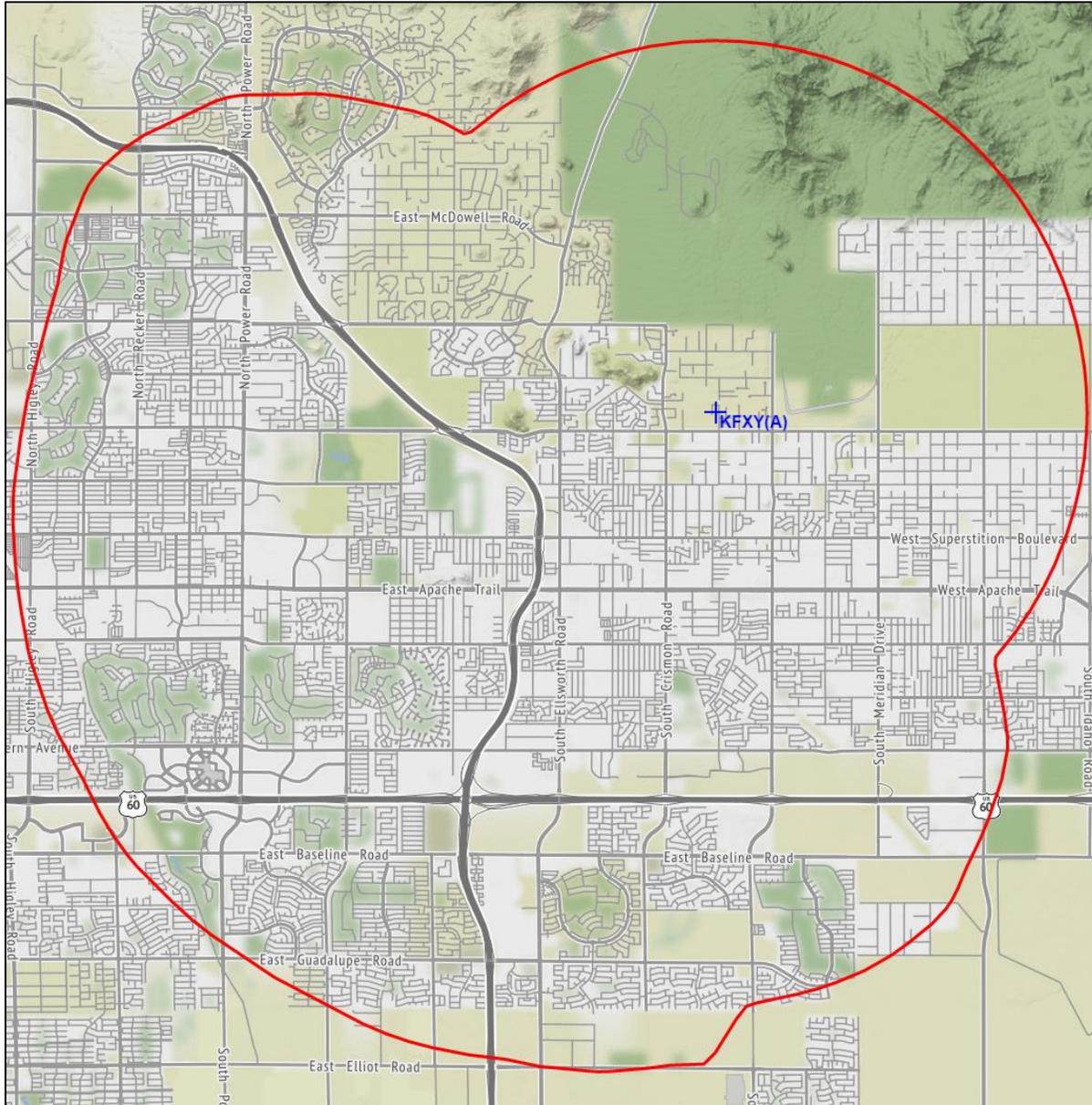




REC Networks
11541 Riverton Wharf Rd.
Mardela Springs, MD 21837
844.REC.LPFM/202.621.2355
recnet.com

CP Modify for KFXV-LP
MESA, AZ
SAN TAN EDUCATIONAL MEDIA
BLL-20170710AAT

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



MESA, AZ – Channel 256L1 (99.1 MHz) ~ ERP 0.100 kW
Elev: 516 meters ~ RCAGL: 22 meters ~ RCAMSL: 538 meters ~ HAAT: 1 meter
Overall tower height: 24 meters – ASR: Not necessary – no nearby airports.
NAD83 Latitude: 33° 26' 21.7" NL – Longitude: 111° 36' 26.6" WL
NAD27 Latitude: 33° 26' 21.5" NL – Longitude: 111° 36' 24.1" WL

R E C NETWORKS
CHANNEL REPORT

NAD27 LATITUDE: 33 - 26' 21.5" - LONGITUDE: 111 - 36' 24.1"
CHANNEL: 256 - CLASS: LPFM(LP-100)

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
254	98.7	KMVP-FM : BONNEVILLE INTERNATIONAL CORPORATION	PHOENIX	AZ C	44.1	93.0	-48.9	254.4
255	98.9	KPIH-LP : RIM CATHOLIC EVANGELIZATION ASSOC.	PAYSON	AZ L1	94.4	14.0	80.4	16.7
256	99.1	K256DB : ROCKET RADIO CORPORATION	GLOBE	AZ D8	51.0	39.0	12.0	125.2
256	99.1	K256DB : ROCKET RADIO CORPORATION : No change in distance to translator (rounded per §73.813)	GLOBE	AZ D6	22.5	39.0	-16.5	161.6
256	99.1	KFXV-LP : SAN TAN EDUCATIONAL MEDIA	MESA	AZ L1	0.0	24.0	-24.0	29.0
256	99.1	KTMG : FLAGSTAFF RADIO, INC	PRESCOTT	AZ A	149.5	67.0	82.5	327.7
256	99.1	XHSITFM :	SONOITA	SO B	210.5	91.0	119.5	214.0
256	99.1	 :	PUERTO PENASCO	SO C	298.5	110.0	188.5	217.7
256	99.1	XHSITFM :	SONOITA	SO B	210.5	91.0	119.5	214.0
256	99.1	KFMM : COCHISE BROADCASTING LLC	THATCHER	AZ C1	221.6	111.0	110.6	105.4
257	99.3	KEMP : KEMP COMMUNICATIONS, INC.	PAYSON	AZ C3	86.3	67.0	19.3	16.6
257	99.3	KEMP : KEMP COMMUNICATIONS, INC.	PAYSON	AZ C2	86.3	80.0	6.3	16.6
257	99.3	KRWV-LP : GOLD CANYON PUBLIC RADIO INC	GOLD CANYON	AZ L1	19.5	14.0	5.5	123.8
257	99.3	K257CD : MICHAEL PIAZZA, LLC	PHOENIX, ETC.	AZ D8	47.8	28.0	19.8	291.2
257	99.3	K257CD : MICHAEL PIAZZA, LLC	PHOENIX, ETC.	AZ D8	47.8	28.0	19.8	291.2
258	99.5	KIIM-FM : RADIO LICENSE HOLDING CBC, LLC	TUCSON	AZ C	139.8	93.0	46.8	160.8
258	99.5	KRPB : DEPORTES Y MUSICA COMUNICACIONES LLC	MORRISTOWN	AZ C2	128.0	53.0	75.0	308.1
258	99.5	KRPB : DEPORTES Y MUSICA COMUNICACIONES LLC	MORRISTOWN	AZ C2	135.1	53.0	82.1	308.5

LPFM SECOND ADJACENT CHANNEL WAIVER STUDY

Mesa, AZ
Channel 256L1 (99.1 MHz)

The proposed location is second-adjacent channel short spaced to KMVP-FM, Phoenix, Arizona.

Based on a study performed by Michelle Bradley of REC Networks, it has been determined that this proposed site qualifies for a second adjacent waiver as specified in Section 73.807(e) of the Commission's Rules.

KMVP-FM operates on Channel 254C with 97 kW maximum effective radiated power ("ERP") at 545 meters height above average terrain ("HAAT") into a non-directional antenna with an effective HAAT of 497 meters towards the proposed LPFM site and is located 44.1 km from the proposed LPFM site. KMVP-FM places an 77.9 dBu service contour at the proposed LPFM site.

Using the U/D method¹, the proposed LPFM station is predicted to produce an undesired interference overlap in respect to KMVP-FM to the proposed LPFM station's 117.9 dBu interference contour ("overlap zone"). At 100 watts ERP, the overlap zone extends to 89 meters from the radiation center.

On the same property as the tower, there is a structure that is single story in some portions and two-story in other portions. The two-story section is located within 19 and 32 meters from the tower base. The single-story section of the structure extends to 37 meters from the tower base. On this property, there is also a single story unoccupied garage/storage building.

There are three adjacent properties. On all of those properties, there is a mix of single-story occupied structures and unoccupied garage/storage buildings. The closest single-story adjacent property occupied structure is 50 meters from the tower and there are single-story structures entirely inside the 89-meter radius of the tower at all points exceeding 50 meters.

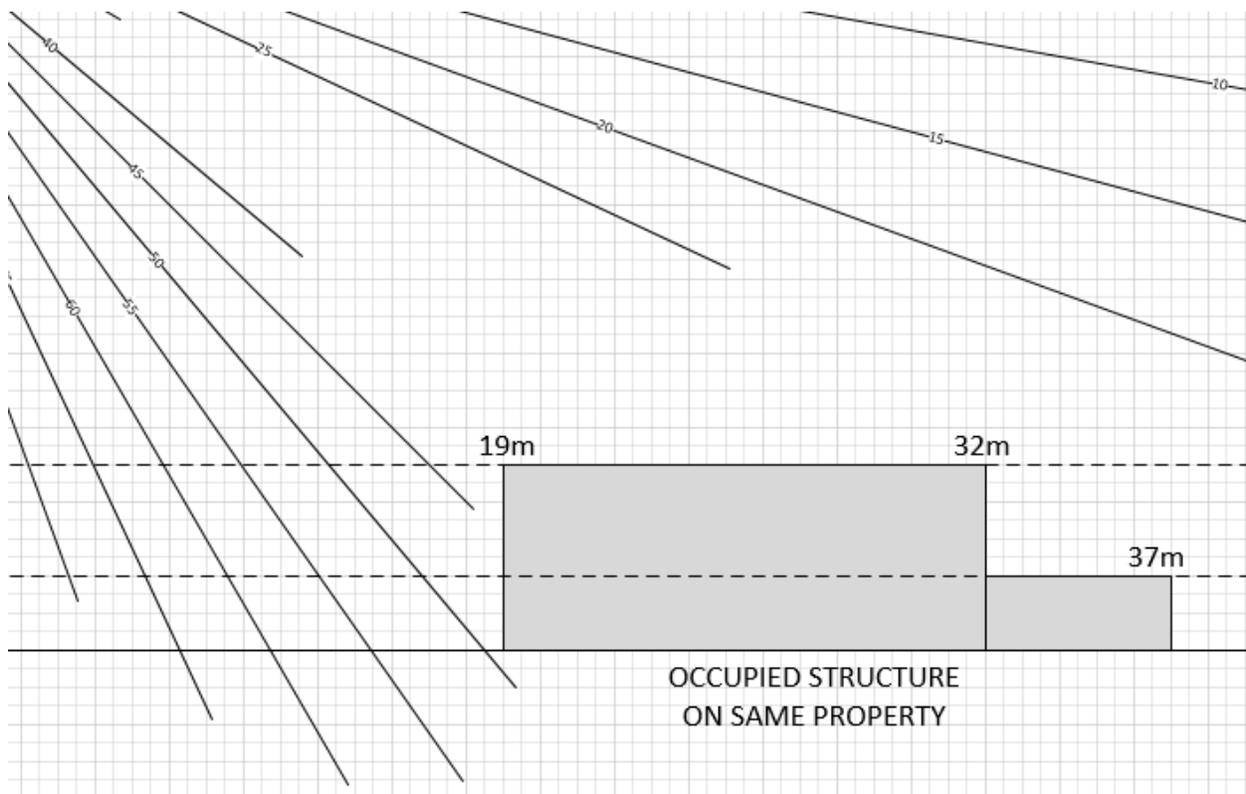
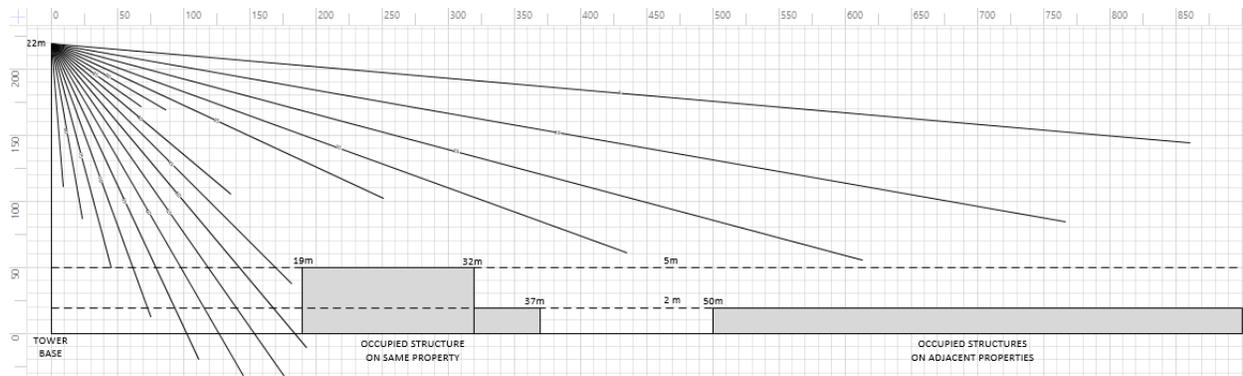
To address these structures, the applicant proposes to use a Nicom BKG-77 circularly polarized antenna with 2 bays at 0.85 wave spacing. Using the manufacturer's published elevation pattern at industry-standard 5 degree increments, we have determined that the overlap zone reaches ground level only at points less than 19 meters from the tower base. The overlap zone does not reach any point lower than 5 meters between 19 and 89 meters from the tower base. As a result, the 117.9 dBu interfering contour does not penetrate any occupied structure within 89 meters of the tower.

¹ - See *Living Way Ministries, Inc.* Memorandum Opinion and Order, 17 FCC Rcd 17054, 17056 (2002) at 5. *Recon denied* 23 FCC Rcd 15070 (2008).

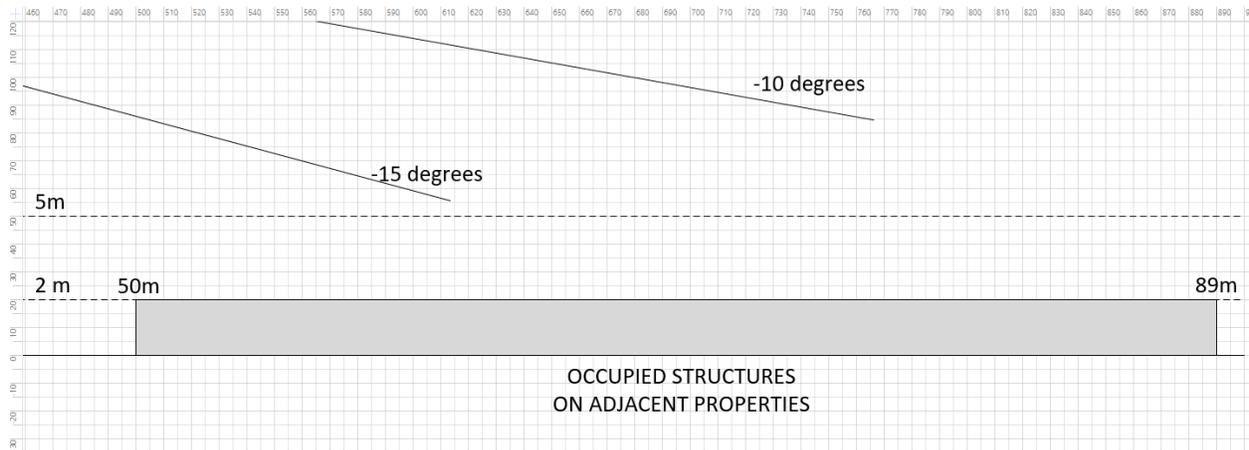
Based on the information presented, REC submits that the proposed station will not create any interference to existing or potential listeners of second adjacent channel station KMVP-FM, Phoenix, Arizona.

The applicant requests a waiver of §73.807 of the Commission's Rules in respect to KMVP.

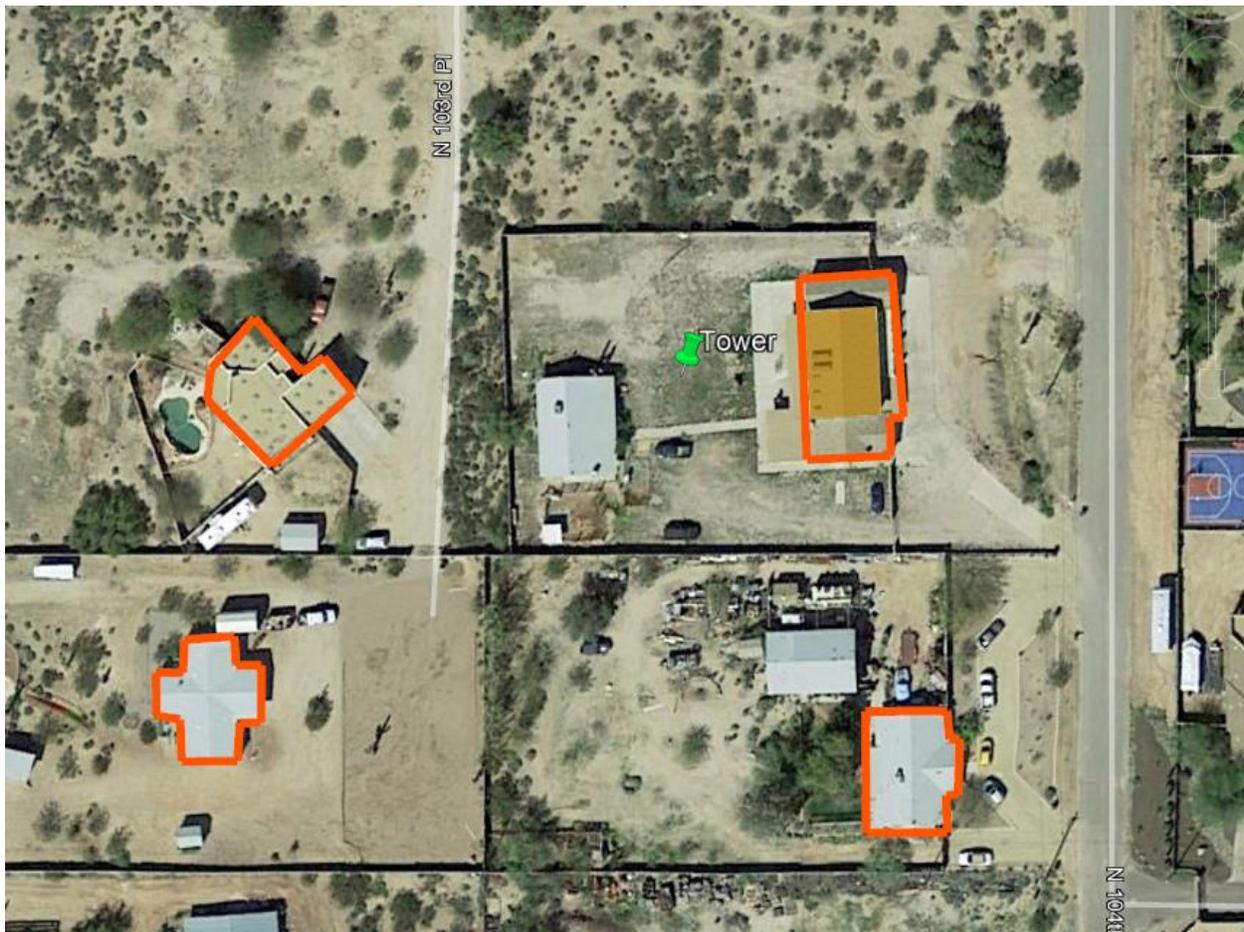
Report completed by
Michelle Bradley
Founder, REC Networks
August 31, 2017



The interfering contour along the 50-degree depression angle reaches the ground at 18.46 meters from the base of the tower.



Interference along the -10 and -15 degree depression angles do not reach any point below 5 meter from 50 meters to the boundary of the overlap zone.



Affected single-story structures in orange outline.
 Affected two-story section of an occupied structure in brown.

Proposed Power:				0.1 kW				
Antenna Height AGL:				22 m				
Interference Contour:				117.9 dBu				
Artificial RX Antenna Height:				2 m				
Antenna Type:				Nicom BKG77 - 2 bay 0.85 wave spacing				
Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant to Interference Contour	Distance from Ant to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant to Ground Level	Field Strength in dBu @ Ground Level
5	0.967	0.094	-10.29	86.38	229.47	109.41	252.42	108.59
10	0.871	0.076	-11.20	77.81	115.18	114.49	126.69	113.67
15	0.711	0.051	-12.96	63.51	77.27	116.20	85.00	115.37
20	0.518	0.027	-15.71	46.27	58.48	115.87	64.32	115.04
25	0.310	0.010	-20.17	27.69	47.32	113.25	52.06	112.42
30	0.112	0.001	-29.02	10.01	40.00	105.86	44.00	105.04
35	0.062	0.000	-34.15	5.54	34.87	101.92	38.36	101.09
40	0.198	0.004	-24.07	17.69	31.11	112.99	34.23	112.17
45	0.288	0.008	-20.81	25.73	28.28	117.08	31.11	116.25
50	0.336	0.011	-19.47	30.02	26.11	119.11	28.72	118.28
55	0.349	0.012	-19.14	31.18	24.42	120.02	26.86	119.20
60	0.331	0.011	-19.60	29.57	23.09	120.05	25.40	119.22
65	0.295	0.009	-20.60	26.35	22.07	119.44	24.27	118.61
70	0.246	0.006	-22.18	21.98	21.28	118.18	23.41	117.35
75	0.197	0.004	-24.11	17.60	20.71	116.49	22.78	115.66
80	0.151	0.002	-26.42	13.49	20.31	114.35	22.34	113.52
85	0.122	0.001	-28.27	10.90	20.08	112.59	22.08	111.77
90	0.117	0.001	-28.64	10.45	20.00	112.26	22.00	111.44

As already noted, the -117.9 dBu interfering contour along the 50, -55, -60, 65- and -70 degree depression angles does not reach any occupied structure.

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	914.2	30.0	11.2	11.5	60.0	33.1	100.1
0.5	100.0	913.3	30.5	9.3	7.9	60.5	32.8	98.4
1.0	99.8	911.3	31.0	7.5	5.1	61.0	32.5	96.7
1.5	99.7	908.1	31.5	5.6	2.9	61.5	32.2	94.8
2.0	99.4	903.9	32.0	3.8	1.3	62.0	31.9	92.8
2.5	99.1	898.4	32.5	2.1	0.4	62.5	31.5	90.8
3.0	98.8	891.9	33.0	0.3	0.0	63.0	31.1	88.7
3.5	98.4	884.3	33.5	1.4	0.2	63.5	30.8	86.5
4.0	97.9	875.7	34.0	3.0	0.8	64.0	30.4	84.2
4.5	97.3	865.9	34.5	4.6	2.0	64.5	29.9	81.9
5.0	96.7	855.2	35.0	6.2	3.5	65.0	29.5	79.5
5.5	96.0	842.7	35.5	7.8	5.5	65.5	29.1	77.2
6.0	95.2	829.2	36.0	9.3	7.9	66.0	28.6	74.8
6.5	94.4	814.9	36.5	10.7	10.5	66.5	28.2	72.5
7.0	93.5	799.7	37.0	12.1	13.5	67.0	27.7	70.0
7.5	92.6	783.6	37.5	13.5	16.7	67.5	27.2	67.6
8.0	91.6	766.9	38.0	14.9	20.2	68.0	26.7	65.1
8.5	90.5	749.4	38.5	16.1	23.8	68.5	26.2	62.7
9.0	89.4	731.2	39.0	17.4	27.7	69.0	25.7	60.2
9.5	88.3	712.5	39.5	18.6	31.6	69.5	25.1	57.8
10.0	87.1	693.1	40.0	19.8	35.7	70.0	24.6	55.3
10.5	85.7	670.8	40.5	20.9	39.8	70.5	24.1	53.3
11.0	84.2	648.2	41.0	21.9	43.9	71.0	23.7	51.2
11.5	82.7	625.3	41.5	22.9	48.1	71.5	23.2	49.2
12.0	81.2	602.3	42.0	23.9	52.2	72.0	22.7	47.2
12.5	79.6	579.0	42.5	24.8	56.4	72.5	22.2	45.2
13.0	78.0	555.7	43.0	25.7	60.4	73.0	21.7	43.2
13.5	76.3	532.4	43.5	26.5	64.4	73.5	21.2	41.3
14.0	74.6	509.1	44.0	27.3	68.3	74.0	20.7	39.3
14.5	72.9	485.8	44.5	28.1	72.1	74.5	20.2	37.4
15.0	71.1	462.7	45.0	28.8	75.8	75.0	19.7	35.5
15.5	69.3	439.1	45.5	29.5	79.3	75.5	19.3	33.9
16.0	67.4	415.8	46.0	30.1	82.7	76.0	18.8	32.4
16.5	65.6	392.9	46.5	30.7	85.9	76.5	18.4	30.8
17.0	63.6	370.3	47.0	31.2	88.9	77.0	17.9	29.3
17.5	61.7	348.1	47.5	31.7	91.8	77.5	17.4	27.8
18.0	59.8	326.5	48.0	32.1	94.4	78.0	17.0	26.4
18.5	57.8	305.3	48.5	32.6	96.9	78.5	16.5	24.9
19.0	55.8	284.7	49.0	32.9	99.2	79.0	16.0	23.5
19.5	53.8	264.7	49.5	33.3	101.2	79.5	15.6	22.1
20.0	51.8	245.3	50.0	33.6	103.1	80.0	15.1	20.8
20.5	49.7	226.1	50.5	33.9	104.8	80.5	14.8	20.0
21.0	47.6	207.5	51.0	34.1	106.3	81.0	14.5	19.3
21.5	45.6	189.8	51.5	34.3	107.6	81.5	14.3	18.6
22.0	43.5	172.8	52.0	34.5	108.7	82.0	14.0	17.8
22.5	41.4	156.7	52.5	34.6	109.6	82.5	13.7	17.1
23.0	39.3	141.3	53.0	34.7	110.3	83.0	13.4	16.4
23.5	37.2	126.8	53.5	34.8	110.8	83.5	13.1	15.7
24.0	35.2	113.0	54.0	34.9	111.1	84.0	12.8	15.0
24.5	33.1	100.1	54.5	34.9	111.2	84.5	12.5	14.4
25.0	31.0	88.1	55.0	34.9	111.1	85.0	12.2	13.7
25.5	29.0	76.8	55.5	34.8	110.7	85.5	12.2	13.6
26.0	26.9	66.3	56.0	34.7	110.2	86.0	12.1	13.4
26.5	24.9	56.7	56.5	34.6	109.4	86.5	12.1	13.3
27.0	22.9	47.9	57.0	34.5	108.5	87.0	12.0	13.2
27.5	20.9	39.9	57.5	34.3	107.5	87.5	11.9	13.0
28.0	18.9	32.7	58.0	34.1	106.3	88.0	11.9	12.9
28.5	17.0	26.3	58.5	33.9	104.9	88.5	11.8	12.8
29.0	15.0	20.6	59.0	33.6	103.5	89.0	11.7	12.6
29.5	13.1	15.7	59.5	33.4	101.8	89.5	11.7	12.5

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **33° 26' 21.7"** North
Longitude **111° 36' 26.6"** West (NAD 83)

These coordinates convert to NAD 27 coordinates of
33° 26' 21.53", North, 111° 36' 24.11" West (NAD 27).

Height of antenna radiation center above mean sea level: **538 meters AMSL**

Number of Evenly Spaced Radials = **8** 0° is referenced to True North

Results

Calculated HAAT = **1 meters**

Antenna Height Above Average Terrain calculated
using FCC 30 second terrain database (continental USA only)

Individual "Radial HAAT" Values, in meters

0°	-30.0 m
45°	-156.0 m
90°	-191.3 m
135°	36.2 m
180°	88.1 m
225°	115.1 m
270°	103.1 m
315°	40.2 m