

Directional Antenna Parameters

The proposed WGLB antenna system will operate with the following parameters:

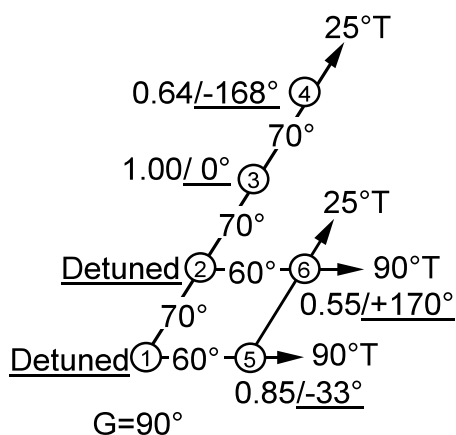
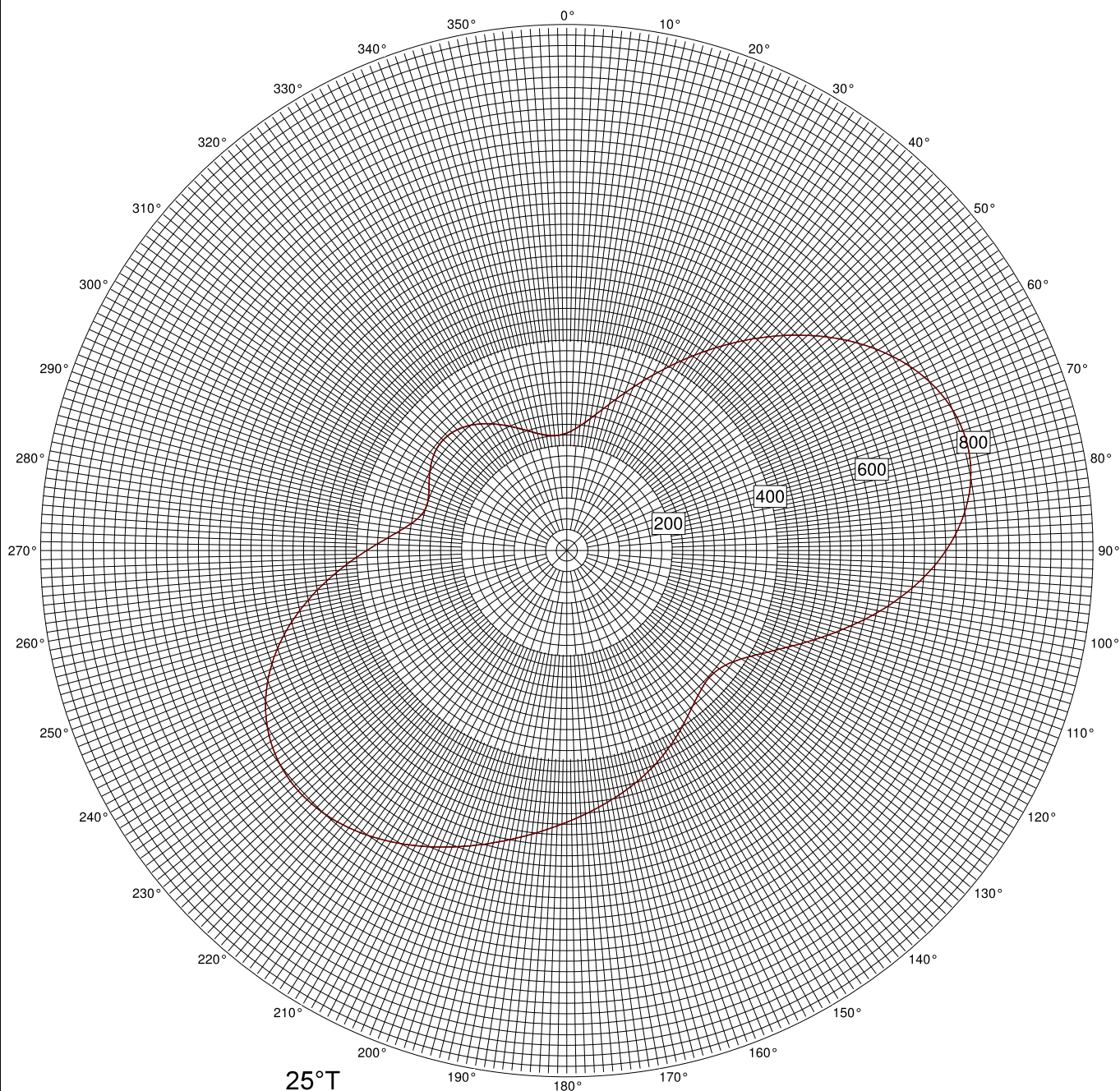
Power in watts:	2,500 watts daytime, 250 watts nighttime																						
Number of towers:	4 daytime, 4 nighttime																						
Type of towers:	Vertical, steel, uniform-cross-section base-insulated guyed towers																						
Height of towers:	48.1 meters above base insulator (90°) 49.0 meters overall height																						
Tower Orientation:	Tower 1 is night reference Tower 2, 25° true Tower 3, 25° true, day reference Tower 4, 25° true Tower 5, 90° true, 179.6° true from #3 Tower 6, 54.694° true; 25° true from #5, 154.4° true from #3																						
Tower Spacing:	Tower 1 is reference Tower 2, 70° (37.4 meters) Tower 3, 140° (74.8 meters) Tower 4, 210° (112.2 meters), 70° (37.4 meters) from #3 Tower 5, 60° (32.1 meters), 126.9° (67.8 meters) from #3 Tower 6, 109.77° (57.6 meters), 70.4 (37.6 m) from #3																						
Ground System:	see attached																						
Design Parameters:	<table><tr><th></th><th><u>Daytime</u></th><th><u>Nighttime</u></th></tr><tr><td>#1:</td><td>Detuned (floating)</td><td>1.00 / 0°</td></tr><tr><td>#2:</td><td>Detuned (floating)</td><td>0.72 / -125°</td></tr><tr><td>#3:</td><td>1.00 / 0°</td><td>Detuned (floating)</td></tr><tr><td>#4:</td><td>0.64 / -168°</td><td>Detuned (floating)</td></tr><tr><td>#5:</td><td>0.85 / -33°</td><td>0.90 / +125°</td></tr><tr><td>#6:</td><td>0.55 / +170°</td><td>0.65 / 0°</td></tr></table>		<u>Daytime</u>	<u>Nighttime</u>	#1:	Detuned (floating)	1.00 / 0°	#2:	Detuned (floating)	0.72 / -125°	#3:	1.00 / 0°	Detuned (floating)	#4:	0.64 / -168°	Detuned (floating)	#5:	0.85 / -33°	0.90 / +125°	#6:	0.55 / +170°	0.65 / 0°	
	<u>Daytime</u>	<u>Nighttime</u>																					
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#6:	0.55 / +170°	0.65 / 0°																					
RMS (Theoretical):	479.05 mv/m/km	152.34 mv/m/km																					
RMS (Standard):	503.57 mv/m/km	160.30 mv/m/km																					
RSS:	828.29 mv/m/km	311.51 mv/m/kjm																					
Q Term:	20.71 mv/m/km	10.00 mv/m/km																					
Pattern Multiplier (K):	530.85 mv/m/km	187.81 mv/m/km																					

All pattern calculations were made in compliance with 47 CFR 73.150.

Theoretical RMS: 479.05 mv/m/km
Theoretical RSS: 828.29 mv/m/km
Quadrature Term: 20.71 mv/m/km
Multiplier (K): 530.85 mv/m/km
Standard RMS: 503.47 mv/m/km

Mueller Broadcast Design

613 S. La Grange Rd.
La Grange, Illinois 60525
(708) 352-2166



Proposed Standard Pattern

Joel J. Kinlow

Frequency: 1560 KHz Power: 2.5 KW

Daytime Directional Antenna

Location: **Elm Grove, Wisconsin**

Call Sign: **WGLB**

43° - 0' - 32" N / 88° - 2' - 6" W

November 4, 2014

Horizontal Plane Radiation Pattern

Mueller Broadcast Design

613 S. La Grange Rd.
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WGLB

The antenna input power is 2.5 KW for daytime operation.

The design variables for this pattern are:

<u>Tower</u>	<u>Azimuth</u>	<u>Spacing</u>	<u>Ratio</u>	<u>Phase</u>	<u>Height</u>	<u>Top Load</u>
3	0.000°	0.000°	1.000	0.000°	90.000°	none
4	25.000°	70.000°	0.640	-168.000°	90.000°	none
5	179.600°	126.900°	0.850	-33.000°	90.000°	none
6	154.400°	70.400°	0.550	170.000°	90.000°	none

RMS(Theo.) (One Ohm Loss)= 479.05 mv/m/km

RSS(Theo.) (One Ohm Loss)= 828.29 mv/m/km

K (Pattern Multiplier) = 530.85 mv/m/km

Quadrature Term = 20.71 mv/m/km

RMS(Std.) (One Ohm Loss)= 503.47 mv/m/km

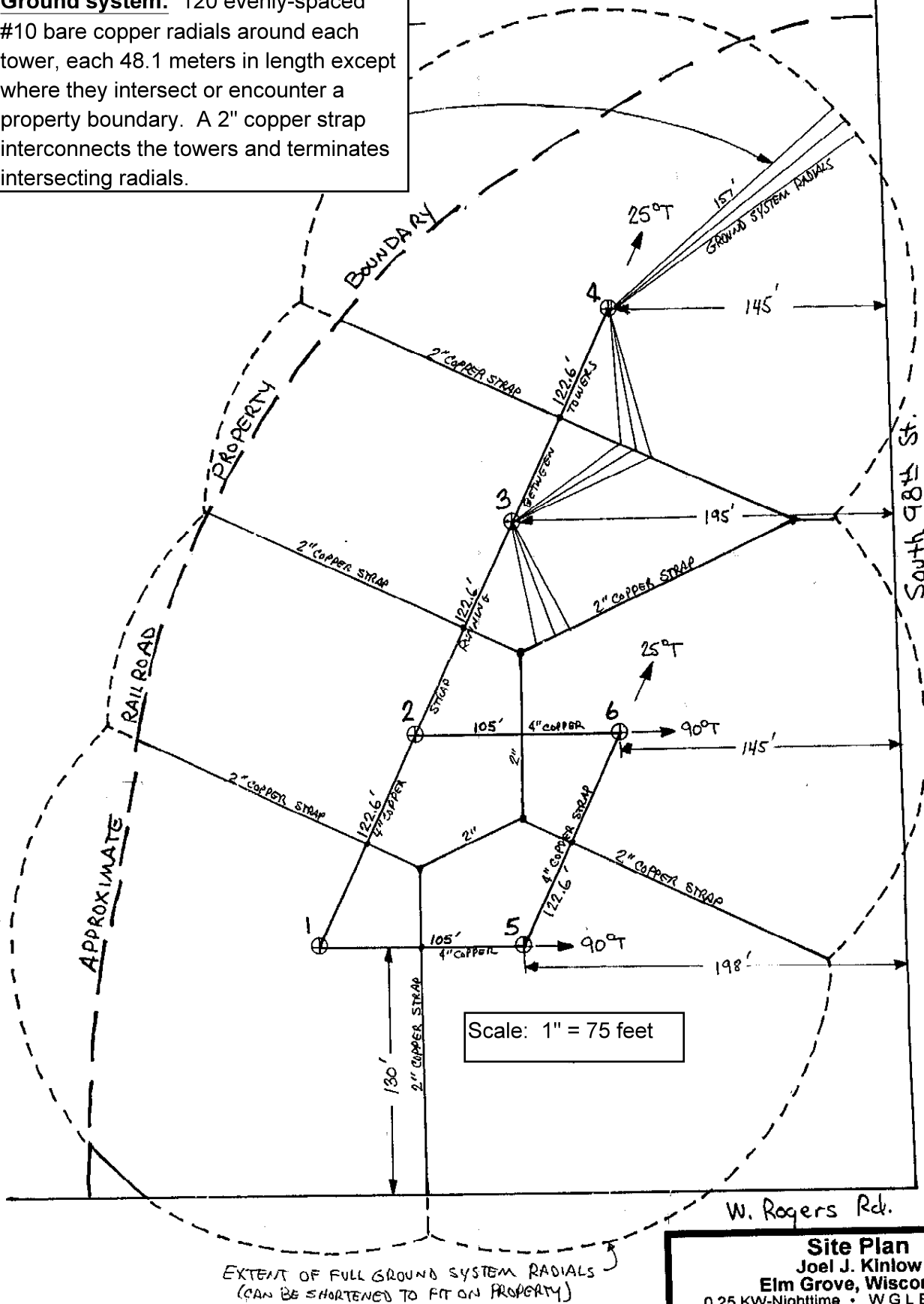
The WGLB 0° vertical elevation pattern at one kilometer is:

<u>BEARING</u>	<u>F.I.</u>	<u>BEARING</u>	<u>F.I.</u>	<u>BEARING</u>	<u>F.I.</u>	<u>BEARING</u>	<u>F.I.</u>
<u>DEG.T</u>	<u>MV/M</u>	<u>DEG.T</u>	<u>MV/M</u>	<u>DEG.T</u>	<u>MV/M</u>	<u>DEG.T</u>	<u>MV/M</u>
0°	224.70	90°	720.31	180°	519.85	270°	380.24
5°	236.35	95°	672.99	185°	538.90	275°	333.38
10°	256.22	100°	617.60	190°	559.28	280°	299.55
15°	284.40	105°	558.12	195°	580.85	285°	282.24
20°	320.60	110°	499.27	200°	603.12	290°	280.42
25°	364.12	115°	446.21	205°	625.26	295°	288.73
30°	413.81	120°	404.00	210°	646.11	300°	300.54
35°	468.11	125°	376.42	215°	664.24	305°	310.55
40°	525.03	130°	364.61	220°	678.04	310°	315.62
45°	582.28	135°	366.54	225°	685.84	315°	314.50
50°	637.26	140°	378.07	230°	686.06	320°	307.30
55°	687.27	145°	394.88	235°	677.32	325°	295.10
60°	729.61	150°	413.68	240°	658.69	330°	279.58
65°	761.79	155°	432.53	245°	629.84	335°	262.70
70°	781.69	160°	450.63	250°	591.16	340°	246.52
75°	787.79	165°	467.94	255°	543.97	345°	233.03
80°	779.34	170°	484.87	260°	490.60	350°	223.99
85°	756.47	175°	501.98	265°	434.49	355°	220.84

Pattern date: November 4, 2014

WGLB TOWER LAYOUT

Ground system: 120 evenly-spaced #10 bare copper radials around each tower, each 48.1 meters in length except where they intersect or encounter a property boundary. A 2" copper strap interconnects the towers and terminates intersecting radials.



Mueller Broadcast Design
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La Grange, Illinois 60525
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Site Plan
Joel J. Kinlow
Elm Grove, Wisconsin
0.25 KW-Nighttime • WGLB • 1580 KHz
June 1999