

CITY OF LICENSE
CALL LETTERS
PREPARED FOR
VERSION
JOB

Seven Oaks, OR
K232EM
Community Media Assistance Project
1.0
115037

CONSOLIDATED

ENGINEERING EXHIBIT

FCC Form 349 - Section III-a - Engineering

ENGINEERING STATEMENT
MINOR-CHANGE TO K232EM, SEVEN OAKS, OR
CHANGING LOCATION, HEIGHT, ERP, PATTERN AND CHANNEL
Community Media Assistance Project

SUMMARY

Community Media Assistance Project (CMAP), hereby submits a proposed minor change to FM translator K232EM, Seven Oaks, OR. A change in the location to a developed tower at Roxy Ann Peak, near Medford, is proposed. The antenna height, pattern and ERP would also change. The frequency would also change one channel to Ch231. Finally, a change in the Community of License is being requested, to better reflect the actual area to be served.

The translator would continue to rebroadcast KSKQ (FM), Ashland, OR. **Exhibit 10** shows the fill-in status of this proposal.

Both CMAP, and the owner of KSKQ (Multicultural Association of Southern Oregon), are non-profit entities operating the stations on a non-commercial basis.

The antenna is 5 meters below the nearest existing directional broadcast antenna (K243AF), which is far greater than 1 wavelength (2.9-3.4m) - the normal distance required by antenna manufacturers to avoid potential pattern distortion.

Exhibit 10
Proposed K232EM 60dBu
vs Primary Station KSKQ, Ashland, OR 60dBu
-showing fill-in status-

Brown Broadcast Services, Inc.
Job: K232EM Roxy Ann Final Oct 2016.fmj
Master Database: 2016_Oct_15.fmd
Lat: N42:21:12 Lon: W122:47:08 NAD-27 (at prop. XLTR site)
Scale: 1:450000
Channel: 231 Class: DX

rfInvestigator Version 3.8.16
by rfSoftware, Inc.
Date: 10/15/2016 11:19:26 PM

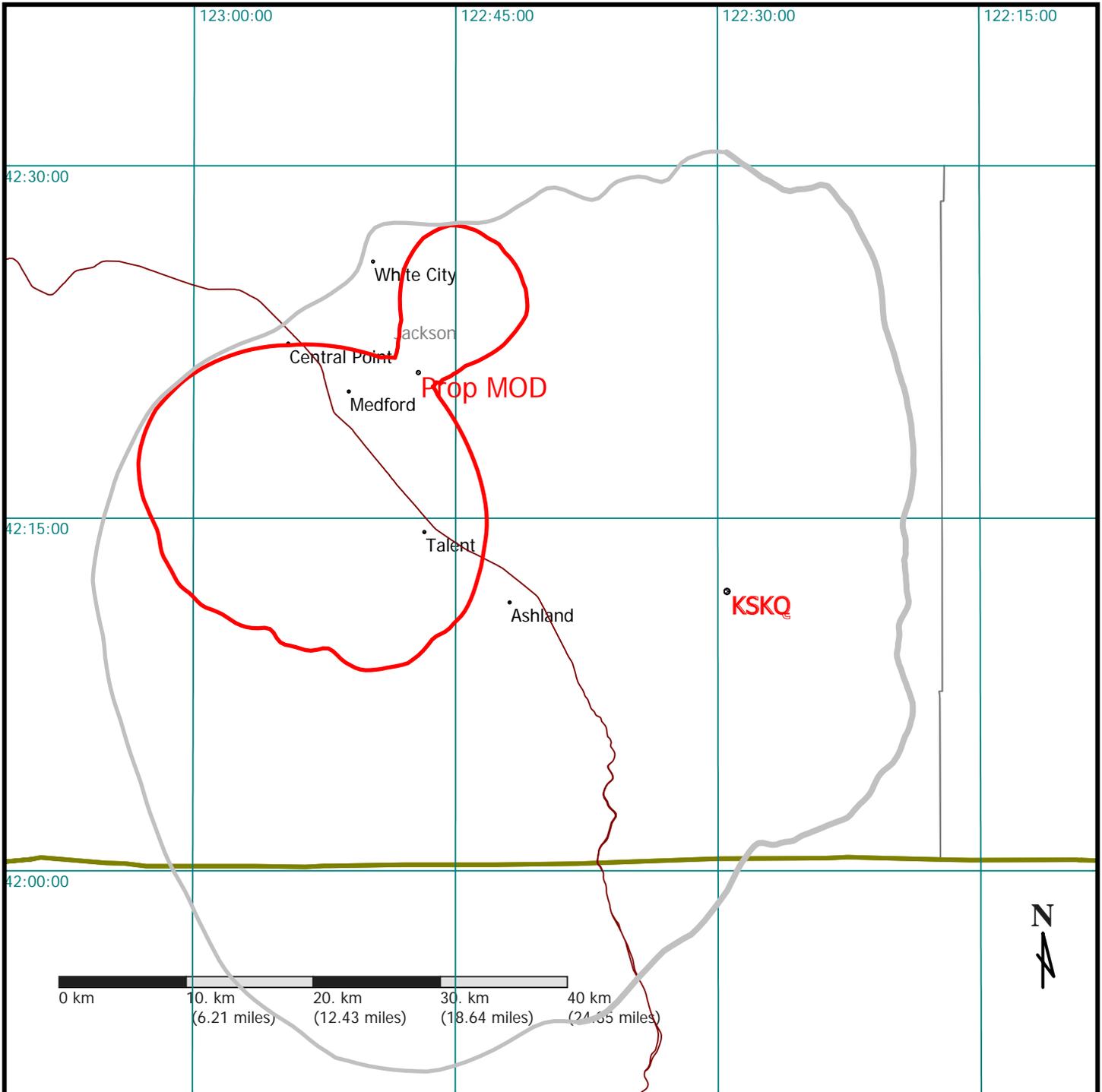


EXHIBIT 13

FM OVERLAP REQUIREMENTS

INTERFERENCE PROTECTION

REFERENCE		CH# 231D - 94.1 MHz, Pwr= 0.11 kW DA, HAAT= 477.5 M, COR= 1086 M		K232EM TO ROXY ANN Community Media Assistance Project		Average Protected F(50-50)= 23.1 km		DISPLAY DATES		
42 21 12.0 N.								DATA 09-10-16		
122 47 08.0 W.								SEARCH 09-28-16		
CH	CALL	TYPE	ANT	AZI.	DI ST	LAT.	Pwr (kW)	INT (km)	PRO (km)	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT (M)	COR (M)	LICENSEE	(Overlap in km)
229C	KTMT-FM	LIC	C	169.7	30.75	42 04 52.0	31.000	10.9	95.4	-65.1*
	Medford		OR	349.8	BMLH20091214AFD	122 43 09.0	980	2297	Mapleton License Of Medfor	
232D	K232EM!	LIC	C	153.4	6.73	42 17 57.0	0.010	20.4	13.1	-23.7
	Seven Oaks		OR	333.4	BLFT20160429AAB	122 44 56.0		1175	Community Media Assistance	
234A	KRRM	LIC	NCN	286.3	36.76	42 26 44.0	0.130	0.8	30.5	5.9
	Rogue River		OR	106.1	BLH19941027KC	123 12 56.0	623	1173	Shirley M. Bell	
232L1	KSHD-LP	LIC		356.5	30.09	42 37 24.6	0.100			8.1
	Shady Cove		OR	176.5	BLL20150113ABR	122 48 28.8		439	City Of Shady Cove, Or	
232L1	KRRC-LP	LIC		287.9	32.31	42 26 32.0	0.100			9.2
	Rogue River		OR	107.7	BLL20150414AAR	123 09 37.0		450	Faith Lutheran Church	
232D	K232BH	LIC	DVN	173.7	67.91	41 44 46.0	0.071	13.3	8.7	28.4
	Yreka		CA	353.8	BLFT19840910MA	122 41 47.0	416	1481	Yreka Christian Radio	
	TRANSLATOR FOR KVI PFM, REDDING, CA.									

As shown by the contour overlap study above, and by **Exhibits 13b to 13d**, all stations except KTMT-FM are easily cleared by this proposal. **Exhibit 13a** shows that a significant portion of the proposed 60dBu contour overlaps the licensed 60dBu contour, qualifying this proposal as a minor change.

CONTOUR PROTECTION TO KTMT-FM

Contour protection to 3rd-adjacent station KTMT-FM, Medford, OR is provided using the ratio method. The F(50/50) contour of KTMT-FM is 87.7dBu at the proposed translator site. Using the appropriate U/D ratio of 40dB, the interfering contour of the proposed translator is therefore 127.7dBu. **Exhibit 13b** shows the area encompassed by this contour, which does not contain any populated structures. Therefore, no interference would be caused to any station, in populated areas.

BROWN BROADCAST SERVICES INCORPORATED

PROTECTED ZONES REPORT

Protected zones report for K232EM on channel 231D 10-15-2016

Lat. 42 21 12.0 Lng. 122 47 08.0, ERP= 0.11 kw, HAAT= 477.5 m

Facility is okay with respect to AM station towers.

Closest AM Facility is KRTA, MEDFORD, OR, L, DA2 at 18.9° at a distance of 4.0 km

Facility is okay with respect to FCC monitoring stations.

Closest FCC Monitoring Station is 521.4 km= Livermore, CA

Facility is okay toward West Virginia Quiet Zone. Distance to center = 3703.2 km

Facility is okay toward Table Mountain. Distance to Center = 1491.3 km, Azimuth = 93.7

Degrees True

Exhibit 13a

Proposed vs. Licensed K232EM 60dBu

Brown Broadcast Services, Inc.
Job: K232EM Roxy Ann Final Oct 2016.fmj
Master Database: 2016_Oct_15.fmd
Lat: N42:21:12 Lon: W122:47:08 NAD-27
Scale: 1:250000
Channel: 231 Class: DX

rfInvestigator Version 3.8.16
by rfSoftware, Inc.
Date: 10/16/2016 10:46:27 AM

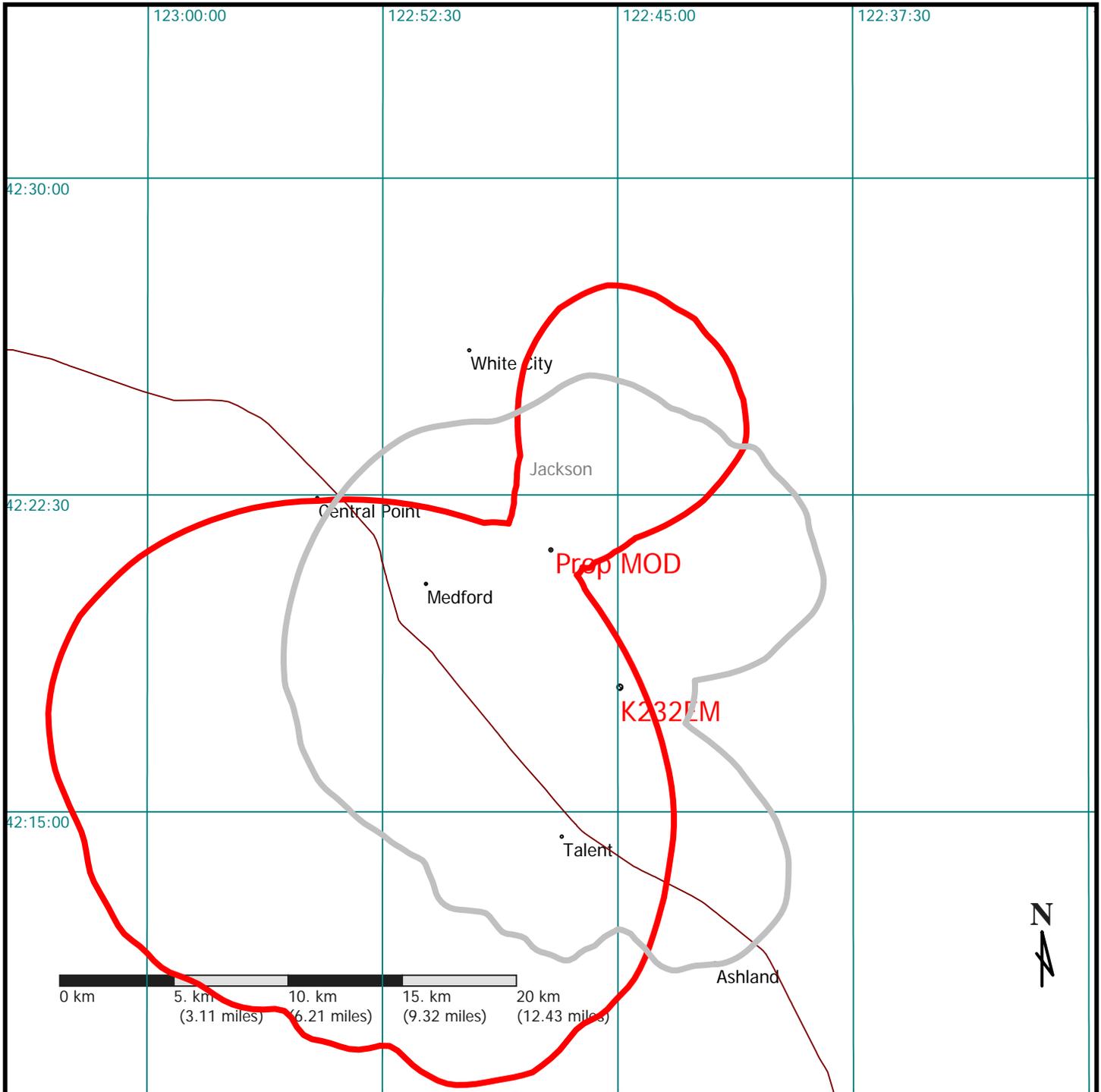


Exhibit 13b Co-Channel Contour Protection

Brown Broadcast Services, Inc.
 Job: K232EM Roxy Ann Final Oct 2016.fmj
 Master Database: 2016_Oct_15.fmd
 Lat: N42:21:12 Lon: W122:47:08 NAD-27
 Scale: 1:1500000
 Channel: 231 Class: DX

PROPOSED
 Interfering: 40dBu F(50,10)
AFFECTED
 Protected: 60dBu F(50,50)

rfInvestigator Version 3.8.16
 by rfSoftware, Inc.
 Date: 10/16/2016 12:50:23 PM
 Key:
 City Grade
 Protected
 Co-Channel
 1st Adj
 2nd/3rd Adj

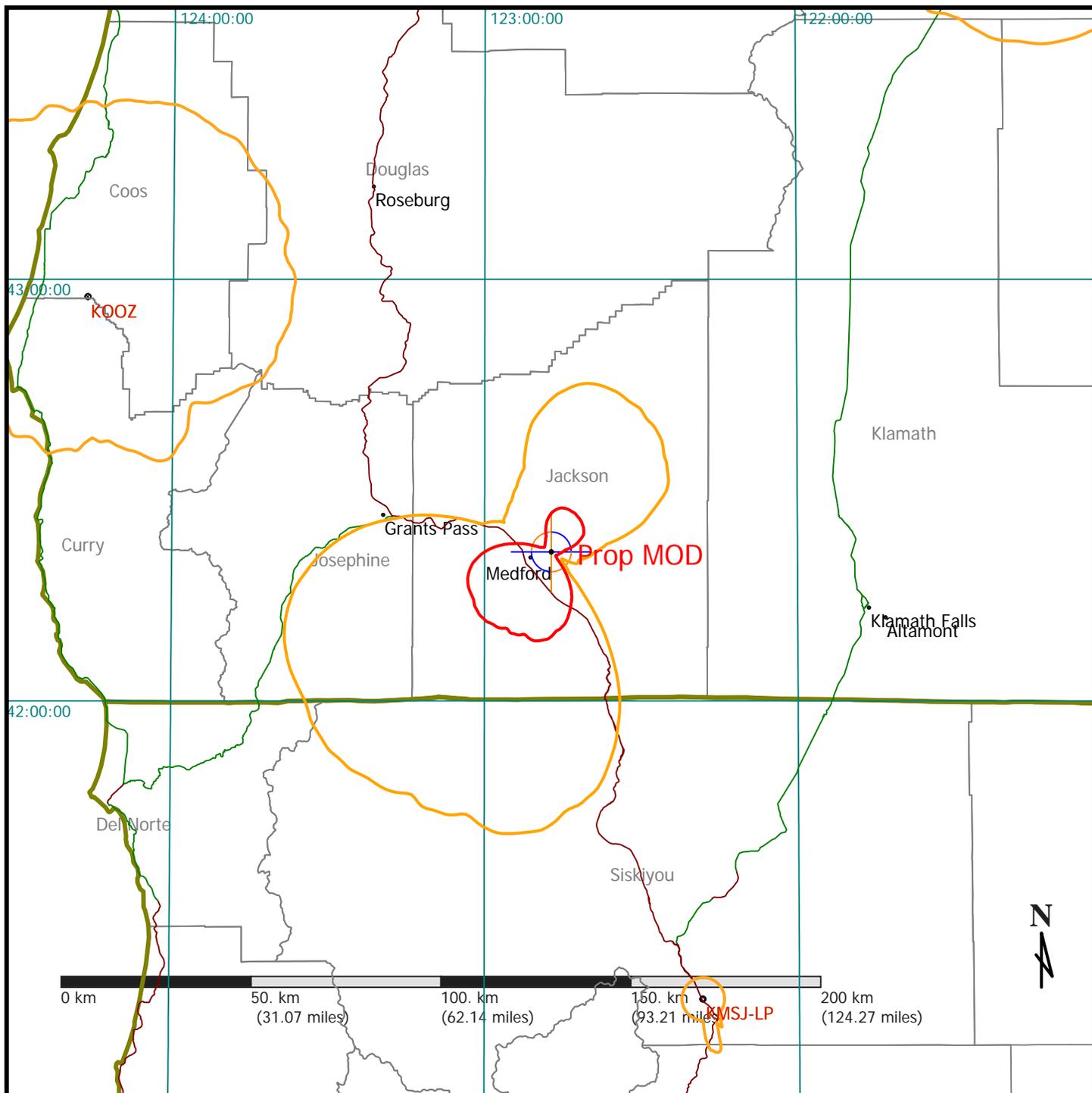


Exhibit 13c

First-Adjacent-Channel Contour Protection

Brown Broadcast Services, Inc.
 Job: K232EM Roxy Ann Final Oct 2016.fmj
 Master Database: 2016_Oct_15.fmd
 Lat: N42:21:12 Lon: W122:47:08 NAD-27
 Scale: 1:750000
 Channel: 231 Class: DX

PROPOSED
 Interfering: 54dBu F(50,10)
AFFECTED
 Protected: 60dBu F(50,50)

rfInvestigator Version 3.8.16
 by rfSoftware, Inc.
 Date: 10/16/2016 12:52:08 PM
 Key:
 City Grade
 Protected
 Co-Channel
 1st Adj
 2nd/3rd Adj

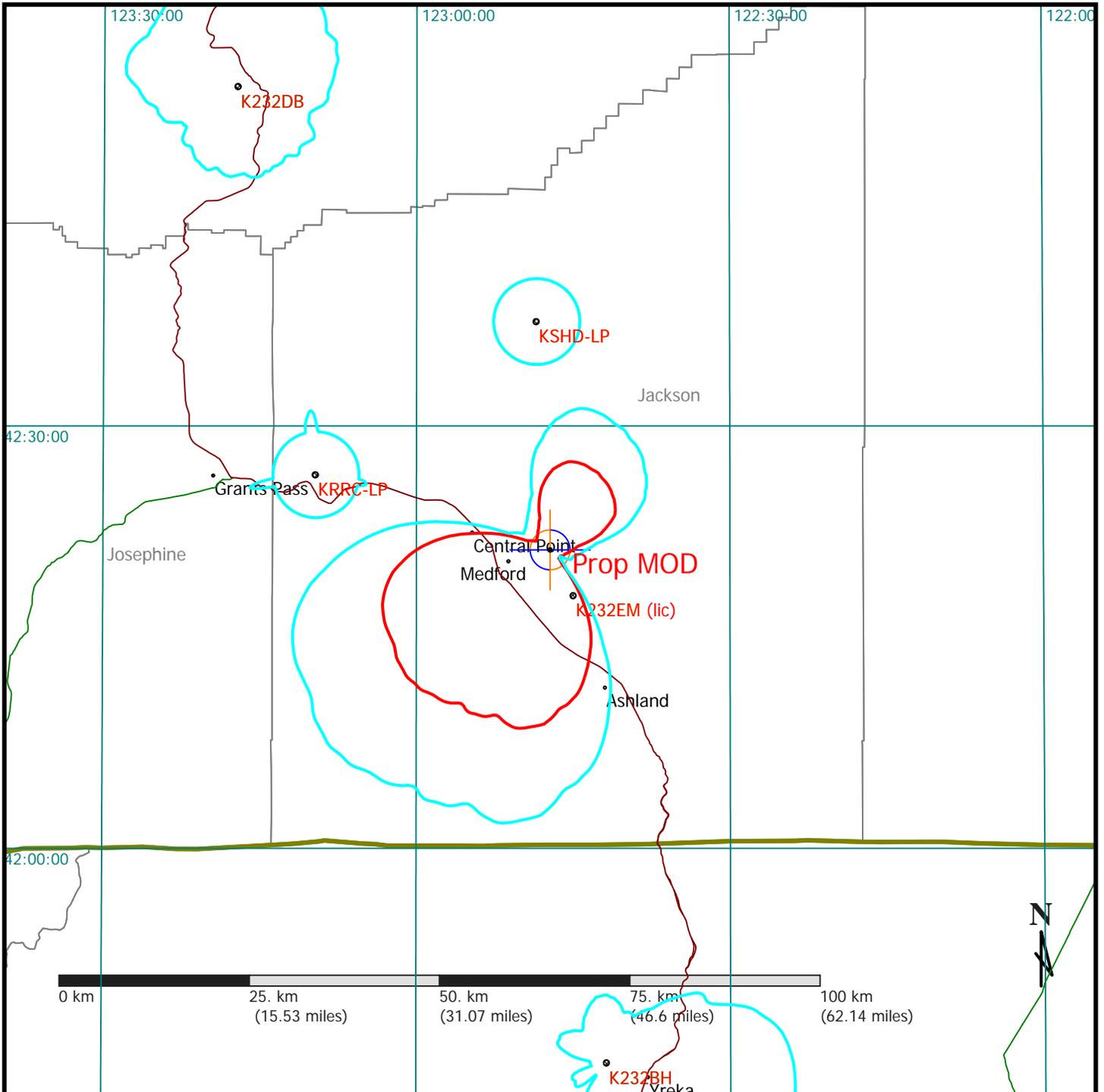


Exhibit 13d

3rd-Adjacent-Channel Contour Protection vs KRRM

Brown Broadcast Services, Inc.
 Job: K232EM Roxy Ann Final Oct 2016.fmj
 Master Database: 2016_Oct_15.fmd
 Lat: N42:21:12 Lon: W122:47:08 NAD-27
 Scale: 1:500000
 Channel: 231 Class: DX

PROPOSED
 Interfering: 100dBu F(50,10)
AFFECTED
 Protected: 60dBu F(50,50)

rfInvestigator Version 3.8.16
 by rfSoftware, Inc.
 Date: 10/16/2016 12:53:41 PM
 Key:
 City Grade
 Protected
 Co-Channel
 1st Adj
 2nd/3rd Adj

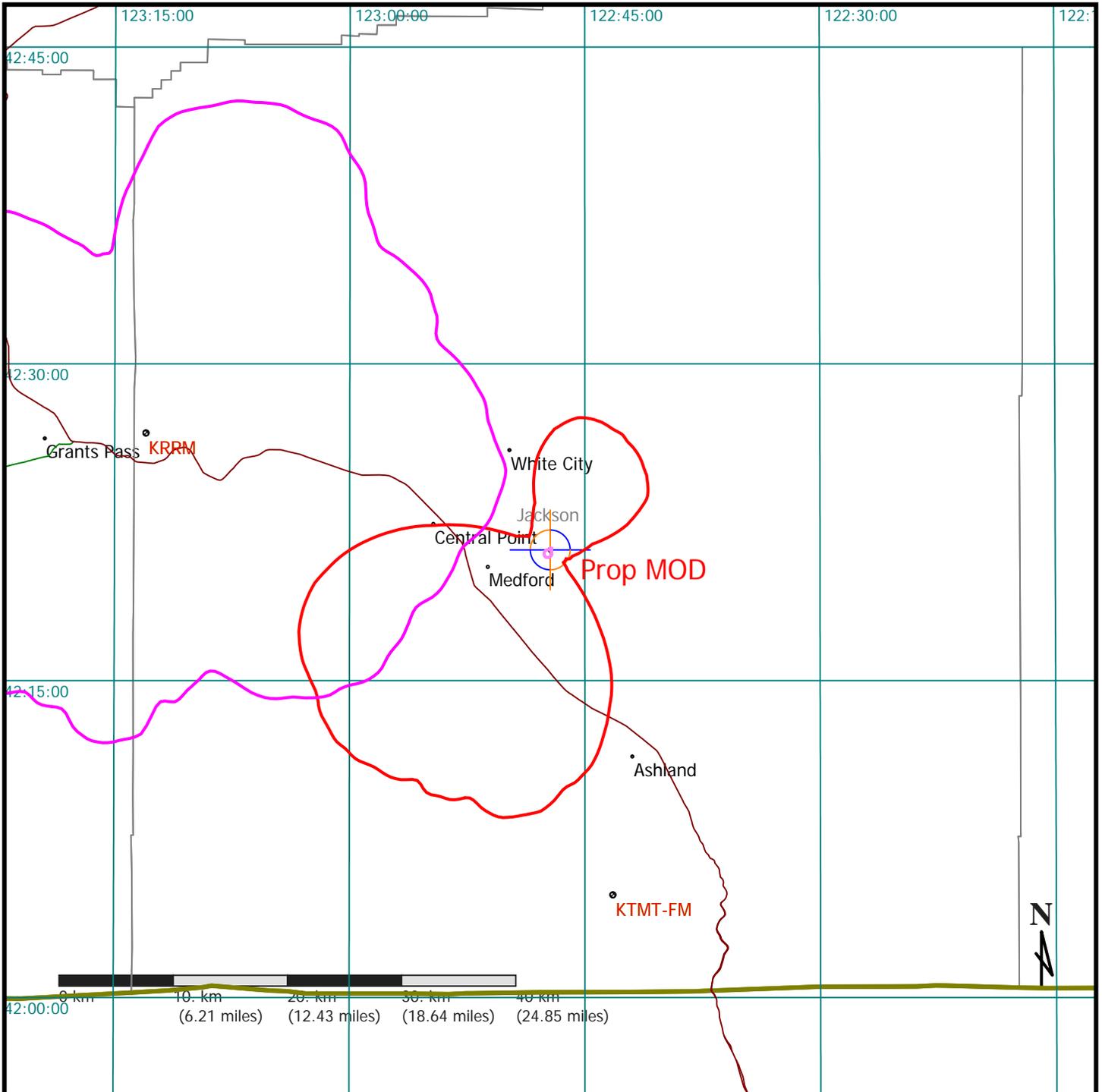


EXHIBIT 13e
127.7dBu Interfering Contour vs. KTMT-FM
>showing no populated areas<



Google Earth



Only one unattended transmitter building is located within the interfering contour.

No interference will be caused to any station, in populated areas.

EXHIBIT 17

ENVIRONMENTAL PROTECTION ACT / NIER ANALYSIS

The applicant proposes mounting a new antenna on an existing 29 meter tower. The proposed center of radiation is 8m AGL. A 1-bay Kathrein/Scala CA2-FM/CP circularly-polarized directional antenna is proposed. Since this antenna is not specifically listed in Appendix B of the FM Model (online version) Public Notice, the "Type-1" (worst-case) setting was employed. FM Model predicted a peak exposure of 122.9 μ W/cm², at 1.6 meters from the tower.

There are three other FM translators, and one full-power FM station, on this tower. An examination of the RF Exposure contributions is listed below:

RF EXPOSURE OF BROADCAST FACILITIES									
CALL	STAT	CITY	CL	ANENNA	AGL(m)	W ERP	FM MODEL SETTING	FM MODEL RF EXPOSURE uw/cm2	NOTES
K232EM	PROP MOD	Medford	DX	Kathrein/Scala CA2-FM/CP	8	110	Type 1	122.9	24uw/cm2 using factory-supplied elevation pattern data
KYVL	LIC	Eagle Point	FM	Jampro JLPC-2, 0.5 wave spaced	27	1000	Type 2	11.2	
K243AF	LIC	Jacksonville	DX	Kathrein/Scala 2-CLFM-V	13 vert only	250	Type 1	65.7	7.4uw/cm2 using factory-supplied elevation pattern data
K216DR	LIC	Central Point	DX	Kathrein/Scala CA2-FM/CP	17	10	Type 1	1.8	
K251AX	LIC	Medford	DX	Kathrein/Scala 2-CA2-FM/CP	21	41	Type 1	3.2	
		TOTAL						204.8	

BROWN BROADCAST SERVICES

Michael D. Brown

INCORPORATED
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503-245-6065

For the following reasons, the applicant believes that this proposal should be considered to be in compliance with RF Exposure limits.

1. The applicant believes that the site should be considered an occupational/limited access site, in that it is at a remote mountaintop, accessible by a single road with a locked gate, and is marked with RF exposure warning signs. It also is not at the highest peak, which is 230 meters to the north. Hikers on foot can access the higher peak, with panoramic views, and do not normally go to the “lower peak” with the tower and obstructed views.
2. On the basis of an occupational/limited access area, the exposures predicted by FM Model represent 20.3% of the Maximum Permissible Exposures (MPE).
3. If factory-supplied antenna elevation data was employed, the total predicted exposures from these 5 broadcast facilities would be less than $40\mu\text{W}/\text{cm}^2$.
3. The peak exposure points are at different distances from the tower. The chart totals do not take this into account. The actual peak combined predicted exposures are lower.
5. All other facilities on this tower and nearby are non-broadcast in nature, and are not expected to be significant contributors to ground-level RF exposures.

Access to the tower is restricted by locked perimeter fencing. Appropriate RF exposure warning signs are in place. If tower climbing by authorized personnel becomes necessary, transmitter power will be reduced or operation will cease, as necessary, so as to not exceed the RF exposure limits.