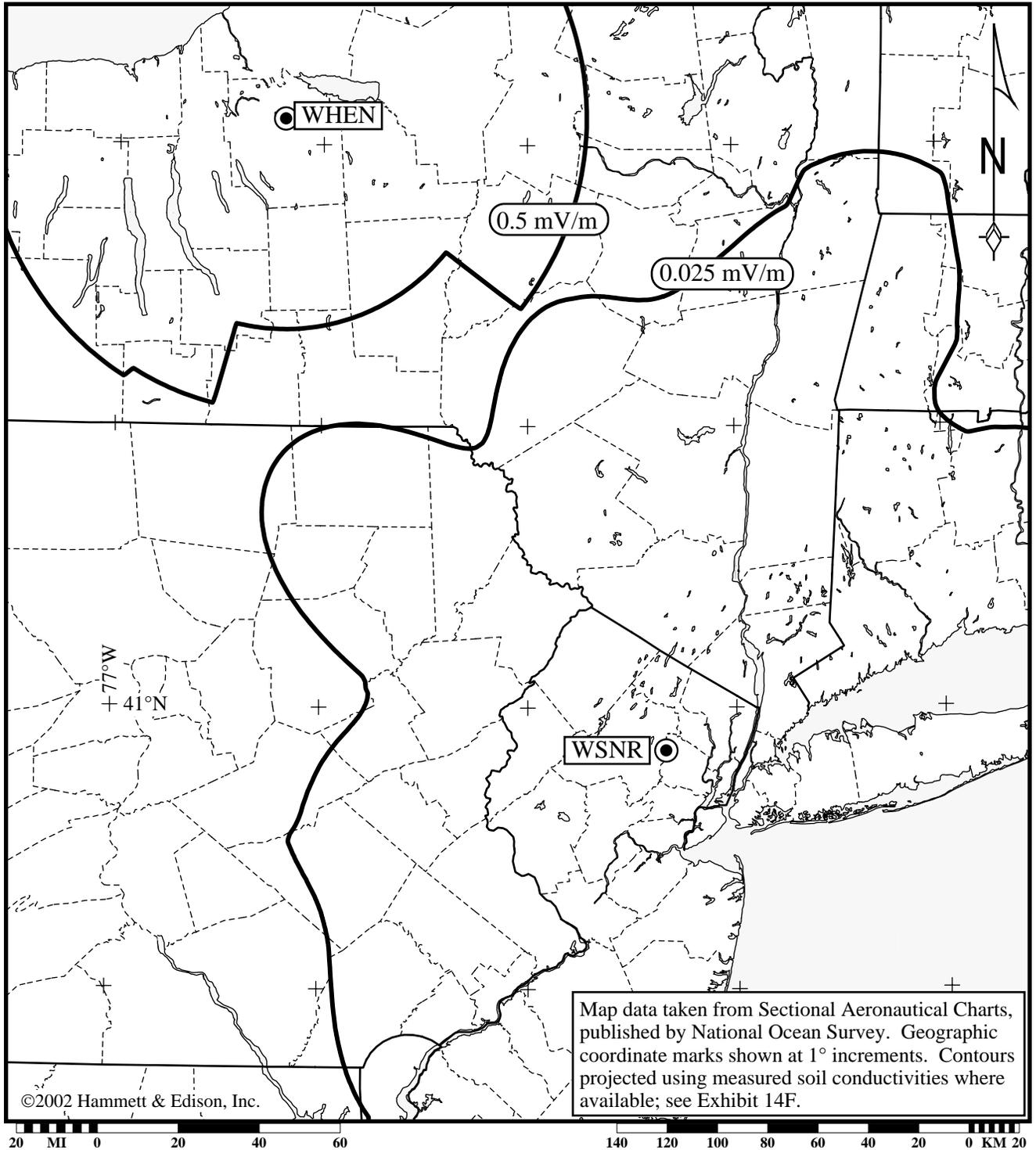
* FCC File No. not listed in FCC engineering database.



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Daytime Groundwave Protection

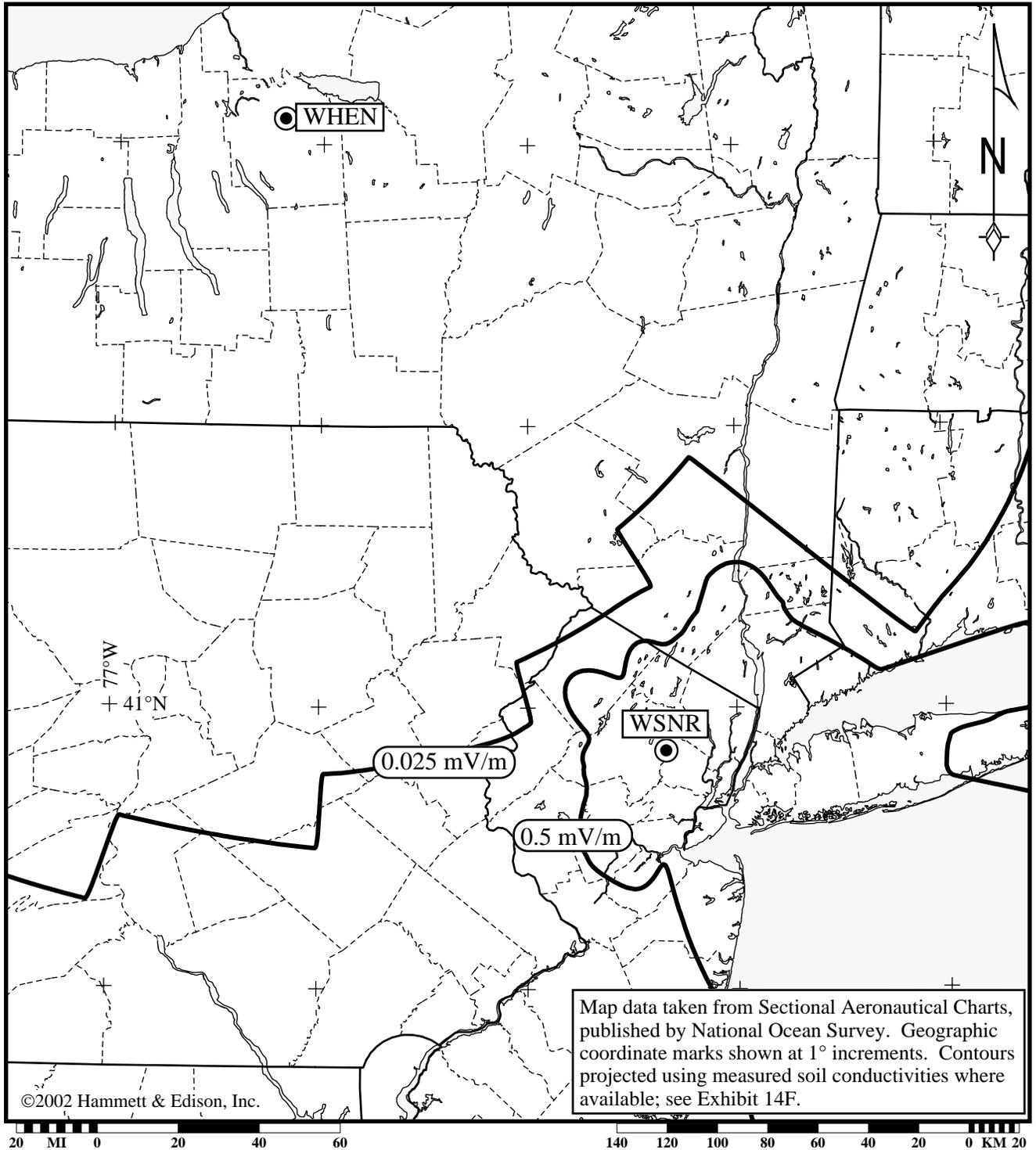
Proposed WSNR 0.025 mV/m Interfering Contour
vs. 0.5 mV/m Co-Channel Protected Contour



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Daytime Groundwave Protection

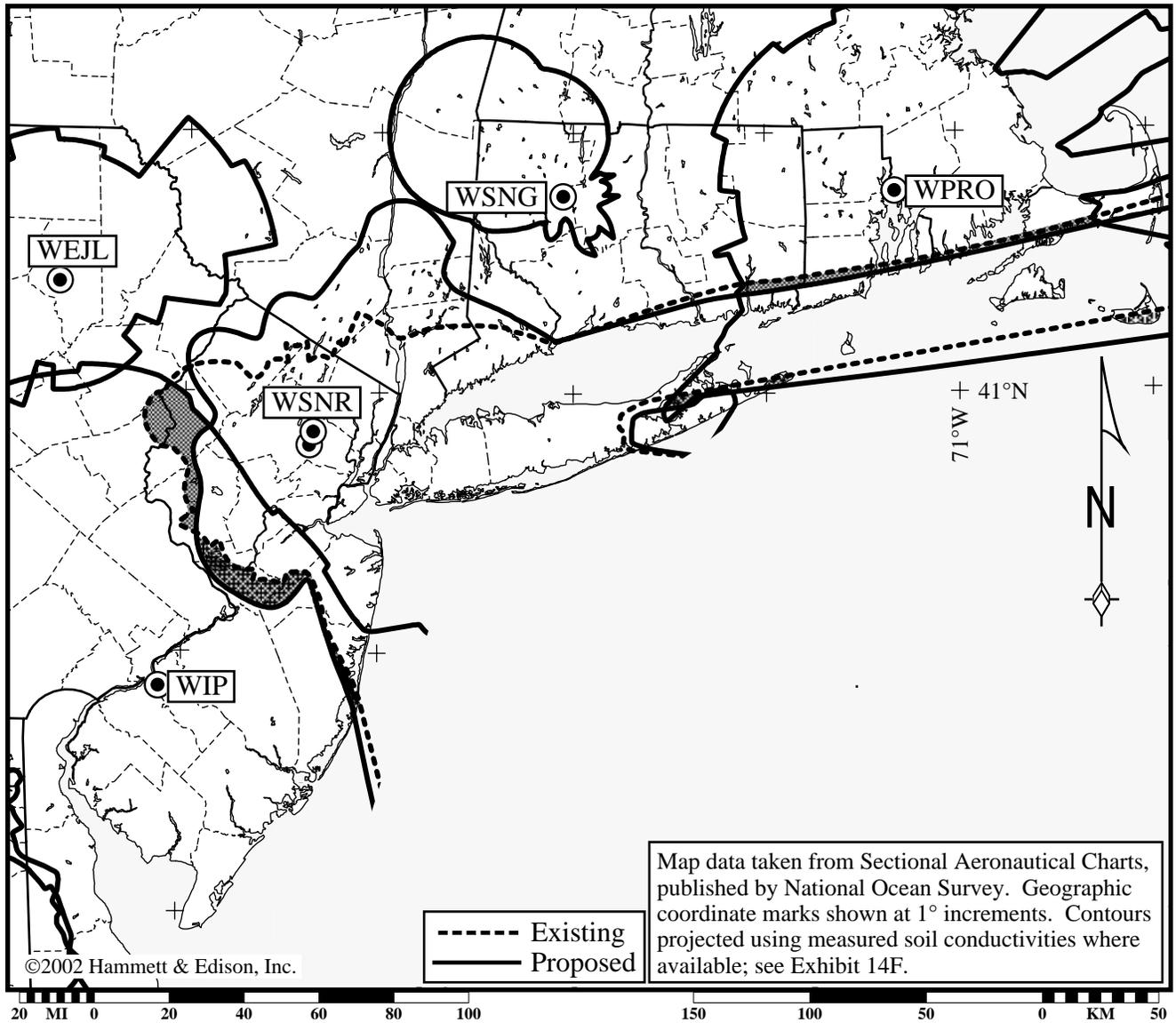
0.025 mV/m Co-Channel Interfering Contour
vs. Proposed WSNR 0.5 mV/m Protected Contour



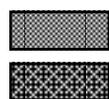
Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Daytime Groundwave Protection

Proposed WSNR 0.25 mV/m Interfering Contour
vs. 0.5 mV/m Protected First-Adjacent Contours



Areas of overlap determined by polar integration:



Existing overlap relinquished

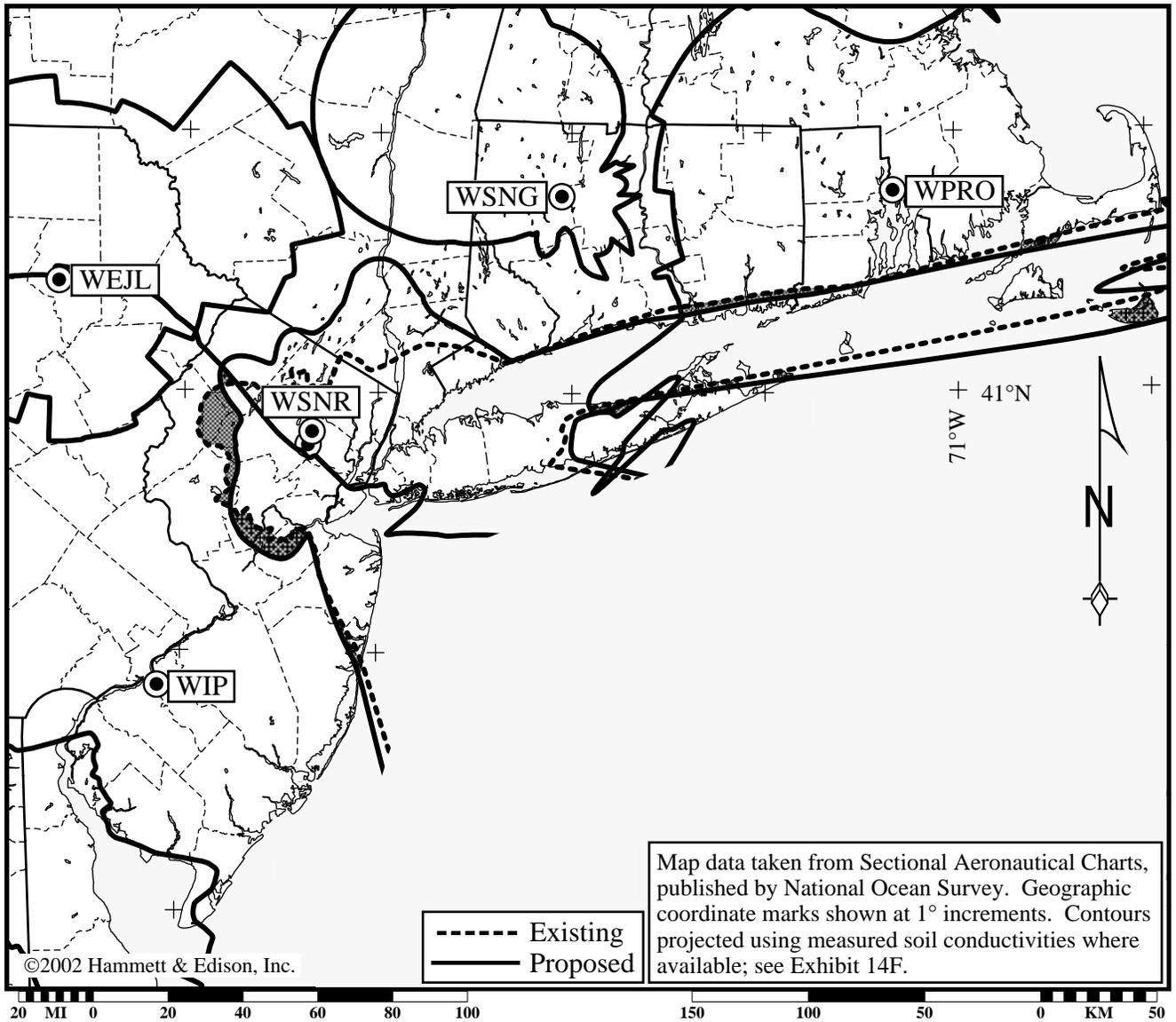
Proposed overlap increased

Net overlap reduction

	<u>vs. WIP</u>	<u>vs. WPRO</u>
Existing overlap relinquished	684.9 sq. km	349.2 sq. km
Proposed overlap increased	635.2 sq. km	126.6 sq. km
Net overlap reduction	49.7 sq. km	222.6 sq. km

Daytime Groundwave Protection

0.25 mV/m First-Adjacent Interfering Contours
vs. Proposed WSNR 0.5 mV/m Protected Contour

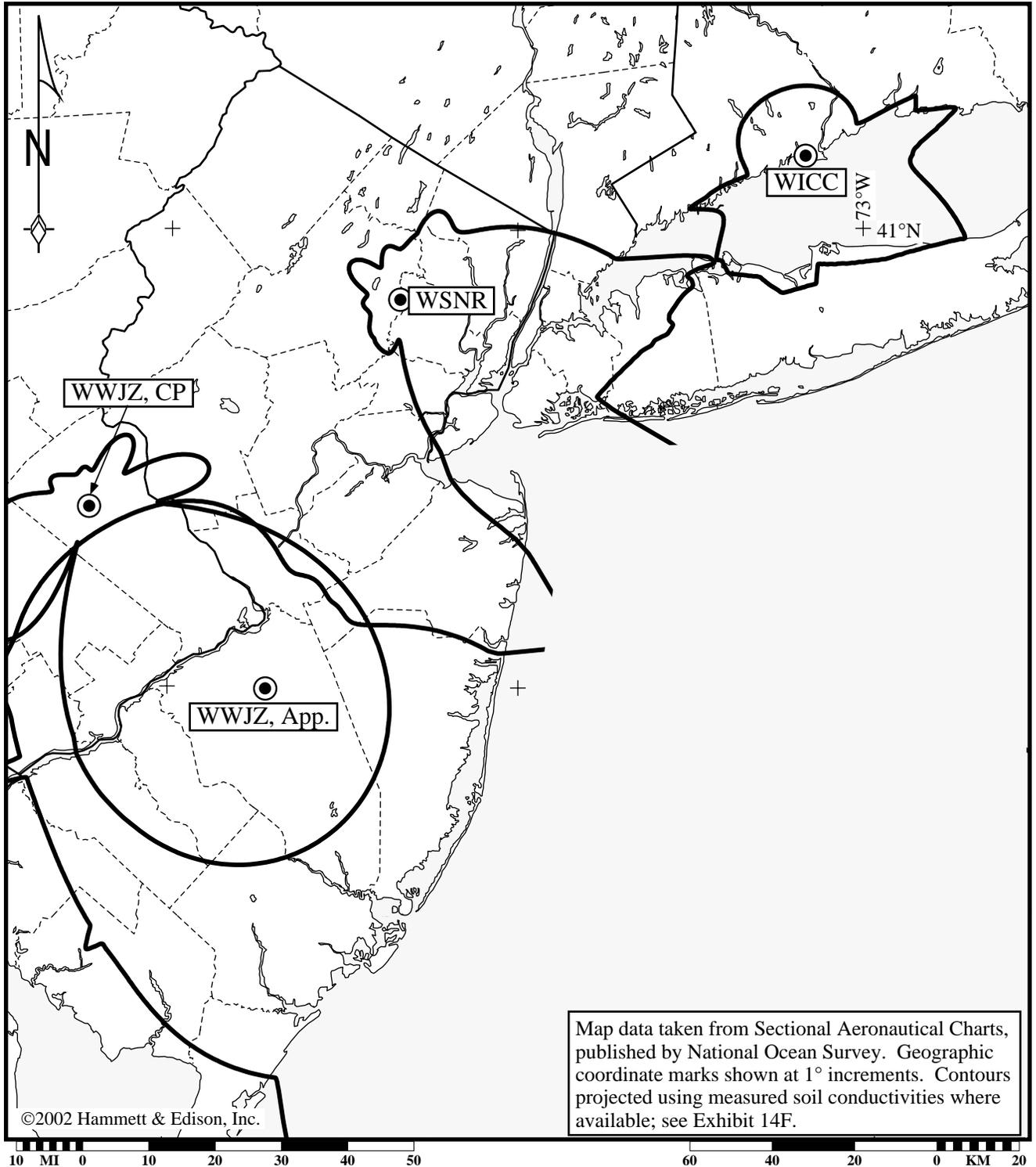


Areas of overlap determined by polar integration:

	vs. WIP	vs. WPRO
 Existing overlap relinquished	440.3 sq. km	234.9 sq. km
 Proposed overlap increased	386.0 sq. km	210.2 sq. km
Net overlap reduction	54.3 sq. km	24.7 sq. km

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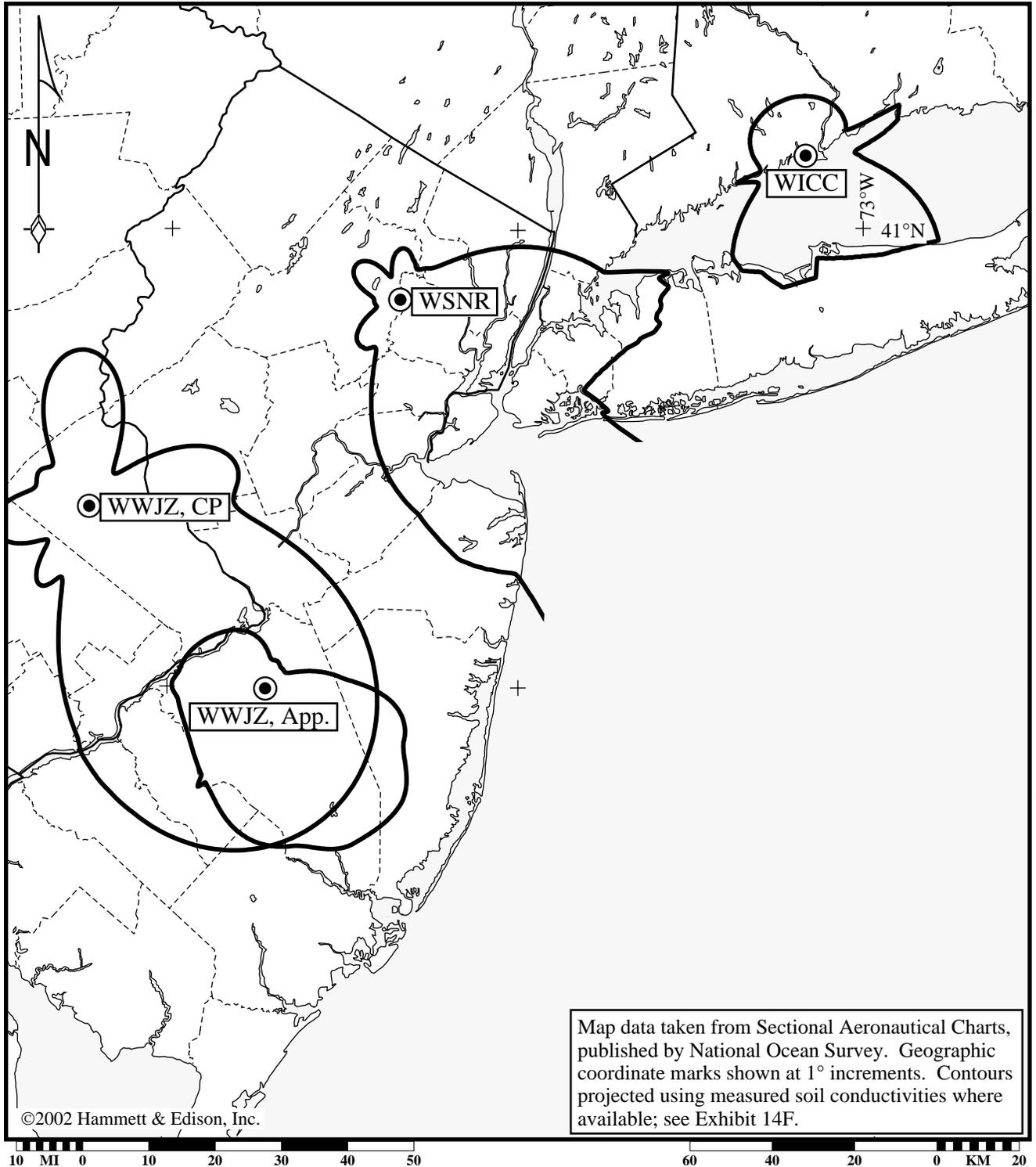
Daytime Groundwave Protection
Proposed WSNR 5 mV/m Contour
vs. 5 mV/m Second-Adjacent Contours



Map data taken from Sectional Aeronautical Charts, published by National Ocean Survey. Geographic coordinate marks shown at 1° increments. Contours projected using measured soil conductivities where available; see Exhibit 14F.

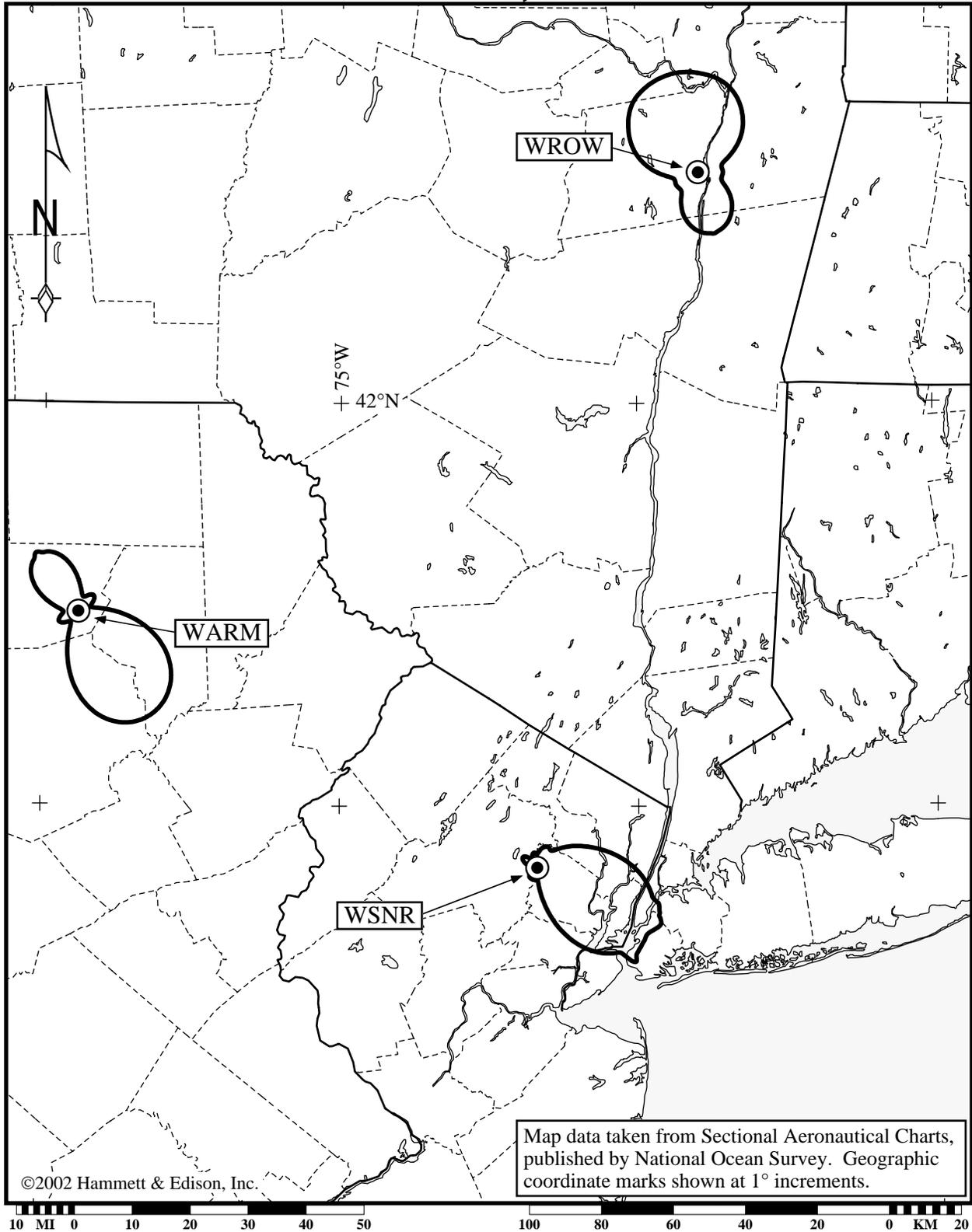
Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Nighttime Groundwave Protection
Proposed WSNR 5 mV/m Contour
vs. 5 mV/m Second-Adjacent Contours



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Daytime Groundwave Protection
Proposed WSNR 25 mV/m Contour
vs. 25 mV/m Third-Adjacent Contours



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Measured Soil Conductivity Data used for Projection of Field Strength Contours

The following tables show the measured soil conductivities used to determine the locations of pertinent field strength contours for six stations: WSNR (licensed), WHEN, WIP, WSNG, WEJL, and WPRO. Detailed studies were performed for these stations to ensure that the proposed facilities met FCC protection requirements. Measured conductivities were used over an arc of $\pm 10^\circ$ from each measured radial; in cases where measured conductivity data exists for radials spaced closer than 20° , the break was taken at the center point between the radials. Estimated conductivities (*i.e.*, from Map M3) were combined with the measured data (using the equivalent distance method) for contour distances located beyond the measured data.

Licensed Radio Station WSNR - 620 kHz, Newark, New Jersey 15 Measured Soil Radials

Source: FCC File No. BZ19780817AB, WSNR Application for License

Coordinates: N 40° 47' 51" W 74° 21' 36"

Az °T	Conductivity		Conductivity									
	mS/m	km	mS/m	km								
9.0	3.0	0.8	1.5	1.8	2.0	11.4	1.5	14.0	1.0	19.2		
35.0	3.0	5.5	5.0	15.4	3.0	20.0						
70.0	1.0	3.5	1.5	6.9	2.0	11.4	3.0	20.0				
110.0	2.0	8.0	3.0	17.9								
150.0	1.5	1.1	2.0	8.0	3.0	15.6						
185.0	2.0	20.1										
195.0	1.5	1.3	2.0	6.0	3.0	19.8						
211.0	2.0	20.0										
220.0	2.0	20.1										
228.0	2.0	5.8	3.0	17.7								
250.0	2.0	10.0	1.5	18.5								
258.0	2.0	9.8	1.5	18.8								
290.0	6.0	7.6	2.0	19.8								
328.0	1.5	1.8	2.0	10.9	1.0	20.0						
335.0	3.0	9.0	2.0	11.4	1.0	18.0						

Radio Station WSNG - 610 kHz, Torrington, Connecticut 10 Measured Soil Radials

Source: FCC File No. BL-10511, WSNG Application for License

Coordinates: N 41° 45' 28" W 73° 03' 06"

Az °T	Conductivity		Conductivity		Conductivity		Conductivity		Conductivity		Conductivity	
	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km
30.0	1.5	4.8	1.0	30.4								
47.0	1.0	31.9										
78.0	1.0	7.2	0.5	17.7	1.0	30.4						
140.0	1.0	31.5										
175.0	1.0	1.1	0.5	28.5								
219.0	1.0	31.9										
250.0	1.0	26.9										
290.0	1.0	26.7										
320.0	1.0	28.8										
355.0	1.0	29.0										

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Soil Conductivity Data for Projection of Field Strength Contours

**Radio Station WIP - 610 kHz, Philadelphia, Pennsylvania
10 Measured Soil Radials**

Source: FCC File No. BL19861110AE, WIP Application for License

Coordinates: N 39° 51' 56" W 75° 06' 43"

Az °T	Conductivity		Conductivity		Conductivity		Conductivity		Conductivity		Conductivity	
	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km
44.0	1.0	2.4	3.0	9.7	5.0	31.9						
105.0	0.5	1.1	1.5	3.1	3.0	16.1	2.0	31.2				
140.0	2.0	31.9										
175.0	3.0	16.9	2.0	31.4								
218.0	2.0	2.9	5.0	31.2								
230.0	1.5	1.6	5.0	31.9								
242.0	2.0	4.3	5.0	30.7								
285.0	2.0	3.2	5.0	31.4								
320.0	0.5	1.3	3.0	2.4	5.0	22.5	3.0	31.9				
355.0	0.5	1.1	1.0	2.7	2.0	8.0	6.0	31.4				

**Radio Station WHEN - 620 kHz, Syracuse, New York
11 Measured Soil Radials**

Source: FCC File No. BMP19990713AG, WEJL Application for Construction Permit plus 1999 Measurements on 135°T (see Exhibit 14H)

Coordinates: N 43° 05' 32" W 76° 11' 22"

Az °T	Conductivity		Conductivity		Conductivity		Conductivity		Conductivity		Conductivity	
	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km
68.5	4.0	22.0										
77.0	4.0	32.2										
122.0	4.0	29.5										
135.0	0.5	0.5	1.5	2.1	3.0	50.1	2.0	99.9	1.0	300.0		
146.9	5.0	12.1	4.0	28.0	3.0	42.0	2.0	120.1	1.5	135.0	1.0	140.8
166.9	2.0	6.9	3.0	46.0	2.0	127.9	1.5	148.9				
186.9	4.0	40.1	3.0	70.0	2.0	115.1						
201.0	4.0	12.1	3.0	29.9								
223.0	4.0	31.1										
257.0	4.0	31.2										
274.0	4.0	31.9										

Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Soil Conductivity Data for Projection of Field Strength Contours

Radio Station WEJL - 630 kHz, Scranton, Pennsylvania

17 Measured Soil Radials

Source: FCC File No. BMP19990713AG, WEJL Application for Construction Permit plus 2001 Measurements on 105°T (see Exhibit 14G)

Coordinates: N 41° 24' 34" W 75° 40' 01"

Az °T	Conductivity											
	mS/m	km										
7.2	4.0	8.0	2.0	29.9	2.0	60.0	1.5	111.8				
27.2	10.0	9.0	3.0	17.1	2.0	34.0	1.5	65.0				
45.0	2.0	1.9	4.0	22.0	3.0	36.7						
90.0	2.0	5.0	1.5	31.4								
105.0	0.5	0.75	1.0	105.0	0.5	119.6						
120.0	3.0	8.0	1.0	29.9	0.5	60.0	0.1	66.1				
140.0	1.5	1.6	6.0	5.0	1.5	20.0	1.0	57.1				
160.0	2.0	24.1	1.0	46.7								
180.0	1.5	22.5	1.0	45.1								
185.0	3.0	5.0	1.5	6.9	1.0	20.0	0.5	80.0	1.0	121.5		
205.0	0.5	1.8	1.5	3.5	3.0	8.0	1.5	17.1	1.5	60.0	1.0	108.6
225.0	2.0	13.0	5.0	36.0	3.0	70.0	2.0	139.2				
245.0	1.5	1.9	3.0	8.0	1.5	80.0	2.0	105.1				
270.0	5.0	6.9	1.5	27.5								
307.2	1.5	130.4										
327.2	1.0	1.0	4.0	5.0	2.0	55.0	1.5	140.3				
347.2	3.0	22.0	2.0	119.6								

Radio Station WPRO - 630 kHz, Providence, Rhode Island

12 Measured Soil Radials

Source: FCC File No. BL19801215AH, WPRO Application for License

Coordinates: N 41° 46' 28" W 71° 19' 23"

Az °T	Conductivity		Conductivity		Conductivity		Conductivity		Conductivity		Conductivity	
	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km	mS/m	km
51.0	3.0	8.9	1.0	32.0								
60.0	2.0	9.7	1.5	32.0								
70.5	2.0	11.3	1.5	17.7	1.0	32.0						
112.0	3.0	19.3	1.5	29.8								
148.0	3.0	16.1	1.5	33.3								
217.0	4.0	19.3	2.0	32.8								
237.5	3.0	13.7	2.0	33.8								
240.0	2.0	17.7	1.5	27.0								
263.0	3.0	16.9	1.0	32.0								
277.5	4.0	12.9	1.5	34.4								
332.0	3.0	20.1	1.5	31.5								
352.0	2.0	32.7										

Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Field Strength Measurements on Station WEJL, 630 kHz, at 105°T

<u>Point</u>	<u>Distance</u>	<u>Date/Time</u>	<u>Field</u>	
1	0.18 km	c1002	1000 mV/m	
2	0.36	c1015	410	
3	0.52	c1027	290	
4	0.63	c1047	235	
5	0.78	c1058	225	
6	0.91	c1107	185	
7	1.05	c1113	125	
8	1.19	c1125	135	
9	1.32	c1141	160	
10	1.58	c1220	120	
11	1.71	c1225	74	
12	1.84	c1230	92	
13	2.12	c1250	47.0	
14	26.0	b1400	0.97	
15	30.5	b1327	0.79	
16	33.7	b1340	0.63	
17	39.5	b1303	0.57	
18	41.6	b1243	0.480	
19	47.6	b1210	0.252	
20	49.9	b1200	0.198	
21	52.5	b1140	0.269	
22	57.7	b1040	0.131	
23	62.5	b1020	0.110	
24	67.0	b0935	0.131	
25	69.9	b0915	0.093	
26	73.1	b0858	0.121	
27	75.2	b0845	0.098	
28	79.5	a1442	0.071	
29	84.1	a1400	0.062	
30	90.0	a1345	0.066	
31	93.9	a1325	0.057	
32	97.8	a1305	0.0355	
33	102	a1240	0.061	
34	113	a1137	0.0222	
35	117	a1115	0.0298	
36	120	a1055	0.0332	

Dates of Measurements:

a	November 16, 2001
b	November 17, 2001
c	November 27, 2001

Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Certificate of Field Measurements on WEJL

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained to determine by measurement the unattenuated field strength and ground conductivity toward 105°T from Radio Station WEJL, 630 kHz, Scranton, Pennsylvania.

Results of Measurements

Station WEJL operates at 500 watts nominal power into a non-directional tower in downtown Scranton. All field strength measurements contained in this report were made by qualified Hammett & Edison, Inc. personnel under my direction. It is believed that all measurements were carefully made and are a true representation of the field strengths existing at the times and locations shown. Wherever possible, the measurements were made in clear areas removed from overhead wires, fences, and other large metallic obstructions. A Potomac Instruments field strength meter, Model FIM-41, Serial No. 723, was employed for the measurements. Graph 4 of Section 73.184 of the FCC Rules was used to determine the unattenuated radiation and ground conductivity along the radial.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2005. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



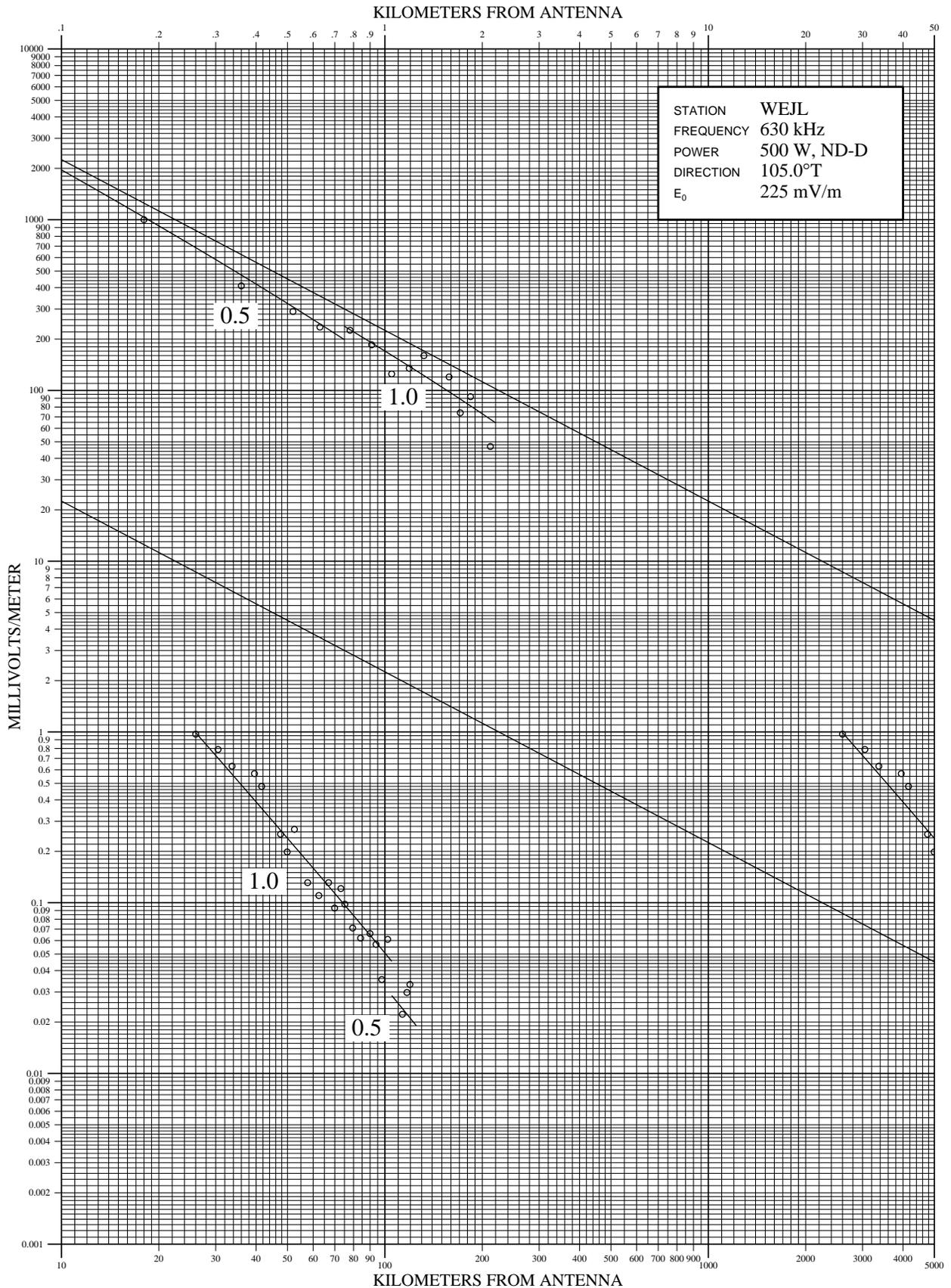
William F. Hammett

William F. Hammett, P.E.

April 15, 2002

Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Measured Field Strengths for WEJL, 630 kHz, on 105°T



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Field Measurements on Station WHEN, 620 kHz, at 135°T

<u>Point</u>	<u>Distance</u>	<u>Date/Time</u>	<u>Field</u>	<u>Point</u>	<u>Distance</u>	<u>Date/Time</u>	<u>Field</u>
1	0.18 km	a0925	3050 mV/m	37	57.8 km	d1125	1.08 mV/m
2	0.30	a0941	1780	38	69.9	d1434	0.680
3	0.41	a0959	1250	39	84.2	d1508	0.386
4	0.59	a1010	1050	40	100	d1547	0.240
5	0.70	a1235	900	41	120	d1644	0.120
6	0.76	a1239	820	42	141	d1727	0.092
7	0.88	a1242	600	43	151	d1827	0.0345
8	0.95	a1246	475	44	168	e1503	0.0475
9	1.11	a1250	510	45	181	e1520	0.0280
10	1.23	a1253	410	46	193	e1645	0.0155
11	1.33	a1258	330	47	212	e1717	0.0150
12	1.50	a1307	400	48	225	e1802	0.0142
13	1.67	a1322	260	49	238	a1515	0.0240
14	1.77	a1328	290	50	263	a1645	0.0118
15	2.40	a1345	260	51	291	f1235	0.0110
16	2.56	a1357	245	52	316	f1405	0.0130
17	2.71	a1406	215	53	344	f1653	0.0105
18	2.82	a1420	215				
19	2.90	a1435	210				
20	3.05	a1440	170				
21	3.15	c0908	160				
22	4.25	c0916	108				
23	5.00	c0925	105				
24	5.72	c0939	123				
25	6.50	c0945	71				
26	7.53	c0958	79				
27	8.78	c1018	64				
28	10.4	c1033	63				
29	12.7	c1108	41.0				
30	15.9	c1126	24.2				
31	18.9	c1308	17.3				
32	23.3	c1334	8.4				
33	27.7	c1352	9.1				
34	34.2	c1443	5.7				
35	40.8	c1503	3.83				
36	48.6	c1522	2.32				

Dates of Measurements:

- a June 10, 1999
- b June 13, 1999
- c June 17, 1999
- d June 18, 1999
- e June 22, 1999
- f June 23, 1999

Certificate of Field Measurements on WHEN

Gerald E. Corby
7 Summit Ave.
Budd Lake, NJ 07828
973 691 9586

Nov. 15, 2001

Scott Clifton, Dir. of Engineering
Sporting News Radio
1935 Techny Road, Suite 18
Northbrook, IL 60062

Dear Scott,

This is a statement to supplement the attached record of field strength measurements of station W H E N, AM 620, Syracuse, NY. These measurements were made, at your request, during the month of June, 1999. They were made by me with the occasional assistance of Michael Pritchard.

I have worked in the field of radio broadcast engineering for more than thirty years. During that time I have participated in field strength measurements, at several stations, for antenna proof of performance and monitor point maintenance. As a result, I believe I can say that I am very highly qualified to make field measurements of AM radio broadcast stations.

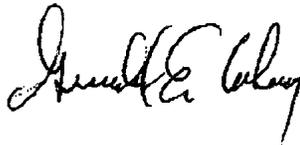
Mr. Pritchard has five years experience in making field strength readings, for antenna proof purposes, at several stations. In my opinion, he is very well qualified at this work.

A note about the data:

As requested, measurements were made on the bearings of 135 degrees and 155 degrees from the W H E N site. At distant points from the station, interference from co-channel station W J W R, AM 620, Newark, NJ, was observed. Whenever this occurred, W J W R was contacted by telephone and its carrier was interrupted briefly so that an accurate measurement of W H E N could be made.

If you have need of any further details, don't hesitate to ask.

Sincerely,



Radio Station WSNR • 620 kHz, Class B • Jersey City, New Jersey

Measured Field Strengths for WHEN, 620 kHz, on 135°T

