

PROPOSED AM
JNE INVESTMENTS, INC.
1120 kHz, 0.25 kW/0.18 kW DA-2
MANOR, TEXAS
JUNE 2007

ENGINEERING STATEMENT (AMENDED)

Concerning a minor amendment to an application for Construction Permit for a new AM to serve Manor, Texas.

JNE INVESTMENTS, INC. requested this new AM station in Auction 84 and has been declared a singleton. The FCC staff has requested additional studies for the Class A facility KMOX and for several Mexican proposals based on changes of international processing status of objected to facilities in Mexico and other countries. This has resulted in a modified night pattern design documented in this application. The daytime proposal is unchanged. This application requests 250 Watts daytime with directional antenna and 180 Watts nighttime using directional antenna (DA-2).

PROPOSED OPERATION

The proposed Manor operation will use seven towers at a site near Manor, Texas. The 4 daytime towers will not require paint or lights since they are all under 61 m in height overall and not near an airport. The three night towers will exceed 61 m in height and are awaiting FAA approval.

GROUND SYSTEM

The proposed ground system will be composed of 120 ground radials around each tower averaging 65 m in length or to the common strap between towers.

CITY GRADE COVERAGE

The proposed application fully encompasses the community of Manor in the 5 mV/m contour daytime. The nighttime operation will provide 22.7 mV/m Night Limit coverage over the community of license.

ENVIRONMENTAL CONSIDERATIONS

The proposed Manor operation is not located in a critical area and will involve only minimal change in the surface characteristics of the site. The RF exposure will comply with OET65 recommended levels at all locations outside of the standard protective tower base fences. No employee will be allowed to climb the towers when energized.

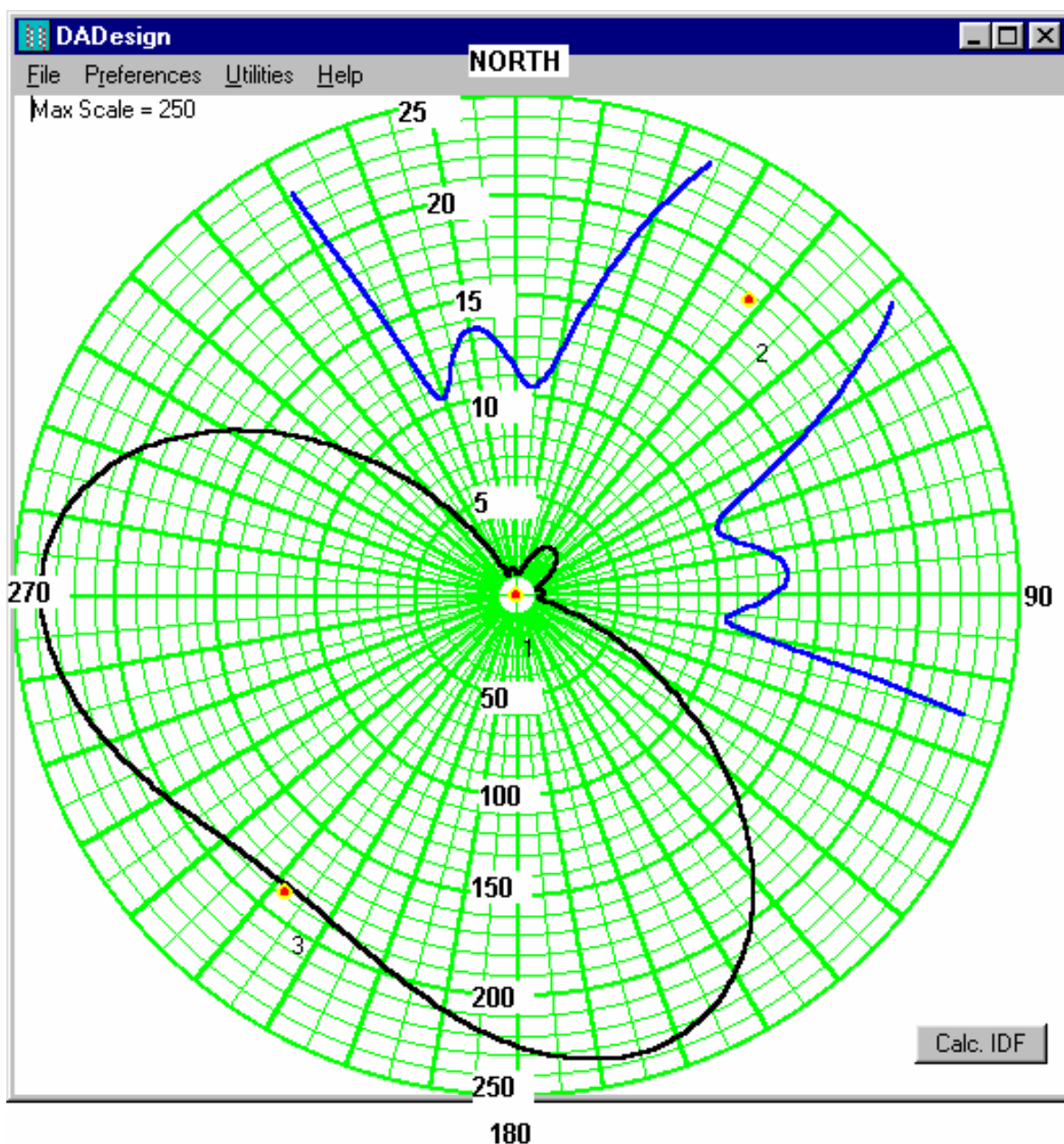
SUMMARY

The proposed Manor operation meets all interference and coverage standards for grant and will provide a desirable service to the community of Manor and to its market area.

Respectfully submitted,

A handwritten signature in black ink that reads "Timothy C Cutforth". The signature is written in a cursive, flowing style.

Timothy C. Cutforth P.E.
11 June 2007



MANOR-N 30-20-51 N 97-31-23 W FCC RMS 1 OHM = 141.47 mV/m/km
 Frequency: 1120 kHz Class: B Std RMS 1 OHM = 148.91 mV/m/km
 Nominal Power = 0.1180 kW Antenna RSS = 136.46 mV/m/km
 RSS/RMS = 0.96458 STANDARD Q = 10.00 mV/m/km

Twr.No.	Field	Phasing	Spacing	Azimuth	Height
1	0.930	+0.0	0.0	0.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					
2	0.500	+85.0	140.0	38.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					
3	0.500	-85.0	140.0	218.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					

MANOR-N 30-20-51 N 97-31-23 W

Twr.No.	Field	Phasing	Spacing	Azimuth	Height
1	0.930	+0.0	0.0	0.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					
2	0.500	+85.0	140.0	38.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					
3	0.500	-85.0	140.0	218.0	0.0
Top Loaded Antenna: A=120.0 B=111.0					
Theo. RMS= 141.47 mV/m/km RSS= 136.46 Q= 10.00					

STANDARD HORIZONTAL PLANE PATTERN

Azimuth	mV/m/km	Azimuth	mV/m/km
0	11.3	180	225.2
5	10.5	185	217.8
10	12.3	190	210.1
15	16.1	195	202.7
20	20.5	200	196.2
25	24.4	205	190.8
30	27.4	210	187.1
35	29.0	215	185.0
40	29.2	220	184.8
45	27.8	225	186.5
50	25.1	230	190.0
55	21.3	235	195.0
60	17.0	240	201.3
65	12.9	245	208.6
70	10.7	250	216.3
75	11.0	255	223.8
80	12.7	260	230.2
85	13.6	265	234.9
90	12.7	270	236.9
95	10.7	275	235.5
100	12.7	280	230.1
105	23.0	285	220.2
110	39.5	290	205.8
115	60.3	295	187.3
120	84.0	300	165.2
125	109.6	305	140.6
130	135.5	310	114.8
135	160.5	315	89.0
140	183.1	320	64.8
145	202.4	325	43.4
150	217.7	330	25.9
155	228.5	335	14.1
160	234.8	340	10.5
165	236.9	345	12.3
170	235.5	350	13.5
175	231.3	355	12.9

MANOR-N

Standard Vertical Pattern
(mV/m at one kilometer)

Azimuth	VA= 5	VA= 10	VA= 15	VA= 20	VA= 25	VA= 30
0	11.3	11.2	10.9	10.2	9.3	8.3
5	10.4	10.2	10.0	9.7	9.1	8.2
10	11.9	11.0	10.0	9.3	8.8	8.2
15	15.4	13.5	11.3	9.6	8.8	8.1
20	19.5	16.8	13.3	10.4	8.9	8.1
25	23.2	19.9	15.5	11.5	9.1	8.1
30	26.0	22.2	17.2	12.4	9.4	8.1
35	27.5	23.5	18.1	13.0	9.6	8.1
40	27.7	23.7	18.2	13.0	9.6	8.1
45	26.4	22.6	17.4	12.6	9.4	8.1
50	23.9	20.4	15.9	11.7	9.2	8.1
55	20.3	17.4	13.8	10.7	8.9	8.1
60	16.2	14.1	11.6	9.8	8.8	8.1
65	12.5	11.3	10.2	9.3	8.8	8.2
70	10.5	10.2	9.9	9.6	9.0	8.2
75	11.0	10.9	10.7	10.1	9.3	8.3
80	12.5	12.2	11.5	10.6	9.4	8.2
85	13.3	12.7	11.7	10.5	9.2	8.2
90	12.5	11.8	10.8	9.8	8.8	8.1
95	10.6	10.3	9.8	9.4	8.9	8.2
100	12.6	12.5	12.2	11.5	10.4	8.8
105	22.7	21.8	20.1	17.5	14.1	10.2
110	38.7	36.3	32.2	26.7	19.9	12.4
115	58.8	54.4	47.4	38.1	27.2	15.5
120	81.8	75.2	64.8	51.2	35.5	19.2
125	106.5	97.5	83.4	65.2	44.5	23.2
130	131.6	120.2	102.3	79.5	53.7	27.4
135	155.7	142.0	120.5	93.2	62.6	31.5
140	177.7	161.8	137.1	105.8	70.8	35.3
145	196.4	178.8	151.4	116.8	78.0	38.7
150	211.2	192.3	162.9	125.7	84.0	41.6
155	221.7	202.0	171.3	132.3	88.5	43.8
160	227.9	207.9	176.5	136.6	91.6	45.5
165	230.1	210.2	178.9	138.8	93.4	46.5
170	228.9	209.4	178.6	139.1	93.9	46.9
175	224.9	206.1	176.3	137.8	93.5	46.9

MANOR-N

Standard Vertical Pattern
(mV/m at one kilometer)

Azimuth	VA= 5	VA= 10	VA= 15	VA= 20	VA= 25	VA= 30
180	219.0	201.1	172.6	135.4	92.3	46.6
185	212.1	195.1	167.9	132.3	90.6	46.0
190	204.7	188.7	162.9	128.8	88.7	45.3
195	197.6	182.4	157.9	125.4	86.7	44.5
200	191.3	176.9	153.5	122.3	84.9	43.8
205	186.2	172.4	149.9	119.7	83.4	43.1
210	182.6	169.2	147.3	117.9	82.3	42.7
215	180.6	167.5	146.0	116.9	81.7	42.5
220	180.4	167.3	145.8	116.8	81.7	42.4
225	182.0	168.7	147.0	117.6	82.1	42.6
230	185.3	171.6	149.3	119.3	83.1	43.0
235	190.2	175.9	152.7	121.7	84.6	43.6
240	196.3	181.3	157.0	124.7	86.3	44.3
245	203.2	187.4	161.9	128.1	88.3	45.1
250	210.6	193.8	166.9	131.6	90.2	45.9
255	217.7	200.0	171.7	134.8	92.0	46.5
260	223.9	205.2	175.7	137.4	93.3	46.9
265	228.3	208.9	178.3	138.9	93.9	47.0
270	230.1	210.2	179.0	139.0	93.6	46.6
275	228.6	208.6	177.2	137.2	92.1	45.7
280	223.3	203.5	172.6	133.4	89.3	44.2
285	213.6	194.6	164.8	127.2	85.0	42.1
290	199.7	181.8	154.0	118.7	79.3	39.3
295	181.7	165.5	140.2	108.2	72.4	36.0
300	160.3	146.1	123.9	95.8	64.3	32.3
305	136.5	124.6	106.0	82.3	55.5	28.2
310	111.5	102.1	87.2	68.1	46.4	24.0
315	86.6	79.6	68.4	54.0	37.3	19.9
320	63.2	58.4	50.7	40.6	28.8	16.2
325	42.4	39.6	35.0	28.8	21.2	13.0
330	25.5	24.3	22.2	19.1	15.1	10.5
335	14.0	13.8	13.3	12.4	10.9	9.0
340	10.4	10.2	9.9	9.5	9.0	8.3
345	12.1	11.5	10.6	9.6	8.8	8.1
350	13.3	12.7	11.6	10.4	9.1	8.1
355	12.8	12.4	11.7	10.6	9.4	8.2

MANOR-N

Standard Vertical Pattern
(mV/m at one kilometer)

Azimuth	VA= 35	VA= 40	VA= 45	VA= 50	VA= 55	VA= 60
0	7.4	6.7	5.9	5.2	6.4	10.8
5	7.4	6.7	6.1	5.1	5.1	8.6
10	7.4	6.8	6.3	5.4	4.5	6.9
15	7.4	6.8	6.4	5.6	4.3	5.6
20	7.4	6.7	6.4	5.9	4.5	4.8
25	7.4	6.7	6.4	6.0	4.6	4.3
30	7.4	6.7	6.4	6.1	4.8	4.1
35	7.4	6.7	6.4	6.1	4.9	3.9
40	7.4	6.7	6.4	6.1	4.9	3.9
45	7.4	6.7	6.4	6.1	4.8	4.0
50	7.4	6.7	6.4	6.0	4.7	4.3
55	7.4	6.7	6.4	5.9	4.5	4.7
60	7.4	6.8	6.4	5.7	4.4	5.4
65	7.4	6.8	6.3	5.4	4.4	6.6
70	7.4	6.8	6.2	5.2	4.9	8.2
75	7.4	6.7	6.0	5.1	6.1	10.3
80	7.4	6.6	5.8	5.7	8.1	12.9
85	7.4	6.6	6.1	7.1	10.9	16.2
90	7.4	6.7	7.0	9.7	14.4	19.9
95	7.4	7.1	9.0	13.2	18.7	24.3
100	7.4	8.0	11.9	17.5	23.7	29.2
105	7.4	9.6	15.6	22.7	29.3	34.6
110	7.4	11.7	20.1	28.5	35.6	40.5
115	7.4	14.3	25.1	34.9	42.3	46.7
120	7.4	17.2	30.6	41.6	49.3	53.2
125	7.4	20.4	36.3	48.6	56.6	59.8
130	7.4	23.6	42.0	55.6	63.8	66.5
135	7.4	26.8	47.6	62.5	70.9	73.0
140	7.4	29.9	52.9	69.0	77.8	79.3
145	7.4	32.6	57.8	75.1	84.1	85.3
150	7.4	35.0	62.1	80.6	90.0	90.8
155	7.4	37.0	65.7	85.3	95.2	95.8
160	7.4	38.6	68.7	89.3	99.7	100.3
165	7.4	39.7	71.0	92.6	103.6	104.2
170	7.4	40.5	72.7	95.1	106.7	107.6
175	7.4	40.9	73.8	97.0	109.2	110.4

MANOR-N

Standard Vertical Pattern
(mV/m at one kilometer)

Azimuth	VA= 35	VA= 40	VA= 45	VA= 50	VA= 55	VA= 60
180	7.4	41.0	74.4	98.3	111.1	112.7
185	7.4	40.9	74.7	99.2	112.6	114.5
190	7.4	40.7	74.7	99.6	113.6	115.9
195	7.4	40.4	74.5	99.8	114.3	117.0
200	7.4	40.1	74.2	99.9	114.7	117.7
205	7.4	39.8	74.0	99.8	115.0	118.3
210	7.4	39.6	73.7	99.7	115.1	118.6
215	7.4	39.5	73.6	99.7	115.2	118.8
220	7.4	39.5	73.6	99.7	115.2	118.8
225	7.4	39.6	73.7	99.7	115.1	118.7
230	7.4	39.8	73.9	99.8	115.0	118.4
235	7.4	40.1	74.2	99.9	114.8	117.9
240	7.4	40.4	74.5	99.9	114.4	117.1
245	7.4	40.7	74.7	99.7	113.7	116.1
250	7.4	40.9	74.7	99.3	112.8	114.8
255	7.4	41.0	74.5	98.5	111.5	113.1
260	7.4	40.9	74.0	97.3	109.6	110.9
265	7.4	40.6	73.0	95.6	107.2	108.2
270	7.4	39.9	71.4	93.1	104.2	104.9
275	7.4	38.8	69.2	90.0	100.5	101.1
280	7.4	37.4	66.4	86.2	96.2	96.8
285	7.4	35.4	62.8	81.6	91.1	91.9
290	7.4	33.1	58.7	76.2	85.4	86.4
295	7.4	30.4	53.9	70.3	79.1	80.5
300	7.4	27.5	48.7	63.8	72.3	74.3
305	7.4	24.3	43.1	57.0	65.3	67.8
310	7.4	21.0	37.4	50.0	58.0	61.2
315	7.4	17.8	31.7	43.0	50.8	54.5
320	7.4	14.8	26.2	36.2	43.7	48.0
325	7.4	12.1	21.1	29.7	36.9	41.7
330	7.4	9.9	16.5	23.8	30.5	35.8
335	7.4	8.3	12.6	18.5	24.8	30.3
340	7.4	7.3	9.5	14.0	19.6	25.2
345	7.4	6.8	7.3	10.3	15.2	20.8
350	7.4	6.6	6.2	7.6	11.5	16.9
355	7.4	6.6	5.8	5.9	8.6	13.5

Source Coordinates: 30-20-51 North 97-31-23 West

This program uses the 2000 US Census Database: PL 94-171
Block level centroid retrieval methodology
Distance to the Contours are interpolated between Azimuths
CONTOUR OF STUDY is 22.7 mV/m.

City of Study: MANOR -----

MANOR, Travis County, TX		
Total City Persons:	1,204	
Total Contour Persons:	1,204	
Persons in Contour:	100.0%	
Area within Contour by Sectoring:	91.7 sq. km	
Land Area in City from Census:	1.3 sq. km	
Land Area in Contour from Census:	1.3 sq. km	100.0%

Proposed Night Limits

KMANOR3T 1120 kHz to Co-Channel Stations: KMOX .5 mV/m 50% SKYWAVE

*** Facilities/Points with Proposed Limits less than .4 mV/m are NOT printed

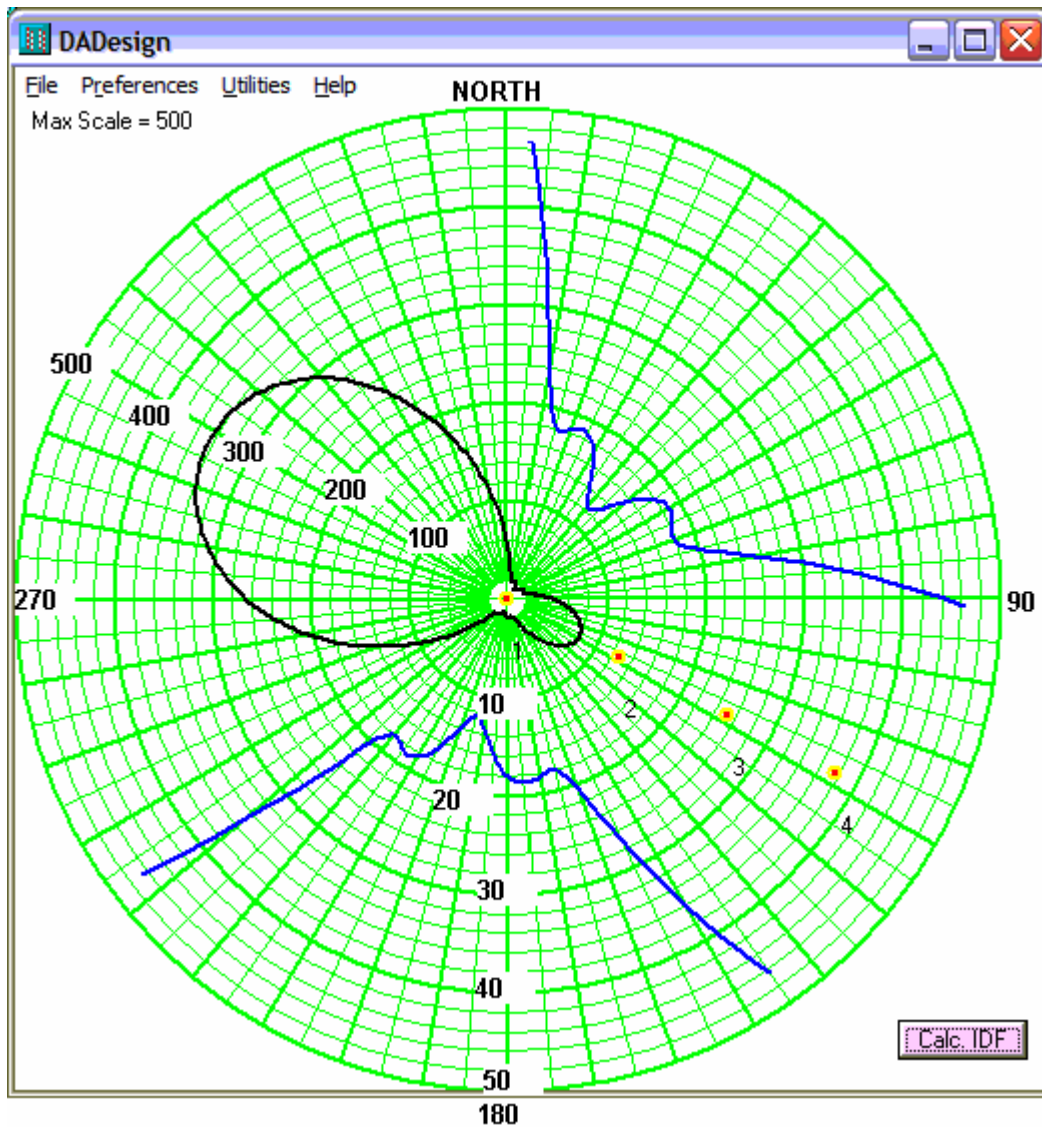
Facility or Contour	Location	Dist km	Azim deg	Theta deg	Max IDF mV/m/km	Skywave uV/m	Limit mV/m	Required Protect
KMOX-210	30-26-35N 95-29-40W	194.8	86.4	36.0	50.4	8.0	296.8	0.473 0.500
KMOX-215	30-53-14N 96-17-28W	132.3	62.8	47.1	60.7	6.7	361.6	0.482 0.501
KMOX-220	31-22-53N 97-02-37W	123.7	21.7	49.0	62.3	6.4	371.4	0.475 0.500
KMOX-225	31-56-11N 97-44-01W	177.8	353.5	38.6	52.9	7.7	315.0	0.488 0.501
KMOX-230	32-31-55N 98-22-05W	255.8	341.9	28.8	42.5	8.3	244.7	0.407 0.500

Proposed Night Limits

KMANOR3T 1120 kHz to Co-Channel Stations: 1120 kHz

*** Facilities/Points with Proposed Limits less than .5 mV/m are NOT printed

Facility or Contour	Location	Dist km	Azim deg	Theta deg	Max IDF mV/m/km	Skywave uV/m	Limit mV/m	Required Protect
XEMX1-P	32-37-25N 115-30-13W	1721.3	283.0	2.5	2.5	223.0	16.8	0.750 4.582
XENVA2-P	28-37-48N 102-57-00W	558.8	251.5	17.7	17.7	150.2	116.4	3.498 5.615
XE-P	16-45-20N 93-06-46W	1576.1	162.4	3.4	3.4	233.1	22.6	1.056 1.654
XEUNO2-P	20-40-18N 103-20-56W	1223.7	210.0	6.1	6.1	180.3	44.1	1.591 1.791
XE-P	17-55-30N 102-11-40W	1459.7	200.0	4.2	4.2	192.7	28.5	1.098 1.449
XEZB-P	17-03-52N 93-43-06W	1526.4	164.4	3.7	3.7	233.1	25.1	1.168 1.690
XEGV1-P	20-36-19N 100-22-05W	1120.0	195.5	7.2	7.2	191.6	52.9	2.026 2.130
XE-P	21-04-52N 86-46-18W	1488.7	131.1	4.0	4.0	138.7	26.9	0.747 2.999
XETR1-O	21-57-40N 98-59-49W	943.9	189.3	9.3	9.3	192.2	69.9	2.688 2.744
XEUK-P	30-41-50N 112-09-29W	1401.2	275.3	4.6	4.6	229.4	31.9	1.461 3.645
XENVA2-P	27-29-46N 99-30-03W	370.2	211.9	26.5	26.5	70.3	150.7	2.119 7.021
XETQE-P	17-27-00N 91-26-00W	1561.0	155.2	3.5	3.5	225.6	23.4	1.055 3.617
XEZAZ-P	22-44-41N 102-31-31W	980.5	211.8	8.8	8.8	172.2	66.2	2.279 2.450
SNOWFL-A	34-30-27N 110-01-57W	1260.6	294.7	3.7	7.9	185.6	32.3	1.198 6.076
PERALT-A	34-52-20N 106-43-12W	996.8	302.6	6.0	11.2	146.4	46.6	1.365 5.740
TESUQU-A	35-46-15N 105-55-30W	987.5	309.7	6.1	11.4	111.5	47.0	1.049 6.380
XEMX-O	32-38-09N 115-27-52W	1717.7	283.1	2.5	2.5	222.8	16.9	0.755 4.575
XEUNO-O	20-40-18N 103-20-53W	1223.7	210.0	6.1	6.1	180.3	44.1	1.591 1.791
XEGV-O	20-34-58N 100-24-07W	1123.3	195.6	7.1	7.1	191.5	52.5	2.012 2.120



manor-d	30-20-51 N	97-31-23 W	FCC RMS 1 OHM=	141.91 mV/m/km	
Frequency:	1120 kHz	Class:B	Std RMS 1 OHM=	149.43 mV/m/km	
Nominal Power=	0.2500 kW		Antenna RSS=	430.68 mV/m/km	
RSS/RMS=	3.03498		STANDARD Q =	10.77 mV/m/km	
Twr.No.	Field	Phasing	Spacing	Azimuth	Height
1	0.290	+0.0	0.0	0.0	70.0
2	0.860	+161.0	81.0	118.0	70.0
3	1.000	+322.0	162.0	118.0	70.0
4	0.450	+483.0	243.0	118.0	70.0

	manor-d	30-20-51 N	97-31-23 W		
Twr.No.	Field	Phasing	Spacing	Azimuth	Height
1	0.290	+0.0	0.0	0.0	70.0
2	0.860	+161.0	81.0	118.0	70.0
3	1.000	+322.0	162.0	118.0	70.0
4	0.450	+483.0	243.0	118.0	70.0
Theo. RMS=	141.91	mV/m/km	RSS=	430.68	Q= 10.77

STANDARD HORIZONTAL PLANE PATTERN			
Azimuth	mV/m/km	Azimuth	mV/m/km
0	60.3	180	18.5
5	38.9	185	16.5
10	24.4	190	14.0
15	18.7	195	13.0
20	18.8	200	14.6
25	19.2	205	17.3
30	17.7	210	19.0
35	15.1	215	19.0
40	13.1	220	18.4
45	13.6	225	22.6
50	16.0	230	35.4
55	18.2	235	55.6
60	19.2	240	81.1
65	18.8	245	110.3
70	18.4	250	141.8
75	20.1	255	174.3
80	25.7	260	206.4
85	34.3	265	236.9
90	44.5	270	264.8
95	54.8	275	289.3
100	64.3	280	309.7
105	72.2	285	325.5
110	77.8	290	336.4
115	80.9	295	342.1
120	81.2	300	342.7
125	78.7	305	337.9
130	73.5	310	328.1
135	66.0	315	313.2
140	56.8	320	293.7
145	46.6	325	270.0
150	36.3	330	242.7
155	27.2	335	212.7
160	20.9	340	180.8
165	18.5	345	148.3
170	18.7	350	116.5
175	19.2	355	86.7

Station: MANOR-D		Frequency 1120 kHz		30-20-51	97-31-23		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
<hr/>							
0	60.3	2.3	9.6	21.9	59.0	78.6	172.0
5	38.9	1.5	6.5	14.9	44.4	68.4	161.0
10	24.4	0.9	4.3	9.6	31.7	51.4	148.2
15	18.7	0.7	3.4	7.6	25.6	42.9	143.5
20	18.8	0.7	3.4	7.7	25.4	42.8	143.4
25	19.2	0.7	3.5	7.8	25.5	43.0	140.4
30	17.7	0.7	3.2	7.3	23.4	40.2	134.3
35	15.1	0.6	2.8	6.4	19.4	34.9	125.6
40	13.1	0.5	2.4	5.6	17.2	29.8	118.0
45	13.6	0.5	2.5	5.8	17.7	28.2	109.7
50	16.0	0.6	2.9	6.7	19.8	31.1	95.6
55	18.2	0.7	3.3	7.5	21.7	33.6	100.7
60	19.2	0.7	3.5	7.8	22.4	34.6	103.0
65	18.8	0.7	3.4	7.7	22.2	34.2	102.2
70	18.4	0.7	3.3	7.5	21.8	33.8	101.1
75	20.1	0.8	3.6	8.1	23.2	35.6	105.0
80	25.7	1.0	4.5	10.0	27.2	40.9	113.5
85	34.3	1.3	5.9	12.5	32.5	47.7	123.7
90	44.5	1.7	7.3	15.3	37.7	54.3	134.5
95	54.8	2.1	8.7	17.8	42.3	60.0	145.8
100	64.3	2.4	10.0	19.9	46.0	64.7	162.0
105	72.2	2.7	10.9	21.5	48.8	68.2	168.6
110	77.8	2.9	11.6	22.7	50.8	70.4	173.2
115	80.9	3.0	12.0	23.3	51.8	71.7	175.5
120	81.2	3.0	12.0	23.3	51.9	71.8	175.7
125	78.7	2.9	11.7	22.8	51.1	70.8	173.9
130	73.5	2.7	11.1	21.8	49.3	68.7	187.2
135	66.0	2.5	10.2	20.3	46.7	65.4	179.6
140	56.8	2.1	9.0	18.2	43.1	61.0	166.4
145	46.6	1.8	7.6	15.8	38.7	55.5	150.3
150	36.3	1.4	6.2	13.1	33.5	49.0	131.4
155	27.2	1.1	4.8	10.4	28.2	42.1	117.8
160	20.9	0.8	3.8	8.4	23.8	36.4	106.5
165	18.5	0.7	3.4	7.6	21.9	33.9	101.3
170	18.7	0.7	3.4	7.7	22.1	34.1	101.9
175	19.2	0.7	3.5	7.8	22.5	34.7	103.0

Station: MANOR-D		Frequency 1120 kHz		30-20-51	97-31-23		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
180	18.5	0.7	3.4	7.6	21.9	33.9	101.5
185	16.5	0.6	3.0	6.9	20.2	31.6	96.8
190	14.0	0.5	2.6	6.0	18.1	28.7	90.6
195	13.0	0.5	2.4	5.6	17.1	27.3	87.8
200	14.6	0.6	2.7	6.2	18.6	29.4	92.1
205	17.3	0.7	3.2	7.1	20.9	32.6	98.6
210	19.0	0.7	3.4	7.8	22.3	34.4	102.6
215	19.0	0.7	3.4	7.7	22.2	34.4	102.5
220	18.4	0.7	3.3	7.6	21.8	33.8	90.1
225	22.6	0.9	4.0	9.0	25.0	38.0	90.0
230	35.4	1.4	6.0	12.8	33.1	45.0	102.4
235	55.6	2.1	8.8	18.0	39.3	51.1	118.7
240	81.1	3.0	12.0	23.3	44.1	57.4	135.0
245	110.3	3.9	15.2	27.5	48.7	63.5	149.9
250	141.8	5.0	18.2	30.0	53.0	69.1	163.5
255	174.3	5.9	21.0	32.2	56.8	74.1	175.4
260	206.4	6.9	22.7	34.4	60.3	78.7	185.8
265	236.9	7.7	24.1	36.3	63.5	82.9	194.5
270	264.8	8.5	25.2	37.9	66.1	86.3	201.9
275	289.3	9.1	26.2	39.3	68.3	89.3	207.8
280	309.7	9.7	27.0	40.4	70.0	91.4	212.1
285	325.5	10.1	27.9	41.5	71.8	93.6	216.3
290	336.4	10.3	28.7	42.5	73.1	95.2	219.0
295	342.1	10.5	29.2	43.0	73.8	96.1	220.5
300	342.7	10.5	29.5	43.3	74.1	96.4	220.8
305	337.9	10.4	29.6	43.4	74.0	96.2	220.2
310	328.1	10.1	29.5	43.2	73.6	95.4	218.4
315	313.2	9.8	29.4	42.8	72.6	94.1	215.3
320	293.7	9.3	29.1	42.3	71.5	92.5	218.2
325	270.0	8.6	28.7	41.5	69.9	90.3	217.3
330	242.7	7.9	28.3	40.6	68.1	87.6	214.2
335	212.7	7.1	27.9	39.6	65.8	84.3	208.5
340	180.8	6.1	25.5	39.2	64.0	81.5	202.1
345	148.3	5.2	21.7	39.4	62.7	79.0	194.4
350	116.5	4.1	17.7	36.5	62.5	77.6	186.4
355	86.7	3.2	13.6	29.3	64.6	78.2	180.0

Station: MANOR 1120 kHz 30-20-51 97-31-23								
Distances are from Site to Conductivity Breaks								
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
<hr/>								
0	15	8.9	30	72.2	8	82.7	15	345.7
	30	450.0						
5	15	9.4	30	92.6	15	348.0	30	450.0
10	15	10.1	30	117.8	15	302.9	30	380.6
	15	450.0						
15	15	10.9	30	137.2	15	220.1	30	376.9
	15	450.0						
20	15	11.9	30	136.4	15	217.4	30	395.9
	15	450.0						
25	15	13.3	30	126.1	15	216.8	30	432.3
	15	450.0						
30	15	15.2	30	119.2	15	218.3	30	391.3
	4	450.0						
35	15	17.9	30	113.9	15	199.2	4	224.3
	8	397.7	4	450.0				
40	15	21.9	30	109.8	15	132.3	4	234.0
	8	429.0	4	450.0				
45	15	28.6	30	95.1	15	106.9	4	247.2
	8	456.7						
50	15	104.9	4	266.2	8	450.0		
55	15	103.8	4	292.4	8	429.1	15	450.0
60	15	103.5	4	328.0	8	429.0	15	450.0
65	15	104.0	4	346.2	8	426.1	15	450.0
70	15	105.3	4	248.2	8	423.8	15	450.0
75	15	107.5	4	241.0	8	420.4	15	450.0
80	15	111.3	4	237.7	8	421.7	15	450.0
85	15	117.3	4	236.3	8	433.9	15	450.0
90	15	125.0	4	236.7	8	450.0		
95	15	135.3	4	230.7	15	238.6	30	405.2
	50	411.7	30	450.0				
100	15	242.0	30	365.5	50	450.0		
105	15	225.7	30	243.2	50	248.5	30	267.5
	50	283.4	30	319.1	50	450.0		
110	15	213.6	30	269.1	50	288.7	30	292.8
	50	450.0						
115	15	220.8	30	274.4	50	450.0		
120	15	234.1	30	267.1	50	450.0		
125	15	253.9	30	267.3	50	450.0		
130	15	120.5	30	143.0	15	144.6	30	183.8
	15	248.7	30	259.9	50	450.0		
135	15	122.0	30	252.1	50	450.0		
140	15	124.4	30	240.2	50	450.0		
145	15	127.9	30	223.1	50	226.2	30	235.2
	50	450.0						
150	15	132.7	30	220.5	50			

Station: MANOR-D		1120 kHz		30-20-51		97-31-23	
AZIMUTH	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM
<hr/>							
155	15 139.0	30 199.7	50 205.6	30 210.5			
	50 215.4	30 238.0	50 450.0				
160	15 145.5	30 229.8	50 234.2	30 237.5			
	50 450.0						
165	15 152.9	30 249.0	50 450.0				
170	15 163.3	30 247.3	50 254.8	30 264.0			
	50 450.0						
175	15 176.6	30 274.1	50 295.0	30 295.5			
	50 450.0						
180	15 193.8	30 319.1	50 325.3	30 329.3			
	50 335.9	30 339.0	50 345.9	30 372.3			
	50 391.2	30 450.0					
185	15 224.2	30 450.0					
190	15 269.8	30 365.2	15 453.0				
195	15 450.0						
200	15 450.0						
205	15 420.5	3 450.0					
210	15 389.6	3 450.0					
215	15 354.1	8 364.7	3 450.0				
220	15 65.5	8 98.0	15 310.8	8 360.4			
	3 450.0						
225	15 46.7	8 120.7	15 284.4	8 350.5			
	3 450.0						
230	15 38.3	8 139.0	15 269.1	8 352.0			
	3 450.0						
235	15 32.7	8 165.3	15 257.2	8 342.5			
	3 450.0						
240	15 28.7	8 197.3	15 245.1	8 339.4			
	3 450.0						
245	15 25.7	8 335.9	3 450.0				
250	15 23.5	8 339.5	3 450.0				
255	15 21.8	8 354.6	3 450.0				
260	15 20.8	8 378.0	3 450.0				
265	15 20.2	8 450.0					
270	15 19.7	8 450.0					
275	15 19.4	8 450.0					
280	15 19.3	8 450.0					
285	15 16.7	30 19.1	8 450.0				
290	15 14.5	30 19.0	8 450.0				
295	15 12.9	30 19.1	8 413.6	15 450.0			
300	15 11.7	30 19.3	8 389.3	15 450.0			
305	15 10.8	30 19.7	8 364.1	15 450.0			
310	15 10.1	30 20.2	8 363.4	15 450.0			
315	15 9.5	30 21.0	8 382.8	15 388.6			
	30 450.0						
320	15 9.1	30 21.9	8 173.8	15 319.5			
	8 370.6	30 450.0					

Vir James Engineers								
Station: MANOR-D			1120 kHz		30-20-51		97-31-23	
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
325	15	8.7	30	23.2	8	148.6	15	321.8
	8	358.8	30	450.0				
330	15	8.5	30	24.8	8	130.7	15	324.1
	8	338.9	30	450.0				
335	15	8.3	30	26.8	8	117.4	15	328.7
	30	450.0						
340	15	8.2	30	30.6	8	107.3	15	335.7
	30	446.2	15	450.0				
345	15	8.2	30	36.2	8	99.0	15	345.7
	30	435.0	15	450.0				
350	15	8.3	30	44.6	8	92.2	15	352.5
	30	433.8	15	436.9	30	450.0		
355	15	8.6	30	58.1	8	86.9	15	348.2
	30	450.0						

Tabulated 50 mS/m represents 5000 mS/m

Station: KJSA		Frequency 1120 kHz		32-47-12	98-05-53		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
0	151.0	5.2	19.0	34.3	69.5	101.8	263.5

5	151.0	5.2	19.0	34.3	69.5	101.8	266.8
10	151.0	5.2	19.0	34.3	69.5	101.4	269.7
15	151.0	5.2	19.0	34.3	69.5	100.7	269.0
20	151.0	5.2	19.0	34.3	69.5	99.6	268.0
25	151.0	5.2	19.0	34.3	69.5	98.3	266.3
30	151.0	5.2	19.0	34.3	69.5	96.2	258.7
35	151.0	5.2	19.0	34.3	69.5	93.9	248.7
40	151.0	5.2	19.0	34.3	69.5	93.4	232.7
45	151.0	5.2	19.0	34.3	69.5	93.4	230.6
50	151.0	5.2	19.0	34.3	69.5	93.4	229.5
55	151.0	5.2	19.0	34.3	69.5	93.4	231.4
60	151.0	5.2	19.0	34.3	69.5	93.4	237.0
65	151.0	5.2	19.0	34.3	69.5	93.4	251.8
70	151.0	5.2	19.0	34.3	69.5	93.4	252.8
75	151.0	5.2	19.0	34.3	69.5	93.4	253.4
80	151.0	5.2	19.0	34.3	69.5	93.4	249.3
85	151.0	5.2	19.0	34.3	69.5	93.4	244.9
90	151.0	5.2	19.0	34.3	69.5	93.4	241.2
95	151.0	5.2	19.0	34.3	69.5	93.4	238.4
100	151.0	5.2	19.0	34.3	69.5	93.4	235.9
105	151.0	5.2	19.0	34.3	69.5	93.4	234.6
110	151.0	5.2	19.0	34.3	69.5	93.4	233.4
115	151.0	5.2	19.0	34.3	69.5	93.4	225.9
120	151.0	5.2	19.0	34.3	69.5	93.4	210.7
125	151.0	5.2	19.0	34.3	69.5	93.4	211.8
130	151.0	5.2	19.0	34.3	69.5	93.4	212.9
135	151.0	5.2	19.0	34.3	69.5	93.4	215.0
140	151.0	5.2	19.0	34.3	69.5	93.4	216.9
145	151.0	5.2	19.0	34.3	69.5	93.4	220.1
150	151.0	5.2	19.0	34.3	69.5	93.4	231.0
155	151.0	5.2	19.0	34.3	69.5	93.4	228.7
160	151.0	5.2	19.0	34.3	69.5	93.4	224.8
165	151.0	5.2	19.0	34.3	69.5	93.4	214.8
170	151.0	5.2	19.0	34.3	69.5	93.4	209.9
175	151.0	5.2	19.0	34.3	69.5	93.4	208.2

Station: KJSA		Frequency 1120 kHz		32-47-12	98-05-53		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
<hr/>							
180	151.0	5.2	19.0	34.3	69.5	93.4	207.1
185	151.0	5.2	19.0	34.3	69.5	93.4	205.6
190	151.0	5.2	19.0	34.3	69.5	93.4	205.1
195	151.0	5.2	19.0	34.3	69.5	93.4	204.7
200	151.0	5.2	19.0	34.3	69.5	93.4	204.3
205	151.0	5.2	19.0	34.3	69.5	93.4	204.3
210	151.0	5.2	19.0	34.3	69.5	93.4	204.6
215	151.0	5.2	19.0	34.3	69.5	93.4	205.0
220	151.0	5.2	19.0	34.3	69.5	93.4	205.0
225	151.0	5.2	19.0	34.3	69.5	93.4	204.8
230	151.0	5.2	19.0	34.3	69.5	93.4	204.4
235	151.0	5.2	19.0	34.3	69.5	93.4	204.4
240	151.0	5.2	19.0	34.3	69.5	93.4	204.6
245	151.0	5.2	19.0	34.3	69.5	93.4	205.1
250	151.0	5.2	19.0	34.3	69.5	93.4	205.3
255	151.0	5.2	19.0	34.3	69.5	93.4	206.3
260	151.0	5.2	19.0	34.3	69.5	93.4	205.2
265	151.0	5.2	19.0	34.3	69.5	93.4	201.8
270	151.0	5.2	19.0	34.3	69.5	93.4	197.8
275	151.0	5.2	19.0	34.3	69.5	93.4	202.9
280	151.0	5.2	19.0	34.3	69.5	93.4	226.9
285	151.0	5.2	19.0	34.3	69.5	93.7	262.0
290	151.0	5.2	19.0	34.3	69.5	96.7	263.3
295	151.0	5.2	19.0	34.3	69.5	99.1	265.6
300	151.0	5.2	19.0	34.3	69.5	101.0	268.7
305	151.0	5.2	19.0	34.3	69.5	102.5	270.8
310	151.0	5.2	19.0	34.3	69.5	103.3	271.6
315	151.0	5.2	19.0	34.3	69.5	104.0	272.3
320	151.0	5.2	19.0	34.3	69.5	104.4	269.6
325	151.0	5.2	19.0	34.3	69.5	104.5	260.7
330	151.0	5.2	19.0	34.3	69.5	104.3	249.8
335	151.0	5.2	19.0	34.3	69.5	103.7	247.3
340	151.0	5.2	19.0	34.3	69.5	103.1	244.2
345	151.0	5.2	19.0	34.3	69.5	102.6	243.1
350	151.0	5.2	19.0	34.3	69.5	102.1	243.1
355	151.0	5.2	19.0	34.3	69.5	102.0	260.0

Station: KJSA 1120 kHz 32-47-12 98-05-53

Distances are from Site to Conductivity Breaks

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
0	15	77.8	30	236.9	15	290.6	30	450.0
5	15	77.9	30	252.9	15	284.8	30	450.0
10	15	78.5	30	273.3	15	283.7	30	312.9
	15	333.5	30	450.0				
15	15	79.8	30	281.4	15	338.3	8	356.3
	30	450.0						
20	15	81.8	30	279.1	15	325.6	8	435.0
	30	450.0						
25	15	84.5	30	265.6	15	326.8	8	434.6
	15	443.3	30	450.0				
30	15	88.1	30	236.0	15	450.0		
35	15	92.7	30	198.7	15	445.7	8	450.0
40	15	99.6	30	149.3	15	411.8	8	450.0
45	15	108.8	30	154.6	15	413.8	8	450.0
50	15	118.0	30	161.5	15	469.7		
55	15	120.6	30	170.5	15	450.0		
60	15	117.2	30	189.0	15	450.0		
65	15	114.3	30	299.4	4	357.1	15	397.6
	4	450.0						
70	15	111.7	30	276.2	4	450.0		
75	15	110.1	30	255.9	4	450.0		
80	15	109.3	30	240.0	8	347.0	4	450.0
85	15	109.4	30	227.5	8	413.5	4	432.5
	15	450.0						
90	15	110.3	30	217.8	8	394.4	15	450.0
95	15	111.6	30	210.4	8	416.3	15	450.0
100	15	112.3	30	205.0	8	442.8	15	450.0
105	15	112.0	30	200.7	8	450.0		
110	15	112.1	30	197.2	8	290.3	4	391.5
	8	450.0						
115	15	115.9	30	197.0	8	202.2	4	356.3
	8	450.0						
120	15	198.2	4	338.7	8	450.0		
125	15	200.9	4	350.8	8	450.0		
130	15	205.1	4	378.9	8	449.9	30	450.2
135	15	211.3	4	407.2	15	414.3	30	450.0
140	15	218.1	4	375.1	15	426.6	30	450.0
145	15	167.7	30	182.3	15	226.2	4	356.5
	15	446.5	30	450.0				
150	15	166.1	30	238.1	15	450.0		
155	15	172.6	30	247.4	15	402.4	30	450.0
160	15	186.6	30	255.4	15	390.9	30	450.0
165	15	191.0	8	207.8	30	262.6	15	417.6
	30	450.0						
170	15	178.0	8	250.2	30	267.7	15	445.3
	30	450.0						

Vir James Engineers

Station: KJSA		1120 kHz		32-47-12		98-05-53	
AZIMUTH	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM	mS/m KM
175	15 168.6	8 296.2	15 450.0				
180	15 161.7	8 337.4	15 450.0				
185	15 156.5	8 357.1	15 450.0				
190	15 152.8	8 367.7	15 450.0				
195	15 150.3	8 380.7	15 450.0				
200	15 149.0	8 396.3	15 450.2				
205	15 148.9	8 450.0					
210	15 149.9	8 450.0					
215	15 151.3	8 450.0					
220	15 151.4	8 450.0					
225	15 150.9	8 450.0					
230	15 149.5	8 450.0					
235	15 149.3	8 450.0					
240	15 150.2	8 450.0					
245	15 152.2	8 450.0					
250	15 155.6	8 450.0					
255	15 158.9	8 261.5	15 281.7	8 285.2			
	15 373.3	8 450.0					
260	15 154.3	8 228.7	15 400.9	8 450.0			
265	15 137.6	8 220.6	15 438.9	8 450.0			
270	15 121.5	8 216.7	15 450.0				
275	15 109.5	8 177.9	30 297.4	15 450.0			
280	15 100.3	30 106.2	8 140.9	30 288.1			
	15 450.0						
285	15 93.0	30 269.2	15 450.0				
290	15 87.2	30 258.0	15 450.0				
295	15 82.8	30 259.2	15 362.7	30 450.0			
300	15 79.3	30 266.8	15 295.2	30 450.0			
305	15 76.7	30 450.0					
310	15 74.8	30 450.0					
315	15 73.5	30 450.0					
320	15 72.9	30 256.4	15 393.7	30 450.0			
325	15 72.7	30 215.1	15 375.2	30 450.0			
330	15 73.1	30 175.4	15 374.0	30 450.0			
335	15 74.1	30 167.6	15 395.5	30 450.0			
340	15 75.4	30 158.6	15 450.0				
345	15 76.5	30 155.5	15 428.2	30 450.0			
350	15 77.4	30 157.0	15 369.9	30 450.0			
355	15 77.6	30 220.4	15 322.0	30 450.0			

Station: KTMR-LIC		Frequency 1130 kHz		29-01-40	96-40-05		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
0	118.5	4.5	19.8	33.8	49.9	67.2	164.4
5	110.8	4.3	18.7	38.9	60.3	82.2	191.8
10	106.8	4.1	18.1	37.9	59.3	80.9	183.2
15	105.7	4.1	17.9	33.8	68.3	70.8	192.3
20	106.3	4.1	18.0	33.8	68.4	70.8	192.6
25	106.9	4.1	18.1	35.2	82.0	94.6	158.4
30	106.6	4.1	18.1	35.1	82.0	94.5	158.2
35	105.9	4.1	18.0	34.9	82.0	94.2	157.8
40	106.1	4.0	17.2	35.0	74.3	95.8	192.0
45	108.8	4.1	17.6	35.6	75.1	96.8	197.0
50	115.0	4.3	18.4	37.0	77.0	99.2	207.7
55	124.8	4.7	19.7	39.2	79.9	102.5	225.7
60	138.1	5.2	21.3	42.0	83.2	106.5	252.5
65	157.2	5.8	23.6	45.8	87.6	111.8	274.7
70	188.0	6.9	27.2	51.4	94.1	119.6	310.2
75	238.5	8.6	32.4	59.6	103.3	134.2	391.6
80	315.2	11.0	39.5	70.0	114.7	154.2	493.7
85	420.1	14.1	47.9	80.2	128.3	214.5	640.5
90	551.6	17.8	56.8	90.3	163.4	283.5	714.0
95	704.4	21.7	65.6	100.3	244.1	367.0	798.3
100	871.2	25.6	74.1	113.8	331.2	454.8	893.4
105	1042.5	29.3	81.6	158.6	391.0	516.6	952.4
110	1207.7	32.7	88.2	210.0	445.9	572.3	1012.7
115	1356.4	35.6	108.3	243.0	480.6	607.8	1050.2
120	1479.1	37.8	125.2	261.8	502.7	628.7	1071.1
125	1568.6	39.3	145.1	283.8	525.3	652.4	1092.9
130	1620.4	40.2	158.4	298.0	539.7	667.4	1107.0
135	1633.5	40.5	171.3	311.2	552.9	680.8	1120.1
140	1609.8	40.1	178.7	318.1	559.8	687.4	1127.1
145	1554.1	39.1	185.4	323.8	565.2	692.2	1133.0
150	1473.1	37.7	168.8	305.3	546.1	672.0	1114.5
155	1374.4	35.9	163.6	298.7	536.7	663.6	1106.1
160	1266.0	33.8	148.4	280.1	517.2	644.2	1085.4
165	1155.0	31.6	122.3	251.3	486.1	611.8	1051.4
170	1047.6	29.4	113.5	239.1	471.6	597.2	1032.9
175	948.6	27.3	87.0	208.8	438.9	564.1	1001.3

Station: KTMR-LIC		Frequency 1130 kHz			29-01-40	96-40-05	
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
180	861.4	25.4	73.7	182.5	410.2	533.6	972.1
185	788.1	23.7	71.3	185.7	410.7	534.6	970.1
190	730.1	22.3	67.1	140.2	343.2	386.8	775.9
195	687.7	21.3	64.8	112.1	311.1	359.8	516.0
200	661.0	20.6	63.4	110.5	264.5	314.7	488.3
205	650.1	20.3	62.7	102.4	202.6	261.9	459.4
210	654.8	20.4	63.0	102.7	189.2	240.4	422.9
215	675.1	20.9	64.1	104.3	186.4	236.7	410.6
220	711.2	21.8	66.0	106.8	189.9	241.1	404.7
225	763.1	23.1	68.8	110.4	194.6	237.7	398.7
230	830.3	24.7	72.2	114.8	186.2	224.9	390.2
235	912.1	26.5	76.0	119.7	179.4	219.7	382.8
240	1006.7	28.6	80.2	115.7	177.3	218.4	381.3
245	1111.3	30.8	82.5	112.4	175.7	217.9	384.5
250	1221.5	33.0	80.7	111.2	176.5	219.8	387.4
255	1331.8	35.1	80.1	111.7	178.4	222.2	392.5
260	1435.3	37.0	80.3	112.4	180.5	225.7	397.9
265	1524.3	38.6	80.5	113.4	182.7	228.3	403.1
270	1591.0	39.7	80.7	114.0	184.0	229.9	407.6
275	1628.2	40.0	80.5	114.0	184.4	230.5	412.0
280	1630.2	39.3	79.8	113.3	183.7	229.8	408.3
285	1594.0	38.3	78.5	111.9	181.9	225.2	396.8
290	1519.2	37.0	76.5	109.4	178.6	216.5	386.9
295	1409.1	35.3	74.0	105.9	172.0	208.6	377.2
300	1269.7	33.2	70.6	101.6	165.6	201.3	366.2
305	1109.9	30.8	66.6	96.5	159.4	193.2	355.3
310	939.7	27.1	62.0	90.6	150.6	184.8	341.8
315	770.0	23.3	56.9	83.9	140.6	175.1	326.0
320	610.5	19.3	51.4	76.4	129.7	165.5	309.8
325	469.8	15.5	45.7	68.8	118.3	151.2	291.9
330	353.8	12.2	40.3	61.3	106.7	137.4	276.5
335	265.8	9.4	35.1	54.5	96.4	124.3	264.8
340	205.4	7.1	25.9	33.5	63.4	105.8	209.4
345	167.7	6.0	22.4	30.1	58.2	97.5	188.6
350	144.8	5.2	20.1	27.8	54.6	73.0	177.7
355	129.6	4.9	21.3	33.8	52.0	69.7	169.8

Station: KTMR-LIC		1130 kHz		29-01-40		96-40-05		
Distances are from Site to Conductivity Breaks								
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM

0	-40	33.8	-10	99.7	-15	159.3	-10	199.5

	15	210.9	4	240.8	15	347.2	30	450.0
5	-40	40.2	-30	48.3	-20	58.7	-15	164.0
	15	184.1	4	292.3	15	335.6	30	450.0
10	-40	40.2	-30	48.3	-20	58.7	-15	164.0
	15	165.8	4	332.0	8	380.7	30	450.0
15	-40	33.8	-20	70.8	-10	115.8	-15	198.0
	4	332.4	8	450.0				
20	-40	33.8	-20	70.8	-10	115.8	-15	198.0
	4	337.3	8	450.0				
25	-40	26.5	-30	82.0	-20	133.5	-10	182.0
	-8	204.0	4	345.4	8	450.0		
30	-40	26.5	-30	82.0	-20	133.5	-10	182.0
	-8	204.0	4	358.7	8	450.0		
35	-40	26.5	-30	82.0	-20	133.5	-10	182.0
	-8	204.0	4	262.9	8	316.8	4	373.0
	8	450.0						
40	30	59.1	15	164.7	4	237.4	8	348.0
	4	360.4	8	458.5				
45	30	59.6	15	174.3	4	217.9	8	439.2
	15	450.0						
50	30	60.7	15	194.0	4	202.8	8	419.3
	15	450.0						
55	30	61.8	15	189.3	30	221.0	8	402.0
	15	450.0						
60	30	62.6	15	135.8	30	176.8	15	182.1
	30	246.0	8	394.3	15	450.0		
65	30	64.0	15	129.5	30	174.9	50	178.1
	30	287.1	8	395.3	15	450.0		
70	30	66.0	15	125.4	30	171.1	50	202.9
	30	342.5	50	344.8	30	382.9	8	391.4
	30	403.9	8	450.0				
75	30	68.6	15	123.2	30	177.9	50	207.2
	30	227.1	50	330.8	30	331.6	50	335.6
	30	421.0	15	450.0				
80	30	72.0	15	123.4	30	169.2	50	395.5
	30	430.6	15	445.9	50	450.0		
85	30	76.7	15	127.3	30	148.5	50	450.0
90	30	83.0	15	125.8	30	141.1	50	450.0
95	30	89.6	15	115.1	30	132.2	50	450.0
100	30	98.1	15	104.2	30	119.8	50	450.0
105	30	109.4	50	450.0				
110	30	93.3	50	450.0				
115	30	85.1	50	450.0				
120	30	81.8	50	450.0				

Station: KTMR-LIC			1130 kHz		29-01-40		96-40-05	
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM

125	30	57.6	50	58.5	30	75.3	50	450.0
130	30	58.2	50	60.8	30	71.6	50	450.0
135	30	56.1	50	63.8	30	68.7	50	450.0
140	30	54.5	50	450.0				
145	30	42.6	50	51.2	30	53.4	50	450.0
150	30	52.9	50	450.0				
155	30	49.7	50	450.0				
160	30	47.4	50	65.0	30	70.5	50	450.0
165	30	46.7	50	55.1	30	71.7	50	450.0
170	30	36.6	50	50.4	30	73.5	50	450.0
175	30	35.7	50	41.0	30	76.1	50	450.0
180	30	35.2	50	35.5	30	79.4	50	450.0
185	30	69.3	50	450.0				
190	30	70.2	50	75.0	30	94.5	50	330.6
	30	347.0	20	413.7	50	450.0		
195	30	70.0	50	71.2	30	102.2	50	296.7
	30	352.3	20	413.8	50	419.0	20	423.1
	5	428.8	50	429.4	5	450.0		
200	30	98.9	50	110.4	30	131.5	50	226.3
	30	226.7	50	234.5	30	239.3	50	251.8
	30	351.0	20	437.7	5	450.0		
205	30	112.5	50	118.9	30	140.1	50	158.0
	30	192.4	50	197.7	30	202.9	50	218.1
	30	362.0	20	471.7				
210	30	147.3	50	154.9	30	206.0	50	207.8
	30	275.5	15	358.7	20	428.7	3	450.0
215	30	258.8	15	363.6	20	395.5	3	450.0
220	30	243.4	15	375.6	20	376.9	3	450.0
225	30	211.3	15	360.1	3	450.0		
230	30	153.4	15	353.5	3	450.0		
235	30	119.4	15	336.6	3	450.0		
240	30	98.3	15	324.7	3	450.0		
245	30	78.7	15	316.3	8	335.7	3	450.0
250	30	66.0	15	302.7	8	338.7	3	450.0
255	30	57.2	15	293.8	8	351.7	3	450.0
260	30	50.8	15	289.5	8	364.4	3	450.0
265	30	46.0	15	290.5	8	375.8	3	450.0
270	30	42.3	15	293.8	8	385.8	3	450.0
275	30	39.2	15	296.3	8	407.6	3	450.0
280	30	36.8	15	273.3	8	450.0		
285	30	35.0	15	212.2	8	450.0		
290	30	33.5	15	179.8	8	450.0		
295	30	32.4	15	165.1	8	450.0		
300	30	31.6	15	159.4	8	450.0		
305	30	31.5	15	157.1	8	450.0		
310	30	31.6	15	158.5	8	450.0		

Vir James Engineers

Station: KTMR-LIC 1130 kHz 29-01-40 96-40-05

AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
315	30	32.0	15	162.3	8	450.0		
320	30	32.6	15	168.6	8	450.0		
325	30	33.5	15	177.8	8	344.8	15	450.0
330	30	34.7	15	176.9	30	190.6	8	302.6
	15	450.0						
335	30	36.3	15	175.9	30	211.2	8	271.4
	15	450.0						
340	-20	27.4	-10	74.0	-15	148.0	-10	172.0
	15	177.6	30	235.4	8	244.9	15	450.0
345	-20	27.4	-10	74.0	-15	148.0	-10	172.0
	15	183.8	30	260.3	15	450.0		
350	-20	27.4	-10	74.0	-15	148.0	-10	172.0
	15	192.8	30	280.9	15	450.0		
355	-40	33.8	-10	99.7	-15	159.3	-10	199.5
	15	209.0	30	250.1	15	450.0		

Negative mS/m are MEASURED Conductivity Values

Found in BP-19810705AD

Tabulated 50 mS/m represents 5000 mS/m

Station: KTEK		Frequency 1110 kHz		29-22-51	95-14-15		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
0	931.7	27.0	66.6	88.3	121.1	146.0	278.8
5	843.5	25.0	64.2	87.9	119.2	143.1	279.0
10	753.6	22.9	61.6	87.6	123.0	152.8	293.8
15	664.8	20.7	58.9	91.4	130.4	158.9	297.4
20	579.4	18.5	57.9	94.1	131.2	158.3	294.0
25	499.2	16.4	55.4	91.8	129.5	155.2	292.5
30	425.2	14.3	50.1	84.4	125.1	149.3	281.2
35	358.0	12.3	44.0	76.1	122.0	144.7	270.6
40	297.6	10.5	40.6	72.0	121.6	142.7	262.1
45	243.8	8.7	33.0	63.9	121.4	141.0	253.4
50	196.2	7.2	28.0	74.3	131.3	149.4	254.4
55	154.8	5.8	23.4	60.8	117.3	147.9	245.3
60	120.1	4.5	19.1	45.0	103.1	137.8	235.9
65	93.7	3.6	15.5	32.0	88.1	120.3	229.1
70	78.1	3.0	13.3	27.9	77.4	108.0	259.9
75	74.3	2.9	12.7	26.9	90.0	126.8	285.4
80	78.7	3.0	13.3	28.1	99.5	182.5	336.3
85	85.4	3.3	14.3	29.9	117.5	202.9	397.8
90	90.3	3.4	15.0	31.1	124.4	212.0	468.2
95	91.1	3.5	15.1	31.3	130.3	218.1	604.2
100	87.0	3.3	14.5	30.3	125.7	211.9	595.3
105	78.3	3.0	13.3	28.0	114.5	197.3	577.3
110	66.0	2.5	11.5	24.6	101.5	178.2	548.7
115	51.8	2.0	9.2	20.3	81.6	149.5	507.1
120	38.3	1.5	7.0	15.8	60.5	117.2	454.3
125	28.5	1.1	5.3	12.3	44.3	90.4	404.0
130	25.4	1.0	4.8	11.1	38.9	81.2	384.2
135	27.1	1.1	5.1	11.7	42.1	86.5	395.6
140	29.1	1.1	5.4	12.5	45.6	92.4	407.6
145	29.1	1.1	5.4	12.5	45.3	92.1	407.3
150	26.8	1.1	5.0	11.6	41.2	85.2	393.5
155	23.5	0.9	4.4	10.3	37.8	77.6	373.8
160	21.2	0.8	4.0	9.4	35.2	71.8	358.0
165	21.7	0.9	4.1	9.6	30.2	63.3	351.5
170	24.4	1.0	4.6	10.7	33.0	73.2	373.1
175	27.4	1.1	5.1	11.8	36.1	79.7	389.8

Station: KTEK		Frequency 1110 kHz		29-22-51	95-14-15		
Azim	Inverse	25 mV	5 mV	2.0 mV	0.5 mV	.250 mV	.025 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)	(km)
<hr/>							
180	29.1	1.1	5.4	12.4	37.3	77.9	392.8
185	28.8	1.1	5.4	12.4	37.1	70.2	384.6
190	26.9	1.1	5.0	11.6	35.3	59.5	367.9
195	23.9	0.9	4.5	10.5	32.4	51.3	339.7
200	20.8	0.8	3.9	9.2	29.2	42.9	295.5
205	18.4	0.7	3.5	8.3	26.8	39.8	247.3
210	17.3	0.7	3.3	7.8	25.4	38.0	202.2
215	16.9	0.7	3.2	7.7	25.0	37.1	177.1
220	16.9	0.7	3.2	7.7	25.1	36.9	152.3
225	17.2	0.7	3.3	7.8	25.3	37.0	123.3
230	17.6	0.7	3.4	8.0	25.3	37.0	122.7
235	18.0	0.7	3.4	8.1	25.4	37.2	123.0
240	20.0	0.8	3.8	8.9	26.7	39.1	128.5
245	28.8	1.1	5.4	12.4	32.7	47.0	150.7
250	49.5	1.9	8.8	19.5	43.4	60.6	187.4
255	83.6	3.2	14.1	27.2	56.0	76.2	219.8
260	132.1	5.0	20.6	35.0	68.8	98.1	241.6
265	195.4	7.1	26.0	43.0	81.3	118.3	263.5
270	273.2	9.7	31.5	50.8	93.5	135.8	283.6
275	364.2	12.5	37.0	58.3	104.1	147.0	299.9
280	466.1	15.4	42.1	65.2	114.5	153.4	309.2
285	575.7	18.4	47.0	71.6	124.0	159.0	318.9
290	689.1	21.3	51.5	77.4	132.6	169.5	332.6
295	801.9	23.8	55.5	82.8	140.4	179.0	344.5
300	909.6	25.9	59.1	87.4	147.1	187.3	358.7
305	1007.9	27.9	62.4	91.4	153.0	194.1	371.6
310	1092.9	29.7	65.1	94.9	157.9	199.8	388.8
315	1161.2	31.3	67.5	97.9	161.8	204.8	401.4
320	1210.7	32.8	69.7	100.2	141.1	168.6	357.1
325	1239.6	33.4	71.2	102.0	141.1	168.9	327.4
330	1247.6	33.5	72.5	102.8	139.8	167.6	322.5
335	1235.0	33.3	72.9	100.5	137.3	165.1	315.2
340	1203.1	32.6	72.8	97.7	134.1	161.4	304.1
345	1154.0	31.6	71.8	95.0	130.8	157.9	297.4
350	1090.3	30.3	70.5	92.3	127.3	153.9	291.7
355	1015.1	28.8	68.7	90.1	123.9	149.8	285.6

Station: KTEK 1110 kHz 29-22-51 95-14-15								
Distances are from Site to Conductivity Breaks								
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
<hr/>								
0	30	47.1	15	82.4	4	274.3	8	428.7
	4	479.5						
5	30	47.9	15	84.3	4	168.0	8	198.2
	4	273.0	8	433.9	4	450.0		
10	30	48.7	15	87.0	4	100.7	8	218.9
	4	274.0	8	438.1	4	450.0		
15	30	49.9	15	68.2	30	89.6	8	230.2
	4	275.9	8	439.8	4	450.0		
20	30	43.4	50	47.1	30	51.6	15	56.7
	30	92.6	8	239.3	4	273.5	8	382.0
	15	422.3	8	428.6	4	450.0		
25	30	40.9	50	44.8	30	96.4	8	358.1
	15	450.0						
30	30	39.3	50	43.1	30	97.9	8	334.6
	15	426.6	4	450.0				
35	30	40.0	50	42.0	30	101.9	8	313.3
	15	385.7	4	450.0				
40	30	35.0	50	43.6	30	107.6	8	290.0
	15	354.6	4	454.4				
45	30	34.3	50	41.7	30	116.8	8	271.9
	15	333.6	4	411.2	8	450.0		
50	30	29.8	50	65.4	30	66.9	50	74.1
	30	129.7	8	260.8	15	319.0	8	344.3
	4	386.1	8	450.0				
55	30	29.0	50	64.6	30	142.5	8	255.3
	15	312.5	8	450.0				
60	30	30.4	50	61.2	30	153.9	8	253.9
	15	314.0	8	450.0				
65	30	32.2	50	54.4	30	171.0	8	255.6
	15	320.8	8	450.0				
70	30	33.0	50	48.9	30	195.3	50	200.9
	30	263.1	8	438.6	4	450.0		
75	30	31.0	50	74.4	30	113.4	50	123.8
	30	143.0	50	164.5	30	189.3	50	192.5
	30	274.1	15	326.3	8	419.7	4	445.3
	15	450.0						
80	30	33.7	50	57.4	30	70.1	50	222.1
	30	283.9	15	450.0				
85	30	33.8	50	49.4	30	55.4	50	267.4
	30	287.1	15	310.8	50	358.1	15	450.0
90	30	33.7	50	44.6	30	50.1	50	398.8
	15	407.8	50	419.1	15	455.0		
95	30	33.9	50	45.3	30	46.0	50	450.0
100	30	34.3	50	450.0				
105	30	34.4	50	450.0				

Station: KTEK			1110 kHz		29-22-51		95-14-15	
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM

110	30	30.3	50	450.0				
115	30	29.2	50	450.0				
120	30	28.4	50	450.0				
125	30	27.8	50	450.0				
130	30	27.5	50	450.0				
135	30	27.4	50	450.0				
140	30	27.5	50	450.0				
145	30	27.9	50	450.0				
150	30	28.0	50	450.0				
155	30	24.1	50	450.0				
160	30	21.3	50	450.0				
165	30	35.3	50	450.0				
170	30	33.8	50	450.0				
175	30	32.6	50	33.2	30	37.3	50	450.0
180	30	43.4	50	450.0				
185	30	49.3	50	450.0				
190	30	53.2	50	450.0				
195	30	36.1	15	37.5	30	58.2	50	450.0
200	30	32.9	15	44.0	30	64.8	50	450.0
205	30	30.5	15	53.2	30	73.0	50	450.0
210	30	28.6	15	62.2	30	83.5	50	410.5
	30	446.5	20	450.0				
215	30	27.1	15	71.7	30	86.9	50	379.4
	30	447.8	20	450.0				
220	30	26.0	15	70.0	30	98.5	50	107.7
	30	110.5	50	354.5	30	450.0		
225	30	25.1	15	69.0	30	120.1	50	293.7
	30	312.9	50	331.7	30	333.4	50	334.6
	30	393.7	15	450.0				
230	30	23.8	15	68.5	30	121.7	50	154.3
	30	183.0	50	198.7	30	202.5	50	229.6
	30	257.9	50	274.0	30	380.5	15	450.0
235	30	22.9	15	68.6	30	135.9	50	138.9
	30	145.2	50	156.0	30	181.1	50	182.7
	30	186.4	50	190.2	30	365.2	15	450.0
240	30	22.2	15	69.8	30	151.1	50	157.6
	30	314.6	15	450.0				
245	30	21.6	15	71.7	30	268.0	15	450.0
250	30	21.3	15	73.8	30	232.8	15	453.6
255	30	21.1	15	76.7	30	201.0	15	438.7
	8	450.0						
260	30	21.0	15	80.4	30	177.4	15	433.0
	8	450.0						
265	30	20.8	15	85.1	30	161.3	15	434.0
	8	450.0						
270	30	20.8	15	92.1	30	150.5	15	429.5
	8	450.0						

Vir James Engineers

Station: KTEK			1110 kHz		29-22-51		95-14-15	
AZIMUTH	mS/m	KM	mS/m	KM	mS/m	KM	mS/m	KM
275	30	20.9	15	104.5	30	142.1	15	303.4
	8	450.0						
280	30	21.2	15	117.7	30	135.5	15	275.5
	8	450.0						
285	30	21.7	15	130.4	30	130.6	15	265.8
	8	450.0						
290	30	22.4	15	262.8	8	450.0		
295	30	23.3	15	263.3	8	450.0		
300	30	24.4	15	244.2	30	266.1	8	450.0
305	30	25.9	15	233.6	30	275.0	8	450.0
310	30	27.9	15	229.3	30	283.9	8	322.5
	15	450.0						
315	30	30.3	15	228.8	30	292.4	15	450.0
320	30	33.2	15	109.0	4	185.3	15	232.5
	30	299.5	15	450.0				
325	30	36.0	15	106.6	4	241.9	15	450.0
330	30	39.6	15	102.4	4	252.5	15	450.0
335	30	41.9	15	97.3	4	269.6	15	347.2
	30	381.5	15	450.0				
340	30	43.9	15	92.1	4	291.8	15	315.5
	30	450.0						
345	30	44.5	15	88.0	4	298.1	8	321.1
	30	450.0						
350	30	45.6	15	85.0	4	286.3	8	355.2
	30	450.0						
355	30	46.3	15	82.9	4	279.0	8	406.3
	30	450.0						

Tabulated 50 mS/m represents 5000 mS/m

1120 kHz 10% Skywave Contour of MANOR
30-20-51 N 97-31-23 W CLASS B
[*] indicates no skywave contour developed - use GW contour dist.

Azimuth	E(Theta)	Min	Max	Sky uV/m	mV/m	km

0	7.3	42.0	56.2	335.8	0.024	158
5	7.0	44.2	58.2	347.8	0.024	146
10	6.8	46.2	60.0	358.0	0.024	136
15	6.6	47.7	61.2	365.1	0.024	130
20	6.6	49.0	62.3	371.1	0.025	124
25	6.4	49.7	62.9	374.2	0.024	121
30	6.4	50.3	63.4	377.0	0.024	118
35	6.5	50.8	63.8	378.9	0.025	116
40	6.5	50.7	63.7	378.7	0.025	117
45	6.5	50.5	63.5	377.5	0.025	118
50	6.4	49.8	63.0	374.6	0.024	120
55	6.6	49.1	62.4	371.2	0.024	123
60	6.6	47.9	61.4	365.7	0.024	129
65	6.7	46.5	60.2	358.4	0.024	135
70	6.9	44.6	58.6	348.8	0.024	144
75	7.2	42.5	56.7	337.3	0.024	155
80	7.5	39.9	54.2	322.0	0.024	170
85	7.9	37.0	51.4	303.3	0.024	188
90	8.6	34.1	48.4	283.6	0.024	209
95	9.2	31.3	45.3	262.7	0.024	232
100	9.8	29.0	42.7	244.9	0.024	253
105	20.2	14.6	23.9	118.7	0.024	511
110	37.4	8.1	14.4	64.3	0.024	819
115	59.0	4.7	9.4	40.7	0.024	1131
120	83.5	2.5	6.2	28.8	0.024	1438
125	109.5	0.8	3.9	21.9	0.024	1735
130	135.5	0.0	2.2	17.7	0.024	2018
135	160.5	0.0	0.8	15.0	0.024	2282
140	183.1	0.0	0.0	13.1	0.024	2520
145	202.4	0.0	0.0	11.9	0.024	2726
150	217.7	0.0	0.0	11.0	0.024	2892
155	228.5	0.0	0.0	10.5	0.024	3017
160	234.8	0.0	0.0	10.2	0.024	3099
165	236.9	0.0	0.0	10.1	0.024	3141
170	235.5	0.0	0.0	10.2	0.024	3144

1120 kHz 10% Skywave Contour of MANOR

30-20-51 N 97-31-23 W CLASS B

[*] indicates no skywave contour developed - use GW contour dist.

Azimuth	E(Theta)	Min	Max	Sky uV/m	mV/m	km
175	231.3	0.0	0.0	10.4	0.024	3118
180	225.2	0.0	0.0	10.7	0.024	3068
185	217.8	0.0	0.0	11.0	0.024	3004
190	210.1	0.0	0.0	11.4	0.024	2929
195	202.7	0.0	0.0	11.8	0.024	2854
200	196.2	0.0	0.0	12.2	0.024	2782
205	190.8	0.0	0.0	12.6	0.024	2720
210	187.1	0.0	0.0	12.8	0.024	2669
215	185.0	0.0	0.0	13.0	0.024	2633
220	184.8	0.0	0.0	13.0	0.024	2610
225	186.5	0.0	0.0	12.9	0.024	2603
230	190.0	0.0	0.0	12.6	0.024	2608
235	195.0	0.0	0.0	12.3	0.024	2623
240	201.3	0.0	0.0	11.9	0.024	2643
245	208.6	0.0	0.0	11.5	0.024	2665
250	216.3	0.0	0.0	11.1	0.024	2683
255	223.8	0.0	0.0	10.7	0.024	2691
260	230.2	0.0	0.0	10.4	0.024	2685
265	234.9	0.0	0.0	10.2	0.024	2661
270	236.9	0.0	0.0	10.1	0.024	2615
275	235.5	0.0	0.0	10.2	0.024	2547
280	230.1	0.0	0.0	10.4	0.024	2456
285	220.2	0.0	0.4	10.9	0.024	2369
290	205.8	0.0	0.9	11.7	0.024	2259
295	187.3	0.0	1.6	12.8	0.024	2125
300	165.2	0.0	2.5	14.5	0.024	1968
305	140.6	0.6	3.6	17.1	0.024	1790
310	114.5	1.6	5.0	21.0	0.024	1591
315	88.2	2.9	6.8	27.2	0.024	1368
320	63.3	4.8	9.5	37.9	0.024	1123
325	41.2	7.6	13.7	58.3	0.024	854
330	23.2	12.9	21.5	103.6	0.024	568
335	9.9	28.6	42.3	243.2	0.024	258
340	9.3	30.7	44.7	259.9	0.024	237
345	8.6	33.5	47.7	280.5	0.024	214
350	8.0	36.4	50.8	300.9	0.024	192
355	7.5	39.3	53.6	319.4	0.024	173

Station: MANOR-N		Frequency 1120 kHz		30-20-51	97-31-23	
Azim	Inverse	1000 mV	25 mV	22.7 mV	5.0 mV	2.00 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)

0	11.3	0.01	0.4	0.5	2.1	4.9
5	10.5	0.01	0.4	0.5	2.0	4.6
10	12.3	0.01	0.5	0.5	2.3	5.3
15	16.1	0.02	0.6	0.7	3.0	6.7
20	20.5	0.02	0.8	0.9	3.7	8.3
25	24.4	0.02	0.9	1.0	4.3	9.6
30	27.4	0.03	1.1	1.2	4.8	10.5
35	29.0	0.03	1.1	1.2	5.1	11.0
40	29.2	0.03	1.1	1.2	5.1	11.0
45	27.8	0.03	1.1	1.2	4.9	10.6
50	25.1	0.03	1.0	1.1	4.4	9.8
55	21.3	0.02	0.8	0.9	3.8	8.6
60	17.0	0.02	0.7	0.7	3.1	7.0
65	12.9	0.01	0.5	0.6	2.4	5.6
70	10.7	0.01	0.4	0.5	2.0	4.7
75	11.0	0.01	0.4	0.5	2.1	4.8
80	12.7	0.01	0.5	0.5	2.4	5.5
85	13.6	0.01	0.5	0.6	2.5	5.8
90	12.7	0.01	0.5	0.5	2.4	5.5
95	10.7	0.01	0.4	0.5	2.0	4.7
100	12.7	0.01	0.5	0.5	2.4	5.5
105	23.0	0.02	0.9	1.0	4.1	9.1
110	39.5	0.04	1.5	1.7	6.6	14.0
115	60.3	0.06	2.3	2.5	9.5	19.0
120	84.0	0.08	3.1	3.4	12.3	23.8
125	109.6	0.11	3.9	4.3	15.1	28.3
130	135.5	0.13	4.8	5.2	17.6	32.2
135	160.5	0.16	5.5	6.0	19.9	35.6
140	183.1	0.18	6.2	6.7	21.8	38.3
145	202.4	0.20	6.8	7.4	23.3	40.5
150	217.7	0.22	7.2	7.8	24.4	42.1
155	228.5	0.23	7.5	8.1	25.2	43.3
160	234.8	0.23	7.7	8.3	25.6	43.9
165	236.9	0.23	7.7	8.4	25.8	44.1
170	235.5	0.23	7.7	8.4	25.7	44.0
175	231.3	0.23	7.6	8.2	25.4	43.6

Station: MANOR-N		Frequency 1120 kHz		30-20-51	97-31-23	
Azim	Inverse	1000 mV	25 mV	22.7 mV	5.0 mV	2.00 mV
(deg)	(mV/m)	(km)	(km)	(km)	(km)	(km)

180	225.2	0.22	7.4	8.0	25.0	42.9
185	217.8	0.22	7.2	7.8	24.4	42.1
190	210.1	0.21	7.0	7.6	23.8	41.3
195	202.7	0.20	6.8	7.4	23.3	40.5
200	196.2	0.19	6.6	7.2	22.8	39.8
205	190.8	0.19	6.4	7.0	22.4	39.2
210	187.1	0.19	6.3	6.9	22.1	38.8
215	185.0	0.18	6.3	6.8	21.9	38.5
220	184.8	0.18	6.3	6.8	21.9	38.5
225	186.5	0.18	6.3	6.9	22.0	38.7
230	190.0	0.19	6.4	7.0	22.3	38.8
235	195.0	0.19	6.5	7.1	22.7	37.3
240	201.3	0.20	6.7	7.3	23.2	36.5
245	208.6	0.21	6.9	7.5	23.7	36.0
250	216.3	0.21	7.2	7.8	24.1	35.9
255	223.8	0.22	7.4	8.0	23.9	35.9
260	230.2	0.23	7.6	8.2	23.9	36.0
265	234.9	0.23	7.7	8.3	24.0	36.1
270	236.9	0.23	7.7	8.4	23.9	36.2
275	235.5	0.23	7.7	8.4	23.8	36.0
280	230.1	0.23	7.5	8.2	23.4	35.5
285	220.2	0.22	7.3	7.9	23.3	35.2
290	205.8	0.20	6.9	7.5	22.9	34.6
295	187.3	0.19	6.3	6.9	22.2	33.5
300	165.2	0.16	5.7	6.2	21.2	32.0
305	140.6	0.14	4.9	5.4	19.9	30.1
310	114.8	0.11	4.1	4.5	17.1	27.9
315	89.0	0.09	3.2	3.5	13.7	25.4
320	64.8	0.06	2.4	2.6	10.2	22.6
325	43.4	0.04	1.6	1.8	7.2	16.5
330	25.9	0.03	1.0	1.1	4.6	10.4
335	14.1	0.01	0.6	0.6	2.6	6.0
340	10.5	0.01	0.4	0.5	2.0	4.6
345	12.3	0.01	0.5	0.5	2.3	5.3
350	13.5	0.01	0.5	0.6	2.5	5.8
355	12.9	0.01	0.5	0.6	2.4	5.6

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Antenna Structure Registration

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TOWAIR Determination Results

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A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

PASS SLOPE(50:1): NO FAA REQ-RWY 10499 MTRS OR LESS & 6504.73 MTRS (6.50469) KM AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	30-23-34.00N	097-33-58.00W	BIRD'S NEST	TRAVIS AUSTIN, TX	182.7	829.7000000000005

Your Specifications

NAD83 Coordinates

Latitude 30-20-51.0 north
Longitude 097-31-23.0 west

Measurements (Meters)

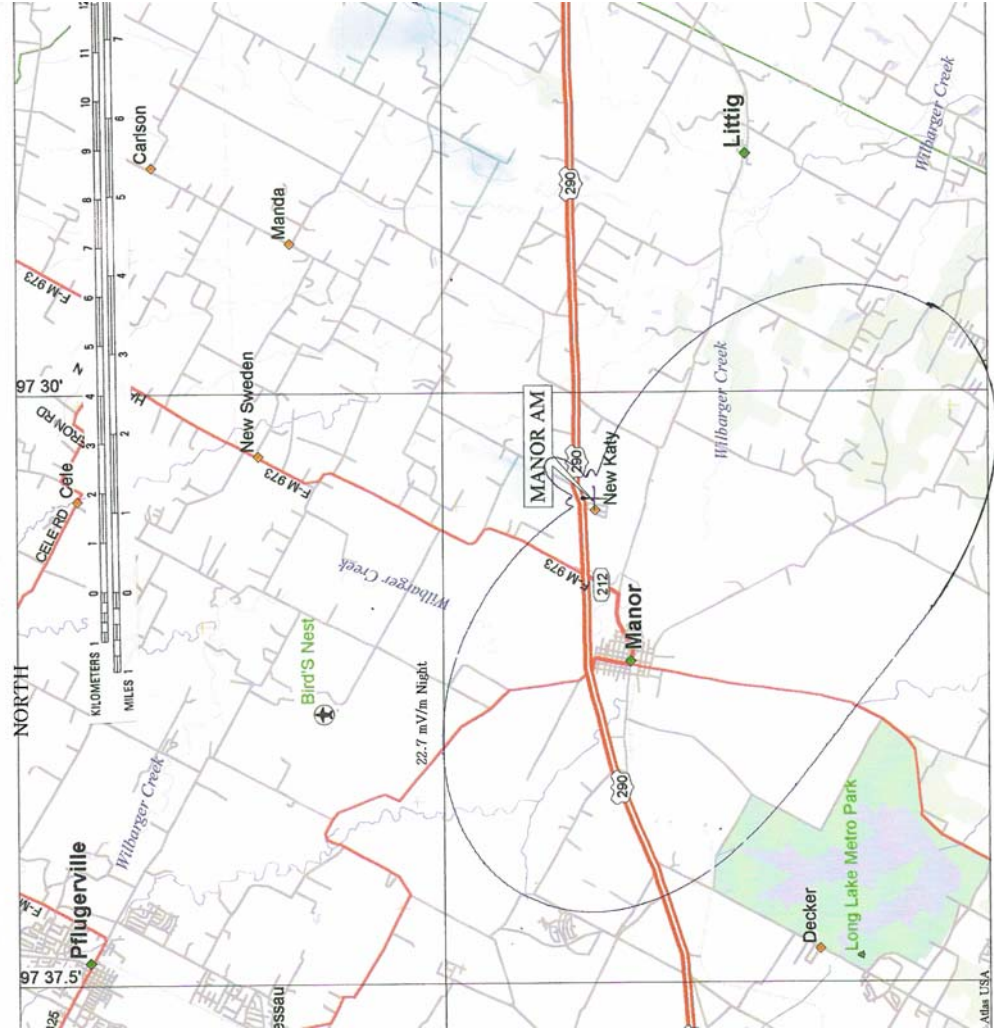
Overall Structure Height (AGL) 53
Support Structure Height (AGL) 53
Site Elevation (AMSL) 161

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

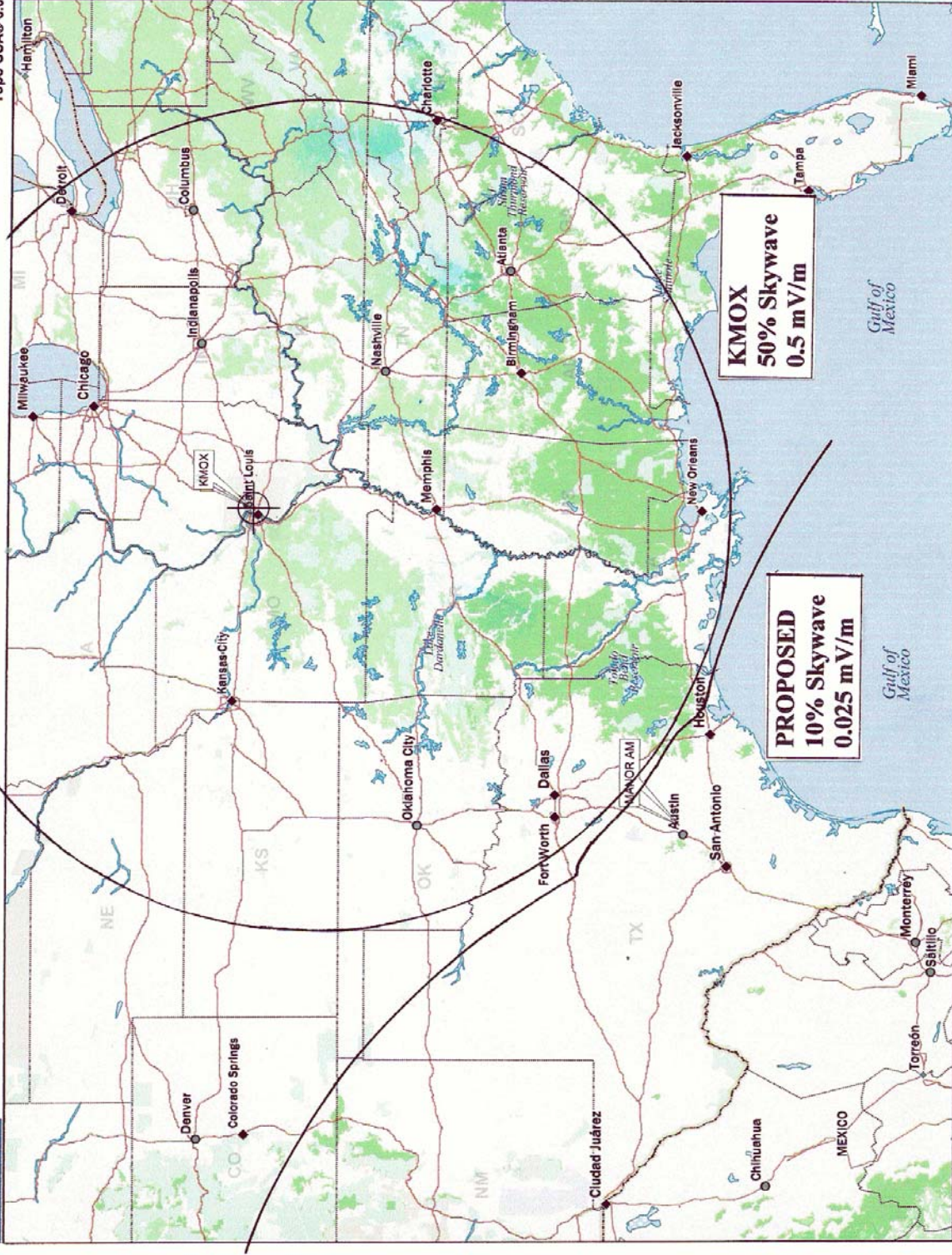
[Tower Construction Notification](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.
Note: Notification does NOT replace [Section 106 Consultation](#).





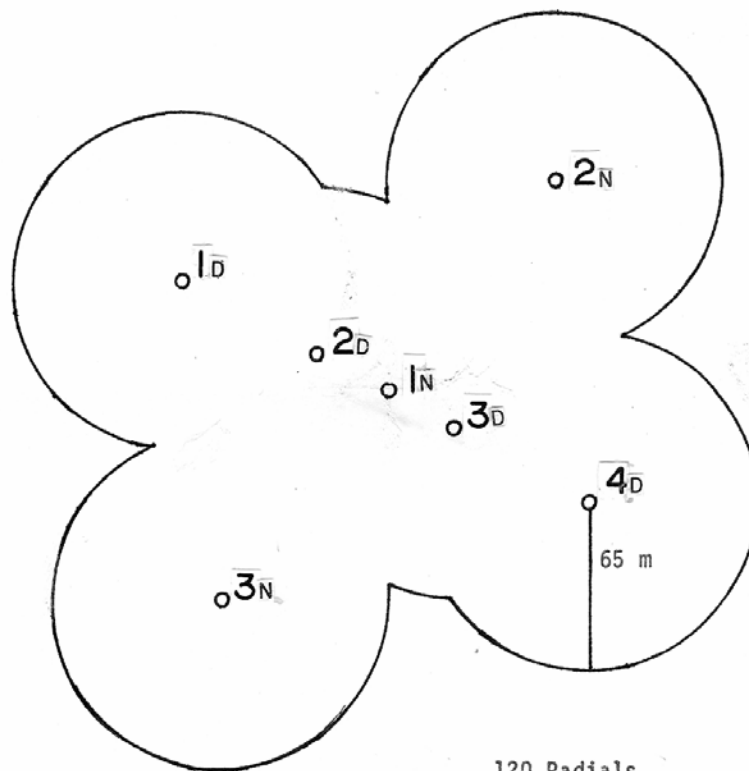
Topo USA® 6.0



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Scale 1 : 11,200,000
1" = 178.77 mi
Data Zoom 4-0

PLAT OF TOWER SITE



120 Radials
65 m Long around each tower
except where shortened
at common strap between
towers

TOWER VERTICAL DIAGRAM

