

ENGINEERING STATEMENT – SECOND ADJACENT CHANNEL PROTECTION

KDON-FM, Salinas, CA, 273B (28.5 kilometers at 127 degrees True from LPFM site) is a second adjacent-channel station to the proposed channel 271 LPFM facility. The 54 dBu F50,50 service contour extends well beyond the LPFM transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to KDON-FM.

Note that a rule waiver of Section 73.807 for this second adjacent-channel protection using the well-established *Living Way Ministries* Methodology is respectfully requested if such a rule waiver is deemed necessary for protection to any station.

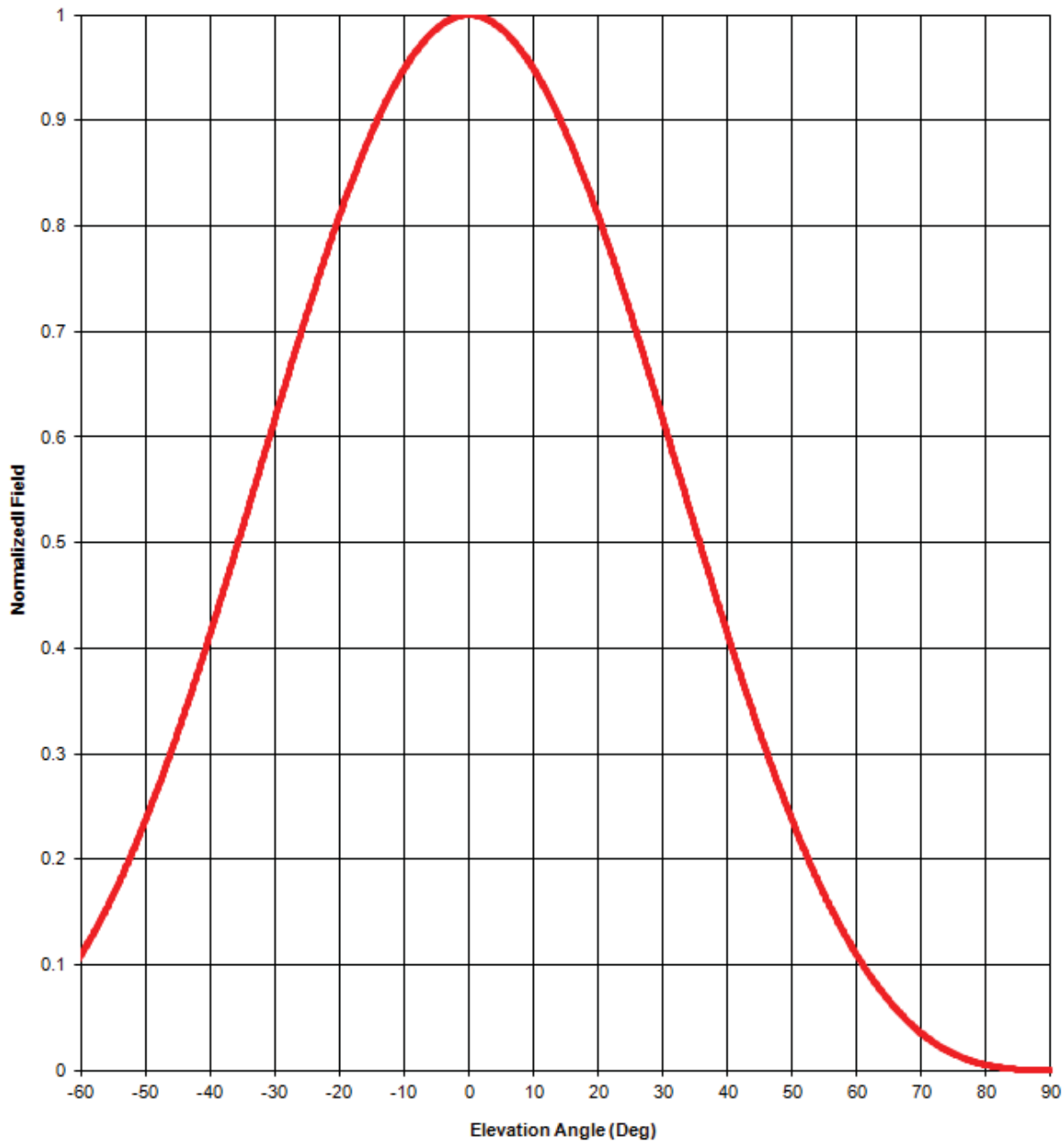
The F50,50 signal strength from KDON-FM at the proposed LPFM transmitter site is 82 dBu (the “desired” signal). The second/third adjacent-channel protection is an undesired-to-desired (“U/D”) dB signal strength ratio of 40:1. Therefore, predicted interference to KDON-FM is a LPFM signal of greater than or equal to 122 dBu.

Figure EE1 is the vertical plane relative field pattern for the proposed Shively Labs 6812B 2-bay half-wave spaced antenna. By adjusting for the vertical plane downward relative field values of the proposed antenna, it is herein demonstrated that the 122 dBu interfering signal (using a free space field determination) does not exist at any point at ground level. (Actually, the study is made to 2 meters above ground level to account for a person’s height.)

Attached as Figure EE2 is a tabulation of various points (at 2 meters above ground level) from the proposed translator tower base. (Column B is the different distances from the tower base to each studied point.) The actual distance from the antenna to each point is listed in Column C, the hypotenuse of the vertical height (Column A) and the horizontal distance (Column B). Also, the vertical distance from the antenna bottom to the calculated interference signal for each studied point is provided in Column K. Because the calculated distance to the free space interfering signal (Column J) is less than the hypotenuse distance (Column C) and the interfering signal vertical distance (Column K) is less than the vertical distance (Column A) for each studied point, the interfering signal does not reach any studied point. (In other words, the interfering signal does not make it to 2 meters any point.) The clearance of at least 23 meters is above the top floor height of any building that is located within 56 meters of the tower. (56 meters is the farthest distance for the maximum ERP of 100 watts that is proposed for this station.) An aerial photo of the site is attached. No interference is predicted to exist to KDON-FM based on the above showing.

Elevation pattern

FIGURE EE1 (Page 1 of 2)



Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, & 68xx except 6832, 2-bay half-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

	Power	dB
6014, 6015, 68xx:	0.71	-1.51 dB
6510, 6513, 6600:	1.42	1.49 dB

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FIGURE EE1 (Page 2 of 2)

Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.999	19	0.827	37	0.473	55	0.166	73	0.022
2	0.998	20	0.810	38	0.453	56	0.154	74	0.019
3	0.995	21	0.792	39	0.433	57	0.142	75	0.016
4	0.992	22	0.774	40	0.414	58	0.130	76	0.013
5	0.987	23	0.756	41	0.394	59	0.119	77	0.011
6	0.981	24	0.737	42	0.375	60	0.109	78	0.008
7	0.975	25	0.718	43	0.357	61	0.099	79	0.007
8	0.967	26	0.698	44	0.338	62	0.090	80	0.005
9	0.959	27	0.678	45	0.320	63	0.082	81	0.004
10	0.949	28	0.658	46	0.303	64	0.073	82	0.003
11	0.939	29	0.638	47	0.286	65	0.066	83	0.002
12	0.928	30	0.617	48	0.269	66	0.059	84	0.001
13	0.915	31	0.597	49	0.253	67	0.052	85	0.001
14	0.903	32	0.576	50	0.237	68	0.046	86	0.001
15	0.889	33	0.555	51	0.222	69	0.040	87	0.000
16	0.874	34	0.535	52	0.207	70	0.035	88	0.000
17	0.859	35	0.514	53	0.193	71	0.030	89	0.000
18	0.843	36	0.494	54	0.179	72	0.026	90	0.000

Elevation Pattern Tabulation

Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, 68xx except 6832, & Versa2une, 2-bay half-wave-spaced.

Relative Field at 0° Depression = 1.000

FIGURE EE2

FREE SPACE FIELD STRENGTH AT A DISTANCE STUDY RESULTS

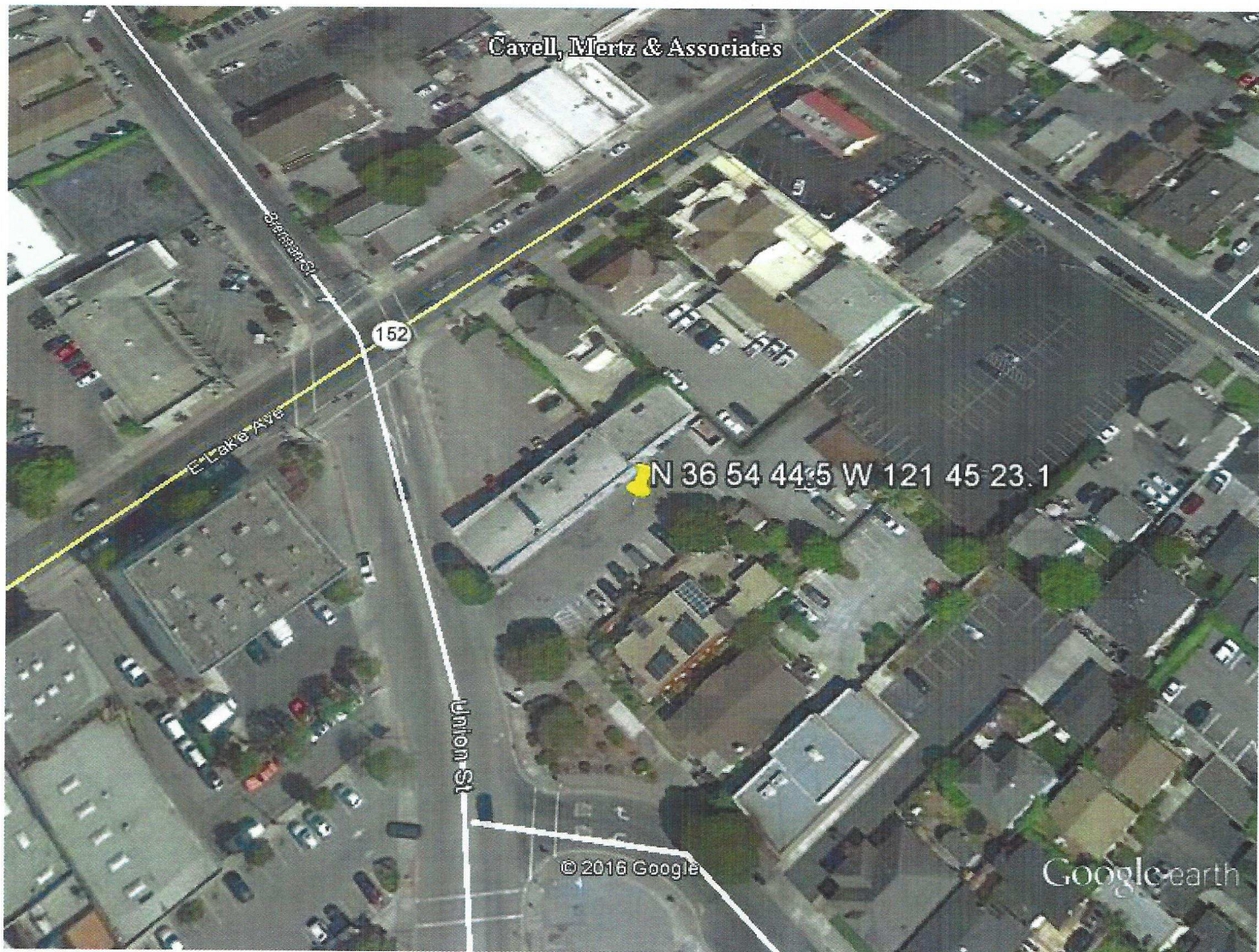
PROJECT: WATSONVILLE, CA, CHANNEL 271L

31-May-16

Pt	Column A Vert Dist From Ant Bottom (meters)	Column B Horiz Dist From Tower Base (meters)	Column C Hypot- enuse Dist fr Ant Bottom (meters)	Column D Down- ward Angle fr Ant Bottom (degrees)	Column E Max ERP (watts)	Column F Max ERP (dBmw)	Column G Pattern Relative Field at Down- ward Angle	Column H Free Space Inter- ferring Signal (dBu)	Column I Adjusted ERP in Down- ward Angle (dBmW)	Column J Interf Distance along Hypot- enuse (meters)	Column K Vert Interf Distance below Antenna (meters)
1	40	0.1	40.0	89.9	100	50.00	0.001	122.0	-10.00	0.1	0.1
2	40	4	40.2	84.3	100	50.00	0.001	122.0	-10.00	0.1	0.1
3	40	6	40.4	81.5	100	50.00	0.004	122.0	2.04	0.2	0.2
4	40	8	40.8	78.7	100	50.00	0.007	122.0	6.90	0.4	0.4
5	40	10	41.2	76.0	100	50.00	0.013	122.0	12.28	0.7	0.7
6	40	15	42.7	69.4	100	50.00	0.040	122.0	22.04	2.2	2.1
7	40	20	44.7	63.4	100	50.00	0.082	122.0	28.28	4.6	4.1
8	40	25	47.2	58.0	100	50.00	0.130	122.0	32.28	7.3	6.2
9	40	30	50.0	53.1	100	50.00	0.193	122.0	35.71	10.8	8.6
10	40	35	53.2	48.8	100	50.00	0.269	122.0	38.60	15.0	11.3
11	40	40	56.6	45.0	100	50.00	0.320	122.0	40.10	17.9	12.7
12	40	45	60.2	41.6	100	50.00	0.394	122.0	41.91	22.0	14.6
13	40	50	64.0	38.7	100	50.00	0.453	122.0	43.12	25.3	15.8
14	40	56	68.8	35.5	100	50.00	0.514	122.0	44.22	28.7	16.7

NOTE: Study point at 2 meters above ground (or rooftop, see write-up) level.

RESULTS: COLUMN J DISTANCES ARE LESS THAN COLUMN C AND COLUMN K DISTANCES ARE LESS THAN COLUMN A DISTANCES IN ALL INSTANCES; THEREFORE, INTERFERRING SIGNAL DOES NOT EXIST AT ANY LOCATION (TWO METERS OR LESS ABOVE GROUND LEVEL)



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