

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of EAST BAY ORIENTAL RADIO, INC. in support of its amendment to Application for Construction Permit [BNPL-20131115ACI] to operate a Low Power FM station on Channel 241 (96.1 MHz) in Oakland, California.

It is proposed to mount a standard 4-bay half-wave-spaced antenna at the 27.5-meter level of an existing tower. The proposed effective radiated power is 100 watts. Exhibit B is a map upon which the proposed 60 dBu service contour for the proposed facility is plotted. It is important to note that the proposed location meets all of the Commission's spacing requirements to pertinent co-channel and adjacent-channel full-power, FM translator and LPFM stations, except in two instances. The proposed site is short-spaced to second-adjacent-channel station KGMZ(FM) and KOIT(FM) in San Francisco, California. As a result, we request a waiver of the Commission's Rules with respect to KGMZ(FM) and KOIT(FM) and the justification appears in Exhibit C.] We have also determined that the proposed facility should not cause objectionable interference to the input signal of any existing translator station, based on the information contained in the FCC's CDBS database.

Employing the methods of OET Bulletin No. 65, and based on the elevation pattern of a standard 4-bay FM antenna, maximum power density two meters above ground of 0.0042 mW/cm^2 is calculated to occur 9 meters from the base of the tower. Since this is only 2.1 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access)

EXHIBIT A

surrounding a facility operating in the FM band, a grant of this proposal can be considered a minor environmental action with respect to human exposure to non-ionizing electromagnetic radiation. Further the station owner will take whatever precautionary steps are necessary to ensure that workers operating in the vicinity of the antenna are not exposed to RF energy in excess of the Commission's guideline values.

Due to the diminutive height of the existing building and its proximity to the nearest airport runways, the FAA has not been notified of this application. In addition, FCC registration of this structure is not required for the same reasons. This conclusion is supported by the Commission's TOWAIR program.

I declare under penalty of perjury that the foregoing statements and the attached exhibit, which was prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.



KYLE T. FISHER

April 3, 2014

**CONTOUR POPULATION
2010 U.S. CENSUS DATA
314,649**

Proposed Site

Latitude: 37-46-30 N
Longitude: 122-14-12.60 W
ERP: 0.10 kW
Channel: 241
Frequency: 96.1 MHz
AMSL Height: 31.83 m
Horiz. Pattern: Omni



**60 DBU FCC
CONTOUR**

**EXHIBIT B
PREDICTED SERVICE CONTOUR
PROPOSED LPFM STATION
96.1 MHZ - OAKLAND, CA**

Scale 1:125,000



SECOND-ADJACENT-CHANNEL WAIVER REQUEST
PROPOSED LPFM STATION
CHANNEL 241 – OAKLAND, CALIFORNIA
[AMENDMENT TO BNPL-20131115ACI]

The newly proposed site is located 20.0 kilometers from that of KGMZ(FM), which operates on Channel 239B in San Francisco, California, and 19.0 kilometers from that of KOIT(FM), Channel 243B in San Francisco. Since the required spacing to these stations is 67 kilometers, a waiver of the Commission's spacing rules with regard to these stations is requested and believed to be justified for the reasons stated below.

Attached as Exhibit C-2 is a map upon which the proposed site is plotted. To that map, we have added the KGMZ 79.8 dBu and the KOIT 87.2 dBu service contours, which pass very close to the proposed site. Based on the FCC's 40 dB desired-to-undesired ratio that applies to second-adjacent-channel situations such as these, the proposed interference contours to KGMZ and KOIT are 119.8 dBu and 127.2 dBu, respectively. If one assumes a maximum effective radiated power of 100 watts in all depression angles for the LPFM antenna, the interference contour toward KGMZ and KOIT would extend only 70 meters from the proposed antenna for KGMZ and only 30 meters with respect to KOIT.

In addition, the applicant proposes to utilize an ERI LPX4H half-wave-spaced antenna for the proposed LPFM facility. This antenna has suppressed radiation values at the steeper elevation angles, as shown in Exhibit C-3.

In Exhibit C-4, we have tabulated the calculated free-space field values at five degree increments from horizontal that result from use of this antenna. We employed the following formula for calculating these field strength values: $F=137+10(\log ERP)-20(\log d)$, where F is the field

EXHIBIT C-1

strength in terms of dBu, ERP is in watts (and factors in the relative field value from the elevation pattern at the given depression angle) and d is distance from the base of the tower in meters. As shown, at every distance from the tower base the proposed field strength is at least 4 dB less than that required to protect KGMZ and KOIT from interference.

We have also conducted a population analysis, based on the 2010 U.S. Census database, for the maximum interference contour (70 meters) that extends from the antenna and conclude that there are no buildings of significant height within this arc. In support of this conclusion, Exhibit C-5 is a map on which the interference area is plotted.

As a result, a waiver of the FCC's 2nd-adjacent-channel spacing Rule with regard to KGMZ and KOIT is respectfully requested and believed to be justified.

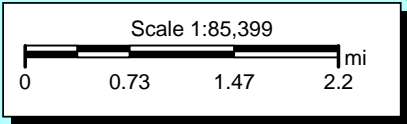
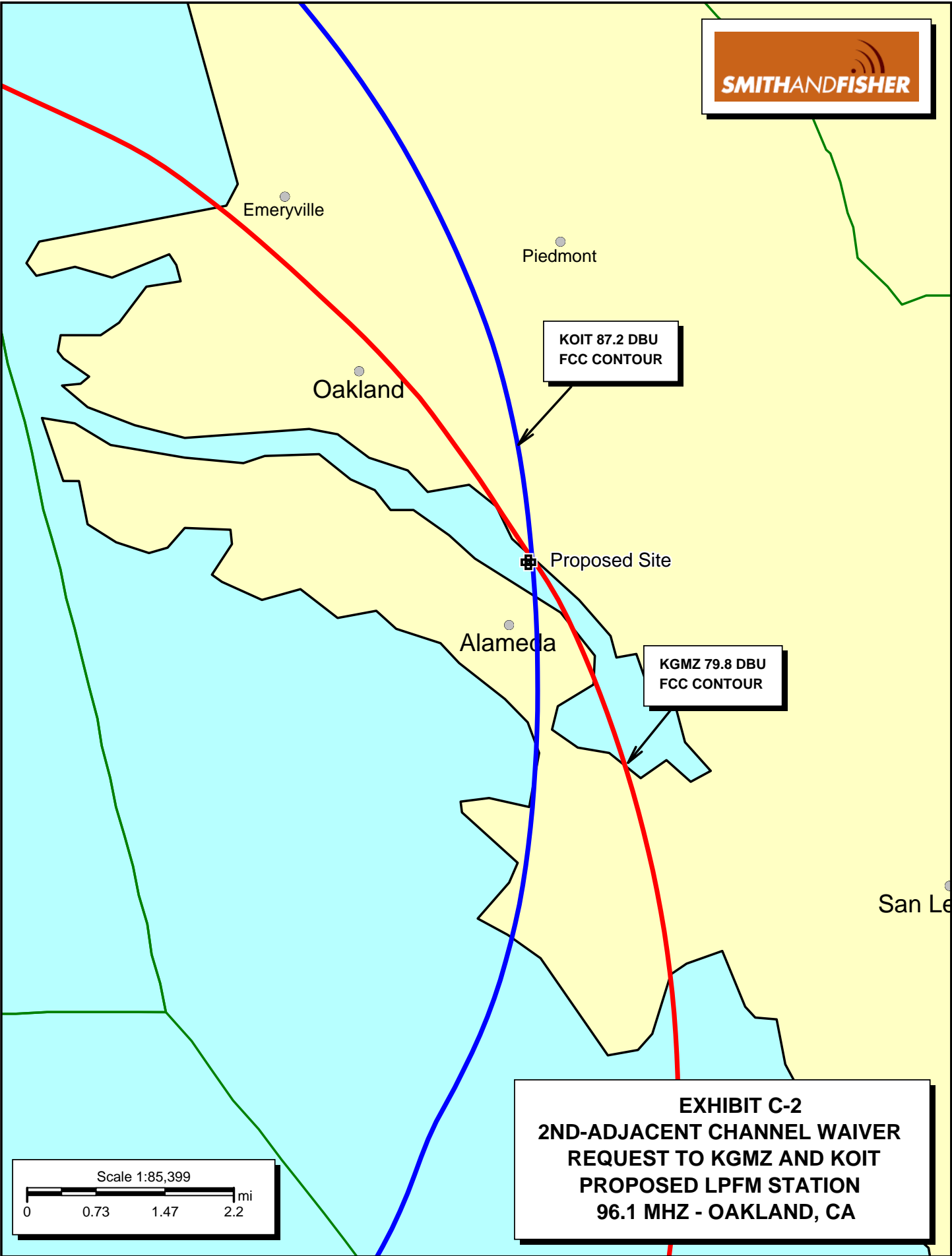
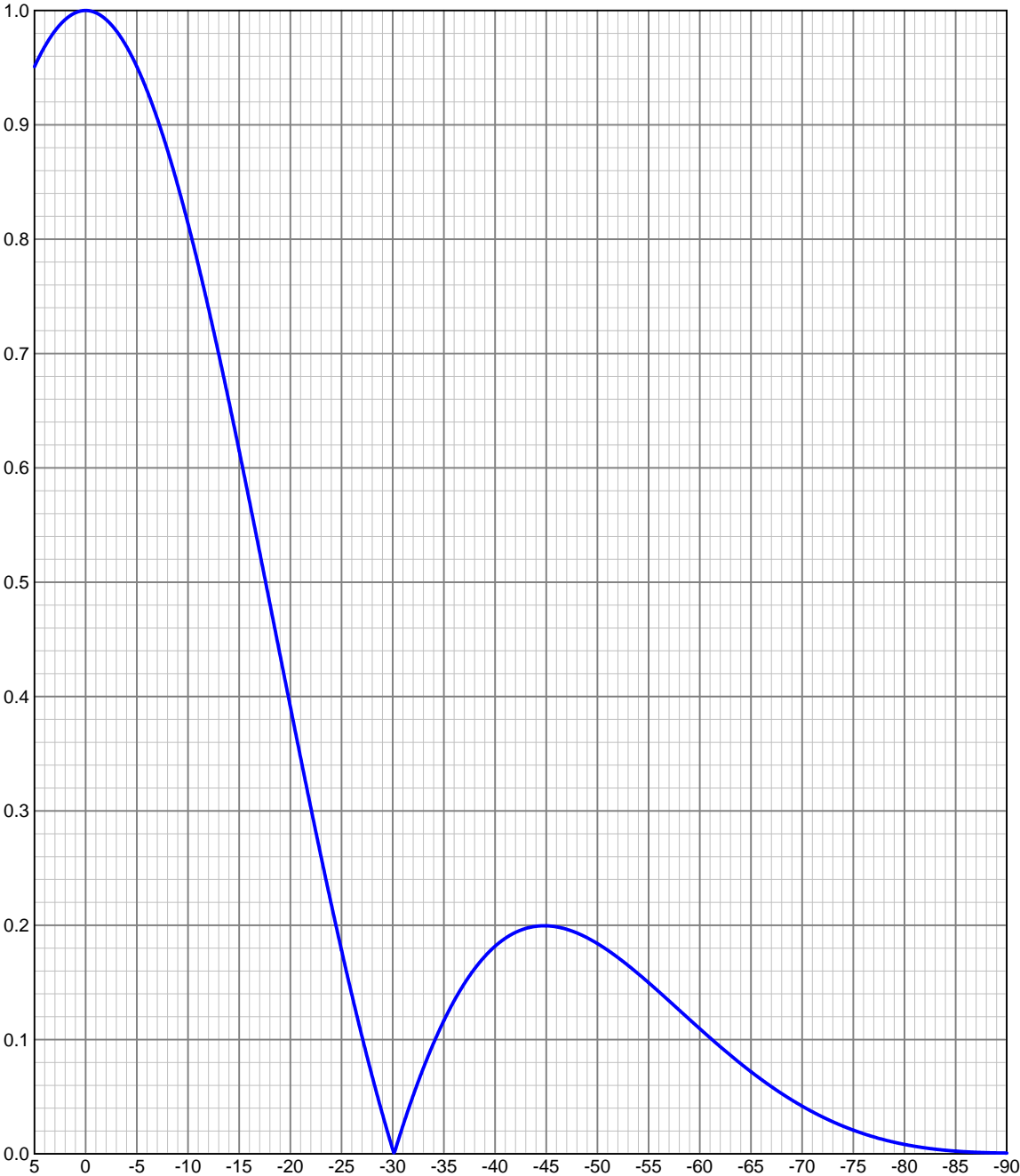


EXHIBIT C-2
2ND-ADJACENT CHANNEL WAIVER
REQUEST TO KGMZ AND KOIT
PROPOSED LPFM STATION
96.1 MHZ - OAKLAND, CA

ELEVATION PATTERN

Type:	LPX4H		Channel:	250
Directivity:	Numeric	dBd	Location:	
Main Lobe:	1.31	1.16	Beam Tilt:	0.00
Horizontal:	1.31	1.16	Polarization:	Circular

Relative Field



Preliminary, subject to final design and review.

TABULATED DATA FOR ELEVATION PATTERN

Type: LPX4H

Polarization: Circular

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.951	-0.44	-6.75	0.912	-0.80	-27.00	0.103	-19.77	-50.50
4.75	0.956	-0.39	-7.00	0.905	-0.86	-27.50	0.085	-21.42	-51.00
4.50	0.960	-0.35	-7.25	0.899	-0.93	-28.00	0.068	-23.39	-51.50
4.25	0.964	-0.32	-7.50	0.892	-0.99	-28.50	0.051	-25.85	-52.00
4.00	0.968	-0.28	-7.75	0.885	-1.06	-29.00	0.035	-29.18	-52.50
3.75	0.972	-0.25	-8.00	0.878	-1.13	-29.50	0.019	-34.39	-53.00
3.50	0.976	-0.21	-8.25	0.870	-1.21	-30.00	0.004	-48.10	-53.50
3.25	0.979	-0.18	-8.50	0.863	-1.28	-30.50	0.011	-39.44	-54.00
3.00	0.982	-0.16	-8.75	0.855	-1.36	-31.00	0.025	-32.14	-54.50
2.75	0.985	-0.13	-9.00	0.847	-1.44	-31.50	0.038	-28.36	-55.00
2.50	0.988	-0.11	-9.25	0.839	-1.53	-32.00	0.051	-25.83	-55.50
2.25	0.990	-0.09	-9.50	0.831	-1.61	-32.50	0.063	-23.95	-56.00
2.00	0.992	-0.07	-9.75	0.822	-1.70	-33.00	0.075	-22.47	-56.50
1.75	0.994	-0.05	-10.00	0.814	-1.79	-33.50	0.086	-21.27	-57.00
1.50	0.996	-0.04	-10.50	0.796	-1.98	-34.00	0.097	-20.26	-57.50
1.25	0.997	-0.03	-11.00	0.778	-2.18	-34.50	0.107	-19.40	-58.00
1.00	0.998	-0.02	-11.50	0.759	-2.40	-35.00	0.117	-18.67	-58.50
0.75	0.999	-0.01	-12.00	0.740	-2.62	-35.50	0.126	-18.02	-59.00
0.50	1.000	0.00	-12.50	0.720	-2.86	-36.00	0.134	-17.46	-59.50
0.25	1.000	0.00	-13.00	0.700	-3.10	-36.50	0.142	-16.97	-60.00
0.00	1.000	0.00	-13.50	0.679	-3.36	-37.00	0.149	-16.54	-60.50
-0.25	1.000	0.00	-14.00	0.658	-3.64	-37.50	0.156	-16.15	-61.00
-0.50	1.000	0.00	-14.50	0.637	-3.92	-38.00	0.162	-15.81	-61.50
-0.75	0.999	-0.01	-15.00	0.615	-4.22	-38.50	0.168	-15.51	-62.00
-1.00	0.998	-0.02	-15.50	0.593	-4.54	-39.00	0.173	-15.25	-62.50
-1.25	0.997	-0.03	-16.00	0.571	-4.87	-39.50	0.177	-15.02	-63.00
-1.50	0.996	-0.04	-16.50	0.549	-5.21	-40.00	0.182	-14.81	-63.50
-1.75	0.994	-0.05	-17.00	0.526	-5.58	-40.50	0.185	-14.64	-64.00
-2.00	0.992	-0.07	-17.50	0.504	-5.95	-41.00	0.189	-14.49	-64.50
-2.25	0.990	-0.09	-18.00	0.481	-6.35	-41.50	0.191	-14.36	-65.00
-2.50	0.988	-0.11	-18.50	0.459	-6.77	-42.00	0.194	-14.25	-65.50
-2.75	0.985	-0.13	-19.00	0.436	-7.21	-42.50	0.196	-14.17	-66.00
-3.00	0.982	-0.16	-19.50	0.414	-7.67	-43.00	0.197	-14.10	-66.50
-3.25	0.979	-0.18	-20.00	0.391	-8.15	-43.50	0.198	-14.05	-67.00
-3.50	0.976	-0.21	-20.50	0.369	-8.66	-44.00	0.199	-14.02	-67.50
-3.75	0.972	-0.25	-21.00	0.347	-9.20	-44.50	0.199	-14.00	-68.00
-4.00	0.968	-0.28	-21.50	0.325	-9.77	-45.00	0.200	-14.00	-68.50
-4.25	0.964	-0.32	-22.00	0.303	-10.38	-45.50	0.199	-14.01	-69.00
-4.50	0.960	-0.35	-22.50	0.281	-11.02	-46.00	0.199	-14.04	-69.50
-4.75	0.956	-0.39	-23.00	0.260	-11.70	-46.50	0.198	-14.08	-70.00
-5.00	0.951	-0.44	-23.50	0.239	-12.43	-47.00	0.196	-14.13	-70.50
-5.25	0.946	-0.48	-24.00	0.218	-13.22	-47.50	0.195	-14.20	-71.00
-5.50	0.941	-0.53	-24.50	0.198	-14.06	-48.00	0.193	-14.28	-71.50
-5.75	0.935	-0.58	-25.00	0.178	-14.98	-48.50	0.191	-14.37	-72.00
-6.00	0.930	-0.63	-25.50	0.159	-15.99	-49.00	0.189	-14.47	-72.50
-6.25	0.924	-0.69	-26.00	0.140	-17.11	-49.50	0.187	-14.58	-73.00
-6.50	0.918	-0.74	-26.50	0.121	-18.35	-50.00	0.184	-14.70	-73.50

Preliminary, subject to final design and review.

CALCULATED FIELD STRENGTHS
PROPOSED LPFM STATION
CHANNEL 241 – OAKLAND, CALIFORNIA
[AMENDMENT TO BNPL-20131115ACI]

Dep. Ang. (degrees)	R. Field (elevation)	Dist. From Tower (m.)	Effective Power (w)	Free-Space Field (dBu)	KGMZ(FM) Clear (dBu)	KOIT(FM) Clear (dBu)
90	0.001	0	0.0001	97.0	22.8	30.2
85	0.002	2	0.0004	95.4	24.4	31.8
80	0.008	5	0.0064	101.3	18.5	25.9
75	0.021	7	0.0441	106.1	13.7	21.1
70	0.042	10	0.1764	109.5	10.3	17.7
65	0.072	13	0.5184	112.0	7.8	15.2
60	0.110	16	1.21	113.8	6.0	13.4
55	0.146	19	2.1316	114.6	5.2	12.6
50	0.184	23	3.3856	115.0	4.8	12.2
45	0.200	28	4	114.2	5.6	13.0
40	0.182	33	3.3124	111.9	7.9	15.3
35	0.117	39	1.3689	106.5	13.3	20.7
30	0.004	48	0.0016	75.5	44.3	51.7
25	0.178	59	3.1684	106.6	13.2	20.6
20	0.391	76	15.2881	111.3	8.5	15.9
15	0.615	103	37.8225	112.6	7.2	14.6
10	0.814	156	66.2596	111.4	8.4	15.8
5	0.951	314	90.4401	106.6	13.2	20.6
2	0.992	787	98.4064	99.0	20.8	28.2

EXHIBIT C-5

AMENDMENT TO BNPL-20131115ACI
Oakland, CA

Please note the building located inside the arc is a transmitter building supporting the existing tower.

Legend

 70 Meter Arc

