

**Goldman Engineering Management
Auburn, CA**

KQED-FM

APPLICATION FOR NEW ON-CHANNEL BOOSTER

This technical statement and attached exhibits have been prepared on behalf of KQED Inc. licensee of station KQED-FM, Channel 203B, San Francisco, CA, Facility identifier 35501 for an on-channel FM booster to cover the community of Concord, CA which is terrain blocked to the primary KQED-FM signal.

FACILITIES REQUESTED

As required by 47 C.F.R. § 74.1232(f), the requested facility will operate within the Non-Grandfathered 60dBu contour of KQED-FM. To determine the Non-Grandfathered 60dBu contour, the COR AMSL to achieve 150m HAAT was established. The 60dBu maximum Class B contour was then calculated, 50kW @ 150m HAAT. As demonstrated in the exhibit attached to this LMS application, the calculated COR AMSL for the main KQED antenna to achieve 150-meter HAAT is 212.6 meters. The non-grandfathered 60dBu contour is, therefore, calculated as 50kW at 212.6m AMSL. A map showing the coverage of this booster in relationship to the main non-grandfathered KQED-FM signal is shown in Exhibit A. The antenna proposed is a Jampro dual element, single-level log-periodic antenna rotated 45 degrees from vertical to achieve slant H+V polarization. The Azimuth Pattern is attached as Exhibit C.

TECHNICAL SPECIFICATIONS

Booster Location:	“Briones”- Concord, CA
ASR	ASR Not Required (Existing Vertical Bridge asset)
Geographic Coordinates (NAD27):	37°55'56.5” N, 122° 07' 24.1” W
Channel:	203 (88.5 MHz)
Effective Radiated Power:	75 W (H+V)
Antenna Type, Pattern:	Jampro Java Slant Log Periodic (Exhibit C)
Antenna Orientation:	45° True
Site Height AMSL	422m
Tower OAGL	7m
Antenna Height :	
Above ground:	7m
Above mean sea level:	429m

As shown in Exhibit A the 60dBu contour of the booster will fall inside the 60dBu contour of KQED-FM and is thus compliant with 74.1232(f). As shown in Exhibit B, the proposed booster will provide interference protection to all first adjacent channel stations because the first adjacent interfering contours are within the KQED-FM interfering contours. The KQED-FM interfering 54dBu f50,10 contour does not overlap with any first adjacent stations and, it should be noted, as a grandfathered NCE, it is protected to its grandfathered 60dBu contour. There is no IF restriction on this proposed booster.

ENVIRONMENTAL CONSIDERATIONS

The Booster will be attached at the 7m height on an existing 7m tower. Because there will be no modifications to this tower it is exempt from environmental processing under CFR Section 1.1306.

The proposed KQED-FM booster antenna was evaluated for RF energy at ground level. RF fields were calculated using the FCC "FM Model" calculator¹ using an EPA Type 2 antenna. The RF field was calculated at 55.1 μ W/cm² which is 27.6% of the maximum allowable 200 μ W/cm² allowable limit for public exposure. There are two other nearby facilities at this site. K285FA (99w @ 13m AGL) and KIOI-FM1 (267D, 150w @ 5m AGL). The antennas for all facilities are on the edge of a steep drop-off. Because of the antenna placements, and the low power levels it is believed that the proposed 75-watt booster will be compliant under 47CFR 1.1306 and 1.1307.

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

CERTIFICATION

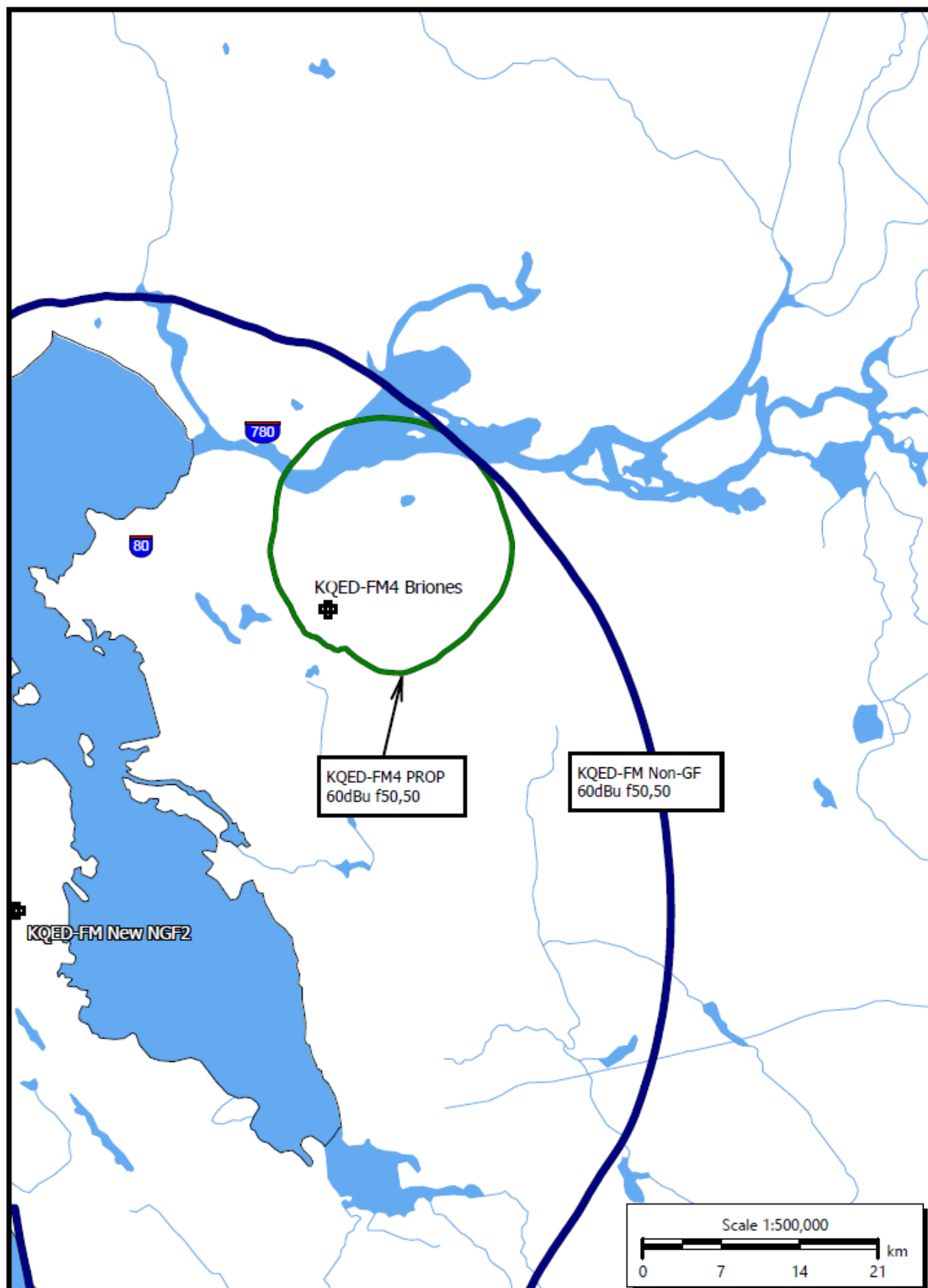
The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direct supervision and that they are true and correct to the best of his knowledge and belief.



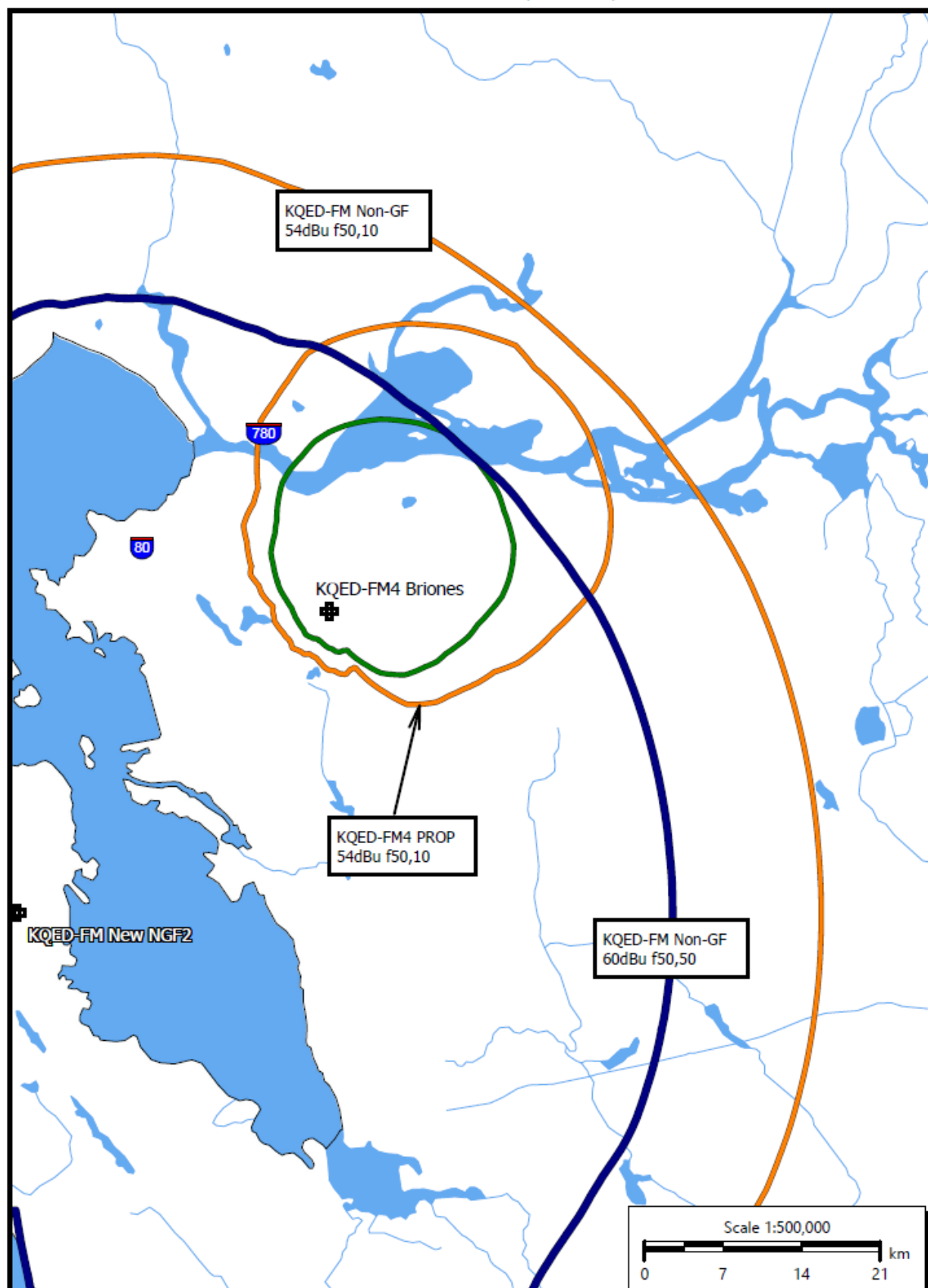
Bertram S. Goldman
Goldman Engineering Management

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

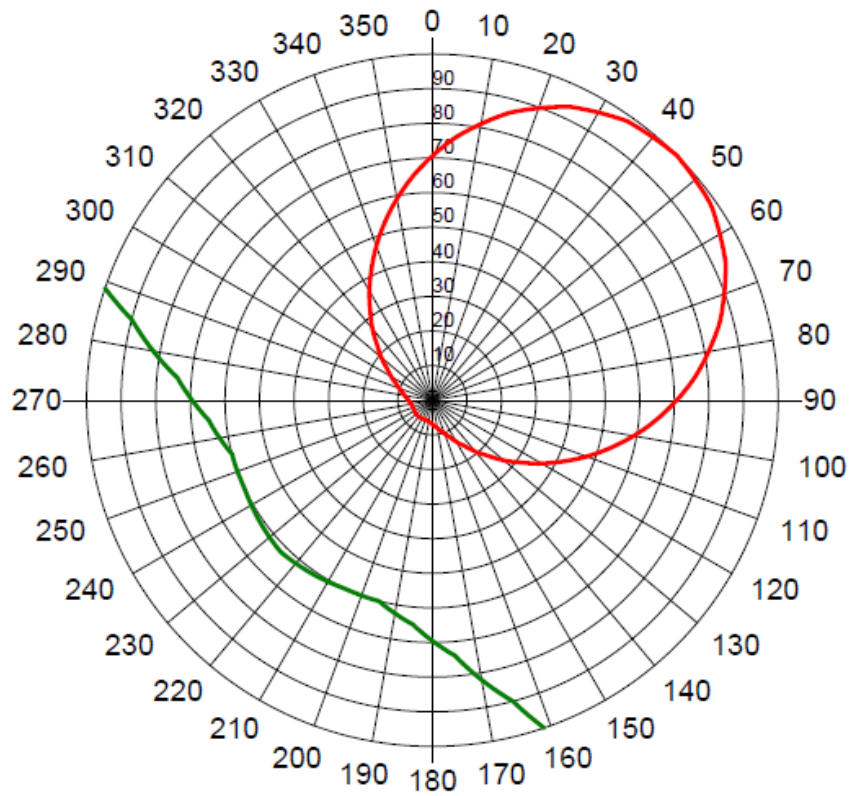
PROP KQED-FM4 Concord (Briones) 75 Watts



PROP KQED-FM4 Concord (Briones)-75 Watts



KQED Briones 45 pattern



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	0.706	-17.00	0.020	-3.02	180	0.070	-37.14	0.000	-23.16
10	0.811	-15.80	0.026	-1.82	190	0.063	-38.06	0.000	-24.08
20	0.898	-14.91	0.032	-0.93	200	0.060	-38.42	0.000	-24.44
30	0.960	-14.33	0.037	-0.35	210	0.061	-38.34	0.000	-24.36
40	0.992	-14.05	0.039	-0.07	220	0.062	-38.20	0.000	-24.22
50	0.992	-14.05	0.039	-0.07	230	0.062	-38.20	0.000	-24.22
60	0.960	-14.33	0.037	-0.35	240	0.061	-38.34	0.000	-24.36
70	0.898	-14.91	0.032	-0.93	250	0.060	-38.42	0.000	-24.44
80	0.811	-15.80	0.026	-1.82	260	0.063	-38.06	0.000	-24.08
90	0.706	-17.00	0.020	-3.02	270	0.070	-37.14	0.000	-23.16
100	0.591	-18.55	0.014	-4.57	280	0.082	-35.70	0.000	-21.72
110	0.475	-20.45	0.009	-6.48	290	0.103	-33.72	0.000	-19.74
120	0.365	-22.73	0.005	-8.75	300	0.138	-31.18	0.001	-17.20
130	0.270	-25.37	0.003	-11.39	310	0.193	-28.27	0.001	-14.29
140	0.193	-28.27	0.001	-14.29	320	0.270	-25.37	0.003	-11.39
150	0.138	-31.18	0.001	-17.20	330	0.365	-22.73	0.005	-8.75
160	0.103	-33.72	0.000	-19.74	340	0.475	-20.45	0.009	-6.48
170	0.082	-35.70	0.000	-21.72	350	0.591	-18.55	0.014	-4.57

Rotation Angle = 0

45Deg = 1.0