

**Minor License Modification Application**

**K273AF, NV –Fill-in Translator for KCMY (AM)**

This technical statement and attached exhibits have been prepared on behalf of The Evans Broadcast Company, Inc, (“Evans”), licensee of station K273AF, Carson City, NV Facility identifier 13529. Evans proposes to modify the license for K273AF to replace the existing antenna, modify the pattern, and increase maximum ERP to 250 watts. This change is allowable due to the determination that K273BI, Truckee, NV has not been operating for several years and the license should be canceled. This application is contingent on the dismissal of the K273BI license. K273AF will continue to be used as a fill-in translator for co-owned KCMY (AM), 1300kHz, Carson City, NV, Facility identifier 40801.

**FACILITIES REQUESTED**

The 60dBu contour of the requested facility will operate within the 2mV/m contour of KCMY (AM) using a directional Kathrein/ Scala dual CA2-FM-CP antenna with elements pointed at 180deg T and 340deg T

**PROPOSED TECHNICAL PARAMETERS**

Booster Location:	Carson City, NV
ASR	1213938
Geographic Coordinates (NAD27):	39°15'34"N, 119° 42' 21" W
Geographic Coordinates (NAD83):	39°15'34"N, 119° 42' 25" W
Channel:	273D (102.5 MHz)
Effective Radiated Power:	250 W (H+V)
Antenna Type, Pattern:	Directional (Exhibit A)
Antenna Orientation:	Elements pointing at 180degT and 340degT
Site Height AMSL	2252m
Tower OAGL	61m
Antenna Height :	
Above ground:	49.0m
Above mean sea level:	2301.0m

## INTERFERENCE STUDY

ComStudy 2.2 search of channel 273 (102.5 MHz Class D) at 39-15-34.0 N, 119-42-21.0 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
KWYL	SOUTH LAKE TAHOE	CA 275 C	16.35	0.00	290.4	-37.85 dB Exhibit D
K273BI	TRUCKEE	CA 273 D	38.63	0.00	279.6	-15.06 dB DELETE
KRNV-FM	RENO	NV 271 C3	36.91	0.00	347.7	-9.14 dB Exhibit D
KNVR	FALLON	NV 273 A	83.44	0.00	73.1	4.96 Db Exhibit C
K271BT	SOUTH LAKE TAHOE	CA 271 D	50.80	0.00	210.4	7.19 dB
KSFM	WOODLAND	CA 273 B	190.27	0.00	247.5	12.12 dB
KRNV-FM*	RENO	NV 271 C3	36.91	0.00	347.7	14.34 dB
KSFM	WOODLAND	CA 273 B	190.27	0.00	247.5	16.64 dB
KSFM	WOODLAND	CA 273 B	190.27	0.00	247.5	22.71 dB
K274CG	SONORA	CA 274 D	150.18	0.00	202.5	22.09 dB
KDON-FM	SALINAS	CA 273 B	319.46	0.00	210.0	23.55 dB
KNTY	SHINGLE SPRINGS	CA 270 B	115.93	0.00	247.4	23.99 dB
K272DX	GRASS VALLEY	CA 272 D	108.56	0.00	269.6	24.52 dB
K272AE	HAWTHORNE	NV 272 D	120.82	0.00	137.1	26.43 dB
KSFM	WOODLAND	CA 273 B	190.27	0.00	247.5	28.51 dB

There are no facilities with IF protection considerations

Exhibit B demonstrates compliance with Rule 74.1201(g) governing the use of a translator as a fill-in for an AM station. The 60dBu contour of the proposed translator will be completely contained within the 2mV/m contour of KCMY (AM).

Exhibit C demonstrates compliance with Rule 74.1204(a). There are no impermissible contour overlaps to any other facilities.

As demonstrated in Exhibit D, per Rule 74.1204(d), there will be no location at ground level where the signal of the proposed translator will be in excess of 40dBu above 2nd adjacent KWYL (FM) 275C or 2<sup>nd</sup> adjacent KRNV-FM, 271C3. The antenna is mounted on a remote hilltop. As shown in this exhibit, the worst-case interfering contour (assuming non-directional operation) will extend 392m from the K273AF antenna. The nearest residence is over 500m from the tower base to the southeast.

## ENVIRONMENTAL CONSIDERATIONS

The Booster will be attached at 49m AGL on an existing 61m tower ASR number 1213938

The proposed 273D facility will utilize a dual Yagi antenna with elements directed at 180degT and 340degT, 49m AGL, Based upon the FCC "FM Model for Windows"<sup>1</sup> program using a worst-case ring-stub antenna, the proposed 273D operation will produce 4.6  $\mu\text{W}/\text{cm}^2$  at a distance of 13m from the base of the tower at ground level or 2.3% of the MPE level. There are multiple non-excluded antennas on the tower. Because the projected MPE is under 5%, this translator can be considered independently of other RF sources on the tower.

The applicant agrees to reduce power or cease operations when it becomes necessary if workers are near the antenna in order to ensure that they will not be exposed to levels of radio frequency electromagnetic radiation that exceed FCC guidelines.

## CERTIFICATION

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direct supervision, and that they are true and correct to the best of his knowledge and belief.



Bertram S. Goldman  
Goldman Engineering Management

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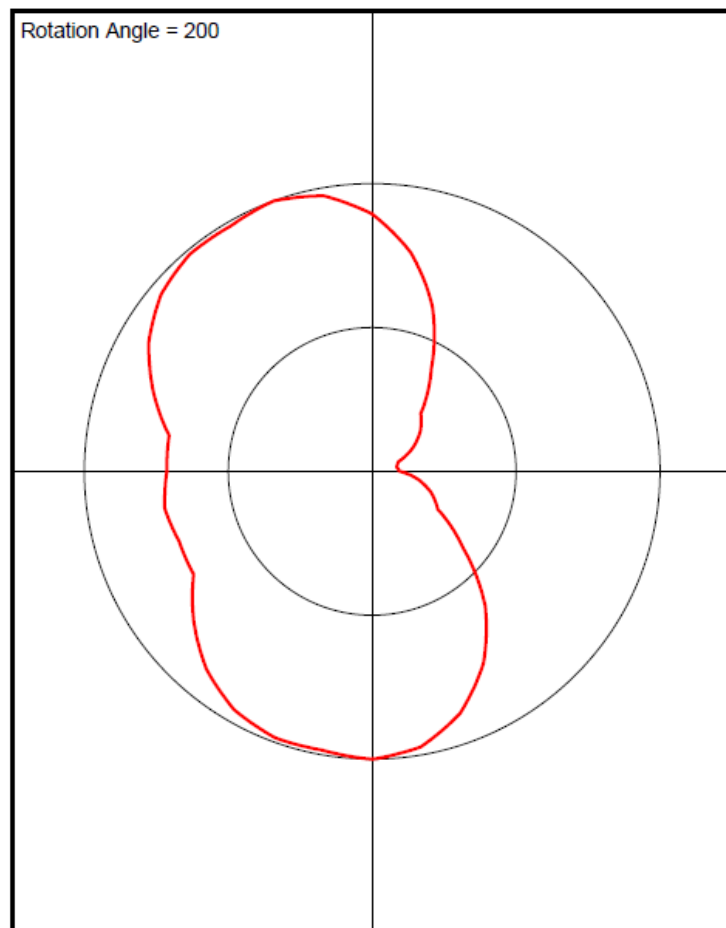
<sup>1</sup> <https://www.fcc.gov/general/fm-model>

## Exhibit A- Normalized Antenna Pattern

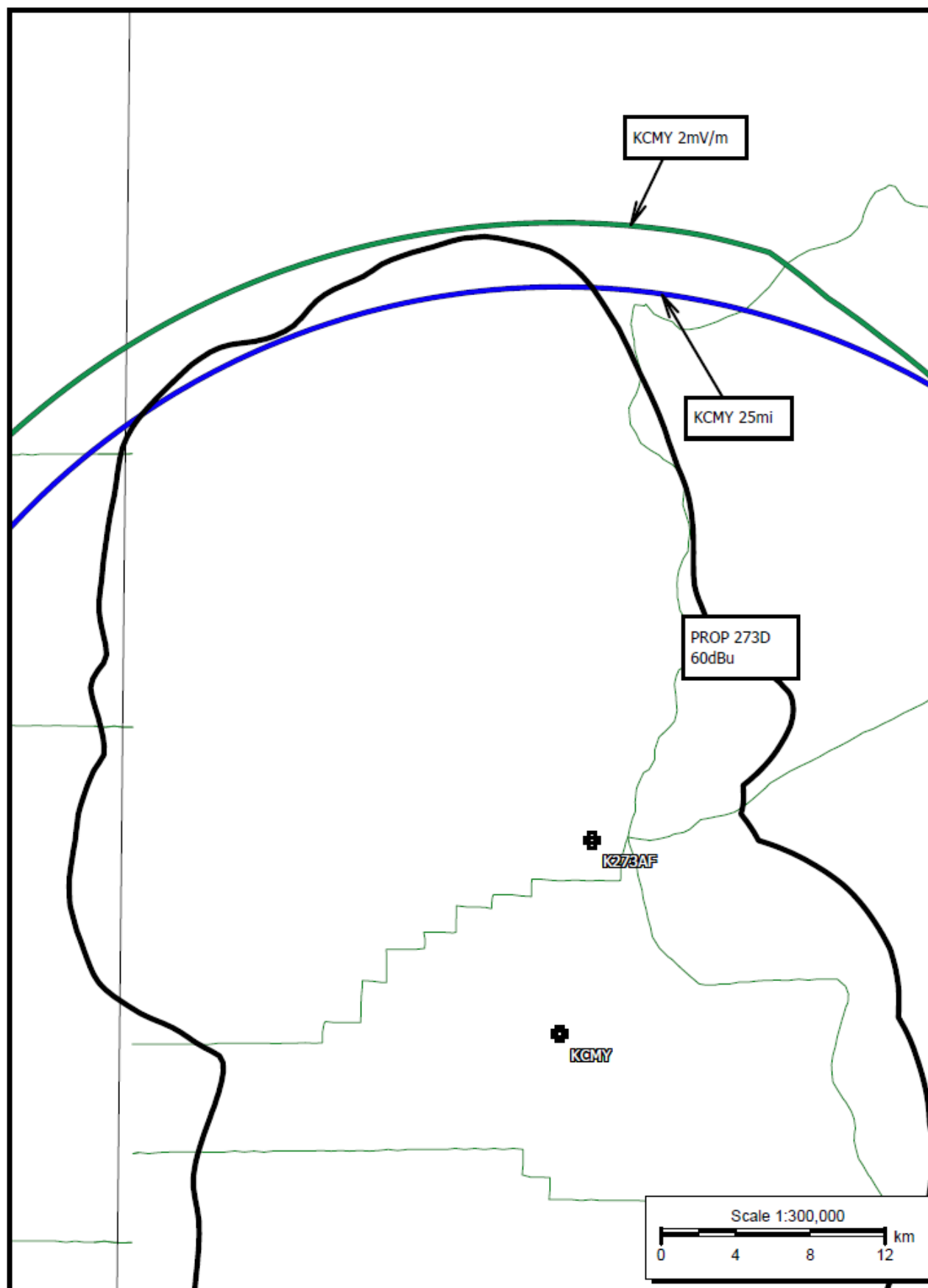
Antenna Pattern

Post-Rotation Antenna Pattern....

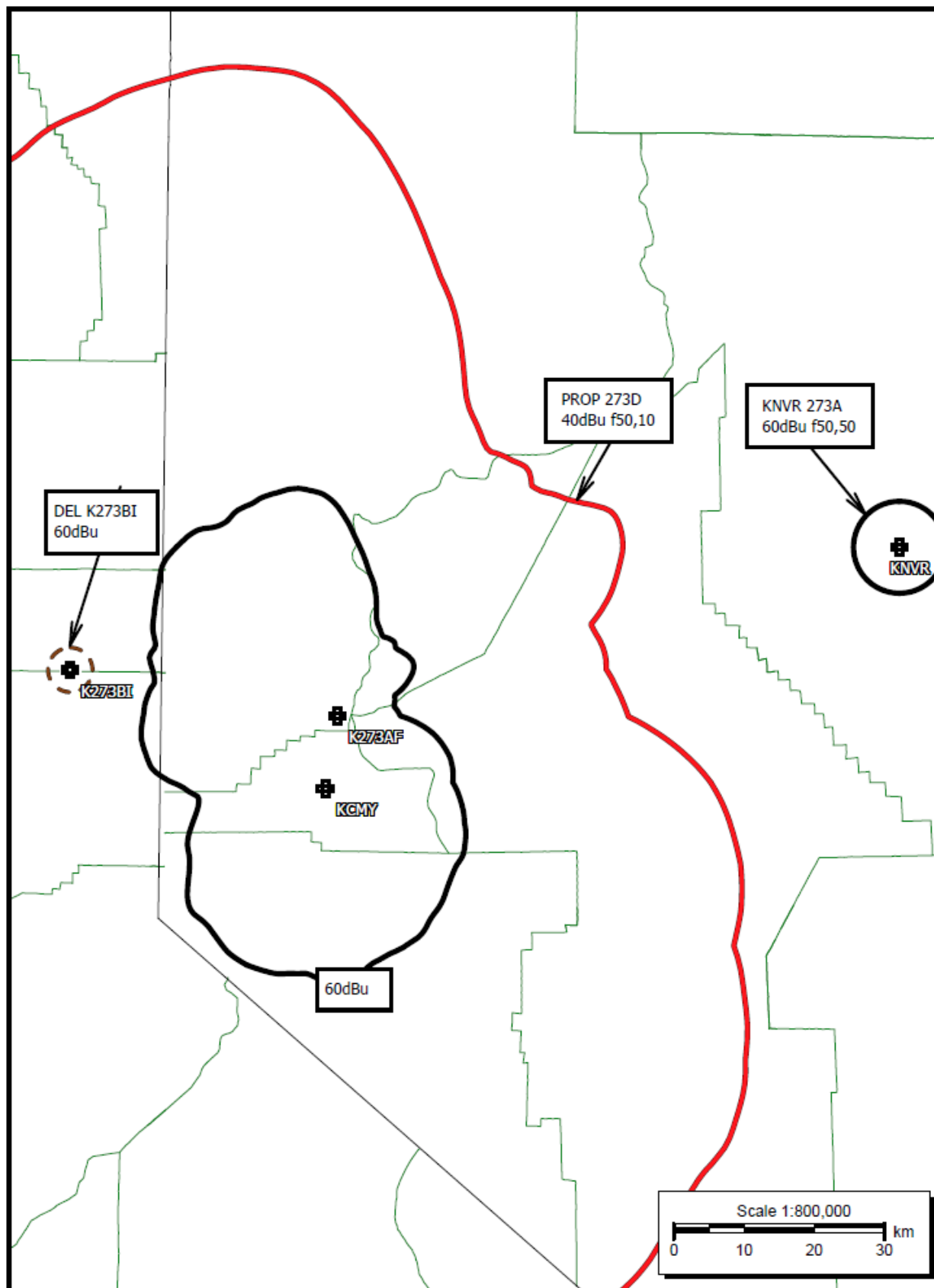
Azimuth (deg)	Relative Field
0.0	0.894
10.0	0.772
20.0	0.611
30.0	0.411
40.0	0.263
50.0	0.219
60.0	0.163
70.0	0.096
80.0	0.086
90.0	0.096
100.0	0.163
110.0	0.219
120.0	0.263
130.0	0.411
140.0	0.611
150.0	0.772
160.0	0.894
170.0	0.972
180.0	1.0
190.0	0.984
200.0	0.985
210.0	0.957
220.0	0.896
230.0	0.809
240.0	0.716
250.0	0.713
260.0	0.732
270.0	0.713
280.0	0.716
290.0	0.809
300.0	0.896
310.0	0.957
320.0	0.985
330.0	0.984
340.0	1.0
350.0	0.972



Proposed K273AF- 74.1201(g)



Proposed K273AF- 74.1204a Compliance



# Exhibit D- 74.1204(d) Analysis KRNV-271

K273AF Carson City , NV, Showing Protection to KRNV-FM , Channel: 271  
 Geographic Coordinates: N. 39 1 5 34.0 W. 119 4 2 21.0  
 74.1204(d) Study - Using NED 03 SEC Terrain Database  
 Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 273  
 Translator or LPFM Antenna Height AG = 49 meters  
 K273AF Antenna Model = CA5-FM-CP-RM\_0098-MHZ\_CPOL\_000DT

Protected Station's Contour = 68.758 dBu  
 Translator's or LPFM's full Interference contour 108.758

Review Azimuth = 180 Degrees True  
 Horizontal Relative Field at Review Azimuth = 1.000  
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW  
 Distance between stations = 37.0 km  
 Protected Station= KRNV-FM, 11 kW, 1708 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	1.0	0.2500	404.6411	404.6411	049.000
01.00	0.997	1.0	0.2483	403.2249	403.1635	041.963
02.00	0.993	1.0	0.2465	401.7682	401.5234	034.978
03.00	0.989	1.0	0.2447	400.3519	399.8033	028.047
04.00	0.986	1.0	0.2430	398.9357	397.9639	021.172
05.00	0.982	1.0	0.2412	397.4790	395.9664	014.357
06.00	0.976	1.0	0.2383	395.0511	392.8870	007.706
07.00	0.97	1.0	0.2354	392.6233	389.6967	001.151
08.00	0.964	1.0	0.2325	390.1954	386.3981	-005.305
09.00	0.958	1.0	0.2296	387.7676	382.9935	-011.660
10.00	0.952	1.0	0.2267	385.3397	379.4856	-017.914
11.00	0.945	1.0	0.2232	382.3049	375.2809	-023.947
12.00	0.937	1.0	0.2196	379.2701	370.9822	-029.855
13.00	0.93	1.0	0.2161	376.1948	366.5530	-035.625
14.00	0.922	1.0	0.2126	373.1600	362.0756	-041.276
15.00	0.915	1.0	0.2092	370.1252	357.5135	-046.795
16.00	0.905	1.0	0.2047	366.1597	351.9753	-051.927
17.00	0.895	1.0	0.2003	362.2347	346.4068	-056.907
18.00	0.886	1.0	0.1960	358.3097	340.7728	-061.724
19.00	0.876	1.0	0.1917	354.3442	335.0390	-066.363
20.00	0.866	1.0	0.1875	350.4192	329.2863	-070.850
21.00	0.852	1.0	0.1815	344.7542	321.8558	-074.549
22.00	0.838	1.0	0.1756	339.0893	314.3981	-078.025
23.00	0.824	1.0	0.1697	333.4243	306.9187	-081.279
24.00	0.81	1.0	0.1640	327.7593	299.4230	-084.312
25.00	0.796	1.0	0.1584	322.0943	291.9166	-087.123
26.00	0.781	1.0	0.1523	315.8224	283.8593	-089.447
27.00	0.765	1.0	0.1463	309.5100	275.7754	-091.515
28.00	0.749	1.0	0.1404	303.2381	267.7433	-093.362
29.00	0.734	1.0	0.1347	296.9661	259.7324	-094.972
30.00	0.718	1.0	0.1290	290.6537	251.7135	-096.327
31.00	0.7	1.0	0.1226	283.3702	242.8956	-096.946
32.00	0.682	1.0	0.1164	276.0866	234.1347	-097.304
33.00	0.664	1.0	0.1103	268.8031	225.4372	-097.401
34.00	0.646	1.0	0.1044	261.5196	216.8095	-097.240
35.00	0.628	1.0	0.0987	254.2360	208.2580	-096.824
36.00	0.608	1.0	0.0925	246.1432	199.1340	-095.679
37.00	0.588	1.0	0.0865	238.0504	190.1155	-094.262
38.00	0.568	1.0	0.0807	229.9575	181.2090	-092.576
39.00	0.548	1.0	0.0752	221.8647	172.4213	-090.624
40.00	0.528	1.0	0.0698	213.7719	163.7588	-088.410
41.00	0.507	1.0	0.0643	205.2744	154.9226	-085.672
42.00	0.486	1.0	0.0591	196.7770	146.2338	-082.669
43.00	0.465	1.0	0.0541	188.2795	137.6989	-079.406
44.00	0.444	1.0	0.0494	179.7820	129.3244	-075.887
45.00	0.423	1.0	0.0448	171.2846	121.1165	-072.116
46.00	0.405	1.0	0.0409	163.6773	113.6998	-068.740
47.00	0.386	1.0	0.0372	156.0701	106.4395	-065.142

48.00	0.367	1.0	0.0337	148.4628	099.3410	-061.329
49.00	0.348	1.0	0.0303	140.8556	092.4096	-057.305
50.00	0.329	1.0	0.0271	133.2483	085.6504	-053.074
51.00	0.313	1.0	0.0245	126.5717	079.6542	-049.365
52.00	0.296	1.0	0.0219	119.8952	073.8148	-045.479
53.00	0.28	1.0	0.0196	113.1781	068.1123	-041.388
54.00	0.263	1.0	0.0173	106.5015	062.6000	-037.162
55.00	0.247	1.0	0.0152	099.8250	057.2572	-032.772
56.00	0.235	1.0	0.0138	095.2121	053.2419	-029.934
57.00	0.224	1.0	0.0125	090.6396	049.3659	-027.017
58.00	0.213	1.0	0.0113	086.0672	045.6086	-023.989
59.00	0.201	1.0	0.0101	081.4543	041.9520	-020.820
60.00	0.19	1.0	0.0090	076.8818	038.4409	-017.582
61.00	0.18	1.0	0.0081	072.9568	035.3702	-014.809
62.00	0.171	1.0	0.0073	069.0722	032.4275	-011.987
63.00	0.161	1.0	0.0065	065.1472	029.5762	-009.047
64.00	0.151	1.0	0.0057	061.2222	026.8380	-006.026
65.00	0.142	1.0	0.0050	057.3376	024.2319	-002.966
66.00	0.14	1.0	0.0049	056.6902	023.0580	-002.789
67.00	0.139	1.0	0.0048	056.0833	021.9135	-002.625
68.00	0.137	1.0	0.0047	055.4763	020.7818	-002.437
69.00	0.136	1.0	0.0046	054.8289	019.6489	-002.187
70.00	0.134	1.0	0.0045	054.2219	018.5450	-001.952
71.00	0.134	1.0	0.0045	054.3028	017.6793	-002.344
72.00	0.134	1.0	0.0045	054.3838	016.8055	-002.722
73.00	0.135	1.0	0.0045	054.4647	015.9239	-003.085
74.00	0.135	1.0	0.0045	054.5456	015.0348	-003.433
75.00	0.135	1.0	0.0046	054.6266	014.1384	-003.765
76.00	0.136	1.0	0.0046	055.1526	013.3426	-004.514
77.00	0.138	1.0	0.0047	055.7191	012.5341	-005.291
78.00	0.139	1.0	0.0048	056.2451	011.6940	-006.016
79.00	0.14	1.0	0.0049	056.7712	010.8324	-006.728
80.00	0.142	1.0	0.0050	057.3376	009.9566	-007.467
81.00	0.143	1.0	0.0051	057.9851	009.0709	-008.271
82.00	0.145	1.0	0.0053	058.6730	008.1657	-009.102
83.00	0.147	1.0	0.0054	059.3608	007.2343	-009.918
84.00	0.148	1.0	0.0055	060.0083	006.2726	-010.680
85.00	0.15	1.0	0.0056	060.6962	005.2900	-011.465
86.00	0.152	1.0	0.0057	061.3031	004.2763	-012.154
87.00	0.153	1.0	0.0058	061.8696	003.2380	-012.785
88.00	0.154	1.0	0.0060	062.4766	002.1804	-013.439
89.00	0.156	1.0	0.0061	063.0835	001.1010	-014.074
90.00	0.157	1.0	0.0062	063.6500	000.0000	-014.650



# Exhibit D (Cont'd)- 74.1204(d) Analysis KWYL (FM) 275

K273AF Carson City , NV, Showing Protection to KWYL , Channel: 275  
 Geographic Coordinates: N. 39 1 5 34.0 W. 119 4 2 21.0  
 74.1204(d) Study - Using NED 03 SEC Terrain Database  
 Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 273  
 Translator or LPFM Antenna Height AG = 49 meters  
 K273AF Antenna Model = CA5-FM-CP-RM\_0098-MHZ\_CPOL\_000DT

Protected Station's Contour = 97.24106 dBu  
 Translator's or LPFM's full Interference contour 137.24106

Review Azimuth = 180 Degrees True  
 Horizontal Relative Field at Review Azimuth = 1.000  
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW  
 Distance between stations = 16.3 km  
 Protected Station= KWYL, 39 kW, 2969 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	1.0	0.2500	015.2376	015.2376	049.000
05.00	0.982	1.0	0.2412	014.9679	014.9110	047.695
10.00	0.952	1.0	0.2267	014.5108	014.2903	046.480
15.00	0.915	1.0	0.2092	013.9378	013.4629	045.393
20.00	0.866	1.0	0.1875	013.1958	012.4000	044.487
25.00	0.796	1.0	0.1584	012.1291	010.9927	043.874
30.00	0.718	1.0	0.1290	010.9452	009.4788	043.527
35.00	0.628	1.0	0.0987	009.5738	007.8424	043.509
40.00	0.528	1.0	0.0698	008.0500	006.1667	043.826
45.00	0.423	1.0	0.0448	006.4501	004.5609	044.439
50.00	0.329	1.0	0.0271	005.0177	003.2253	045.156
55.00	0.247	1.0	0.0152	003.7591	002.1561	045.921
60.00	0.19	1.0	0.0090	002.8951	001.4476	046.493
65.00	0.142	1.0	0.0050	002.1592	000.9125	047.043
70.00	0.134	1.0	0.0045	002.0418	000.6984	047.081
75.00	0.135	1.0	0.0046	002.0571	000.5324	047.013
80.00	0.142	1.0	0.0050	002.1592	000.3749	046.874
85.00	0.15	1.0	0.0056	002.2856	000.1992	046.723
90.00	0.157	1.0	0.0062	002.3969	000.0000	046.603

NO INTERFERENCE TO KWYL(FM) 275C AT GROUND LEVEL

Exhibit D (Cont'd) 74.1204(d) – No Residences within interfering contour to KRNV. KWYL will be considerably less restrictive.

