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DIRECTIONAL ANTENNAS
AM – FM – TV
APPLICATIONS
PROOFS
FIELD MEASUREMENTS
AUDIO AND RF ENGINEERING
EMERGENCY REPAIR

PROPOSED AM
MBC GRAND BROADCASTING, Inc.
1490 kHz 1kW ND-U
SILT, COLORADO
OCTOBER 2004

ENGINEERING STATEMENT

Concerning an application for a new AM facility on 1490 kHz to serve Silt, Colorado.

MBC GRAND BROADCASTING, Inc., the applicant, has retained Vir James Engineers to prepare the engineering section of Form 301 for this application.

ALLOCATIONS

All stations, Construction Permits, and applications for facilities on 1490 kHz and adjacent channels were considered. Two stations were close enough to require additional study. All were studied using the criteria from 73.37 b) which specifies that all Class C stations are to be assumed to be 250 Watts for allocation studies with respect to interference received from other Class C stations. The proposed 1kW Silt 0.025 mV/m contour does not cross the 0.5 mV/m contour of any cochannel facility and the proposed 1kW Silt 0.5 mV/m contour does not cross 0.025 mV/m contour of any cochannel station at 250 Watts therefore the proposed Silt station is acceptable.

Section 73.37 c) also states that a Class C station that qualifies for nondirectional operation at 250 Watts can request operation at 1 kW and that operation will be granted as in the public interest. And Section 73.182 a)3) specifies that the nighttime operation is determined by the ability to operate nondirectionally with a power of 250 Watts or greater.
Therefore the proposed Silt 1 kW daytime and 1 kW nighttime operation meets all FCC technical standards for a Class C facility.
The proposed daytime 5 mV/m contour fully encompasses the community of Silt. The proposed nighttime 26.6 mV/m night limit encompasses more than 80% of the community of Silt.

The proposed operation will use a buried radial ground system with 120 radials 49m in length around the base of the tower.

The standard tower base protective fence will fully protect the public from exposure to excessive RF power density. No employee will be allowed to climb the tower when energized. The short tower will require only minimal construction on the site and no significant environmental effect is likely. The proposed tower is not located in or near a critical location.

SUMMARY

The proposed Silt AM facility will not cause interference under FCC standards and will provide a desireable service to the Silt market area.

Respectfully,

Timothy C. Cutforth P.E
24 September 2007

Station: SILT Frequency 1490 kHz 39-33-37 107-39-05

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
0	123.5	2.1	5.4	8.5	16.4	22.7	85.8
5	123.5	2.1	5.4	8.5	16.4	22.7	78.9
10	123.5	2.1	5.4	8.5	16.4	22.7	71.0
15	123.5	2.1	5.4	8.5	16.4	22.7	65.7
20	123.5	2.1	5.4	8.5	16.4	22.7	65.7
25	123.5	2.1	5.4	8.5	16.4	22.7	65.7
30	123.5	2.1	5.4	8.5	16.4	22.7	65.7
35	123.5	2.1	5.4	8.5	16.4	22.7	65.7
40	123.5	2.1	5.4	8.5	16.4	22.7	65.7
45	123.5	2.1	5.4	8.5	16.4	22.7	65.7
50	123.5	2.1	5.4	8.5	16.4	22.7	65.7
55	123.5	2.1	5.4	8.5	16.4	22.7	65.7
60	123.5	2.1	5.4	8.5	16.4	22.7	65.7
65	123.5	2.1	5.4	8.5	16.4	22.7	65.7
70	123.5	2.1	5.4	8.5	16.4	22.7	65.7
75	123.5	2.1	5.4	8.5	16.4	22.7	65.7
80	123.5	2.1	5.4	8.5	16.4	22.7	65.7
85	123.5	2.1	5.4	8.5	16.4	22.7	65.7
90	123.5	2.1	5.4	8.5	16.4	22.7	65.7
95	123.5	2.1	5.4	8.5	16.4	22.7	65.7
100	123.5	2.1	5.4	8.5	16.4	22.7	65.7
105	123.5	2.1	5.4	8.5	16.4	22.7	65.7
110	123.5	2.1	5.4	8.5	16.4	22.7	65.7
115	123.5	2.1	5.4	8.5	16.4	22.7	65.7
120	123.5	2.1	5.4	8.5	16.4	22.7	65.7
125	123.5	2.1	5.4	8.5	16.4	22.7	65.7
130	123.5	2.1	5.4	8.5	16.4	22.7	65.7
135	123.5	2.1	5.4	8.5	16.4	22.7	65.7
140	123.5	2.1	5.4	8.5	16.4	22.7	65.7
145	123.5	2.1	5.4	8.5	16.4	22.7	65.7
150	123.5	2.1	5.4	8.5	16.4	22.7	65.7
155	123.5	2.1	5.4	8.5	16.4	22.7	65.7
160	123.5	2.1	5.4	8.5	16.4	22.7	65.7
165	123.5	2.1	5.4	8.5	16.4	22.7	89.8
170	123.5	2.1	5.4	8.5	16.4	25.4	97.4
175	123.5	2.1	5.4	8.5	18.2	29.6	101.6

Station: SILT Frequency 1490 kHz 39-33-37 107-39-05

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
180	123.5	2.1	5.4	8.5	20.9	32.4	104.4
185	123.5	2.1	5.4	8.5	23.1	34.6	106.6
190	123.5	2.1	5.4	9.6	25.5	36.9	109.6
195	123.5	2.1	5.4	11.2	27.1	38.5	115.1
200	123.5	2.1	5.4	12.3	28.2	39.6	118.3
205	123.5	2.1	6.1	13.1	29.0	40.4	120.5
210	123.5	2.1	6.7	13.7	29.6	41.0	122.0
215	123.5	2.1	7.1	14.1	30.0	41.5	123.2
220	123.5	2.1	7.5	14.5	30.4	41.8	123.7
225	123.5	2.1	7.8	14.7	30.6	42.1	124.1
230	123.5	2.1	8.0	15.0	30.9	42.3	124.2
235	123.5	2.1	8.1	15.1	31.0	42.4	124.2
240	123.5	2.1	8.2	15.2	31.1	42.6	123.6
245	123.5	2.1	8.3	15.3	31.2	42.6	122.8
250	123.5	2.1	8.4	15.4	31.2	42.7	121.7
255	123.5	2.1	8.4	15.4	31.3	42.7	120.7
260	123.5	2.1	8.4	15.4	31.3	42.7	117.8
265	123.5	2.1	8.4	15.4	31.2	42.7	114.7
270	123.5	2.1	8.3	15.3	31.2	42.6	114.6
275	123.5	2.1	8.2	15.2	31.1	42.6	114.6
280	123.5	2.1	8.1	15.1	31.0	42.4	114.4
285	123.5	2.1	7.9	14.9	30.8	42.3	114.3
290	123.5	2.1	7.7	14.7	30.6	42.1	114.1
295	123.5	2.1	7.5	14.4	30.3	41.8	113.8
300	123.5	2.1	7.1	14.1	30.0	41.4	113.4
305	123.5	2.1	6.6	13.6	29.5	41.0	113.0
310	123.5	2.1	6.0	13.0	28.9	40.3	112.3
315	123.5	2.1	5.4	12.2	28.1	39.5	111.5
320	123.5	2.1	5.4	11.0	26.9	38.4	110.4
325	123.5	2.1	5.4	9.4	25.3	36.7	108.7
330	123.5	2.1	5.4	8.5	22.8	34.2	106.2
335	123.5	2.1	5.4	8.5	21.1	32.5	104.5
340	123.5	2.1	5.4	8.5	19.1	30.5	102.5
345	123.5	2.1	5.4	8.5	16.4	27.7	99.7
350	123.5	2.1	5.4	8.5	16.4	23.5	95.5
355	123.5	2.1	5.4	8.5	16.4	22.7	90.6

Station: SILT-N Frequency 1490 kHz 39-33-37 107-39-05

Azim (deg)	Inverse (mV/m)	1000 mV (km)	27 mV (km)	25.0 mV (km)	10.0 mV (km)	5.00 mV (km)	2.00 mV (km)
0	123.5	0.11	2.0	2.1	3.7	5.4	8.5
5	123.5	0.11	2.0	2.1	3.7	5.4	8.5
10	123.5	0.11	2.0	2.1	3.7	5.4	8.5
15	123.5	0.11	2.0	2.1	3.7	5.4	8.5
20	123.5	0.11	2.0	2.1	3.7	5.4	8.5
25	123.5	0.11	2.0	2.1	3.7	5.4	8.5
30	123.5	0.11	2.0	2.1	3.7	5.4	8.5
35	123.5	0.11	2.0	2.1	3.7	5.4	8.5
40	123.5	0.11	2.0	2.1	3.7	5.4	8.5
45	123.5	0.11	2.0	2.1	3.7	5.4	8.5
50	123.5	0.11	2.0	2.1	3.7	5.4	8.5
55	123.5	0.11	2.0	2.1	3.7	5.4	8.5
60	123.5	0.11	2.0	2.1	3.7	5.4	8.5
65	123.5	0.11	2.0	2.1	3.7	5.4	8.5
70	123.5	0.11	2.0	2.1	3.7	5.4	8.5
75	123.5	0.11	2.0	2.1	3.7	5.4	8.5
80	123.5	0.11	2.0	2.1	3.7	5.4	8.5
85	123.5	0.11	2.0	2.1	3.7	5.4	8.5
90	123.5	0.11	2.0	2.1	3.7	5.4	8.5
95	123.5	0.11	2.0	2.1	3.7	5.4	8.5
100	123.5	0.11	2.0	2.1	3.7	5.4	8.5
105	123.5	0.11	2.0	2.1	3.7	5.4	8.5
110	123.5	0.11	2.0	2.1	3.7	5.4	8.5
115	123.5	0.11	2.0	2.1	3.7	5.4	8.5
120	123.5	0.11	2.0	2.1	3.7	5.4	8.5
125	123.5	0.11	2.0	2.1	3.7	5.4	8.5
130	123.5	0.11	2.0	2.1	3.7	5.4	8.5
135	123.5	0.11	2.0	2.1	3.7	5.4	8.5
140	123.5	0.11	2.0	2.1	3.7	5.4	8.5
145	123.5	0.11	2.0	2.1	3.7	5.4	8.5
150	123.5	0.11	2.0	2.1	3.7	5.4	8.5
155	123.5	0.11	2.0	2.1	3.7	5.4	8.5
160	123.5	0.11	2.0	2.1	3.7	5.4	8.5
165	123.5	0.11	2.0	2.1	3.7	5.4	8.5
170	123.5	0.11	2.0	2.1	3.7	5.4	8.5
175	123.5	0.11	2.0	2.1	3.7	5.4	8.5

Station: SILT-N Frequency 1490 kHz 39-33-37 107-39-05

Azim (deg)	Inverse (mV/m)	1000 mV (km)	27 mV (km)	25.0 mV (km)	10.0 mV (km)	5.00 mV (km)	2.00 mV (km)
180	123.5	0.11	2.0	2.1	3.7	5.4	8.5
185	123.5	0.11	2.0	2.1	3.7	5.4	8.5
190	123.5	0.11	2.0	2.1	3.7	5.4	9.6
195	123.5	0.11	2.0	2.1	3.7	5.4	11.2
200	123.5	0.11	2.0	2.1	3.7	5.4	12.3
205	123.5	0.11	2.0	2.1	3.7	6.1	13.1
210	123.5	0.11	2.0	2.1	3.7	6.7	13.7
215	123.5	0.11	2.0	2.1	3.7	7.1	14.1
220	123.5	0.11	2.0	2.1	3.7	7.5	14.5
225	123.5	0.11	2.0	2.1	3.9	7.8	14.7
230	123.5	0.11	2.0	2.1	4.1	8.0	15.0
235	123.5	0.11	2.0	2.1	4.3	8.1	15.1
240	123.5	0.11	2.0	2.1	4.4	8.2	15.2
245	123.5	0.11	2.0	2.1	4.5	8.3	15.3
250	123.5	0.11	2.0	2.1	4.5	8.4	15.4
255	123.5	0.11	2.0	2.1	4.6	8.4	15.4
260	123.5	0.11	2.0	2.1	4.6	8.4	15.4
265	123.5	0.11	2.0	2.1	4.5	8.4	15.4
270	123.5	0.11	2.0	2.1	4.5	8.3	15.3
275	123.5	0.11	2.0	2.1	4.4	8.2	15.2
280	123.5	0.11	2.0	2.1	4.3	8.1	15.1
285	123.5	0.11	2.0	2.1	4.1	7.9	14.9
290	123.5	0.11	2.0	2.1	3.9	7.7	14.7
295	123.5	0.11	2.0	2.1	3.7	7.5	14.4
300	123.5	0.11	2.0	2.1	3.7	7.1	14.1
305	123.5	0.11	2.0	2.1	3.7	6.6	13.6
310	123.5	0.11	2.0	2.1	3.7	6.0	13.0
315	123.5	0.11	2.0	2.1	3.7	5.4	12.2
320	123.5	0.11	2.0	2.1	3.7	5.4	11.0
325	123.5	0.11	2.0	2.1	3.7	5.4	9.4
330	123.5	0.11	2.0	2.1	3.7	5.4	8.5
335	123.5	0.11	2.0	2.1	3.7	5.4	8.5
340	123.5	0.11	2.0	2.1	3.7	5.4	8.5
345	123.5	0.11	2.0	2.1	3.7	5.4	8.5
350	123.5	0.11	2.0	2.1	3.7	5.4	8.5
355	123.5	0.11	2.0	2.1	3.7	5.4	8.5

Vir James Engineers

Station: SILT 1490 kHz 39-33-37 107-39-05

Distances are from Site to Conductivity Breaks

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
0	2	34.7	8	149.5	15	421.3	8	450.0
5	2	44.6	8	159.6	2	169.3	15	417.0
	8	450.0						
10	2	56.6	8	145.6	2	196.1	15	450.0
15	2	78.2	8	123.9	2	230.6	15	450.0
20	2	258.0	15	450.0				
25	2	264.7	15	450.0				
30	2	254.0	15	342.8	8	377.8	15	450.0
35	2	242.5	15	311.1	8	450.0		
40	2	228.9	15	280.5	8	450.0		
45	2	201.8	8	223.0	15	258.9	8	450.0
50	2	173.5	8	450.0				
55	2	154.4	8	450.0				
60	2	144.6	8	450.0				
65	2	138.4	8	450.0				
70	2	134.1	8	459.5				
75	2	131.3	8	384.7	15	450.0		
80	2	129.6	8	192.9	15	450.0		
85	2	128.9	8	167.1	15	450.0		
90	2	129.2	8	167.1	15	450.0		
95	2	130.5	8	180.6	15	450.0		
100	2	132.8	8	194.0	15	450.0		
105	2	135.5	8	203.5	15	450.0		
110	2	138.8	8	213.0	15	450.0		
115	2	143.4	8	224.0	15	450.0		
120	2	149.5	8	240.4	15	450.0		
125	2	165.3	8	273.3	15	450.0		
130	2	195.8	8	315.4	2	316.7	15	450.0
135	2	206.3	4	276.6	2	382.9	15	450.0
140	2	209.2	4	296.4	2	404.9	15	450.0
145	2	216.9	4	343.7	2	414.5	15	450.0
150	2	232.4	4	329.7	2	451.1		
155	2	450.0						
160	2	313.5	4	450.0				
165	2	29.2	8	95.5	2	264.9	4	412.6
	15	450.0						
170	2	19.3	8	106.8	2	247.0	4	383.4
	15	450.0						
175	2	14.5	8	118.4	2	236.2	4	359.0
	15	450.0						
180	2	11.6	8	126.0	15	131.7	2	212.4
	4	331.4	15	450.0				
185	2	9.6	8	118.5	15	145.6	4	314.0
	15	430.0	8	450.0				
190	2	7.6	8	106.0	15	152.1	4	304.9

15 413.6   8 450.0

Vir James Engineers

Station: SILT 1490 kHz 39-33-37 107-39-05

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
195	2	6.3	8	91.0	15	152.6	4	293.8
	15	385.8	8	450.0				
200	2	5.4	8	82.7	15	151.2	4	281.7
	15	364.5	8	450.0				
205	2	4.8	8	78.5	15	149.8	4	272.2
	15	351.3	8	450.0				
210	2	4.3	8	75.9	15	149.4	4	267.4
	15	346.3	8	450.0				
215	2	4.0	8	74.0	15	150.2	4	268.6
	15	345.1	8	450.0				
220	2	3.7	8	72.7	15	151.8	4	272.6
	15	350.3	8	449.1	15	450.0		
225	2	3.5	8	72.3	15	153.5	4	271.7
	15	372.3	8	429.1	15	450.0		
230	2	3.3	8	73.3	15	159.0	4	219.0
	15	450.0						
235	2	3.2	8	75.0	15	313.7	8	413.7
	30	450.0						
240	2	3.1	8	77.3	15	299.4	8	421.8
	30	450.0						
245	2	3.0	8	80.4	15	319.0	8	432.5
	30	450.0						
250	2	3.0	8	84.4	15	338.8	8	444.7
	30	481.6						
255	2	2.9	8	89.5	15	153.7	8	164.6
	4	218.5	15	334.8	8	446.9	15	450.0
260	2	2.9	8	100.5	15	117.4	8	162.1
	4	231.0	15	314.9	8	423.8	15	450.0
265	2	3.0	8	162.8	4	233.1	15	295.6
	8	392.3	15	450.0				
270	2	3.0	8	164.7	4	241.8	15	287.8
	8	363.3	15	450.0				
275	2	3.1	8	171.7	4	322.6	15	450.0
280	2	3.2	8	168.6	15	184.7	4	332.8
	15	450.0						
285	2	3.3	8	158.7	15	317.4	4	350.3
	15	450.0						
290	2	3.5	8	154.4	15	278.8	2	300.5
	4	370.0	15	450.0				
295	2	3.7	8	153.2	15	251.8	2	328.3
	4	392.5	15	450.0				
300	2	4.0	8	153.7	15	221.9	2	347.7
	8	353.3	4	415.1	8	420.3	15	450.0
305	2	4.4	8	156.9	15	192.3	2	279.7
	15	319.5	8	372.5	4	377.7	8	450.0
310	2	4.9	8	162.3	15	167.7	2	247.4
	8	265.5	15	335.3	8	450.0		

Vir James Engineers

Station: SILT 1490 kHz 39-33-37 107-39-05

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
315	2	5.5	8	152.8	2	224.8	8	272.8
	15	347.7	8	450.0				
320	2	6.4	8	143.9	2	208.2	8	280.3
	15	358.4	8	450.0				
325	2	7.8	8	138.8	2	195.5	8	290.7
	15	389.5	8	450.0				
330	2	10.0	8	121.4	15	225.3	8	271.9
	15	450.0						
335	2	11.5	8	109.2	15	409.8	2	450.0
340	2	13.5	8	109.4	15	333.3	2	450.0
345	2	16.6	8	115.5	15	323.7	2	387.7
	15	441.0	8	478.1				
350	2	21.6	8	123.3	15	434.9	8	450.0
355	2	28.0	8	134.6	15	428.8	8	450.0

Station: KPKE Frequency 1490 kHz 38-33-57 106-55-32

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
0	301.0	3.6	8.4	13.0	24.9	34.4	97.0
5	301.0	3.6	8.4	13.0	24.9	34.4	97.0
10	301.0	3.6	8.4	13.0	24.9	34.4	97.0
15	301.0	3.6	8.4	13.0	24.9	34.4	97.0
20	301.0	3.6	8.4	13.0	24.9	34.4	97.0
25	301.0	3.6	8.4	13.0	24.9	34.4	97.0
30	301.0	3.6	8.4	13.0	24.9	34.4	97.0
35	301.0	3.6	8.4	13.0	24.9	34.4	97.0
40	301.0	3.6	8.4	13.0	24.9	34.4	97.0
45	301.0	3.6	8.4	13.0	24.9	34.4	97.4
50	301.0	3.6	8.4	13.0	24.9	34.4	100.8
55	301.0	3.6	8.4	13.0	24.9	34.4	103.9
60	301.0	3.6	8.4	13.0	24.9	34.4	106.7
65	301.0	3.6	8.4	13.0	24.9	34.4	108.1
70	301.0	3.6	8.4	13.0	24.9	34.4	108.4
75	301.0	3.6	8.4	13.0	24.9	34.4	108.3
80	301.0	3.6	8.4	13.0	24.9	34.4	108.0
85	301.0	3.6	8.4	13.0	24.9	34.4	107.4
90	301.0	3.6	8.4	13.0	24.9	34.4	106.0
95	301.0	3.6	8.4	13.0	24.9	34.4	103.8
100	301.0	3.6	8.4	13.0	24.9	34.4	101.1
105	301.0	3.6	8.4	13.0	24.9	34.4	97.6
110	301.0	3.6	8.4	13.0	24.9	34.4	97.9
115	301.0	3.6	8.4	13.0	24.9	34.4	98.5
120	301.0	3.6	8.4	13.0	24.9	34.4	98.6
125	301.0	3.6	8.4	13.0	24.9	34.4	98.6
130	301.0	3.6	8.4	13.0	24.9	34.4	98.7
135	301.0	3.6	8.4	13.0	24.9	34.4	98.5
140	301.0	3.6	8.4	13.0	24.9	34.4	97.8
145	301.0	3.6	8.4	13.0	24.9	34.4	97.1
150	301.0	3.6	8.4	13.0	24.9	34.4	97.0
155	301.0	3.6	8.4	13.0	24.9	34.4	97.0
160	301.0	3.6	8.4	13.0	24.9	34.4	97.0
165	301.0	3.6	8.4	13.0	24.9	34.4	97.0
170	301.0	3.6	8.4	13.0	24.9	34.4	97.0
175	301.0	3.6	8.4	13.0	24.9	34.4	97.0

Station: KPKE Frequency 1490 kHz 38-33-57 106-55-32

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
180	301.0	3.6	8.4	13.0	24.9	34.4	97.0
185	301.0	3.6	8.4	13.0	24.9	34.4	97.0
190	301.0	3.6	8.4	13.0	24.9	34.4	97.0
195	301.0	3.6	8.4	13.0	24.9	34.4	97.0
200	301.0	3.6	8.4	13.0	24.9	34.4	97.0
205	301.0	3.6	8.4	13.0	24.9	34.4	97.0
210	301.0	3.6	8.4	13.0	24.9	34.4	97.0
215	301.0	3.6	8.4	13.0	24.9	34.4	97.0
220	301.0	3.6	8.4	13.0	24.9	34.4	97.0
225	301.0	3.6	8.4	13.0	24.9	34.4	97.2
230	301.0	3.6	8.4	13.0	24.9	34.4	98.6
235	301.0	3.6	8.4	13.0	24.9	34.4	99.9
240	301.0	3.6	8.4	13.0	24.9	34.4	99.9
245	301.0	3.6	8.4	13.0	24.9	34.4	100.0
250	301.0	3.6	8.4	13.0	24.9	34.4	115.7
255	301.0	3.6	8.4	13.0	24.9	34.4	122.4
260	301.0	3.6	8.4	13.0	24.9	34.4	128.4
265	301.0	3.6	8.4	13.0	24.9	34.4	130.4
270	301.0	3.6	8.4	13.0	24.9	34.4	132.4
275	301.0	3.6	8.4	13.0	24.9	34.4	132.9
280	301.0	3.6	8.4	13.0	24.9	34.4	133.6
285	301.0	3.6	8.4	13.0	24.9	34.4	133.4
290	301.0	3.6	8.4	13.0	24.9	34.4	132.3
295	301.0	3.6	8.4	13.0	24.9	34.4	129.3
300	301.0	3.6	8.4	13.0	24.9	34.4	126.7
305	301.0	3.6	8.4	13.0	24.9	34.4	125.3
310	301.0	3.6	8.4	13.0	24.9	34.4	124.0
315	301.0	3.6	8.4	13.0	24.9	34.4	120.7
320	301.0	3.6	8.4	13.0	24.9	34.4	114.0
325	301.0	3.6	8.4	13.0	24.9	34.4	100.9
330	301.0	3.6	8.4	13.0	24.9	34.4	97.0
335	301.0	3.6	8.4	13.0	24.9	34.4	97.0
340	301.0	3.6	8.4	13.0	24.9	34.4	97.0
345	301.0	3.6	8.4	13.0	24.9	34.4	97.0
350	301.0	3.6	8.4	13.0	24.9	34.4	97.0
355	301.0	3.6	8.4	13.0	24.9	34.4	97.0

Station: KPKE250W Frequency 1490 kHz 38-33-57 106-55-32

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
0	150.2	2.4	6.0	9.4	18.0	24.9	71.8
5	150.2	2.4	6.0	9.4	18.0	24.9	71.8
10	150.2	2.4	6.0	9.4	18.0	24.9	71.8
15	150.2	2.4	6.0	9.4	18.0	24.9	71.8
20	150.2	2.4	6.0	9.4	18.0	24.9	71.8
25	150.2	2.4	6.0	9.4	18.0	24.9	71.8
30	150.2	2.4	6.0	9.4	18.0	24.9	71.8
35	150.2	2.4	6.0	9.4	18.0	24.9	71.8
40	150.2	2.4	6.0	9.4	18.0	24.9	71.8
45	150.2	2.4	6.0	9.4	18.0	24.9	71.8
50	150.2	2.4	6.0	9.4	18.0	24.9	71.8
55	150.2	2.4	6.0	9.4	18.0	24.9	71.8
60	150.2	2.4	6.0	9.4	18.0	24.9	71.8
65	150.2	2.4	6.0	9.4	18.0	24.9	71.8
70	150.2	2.4	6.0	9.4	18.0	24.9	71.8
75	150.2	2.4	6.0	9.4	18.0	24.9	71.8
80	150.2	2.4	6.0	9.4	18.0	24.9	71.8
85	150.2	2.4	6.0	9.4	18.0	24.9	71.8
90	150.2	2.4	6.0	9.4	18.0	24.9	71.8
95	150.2	2.4	6.0	9.4	18.0	24.9	71.8
100	150.2	2.4	6.0	9.4	18.0	24.9	71.8
105	150.2	2.4	6.0	9.4	18.0	24.9	71.8
110	150.2	2.4	6.0	9.4	18.0	24.9	71.8
115	150.2	2.4	6.0	9.4	18.0	24.9	71.8
120	150.2	2.4	6.0	9.4	18.0	24.9	71.8
125	150.2	2.4	6.0	9.4	18.0	24.9	71.8
130	150.2	2.4	6.0	9.4	18.0	24.9	71.8
135	150.2	2.4	6.0	9.4	18.0	24.9	71.8
140	150.2	2.4	6.0	9.4	18.0	24.9	71.8
145	150.2	2.4	6.0	9.4	18.0	24.9	71.8
150	150.2	2.4	6.0	9.4	18.0	24.9	71.8
155	150.2	2.4	6.0	9.4	18.0	24.9	71.8
160	150.2	2.4	6.0	9.4	18.0	24.9	71.8
165	150.2	2.4	6.0	9.4	18.0	24.9	71.8
170	150.2	2.4	6.0	9.4	18.0	24.9	71.8
175	150.2	2.4	6.0	9.4	18.0	24.9	71.8

Station: KPKE250W Frequency 1490 kHz 38-33-57 106-55-32

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
180	150.2	2.4	6.0	9.4	18.0	24.9	71.8
185	150.2	2.4	6.0	9.4	18.0	24.9	71.8
190	150.2	2.4	6.0	9.4	18.0	24.9	71.8
195	150.2	2.4	6.0	9.4	18.0	24.9	71.8
200	150.2	2.4	6.0	9.4	18.0	24.9	71.8
205	150.2	2.4	6.0	9.4	18.0	24.9	71.8
210	150.2	2.4	6.0	9.4	18.0	24.9	71.8
215	150.2	2.4	6.0	9.4	18.0	24.9	71.8
220	150.2	2.4	6.0	9.4	18.0	24.9	71.8
225	150.2	2.4	6.0	9.4	18.0	24.9	71.8
230	150.2	2.4	6.0	9.4	18.0	24.9	71.8
235	150.2	2.4	6.0	9.4	18.0	24.9	71.8
240	150.2	2.4	6.0	9.4	18.0	24.9	71.8
245	150.2	2.4	6.0	9.4	18.0	24.9	71.8
250	150.2	2.4	6.0	9.4	18.0	24.9	74.1
255	150.2	2.4	6.0	9.4	18.0	24.9	79.7
260	150.2	2.4	6.0	9.4	18.0	24.9	84.1
265	150.2	2.4	6.0	9.4	18.0	24.9	86.1
270	150.2	2.4	6.0	9.4	18.0	24.9	88.1
275	150.2	2.4	6.0	9.4	18.0	24.9	88.6
280	150.2	2.4	6.0	9.4	18.0	24.9	89.4
285	150.2	2.4	6.0	9.4	18.0	24.9	89.3
290	150.2	2.4	6.0	9.4	18.0	24.9	89.5
295	150.2	2.4	6.0	9.4	18.0	24.9	89.6
300	150.2	2.4	6.0	9.4	18.0	24.9	89.2
305	150.2	2.4	6.0	9.4	18.0	24.9	87.9
310	150.2	2.4	6.0	9.4	18.0	24.9	86.5
315	150.2	2.4	6.0	9.4	18.0	24.9	83.2
320	150.2	2.4	6.0	9.4	18.0	24.9	76.5
325	150.2	2.4	6.0	9.4	18.0	24.9	71.8
330	150.2	2.4	6.0	9.4	18.0	24.9	71.8
335	150.2	2.4	6.0	9.4	18.0	24.9	71.8
340	150.2	2.4	6.0	9.4	18.0	24.9	71.8
345	150.2	2.4	6.0	9.4	18.0	24.9	71.8
350	150.2	2.4	6.0	9.4	18.0	24.9	71.8
355	150.2	2.4	6.0	9.4	18.0	24.9	71.8

Vir James Engineers

Station: KPKE 1490 kHz 38-33-57 106-55-32

Distances are from Site to Conductivity Breaks

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
0	2	333.6	15	450.0				
5	2	354.3	15	450.0				
10	2	344.5	15	450.0				
15	2	313.8	15	437.3	8	437.5	15	450.0
20	2	185.5	8	284.0	15	349.7	8	450.0
25	2	153.7	8	450.0				
30	2	132.9	8	450.0				
35	2	117.8	8	450.0				
40	2	106.7	8	165.3	15	170.4	8	450.0
45	2	96.1	8	151.1	15	216.5	8	450.0
50	2	88.1	8	150.2	15	255.6	8	450.0
55	2	81.8	8	150.3	15	291.2	8	390.9
	15	450.0						
60	2	77.0	8	149.0	15	450.0		
65	2	73.9	8	146.7	15	450.0		
70	2	73.4	8	143.9	15	450.0		
75	2	73.4	8	142.2	15	450.0		
80	2	74.0	8	141.2	15	450.0		
85	2	75.2	8	140.9	15	450.0		
90	2	78.1	8	141.8	15	450.0		
95	2	82.2	8	146.1	15	450.0		
100	2	87.4	8	152.8	15	450.0		
105	2	95.3	4	95.7	8	163.4	15	450.0
110	2	92.2	4	109.2	8	177.0	15	450.0
115	2	89.9	4	128.3	8	193.0	15	450.0
120	2	88.3	4	150.1	8	195.2	2	210.6
	15	450.0						
125	2	87.5	4	157.3	2	240.3	15	450.0
130	2	87.4	4	164.0	2	272.9	15	450.0
135	2	89.6	4	183.7	2	280.5	15	450.0
140	2	92.6	4	212.5	2	284.4	15	450.0
145	2	96.5	4	217.5	2	294.6	15	450.0
150	2	105.1	4	205.9	2	321.7	15	450.0
155	2	128.4	4	132.0	2	358.1	15	414.6
	8	450.0						
160	2	228.0	4	287.6	2	382.5	15	450.0
165	2	199.3	4	335.7	15	450.0		
170	2	173.8	4	301.0	15	450.0		
175	2	155.2	4	280.0	15	450.0		
180	2	143.4	4	267.0	15	450.0		
185	2	136.5	4	256.4	15	450.0		
190	2	134.8	4	244.5	15	370.4	8	450.0
195	2	134.1	4	233.0	15	336.5	8	450.0
200	2	132.3	4	225.1	15	332.7	8	450.0
205	2	129.8	4	222.1	15	326.2	8	450.0

Vir James Engineers

Station: KPKE 1490 kHz 38-33-57 106-55-32

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
210	2	124.2	4	222.4	15	314.4	8	445.7
	15	450.0						
215	2	115.9	4	222.4	15	303.6	8	416.4
	15	450.0						
220	2	105.0	4	222.9	15	298.6	8	450.0
225	2	95.6	4	222.2	15	296.7	8	450.3
230	2	88.4	4	222.9	15	301.1	8	436.1
	15	450.0						
235	2	83.1	4	226.7	15	308.3	8	425.8
	15	450.0						
240	2	82.2	4	234.0	15	323.0	8	417.5
	15	450.0						
245	2	81.9	4	248.0	15	355.5	8	405.8
	15	450.0						
250	2	68.8	15	108.3	4	264.9	15	450.0
255	2	61.9	8	65.2	15	119.7	4	263.0
	15	332.7	8	430.3	30	450.0		
260	2	55.6	8	66.9	15	131.9	4	242.8
	15	326.2	8	450.0				
265	2	50.7	8	75.1	15	148.1	4	226.1
	15	330.7	8	450.0				
270	2	47.2	8	79.2	15	167.5	4	212.1
	15	382.9	8	450.0				
275	2	45.4	8	82.1	15	386.1	8	450.0
280	2	44.1	8	85.0	15	374.7	8	459.9
285	2	43.2	8	89.8	15	230.9	4	301.8
	15	367.3	8	439.8	15	450.0		
290	2	42.7	8	97.2	15	220.7	8	236.0
	4	322.1	15	372.1	8	385.2	4	408.0
	15	450.0						
295	2	42.4	8	114.2	15	206.5	8	249.2
	4	433.6	15	450.0				
300	2	43.3	8	161.4	15	188.1	8	273.4
	15	277.2	4	345.9	15	404.7	4	471.1
305	2	45.1	8	263.7	15	372.9	2	437.8
	4	450.0						
310	2	47.5	8	265.3	15	346.3	2	438.8
	8	450.0						
315	2	52.3	8	272.5	15	314.4	2	383.7
	15	452.0						
320	2	63.3	8	285.6	2	353.4	8	396.0
	15	450.0						
325	2	87.8	8	269.9	2	331.0	8	410.2
	15	450.0						
330	2	132.6	8	255.4	15	346.5	8	404.9
	15	450.0						

Vir James Engineers

Station: KPKE 1490 kHz 38-33-57 106-55-32

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
335	2	152.6	8	234.9	15	450.0		
340	2	166.7	8	245.3	15	450.1		
345	2	181.6	8	260.6	15	450.0		
350	2	204.0	8	274.0	2	280.2	15	450.0
355	2	304.6	15	450.0				

Station: KCPX Frequency 1490 kHz 38-28-04 109-26-18

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
0	314.5	8.7	24.8	39.3	71.1	88.7	193.2
5	314.5	8.7	24.8	39.3	71.1	90.6	190.2
10	314.5	8.7	24.8	39.3	71.1	92.7	192.3
15	314.5	8.7	24.8	39.3	71.1	93.5	194.2
20	314.5	8.7	24.8	39.3	71.1	93.5	195.9
25	314.5	8.7	24.8	39.3	71.1	93.5	197.6
30	314.5	8.7	24.8	39.3	71.1	93.5	198.2
35	314.5	8.7	24.8	39.3	71.1	93.5	198.6
40	314.5	7.0	17.9	32.5	64.3	86.6	193.0
45	314.5	6.2	13.3	20.3	52.1	74.4	183.6
50	314.5	5.9	12.9	19.4	43.2	65.6	176.7
55	314.5	5.7	12.7	19.2	36.7	59.0	171.8
60	314.5	5.6	12.6	19.1	35.0	55.9	169.7
65	314.5	5.5	12.6	19.0	34.9	52.2	167.0
70	314.5	5.4	12.5	19.0	34.9	49.2	165.0
75	314.5	5.4	12.5	18.9	34.8	47.5	163.5
80	314.5	5.4	12.5	18.9	34.8	47.4	161.3
85	314.5	5.4	12.4	18.9	34.8	47.4	158.1
90	314.5	5.3	12.4	18.9	34.8	47.4	156.0
95	314.5	5.3	12.4	18.9	34.7	47.4	148.9
100	314.5	5.3	12.4	18.8	34.7	47.4	137.9
105	314.5	5.3	12.4	18.8	34.7	47.4	126.5
110	314.5	5.3	12.4	18.8	34.7	47.4	126.5
115	314.5	5.3	12.4	18.8	34.7	47.4	126.5
120	314.5	5.3	12.4	18.8	34.7	47.4	126.5
125	314.5	5.3	12.4	18.8	34.7	47.4	126.5
130	314.5	5.3	12.4	18.8	34.7	47.4	126.5
135	314.5	5.3	12.4	18.8	34.7	47.4	126.5
140	314.5	5.3	12.4	18.8	34.7	47.4	126.5
145	314.5	5.3	12.4	18.9	34.7	47.4	126.5
150	314.5	5.3	12.4	18.9	34.8	47.4	126.6
155	314.5	5.4	12.4	18.9	34.8	47.4	126.6
160	314.5	5.4	12.4	18.9	34.8	47.4	126.6
165	314.5	5.4	12.5	18.9	34.8	47.5	129.2
170	314.5	5.4	12.5	19.0	34.8	47.5	133.6
175	314.5	5.5	12.5	19.0	34.9	47.5	136.4

Station: KCPX Frequency 1490 kHz 38-28-04 109-26-18

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
180	314.5	5.5	12.6	19.1	35.0	47.6	138.9
185	314.5	5.6	12.7	19.2	35.1	47.7	140.9
190	314.5	5.8	12.9	19.3	35.2	47.9	142.7
195	314.5	6.1	13.2	19.6	35.5	48.2	144.0
200	314.5	6.7	13.8	20.3	36.2	48.8	146.9
205	314.5	8.7	15.9	22.3	38.2	50.9	152.8
210	314.5	8.7	24.8	39.3	71.1	93.5	207.8
215	314.5	8.7	24.8	39.3	71.1	93.5	209.1
220	314.5	8.7	24.8	39.3	71.1	93.5	214.0
225	314.5	8.7	24.8	39.3	71.1	93.5	215.1
230	314.5	8.7	24.8	39.3	71.1	93.5	215.1
235	314.5	8.7	24.8	39.3	71.1	93.5	205.9
240	314.5	8.7	24.8	39.3	71.1	93.5	197.9
245	314.5	8.7	24.8	39.3	71.1	93.5	197.3
250	314.5	8.7	24.8	39.3	71.1	93.5	196.4
255	314.5	8.7	24.8	39.3	71.1	93.5	196.1
260	314.5	8.7	24.8	39.3	71.1	93.5	198.6
265	314.5	8.7	24.8	39.3	71.1	93.5	205.0
270	314.5	8.7	24.8	39.3	71.1	93.5	206.8
275	314.5	8.7	24.8	39.3	71.1	93.5	207.5
280	314.5	8.7	24.8	39.3	71.1	93.5	208.2
285	314.5	8.7	24.8	39.3	71.1	93.5	208.3
290	314.5	8.7	24.8	39.3	71.1	93.5	207.8
295	314.5	8.7	24.8	39.3	71.1	93.5	207.5
300	314.5	8.7	24.8	39.3	71.1	93.5	207.5
305	314.5	8.7	24.8	39.3	71.1	93.5	208.0
310	314.5	8.7	24.8	39.3	71.1	93.5	209.2
315	314.5	8.7	24.8	39.3	71.1	93.5	208.4
320	314.5	8.7	24.8	39.3	71.1	86.3	183.5
325	314.5	8.7	24.8	39.3	70.2	82.8	162.0
330	314.5	8.7	24.8	39.3	68.2	80.8	160.0
335	314.5	8.7	24.8	39.3	66.6	79.3	158.4
340	314.5	8.7	24.8	39.3	66.5	79.2	158.3
345	314.5	8.7	24.8	39.3	66.6	79.3	158.4
350	314.5	8.7	24.8	39.3	67.7	80.4	163.6
355	314.5	8.7	24.8	39.3	69.6	82.3	177.0

Station: KCPX250W Frequency 1490 kHz 38-28-04 109-26-18

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
0	157.3	5.0	16.4	27.9	53.5	71.1	150.8
5	157.3	5.0	16.4	27.9	53.5	71.1	152.8
10	157.3	5.0	16.4	27.9	53.5	71.1	154.8
15	157.3	5.0	16.4	27.9	53.5	71.1	156.7
20	157.3	5.0	16.4	27.9	53.5	71.1	158.4
25	157.3	5.0	16.4	27.9	53.5	71.1	160.1
30	157.3	5.0	16.4	27.9	53.5	71.1	160.7
35	157.3	5.0	16.4	27.9	53.5	71.1	161.1
40	157.3	5.0	10.5	21.1	46.6	64.3	155.6
45	157.3	4.3	9.7	14.6	34.4	52.1	146.1
50	157.3	4.0	9.3	14.3	26.1	43.2	139.2
55	157.3	3.8	9.2	14.1	25.9	36.7	134.3
60	157.3	3.7	9.0	14.0	25.8	35.0	132.2
65	157.3	3.6	9.0	13.9	25.7	34.9	129.4
70	157.3	3.6	8.9	13.9	25.7	34.9	126.5
75	157.3	3.5	8.9	13.8	25.7	34.8	124.1
80	157.3	3.5	8.9	13.8	25.6	34.8	121.0
85	157.3	3.5	8.8	13.8	25.6	34.8	117.4
90	157.3	3.5	8.8	13.8	25.6	34.8	112.1
95	157.3	3.5	8.8	13.8	25.6	34.7	104.5
100	157.3	3.5	8.8	13.8	25.6	34.7	95.6
105	157.3	3.5	8.8	13.8	25.6	34.7	95.6
110	157.3	3.5	8.8	13.8	25.6	34.7	95.6
115	157.3	3.5	8.8	13.8	25.6	34.7	95.6
120	157.3	3.5	8.8	13.8	25.6	34.7	95.6
125	157.3	3.5	8.8	13.8	25.6	34.7	95.6
130	157.3	3.5	8.8	13.8	25.6	34.7	95.6
135	157.3	3.5	8.8	13.8	25.6	34.7	95.6
140	157.3	3.5	8.8	13.8	25.6	34.7	95.6
145	157.3	3.5	8.8	13.8	25.6	34.7	95.6
150	157.3	3.5	8.8	13.8	25.6	34.8	95.7
155	157.3	3.5	8.8	13.8	25.6	34.8	95.7
160	157.3	3.5	8.9	13.8	25.6	34.8	95.7
165	157.3	3.5	8.9	13.8	25.6	34.8	95.7
170	157.3	3.6	8.9	13.9	25.7	34.8	95.7
175	157.3	3.6	9.0	13.9	25.7	34.9	95.8

Station: KCPX250W Frequency 1490 kHz 38-28-04 109-26-18

Azim (deg)	Inverse (mV/m)	25 mV (km)	5 mV (km)	2.0 mV (km)	0.5 mV (km)	.250 mV (km)	.025 mV (km)
180	157.3	3.7	9.0	14.0	25.8	35.0	95.9
185	157.3	3.8	9.1	14.1	25.9	35.1	96.4
190	157.3	3.9	9.3	14.2	26.0	35.2	98.2
195	157.3	4.2	9.6	14.5	26.3	35.5	99.5
200	157.3	4.9	10.2	15.2	27.0	36.2	102.4
205	157.3	5.0	12.3	17.2	29.0	38.2	108.3
210	157.3	5.0	16.4	27.9	53.5	71.1	170.3
215	157.3	5.0	16.4	27.9	53.5	71.1	170.7
220	157.3	5.0	16.4	27.9	53.5	71.1	170.7
225	157.3	5.0	16.4	27.9	53.5	71.1	170.7
230	157.3	5.0	16.4	27.9	53.5	71.1	170.7
235	157.3	5.0	16.4	27.9	53.5	71.1	161.8
240	157.3	5.0	16.4	27.9	53.5	71.1	160.4
245	157.3	5.0	16.4	27.9	53.5	71.1	159.9
250	157.3	5.0	16.4	27.9	53.5	71.1	158.9
255	157.3	5.0	16.4	27.9	53.5	71.1	158.6
260	157.3	5.0	16.4	27.9	53.5	71.1	161.1
265	157.3	5.0	16.4	27.9	53.5	71.1	167.5
270	157.3	5.0	16.4	27.9	53.5	71.1	169.3
275	157.3	5.0	16.4	27.9	53.5	71.1	170.1
280	157.3	5.0	16.4	27.9	53.5	71.1	170.7
285	157.3	5.0	16.4	27.9	53.5	71.1	170.7
290	157.3	5.0	16.4	27.9	53.5	71.1	170.3
295	157.3	5.0	16.4	27.9	53.5	71.1	170.0
300	157.3	5.0	16.4	27.9	53.5	71.1	170.0
305	157.3	5.0	16.4	27.9	53.5	71.1	170.5
310	157.3	5.0	16.4	27.9	53.5	71.1	170.7
315	157.3	5.0	16.4	27.9	53.5	71.1	170.7
320	157.3	5.0	16.4	27.9	53.5	71.1	142.0
325	157.3	5.0	16.4	27.9	53.5	70.2	131.1
330	157.3	5.0	16.4	27.9	53.5	68.2	129.1
335	157.3	5.0	16.4	27.9	53.5	66.6	127.5
340	157.3	5.0	16.4	27.9	53.5	66.5	127.4
345	157.3	5.0	16.4	27.9	53.5	66.6	127.5
350	157.3	5.0	16.4	27.9	53.5	67.7	128.6
355	157.3	5.0	16.4	27.9	53.5	69.6	135.4

Vir James Engineers

Station: KCPX 1490 kHz 38-28-04 109-26-18

Distances are from Site to Conductivity Breaks

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
0	15	73.8	8	161.5	15	229.3	2	278.6
	8	362.3	15	461.9				
5	15	81.8	8	192.9	15	228.9	2	280.9
	8	352.3	15	434.3	2	450.0		
10	15	90.0	8	231.7	2	277.1	15	450.0
15	15	97.7	8	239.8	2	257.4	15	450.0
20	15	105.4	8	246.7	15	450.0		
25	15	113.5	8	243.6	15	450.0		
30	15	117.4	8	326.4	2	359.8	15	450.0
35	15	118.8	8	314.1	2	448.5	15	450.0
40	15	5.3	4	11.2	15	118.9	8	274.5
	2	438.0	15	450.0				
45	15	3.5	4	19.2	15	119.8	8	212.5
	2	420.8	15	450.0				
50	15	2.6	4	26.5	15	121.7	8	195.2
	2	371.5	8	450.0				
55	15	2.1	4	33.3	15	124.7	8	188.9
	2	338.2	8	450.0				
60	15	1.8	4	36.7	15	127.1	8	187.0
	2	322.3	8	450.0				
65	15	1.5	4	41.2	15	130.2	8	186.4
	2	310.9	8	378.1	15	394.6	8	450.0
70	15	1.4	4	45.0	15	134.1	8	186.9
	2	302.5	8	347.2	15	450.0		
75	15	1.2	4	48.2	15	135.9	8	187.5
	2	294.5	8	357.2	15	450.0		
80	15	1.1	4	52.3	15	137.5	8	182.9
	2	288.4	8	358.6	15	450.0		
85	15	1.1	4	57.7	15	139.9	8	173.3
	2	293.2	8	359.6	15	450.0		
90	15	1.0	4	66.0	15	154.2	8	162.2
	2	305.5	8	365.9	15	450.0		
95	15	1.0	4	79.3	15	154.4	2	298.9
	4	330.3	8	383.4	15	450.0		
100	15	0.9	4	100.2	15	142.3	4	149.4
	2	286.9	4	358.8	8	403.9	15	450.0
105	15	0.9	4	157.9	2	283.5	4	359.5
	2	429.9	15	450.0				
110	15	0.9	4	162.9	2	293.5	4	380.2
	2	450.0						
115	15	0.9	4	169.6	2	335.2	4	382.3
	2	450.0						
120	15	0.9	4	182.4	2	450.0		
125	15	0.9	4	386.2	2	450.0		
130	15	0.9	4	426.0	2	450.0		

Vir James Engineers

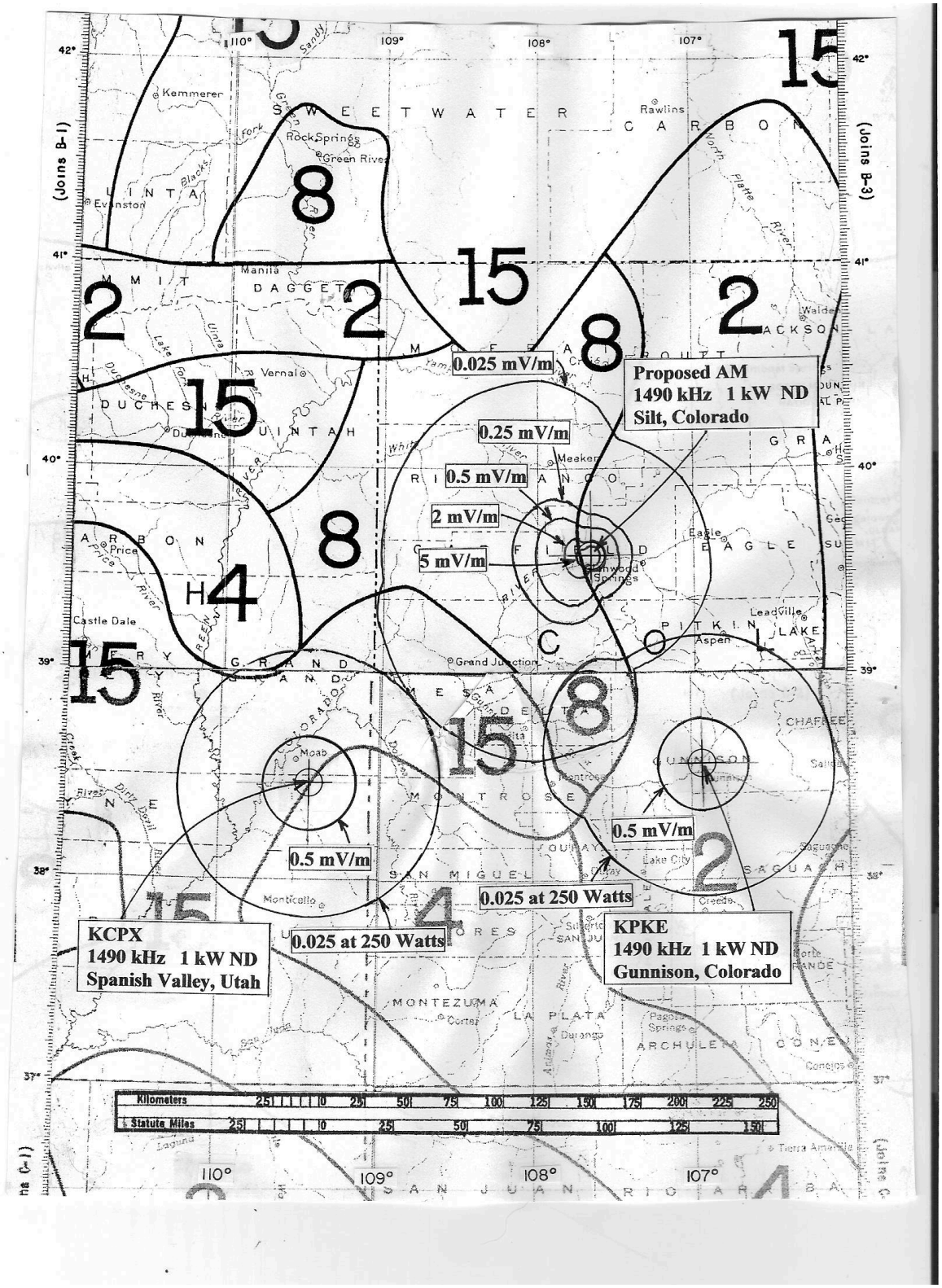
Station: KCPX 1490 kHz 38-28-04 109-26-18

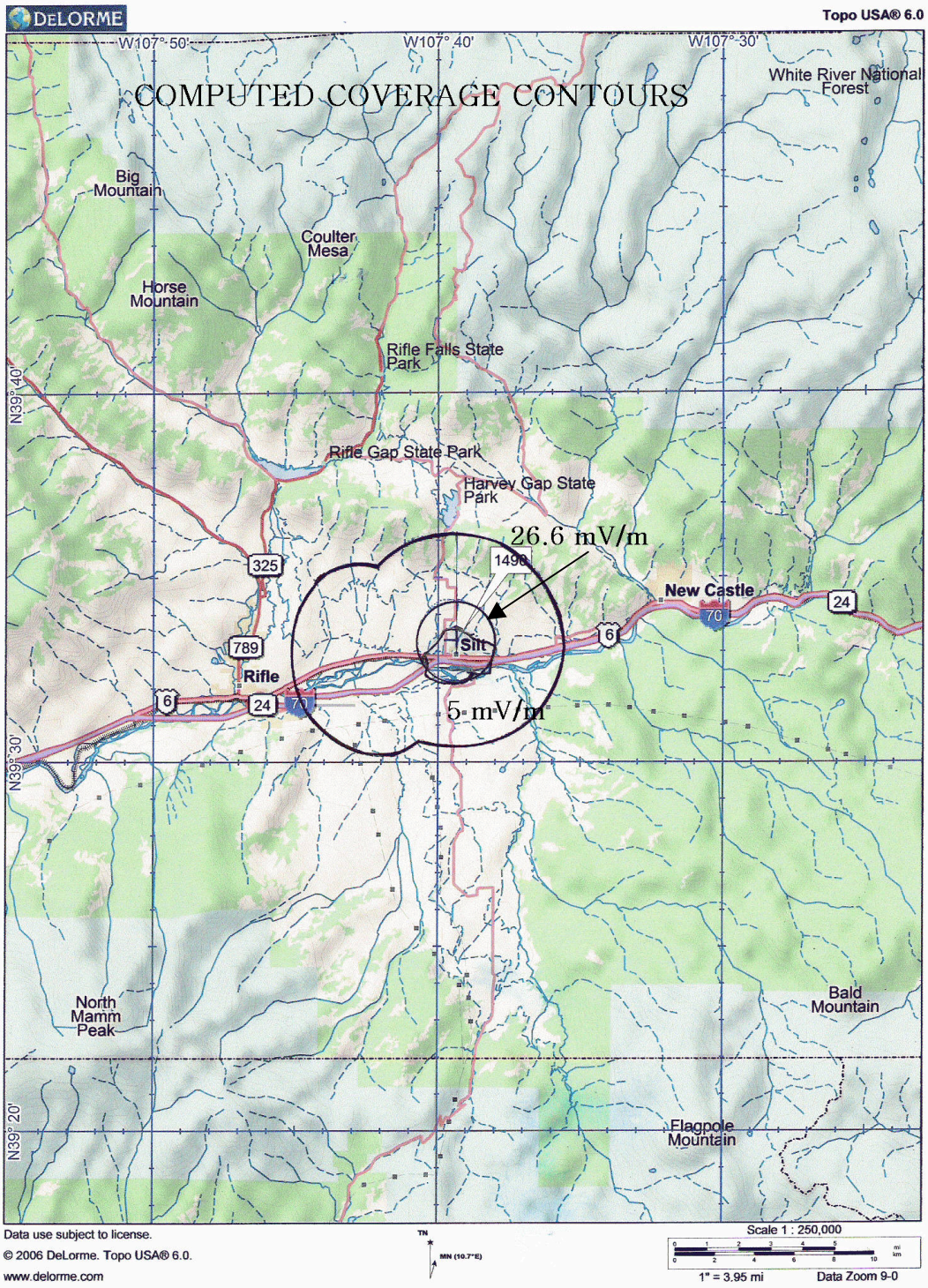
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
135	15	0.9	4	403.8	15	450.0		
140	15	0.9	4	316.4	15	450.0		
145	15	0.9	4	234.2	15	450.0		
150	15	1.0	4	202.6	15	450.0		
155	15	1.0	4	168.6	15	352.7	8	387.4
	15	450.0						
160	15	1.1	4	138.1	15	319.3	8	450.0
165	15	1.2	4	121.5	15	275.3	8	450.0
170	15	1.3	4	110.4	15	230.7	8	450.0
175	15	1.5	4	103.8	15	205.8	8	445.8
	4	450.0						
180	15	1.7	4	98.8	15	190.7	8	361.9
	15	456.5						
185	15	2.0	4	94.9	15	180.1	8	308.4
	15	450.2						
190	15	2.5	4	92.1	15	171.9	8	356.8
	15	449.8	8	450.0				
195	15	3.2	4	90.1	15	167.5	8	334.7
	15	431.8	8	450.0				
200	15	4.7	4	87.1	15	165.2	8	303.1
	15	414.8	8	450.0				
205	15	8.9	4	82.2	15	164.2	8	278.8
	15	387.5	8	450.0				
210	15	168.5	8	259.2	15	363.0	8	450.0
215	15	177.5	8	243.0	15	343.8	8	450.0
220	15	210.2	8	229.7	15	333.0	8	450.0
225	15	322.7	8	450.0				
230	15	292.1	8	450.0				
235	15	121.6	8	163.2	15	220.4	30	259.6
	8	450.0						
240	15	116.2	8	221.5	30	281.5	8	428.2
	15	450.0						
245	15	112.0	8	228.1	30	349.5	8	387.7
	15	450.0						
250	15	109.0	8	237.0	30	357.9	15	450.0
255	15	107.7	8	247.1	30	353.8	15	450.0
260	15	118.7	8	259.7	30	302.7	15	457.6
265	15	152.3	8	271.2	15	429.2	4	450.0
270	15	162.5	8	276.3	15	423.2	4	450.0
275	15	167.3	8	271.6	15	423.6	4	450.0
280	15	171.0	8	264.1	15	427.3	4	450.0
285	15	171.2	8	255.6	15	429.2	4	450.0
290	15	168.4	8	248.7	15	420.5	4	450.0
295	15	166.8	8	244.0	15	400.9	4	450.0
300	15	166.9	8	237.5	15	386.4	8	434.7
	4	450.0						

Vir James Engineers

Station: KCPX 1490 kHz 38-28-04 109-26-18

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
305	15	169.8	8	227.5	15	385.1	8	450.0
310	15	176.6	8	209.3	4	219.9	15	400.6
	8	450.0						
315	15	190.2	8	193.0	4	249.1	15	429.8
	8	450.0						
320	15	76.7	4	119.9	15	176.9	4	301.4
	15	450.0						
325	15	69.1	4	221.8	15	250.1	4	364.9
	15	422.3	8	450.0				
330	15	64.8	4	208.0	15	242.6	2	292.7
	4	375.6	8	450.0				
335	15	61.6	4	196.7	15	238.6	2	317.6
	8	450.0						
340	15	61.3	4	183.2	15	237.8	2	300.1
	15	326.0	8	450.0				
345	15	61.6	4	166.3	15	236.0	2	287.5
	15	376.5	8	450.0				
350	15	63.8	4	149.1	15	233.3	2	281.9
	8	300.6	15	431.7	8	450.0		
355	15	67.9	4	111.5	8	149.5	15	231.5
	2	279.1	8	338.1	15	450.0		


0.025 mV/m
Proposed AM
1490 kHz 1 kW ND
Silt, Colorado
0.25 mV/m
0.5 mV/m
2 mV/m
5 mV/m
0.5 mV/m
0.5 mV/m
0.025 at 250 Watts
0.025 at 250 Watts
KCPX
1490 kHz 1 kW ND
Spanish Valley, Utah
KPKE
1490 kHz 1 kW ND
Gunnison, Colorado
Kilometers
Statute Miles
(Joins B-1)
(Joins B-3)


DeLORME
Topo USA® 6.0
COMPUTED COVERAGE CONTOURS
W107° 50'
W107° 40'
W107° 30'
N39° 40'
N39° 30'
N39° 20'
White River National Forest
Big Mountain
Coulter Mesa
Horse Mountain
Rifle Falls State Park
Rifle Gap State Park
Harvey Gap State Park
26.6 mV/m
5 mV/m
325
149
New Castle
70
24
6
Silt
789
Rifle
North Mamm Peak
Bald Mountain
Flagpole Mountain
Data use subject to license.
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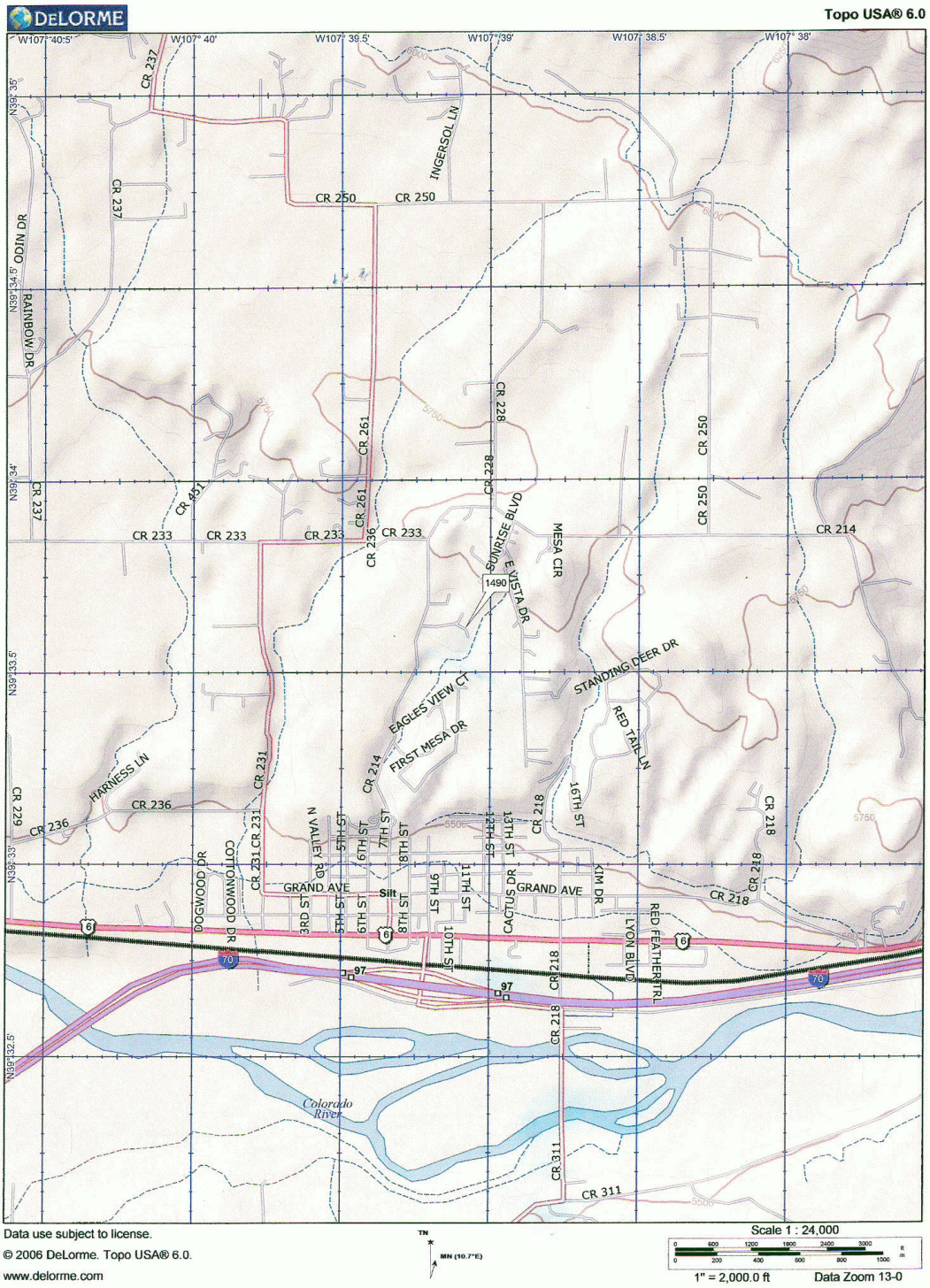
www.delorme.com
TN
MN (10.7°E)
Scale 1 : 250,000
1" = 3.95 mi
Data Zoom 9-0


DeLORME
Topo USA® 6.0
W107° 40.5'
W107° 40'
W107° 39.5'
W107° 39'
W107° 38.5'
W107° 38'
N39° 35'
N39° 34.5'
N39° 34'
N39° 33.5'
N39° 33'
N39° 32.5'
CR 237
INGERSOL LN
CR 250
COLIN DR
RAINBOW DR
CR 261
CR 228
CR 451
CR 233
CR 236
SUNRISE BLVD
MESA CIR
1490
E VISTA DR
CR 214
STANDING DEER DR
EAGLES VIEW CT
FIRST MESA DR
RED TAIL LN
HARNESS LN
CR 229
CR 231
N VALLEY RD
5TH ST
6TH ST
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
13TH ST
16TH ST
CR 218
GRAND AVE
Silt
DOGWOOD DR
COTTONWOOD DR
3RD ST
CACTUS DR
KIM DR
LYON BLVD
RED FEATHER TRL
70
6
97
Colorado River
CR 311
Data use subject to license.
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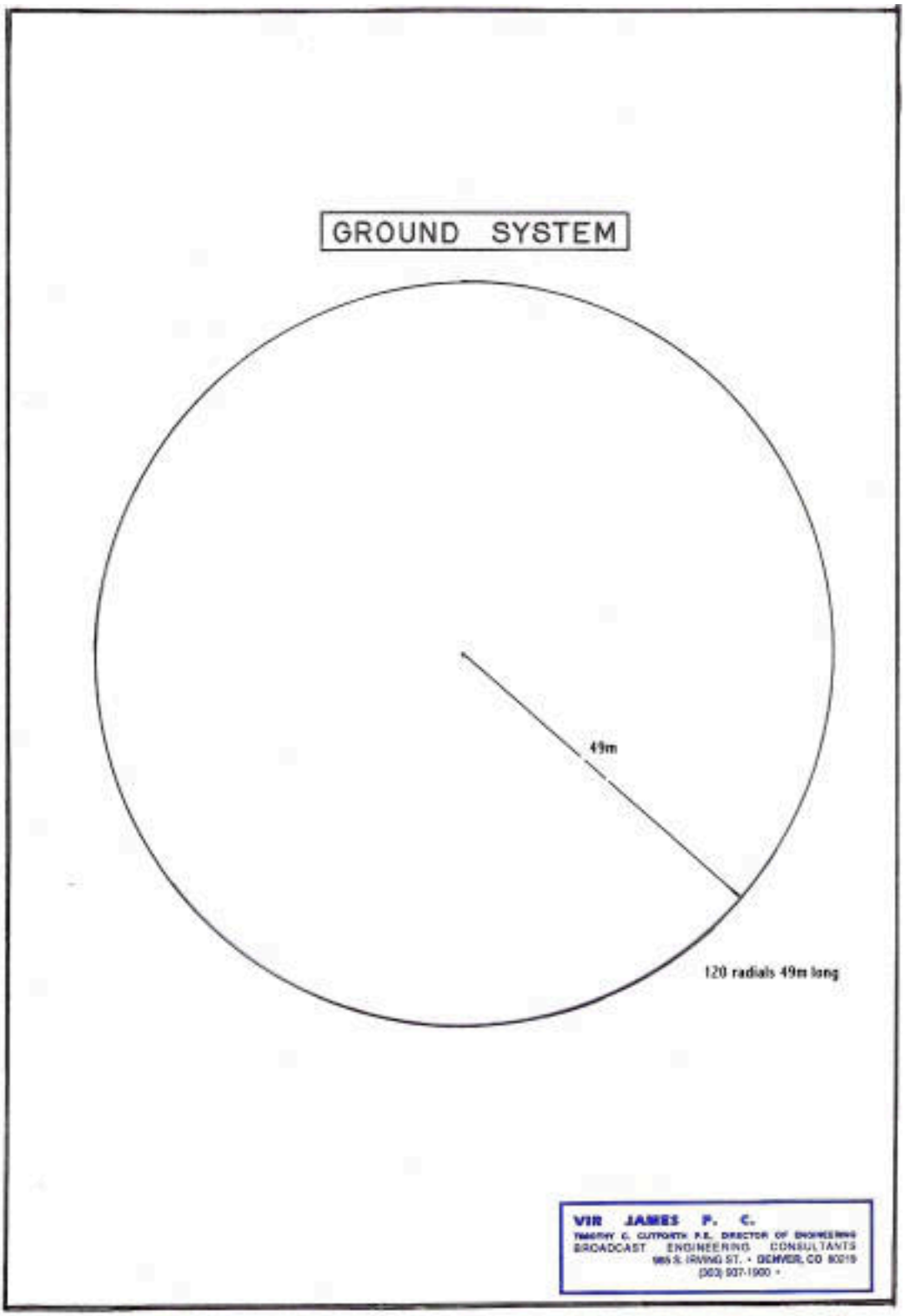
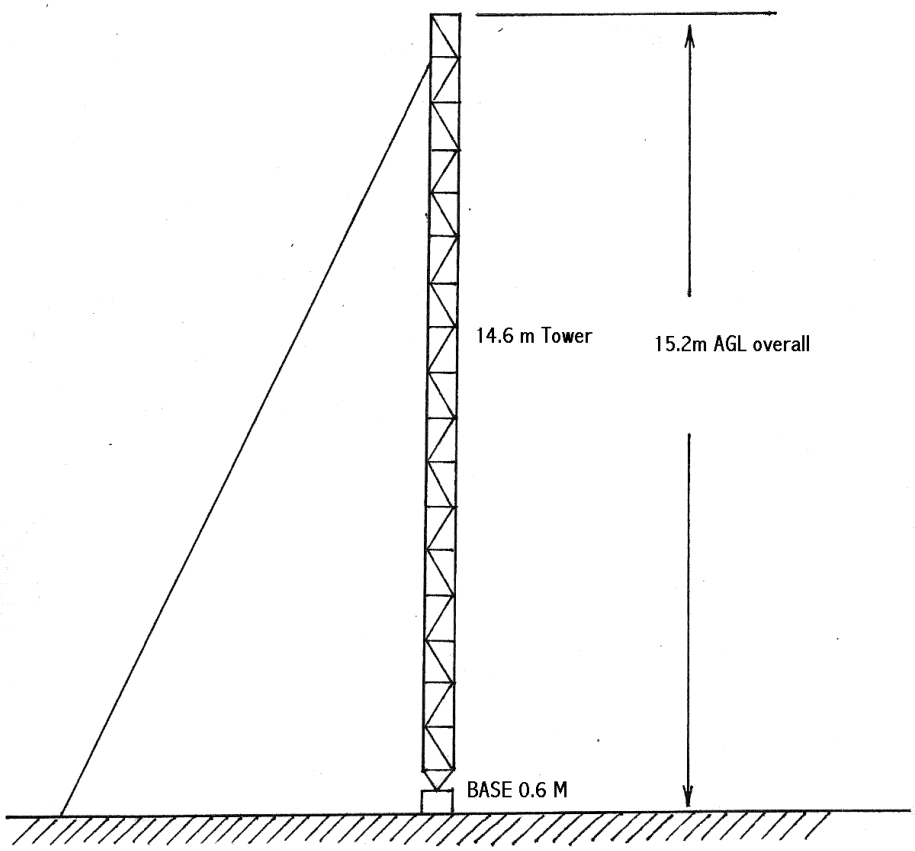
TN
MN (10.7°E)
Scale 1 : 24,000
1" = 2,000.0 ft
Data Zoom 13-0


GROUND SYSTEM
49m
120 radials 49m long
VIR JAMES P. C.
BROADCAST ENGINEERING CONSULTANTS
965 S. IRVING ST. • DENVER, CO 80219
(303) 937-1900 •

VERTICAL TOWER DIAGRAM



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TIMOTHY C. CUTFORTH P.E., DIRECTOR OF ENGINEERING
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(303) 937-1900