

Attachment # 11
Discussion
Comprehensive Technical Exhibit
Covering Exhibits 11 through 18

This engineering Report is in support of an application for a Major Change from WSPY, Geneva, Illinois to Millbrook, Illinois, 1480 kHz Class B channel – 400 W day and 250 W night DA-2.

Discussion

This application is filed pursuant to the settlement of MX 84-18. Attached is “Engineering Report”, “Settlement Summary of MX Group 84-18”.

This application, a change in both technical facility and city of license, is filed under the FCC Policy for “Interference Reduction” in that, overall, this proposal gives and receives less interference than the current licensed facility.

Broadcast Facility

The applicant proposes to construct a total of 5 towers, 4 towers for day, 3 for night (1 common), as specified in the Tech Box. The transmission system would include a transmitter, phaser, and sampling system, all compliant with the FCC current requirements. Each tower would have 120 ground radials, 90 degrees long, except where they intersect radials from another tower or are truncated at the edge of the property. The transmitter site is 10 acres, 660 feet by 660 feet on flat farm land. (See site aerial attached.) The towers are less than 199 feet tall and are not in the glide slope of an FAA recognized airport and will not be painted or lit, unless required by the FAA.

Blanket Contour

The proposed 1.0v/m “Blanket Contour ” map has been included in this report. While the population count using the 2000 U.S. Census shows there is 0 persons in the 1.0 v/m, there is an old farm house within the 1v/m contour and it is believed as many as 6 persons live there.

The proposed facility at 1480 kHz has the following population counts based on 2000 U.S. Census (except 1 v/m):

		<u>Population</u>	<u>Sq KM</u>
1,000	mv/m	6	.1
5	mv/m	36,256	646.3
2	mv/m	68,432	1,606.2
.5	mv/m	660,353	5,885.1
5.429	I.F.	29,687	374.9

307(b)

In a separate filing the applicant has made a 307(b) showing for Millbrook, Illinois as requested by the FCC.

Main Studio

The main studio will be located in compliance with the requirements of 73.1125.

Groundwave

The proposed allocation study of 1480 kHz shows compliance with the requirement of FCC rules and/or meets the objectives of the FCC Policy of AM Interference Reduction. The attached Allocation Study maps demonstrate that fact. FCC M-3 conductivities have been used in calculating most contours. See Engineering Maps for 1480, 1490, 1470, 1460 and 1500 and 1450 and 1510 kHz.

Skywave Interference

The major change station meets the FCC requirements for "Class B" station under the Interference Reduction policy.

Critical Hours Interference

This proposed operation is in compliance with the requirement of 73.187, no critical hours of operation is required.

Environmental Effects

The proposed operation is in compliance with OET Bulletin No. 65. Full protection is afforded by the proposal. An RF study has been included in Exhibit 18. Workers and the general public will not be exposed to high radiation at the station. The towers will be in a location, properly enclosed by a locked security fence, and RF warning signs are posted. The station will operate with transmitter power of 400 W. The station will be in compliance with the radio frequency protection guides of the American National Standards Institute, and OET Bulletin No. 65, including the reduction or cessation of transmitter power when persons have access to the site, towers or antenna. The station will comply with Section 1.1307 of the Commission's rules. Grant of the station's application will not result in a significant environmental impact per the worksheet. The applicant's controlling shareholders, Larry and Pam Nelson, currently own the proposed transmitter site. Zoning for the site was applied for, and denied by the township zoning authorities. The Circuit court then reversed the township and granted the zoning for the transmitter site. The township has applied to the Illinois Appellate Court.

Exhibit 18

1. R-F RADIATION GUIDELINES COMPLIANCE STUDY

This instant application has been evaluated for potential of human exposure to non-ionizing radiofrequency radiation. The guidelines set forth in OET Bulletin No. 65 were used as the standard for this evaluation.

The proposed facility at 400 watts, with a Radiator of 87.0 degrees and a frequency of 1480 kHz requires fencing at 1 Meter from the tower base (1 Meter for 1kw). Fencing as the tower site will comply with or exceed this requirement.

In the event maintenance personnel are required to work within the restricted areas, they will be advised to limit their work in the high RF field areas to specified periods of time appropriate for compliance with the FCC guidelines set forth in OET Bulletin No. 65 (Edition 97-01). If their work cannot be completed within the specified period of time, it is proposed to reduce power appropriately or shut down the operation of the stations to permit completion of the assignment.

Larry Nelson
President
Nelson Multimedia, Inc.
October 2005
FCC License PG-18-9128

Doug Nelson
FCC License PG00016571

ENGINEERING REPORT

Settlement Summary of MX-Group 84-18

These stations were part of this group:

WSPY	ARN 20040127ACW	Major Change to Millbrook, Illinois
WCFJ	ARN 20040126AJC	Major Change to Dolton, Illinois
New	ARN 20040129ATZ	New – Monona, Wisconsin

The applicant at Monona, Wisconsin has reached a settlement with WSPY to dismiss their New application at Monona, Wisconsin.

WCFJ is requesting a change in City of License only – no change in technical facilities.

WSPY's current licensed facility at Geneva, Illinois and its proposed facility at Millbrook, Illinois gives and takes interference to the WCFJ facility.

WSPY's major change is both change of City of License and technical facilities and is filed under the FCC Policy for "Interference Reduction".

With the major change at Millbrook, Illinois, WSPY takes and gives less interference to WCFJ.

Therefore, WCFJ's request and WSPY's request become and should be treated as "singletons", thus, deleting MX-Group 84-18

ENGINEERING SHOWING

WSPY's major change in facility at Millbrook, Illinois has reduced the overlap to WCFJ.

The map "WSPY Interference Reduction to WCFJ" shows the reduction in area of interference given and received.

On the map WSPY at Millbrook in red shows the 1480 .5mV/m and .25 mV/m.

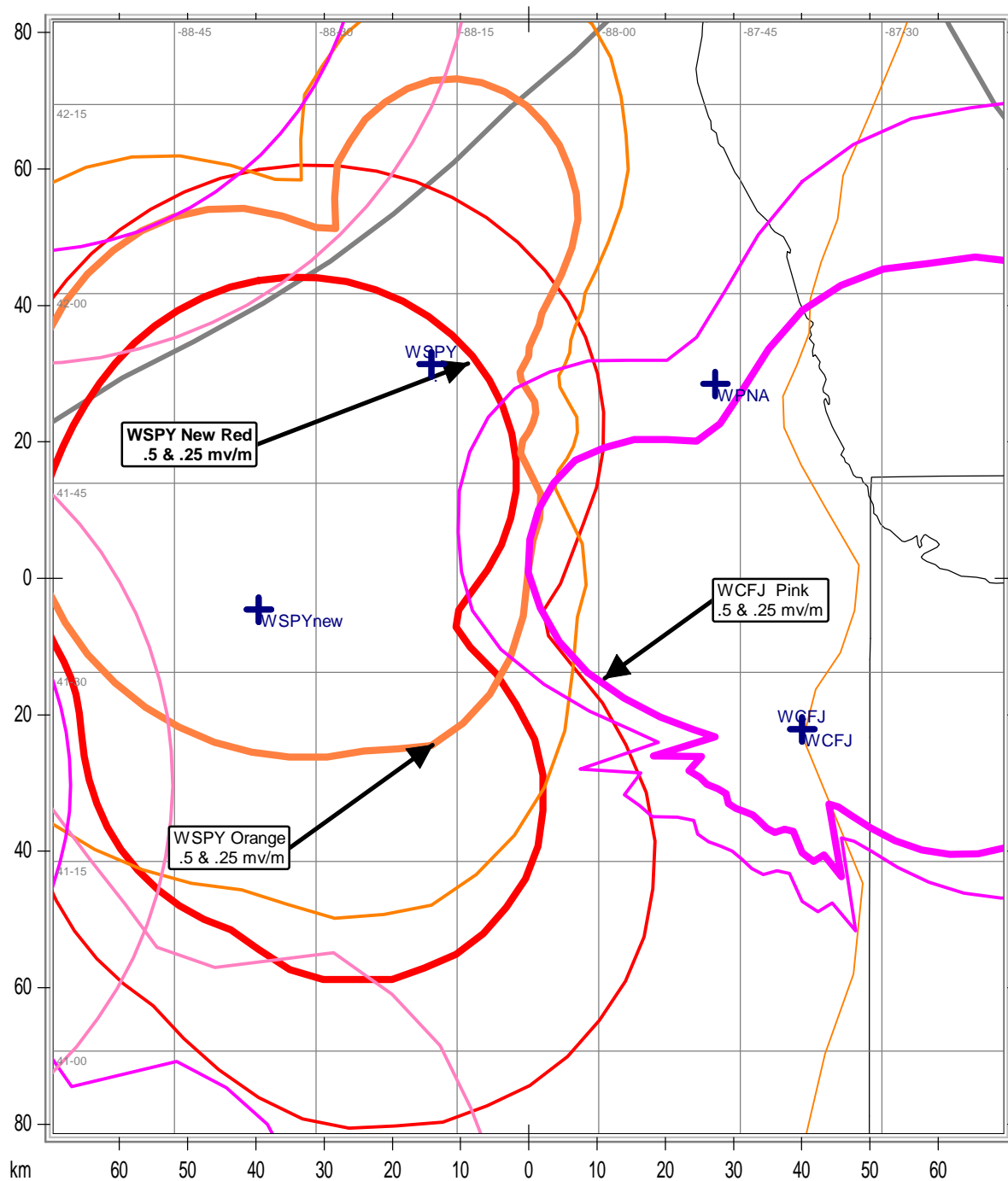
Orange is WSPY's licensed facility .5mV/m and .25mV/m.

Pink is WCFJ Chicago Height and Dalton, Illinois .5mV/m and .25mV/m.

WCFJ and WSPY had pre-existing prohibitive contour overlap. That overlap has not increased in area and has, in fact, decreased in area, thus, under the FCC policy WCFJ and WSPY are not MX and should be treated as singletons.

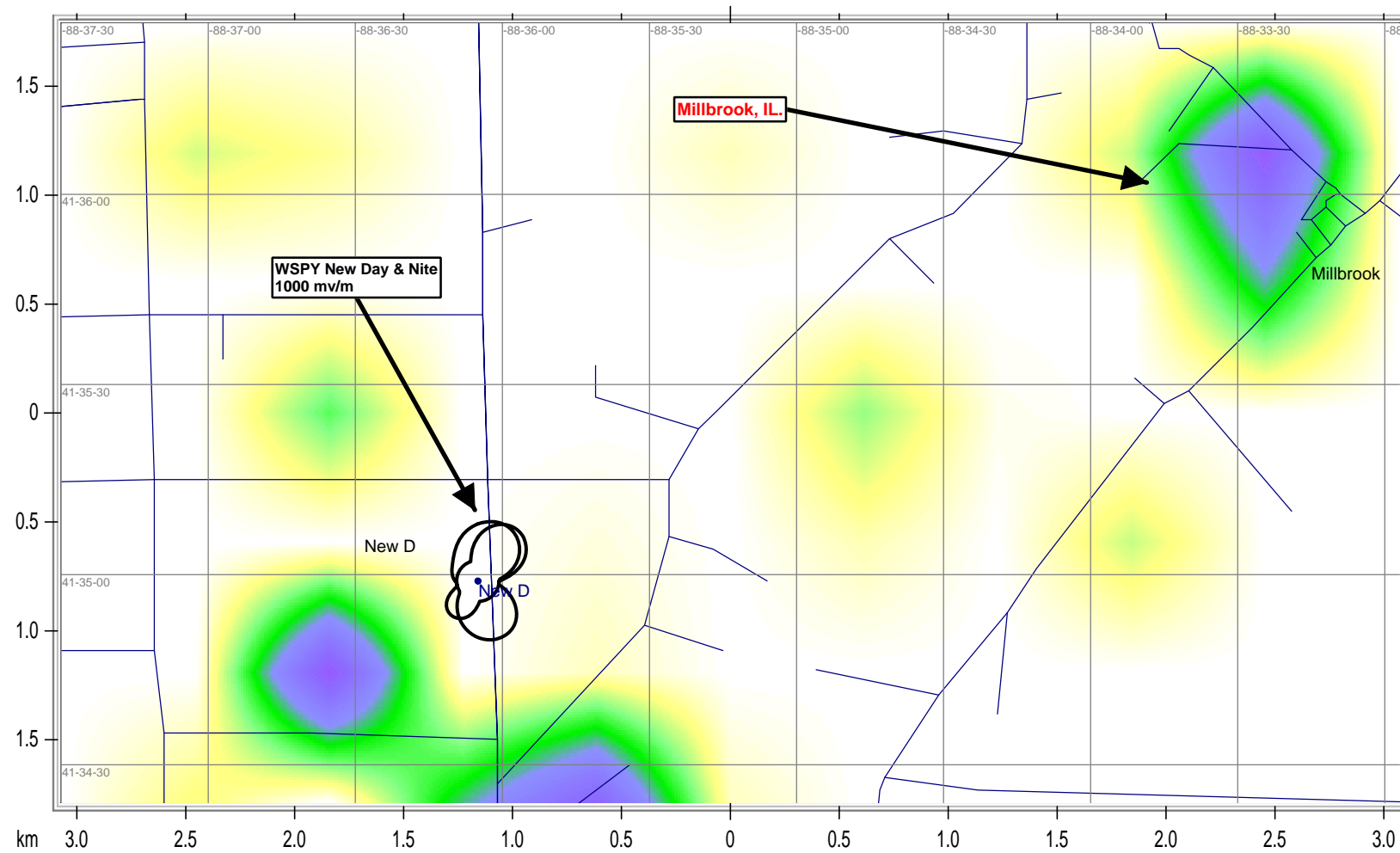
Larry Nelson
Lic # PG-18-9128

Interference Reduction WSPY & WCFJ





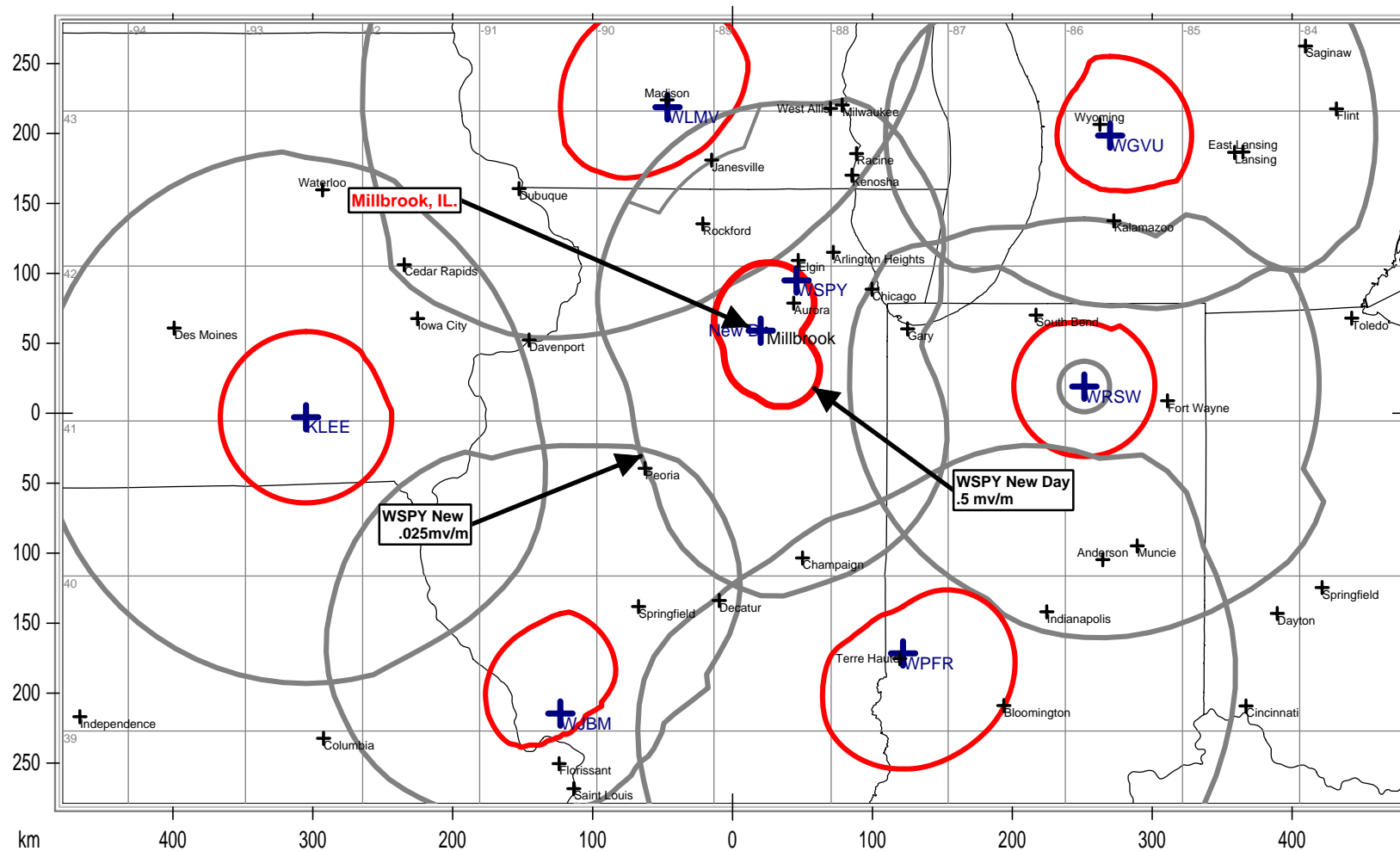
Blanket 1,000 mv/m Day and Nite



Black = 1v/m

State Borders Streets Lat/Lon Grid

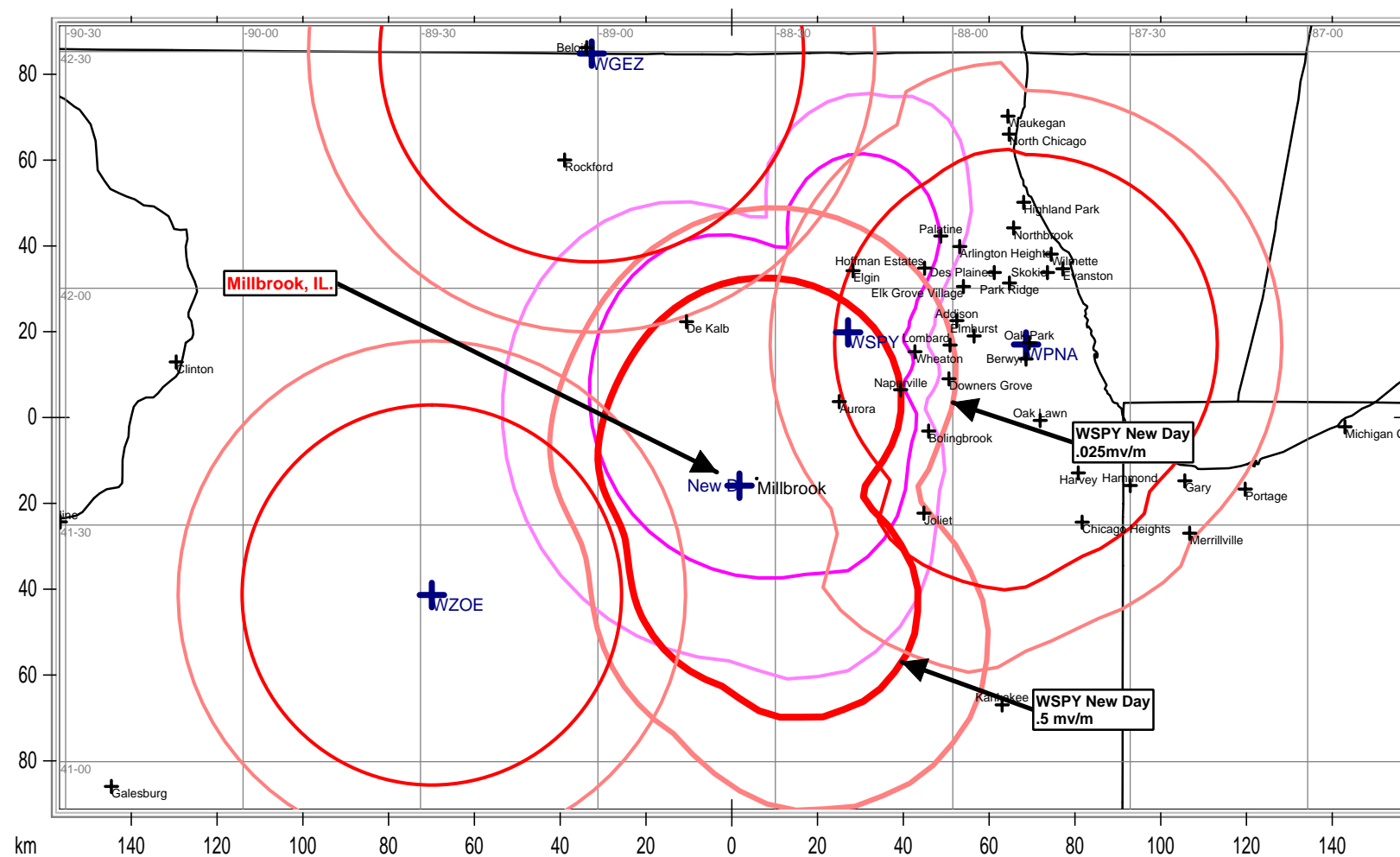
1480Khz Allocation---- CoChannel



Gray = .025mv/m Red = .5 mv/m

State Borders Lat/Lon Grid

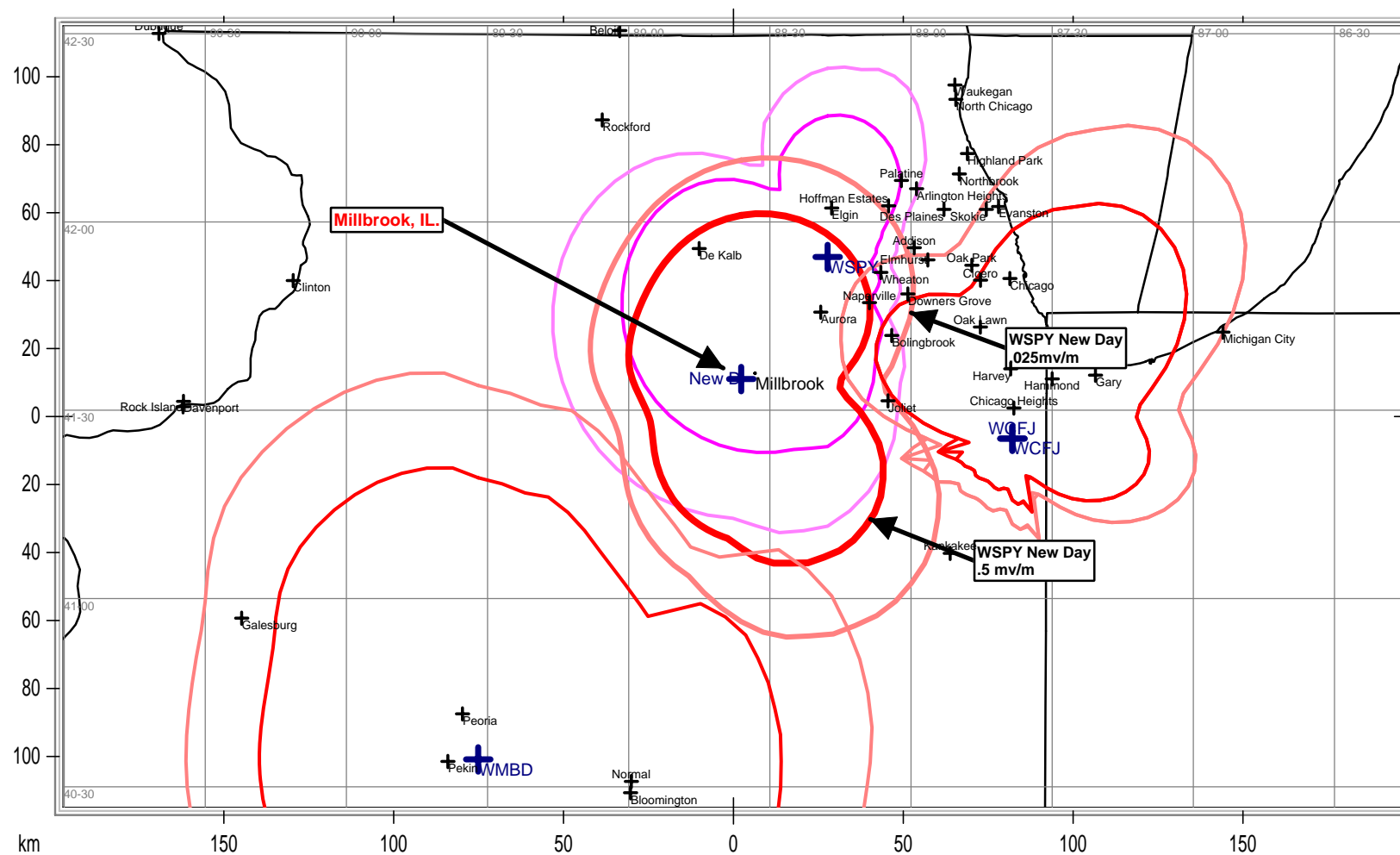
1480Khz Allocation----1490Khz



Interference Reduction Red = .5 mv/m & .25mv/m, Pink = .5 & .25mv/m WSPY lic.

State Borders Lat/Lon Grid

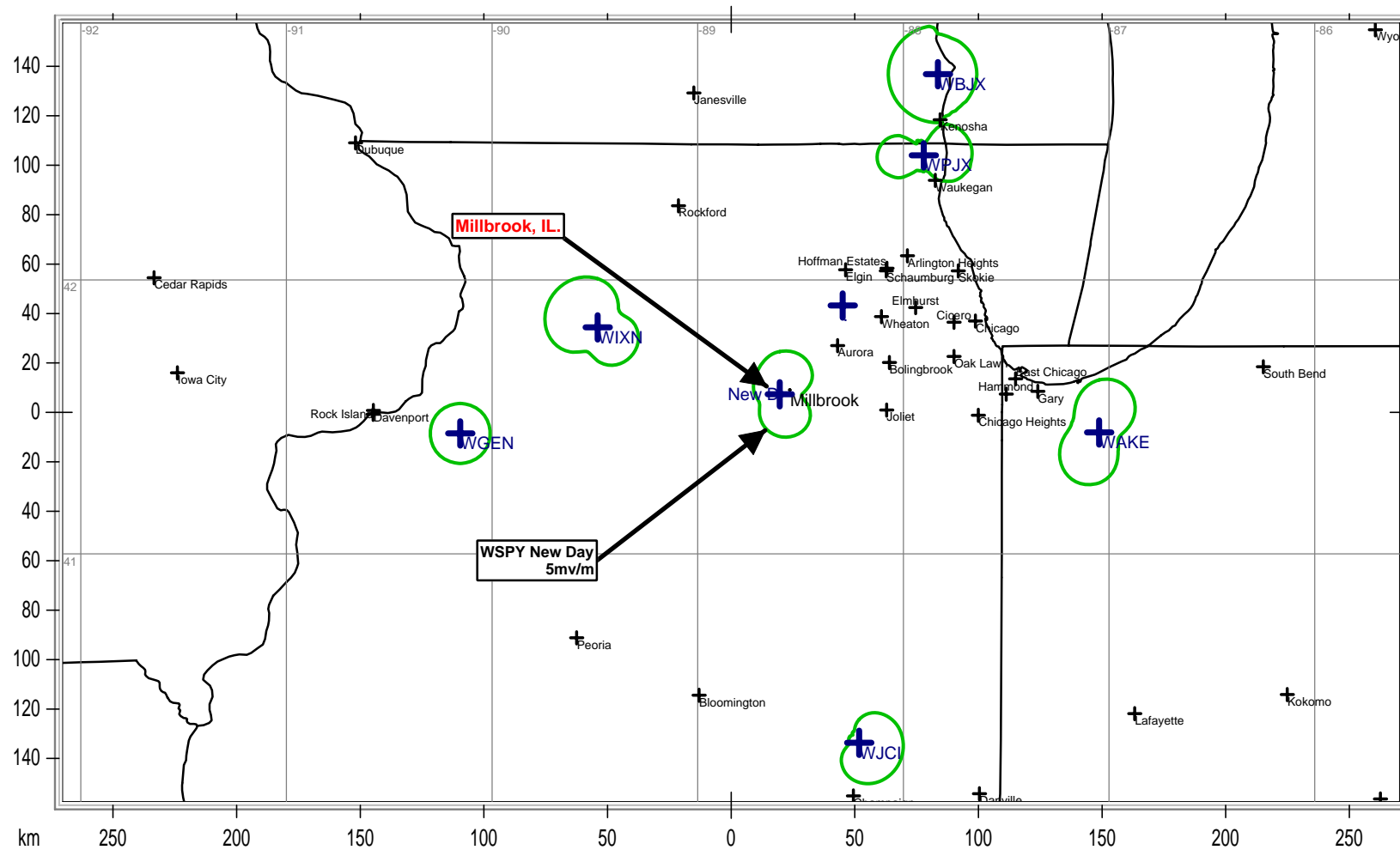
1480Khz Allocation----1470Khz



Interference Reduction Red = .5 mv/m & .25mv/m, Pink= .5 & .25mv/m WSPY lic.

 State Borders
 Lat/Lon Grid

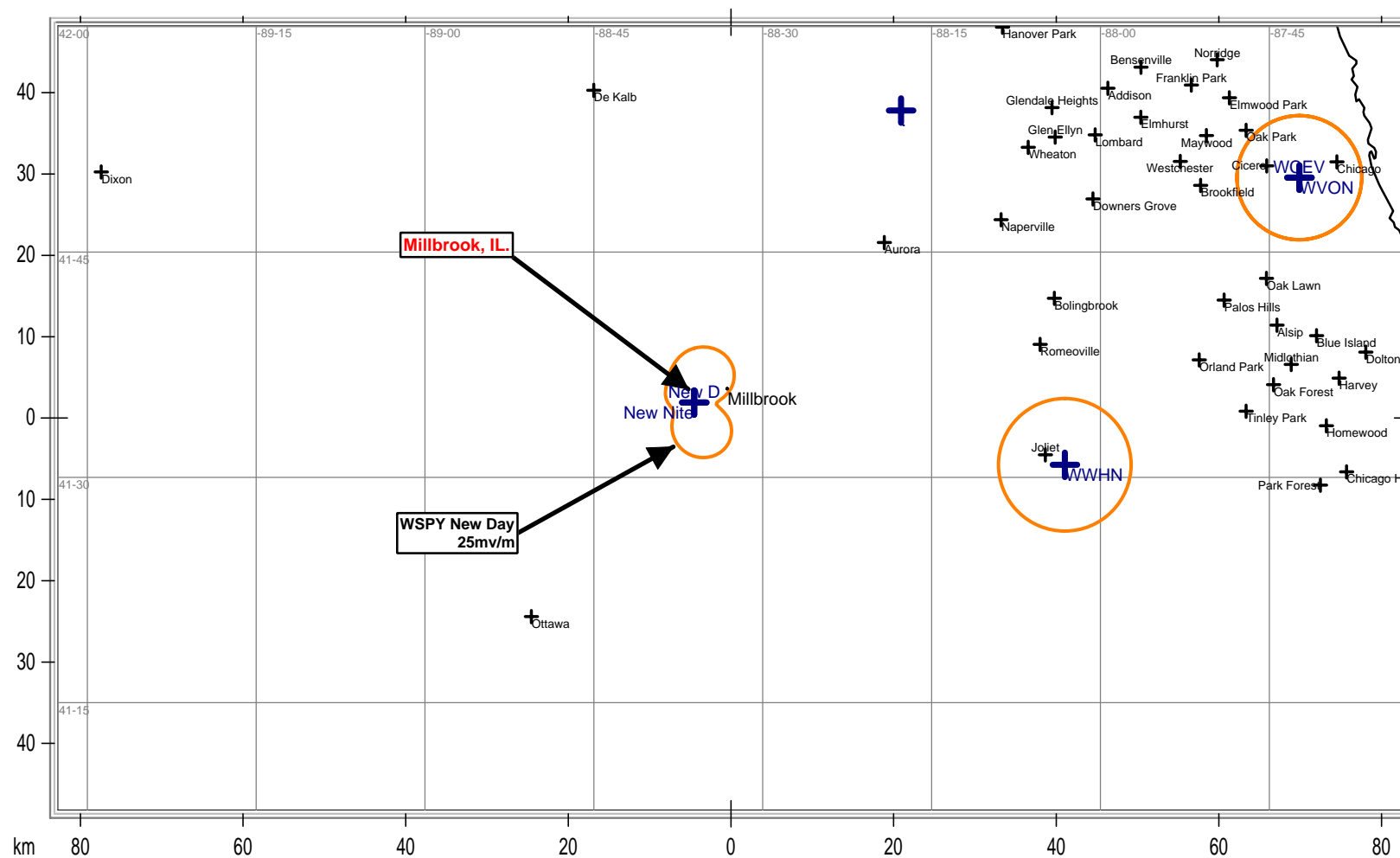
1480Khz Allocation----1460 khz & 1500Khz



Green = 5mv/m

State Borders Lat/Lon Grid

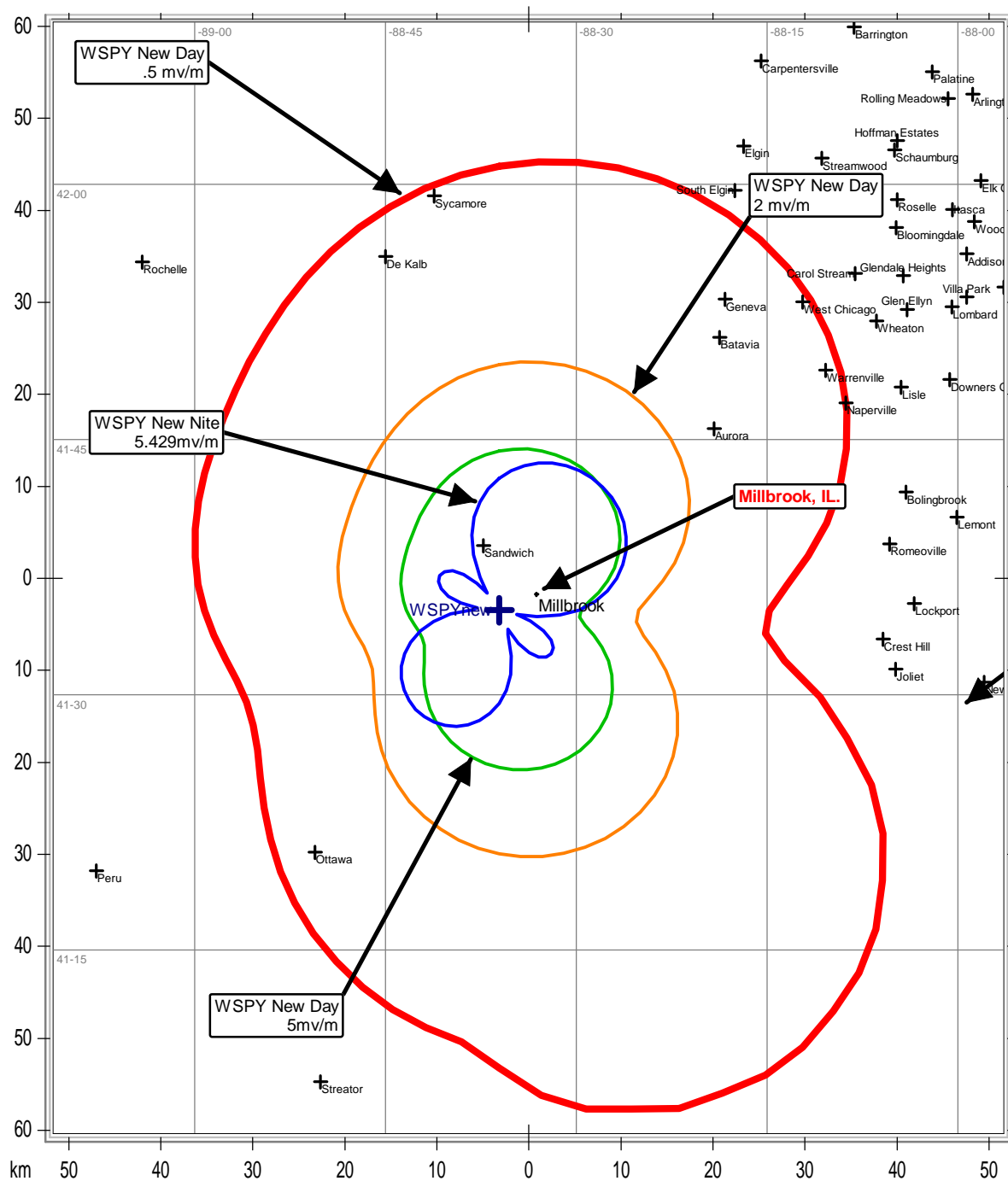
1480Khz Allocation----1450 & 1510Khz



Orange = 25 mv/m

 State Borders
 Lat/Lon Grid

Millbrook, IL. Population Study Coverage Map



State Borders Lat/Lon Grid

Millbrook iL 307b Pop Study Data

Callsign : WSPYnew
 Coordinates : 41-34-59.0 N, 88-36-05.0 W
 Comments :
 Frequency (KHz): 1480
 Power (w): 400.000
 Pattern : AD
 Efficiency : 209.911 mV/M
 Desc : DA2
 City/State : GENEVA, IL
 ARN :
 Licensee : NELSON MULTIMEDIA, INC.

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	87.0	0.0
2	1.128	252.8	153.4	215.1	87.0	0.0
3	1.569	152.6	122.0	184.3	87.0	0.0
4	0.856	18.3	64.9	265.7	87.0	0.0

Brng	Span	mV/M

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	292.101	75	153.843	150	305.565	225	138.778	300	144.079	
5	301.773	80	128.372	155	310.751	230	122.585	305	150.463	
10	309.255	85	106.100	160	312.422	235	108.792	310	158.356	
15	314.305	90	91.343	165	310.777	240	98.373	315	168.048	
20	316.716	95	89.177	170	306.070	245	92.153	320	179.579	
25	316.314	100	100.742	175	298.585	250	90.397	325	192.753	
30	312.958	105	121.794	180	288.622	255	92.563	330	207.188	
35	306.545	110	147.462	185	276.485	260	97.499	335	222.392	
40	297.018	115	174.557	190	262.475	265	103.933	340	237.830	
45	284.375	120	201.183	195	246.888	270	110.820	345	252.978	
50	268.678	125	226.147	200	230.022	275	117.465	350	267.352	
55	250.071	130	248.647	205	212.183	280	123.514	355	280.518	
60	228.796	135	268.131	210	193.711	285	128.909			
65	205.232	140	284.231	215	174.991	290	133.847			
70	179.952	145	296.736	220	156.487	295	138.728			

0.0 ohm K	: 90.082	1.0 ohm K	: 88.577
RMSS	: 220.657	RMSt	: 209.911
RSS	: 207.105		

Contour type : Ground wave
 Signal strength : 0.500 mV/m
 Area covered : 5885.100 sq. km
 Population covered: 660353 persons

Azimuth	Field	Contour	Distance
Degrees	mV/m @ 1 km	mV/m	km
0	292.10	0.500	48.33
5	301.77	0.500	48.98
10	309.25	0.500	49.48
15	314.31	0.500	49.83
20	316.72	0.500	49.99
25	316.31	0.500	49.97
30	312.96	0.500	49.74
35	306.55	0.500	49.30
40	297.02	0.500	48.66
45	284.38	0.500	47.80
50	268.68	0.500	46.67

Millbrook iL 307b Pop Study Data

55	250.07	0.500	45.27
60	228.80	0.500	43.63
65	205.23	0.500	41.67
70	179.95	0.500	39.41
75	153.84	0.500	36.88
80	128.37	0.500	34.15
85	106.10	0.500	31.46
90	91.34	0.500	29.47
95	89.18	0.500	29.17
100	100.74	0.500	31.62
105	121.79	0.500	36.24
110	147.46	0.500	40.41
115	174.56	0.500	44.88
120	201.18	0.500	48.46
125	226.15	0.500	51.21
130	248.65	0.500	53.88
135	268.13	0.500	55.79
140	284.23	0.500	56.97
145	296.74	0.500	58.05
150	305.56	0.500	58.42
155	310.75	0.500	58.00
160	312.42	0.500	57.75
165	310.78	0.500	56.26
170	306.07	0.500	55.18
175	298.58	0.500	53.07
180	288.62	0.500	49.93
185	276.49	0.500	47.24
190	262.48	0.500	46.20
195	246.89	0.500	45.04
200	230.02	0.500	43.73
205	212.18	0.500	42.24
210	193.71	0.500	40.67
215	174.99	0.500	38.96
220	156.49	0.500	37.16
225	138.78	0.500	35.32
230	122.58	0.500	33.49
235	108.79	0.500	31.80
240	98.37	0.500	30.45
245	92.15	0.500	29.59
250	90.40	0.500	29.34
255	92.56	0.500	29.64
260	97.50	0.500	30.33
265	103.93	0.500	31.18
270	110.82	0.500	32.07
275	117.47	0.500	32.89
280	123.51	0.500	33.60
285	128.91	0.500	34.21
290	133.85	0.500	34.77
295	138.73	0.500	35.32
300	144.08	0.500	35.89
305	150.46	0.500	36.55
310	158.36	0.500	37.35
315	168.05	0.500	38.31
320	179.58	0.500	39.38
325	192.75	0.500	40.59
330	207.19	0.500	41.83
335	222.39	0.500	43.11
340	237.83	0.500	44.35
345	252.98	0.500	45.49
350	267.35	0.500	46.57
355	280.52	0.500	47.53

Contour type : Ground Wave

Millbrook iL 307b Pop Study Data

Signal strength : 2.000 mV/m
Area covered : 1606.200 sq. km
Population covered: 68432 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	2.000	26.70
5	301.77	2.000	27.09
10	309.25	2.000	27.38
15	314.31	2.000	27.58
20	316.72	2.000	27.67
25	316.31	2.000	27.65
30	312.96	2.000	27.52
35	306.55	2.000	27.28
40	297.02	2.000	26.90
45	284.38	2.000	26.38
50	268.68	2.000	25.70
55	250.07	2.000	24.89
60	228.80	2.000	23.89
65	205.23	2.000	22.72
70	179.95	2.000	21.36
75	153.84	2.000	19.81
80	128.37	2.000	18.12
85	106.10	2.000	16.44
90	91.34	2.000	15.21
95	89.18	2.000	15.02
100	100.74	2.000	16.01
105	121.79	2.000	17.64
110	147.46	2.000	19.40
115	174.56	2.000	21.05
120	201.18	2.000	22.51
125	226.15	2.000	23.76
130	248.65	2.000	24.83
135	268.13	2.000	25.68
140	284.23	2.000	26.38
145	296.74	2.000	26.89
150	305.56	2.000	27.24
155	310.75	2.000	27.44
160	312.42	2.000	27.50
165	310.78	2.000	27.44
170	306.07	2.000	27.26
175	298.58	2.000	26.96
180	288.62	2.000	26.56
185	276.49	2.000	26.05
190	262.48	2.000	25.44
195	246.89	2.000	24.75
200	230.02	2.000	23.95
205	212.18	2.000	23.08
210	193.71	2.000	22.11
215	174.99	2.000	21.07
220	156.49	2.000	19.97
225	138.78	2.000	18.83
230	122.58	2.000	17.70
235	108.79	2.000	16.65
240	98.37	2.000	15.81
245	92.15	2.000	15.28
250	90.40	2.000	15.12
255	92.56	2.000	15.31
260	97.50	2.000	15.74
265	103.93	2.000	16.27
270	110.82	2.000	16.81
275	117.47	2.000	17.32
280	123.51	2.000	17.76

Millbrook iL 307b Pop Study Data

285	128.91	2.000	18.16
290	133.85	2.000	18.50
295	138.73	2.000	18.83
300	144.08	2.000	19.18
305	150.46	2.000	19.59
310	158.36	2.000	20.09
315	168.05	2.000	20.66
320	179.58	2.000	21.34
325	192.75	2.000	22.06
330	207.19	2.000	22.82
335	222.39	2.000	23.58
340	237.83	2.000	24.33
345	252.98	2.000	25.02
350	267.35	2.000	25.65
355	280.52	2.000	26.22

Contour type : Ground Wave
Signal strength : 5.000 mV/m
Area covered : 646.300 sq. km
Population covered: 36256 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	5.000	17.28
5	301.77	5.000	17.56
10	309.25	5.000	17.78
15	314.31	5.000	17.93
20	316.72	5.000	18.00
25	316.31	5.000	17.98
30	312.96	5.000	17.89
35	306.55	5.000	17.70
40	297.02	5.000	17.42
45	284.38	5.000	17.04
50	268.68	5.000	16.55
55	250.07	5.000	15.95
60	228.80	5.000	15.22
65	205.23	5.000	14.36
70	179.95	5.000	13.36
75	153.84	5.000	12.24
80	128.37	5.000	11.02
85	106.10	5.000	9.83
90	91.34	5.000	8.96
95	89.18	5.000	8.83
100	100.74	5.000	9.53
105	121.79	5.000	10.69
110	147.46	5.000	11.95
115	174.56	5.000	13.14
120	201.18	5.000	14.21
125	226.15	5.000	15.13
130	248.65	5.000	15.90
135	268.13	5.000	16.53
140	284.23	5.000	17.04
145	296.74	5.000	17.41
150	305.56	5.000	17.67
155	310.75	5.000	17.82
160	312.42	5.000	17.87
165	310.78	5.000	17.82
170	306.07	5.000	17.69
175	298.58	5.000	17.47
180	288.62	5.000	17.17
185	276.49	5.000	16.80
190	262.48	5.000	16.36
195	246.89	5.000	15.84

Millbrook iL 307b Pop Study Data

200	230.02	5.000	15.27
205	212.18	5.000	14.62
210	193.71	5.000	13.92
215	174.99	5.000	13.16
220	156.49	5.000	12.36
225	138.78	5.000	11.54
230	122.58	5.000	10.73
235	108.79	5.000	9.98
240	98.37	5.000	9.38
245	92.15	5.000	9.01
250	90.40	5.000	8.90
255	92.56	5.000	9.04
260	97.50	5.000	9.33
265	103.93	5.000	9.71
270	110.82	5.000	10.10
275	117.47	5.000	10.46
280	123.51	5.000	10.77
285	128.91	5.000	11.05
290	133.85	5.000	11.30
295	138.73	5.000	11.54
300	144.08	5.000	11.79
305	150.46	5.000	12.09
310	158.36	5.000	12.44
315	168.05	5.000	12.87
320	179.58	5.000	13.35
325	192.75	5.000	13.88
330	207.19	5.000	14.43
335	222.39	5.000	15.00
340	237.83	5.000	15.53
345	252.98	5.000	16.05
350	267.35	5.000	16.51
355	280.52	5.000	16.92

Callsign : New Nite
 Coordinates : 41-34-59.0 N, 88-36-05.0 W
 Comments :
 Frequency (KHz): 1480
 Power (w): 250.000
 Pattern : AN
 Efficiency : 159.863 mV/M
 Desc : DA2
 City/State : GENEVA, IL
 ARN :
 Licensee : NELSON MULTIMEDIA, INC.

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	87.0	0.0
2	1.640	172.0	75.1	214.9	87.0	0.0
3	0.960	345.7	153.4	215.1	87.0	0.0

Brng	Span	mV/M
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Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	221.478	75	193.127	150	33.471	225	210.271	300	74.748	
5	248.191	80	161.578	155	15.860	230	199.900	305	71.468	
10	271.575	85	128.702	160	20.466	235	185.649	310	62.307	
15	291.209	90	95.453	165	44.073	240	167.835	315	47.706	
20	306.780	95	62.974	170	70.388	245	146.890	320	29.005	

Millbrook iL 307b Pop Study Data

25	318.068	100	32.968	175	96.868	250	123.371	325	15.008
30	324.929	105	13.478	180	122.354	255	97.978	330	32.532
35	327.282	110	27.366	185	145.982	260	71.583	335	62.037
40	325.102	115	46.488	190	167.052	265	45.377	340	94.333
45	318.412	120	61.402	195	185.005	270	21.988	345	127.514
50	307.291	125	70.840	200	199.408	275	16.523	350	160.388
55	291.879	130	74.373	205	209.938	280	33.375	355	191.984
60	272.393	135	71.956	210	216.375	285	50.519		
65	249.141	140	63.858	215	218.590	290	63.820		
70	222.539	145	50.669	220	216.542	295	72.104		

0.0 ohm K : 255.011 1.0 ohm K : 217.818
 RMSS : 168.305 RMSt : 159.863
 RSS : 467.735

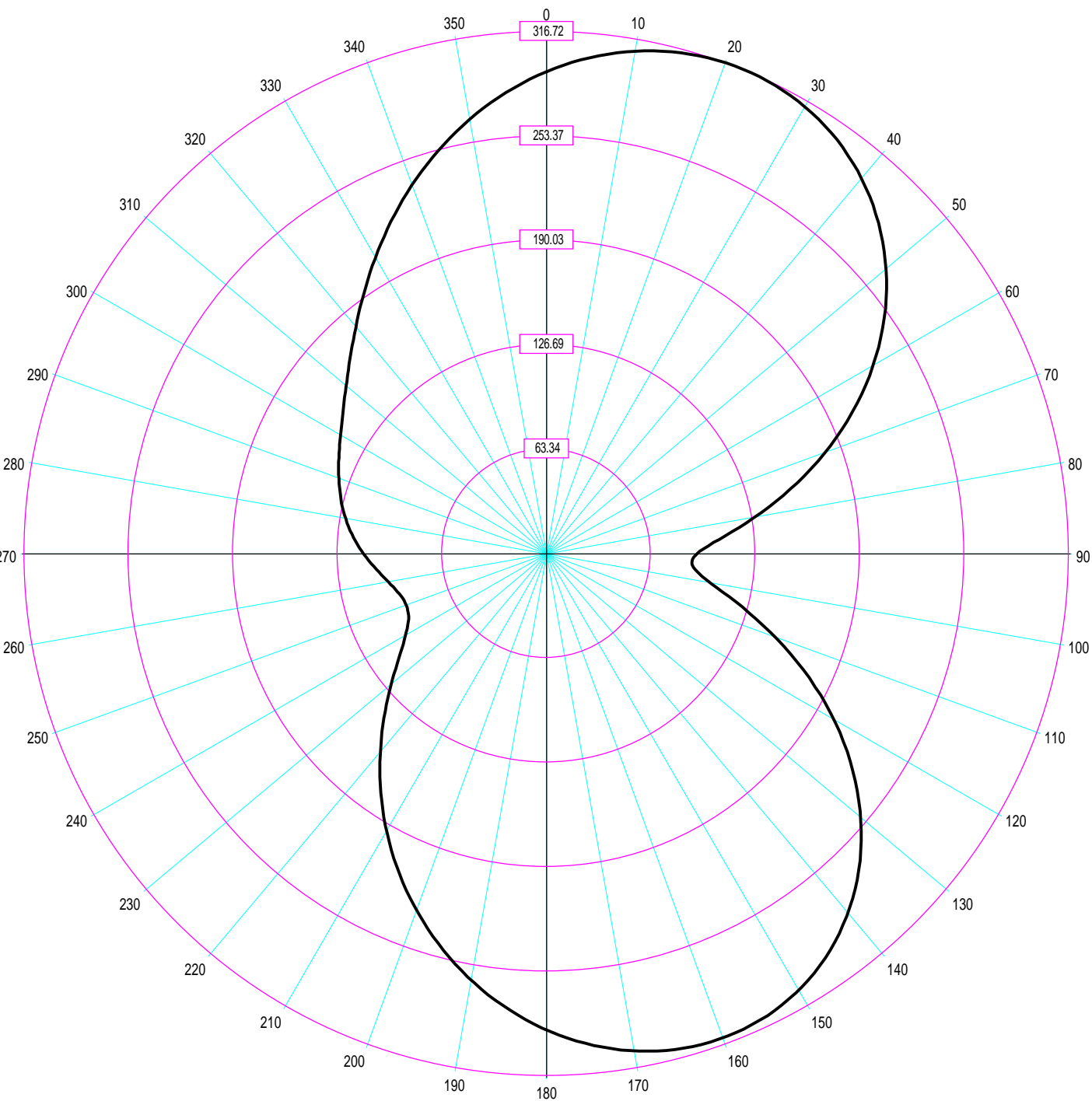
Contour type : Ground Wave
 Signal strength : 5.429 mV/m
 Area covered : 374.900 sq. km
 Population covered: 29687 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	221.48	5.429	14.31
5	248.19	5.429	15.21
10	271.57	5.429	15.95
15	291.21	5.429	16.54
20	306.78	5.429	16.98
25	318.07	5.429	17.30
30	324.93	5.429	17.49
35	327.28	5.429	17.55
40	325.10	5.429	17.49
45	318.41	5.429	17.31
50	307.29	5.429	17.00
55	291.88	5.429	16.55
60	272.39	5.429	15.98
65	249.14	5.429	15.24
70	222.54	5.429	14.35
75	193.13	5.429	13.28
80	161.58	5.429	12.01
85	128.70	5.429	10.52
90	95.45	5.429	8.75
95	62.97	5.429	6.65
100	32.97	5.429	4.17
105	13.48	5.429	2.02
110	27.37	5.429	3.61
115	46.49	5.429	5.38
120	61.40	5.429	6.54
125	70.84	5.429	7.21
130	74.37	5.429	7.44
135	71.96	5.429	7.28
140	63.86	5.429	6.72
145	50.67	5.429	5.72
150	33.47	5.429	4.21
155	15.86	5.429	2.31
160	20.47	5.429	2.86
165	44.07	5.429	5.17
170	70.39	5.429	7.17
175	96.87	5.429	8.83
180	122.35	5.429	10.20
185	145.98	5.429	11.33
190	167.05	5.429	12.24
195	185.01	5.429	12.97
200	199.41	5.429	13.52

Millbrook iL 307b Pop Study Data

205	209.94	5.429	13.91
210	216.37	5.429	14.14
215	218.59	5.429	14.21
220	216.54	5.429	14.14
225	210.27	5.429	13.92
230	199.90	5.429	13.54
235	185.65	5.429	12.99
240	167.83	5.429	12.28
245	146.89	5.429	11.37
250	123.37	5.429	10.25
255	97.98	5.429	8.89
260	71.58	5.429	7.26
265	45.38	5.429	5.28
270	21.99	5.429	3.03
275	16.52	5.429	2.39
280	33.38	5.429	4.20
285	50.52	5.429	5.71
290	63.82	5.429	6.72
295	72.10	5.429	7.29
300	74.75	5.429	7.47
305	71.47	5.429	7.25
310	62.31	5.429	6.61
315	47.71	5.429	5.48
320	29.01	5.429	3.77
325	15.01	5.429	2.21
330	32.53	5.429	4.12
335	62.04	5.429	6.58
340	94.33	5.429	8.68
345	127.51	5.429	10.46
350	160.39	5.429	11.96
355	191.98	5.429	13.23

□



Callsign	:New D	T#	Field	Phase	Spacing	Orientation	Height	Top Load	Tower Ref
Frequency	:1480 kHz	1	1.000	0.0	0.0	0.0	87.0	0.0	0
Power	:0.400 kw	2	1.128	252.8	153.4	215.1	87.0	0.0	0
ERSS	:207.1 mV/m/km	3	1.569	152.6	122.0	184.3	87.0	0.0	0
Theoret. Pattern RMS	:209.9 mV/m/km	4	0.856	18.3	64.9	265.7	87.0	0.0	0
Standard Pattern RMS	:220.7 mV/m/km								
Modified Pattern RMS	:								
Latitude	:41-34-59.0 N								
Longitude	: 88-36-05.0 W								
Number Augmentations	:0								

Azim	Field [mV/m]
0.0	292.101
5.0	301.773
10.0	309.255
15.0	314.305
20.0	316.716
25.0	316.314
30.0	312.958
35.0	306.545
40.0	297.018
45.0	284.375
50.0	268.678
55.0	250.071
60.0	228.796
65.0	205.232
70.0	179.952
75.0	153.843
80.0	128.372
85.0	106.100
90.0	91.343
95.0	89.177
100.0	100.742
105.0	121.794
110.0	147.462
115.0	174.557
120.0	201.183
125.0	226.147
130.0	248.647
135.0	268.131
140.0	284.231
145.0	296.736
150.0	305.565
155.0	310.751
160.0	312.422
165.0	310.777
170.0	306.070
175.0	298.585
180.0	288.622
185.0	276.485
190.0	262.475
195.0	246.888
200.0	230.022

Azim	Field [mV/m]
205.0	212.183
210.0	193.711
215.0	174.991
220.0	156.487
225.0	138.778
230.0	122.585
235.0	108.792
240.0	98.373
245.0	92.153
250.0	90.397
255.0	92.563
260.0	97.499
265.0	103.933
270.0	110.820
275.0	117.465
280.0	123.514
285.0	128.909
290.0	133.847
295.0	138.728
300.0	144.079
305.0	150.463
310.0	158.356
315.0	168.048
320.0	179.579
325.0	192.753
330.0	207.188
335.0	222.392
340.0	237.830
345.0	252.978
350.0	267.352
355.0	280.518

Millbrook IL 1480 Khz Day Pattern Data

Callsign : New D
 Coordinates : 41-34-59.0 N, 88-36-05.0 W
 Comments :
 Frequency (KHz): 1480
 Power (w): 400.000
 Pattern : AD
 Efficiency : 209.911 mV/M
 Desc : DA2
 City/State : Millbrook, IL
 ARN :
 Licensee : NELSON MULTIMEDIA, INC.

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	87.0	0.0
2	1.128	252.8	153.4	215.1	87.0	0.0
3	1.569	152.6	122.0	184.3	87.0	0.0
4	0.856	18.3	64.9	265.7	87.0	0.0

Brng	Span	mV/M

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	292.101	75	153.843	150	305.565	225	138.778	300	144.079	
5	301.773	80	128.372	155	310.751	230	122.585	305	150.463	
10	309.255	85	106.100	160	312.422	235	108.792	310	158.356	
15	314.305	90	91.343	165	310.777	240	98.373	315	168.048	
20	316.716	95	89.177	170	306.070	245	92.153	320	179.579	
25	316.314	100	100.742	175	298.585	250	90.397	325	192.753	
30	312.958	105	121.794	180	288.622	255	92.563	330	207.188	
35	306.545	110	147.462	185	276.485	260	97.499	335	222.392	
40	297.018	115	174.557	190	262.475	265	103.933	340	237.830	
45	284.375	120	201.183	195	246.888	270	110.820	345	252.978	
50	268.678	125	226.147	200	230.022	275	117.465	350	267.352	
55	250.071	130	248.647	205	212.183	280	123.514	355	280.518	
60	228.796	135	268.131	210	193.711	285	128.909			
65	205.232	140	284.231	215	174.991	290	133.847			
70	179.952	145	296.736	220	156.487	295	138.728			

0.0 ohm K	: 90.082	1.0 ohm K	: 88.577
RMSS	: 220.657	RMSt	: 209.911
RSS	: 207.105		

Contour type : Ground wave
 Signal strength : 0.025 mV/m
 Area covered : 66790.400 sq. km
 Population covered: 11542948 persons

Azimuth	Field	Contour	Distance
Degrees	mV/m @ 1 km	mV/m	km
0	292.10	0.025	162.00
5	301.77	0.025	163.88
10	309.25	0.025	165.29
15	314.31	0.025	168.49
20	316.72	0.025	177.09
25	316.31	0.025	177.40
30	312.96	0.025	173.93
35	306.55	0.025	169.77
40	297.02	0.025	163.54
45	284.38	0.025	160.45
50	268.68	0.025	157.18

		Millbrook	IL 1480	Khz	Day	Pattern	Data
55	250.07	0.025					153.15
60	228.80	0.025					148.24
65	205.23	0.025					142.36
70	179.95	0.025					135.48
75	153.84	0.025					132.12
80	128.37	0.025					129.29
85	106.10	0.025					122.81
90	91.34	0.025					115.83
95	89.18	0.025					114.96
100	100.74	0.025					120.40
105	121.79	0.025					129.05
110	147.46	0.025					137.88
115	174.56	0.025					146.80
120	201.18	0.025					154.51
125	226.15	0.025					161.19
130	248.65	0.025					167.26
135	268.13	0.025					171.97
140	284.23	0.025					175.84
145	296.74	0.025					179.44
150	305.56	0.025					181.93
155	310.75	0.025					183.72
160	312.42	0.025					185.63
165	310.78	0.025					186.47
170	306.07	0.025					188.24
175	298.58	0.025					191.05
180	288.62	0.025					190.12
185	276.49	0.025					184.99
190	262.48	0.025					179.54
195	246.89	0.025					173.30
200	230.02	0.025					165.80
205	212.18	0.025					156.47
210	193.71	0.025					145.19
215	174.99	0.025					134.01
220	156.49	0.025					128.42
225	138.78	0.025					122.57
230	122.58	0.025					116.69
235	108.79	0.025					111.34
240	98.37	0.025					106.92
245	92.15	0.025					104.17
250	90.40	0.025					103.36
255	92.56	0.025					104.36
260	97.50	0.025					106.55
265	103.93	0.025					109.30
270	110.82	0.025					112.17
275	117.47	0.025					114.78
280	123.51	0.025					117.05
285	128.91	0.025					119.07
290	133.85	0.025					120.85
295	138.73	0.025					122.55
300	144.08	0.025					124.34
305	150.46	0.025					126.47
310	158.36	0.025					129.01
315	168.05	0.025					131.97
320	179.58	0.025					110.64
325	192.75	0.025					113.84
330	207.19	0.025					117.13
335	222.39	0.025					120.51
340	237.83	0.025					123.71
345	252.98	0.025					126.73
350	267.35	0.025					129.50
355	280.52	0.025					131.90

□

Millbrook IL 1480 Khz Day Pattern Data

Callsign : New D
 Coordinates : 41-34-59.0 N, 88-36-05.0 W
 Comments :
 Frequency (KHz): 1480
 Power (w): 400.000
 Pattern : AD
 Efficiency : 209.911 mV/M
 Desc : DA2
 City/State : Millbrook, IL
 ARN :
 Licensee : NELSON MULTIMEDIA, INC.

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
1	1.000	0.0	0.0	0.0	87.0	0.0
2	1.128	252.8	153.4	215.1	87.0	0.0
3	1.569	152.6	122.0	184.3	87.0	0.0
4	0.856	18.3	64.9	265.7	87.0	0.0

Brng	Span	mV/M

Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
0	292.101	75	153.843	150	305.565	225	138.778	300	144.079	
5	301.773	80	128.372	155	310.751	230	122.585	305	150.463	
10	309.255	85	106.100	160	312.422	235	108.792	310	158.356	
15	314.305	90	91.343	165	310.777	240	98.373	315	168.048	
20	316.716	95	89.177	170	306.070	245	92.153	320	179.579	
25	316.314	100	100.742	175	298.585	250	90.397	325	192.753	
30	312.958	105	121.794	180	288.622	255	92.563	330	207.188	
35	306.545	110	147.462	185	276.485	260	97.499	335	222.392	
40	297.018	115	174.557	190	262.475	265	103.933	340	237.830	
45	284.375	120	201.183	195	246.888	270	110.820	345	252.978	
50	268.678	125	226.147	200	230.022	275	117.465	350	267.352	
55	250.071	130	248.647	205	212.183	280	123.514	355	280.518	
60	228.796	135	268.131	210	193.711	285	128.909			
65	205.232	140	284.231	215	174.991	290	133.847			
70	179.952	145	296.736	220	156.487	295	138.728			

0.0 ohm K	: 90.082	1.0 ohm K	: 88.577
RMSS	: 220.657	RMSt	: 209.911
RSS	: 207.105		

Contour type : Ground wave
 Signal strength : 0.500 mV/m
 Area covered : 5885.100 sq. km
 Population covered: 660353 persons

Azimuth	Field	Contour	Distance
Degrees	mV/m @ 1 km	mV/m	km
0	292.10	0.500	48.33
5	301.77	0.500	48.98
10	309.25	0.500	49.48
15	314.31	0.500	49.83
20	316.72	0.500	49.99
25	316.31	0.500	49.97
30	312.96	0.500	49.74
35	306.55	0.500	49.30
40	297.02	0.500	48.66
45	284.38	0.500	47.80
50	268.68	0.500	46.67

		Millbrook	IL 1480	Khz	Day	Pattern	Data
55	250.07	0.500					45.27
60	228.80	0.500					43.63
65	205.23	0.500					41.67
70	179.95	0.500					39.41
75	153.84	0.500					36.88
80	128.37	0.500					34.15
85	106.10	0.500					31.46
90	91.34	0.500					29.47
95	89.18	0.500					29.17
100	100.74	0.500					31.62
105	121.79	0.500					36.24
110	147.46	0.500					40.41
115	174.56	0.500					44.88
120	201.18	0.500					48.46
125	226.15	0.500					51.21
130	248.65	0.500					53.88
135	268.13	0.500					55.79
140	284.23	0.500					56.97
145	296.74	0.500					58.05
150	305.56	0.500					58.42
155	310.75	0.500					58.00
160	312.42	0.500					57.75
165	310.78	0.500					56.26
170	306.07	0.500					55.18
175	298.58	0.500					53.07
180	288.62	0.500					49.93
185	276.49	0.500					47.24
190	262.48	0.500					46.20
195	246.89	0.500					45.04
200	230.02	0.500					43.73
205	212.18	0.500					42.24
210	193.71	0.500					40.67
215	174.99	0.500					38.96
220	156.49	0.500					37.16
225	138.78	0.500					35.32
230	122.58	0.500					33.49
235	108.79	0.500					31.80
240	98.37	0.500					30.45
245	92.15	0.500					29.59
250	90.40	0.500					29.34
255	92.56	0.500					29.64
260	97.50	0.500					30.33
265	103.93	0.500					31.18
270	110.82	0.500					32.07
275	117.47	0.500					32.89
280	123.51	0.500					33.60
285	128.91	0.500					34.21
290	133.85	0.500					34.77
295	138.73	0.500					35.32
300	144.08	0.500					35.89
305	150.46	0.500					36.55
310	158.36	0.500					37.35
315	168.05	0.500					38.31
320	179.58	0.500					39.38
325	192.75	0.500					40.59
330	207.19	0.500					41.83
335	222.39	0.500					43.11
340	237.83	0.500					44.35
345	252.98	0.500					45.49
350	267.35	0.500					46.57
355	280.52	0.500					47.53

Contour type : Ground Wave

Millbrook IL 1480 Khz Day Pattern Data

Signal strength : 0.250 mV/m
Area covered : 10932.400 sq. km
Population covered: 1761554 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	0.250	64.65
5	301.77	0.250	65.51
10	309.25	0.250	66.20
15	314.31	0.250	66.67
20	316.72	0.250	66.89
25	316.31	0.250	66.85
30	312.96	0.250	66.54
35	306.55	0.250	65.95
40	297.02	0.250	65.09
45	284.38	0.250	63.94
50	268.68	0.250	62.43
55	250.07	0.250	60.55
60	228.80	0.250	58.36
65	205.23	0.250	55.73
70	179.95	0.250	52.73
75	153.84	0.250	49.38
80	128.37	0.250	46.66
85	106.10	0.250	44.49
90	91.34	0.250	41.85
95	89.18	0.250	42.78
100	100.74	0.250	46.91
105	121.79	0.250	52.47
110	147.46	0.250	57.68
115	174.56	0.250	63.14
120	201.18	0.250	67.62
125	226.15	0.250	71.13
130	248.65	0.250	74.49
135	268.13	0.250	76.91
140	284.23	0.250	78.55
145	296.74	0.250	79.97
150	305.56	0.250	80.58
155	310.75	0.250	80.27
160	312.42	0.250	80.05
165	310.78	0.250	78.52
170	306.07	0.250	77.35
175	298.58	0.250	75.04
180	288.62	0.250	71.63
185	276.49	0.250	67.84
190	262.48	0.250	63.99
195	246.89	0.250	60.23
200	230.02	0.250	58.49
205	212.18	0.250	56.51
210	193.71	0.250	54.41
215	174.99	0.250	52.13
220	156.49	0.250	49.74
225	138.78	0.250	47.31
230	122.58	0.250	44.91
235	108.79	0.250	42.71
240	98.37	0.250	40.94
245	92.15	0.250	39.82
250	90.40	0.250	39.49
255	92.56	0.250	39.89
260	97.50	0.250	40.79
265	103.93	0.250	41.89
270	110.82	0.250	43.05
275	117.47	0.250	44.12
280	123.51	0.250	45.05

Millbrook IL 1480 Khz Day Pattern Data

285	128.91	0.250	45.85
290	133.85	0.250	46.60
295	138.73	0.250	47.31
300	144.08	0.250	48.06
305	150.46	0.250	48.92
310	158.36	0.250	49.99
315	168.05	0.250	51.26
320	179.58	0.250	52.68
325	192.75	0.250	54.30
330	207.19	0.250	55.95
335	222.39	0.250	57.66
340	237.83	0.250	59.31
345	252.98	0.250	60.83
350	267.35	0.250	62.30
355	280.52	0.250	63.57

Contour type : Ground wave
Signal strength : 5.000 mV/m
Area covered : 646.300 sq. km
Population covered: 36256 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	5.000	17.28
5	301.77	5.000	17.56
10	309.25	5.000	17.78
15	314.31	5.000	17.93
20	316.72	5.000	18.00
25	316.31	5.000	17.98
30	312.96	5.000	17.89
35	306.55	5.000	17.70
40	297.02	5.000	17.42
45	284.38	5.000	17.04
50	268.68	5.000	16.55
55	250.07	5.000	15.95
60	228.80	5.000	15.22
65	205.23	5.000	14.36
70	179.95	5.000	13.36
75	153.84	5.000	12.24
80	128.37	5.000	11.02
85	106.10	5.000	9.83
90	91.34	5.000	8.96
95	89.18	5.000	8.83
100	100.74	5.000	9.53
105	121.79	5.000	10.69
110	147.46	5.000	11.95
115	174.56	5.000	13.14
120	201.18	5.000	14.21
125	226.15	5.000	15.13
130	248.65	5.000	15.90
135	268.13	5.000	16.53
140	284.23	5.000	17.04
145	296.74	5.000	17.41
150	305.56	5.000	17.67
155	310.75	5.000	17.82
160	312.42	5.000	17.87
165	310.78	5.000	17.82
170	306.07	5.000	17.69
175	298.58	5.000	17.47
180	288.62	5.000	17.17
185	276.49	5.000	16.80
190	262.48	5.000	16.36
195	246.89	5.000	15.84

Millbrook IL 1480 Khz Day Pattern Data

200	230.02	5.000	15.27
205	212.18	5.000	14.62
210	193.71	5.000	13.92
215	174.99	5.000	13.16
220	156.49	5.000	12.36
225	138.78	5.000	11.54
230	122.58	5.000	10.73
235	108.79	5.000	9.98
240	98.37	5.000	9.38
245	92.15	5.000	9.01
250	90.40	5.000	8.90
255	92.56	5.000	9.04
260	97.50	5.000	9.33
265	103.93	5.000	9.71
270	110.82	5.000	10.10
275	117.47	5.000	10.46
280	123.51	5.000	10.77
285	128.91	5.000	11.05
290	133.85	5.000	11.30
295	138.73	5.000	11.54
300	144.08	5.000	11.79
305	150.46	5.000	12.09
310	158.36	5.000	12.44
315	168.05	5.000	12.87
320	179.58	5.000	13.35
325	192.75	5.000	13.88
330	207.19	5.000	14.43
335	222.39	5.000	15.00
340	237.83	5.000	15.53
345	252.98	5.000	16.05
350	267.35	5.000	16.51
355	280.52	5.000	16.92

Contour type : Ground Wave
Signal strength : 25.000 mV/m
Area covered : 88.700 sq. km
Population covered: 2999 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	25.000	6.69
5	301.77	25.000	6.84
10	309.25	25.000	6.95
15	314.31	25.000	7.03
20	316.72	25.000	7.06
25	316.31	25.000	7.06
30	312.96	25.000	7.01
35	306.55	25.000	6.91
40	297.02	25.000	6.76
45	284.38	25.000	6.56
50	268.68	25.000	6.32
55	250.07	25.000	6.01
60	228.80	25.000	5.64
65	205.23	25.000	5.21
70	179.95	25.000	4.74
75	153.84	25.000	4.21
80	128.37	25.000	3.66
85	106.10	25.000	3.15
90	91.34	25.000	2.79
95	89.18	25.000	2.73
100	100.74	25.000	3.02
105	121.79	25.000	3.51
110	147.46	25.000	4.08

Millbrook IL 1480 Khz Day Pattern Data

115	174.56	25.000	4.63
120	201.18	25.000	5.14
125	226.15	25.000	5.59
130	248.65	25.000	5.98
135	268.13	25.000	6.31
140	284.23	25.000	6.56
145	296.74	25.000	6.76
150	305.56	25.000	6.90
155	310.75	25.000	6.97
160	312.42	25.000	7.00
165	310.78	25.000	6.97
170	306.07	25.000	6.90
175	298.58	25.000	6.79
180	288.62	25.000	6.63
185	276.49	25.000	6.44
190	262.48	25.000	6.21
195	246.89	25.000	5.95
200	230.02	25.000	5.66
205	212.18	25.000	5.34
210	193.71	25.000	5.00
215	174.99	25.000	4.64
220	156.49	25.000	4.26
225	138.78	25.000	3.89
230	122.58	25.000	3.53
235	108.79	25.000	3.21
240	98.37	25.000	2.96
245	92.15	25.000	2.81
250	90.40	25.000	2.76
255	92.56	25.000	2.82
260	97.50	25.000	2.94
265	103.93	25.000	3.10
270	110.82	25.000	3.26
275	117.47	25.000	3.41
280	123.51	25.000	3.55
285	128.91	25.000	3.67
290	133.85	25.000	3.78
295	138.73	25.000	3.89
300	144.08	25.000	4.00
305	150.46	25.000	4.14
310	158.36	25.000	4.30
315	168.05	25.000	4.50
320	179.58	25.000	4.73
325	192.75	25.000	4.98
330	207.19	25.000	5.25
335	222.39	25.000	5.53
340	237.83	25.000	5.80
345	252.98	25.000	6.05
350	267.35	25.000	6.29
355	280.52	25.000	6.50

Contour type : Ground Wave
Signal strength : 1000.000 mV/m
Area covered : 0.100 sq. km
Population covered: 0 persons

Azimuth Degrees	Field mV/m @ 1 km	Contour mV/m	Distance km
0	292.10	1000.000	0.28
5	301.77	1000.000	0.29
10	309.25	1000.000	0.29
15	314.31	1000.000	0.30
20	316.72	1000.000	0.30
25	316.31	1000.000	0.30

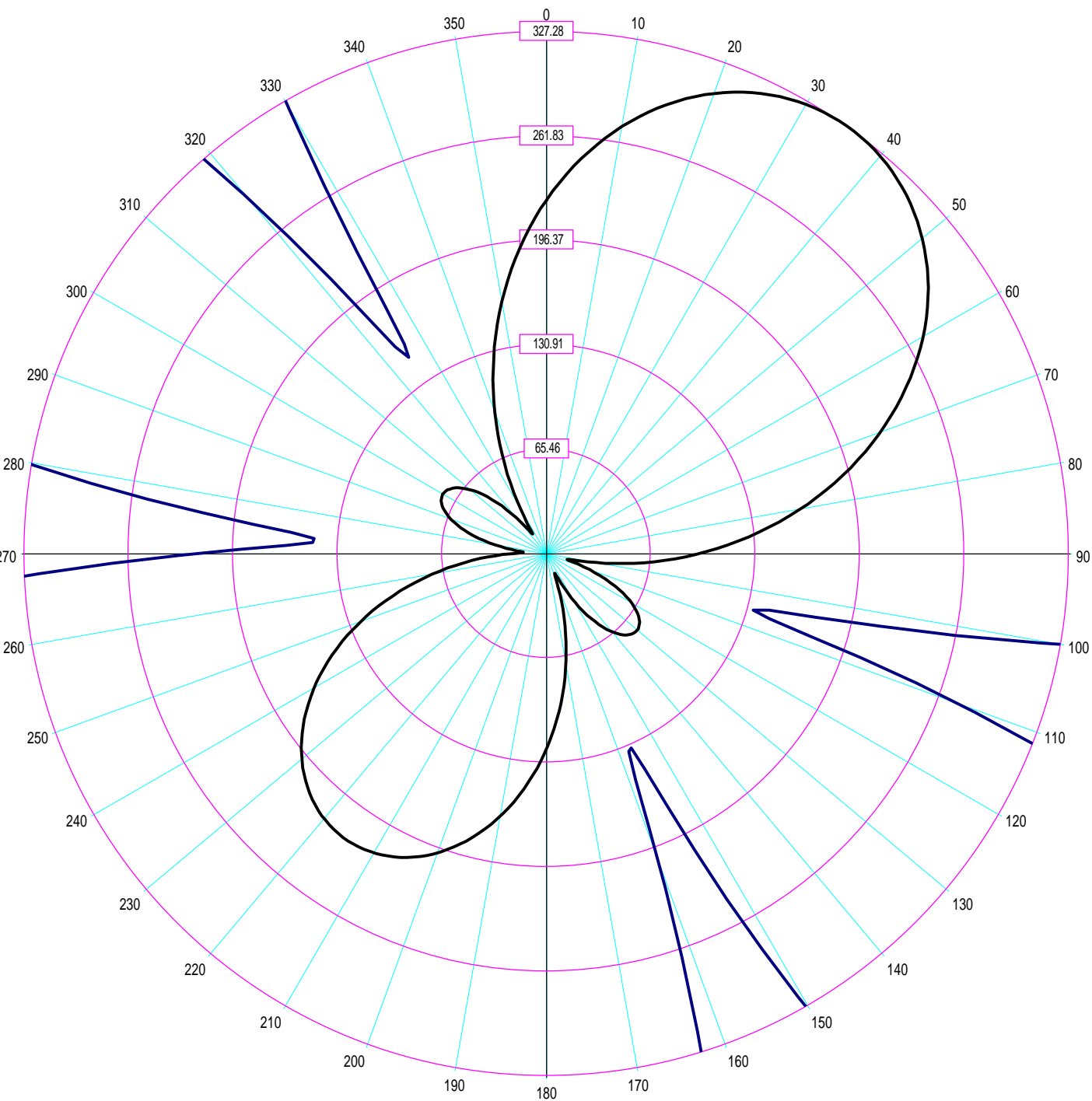
Millbrook IL 1480 Khz Day Pattern Data

30	312.96	1000.000	0.30
35	306.55	1000.000	0.29
40	297.02	1000.000	0.28
45	284.38	1000.000	0.27
50	268.68	1000.000	0.26
55	250.07	1000.000	0.24
60	228.80	1000.000	0.22
65	205.23	1000.000	0.20
70	179.95	1000.000	0.17
75	153.84	1000.000	0.15
80	128.37	1000.000	0.12
85	106.10	1000.000	0.10
90	91.34	1000.000	0.10
95	89.18	1000.000	0.10
100	100.74	1000.000	0.10
105	121.79	1000.000	0.12
110	147.46	1000.000	0.14
115	174.56	1000.000	0.17
120	201.18	1000.000	0.19
125	226.15	1000.000	0.22
130	248.65	1000.000	0.24
135	268.13	1000.000	0.26
140	284.23	1000.000	0.27
145	296.74	1000.000	0.28
150	305.56	1000.000	0.29
155	310.75	1000.000	0.30
160	312.42	1000.000	0.30
165	310.78	1000.000	0.30
170	306.07	1000.000	0.29
175	298.58	1000.000	0.28
180	288.62	1000.000	0.28
185	276.49	1000.000	0.26
190	262.48	1000.000	0.25
195	246.89	1000.000	0.24
200	230.02	1000.000	0.22
205	212.18	1000.000	0.20
210	193.71	1000.000	0.19
215	174.99	1000.000	0.17
220	156.49	1000.000	0.15
225	138.78	1000.000	0.14
230	122.58	1000.000	0.12
235	108.79	1000.000	0.11
240	98.37	1000.000	0.10
245	92.15	1000.000	0.10
250	90.40	1000.000	0.10
255	92.56	1000.000	0.10
260	97.50	1000.000	0.10
265	103.93	1000.000	0.10
270	110.82	1000.000	0.11
275	117.47	1000.000	0.11
280	123.51	1000.000	0.12
285	128.91	1000.000	0.12
290	133.85	1000.000	0.13
295	138.73	1000.000	0.14
300	144.08	1000.000	0.14
305	150.46	1000.000	0.15
310	158.36	1000.000	0.15
315	168.05	1000.000	0.16
320	179.58	1000.000	0.17
325	192.75	1000.000	0.19
330	207.19	1000.000	0.20
335	222.39	1000.000	0.21
340	237.83	1000.000	0.23

Millbrook IL 1480 Khz Day Pattern Data

345	252.98	1000.000	0.24
350	267.35	1000.000	0.26
355	280.52	1000.000	0.27

□



Callsign	:New Nite	T#	Field	Phase	Spacing	Orientation	Height	Top Load	Tower Ref
Frequency	:1480 kHz	1	1.000	0.0	0.0	0.0	87.0	0.0	0
Power	:0.250 kw	2	1.640	172.0	75.1	214.9	87.0	0.0	0
ERSS	:467.7 mV/m/km	3	0.960	345.7	153.4	215.1	87.0	0.0	0
Theoret. Pattern RMS	:159.9 mV/m/km								
Standard Pattern RMS	:168.3 mV/m/km								
Modified Pattern RMS	:								
Latitude	:41-34-59.0 N								
Longitude	: 88-36-05.0 W								
Number Augmentations	:0								

Azim	Field [mV/m]
0.0	221.478
5.0	248.191
10.0	271.575
15.0	291.209
20.0	306.780
25.0	318.068
30.0	324.929
35.0	327.282
40.0	325.102
45.0	318.412
50.0	307.291
55.0	291.879
60.0	272.393
65.0	249.141
70.0	222.539
75.0	193.127
80.0	161.578
85.0	128.702
90.0	95.453
95.0	62.974
100.0	32.968
105.0	13.478
110.0	27.366
115.0	46.488
120.0	61.402
125.0	70.840
130.0	74.373
135.0	71.956
140.0	63.858
145.0	50.669
150.0	33.471
155.0	15.860
160.0	20.466
165.0	44.073
170.0	70.388
175.0	96.868
180.0	122.354
185.0	145.982
190.0	167.052
195.0	185.005
200.0	199.408

Azim	Field [mV/m]
205.0	209.938
210.0	216.375
215.0	218.590
220.0	216.542
225.0	210.271
230.0	199.900
235.0	185.649
240.0	167.835
245.0	146.890
250.0	123.371
255.0	97.978
260.0	71.583
265.0	45.377
270.0	21.988
275.0	16.523
280.0	33.375
285.0	50.519
290.0	63.820
295.0	72.104
300.0	74.748
305.0	71.468
310.0	62.307
315.0	47.706
320.0	29.005
325.0	15.008
330.0	32.532
335.0	62.037
340.0	94.333
345.0	127.514
350.0	160.388
355.0	191.984

Millbrook IL 1480 Khz Nite Pattern Data

Callsign : New Nite
 Coordinates : 41-34-59.0 N, 88-36-05.0 W
 Comments :
 Frequency (KHz): 1480
 Power (w): 250.000
 Pattern : AN
 Efficiency : 159.863 mV/M
 Desc : DA2
 City/State : Millbrook, IL
 ARN :
 Licensee : NELSON MULTIMEDIA, INC.

Tower	Field	Phase	Spcng	Ornt	Hght	TopLd
----	----	----	----	----	----	----
1	1.000	0.0	0.0	0.0	87.0	0.0
2	1.640	172.0	75.1	214.9	87.0	0.0
3	0.960	345.7	153.4	215.1	87.0	0.0

Brng	Span	mV/M
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Field	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m	Brng	mV/m
----	----	----	----	----	----	----	----	----	----	----
0	221.478	75	193.127	150	33.471	225	210.271	300	74.748	
5	248.191	80	161.578	155	15.860	230	199.900	305	71.468	
10	271.575	85	128.702	160	20.466	235	185.649	310	62.307	
15	291.209	90	95.453	165	44.073	240	167.835	315	47.706	
20	306.780	95	62.974	170	70.388	245	146.890	320	29.005	
25	318.068	100	32.968	175	96.868	250	123.371	325	15.008	
30	324.929	105	13.478	180	122.354	255	97.978	330	32.532	
35	327.282	110	27.366	185	145.982	260	71.583	335	62.037	
40	325.102	115	46.488	190	167.052	265	45.377	340	94.333	
45	318.412	120	61.402	195	185.005	270	21.988	345	127.514	
50	307.291	125	70.840	200	199.408	275	16.523	350	160.388	
55	291.879	130	74.373	205	209.938	280	33.375	355	191.984	
60	272.393	135	71.956	210	216.375	285	50.519			
65	249.141	140	63.858	215	218.590	290	63.820			
70	222.539	145	50.669	220	216.542	295	72.104			

0.0 ohm K	: 255.011	1.0 ohm K	: 217.818
RMSS	: 168.305	RMSt	: 159.863
RSS	: 467.735		

Contour type : Ground wave
 Signal strength : 5.429 mV/m
 Area covered : 374.900 sq. km
 Population covered: 29687 persons

Azimuth	Field	Contour	Distance
Degrees	mV/m @ 1 km	mV/m	km
0	221.48	5.429	14.31
5	248.19	5.429	15.21
10	271.57	5.429	15.95
15	291.21	5.429	16.54
20	306.78	5.429	16.98
25	318.07	5.429	17.30
30	324.93	5.429	17.49
35	327.28	5.429	17.55
40	325.10	5.429	17.49
45	318.41	5.429	17.31
50	307.29	5.429	17.00
55	291.88	5.429	16.55

Millbrook IL 1480 Khz Nite Pattern Data

60	272.39	5.429	15.98
65	249.14	5.429	15.24
70	222.54	5.429	14.35
75	193.13	5.429	13.28
80	161.58	5.429	12.01
85	128.70	5.429	10.52
90	95.45	5.429	8.75
95	62.97	5.429	6.65
100	32.97	5.429	4.17
105	13.48	5.429	2.02
110	27.37	5.429	3.61
115	46.49	5.429	5.38
120	61.40	5.429	6.54
125	70.84	5.429	7.21
130	74.37	5.429	7.44
135	71.96	5.429	7.28
140	63.86	5.429	6.72
145	50.67	5.429	5.72
150	33.47	5.429	4.21
155	15.86	5.429	2.31
160	20.47	5.429	2.86
165	44.07	5.429	5.17
170	70.39	5.429	7.17
175	96.87	5.429	8.83
180	122.35	5.429	10.20
185	145.98	5.429	11.33
190	167.05	5.429	12.24
195	185.01	5.429	12.97
200	199.41	5.429	13.52
205	209.94	5.429	13.91
210	216.37	5.429	14.14
215	218.59	5.429	14.21
220	216.54	5.429	14.14
225	210.27	5.429	13.92
230	199.90	5.429	13.54
235	185.65	5.429	12.99
240	167.83	5.429	12.28
245	146.89	5.429	11.37
250	123.37	5.429	10.25
255	97.98	5.429	8.89
260	71.58	5.429	7.26
265	45.38	5.429	5.28
270	21.99	5.429	3.03
275	16.52	5.429	2.39
280	33.38	5.429	4.20
285	50.52	5.429	5.71
290	63.82	5.429	6.72
295	72.10	5.429	7.29
300	74.75	5.429	7.47
305	71.47	5.429	7.25
310	62.31	5.429	6.61
315	47.71	5.429	5.48
320	29.01	5.429	3.77
325	15.01	5.429	2.21
330	32.53	5.429	4.12
335	62.04	5.429	6.58
340	94.33	5.429	8.68
345	127.51	5.429	10.46
350	160.39	5.429	11.96
355	191.98	5.429	13.23

Contour type : Ground Wave
 Signal strength : 1000.000 mV/m

Millbrook Conductivity used to 250km
GROUND CONDUCTIVITY REPORT

Lat : 41-34-59.0 N
Lon : 88-36-05.0 W
Radius : 250

* Includes measured conductivity data

0 deg:	250.19,	8.0					
5 deg:	238.16,	8.0	250.22,	15.0			
10 deg:	204.34,	8.0	250.44,	15.0			
15 deg:	153.72,	8.0	157.48,	15.0	159.44,	8.0	249.67, 15.0
20 deg:	109.65,	8.0	173.92,	15.0	249.94,	8.0	
25 deg:	92.25,	8.0	151.62,	15.0	250.21,	8.0	
30 deg:	87.94,	8.0	129.83,	15.0	249.71,	8.0	
35 deg:	88.16,	8.0	113.50,	15.0	249.76,	8.0	
40 deg:	95.61,	8.0	98.35,	15.0	250.20,	8.0	
45 deg:	249.61,	8.0					
50 deg:	249.99,	8.0					
55 deg:	237.48,	8.0	249.57,	2.0			
60 deg:	222.89,	8.0	250.05,	2.0			
65 deg:	207.22,	8.0	250.24,	2.0			
70 deg:	188.00,	8.0	250.12,	2.0			
75 deg:	50.96,	8.0	67.52,	15.0	70.20,	8.0	71.77, 15.0
	174.01,	8.0	249.70,	2.0			
80 deg:	43.70,	8.0	85.04,	15.0	155.04,	8.0	156.54, 2.0
	157.23,	8.0	249.89,	2.0			
85 deg:	36.95,	8.0	85.57,	15.0	167.48,	8.0	249.90, 2.0
90 deg:	34.77,	8.0	79.82,	15.0	242.06,	8.0	244.17, 2.0
	244.86,	8.0	247.63,	2.0	249.71,	8.0	
95 deg:	31.43,	8.0	75.36,	15.0	250.00,	8.0	
100 deg:	29.07,	8.0	72.72,	15.0	250.04,	8.0	
105 deg:	27.47,	8.0	71.26,	15.0	249.91,	8.0	
110 deg:	27.38,	8.0	70.31,	15.0	250.04,	8.0	
115 deg:	26.16,	8.0	70.52,	15.0	250.09,	8.0	
120 deg:	25.79,	8.0	71.10,	15.0	245.93,	8.0	249.90, 15.0
125 deg:	26.20,	8.0	72.95,	15.0	240.79,	8.0	250.34, 15.0
130 deg:	25.67,	8.0	75.85,	15.0	241.38,	8.0	249.84, 15.0
135 deg:	25.92,	8.0	78.23,	15.0	250.03,	8.0	
140 deg:	26.82,	8.0	81.87,	15.0	250.41,	8.0	
145 deg:	27.01,	8.0	86.84,	15.0	250.32,	8.0	
150 deg:	27.83,	8.0	91.68,	15.0	250.14,	8.0	
155 deg:	29.65,	8.0	98.86,	15.0	249.77,	8.0	
160 deg:	30.56,	8.0	108.19,	15.0	249.81,	8.0	
165 deg:	33.48,	8.0	119.82,	15.0	249.99,	8.0	
170 deg:	34.84,	8.0	136.30,	15.0	250.04,	8.0	
175 deg:	38.13,	8.0	168.26,	15.0	250.10,	8.0	
180 deg:	43.51,	8.0	215.84,	15.0	250.12,	8.0	
185 deg:	49.24,	8.0	250.14,	15.0			
190 deg:	53.53,	8.0	53.65,	15.0	55.47,	8.0	250.12, 15.0
195 deg:	62.25,	8.0	250.11,	15.0			
200 deg:	71.82,	8.0	249.97,	15.0			
205 deg:	86.61,	8.0	86.90,	15.0	87.75,	8.0	249.67, 15.0
210 deg:	110.92,	8.0	250.02,	15.0			
215 deg:	151.68,	8.0	153.24,	15.0	154.01,	8.0	154.41, 15.0
	155.17,	8.0	249.42,	15.0	250.19,	8.0	
220 deg:	250.26,	8.0					
225 deg:	249.86,	8.0					
230 deg:	249.67,	8.0					
235 deg:	229.93,	8.0	250.15,	15.0			
240 deg:	226.59,	8.0	249.70,	15.0			
245 deg:	229.39,	8.0	249.88,	15.0			
250 deg:	236.38,	8.0	249.82,	15.0			
255 deg:	249.69,	8.0					

Millbrook Conductivity used to 250km

260 deg:	249.81,	8.0					
265 deg:	249.77,	8.0					
270 deg:	250.17,	8.0					
275 deg:	249.67,	8.0					
280 deg:	249.66,	8.0					
285 deg:	250.15,	8.0					
290 deg:	249.90,	8.0					
295 deg:	250.03,	8.0					
300 deg:	205.95,	8.0	249.85,	4.0			
305 deg:	196.63,	8.0	249.94,	4.0			
310 deg:	192.23,	8.0	250.34,	4.0			
315 deg:	193.15,	8.0	249.93,	4.0			
320 deg:	200.00,	5.0*	250.05,	4.0			
325 deg:	200.00,	5.0*	202.63,	8.0	249.63,	4.0	
330 deg:	200.00,	5.0*	214.02,	8.0	249.60,	4.0	
335 deg:	200.00,	5.0*	225.71,	8.0	250.40,	4.0	
340 deg:	200.00,	5.0*	200.00,	5.0*	238.27,	8.0	250.10,
345 deg:	200.00,	5.0*	249.79,	8.0			4.0
350 deg:	200.00,	5.0*	250.40,	8.0			
355 deg:	200.00,	5.0*	250.26,	8.0			