

**KRFM**  
**CONTINGENT APPLICATION**  
**NON-ADJACENT SAME CLASS**  
**CHANNEL CHANGE TO 253C0**  
**WITH KIKO-FM SAME CLASS CHANGE**  
**FROM 247C2 TO 243C2**

This technical report has been developed in support of an application for a minor modification to KRFM(FM) changing channel from 243C0 to 253C0.

The NED 30 meter terrain database is used throughout. The following exhibits are provided for the form 301 application:

- E1 KRFM spacing study
- E1A Interference plot to KMVP-FM maximum class
- E2 70 dBu service to Show Low, AZ
- E3 Fully spaced reference point channel study
- E4 Reference point 70 dBu coverage
- E5 Reference point line of sight
- E6 Reference point topographic map
- E7 ASR and NADCON conversion

**Allocation analysis:**

The proposed facility is fully spaced with the exception of KMVP-FM on 254C to which §73.215(e) processing is elected. Exhibit E-2 demonstrates that the proposed facility will place a 70 dBu contour over one hundred percent (100) of the Show Low, AZ 2010 boundaries.

**253C0 fully-spaced reference point:**

N 34-12-44 W 109-51-40 (NAD 27).

A channel study for the reference point, which is located on private land, is provided as E3 and a uniform maximum class C0 70 dBu coverage plot demonstrating 100% coverage of the community as E4. A terrain plot from the reference point shows a clear line of site to Show Low (E5), and a topographic map of the reference point is provided as E6.

**HAAT calculation demonstrates that KRFM will be a C0 facility:**

N. Lat. = 34-12-20 W. Lng. = 109-56-26

HAAT and Distance to Contour, V-Soft 3-16 km, 131 pts Method - NED 30 Meter

Az. AV EL HAAT ERP kW 60-F5

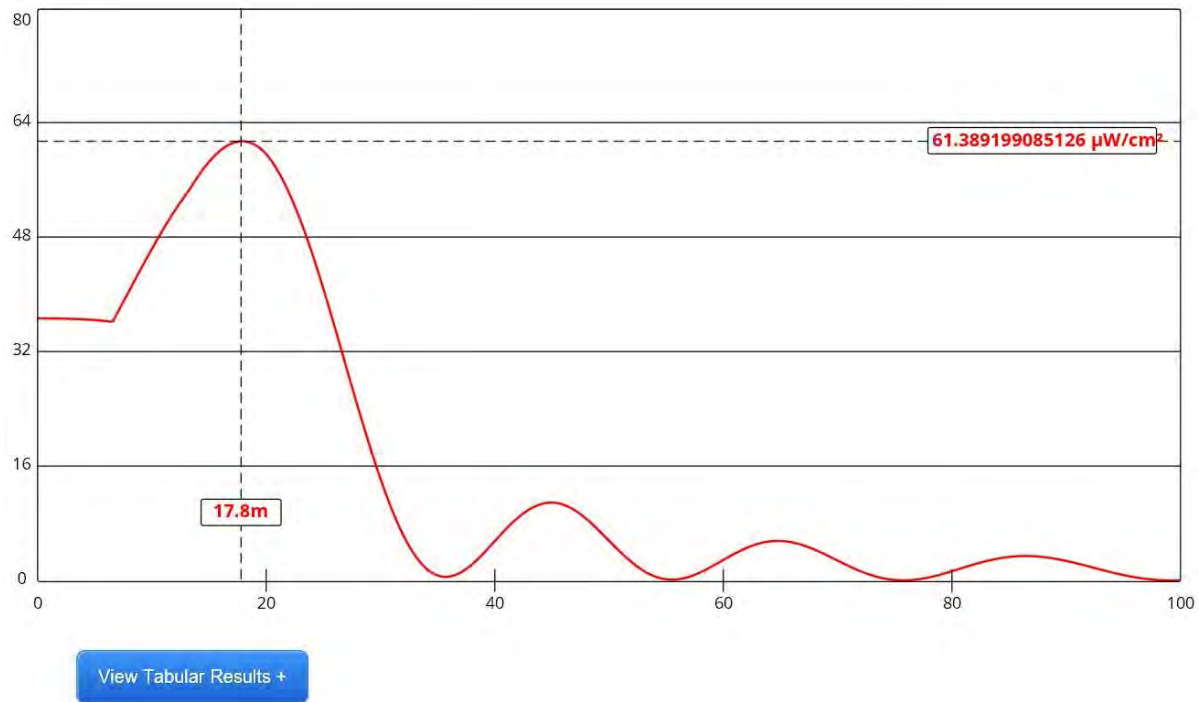
000	1956.8	421.2	100.0000	81.33
030	2002.9	375.1	100.0000	77.92
060	2088.4	289.6	100.0000	71.56
090	2214.4	163.6	100.0000	60.16
120	2242.4	135.6	100.0000	56.49
150	2214.9	163.1	100.0000	60.09
180	2135.4	242.6	100.0000	67.63
210	2012.5	365.5	100.0000	77.22
240	1980.3	397.7	100.0000	79.59
270	2036.9	341.1	100.0000	75.43
300	1961.9	416.1	100.0000	80.95
330	1968.8	409.2	100.0000	80.44

Ave El= 2067.96 M **HAAT= 310.04 M\*** AMSL= 2378

\* Maximum C1 HAAT is 299 meters.

**Antenna and RF calculation:**

The proposed KRFM facility will utilize the existing PSI FHR-10C full wavelength spaced, circularly polarized antenna mounted at 77 meters AGL. The RF contribution of the facility was calculated using the Commission's FMModel program to be 61.4  $\mu\text{W}/\text{cm}^2$  or 30.75% of the maximum permissible for general public exposure and 6.14% of the permissible occupational exposure level at this communications site. Furthermore, the RF level will not change from the existing licensed level. It is concluded that the proposed facility complies with Commission RFR requirements.



Channel Selection	Channel 253 (98.5 MHz) ▼		
Antenna Type +	EPA Type 3: Opposed U Dipole ▼		
Height (m)	77	Distance (m)	100
ERP-H (W)	100000	ERP-V (W)	100000
Num of Elements	10	Element Spacing ( $\lambda$ )	1
Num of Points	500	Apply	

### **Conclusion:**

It is concluded that the proposed KRFM minor modification is in full compliance with Commission rules and policies.

August 6, 2016

Charles M. Anderson  
1519 Euclid Avenue  
Bowling Green, KY 42103  
270-782-0246

## E1 CHANNEL STUDY

REFERENCE		DISPLAY DATES
34 12 20.0 N.	CLASS = C0 Int = C	DATA 08-06-16
109 56 26.0 W.	Current Spacings to 3rd Adj.	SEARCH 08-06-16
----- Channel 253 - 98.5 MHz -----		

Call	Channel	Location		Azi	Dist	FCC	Margin
KMVP-FM	LIC 254C	Phoenix	AZ	244.3	219.18	219.5	-0.32
KKFR	LIC-N 252C	Mayer	AZ	271.5	223.61	219.5	4.1
AL5410	RSV-A 253A	Vail	AZ	194.5	260.77	214.5	46.3
R10905	ADD 253A	Corona De Tucson	AZ	194.5	260.77	214.5	46.3
R10905	DEL 253A	Vail	AZ	194.5	260.77	214.5	46.3
KRDX	LIC-D 253A	Vail	AZ	194.5	260.77	214.5	46.3

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Reference station has protected zone issue: Mexico  
RSV-R = reserved - needs protection, RSV-A = allocation  
All separation margins include rounding

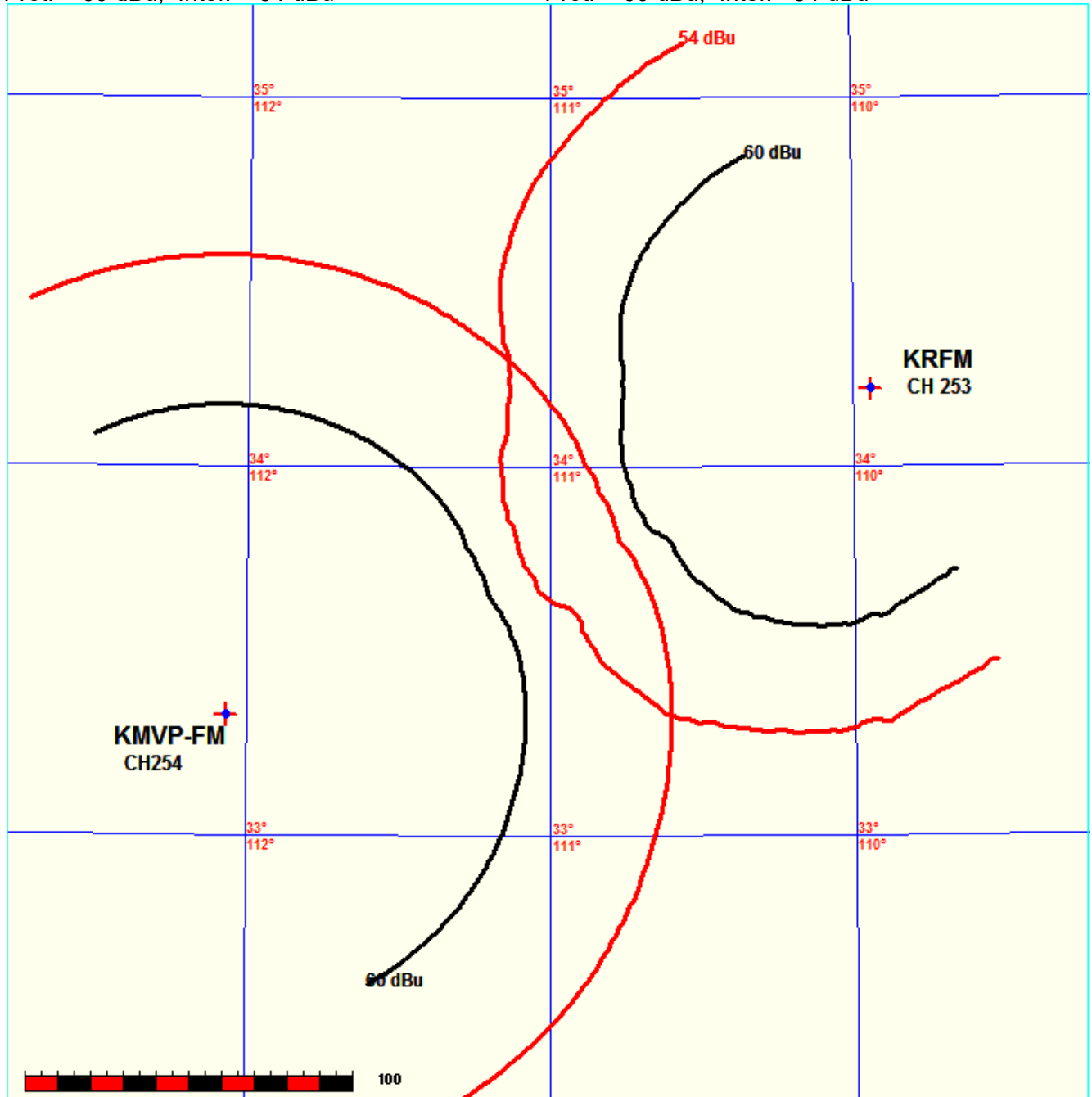
## E1A KRFM 253CO & KMVP-FM INTERFERENCE PLOT

### KMVP-FM MAXIMUM CLASS

FMCommander Single Allocation Study - 08-06-2016 - NED 30 Meter  
KRFM's Overlaps (In= 8.28 km, Out= 13.25 km)

KRFM CH 253 C0 73.215 N  
Lat= 34 12 20.0, Lng= 109 56 26.0  
100.0 kW 310.0 m HAAT, 2376.1 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

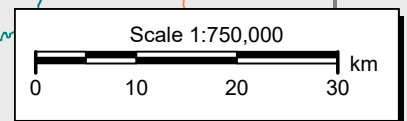
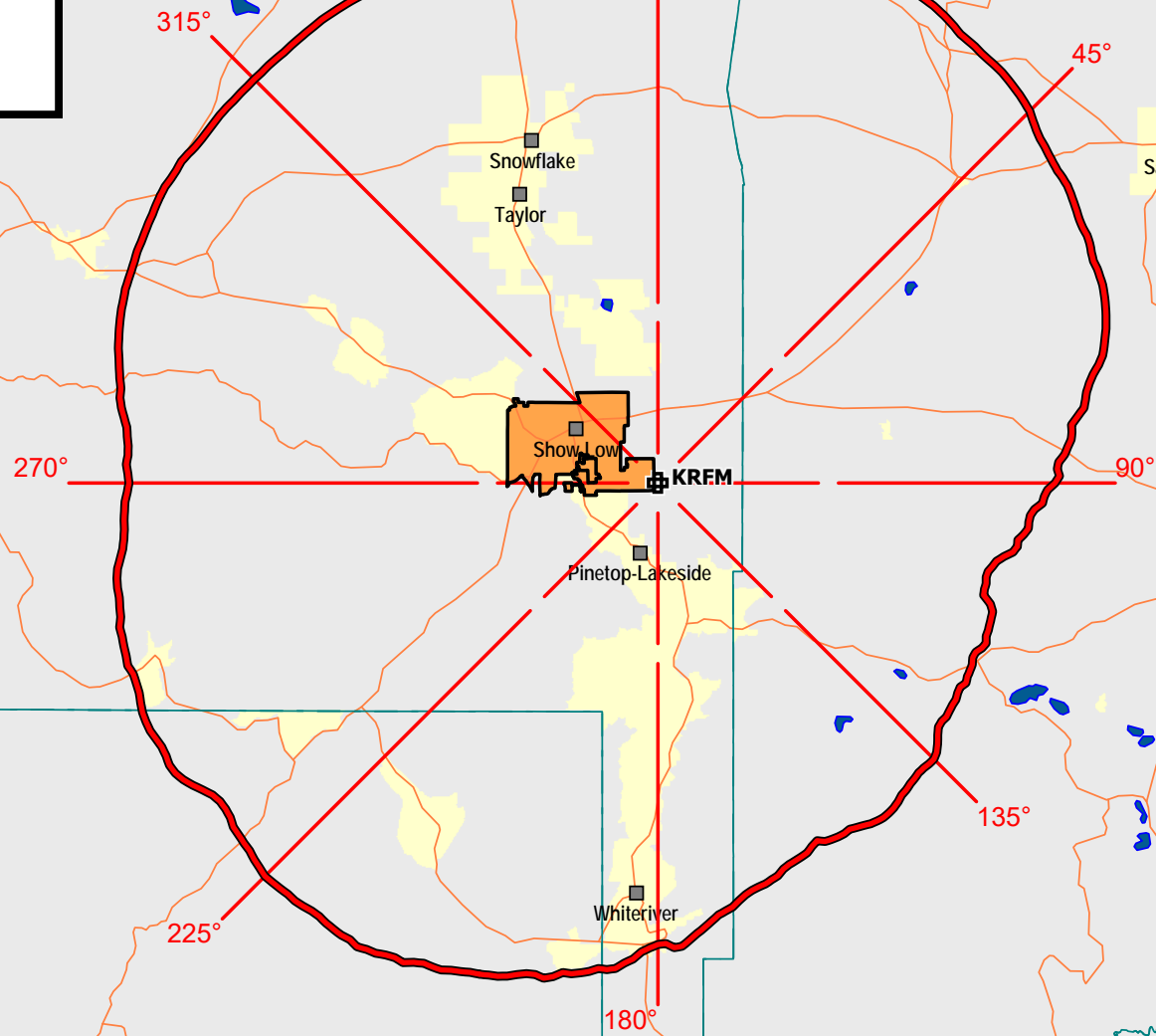
KMVP-FM^ CH 254 C BMLH20040707ABN  
Lat= 33 19 58.0, Lng= 112 03 48.0  
Max Cls: 100.0 kW 600 m HAAT, 966 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



KRFM  
BMLH20120917ACR  
Latitude: 34-12-20 N  
Longitude: 109-56-26 W  
ERP: 100.00 kW  
Channel: 253  
Frequency: 98.5 MHz  
AMSL Height: 2378.0 m  
Elevation: 2301.0 m  
Horiz. Pattern: Omni

## E2 70 DBU CONTOUR

70 DBU



Anderson Communications, LLC

V-Soft Communications LLC ©

# E3 KRFM REFERENCE POINT

REFERENCE		DISPLAY DATES
34 12 44.0 N.	CLASS = C0 Int = C	DATA 08-06-16
109 51 40.0 W.	Current Spacings to 3rd Adj.	SEARCH 08-07-16
----- Channel 253 - 98.5 MHz -----		

Call	Channel	Location		Azi	Dist	FCC	Margin
-----	-----	-----	-----	-----	-----	-----	-----
KMVP-FM	LIC 254C	Phoenix	AZ	245.0	226.11	219.5	6.6
KKFR	LIC-N 252C	Mayer	AZ	271.3	230.91	219.5	11.4
KRDX	LIC-D 253A	Vail	AZ	196.0	263.42	214.5	48.9
R10905	ADD 253A	Corona De Tucson	AZ	196.0	263.42	214.5	48.9
AL5410	RSV-A 253A	Vail	AZ	196.0	263.42	214.5	48.9
R10905	DEL 253A	Vail	AZ	196.0	263.42	214.5	48.9

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Reference station has protected zone issue: Mexico  
 RSV-R = reserved - needs protection, RSV-A = allocation  
 All separation margins include rounding

# EXHIBIT E4

## 253C0 REFERENCE POINT 70 DBU

### KRFM REF.

Latitude: 34-12-44 N  
Longitude: 109-51-40 W  
Channel: 253  
Frequency: 98.5 MHz

MAXIMUM CLASS C0 70 DBU = 59 KM

SHOW LOW 2010 BOUNDARIES

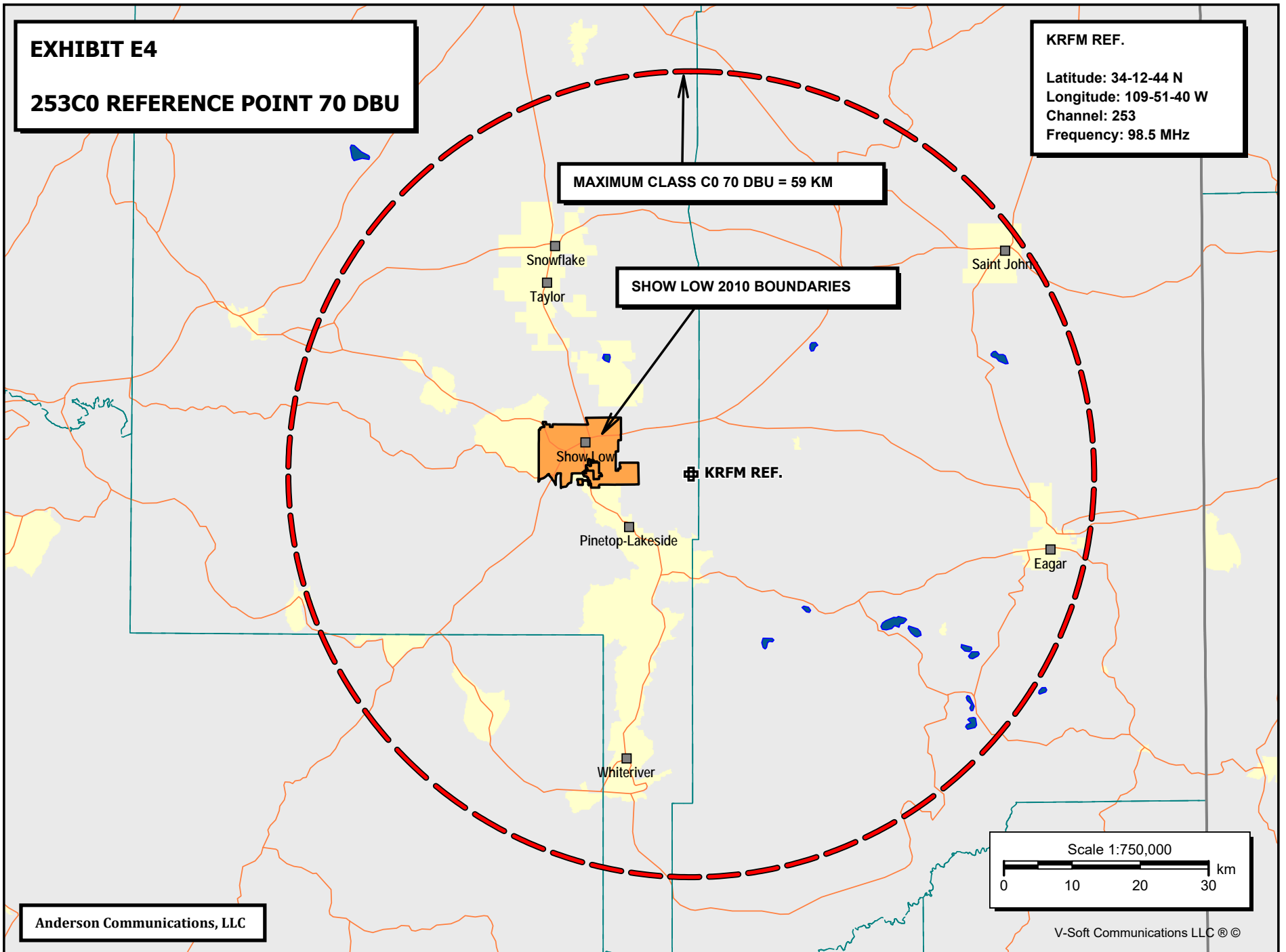
KRFM REF.

Scale 1:750,000

0 10 20 30 km

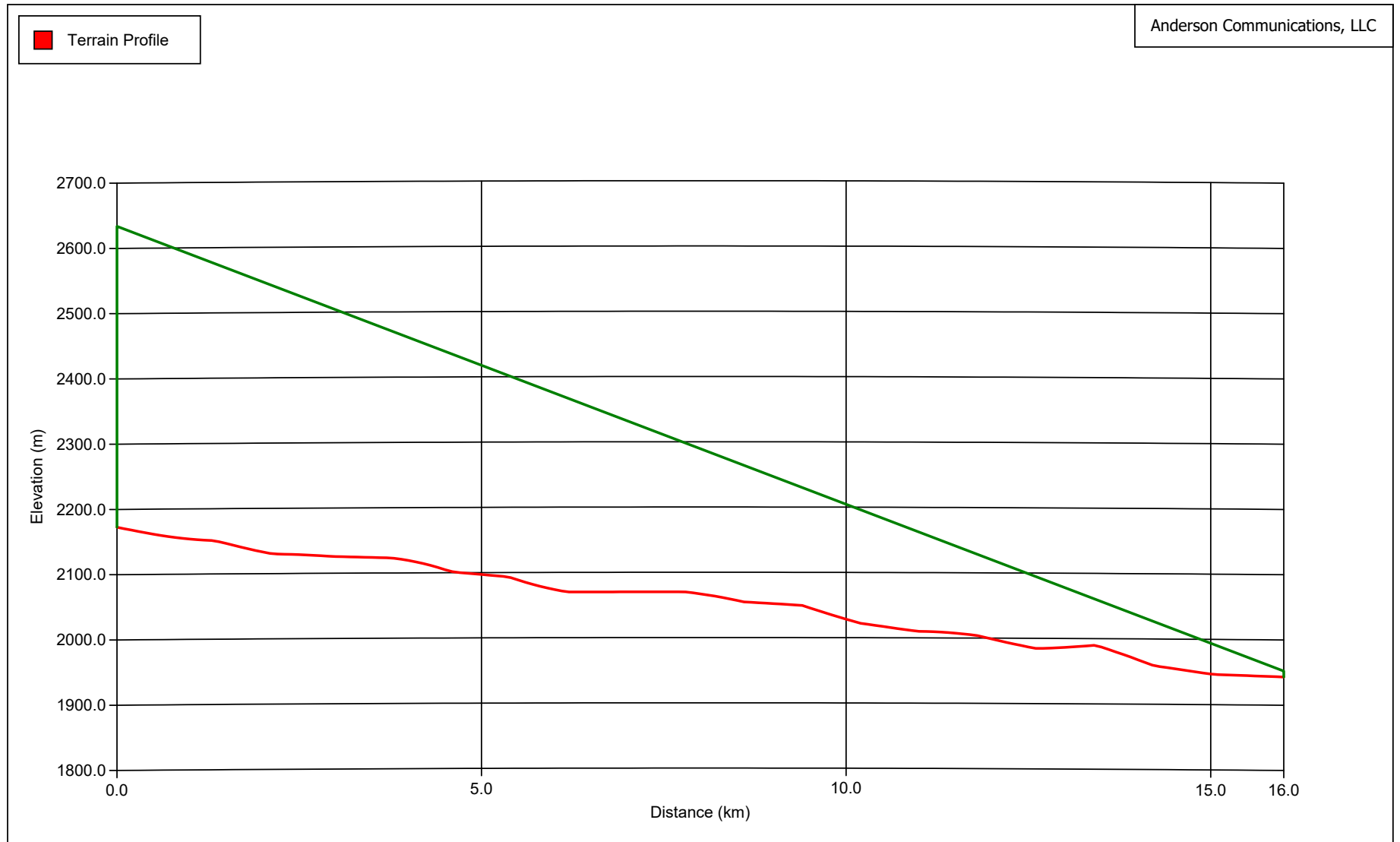
Anderson Communications, LLC

V-Soft Communications LLC ©





## E5 TERRAIN PROFILE FROM REFERENCE POINT TO SHOW LOW, AZ

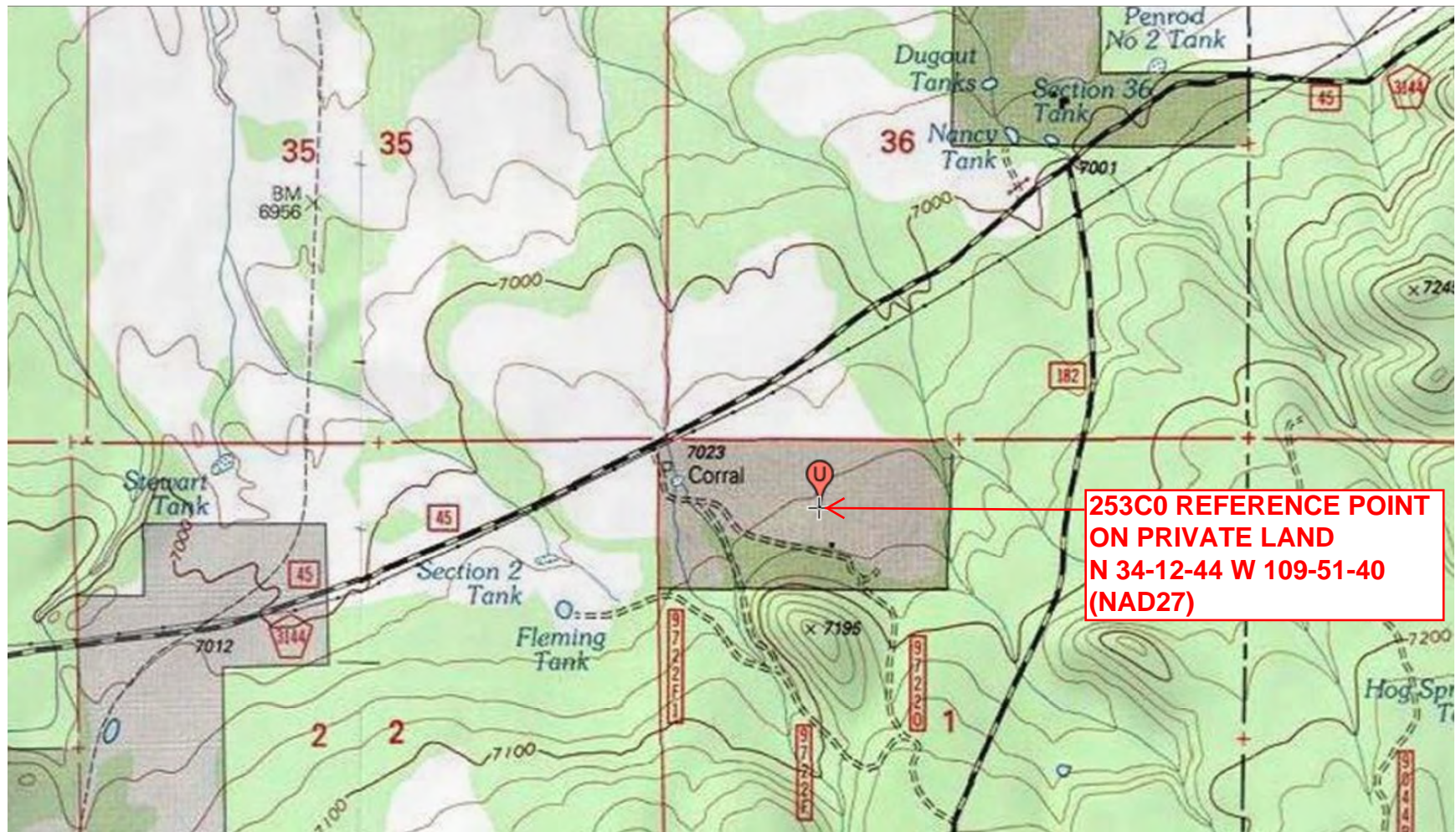


Start Latitude: 34-12-44 N  
Start Longitude: 109-51-40 W

End Latitude: 34-15-20.22 N  
End Longitude: 110-01-36.23 W

Distance: 16.0 km  
Bearing: 287.55 deg

## E6 TOPOGRAPHIC MAP OF REFERENCE POINT



# E7 Registration 1005701

 [Map Registration](#)

## Registration Detail

Reg Number	1005701	Status	Constructed
File Number	A0717184	Constructed	06/01/1983
EMI	No	Dismantled	
NEPA	No		

## Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

### Location (in NAD83 Coordinates)

Lat/Long	34-12-20.0 N 109-56-28.0 W	Address	PORTER MOUNTAIN US FOREST SVC 5 MI SE
City, State	SHOW LOW , AZ		
Zip	85901	County	NAVAJO
Center of AM Array		Position of Tower in Array	

### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
2301.2	91.1
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
2392.3	90.2

### Painting and Lighting Specifications

FCC Paragraphs 1, 3, 11, 21

### FAA Notification

FAA Study	FAA Issue Date
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### Owner & Contact Information

FRN	0020652962	Owner Entity Type	
Assignor FRN	0020662557	Assignor ID	L01622803

### Owner

Petracom of Holbrook LLC	P: (928)368-8100
Attention To: Hank Ash	F:
1838 West Commerce Drive, Suite A	E:
Lakeside , AZ 85929	

### Contact

Woodworth , Gregory M Mr	P: (928)537-2345
P.O. Box P.O. Box 970	F:
Show Low , AZ 85902	E: woodworth_mike@hotmail.com

### Last Action Status

Status	Constructed	Received	03/08/2011
Purpose	Change Owner	Entered	03/08/2011
Mode	Interactive		

### Related Applications

03/08/2011	A0717184	- Change Owner (OC)
10/28/1996	A0006706	- New (NE)

Comments

Comments

12/31/1996      CORRECTED SUPPORT & OVERALL STRUCTURE HEIGHTS, SUBMITTED AS AMSL. CLEARED STRUCTURE BASED ON OLD TOWER FILE RECORD 19923, 82-AWP-862-OE.

History

Date	Event
03/09/2011	Registration Printed
03/09/2011	Change of Ownership Letter Sent
03/08/2011	Change of Ownership Received
All History (4)	

Automated Letters

03/09/2011	Authorization, Reference
03/09/2011	Ownership Change, Reference 680959

CLOSE WINDOW

# Output from NADCON for station KRFM

North American Datum Conversion

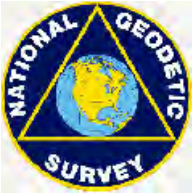
NAD 83 to NAD 27

NADCON Program Version 2.11

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Transformation #: 1                      Region: Conus

	Latitude	Longitude
NAD 27 datum values:	34 12 19.84564	109 56 25.61477
NAD 83 datum values:	34 12 20.00000	109 56 28.00000
NAD 27 - NAD 83 shift values:	-0.15436	-2.38523(secs.)
	-4.756	-61.063 (meters)
Magnitude of total shift:		61.248(meters)



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