

Engineering Statement in support of  
FCC FORM 349  
APPLICATION FOR AUTHORITY TO  
CONSTRUCT OR MAKE CHANGES  
IN AN FM TRANSLATOR  
(For Minor Change to a Licensed Facility)  
K255AQ 255FX, Facility ID 144136

**Introduction:**

This is an application by Rocket Radio Corporation (the Applicant) for a minor change to K255AQ 255FX, Facility ID 144136.

The applicant proposes the following changes:

- Move the site to Mount Ord.
- Change the antenna to a composite of two Scala CL-FMs, horizontally polarized. See the antenna exhibit for additional details

The proposed changes are minor since there is no change in frequency and the 60 dBu contours of the licensed and proposed facilities overlap. See Exhibit 1.

The proposal's 100dBu interfering contour overlaps the service contour of second-adjacent station KMZQ-FM. The proposal's 54dBu interfering contour overlaps the service contour of first-adjacent station KPKX. There are no occupied buildings, paved roads or population within the areas of overlap.

This application was prepared using FCC 30-arc-second terrain data.

### Section III-A Engineering Data:

#### Tech Box Data:

1. Channel: 255
2. Primary Station: Facility ID 55425, Callsign KNRJ, Payson, Arizona Channel 266C1
3. Delivery Method: Off Air
4. Antenna Location Coordinates: 33° 54' 32" N (NAD-27)  
111° 24' 53" W
5. Antenna Structure Registration Number: N/A
6. Antenna Location Site Elevation: 2181 meters AMSL
7. Overall Tower Height: 27 meters AGL
8. Height of Radiation Center: 15 meters (H) - meters (V) AGL
9. Effective Radiated Power: 0.250 kW (H) - kW (V)
10. Transmitting Antenna: Custom Pattern Directional, SCA 2CL-FM @ 30-degrees.
  - a) The antenna consists of 2 CL-FM log periodic elements mounted with horizontal polarization and separated vertically by 1/2 wavelengths. The upper antenna is to be mounted 1/4-wavelengths forward of the lower antenna. The antenna is fed with a custom harness as specified by Kathrein-Scala.
  - b) The antenna manufacturer has specified antenna gain parameters less than -40dB. The antenna envelope specified in this application limits the gain to no less than -39.9dB.
11. Booster or Fill-in within protected contour: Yes.
12. Interference: No. Overlap with KMZQ-FM and KPKX.
  - a) Contour Overlap Requirements: Checked.
  - b) TV Channel 6 Protection: Not Checked.
13. Unattended Operation: Yes
14. Multiple Translators: Yes
15. NEPA, Yes.
  - a) Operation of this facility will not have a significant environmental impact. The existing site is located on a remote mountain top. To the best knowledge of the Applicant:
    1. The structure is not located in an officially designated wilderness area or wildlife preserve, nor does it threaten the existence or habitat of endangered species.
    2. The proposed changes will not affect districts, sites, buildings, structures or objects significant in American history, architecture, engineering or culture that are listed in the National Register of Historic Places, or eligible for listing.
    3. The site is not located in a flood plain. Nothing is proposed that would require significant changes in surface features such as wetland fill, deforestation or water diversion.
    4. The existing structure does not require markings or lights in accordance with FAA requirements.
  - b) The Applicant will cooperate with all site users, managers and owners with regard to the cessation of operation or the reduction of operating power, whenever it is necessary to comply with the FCC Regulations and Guidelines on Human Exposure to Non-Ionizing RF Radiation.
  - c) The proposed site is in compliance with permissible exposure requirements based on calculations using RF Worksheet #1. Based on this information the proposed facility is in compliance with 47 C.R.R. Section 1.1306 with regards to radio-frequency electromagnetic exposure.

## Antenna Pattern (Azimuth)

rfSoftware, Inc.

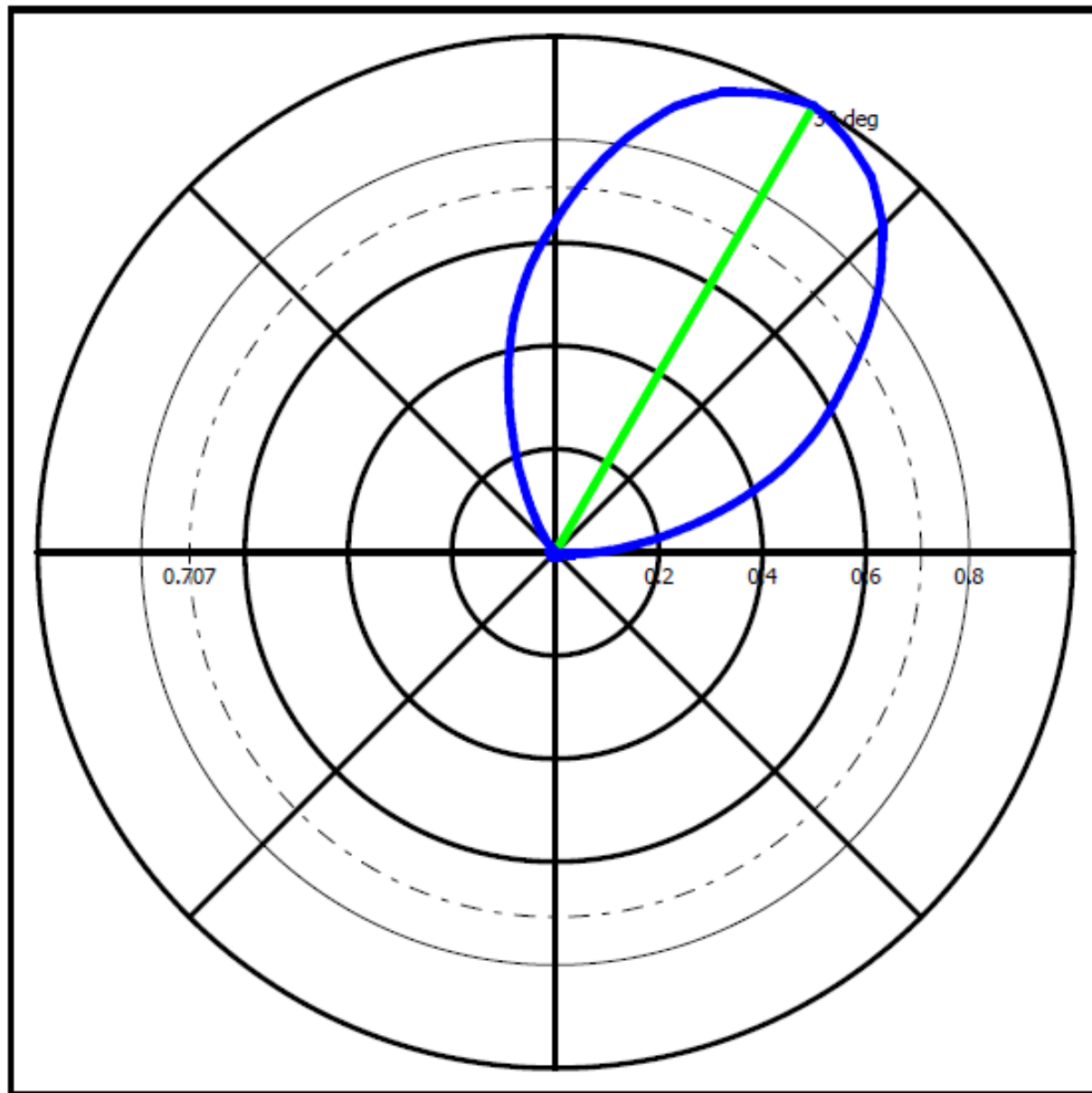
Job: K255AQ\_05Oct2011.fmj

Description: 2CL-FM HH Increase F/B

rfInvestigator Version 3.5.19

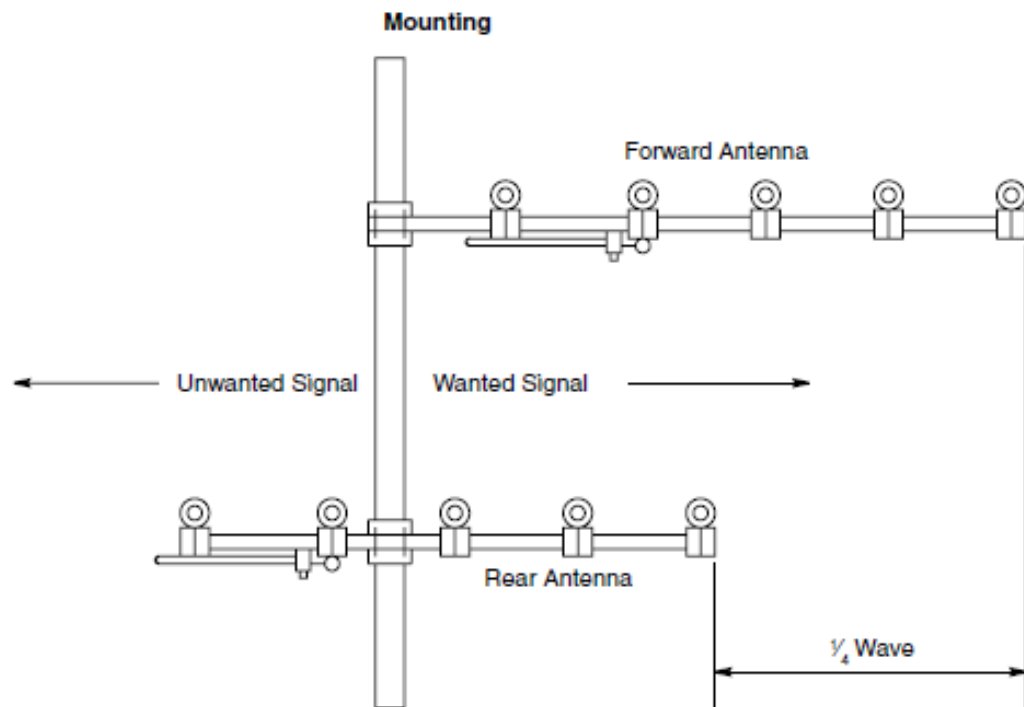
Pattern RMS = 0.391

Date: 10/10/2011 12:01:45 PM

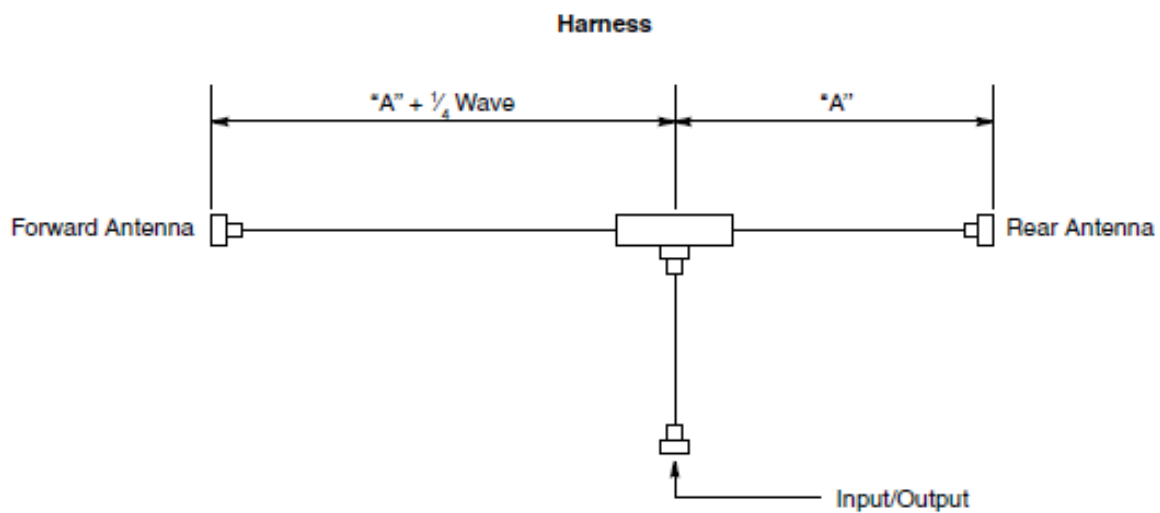


Degree	Field	Degree	Field	Degree	Field	Degree	Field	Degree	Field	Degree	Field
000	0.641	060	0.641	120	0.010	180	0.010	240	0.010	300	0.010
010	0.819	070	0.462	130	0.010	190	0.010	250	0.010	310	0.010
020	0.950	080	0.240	140	0.010	200	0.010	260	0.010	320	0.017
030	1.000	090	0.079	150	0.010	210	0.010	270	0.010	330	0.079
040	0.950	100	0.017	160	0.010	220	0.010	280	0.010	340	0.240
050	0.819	110	0.010	170	0.010	230	0.010	290	0.010	350	0.462

# Antenna Exhibit

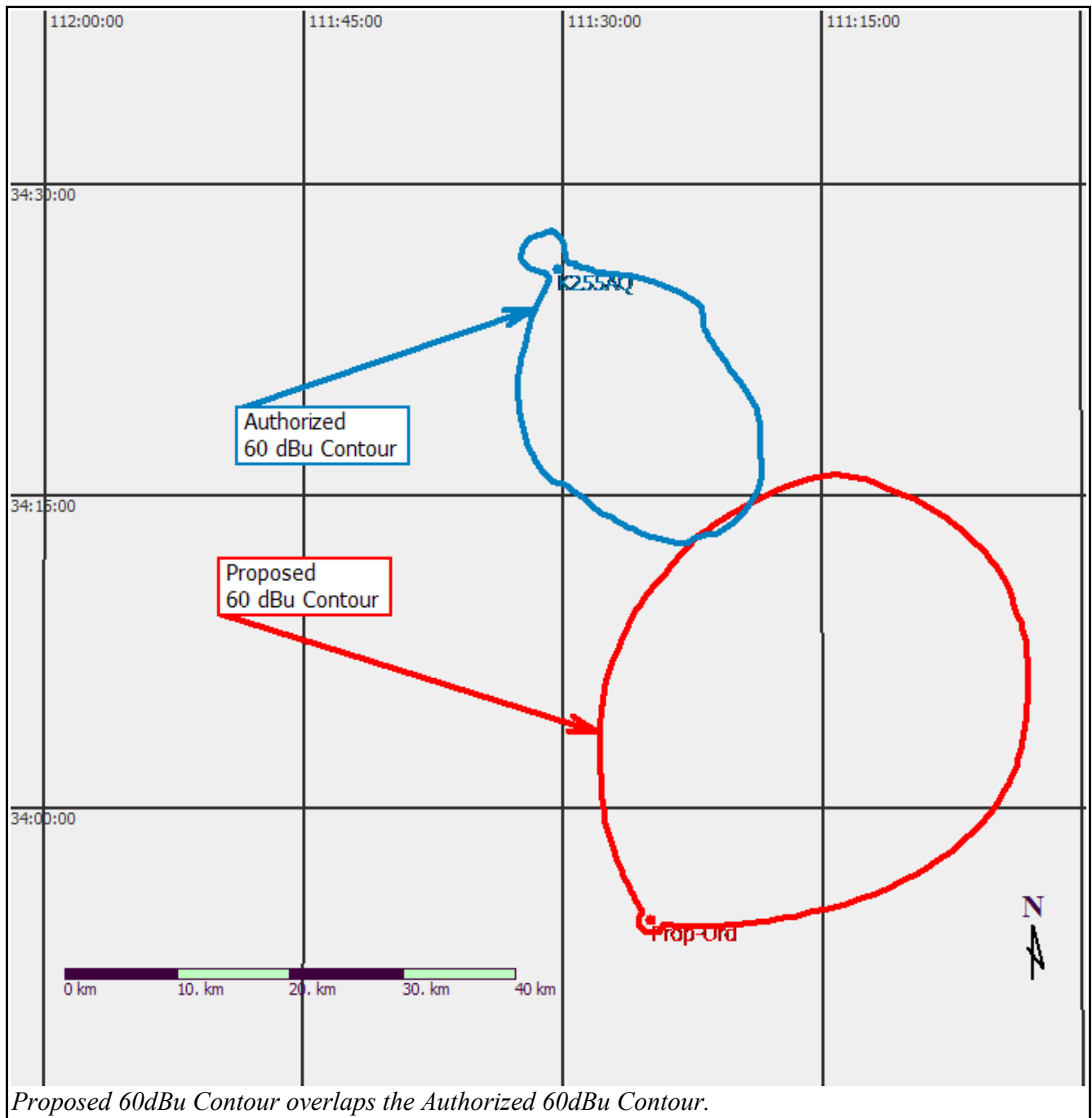


Consult Kathrein Scala for specific mounting information.

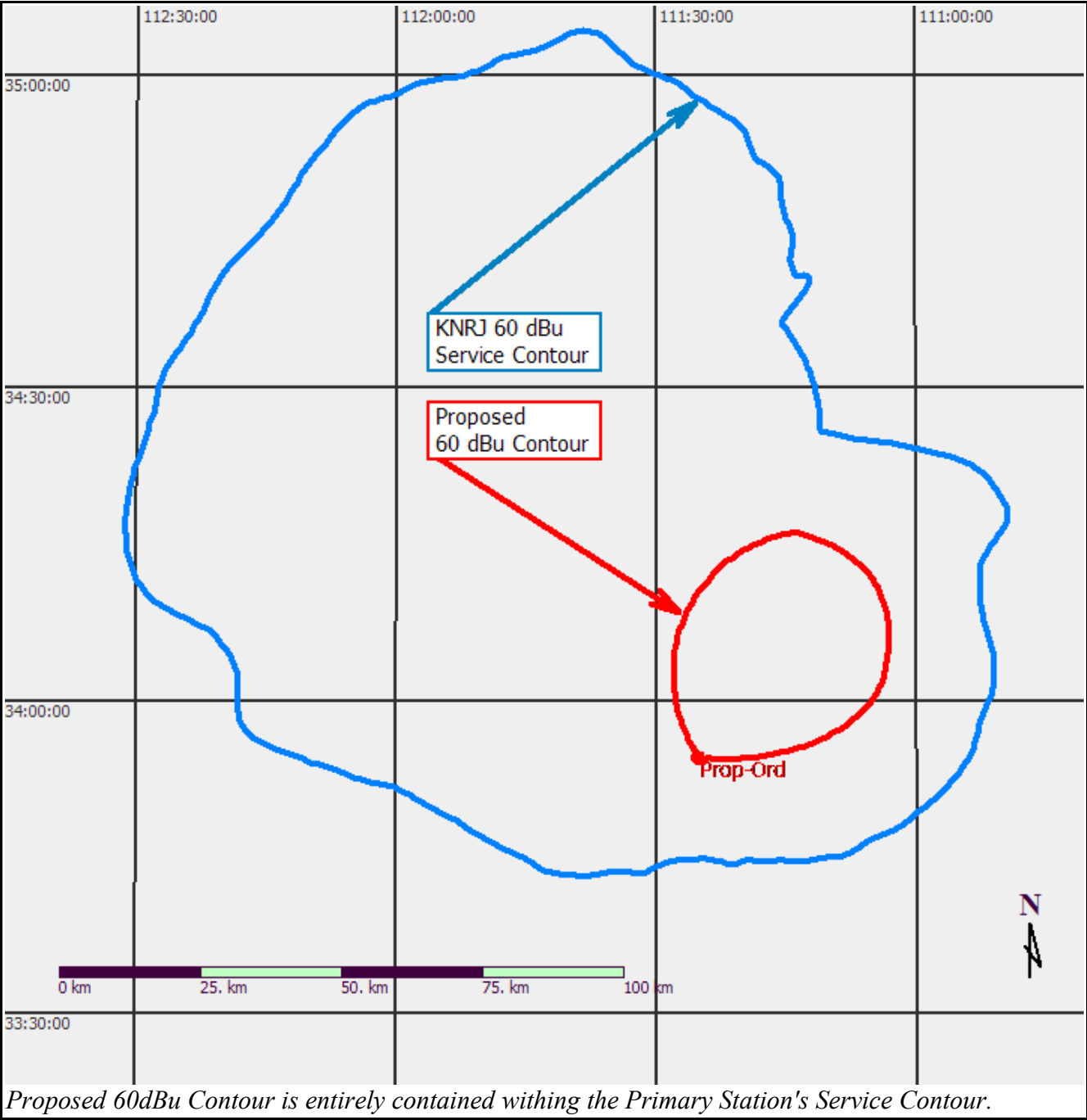


Mounting Configuration Design by Kathrein Scala

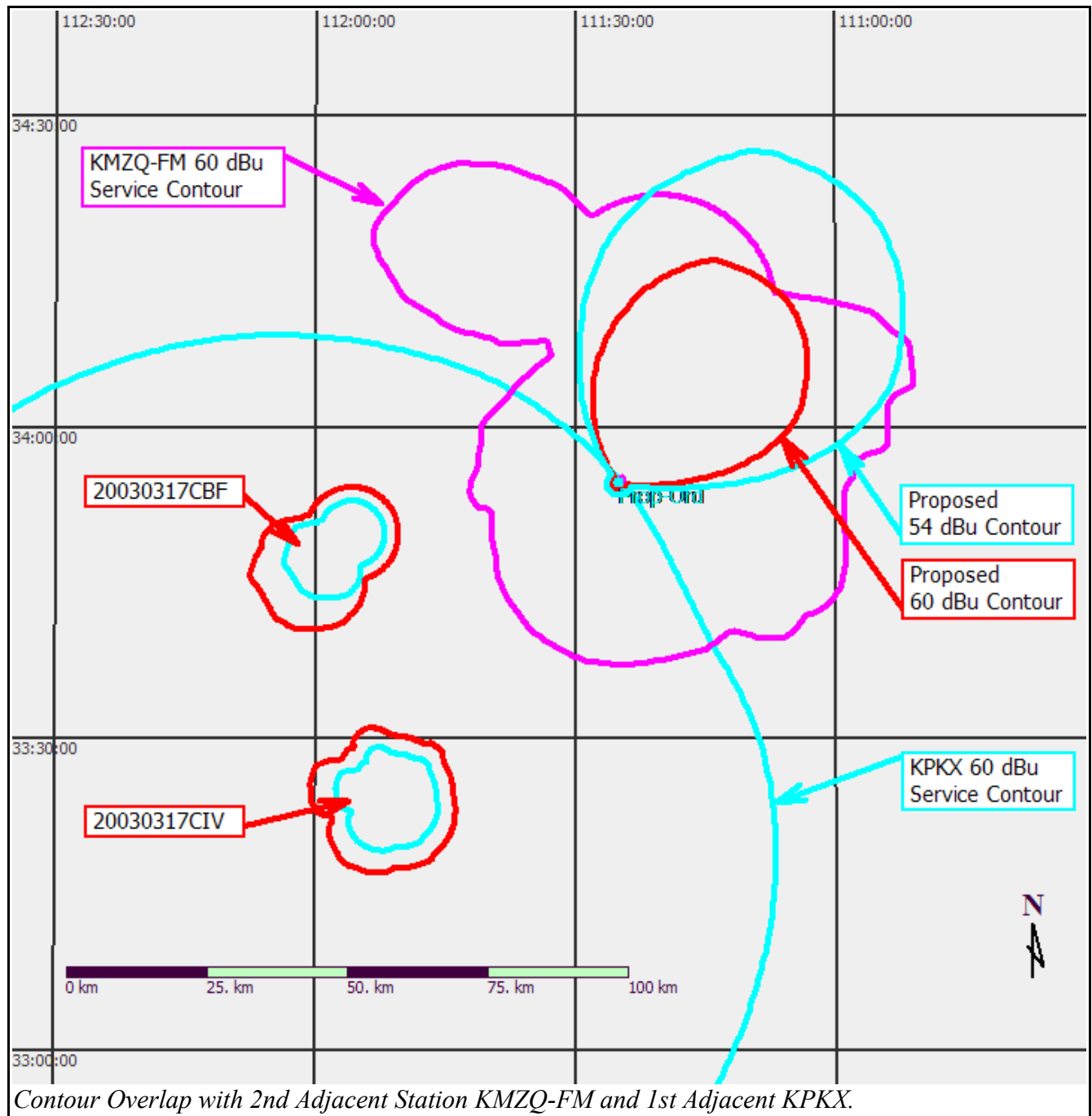
## Exhibit 1



# Fill-In Contour Exhibit

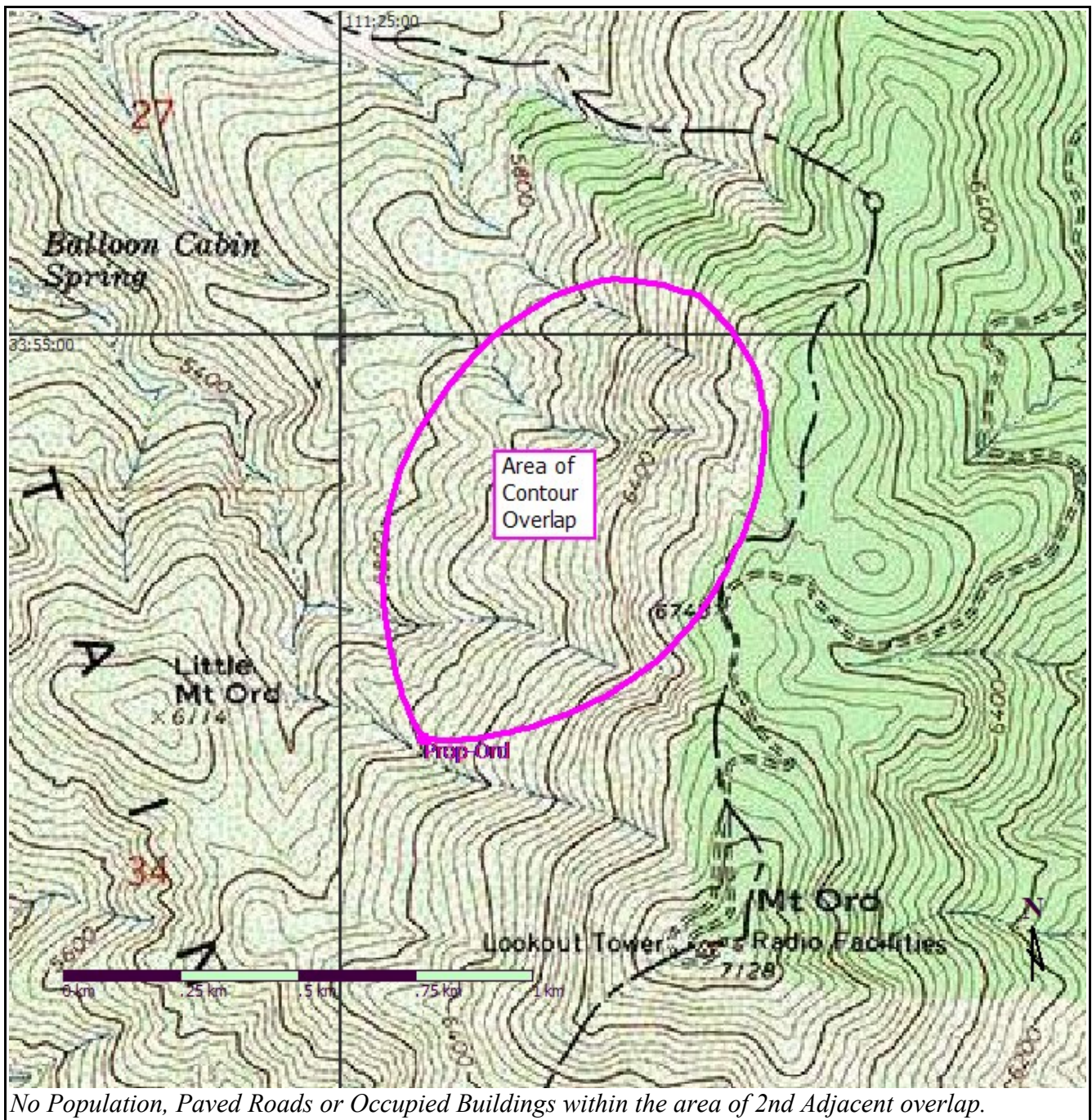


## Contour Overlap Exhibit



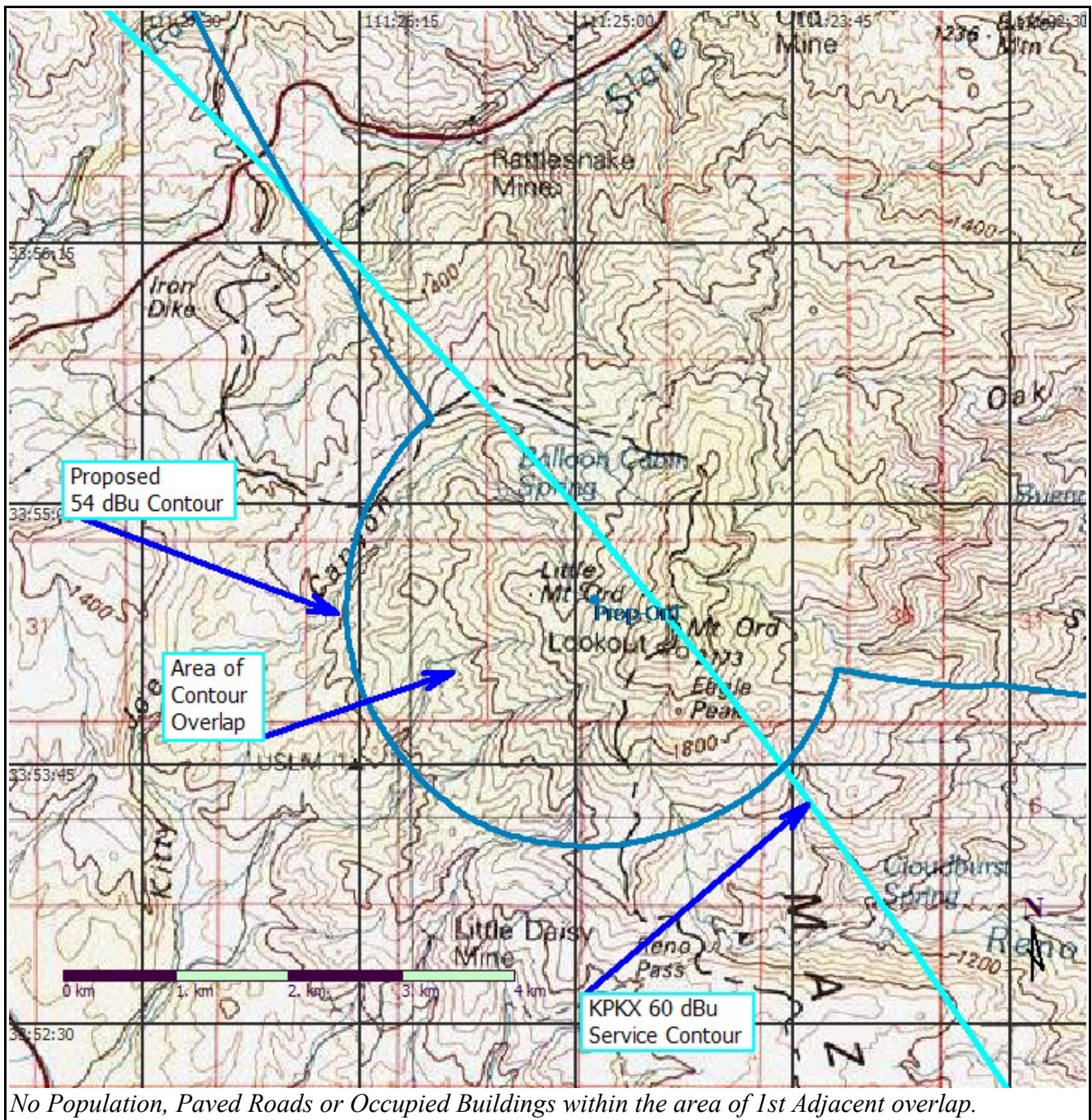


## Contour Overlap Exhibit





## Contour Overlap Exhibit



## RFR Exhibit

### RF Worksheet #1 - FM

Ref Line #			
(1)	Rad Center Height	15.000	Meters AGL
(3)	Building Height	0.000	Meters AGL
(4)	Clearance Height	15.000	Meters AGL
(5)	Head Height	13.000	Meters AGL
(6)	Horizontal ERP	0.250	kW
(7)	Vertical ERP	0.000	kW
(8)	Total Power	0.250	kW
(9)	Power x 33.41	8.353	
(10)	line 5 squared	169.000	
(11)	Line-9 / Line-10	0.049	
(12)	Percent Exposure	4.942	%