Engineering Statement for
Digital LPTV Construction Permit K19JV-D Gila River Indian Community, AZ
Facility ID 187709

SUMMARY

Signal Wiz has been retained by the Gila River Telecommunications, Inc. (GRTI) to prepare engineering studies and the engineering portion of FCC Form 301-CA for a Minor Modification to K19JV-D, FCC file number BNPDTL-20100713APL.

Proposed Modification

This application proposes to modify the antenna and its supporting tower structure for three reasons:

1. To increase the signal beamed toward the Gila River Indian Community while reducing the signal beamed away from the Community and toward the city of Phoenix, Arizona by rotating the directional antenna beam heading from 65° to 205° true north.
2. To reflect a change in antenna from a Scala 4DR-16S panel antenna array to a Dielectric DLP-10M low power slot design, and
3. To change the center of radiation from 54.9 meters to 33.1 meters due to a limitation in allowable height for the design of the self-supporting tower at the existing CP transmission location.

The following exhibits were prepared to support this application:

Exhibit E1 - Proposed engineering specification changes
Exhibit E2 - Antenna azimuth and elevation patterns
Exhibit E3 - Map demonstrating the proposed facility coverage contour changes
Exhibit E4 - Results of interference compliance study
Exhibit E5 - Environmental impact and radio frequency radiation (RFR) analysis

DECLARATION OF ENGINEER

The preceding statement and engineering report are true and correct to the best of my knowledge as of August 12, 2014.

SIGNAL WIZ

Gary L. Stigall
Certified Professional Broadcast Engineer

Exhibit E1
Engineering Specifications, K19JV-D

FCC File BNPDTL-20100713APL	Existing CP Parameters	Proposed CP Parameters
Site		
Latitude, North, NAD 27	33° 22' 37.00"	33° 22' 37.00"
Longitude, West, NAD 27	112° 13' 31.40"	112° 13' 31.40"
FAA Study Number	N/A	N/A
Antenna Site Registration Number	N/A	N/A
Emission Characteristics		
Channel	19 Digital	19 Digital
Frequency	500 - 506 MHz	500 - 506 MHz
Emission Characteristics	Stringent	Stringent
Elevations		
Height of Site Above Mean Sea Level (AMSL)	299 m	299 m
Overall Height of Structure Above Ground (AGL)	61 m	36.6 m
Overall Height of Structure Above Mean Sea Level	360 m	335.6 m
Average Terrain	356.9 m	356.9 m
Antenna Center of Radiation Above Ground	54.9 m	33.1 m
Antenna Center of Radiation Above Average Terrain	-3 m	-25.7 m
Antennna Center of Radiation Above Mean Sea Level	353.9 m	331.2 m
RF Transmission Parameters		
Maximum Effective Radiated Power	15 kW	15 kW
Antenna Gain	11.6 dBd	14.05 dBd
Transmission Line Loss	2.0 dB	1.5 dB
Transmitter Power Output	650 W	850 W
Antenna Make and Model	Scala 4DR-16S	Dielectric DLP-10M-19
Antenna Rotation	65°	205°

Exhibit E2A
Table of Relative Fields for Proposed Directional Antenna
Dielectric Model DLP-10M-19

Azimuth	Factory Pattern	K19JV-D Pattern		Azimuth	Factory Pattern	K19JV-D Pattern
	Relative Field	Relative Field			Relative Field	Relative Field
0	0.90	0.20		180	0.39	0.94
10	0.91	0.30		190	0.35	0.92
20	0.93	0.38		200	0.25	0.90
30	0.96	0.38		210	0.15	0.90
40	0.99	0.30		220	0.21	0.92
50	1.00	0.20		230	0.34	0.94
60	0.98	0.15		240	0.48	0.97
70	0.94	0.28		250	0.61	1.00
80	0.87	0.42		260	0.71	0.99
90	0.80	0.55		270	0.80	0.96
100	0.71	0.66		280	0.87	0.91
110	0.61	0.76		290	0.94	0.84
120	0.48	0.84		300	0.98	0.76
130	0.34	0.91		310	1.00	0.66
140	0.21	0.96		320	0.99	0.55
150	0.15	0.99		330	0.96	0.42
160	0.25	1.00		340	0.93	0.28
170	0.35	0.97		350	0.91	0.15
				149	(null) 0.15	
				211	(null) 0.15	
				352		(null) 0.15
				58		(null) 0.15

Exhibit E2B
Graph of Relative Azimuth Field for Proposed Directional Antenna
Dielectric Model DLP-10M-19

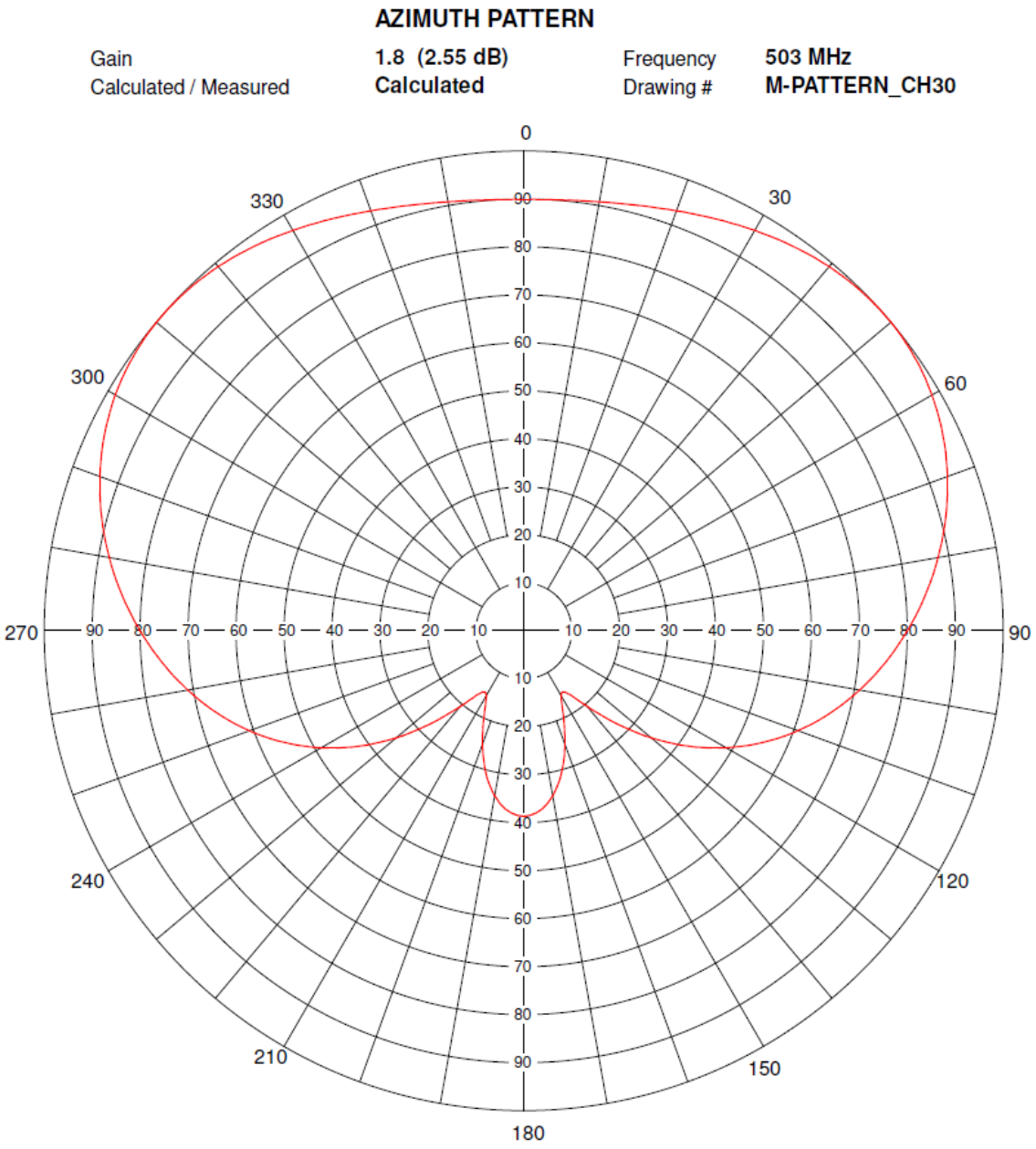

Exhibit E2C
Graph of Relative Elevation Field for Proposed Directional Antenna
Dielectric Model DLP-10M-19

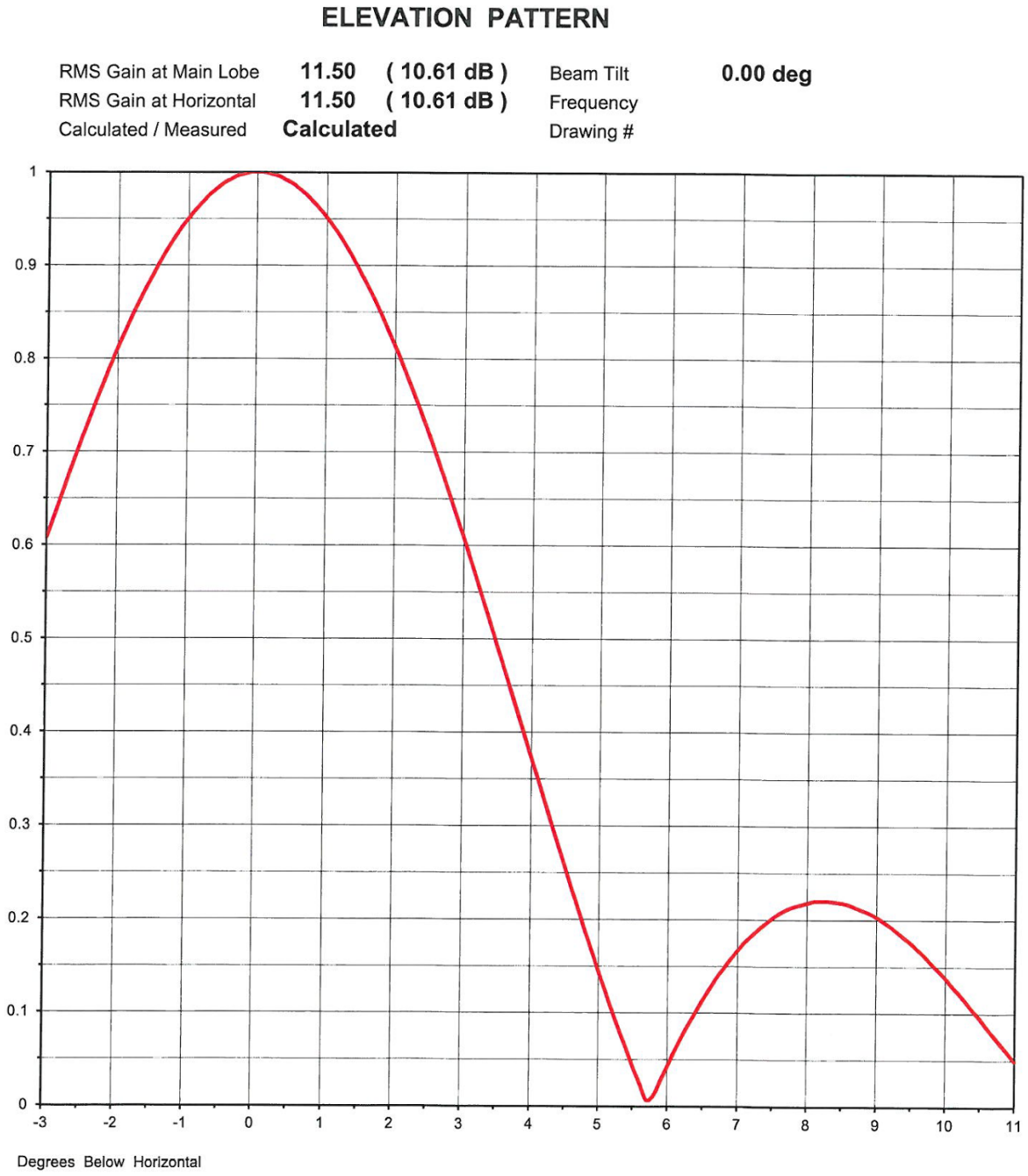

Exhibit E3 - K19JV-D Permitted and Proposed 51DBU Signal Contours