

# Radial EAH Using 3 Second Data

Minor Change Application  
Form 349 Exhibit 12C

Az Degrees	100 Point Elev Total	Number of Points Used	Elev Total Points Used	Elev Used	EAH Calc	EAH Used	Max. ERP(W) Allowed	Proposed ERP(W)
0	24622	100	24622	246.22	50.88	50.88	80	50
30	22973	72	16561	230.01	67.09	67.09	55	50
60	22800	0	0	0.00	0.00	30.00	250	50
90	22800	0	0	0.00	0.00	30.00	250	50
120	22800	0	0	0.00	0.00	30.00	250	50
150	22860	0	0	0.00	0.00	30.00	250	50
180	23408	100	23408	234.08	63.02	63.02	55	50
210	24960	100	24960	249.60	47.50	47.50	120	50
240	24114	100	24114	241.14	55.96	55.96	80	50
270	22867	100	22867	228.67	68.43	68.43	55	50
300	24062	100	24062	240.62	56.48	56.48	80	50
330	24773	100	24773	247.73	49.37	49.37	80	50

68.43 Maximum Radial EAH

Radiation Center AGL	68.5	meters	224.7	Feet
Radiation Center AMSL	297.1	meters	974.8	Feet
Site Elevation	228.6	meters	750.0	Feet

Number of points reduced in accordance with 47CFR73.313(d2)  
due to large body of water have data elevations <= 229 meters.

Exhibit 12  
Radial EAH Using Three-Second Data

Page 1 of 14  
March 18, 2013

Distance to FM Contour

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

True Radial Bearing (Degrees)	Average Elevation (meters)	Radiation Center Height Above Average Terrain (meters)	Effective Radiated Power (KW)	(dBKW)	Distance to Contour 60.0 dBu F(50,50) (km)
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0.00	246.07	51.03	0.055	-12.60	6.32
30.00	229.73	67.37	0.055	-12.60	7.23
60.00	228.00	69.10	0.055	-12.60	7.32
61.90	228.00	69.10	0.055	-12.60	7.32
90.00	228.00	69.10	0.055	-12.60	7.32
120.00	228.14	68.96	0.055	-12.60	7.31
150.00	228.60	68.50	0.055	-12.60	7.29
180.00	234.08	63.02	0.055	-12.60	7.00
210.00	249.60	47.50	0.055	-12.60	6.09
240.00	241.14	55.96	0.055	-12.60	6.62
270.00	228.67	68.43	0.055	-12.60	7.28
300.00	240.62	56.48	0.055	-12.60	6.65
330.00	247.73	49.37	0.055	-12.60	6.21

Radiation Center (AGL):	68.5 meters	224.7 feet
Radiation Center (AMSL):	297.1 meters	974.7 feet
Radiation Center (HAAT):	61.8 meters	202.9 feet
Average Terrain (AMSL):	235.3 meters	771.8 feet
Ground AMSL:	228.6 meters	750.0 feet

Peak ERP:	0.1 KW
Frequency:	101.5 MHz
Antenna:	
Orientation:	0.00°
Downtilt:	0.00°

Area within 60.0 dBu F(50,50) Contour is 149.648 km

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 1 of 13, 0.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	229.00	2	3.13	244.00	3	3.26	244.00
4	3.39	244.00	5	3.52	244.00	6	3.65	243.00
7	3.78	243.00	8	3.91	243.00	9	4.04	243.00
10	4.17	243.00	11	4.30	243.00	12	4.43	243.00
13	4.56	243.00	14	4.69	243.00	15	4.82	242.00
16	4.95	242.00	17	5.08	241.00	18	5.21	240.00
19	5.34	240.00	20	5.47	239.00	21	5.60	239.00
22	5.73	238.00	23	5.86	238.00	24	5.99	237.00
25	6.12	236.00	26	6.25	236.00	27	6.38	236.00
28	6.51	236.00	29	6.64	237.00	30	6.77	237.00
31	6.90	237.00	32	7.03	238.00	33	7.16	238.00
34	7.29	239.00	35	7.42	239.00	36	7.55	240.00
37	7.68	240.00	38	7.81	241.00	39	7.94	242.00
40	8.07	242.00	41	8.20	243.00	42	8.33	243.00
43	8.46	243.00	44	8.59	243.00	45	8.72	243.00
46	8.85	243.00	47	8.98	243.00	48	9.11	243.00
49	9.24	243.00	50	9.37	243.00	51	9.50	243.00
52	9.63	243.00	53	9.76	243.00	54	9.89	243.00
55	10.02	244.00	56	10.15	244.00	57	10.28	245.00
58	10.41	246.00	59	10.54	247.00	60	10.67	248.00
61	10.80	248.00	62	10.93	248.00	63	11.06	249.00
64	11.19	249.00	65	11.32	250.00	66	11.45	250.00
67	11.58	250.00	68	11.71	250.00	69	11.84	251.00
70	11.97	250.00	71	12.10	250.00	72	12.23	252.00
73	12.36	253.00	74	12.49	255.00	75	12.62	255.00
76	12.75	254.00	77	12.88	253.00	78	13.01	253.00
79	13.14	253.00	80	13.27	253.00	81	13.40	254.00
82	13.53	255.00	83	13.66	256.00	84	13.79	256.00
85	13.92	257.00	86	14.05	259.00	87	14.18	259.00
88	14.31	257.00	89	14.44	256.00	90	14.57	256.00
91	14.70	255.00	92	14.83	255.00	93	14.96	255.00
94	15.09	255.00	95	15.22	255.00	96	15.35	254.00
97	15.48	254.00	98	15.61	252.00	99	15.74	252.00
100	15.87	251.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 2 of 13, 30.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	229.00	3	3.26	229.00
4	3.39	230.00	5	3.52	231.00	6	3.65	232.00
7	3.78	232.00	8	3.91	232.00	9	4.04	232.00
10	4.17	232.00	11	4.30	232.00	12	4.43	232.00
13	4.56	231.00	14	4.69	231.00	15	4.82	231.00
16	4.95	231.00	17	5.08	231.00	18	5.21	231.00
19	5.34	231.00	20	5.47	231.00	21	5.60	231.00
22	5.73	231.00	23	5.86	230.00	24	5.99	230.00
25	6.12	230.00	26	6.25	230.00	27	6.38	230.00
28	6.51	231.00	29	6.64	231.00	30	6.77	231.00
31	6.90	231.00	32	7.03	231.00	33	7.16	231.00
34	7.29	231.00	35	7.42	231.00	36	7.55	232.00
37	7.68	232.00	38	7.81	231.00	39	7.94	231.00
40	8.07	231.00	41	8.20	231.00	42	8.33	231.00
43	8.46	230.00	44	8.59	230.00	45	8.72	231.00
46	8.85	231.00	47	8.98	231.00	48	9.11	231.00
49	9.24	231.00	50	9.37	231.00	51	9.50	231.00
52	9.63	231.00	53	9.76	231.00	54	9.89	231.00
55	10.02	230.00	56	10.15	230.00	57	10.28	229.00
58	10.41	229.00	59	10.54	229.00	60	10.67	229.00
61	10.80	229.00	62	10.93	229.00	63	11.06	229.00
64	11.19	229.00	65	11.32	229.00	66	11.45	229.00
67	11.58	229.00	68	11.71	229.00	69	11.84	229.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	228.00
79	13.14	228.00	80	13.27	228.00	81	13.40	228.00
82	13.53	228.00	83	13.66	228.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	228.00
88	14.31	228.00	89	14.44	228.00	90	14.57	228.00
91	14.70	228.00	92	14.83	228.00	93	14.96	228.00
94	15.09	228.00	95	15.22	228.00	96	15.35	228.00
97	15.48	228.00	98	15.61	228.00	99	15.74	228.00
100	15.87	228.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 3 of 13, 60.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	228.00	3	3.26	228.00
4	3.39	228.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	228.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	228.00	42	8.33	228.00
43	8.46	228.00	44	8.59	228.00	45	8.72	228.00
46	8.85	228.00	47	8.98	228.00	48	9.11	228.00
49	9.24	228.00	50	9.37	228.00	51	9.50	228.00
52	9.63	228.00	53	9.76	228.00	54	9.89	228.00
55	10.02	228.00	56	10.15	228.00	57	10.28	228.00
58	10.41	228.00	59	10.54	228.00	60	10.67	228.00
61	10.80	228.00	62	10.93	228.00	63	11.06	228.00
64	11.19	228.00	65	11.32	228.00	66	11.45	228.00
67	11.58	228.00	68	11.71	228.00	69	11.84	228.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	228.00
79	13.14	228.00	80	13.27	228.00	81	13.40	228.00
82	13.53	228.00	83	13.66	228.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	228.00
88	14.31	228.00	89	14.44	228.00	90	14.57	228.00
91	14.70	228.00	92	14.83	228.00	93	14.96	228.00
94	15.09	228.00	95	15.22	228.00	96	15.35	228.00
97	15.48	228.00	98	15.61	228.00	99	15.74	228.00
100	15.87	228.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 4 of 13, 61.9 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	228.00	3	3.26	228.00
4	3.39	228.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	228.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	228.00	42	8.33	228.00
43	8.46	228.00	44	8.59	228.00	45	8.72	228.00
46	8.85	228.00	47	8.98	228.00	48	9.11	228.00
49	9.24	228.00	50	9.37	228.00	51	9.50	228.00
52	9.63	228.00	53	9.76	228.00	54	9.89	228.00
55	10.02	228.00	56	10.15	228.00	57	10.28	228.00
58	10.41	228.00	59	10.54	228.00	60	10.67	228.00
61	10.80	228.00	62	10.93	228.00	63	11.06	228.00
64	11.19	228.00	65	11.32	228.00	66	11.45	228.00
67	11.58	228.00	68	11.71	228.00	69	11.84	228.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	228.00
79	13.14	228.00	80	13.27	228.00	81	13.40	228.00
82	13.53	228.00	83	13.66	228.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	228.00
88	14.31	228.00	89	14.44	228.00	90	14.57	228.00
91	14.70	228.00	92	14.83	228.00	93	14.96	228.00
94	15.09	228.00	95	15.22	228.00	96	15.35	228.00
97	15.48	228.00	98	15.61	228.00	99	15.74	228.00
100	15.87	228.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 5 of 13, 90.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	228.00	3	3.26	228.00
4	3.39	228.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	228.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	228.00	42	8.33	228.00
43	8.46	228.00	44	8.59	228.00	45	8.72	228.00
46	8.85	228.00	47	8.98	228.00	48	9.11	228.00
49	9.24	228.00	50	9.37	228.00	51	9.50	228.00
52	9.63	228.00	53	9.76	228.00	54	9.89	228.00
55	10.02	228.00	56	10.15	228.00	57	10.28	228.00
58	10.41	228.00	59	10.54	228.00	60	10.67	228.00
61	10.80	228.00	62	10.93	228.00	63	11.06	228.00
64	11.19	228.00	65	11.32	228.00	66	11.45	228.00
67	11.58	228.00	68	11.71	228.00	69	11.84	228.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	228.00
79	13.14	228.00	80	13.27	228.00	81	13.40	228.00
82	13.53	228.00	83	13.66	228.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	228.00
88	14.31	228.00	89	14.44	228.00	90	14.57	228.00
91	14.70	228.00	92	14.83	228.00	93	14.96	228.00
94	15.09	228.00	95	15.22	228.00	96	15.35	228.00
97	15.48	228.00	98	15.61	228.00	99	15.74	228.00
100	15.87	228.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 6 of 13, 120.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	228.00	3	3.26	228.00
4	3.39	228.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	228.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	228.00	42	8.33	228.00
43	8.46	228.00	44	8.59	228.00	45	8.72	228.00
46	8.85	228.00	47	8.98	228.00	48	9.11	228.00
49	9.24	228.00	50	9.37	228.00	51	9.50	228.00
52	9.63	228.00	53	9.76	228.00	54	9.89	228.00
55	10.02	228.00	56	10.15	228.00	57	10.28	228.00
58	10.41	228.00	59	10.54	228.00	60	10.67	228.00
61	10.80	228.00	62	10.93	228.00	63	11.06	228.00
64	11.19	228.00	65	11.32	228.00	66	11.45	228.00
67	11.58	228.00	68	11.71	228.00	69	11.84	228.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	228.00
79	13.14	228.00	80	13.27	228.00	81	13.40	228.00
82	13.53	228.00	83	13.66	228.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	229.00
88	14.31	229.00	89	14.44	229.00	90	14.57	229.00
91	14.70	229.00	92	14.83	229.00	93	14.96	229.00
94	15.09	229.00	95	15.22	229.00	96	15.35	229.00
97	15.48	229.00	98	15.61	229.00	99	15.74	229.00
100	15.87	229.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 7 of 13, 150.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	228.00	2	3.13	228.00	3	3.26	228.00
4	3.39	228.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	228.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	229.00	42	8.33	229.00
43	8.46	229.00	44	8.59	229.00	45	8.72	229.00
46	8.85	229.00	47	8.98	229.00	48	9.11	229.00
49	9.24	229.00	50	9.37	229.00	51	9.50	229.00
52	9.63	229.00	53	9.76	229.00	54	9.89	229.00
55	10.02	229.00	56	10.15	229.00	57	10.28	229.00
58	10.41	229.00	59	10.54	229.00	60	10.67	229.00
61	10.80	229.00	62	10.93	229.00	63	11.06	229.00
64	11.19	229.00	65	11.32	229.00	66	11.45	229.00
67	11.58	229.00	68	11.71	229.00	69	11.84	229.00
70	11.97	229.00	71	12.10	229.00	72	12.23	229.00
73	12.36	229.00	74	12.49	229.00	75	12.62	229.00
76	12.75	229.00	77	12.88	229.00	78	13.01	229.00
79	13.14	229.00	80	13.27	229.00	81	13.40	229.00
82	13.53	229.00	83	13.66	229.00	84	13.79	229.00
85	13.92	229.00	86	14.05	229.00	87	14.18	229.00
88	14.31	229.00	89	14.44	229.00	90	14.57	229.00
91	14.70	229.00	92	14.83	229.00	93	14.96	229.00
94	15.09	229.00	95	15.22	229.00	96	15.35	229.00
97	15.48	229.00	98	15.61	229.00	99	15.74	229.00
100	15.87	229.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 8 of 13, 180.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	231.00	2	3.13	231.00	3	3.26	232.00
4	3.39	232.00	5	3.52	231.00	6	3.65	231.00
7	3.78	231.00	8	3.91	231.00	9	4.04	231.00
10	4.17	231.00	11	4.30	231.00	12	4.43	231.00
13	4.56	231.00	14	4.69	231.00	15	4.82	231.00
16	4.95	231.00	17	5.08	231.00	18	5.21	230.00
19	5.34	230.00	20	5.47	230.00	21	5.60	230.00
22	5.73	229.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	229.00
34	7.29	229.00	35	7.42	229.00	36	7.55	229.00
37	7.68	229.00	38	7.81	229.00	39	7.94	229.00
40	8.07	229.00	41	8.20	229.00	42	8.33	229.00
43	8.46	229.00	44	8.59	229.00	45	8.72	229.00
46	8.85	229.00	47	8.98	229.00	48	9.11	229.00
49	9.24	229.00	50	9.37	229.00	51	9.50	229.00
52	9.63	229.00	53	9.76	229.00	54	9.89	229.00
55	10.02	229.00	56	10.15	230.00	57	10.28	230.00
58	10.41	230.00	59	10.54	230.00	60	10.67	230.00
61	10.80	230.00	62	10.93	230.00	63	11.06	231.00
64	11.19	233.00	65	11.32	236.00	66	11.45	237.00
67	11.58	237.00	68	11.71	237.00	69	11.84	238.00
70	11.97	238.00	71	12.10	239.00	72	12.23	239.00
73	12.36	240.00	74	12.49	241.00	75	12.62	242.00
76	12.75	243.00	77	12.88	244.00	78	13.01	244.00
79	13.14	244.00	80	13.27	244.00	81	13.40	244.00
82	13.53	244.00	83	13.66	244.00	84	13.79	244.00
85	13.92	244.00	86	14.05	243.00	87	14.18	243.00
88	14.31	243.00	89	14.44	243.00	90	14.57	243.00
91	14.70	243.00	92	14.83	243.00	93	14.96	243.00
94	15.09	243.00	95	15.22	243.00	96	15.35	243.00
97	15.48	243.00	98	15.61	243.00	99	15.74	243.00
100	15.87	244.00						

Exhibit 12  
Radial EAH Using Three-Second Data

Page 10 of 14  
March 18, 2013

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 9 of 13, 210.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	240.00	2	3.13	239.00	3	3.26	238.00
4	3.39	237.00	5	3.52	236.00	6	3.65	235.00
7	3.78	234.00	8	3.91	233.00	9	4.04	232.00
10	4.17	230.00	11	4.30	230.00	12	4.43	229.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	229.00	27	6.38	229.00
28	6.51	229.00	29	6.64	230.00	30	6.77	230.00
31	6.90	231.00	32	7.03	231.00	33	7.16	232.00
34	7.29	233.00	35	7.42	234.00	36	7.55	235.00
37	7.68	238.00	38	7.81	242.00	39	7.94	244.00
40	8.07	245.00	41	8.20	247.00	42	8.33	247.00
43	8.46	248.00	44	8.59	249.00	45	8.72	249.00
46	8.85	250.00	47	8.98	250.00	48	9.11	251.00
49	9.24	251.00	50	9.37	251.00	51	9.50	252.00
52	9.63	253.00	53	9.76	254.00	54	9.89	255.00
55	10.02	256.00	56	10.15	257.00	57	10.28	258.00
58	10.41	258.00	59	10.54	259.00	60	10.67	259.00
61	10.80	259.00	62	10.93	259.00	63	11.06	259.00
64	11.19	259.00	65	11.32	259.00	66	11.45	259.00
67	11.58	260.00	68	11.71	261.00	69	11.84	262.00
70	11.97	262.00	71	12.10	265.00	72	12.23	266.00
73	12.36	266.00	74	12.49	266.00	75	12.62	265.00
76	12.75	265.00	77	12.88	264.00	78	13.01	263.00
79	13.14	261.00	80	13.27	259.00	81	13.40	259.00
82	13.53	259.00	83	13.66	262.00	84	13.79	269.00
85	13.92	271.00	86	14.05	272.00	87	14.18	273.00
88	14.31	274.00	89	14.44	275.00	90	14.57	275.00
91	14.70	274.00	92	14.83	274.00	93	14.96	274.00
94	15.09	274.00	95	15.22	274.00	96	15.35	274.00
97	15.48	267.00	98	15.61	260.00	99	15.74	259.00
100	15.87	259.00						

Exhibit 12  
Radial EAH Using Three-Second Data

Page 11 of 14  
March 18, 2013

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 10 of 13, 240.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	242.00	2	3.13	240.00	3	3.26	239.00
4	3.39	237.00	5	3.52	234.00	6	3.65	234.00
7	3.78	231.00	8	3.91	229.00	9	4.04	228.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	229.00
28	6.51	231.00	29	6.64	232.00	30	6.77	233.00
31	6.90	235.00	32	7.03	236.00	33	7.16	235.00
34	7.29	236.00	35	7.42	237.00	36	7.55	238.00
37	7.68	238.00	38	7.81	239.00	39	7.94	239.00
40	8.07	239.00	41	8.20	238.00	42	8.33	240.00
43	8.46	241.00	44	8.59	242.00	45	8.72	243.00
46	8.85	243.00	47	8.98	244.00	48	9.11	245.00
49	9.24	246.00	50	9.37	247.00	51	9.50	247.00
52	9.63	248.00	53	9.76	248.00	54	9.89	248.00
55	10.02	249.00	56	10.15	249.00	57	10.28	250.00
58	10.41	250.00	59	10.54	251.00	60	10.67	252.00
61	10.80	252.00	62	10.93	253.00	63	11.06	254.00
64	11.19	255.00	65	11.32	255.00	66	11.45	256.00
67	11.58	256.00	68	11.71	255.00	69	11.84	254.00
70	11.97	253.00	71	12.10	251.00	72	12.23	250.00
73	12.36	249.00	74	12.49	248.00	75	12.62	246.00
76	12.75	245.00	77	12.88	243.00	78	13.01	243.00
79	13.14	243.00	80	13.27	243.00	81	13.40	243.00
82	13.53	243.00	83	13.66	243.00	84	13.79	243.00
85	13.92	243.00	86	14.05	243.00	87	14.18	244.00
88	14.31	244.00	89	14.44	244.00	90	14.57	244.00
91	14.70	244.00	92	14.83	244.00	93	14.96	245.00
94	15.09	246.00	95	15.22	246.00	96	15.35	247.00
97	15.48	248.00	98	15.61	249.00	99	15.74	249.00
100	15.87	250.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 11 of 13, 270.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	240.00	2	3.13	239.00	3	3.26	237.00
4	3.39	236.00	5	3.52	234.00	6	3.65	232.00
7	3.78	231.00	8	3.91	230.00	9	4.04	229.00
10	4.17	228.00	11	4.30	228.00	12	4.43	228.00
13	4.56	228.00	14	4.69	228.00	15	4.82	228.00
16	4.95	228.00	17	5.08	228.00	18	5.21	228.00
19	5.34	228.00	20	5.47	228.00	21	5.60	228.00
22	5.73	228.00	23	5.86	228.00	24	5.99	228.00
25	6.12	228.00	26	6.25	228.00	27	6.38	228.00
28	6.51	228.00	29	6.64	228.00	30	6.77	228.00
31	6.90	228.00	32	7.03	228.00	33	7.16	228.00
34	7.29	228.00	35	7.42	228.00	36	7.55	228.00
37	7.68	228.00	38	7.81	228.00	39	7.94	228.00
40	8.07	228.00	41	8.20	228.00	42	8.33	228.00
43	8.46	228.00	44	8.59	228.00	45	8.72	228.00
46	8.85	228.00	47	8.98	228.00	48	9.11	228.00
49	9.24	228.00	50	9.37	228.00	51	9.50	228.00
52	9.63	228.00	53	9.76	228.00	54	9.89	228.00
55	10.02	228.00	56	10.15	228.00	57	10.28	228.00
58	10.41	228.00	59	10.54	228.00	60	10.67	228.00
61	10.80	228.00	62	10.93	228.00	63	11.06	228.00
64	11.19	228.00	65	11.32	228.00	66	11.45	228.00
67	11.58	228.00	68	11.71	228.00	69	11.84	228.00
70	11.97	228.00	71	12.10	228.00	72	12.23	228.00
73	12.36	228.00	74	12.49	228.00	75	12.62	228.00
76	12.75	228.00	77	12.88	228.00	78	13.01	229.00
79	13.14	229.00	80	13.27	231.00	81	13.40	231.00
82	13.53	230.00	83	13.66	229.00	84	13.79	228.00
85	13.92	228.00	86	14.05	228.00	87	14.18	228.00
88	14.31	228.00	89	14.44	228.00	90	14.57	228.00
91	14.70	228.00	92	14.83	228.00	93	14.96	228.00
94	15.09	228.00	95	15.22	228.00	96	15.35	228.00
97	15.48	228.00	98	15.61	228.00	99	15.74	228.00
100	15.87	228.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 12 of 13, 300.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	235.00	2	3.13	233.00	3	3.26	231.00
4	3.39	229.00	5	3.52	228.00	6	3.65	228.00
7	3.78	228.00	8	3.91	230.00	9	4.04	231.00
10	4.17	232.00	11	4.30	234.00	12	4.43	235.00
13	4.56	236.00	14	4.69	238.00	15	4.82	239.00
16	4.95	240.00	17	5.08	241.00	18	5.21	243.00
19	5.34	243.00	20	5.47	243.00	21	5.60	243.00
22	5.73	243.00	23	5.86	243.00	24	5.99	245.00
25	6.12	247.00	26	6.25	248.00	27	6.38	249.00
28	6.51	245.00	29	6.64	243.00	30	6.77	243.00
31	6.90	243.00	32	7.03	244.00	33	7.16	244.00
34	7.29	245.00	35	7.42	246.00	36	7.55	245.00
37	7.68	244.00	38	7.81	243.00	39	7.94	240.00
40	8.07	238.00	41	8.20	236.00	42	8.33	232.00
43	8.46	233.00	44	8.59	235.00	45	8.72	238.00
46	8.85	240.00	47	8.98	240.00	48	9.11	241.00
49	9.24	241.00	50	9.37	239.00	51	9.50	240.00
52	9.63	242.00	53	9.76	243.00	54	9.89	243.00
55	10.02	243.00	56	10.15	243.00	57	10.28	243.00
58	10.41	242.00	59	10.54	242.00	60	10.67	242.00
61	10.80	242.00	62	10.93	242.00	63	11.06	242.00
64	11.19	242.00	65	11.32	242.00	66	11.45	242.00
67	11.58	242.00	68	11.71	242.00	69	11.84	242.00
70	11.97	242.00	71	12.10	242.00	72	12.23	241.00
73	12.36	241.00	74	12.49	240.00	75	12.62	240.00
76	12.75	241.00	77	12.88	241.00	78	13.01	242.00
79	13.14	242.00	80	13.27	243.00	81	13.40	243.00
82	13.53	243.00	83	13.66	243.00	84	13.79	244.00
85	13.92	245.00	86	14.05	246.00	87	14.18	248.00
88	14.31	246.00	89	14.44	247.00	90	14.57	246.00
91	14.70	245.00	92	14.83	245.00	93	14.96	245.00
94	15.09	244.00	95	15.22	243.00	96	15.35	242.00
97	15.48	239.00	98	15.61	236.00	99	15.74	232.00
100	15.87	231.00						

Detailed Terrain Data

Study: Madam Aerials Tower 225ft 55W 12radials  
Site: Madam Aerials Tower site  
Radial 13 of 13, 330.0 degrees true

Latitude: N44-03-51.00  
Longitude: W88-31-43.00

Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)	Point Number	Dist (km)	Elev (m)
1	3.00	241.00	2	3.13	241.00	3	3.26	241.00
4	3.39	242.00	5	3.52	242.00	6	3.65	242.00
7	3.78	242.00	8	3.91	242.00	9	4.04	243.00
10	4.17	243.00	11	4.30	243.00	12	4.43	243.00
13	4.56	243.00	14	4.69	243.00	15	4.82	243.00
16	4.95	243.00	17	5.08	243.00	18	5.21	243.00
19	5.34	243.00	20	5.47	243.00	21	5.60	244.00
22	5.73	244.00	23	5.86	245.00	24	5.99	245.00
25	6.12	245.00	26	6.25	246.00	27	6.38	247.00
28	6.51	248.00	29	6.64	248.00	30	6.77	249.00
31	6.90	249.00	32	7.03	251.00	33	7.16	252.00
34	7.29	253.00	35	7.42	254.00	36	7.55	255.00
37	7.68	256.00	38	7.81	258.00	39	7.94	258.00
40	8.07	257.00	41	8.20	256.00	42	8.33	255.00
43	8.46	255.00	44	8.59	254.00	45	8.72	254.00
46	8.85	253.00	47	8.98	253.00	48	9.11	252.00
49	9.24	252.00	50	9.37	252.00	51	9.50	253.00
52	9.63	253.00	53	9.76	253.00	54	9.89	254.00
55	10.02	254.00	56	10.15	255.00	57	10.28	255.00
58	10.41	256.00	59	10.54	256.00	60	10.67	256.00
61	10.80	257.00	62	10.93	257.00	63	11.06	257.00
64	11.19	258.00	65	11.32	258.00	66	11.45	258.00
67	11.58	257.00	68	11.71	256.00	69	11.84	255.00
70	11.97	255.00	71	12.10	256.00	72	12.23	254.00
73	12.36	253.00	74	12.49	251.00	75	12.62	249.00
76	12.75	246.00	77	12.88	243.00	78	13.01	243.00
79	13.14	243.00	80	13.27	242.00	81	13.40	242.00
82	13.53	242.00	83	13.66	241.00	84	13.79	241.00
85	13.92	241.00	86	14.05	241.00	87	14.18	240.00
88	14.31	240.00	89	14.44	239.00	90	14.57	239.00
91	14.70	239.00	92	14.83	238.00	93	14.96	238.00
94	15.09	238.00	95	15.22	237.00	96	15.35	237.00
97	15.48	238.00	98	15.61	239.00	99	15.74	240.00
100	15.87	241.00						