GOLDMAN Engineering Management, LLC

ENGINEERING STUDY

CP MODIFICATION APPLICATION

K233CM

TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of Amaturo Sonoma Media Group, LLC. licensee of translator K233CM, Facility ID #152120, fill-in translator for AM radio station KSRO, 1350 kHz, Santa Rosa, CA. Facility ID #22881. This application seeks to slightly modify the currently approved construction permit. The antenna will be attached to an adjacent pole 40ft from the currently proposed facility so that the facilities don't require a combiner. All requirements are still compliant with this extremely minor relocation as shown in the statement below.

Facilities Proposed

Location (NAD83)	38° 20' 09.7" N Latitude, 122° 32' 07.4" W Longitude
Channel	233D (94.5MHz)
Tower Overall AGL Height-	20m
Tower ASR	N/A
Proposed Antenna	Scala 3X CL-FM-V (option 67)
Antenna AGL Height-	18m
Site AMSL Height-	267m
ERP	57 Watts-DIRECTIONAL- EXHIBIT A

COMPLIANCE WITH 74.1204(a) [contour overlap]

The modified translator on channel 233D will be fully compliant with 74.1204(a). A table showing the allocation is attached as Exhibit B and a map depicting the closest pertinent facilities is attached as Exhibit C.

COMPLIANCE WITH 74.1204(d) [2nd Adjacent Interference]

The proposed translator is located inside the 54dBu protected contour of two class B stations, KPFA, 231B and KYLD, 235B. Both 2nd adjacent stations originate from the same general direction and KYLD places less signal at the proposed translator location than KPFA, so it is assumed that if the proposed translator is compliant with 74.1204(d) with respect to KYLD, it will also be compliant with respect to KPFA.

The proposed tower site is located on a mountain and is sparsely populated, however, several nearby residences were identified and as demonstrated in Exhibit D, there will be no actual interference predicted to either KYLD or KPFA at any residential location.

COMPLIANCE WITH 74.1201(g) [AM fill-in], 74.1233(a) [Minor Change]

Exhibit E demonstrates that the proposed translator will be entirely contained within 25 miles of the KSRO transmitter in accordance with 74.1201(g) and the proposed translator will serve some portion of the existing CP 60dBu service area in accordance with 74.1233(a).

The proposed facility is not within 320km of the common border between the US and Canada or Mexico.

ENVIRONMENTAL EXHIBIT

The proposed translator facility will utilize a directional antenna located on a non-registered pole. The structure was checked and passes the TOWAIR determination. Those results are attached as Exhibit G. The proposed mounting pole will be located 40ft from the existing pole mounting for KDHT-FM2.

The RF density near the tower was calculated using an EPA Type 1 “Ring and stub” antenna setting at 57 watts vertical, using the proposed Scala antenna.

Using the FCC program “FM Model for Windows”, it was calculated that the proposed antenna contributes approximately 0.58μW/cm² or 0.3 % of the total allowable 200 μW/cm². The maximum was found to be 12 meters from the base of the tower. The FCC calculator output is shown as Exhibit F. There are no tall buildings within 500m of the proposed tower.

Based upon the above evaluation, the proposed antenna will not cause the RF density at the tower site to exceed public exposure limits and contributes less than 5% of the MPE at ground level. Based upon the preceding, this proposed facility is excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

The proposed new FM translator along with other users at the site will maintain an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

Respectfully Submitted

Bert Goldman

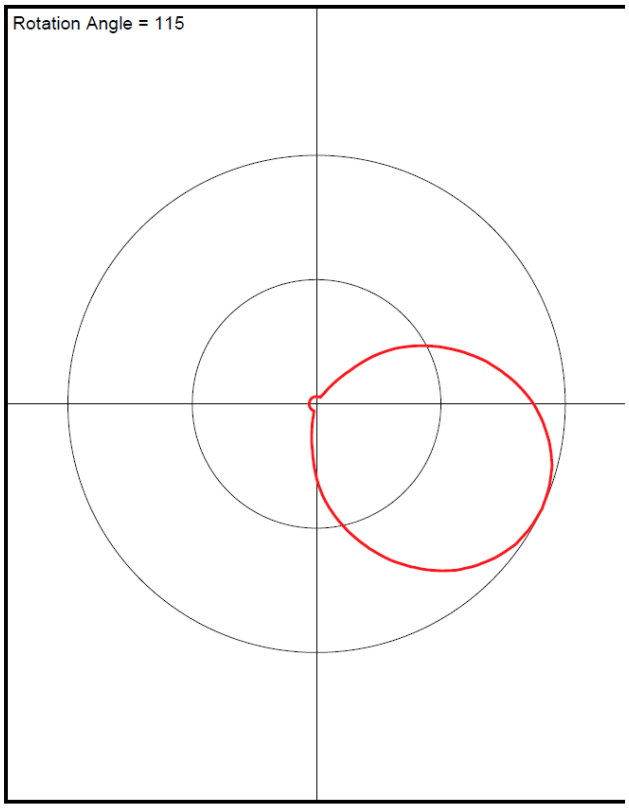
Bert Goldman
Technical Consultant

EXHIBIT A- ANTENNA PATTERN

K233CM PROP Antenna Pattern

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	1.0
5.0	0.993
10.0	0.98
15.0	0.952
20.0	0.916
25.0	0.873
30.0	0.817
35.0	0.756
40.0	0.69
45.0	0.618
50.0	0.544
55.0	0.467
60.0	0.39
65.0	0.3
70.0	0.19
75.0	0.11
80.0	0.05
85.0	0.03
90.0	0.03
95.0	0.03
100.0	0.03
105.0	0.03
110.0	0.03
115.0	0.03
120.0	0.03
125.0	0.03
130.0	0.03
135.0	0.03
140.0	0.03
145.0	0.03
150.0	0.03
155.0	0.03
160.0	0.03
165.0	0.03
170.0	0.03
175.0	0.03
180.0	0.03
185.0	0.03
190.0	0.03
195.0	0.03
200.0	0.03
205.0	0.03
210.0	0.03
215.0	0.03
220.0	0.03
225.0	0.03
230.0	0.03
235.0	0.03
240.0	0.03
245.0	0.03
250.0	0.03
255.0	0.03
260.0	0.03
265.0	0.03
270.0	0.03
275.0	0.03
280.0	0.05
285.0	0.11
290.0	0.19
295.0	0.3
300.0	0.39
305.0	0.467
310.0	0.544
315.0	0.618



320.0	0.69
325.0	0.756
330.0	0.817
335.0	0.873
340.0	0.916
345.0	0.952
350.0	0.98
355.0	0.993

EXHIBIT B- ALLOCATION STUDY

ComStudy 2.2 search of channel 233 (94.5 MHz Class D) at 38-20-9.7 N, 122-32-07.4 W.

CALL	CITY	ST	CHN	CL	DIST	SEP	BRNG	CLEARANCE	
KPFA	BERKELEY	CA	231	B	59.12	0.00	152.1	-11.50 dB	Exhibit D
KYLD	SAN FRANCISCO	CA	235	B	72.30	0.00	173.1	-2.85 dB	Exhibit D
KBAY	GILROY	CA	233	B	141.94	0.00	151.7	0.29 dB	Exhibit C
KWNE	UKIAH	CA	233	B	99.92	0.00	332.2	15.14 dB	Exhibit C
KYLD-FM1	PLEASANTON	CA	235	D	73.97	0.00	132.9	20.51 dB	
KKDO	FAIR OAKS	CA	234	B1	111.49	0.00	70.0	21.12 dB	
K233CU	STOCKTON	CA	233	D	117.60	0.00	110.6	23.02 dB	
K234DD	SANTA ROSA	CA	234	D	22.15	0.00	330.1	24.82 dB	
KGRB	JACKSON	CA	232	B1	164.57	0.00	86.8	33.47 dB	
KHOP	OAKDALE	CA	236	B	186.95	0.00	108.3	33.23 dB	

LMS AS OF 2/13/2021

EXHIBIT C Pertinent Protection Contours (KWNE 233B, KBAY 233B)

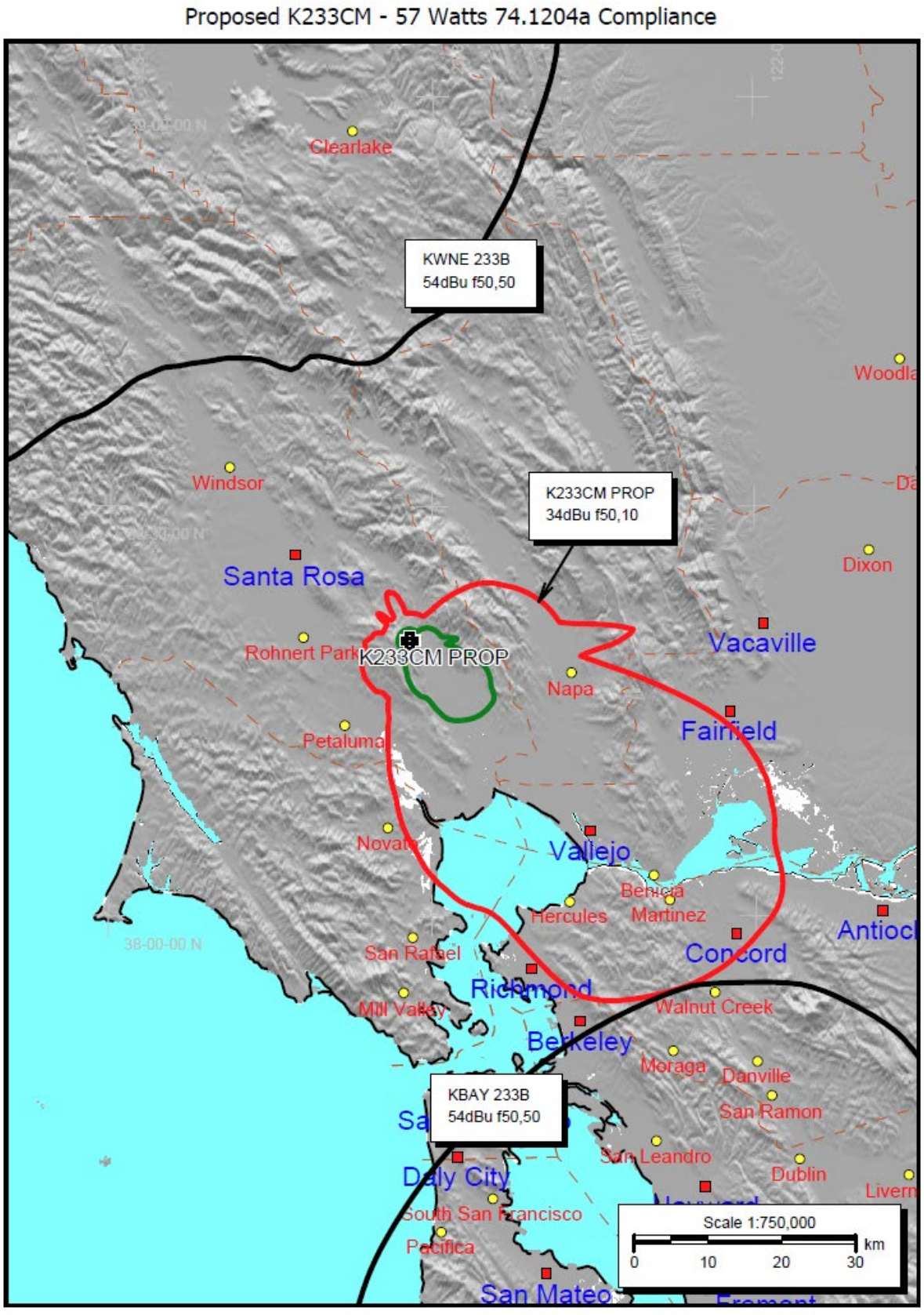
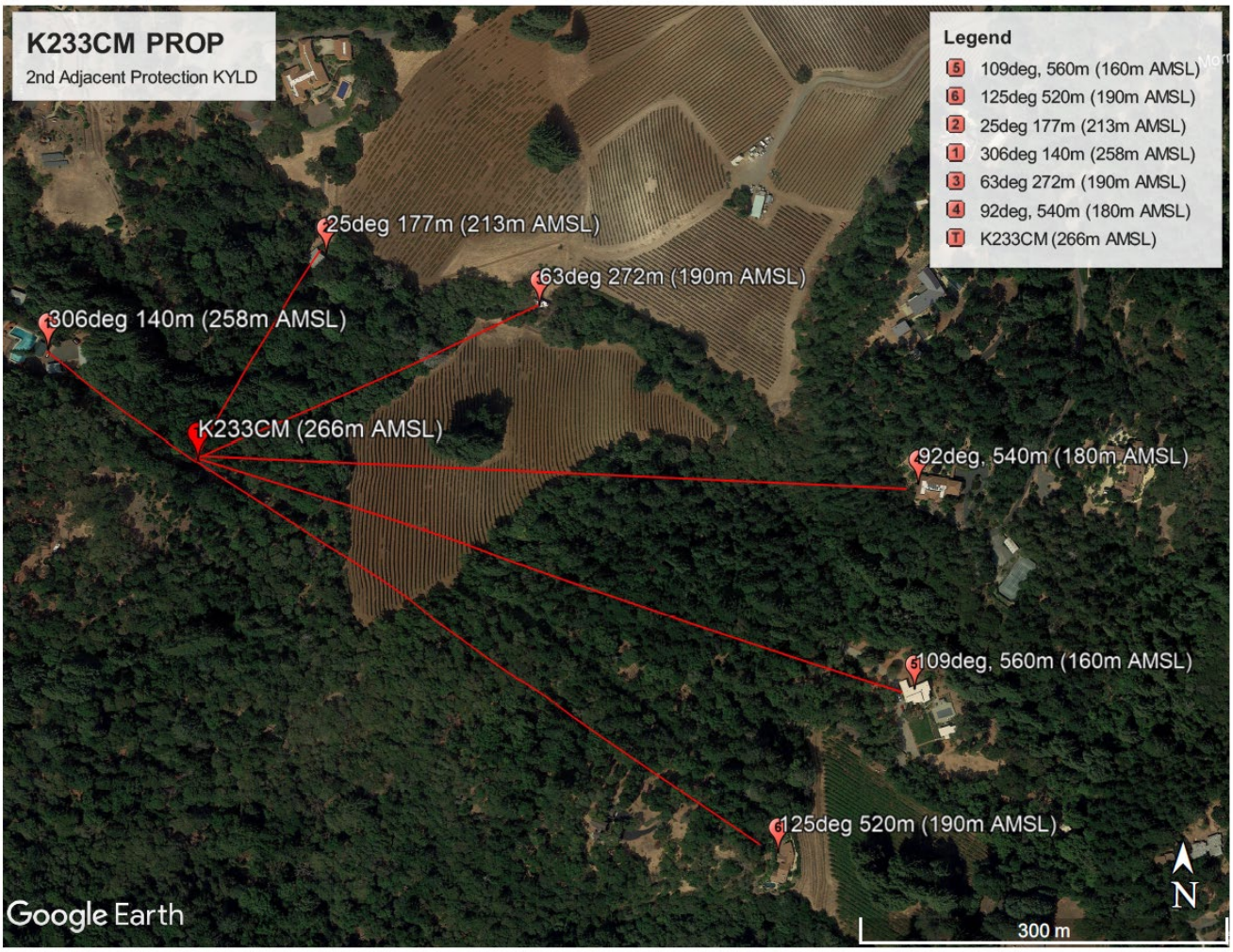


EXHIBIT D, 74.1204(d) Compliance

NOTE: IT IS ASSUMED THAT SINCE KPFA PLACES MORE SIGNAL INTO AREA, IT WILL ALSO BE COMPLIANT



Note- Description of points:
Six homes were determined to be of consequence for 2nd adjacent interference. All are compliant. The table below shows evaluation results using the X-Field program by V-Soft. Azimuth is direction to each home, Relative AGL is the height of the antenna over the home including AMSL difference. Distance is distance to the home, and Minimum Signal indicates the minimum signal above ground. Minimum location distance from the translator is also shown.

POINT	AZIMUTH	RELATIVE AGL (m)	DISTANCE	MINIMUM SIGNAL AGL
1	306	26m	140m	10.4m @ 88.7m *
2	25	71m	177m	55.4m @ 88.7m
3	63	94m	272m	29.3m @
4	92	104m	540m	19.0m @ 482m
5	109	124m	560m	34m @ 509m
6	125	94m	520m	4.6m @ 507m *

*- The two closest clearance calculations (306deg and 125deg) are shown below

X-Field Output 306 deg

K233CM.C Sonoma, CA, Showing Protection to KYLD   , Channel: 235
Geographic Coordinates: N.38-20-9.7 W.122-32-07.4
74.1204(d) Study - Using NED 03 SEC Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.057 kW, Channel: 233
Translator or LPFM Antenna Height AG = 26 meters
K233CM.C Antenna Model = 3-CL-FM V STACK 0PT67 WL SPC

Protected Station's Contour = 56.34708 dBu
Translator's or LPFM's full Interference contour 96.34708

Review Azimuth = 306 Degrees True
Horizontal Relative Field at Review Azimuth = 0.030
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.0 kW
Distance between stations = 72.4 km
Protected Station= KYLD, 30 kW, 425 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	0.03	0.0017	139.6832	139.6832	026.000
05.00	0.823	0.03	0.0012	114.8894	114.4522	015.987
10.00	0.645	0.03	0.0007	090.0956	088.7269	010.355
15.00	0.341	0.03	0.0002	047.5621	045.9415	013.690
20.00	0.036	0.03	0.0000	005.0286	004.7253	024.280
25.00	0.122	0.03	0.0000	016.9715	015.3814	018.828
30.00	0.207	0.03	0.0001	028.9144	025.0406	011.543
35.00	0.162	0.03	0.0000	022.6287	018.5363	013.021
40.00	0.092	0.03	0.0000	012.8509	009.8443	017.740
45.00	0.01	0.03	0.0000	001.3968	000.9877	025.012
50.00	0.052	0.03	0.0000	007.2635	004.6689	020.436
55.00	0.064	0.03	0.0000	008.8699	005.0876	018.734
60.00	0.051	0.03	0.0000	007.1238	003.5619	019.831
65.00	0.034	0.03	0.0000	004.7492	002.0071	021.696
70.00	0.017	0.03	0.0000	002.3746	000.8122	023.769
75.00	0.014	0.03	0.0000	001.8857	000.4881	024.179
80.00	0.01	0.03	0.0000	001.3968	000.2426	024.624
85.00	0.01	0.03	0.0000	001.3968	000.1217	024.608
90.00	0.01	0.03	0.0000	001.3968	000.0000	024.603

X-Field Output 125 deg

K233CM.C Sonoma, CA, Showing Protection to KYLD   , Channel: 235
Geographic Coordinates: N.38-20-9.7 W.122-32-07.4
74.1204(d) Study - Using NED 03 SEC Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.057 kW, Channel: 233
Translator or LPFM Antenna Height AG = 94 meters
K233CM.C Antenna Model = 3-CL-FM V STACK 0PT67 WL SPC

Protected Station's Contour = 56.34708 dBu
Translator's or LPFM's full Interference contour 96.34708

Review Azimuth = 125 Degrees True
Horizontal Relative Field at Review Azimuth = 0.980
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.055 kW
Distance between stations = 72.4 km
Protected Station= KYLD, 30 kW, 425 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	0.98	0.0559	798.3558	798.3558	094.000
05.00	0.823	0.98	0.0378	656.6476	654.1489	036.769
10.00	0.645	0.98	0.0232	514.9395	507.1164	004.582
15.00	0.341	0.98	0.0065	271.8401	262.5774	023.643
20.00	0.036	0.98	0.0001	028.7408	027.0075	084.170
25.00	0.122	0.98	0.0008	097.0002	087.9121	053.006
30.00	0.207	0.98	0.0024	165.2596	143.1191	011.370
35.00	0.162	0.98	0.0015	129.3336	105.9439	019.817
40.00	0.092	0.98	0.0005	073.4487	056.2650	046.788
45.00	0.01	0.98	0.0000	007.9836	005.6452	088.355
50.00	0.052	0.98	0.0002	041.5145	026.6850	062.198
55.00	0.064	0.98	0.0002	050.6956	029.0778	052.473
60.00	0.051	0.98	0.0001	040.7161	020.3581	058.739
65.00	0.034	0.98	0.0001	027.1441	011.4716	069.399
70.00	0.017	0.98	0.0000	013.5720	004.6419	081.246
75.00	0.014	0.98	0.0000	010.7778	002.7895	083.589
80.00	0.01	0.98	0.0000	007.9836	001.3863	086.138
85.00	0.01	0.98	0.0000	007.9836	000.6958	086.047
90.00	0.01	0.98	0.0000	007.9836	000.0000	086.016

EXHIBIT E - 74.1201(g), 74.1233(a) Compliance

Proposed K233CM - 57 Watts 74.1201(g), 74.1233(a) Compliance

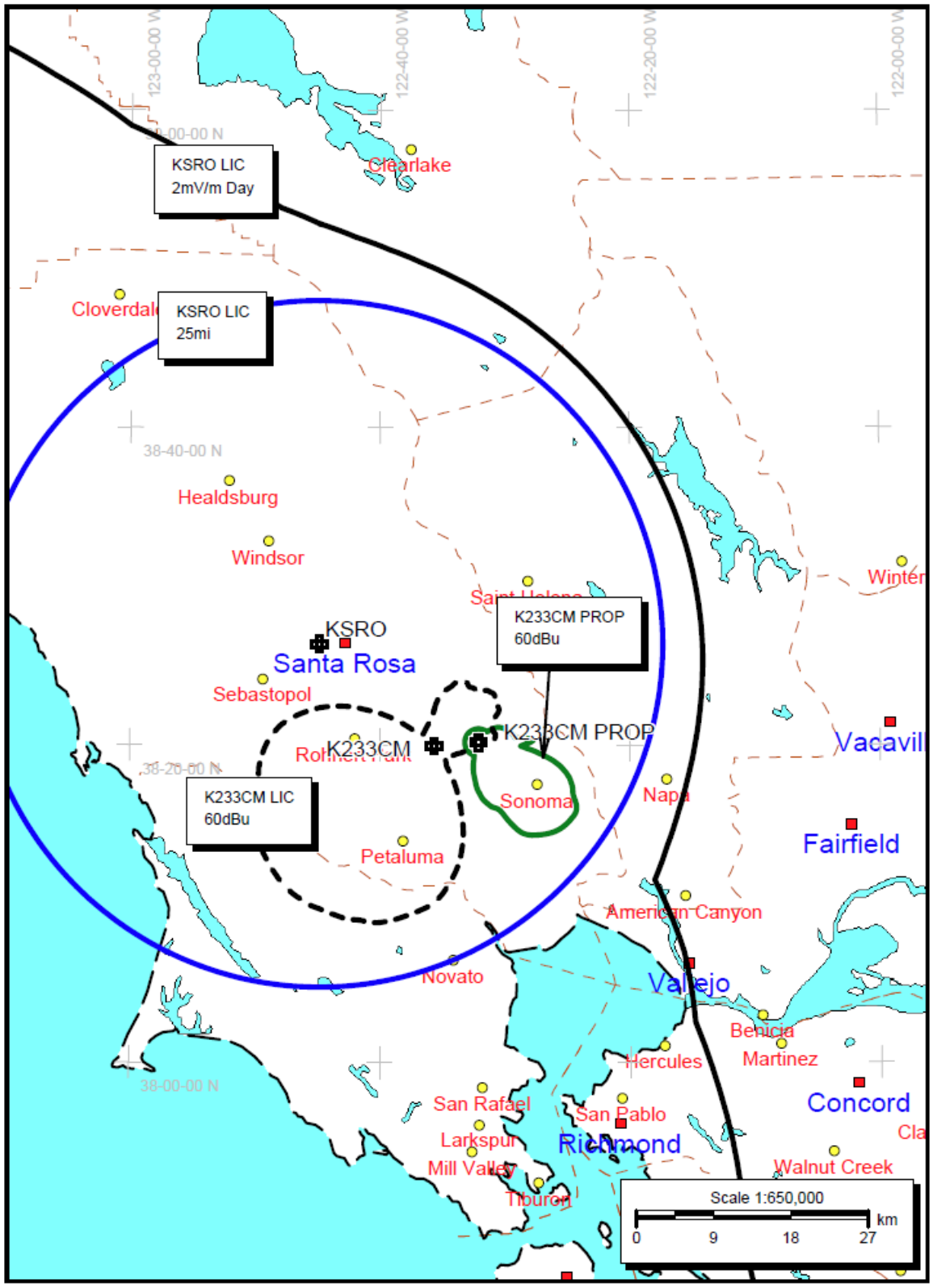
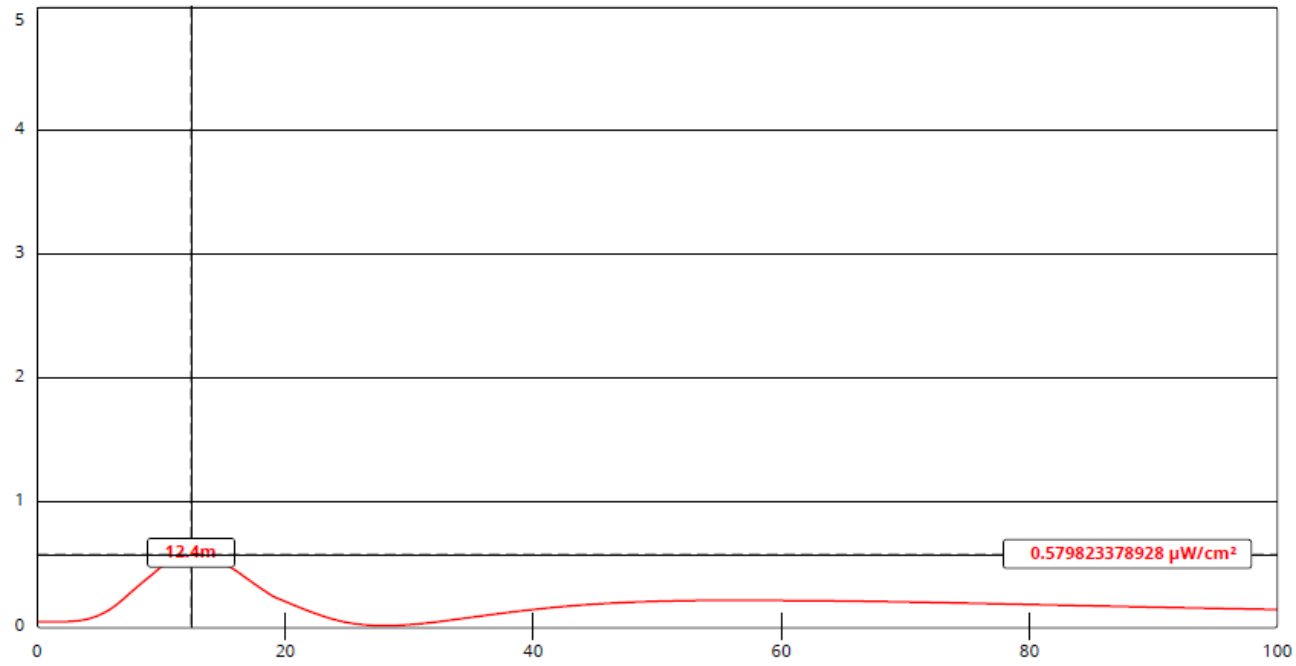


EXHIBIT F- FCC “FM Model” RFR Calculation



View Tabular Results +

Channel Selection	Channel 233 (94.5 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	18	Distance (m)	100
ERP-H (W)	0	ERP-V (W)	57
Num of Elements	3	Element Spacing (λ)	0.67
Num of Points	500	Apply	

TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	38-20-09.7 north
Longitude	122-32-07.4 west
Measurements (Meters)	
Overall Structure Height (AGL)	19
Support Structure Height (AGL)	1
Site Elevation (AMSL)	267
Structure Type	
POLE - Any type of Pole	

Tower Construction Notifications
Notify Tribes and Historic Preservation Officers of your plans to build a tower.