

TECHNICAL EXHIBIT  
MINOR CHANGE APPLICATION  
RADIO STATION KBTB(FM) (FACILITY ID 36029)  
ALEMEDA, CALIFORNIA

JUNE 14, 2004

CH 224A 0.51 KW 339 M

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Technical Narrative

This Technical Exhibit supports a minor change application to the licensed facility for FM station KBTB at Alameda, California. KBTB is currently licensed to operate on channel 224A with a non-directional antenna effective radiated power (ERP) of 3.6 kW and an antenna height above average terrain (HAAT) of 128 meters (BLH-19980908KD).

Proposed Facilities

This minor change application proposes to relocate the transmitter site approximately 5.7 kilometers southwest of the current site. The proposed site coordinates are: 37-45-19 N, 122-27-06 W (NAD27). It is proposed to operate with a non-directional ERP of 0.51 kW and antenna HAAT of 339 meters (equivalent to maximum Class A facilities). The antenna structure registration number for the existing tower is 1001289.

The closest FCC monitoring station is at Livermore, California, approximately 61 kilometers to the east. The proposed 10 mV//m (80 dBu) contour will only extend 9.2 kilometers towards the east and thus it is not a concern for coordination purposes.

### Proposed Coverage Analysis

Sheet 1 of Figure 3 is a map showing the predicted coverage contours for the proposed KBTB operation. As the proposal does not cover 80 percent of Alameda using the normal FCC prediction method, use of alternate propagation techniques as described in the following paragraph results in compliance with the principal community coverage requirement of Section 73.315(a).

### Alternate Propagation Methods

When the terrain in one or more directions from the antenna site departs widely from the average terrain, the FCC rules permit use on an alternative or supplemental coverage showing (see Section 73.313). The Commission staff has established that “Where  $\Delta H$  is used as the sole determinate that the terrain along a radial widely departs from the 50 meter standard, a  $\Delta H$  of 20 meters or less, or 100 meters or more”. Several of the extended radials through Alameda meet this criterion. For example, on a radial at 85 degrees true, the  $\Delta H$  was determined to be 9 meters, which demonstrates compliance with the  $\Delta H$  requirement of 20 meters or less.

As shown in Sheet 2 of Figure 3, the 70 dBu contour determined by the use of Longley-Rice propagation provides service to all of Alameda. The Longley-Rice propagation method has been widely used and accepted by the FCC, therefore details of its use are not provided. In the calculation of the Longley-Rice coverage, a roughness correction factor of 3 dB was employed. Sheet 1 of Figure 4 shows three graphs of the Longley-Rice field strength versus distance for the radials in Figure 3.

Also shown on Sheet 2 of Figure 3 is the proposed KBTB 70 dBu contour based on the Point-to-Point (PTP) model. Using this method, 70 dBu coverage is also provided to all of Alameda. The FCC’s Office of Engineering Technology developed the

PTP method. Sheet 2 of Figure 4 shows the graphical results of the PTT study on the three radials indicated in Figure 3.

Based on use of two alternate propagation methods, 70 dBu coverage of all of Alameda is easily obtained.

The following tabulates the distance to the 70 dBu contours along each radial based on the FCC's F(50,50) method, the Longley-Rice model (with the 3-dB clutter factor) and the Point-to-Point model.

Radial	70 dBu Field Strength (km)		Difference		PTP Distance to 70 dBu(KM)
	FCC F(50,50)	Longley-Rice	KM	Percent	
75°	16.7	25.3	8.6	+51	26
85°	16.3	28.3	12.0	+74	27
95°	16.6	30.1	13.5	+81	27

The difference between the distances to the 70 dBu contours for the Longley-Rice model exceeds the FCC predicted field strength distance for each radial substantially more than the minimum 10 percent, as required by FCC policy on supplemental showings. If waiver of the provisions of Section 73.315(a) is still required, it is respectfully requested.

#### Allocation Study

Figure 5 contains a tabulation of actual and required separation distances with respect to other pertinent stations as specified in Section 73.207(b) of the Commission's Rules. The CDBS was used as the basis for the separation study. The proposed facilities for KBTB will be short-spaced under § 73.207 to third adjacent channel station KBAY on channel 227B. As demonstrated below however, KBTB has been continuously short-spaced to KBAY since prior to November 16, 1964 and therefore may be relocated under § 73.213(a) with respect to KBAY without regard to the short-spacing.

Station KBTB was licensed to operate on channel 224 prior to November 1964. Station KBAY was also authorized and operational prior to November 16, 1964 as a Class B station under FCC Rule § 73.202. A Class B station was considered a *grandfathered* short-spaced station under § 73.207, as adopted on November 16, 1964, if the spacing to a third adjacent station was less than 40 miles, then subsequently changed by the FCC in Docket 88-375 to 43 miles. The respective FCC file numbers and coordinates of the stations, as well as the distance to station KBTB, on November 16, 1964 are as follows:

Station	FCC File No.	Latitude	Longitude	Class	Station Distance in Miles to KBTB
KBTB(FM)	BLH-1427	37° 47' 54"	122° 24' 59"	A	DNA
KBAY(FM)	BSH-963	37° 43' 58"	122° 23' 38"	B	4.7

On June 11, 1987, the FCC granted station KBAY a permit to move to 37° 43' 27" North Latitude and 122° 07' 07" West Longitude (FCC File Nos. BPH-19870508IC and BLH-19880429KB). The resulting spacing between these KBAY and KBTB was 17.1 miles. Thus KBTB remained short-spaced to KBAY. At this newly proposed location, KBTB is 18.4 miles from KBAY and, consequently, KBTB continues to be short-spaced to KBAY. This is also confirmed in a letter from the Commission regarding the station pair (see Appendix).

#### Radiofrequency Electromagnetic Field Exposure

The proposed FM facility was evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A conservative downward radiation relative field of 0.5 (see Figure 6), along with a combined ERP of 1.02 kW (0.51 kW horizontal polarization & 0.51 kW vertical polarization) was assumed. Therefore, the "worst-case" calculated power density at a point 2 meters above ground level is 0.0007 mW/cm<sup>2</sup>, which is less than 0.1% of the FCC's recommended limit of 0.2 mW/cm<sup>2</sup> for FM channels, applicable to general population/uncontrolled exposure areas.

Access to the transmitting site is restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KBTB(FM) operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner as part of the tower registration process.



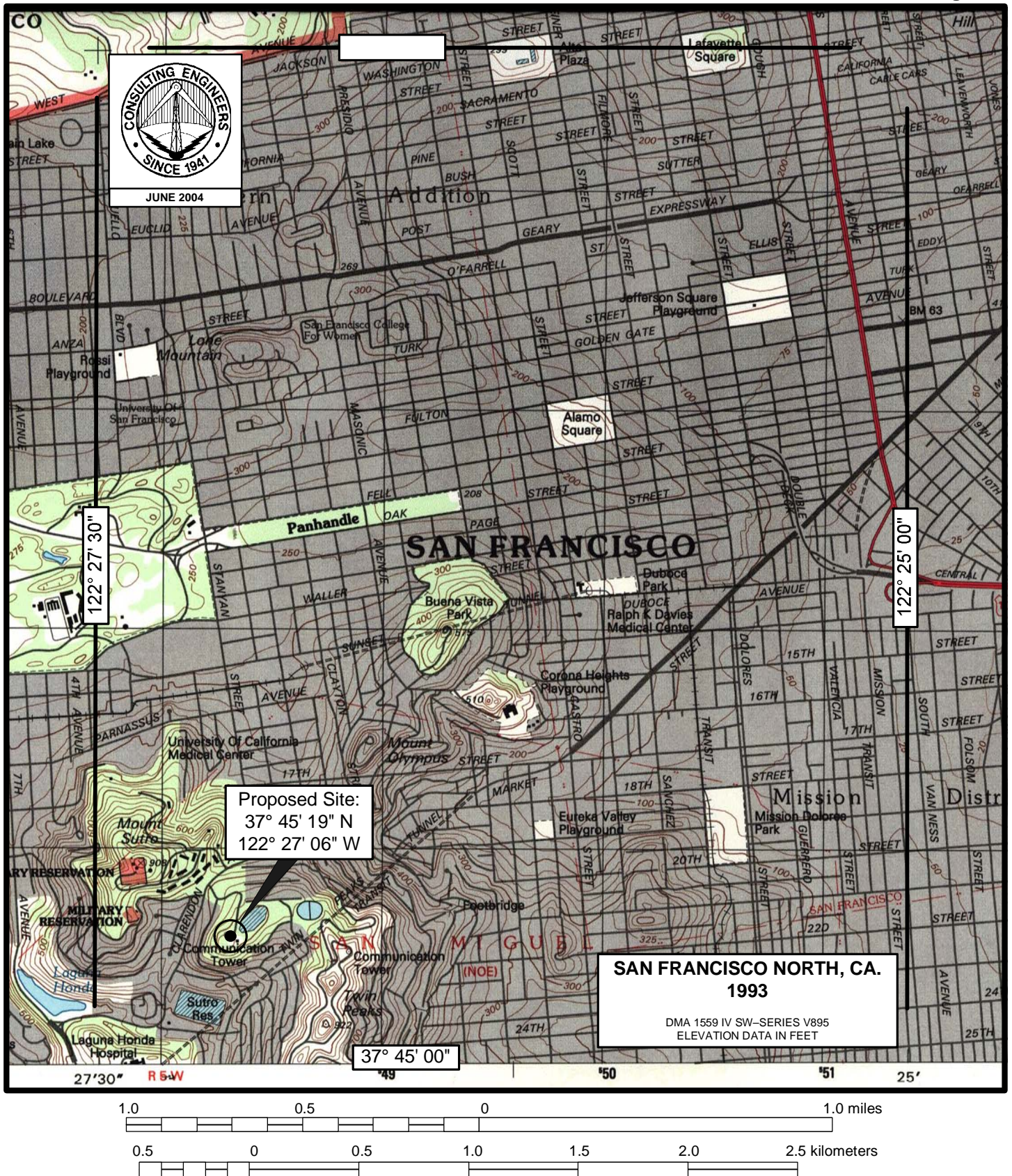
Jonathan N. Edwards

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237  
(941) 329-6000

June 14, 2004



Figure 1



## PROPOSED TRANSMITTER SITE

RADIO STATION KBTB(FM)

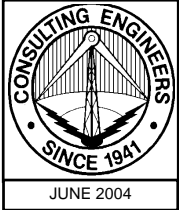
ALAMEDA, CALIFORNIA

CH 224A 0.51 KW 339 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



ASRN: 1001289



604.3 m AMSL  
(1983 ft AMSL)

297.7 m  
(977 ft)

Site Coordinates:  
(NAD 27)  
37° 45' 19"N  
122° 27' 06"W

Proposed KBTB(FM) Antenna

Radiation Center  
370.0 m AMSL  
(1214 ft AMSL)

115.8 m  
(380 ft)

254.2 m AMSL  
(834 ft AMSL)

Not to Scale

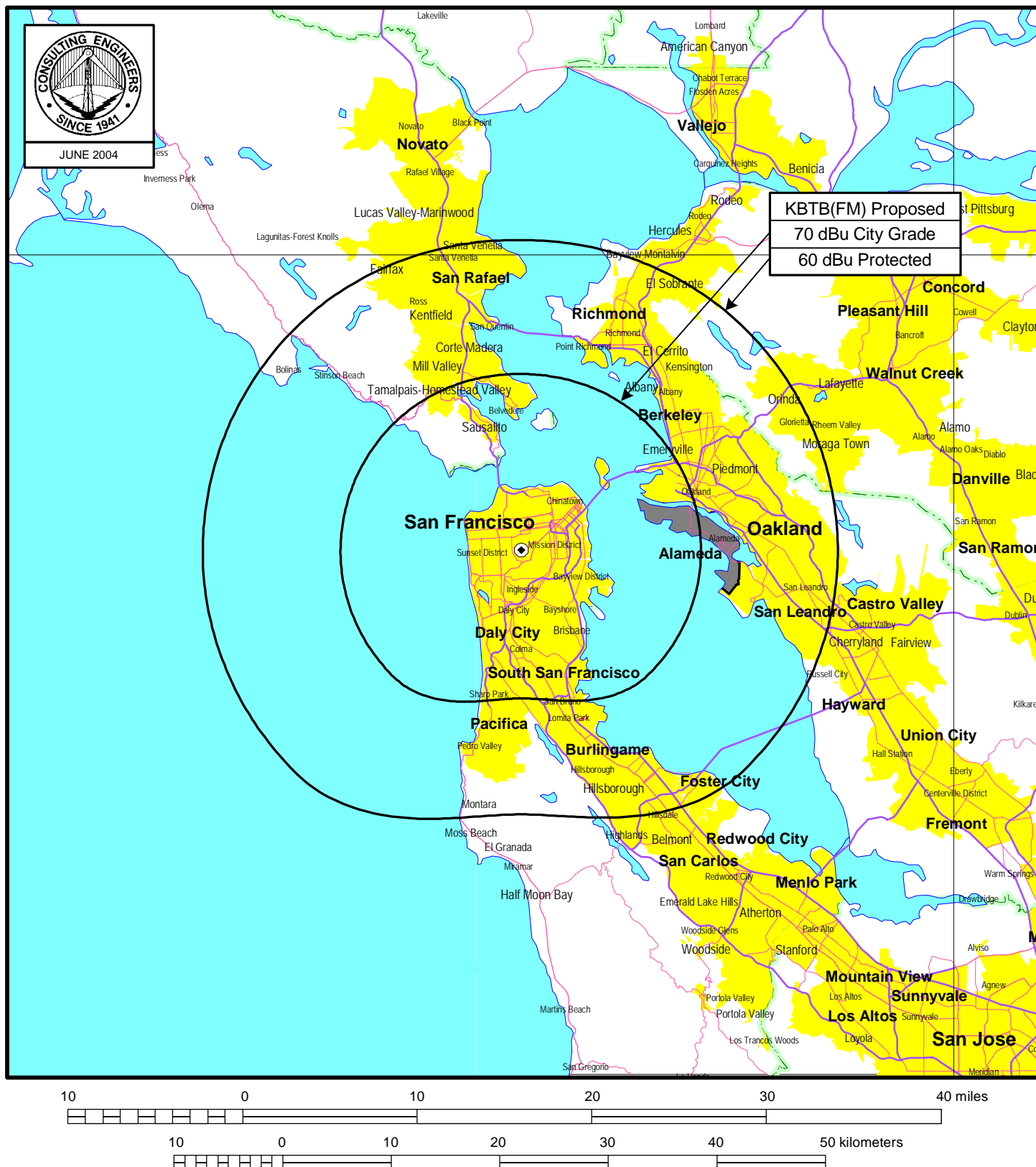
## **PROPOSED ANTENNA AND SUPPORTING STRUCTURE**

RADIO STATION KBTB(FM)

ALAMEDA, CALIFORNIA

CH 224A 0.51 KW 339 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



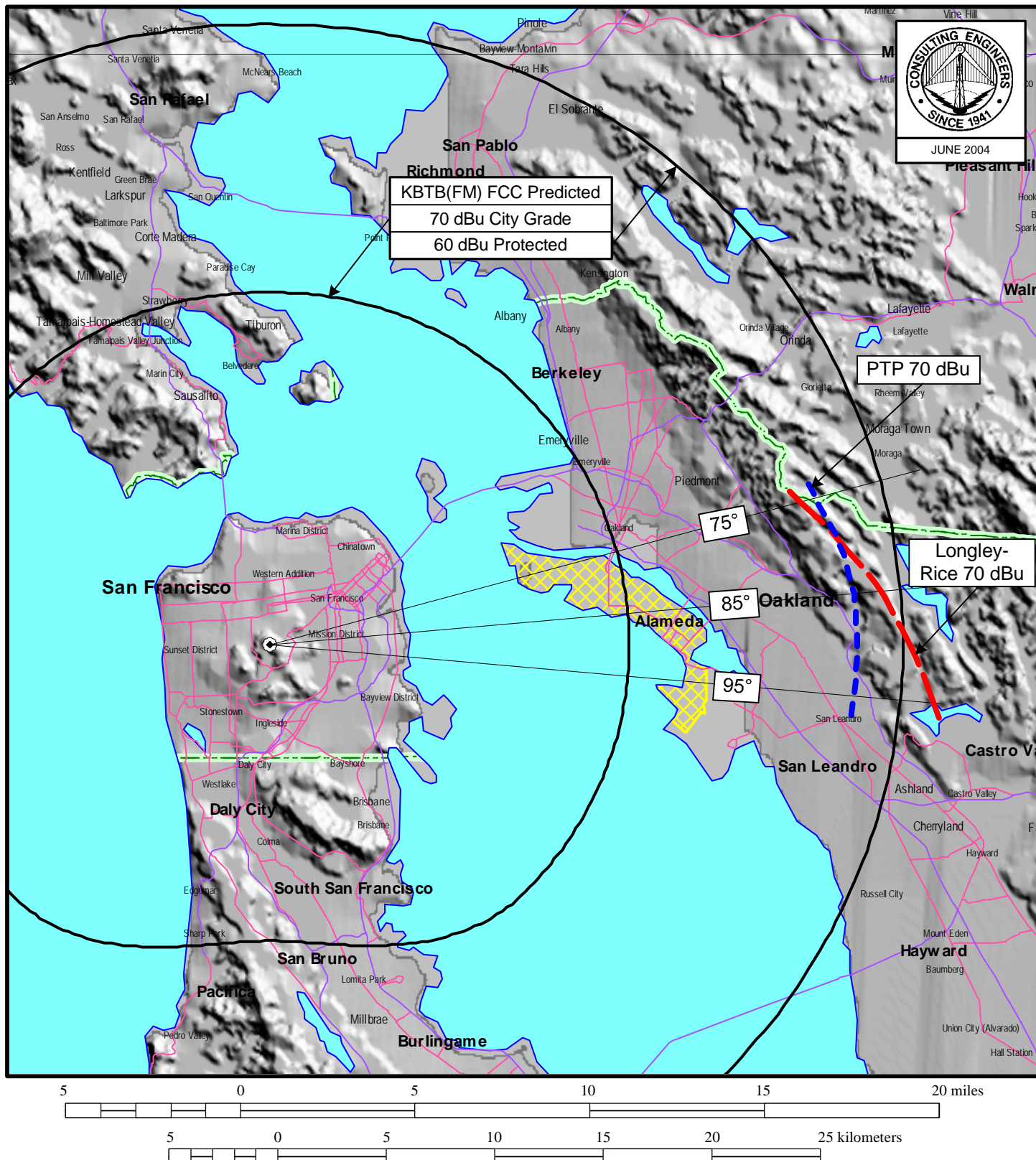
## **FCC PREDICTED COVERAGE CONTOURS**

**RADIO STATION KBTB(FM)**

**ALAMEDA, CALIFORNIA**

**CH 224A 0.51 KW 339 M**

du Treil, Lundin & Rackley, Inc Sarasota, Florida



## COVERAGE BASED ON ALTERNATE PROPAGATION METHODS

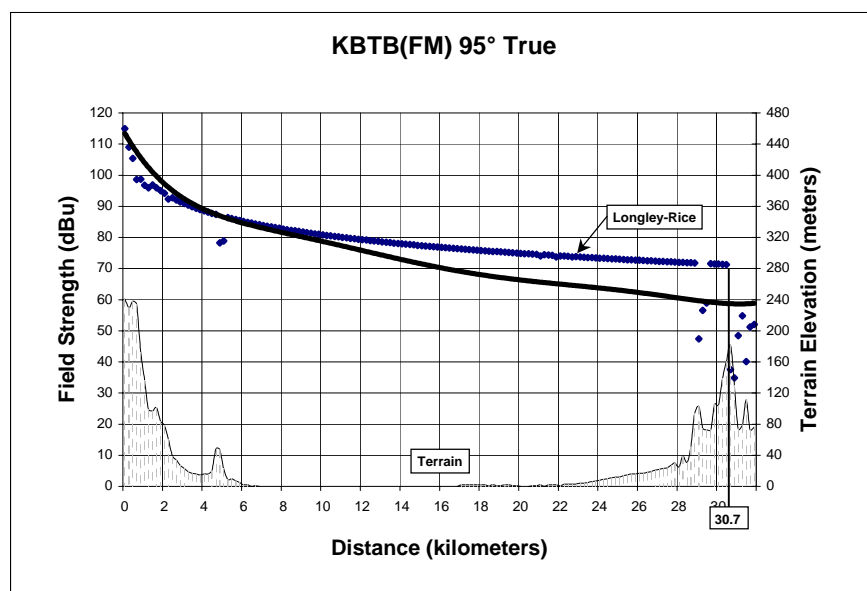
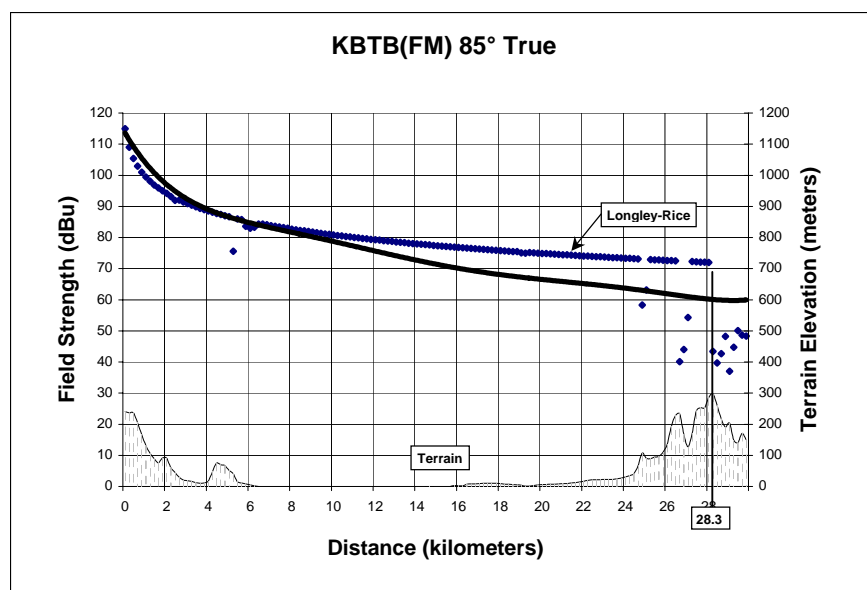
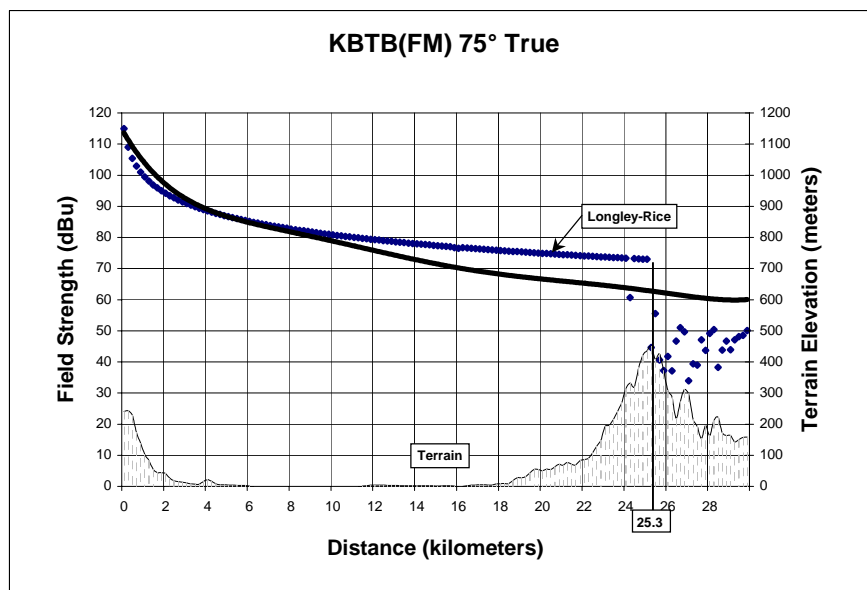
RADIO STATION KBTB(FM)

ALAMEDA, CALIFORNIA

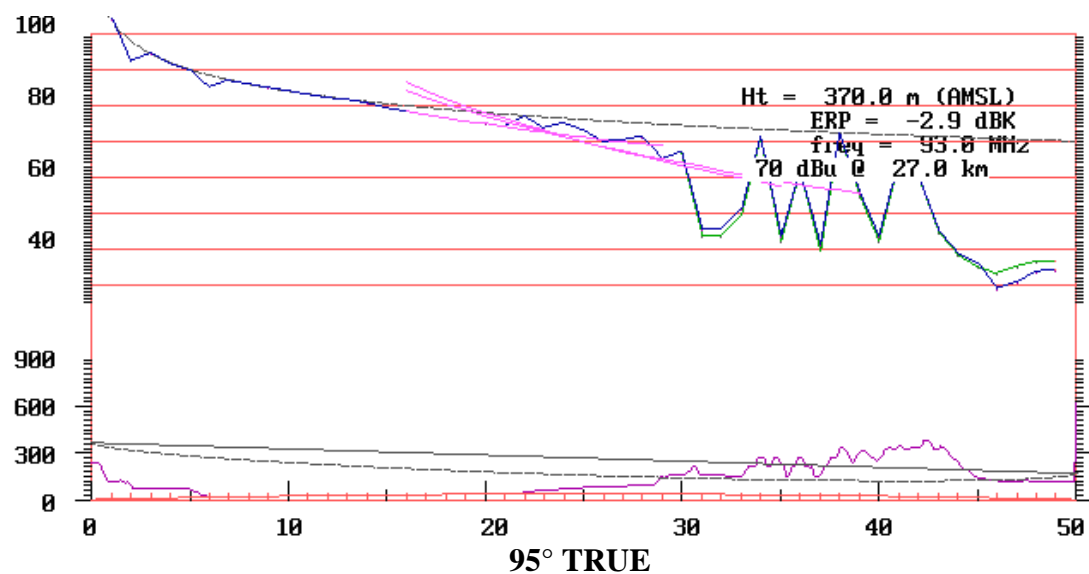
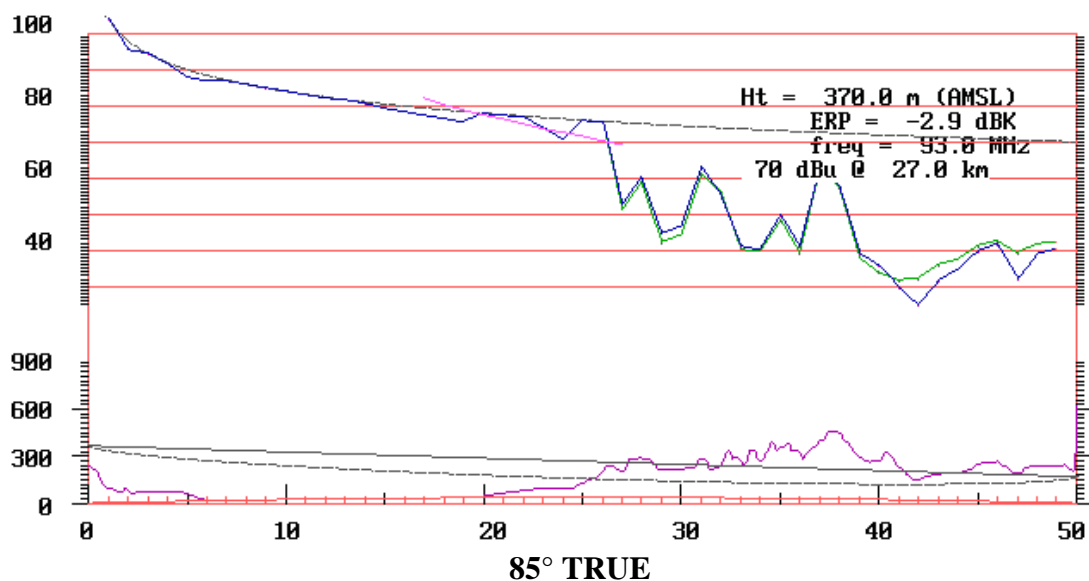
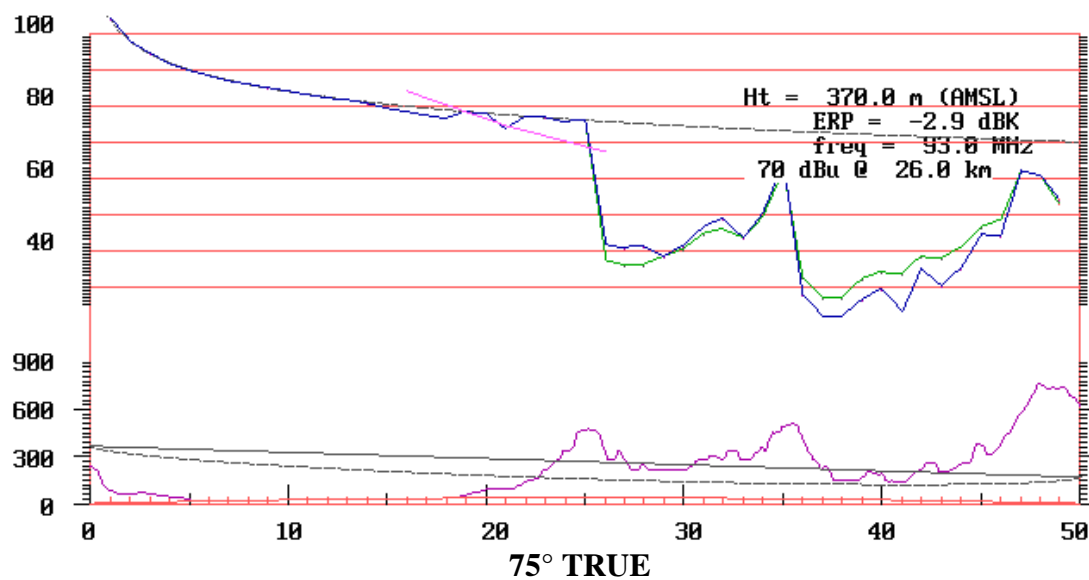
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# LONGLEY-RICE DATA



### POINT-TO-POINT (PTP) DATA



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CDBS FM SEPARATION STUDY

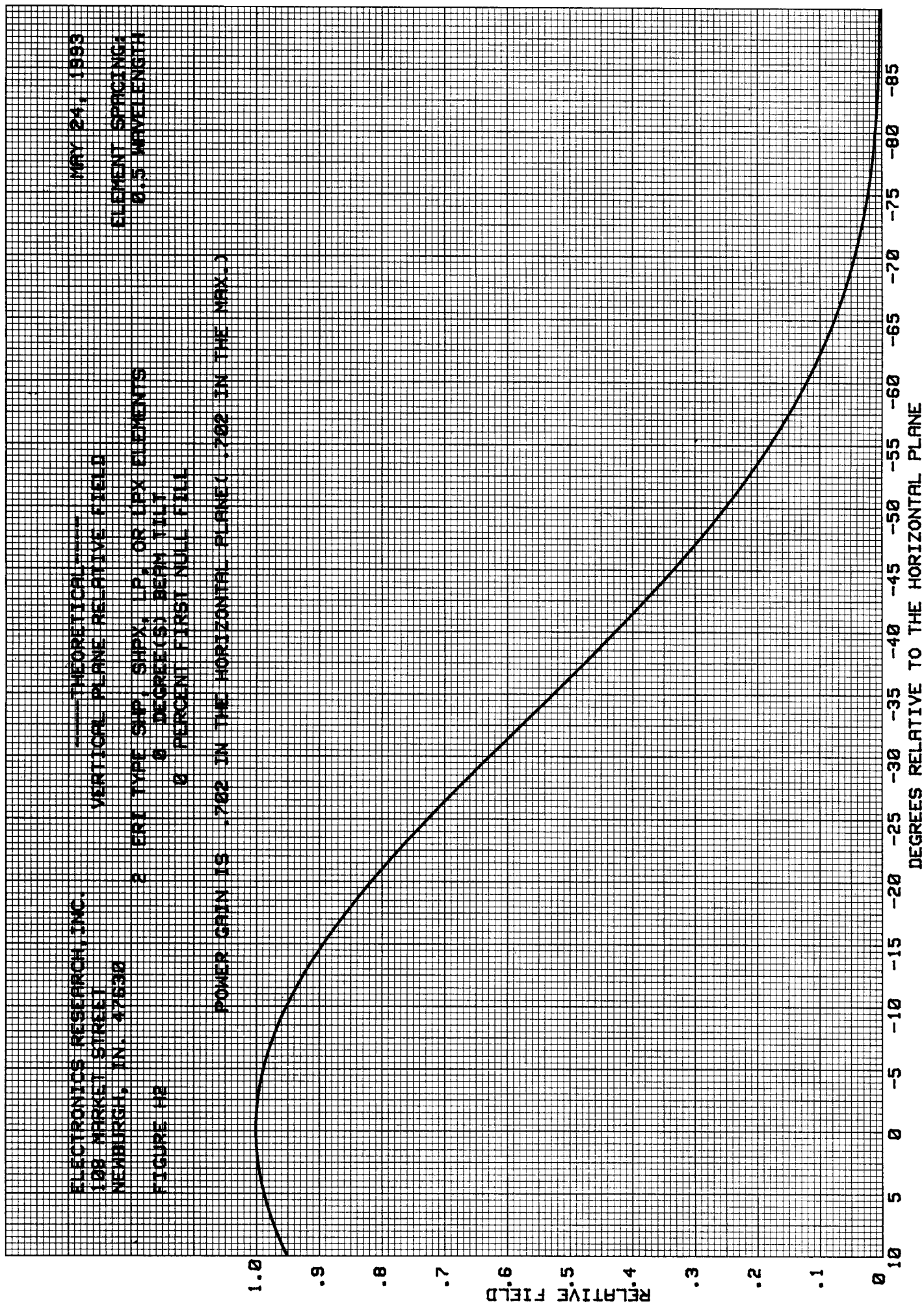
Channel: 224 A  
6/11/2004

Separation Buffer: 32 km  
Coordinates: 37-45-19 N 122-27-06 W

Call Id	City St	File Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km) 73.215	73.207
KFJO 36032	WALNUT CA	CREE LIC	BLH C 4499	221 A 92.1	3.000 27	N	37-53-59 122-05-38	N	62.8	35.34 4.34	25.0 Close	31.0
KFJO 36032	WALNUT CA	CREE APP	BPH C 19990618IK	221 A 92.1	3.000 24	N	37-54-02 122-05-07	N	63.2	36.06 5.06	25.0 Close	31.0
KSJO 4117	SAN JOSE CA	BLH LIC	C 20000706AEK	222 B 92.3	32.000 142	N 30416	37-12-33 121-46-30	N	135.3	85.18 16.18	63.0 Clear	69.0
KGBY 10146	SACRAMENTO CA	BLH LIC	C 19850412KK	223 B 92.5	50.000 137	N	38-42-26 121-28-33	N	38.5	135.89 22.89	96.0 Clear	113.0
KBTB 36029	ALAMEDA CA	BLH LIC	C 19980908KD	224 A 92.7	3.600 128	N	37-47-54 122-24-59	N	32.9	5.70		
(Applicant's existing facility)												
KTOM-FM 40145	MARINA CA	BMLH LIC	C 19950908KF	224 B1 92.7	6.900 189	N	36-33-09 121-47-17	N	156.1	145.92 2.92	119.0 Close	143.0
KFGY 22879	HEALDSBURG CA	BLH LIC	C 19791211AJ	225 B 92.9	2.300 594	N	38-45-45 122-50-24	N	343.3	116.85 3.85	96.0 Close	113.0
KOSO 35426	PATTERSON CA	BPH APP	C 20040525AHE	226 B 93.1	2.750 546	Y 66701	37-30-41 121-22-22	N	105.6	99.01 30.01	63.0 Clear	69.0
KBAY 1092	SAN FRANCISCO CA	BLH LIC	C 19880429KB	227 B 93.3	50.000 150	Y 13775	37-43-27 122-07-07	N	96.6	29.56 -39.44	63.0 Short	69.0
(Section 73.213(a) short-spacing - no 3 <sup>rd</sup> adjacent separation requirement - see Appendix)												



Figure 6



## APPENDIX

332N

FEDERAL COMMUNICATIONS COMMISSION  
1919 M STREET NW  
WASHINGTON DC 20554

MASS MEDIA BUREAU  
AUDIO SERVICES DIVISION  
TECHNICAL PROCESSING GROUP  
APPLICATION STATUS: (202) 418-2730  
HOME PAGE: [www.fcc.gov/mmb/asd/](http://www.fcc.gov/mmb/asd/)

PROCESSING ENGINEER: John Grizzle  
TELEPHONE: (202) 418-2740  
FACSIMILE: (202) 418-1410  
MAIL STOP: 180083  
INTERNET ADDRESS: [jgrizzle@fcc.gov](mailto:jgrizzle@fcc.gov)

October 3, 1997

Dennis J. Kelly, Esq.  
P.O. Box 6648  
Annapolis, MD 21401

Re: KZSF(FM), Alameda, CA  
KZSF Broadcasting, Inc.  
BPH-961223IB

Dear Mr. Kelly:

The staff has under consideration the above-captioned minor change application, filed by KZSF Broadcasting, Inc. ("KBI"), licensee of KZSF(FM), Alameda, California, to change antenna height and effective radiated power.

**Engineering Study.** KBI's proposal is short-spaced, under the provisions of 47 C.F.R. § 73.207, to licensed third-adjacent channel Class B station KYCY-FM, San Francisco, California. KZSF(FM) and KYCY-FM became short-spaced prior to November 16, 1964 and have remained short-spaced since that time. Thus, KBI's application is subject to § 73.213(a).

**Modification of § 73.213(a).** Prior to the filing of KBI's application, the Commission initiated the *Notice of Proposed Rule Making* in MM Docket 96-120 for the purpose of revising and clarifying § 73.213(a).<sup>1</sup> On August 4, 1997, the Commission adopted the *Report and Order* (hereafter "*The Order*").<sup>2</sup> *The Order* in that Docket was released on August 8, 1997. Among the modifications to § 73.213(a) was the inclusion of § 73.213(a)(4), which states as follows:

For stations covered by this rule, there are no distance separation requirements or interference protection requirements with respect to second-adjacent and third-adjacent channel short-spacings that have existing continuously since November 16, 1964.

**Pending Applications Affected by the Modified Rule.** The modification to § 73.213(a) set forth above becomes effective sixty days from *The Order's* publication in the Federal Register or upon receipt by Congress of a report in compliance with the *Contract with*

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<sup>1</sup> See *Grandfathered Short-spaced FM Stations* in MM Docket 96-120, 11 FCC Rcd 7245, 61 Fed. Reg. 33,474 (June 14, 1996).

<sup>2</sup> See *Grandfathered Short-spaced FM Stations* in MM Docket 96-120, 62 Fed. Reg. 50518 (August 8, 1997).

*America Advancement Act of 1996*, whichever is later. *The Order* acknowledged several pending applications that may be affected by the modification of § 73.213(a). Footnote 16 of *The Order* states the following:

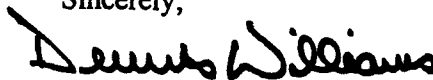
The Mass Media Bureau has identified several pending applications which seek waivers of the current rule but which may comply with Section 73.213(a) as modified in this *Order*. We direct the staff to reconsider these applications under the revised standards adopted herein and delegate to the Chief of the Mass Media Bureau authority to waive Section 73.213 prior to the effective date of this *Order* where the public interest would be served. Any Section 73.213 waiver granted prior to the effective date of the *Order* shall be subject to the final outcome of this proceeding. . . .

**Effect on the Instant Application.** Once the new rule becomes effective, there will no longer be any spacing or contour restrictions with respect to KZSF(FM) and KYCY-FM. In fact, this is KZSF(FM)'s only spacing conflict. Thus, we will waive § 73.213(a) because KBI's proposal would comply with the new version of the rule. We find that KBI's application is otherwise grantable. Grant of KBI's application is conditioned upon the final outcome of MM Docket 96-120.

**Conclusion.** Accordingly, consistent with the Commission's directive in *The Order*, we HEREBY WAIVE § 73.213(a). In addition, KBI's application, BPH-961223IB, IS HEREBY GRANTED subject to the following condition:

The grant of this permit is subject to the final outcome of any appeal of the Report and Order in MM Docket 96-120 (FCC 97-276, rel. 8/8/97). Any change in facility pursuant to this permit prior to the finality of MM Docket 96-120 is at the sole risk of the licensee.

Sincerely,



Dennis Williams  
Assistant Chief  
Audio Services Division  
Mass Media Bureau

cc: Mr. Amador S. Bustos  
Mr. Oscar Leon Cuellar, P.E.