

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of RADIANT LIFE MINISTRIES, INC., licensee of full-power digital television station KAIL-DT, Channel 7 in Fresno, California, in support of this amendment to its pending Application for Construction Permit (LMS-0000035715) to increase the station's effective radiated power. It is proposed herein to utilize the licensed Kathrein antenna rather than that authorized in the KAIL-DT site-change authorization BPCDT-20100401ABQ. It is important to note that the pending application that this amendment modifies simply requests a power increase for the referenced construction permit (BPCDT-20100401ABQ). The instant amendment also seeks a reduction in the proposed effective radiated power from 80 kW to 48.8 kW. No change in the transmitter site location or antenna height above ground from that authorized in BPCDT-20100401ABQ is proposed herein.

It is proposed to mount the licensed Kathrein 6X2K52 directional, horizontally-polarized panel antenna at the 32.6-meter level of an existing 36.6-meter structure. Exhibit B is a map upon which the amended predicted service contours are plotted. As shown, the community of Fresno is still completely encompassed by the proposed 43 dBu city-grade service contour.

Azimuth pattern data for the licensed Kathrein antenna are provided in Exhibit C. Exhibit D provides the summary results from a TVStudy interference study, which was conducted using a cell size of 2.0 kilometers and increment spacing of 1.0 kilometer. It concludes that the proposed KAIL-DT facility meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A facilities.

EXHIBIT A

A power density calculation appears as Exhibit E.

The KAIL-DT facility proposed herein exceeds the FCC's maximum power/height limitations for high-band digital television stations located in Zone 2 of the United States. However, the Commission allows stations to exceed these limits as long as the coverage area of the station does not exceed the coverage area of the largest station in the same market. In this case, the largest station in the Fresno, California, market is KGMC-DT, Channel 11 in Merced, California. The area within the licensed KGMC-DT predicted 36 dBu service contour is 46,390 km<sup>2</sup>. The area within the KAIL-DT facility proposed herein is 38,575 km<sup>2</sup>. Therefore, the proposal meets the FCC's Rules with regard to the Largest Station in the Market exception to the power/height limitations.

Since no change in the overall height or location of the existing tower is proposed herein, and due to the diminutive height of the tower (36.6 meters) and its proximity to the nearest airport runway, the Federal Aviation Administration has not been notified of this application. In addition, and for the same reasons, FCC Antenna Structure Registration is not required. This conclusion is supported by the Commission's TOWAIR software.

I declare under penalty of perjury that the foregoing statements and the attached exhibits are true and correct to the best of my knowledge and belief.

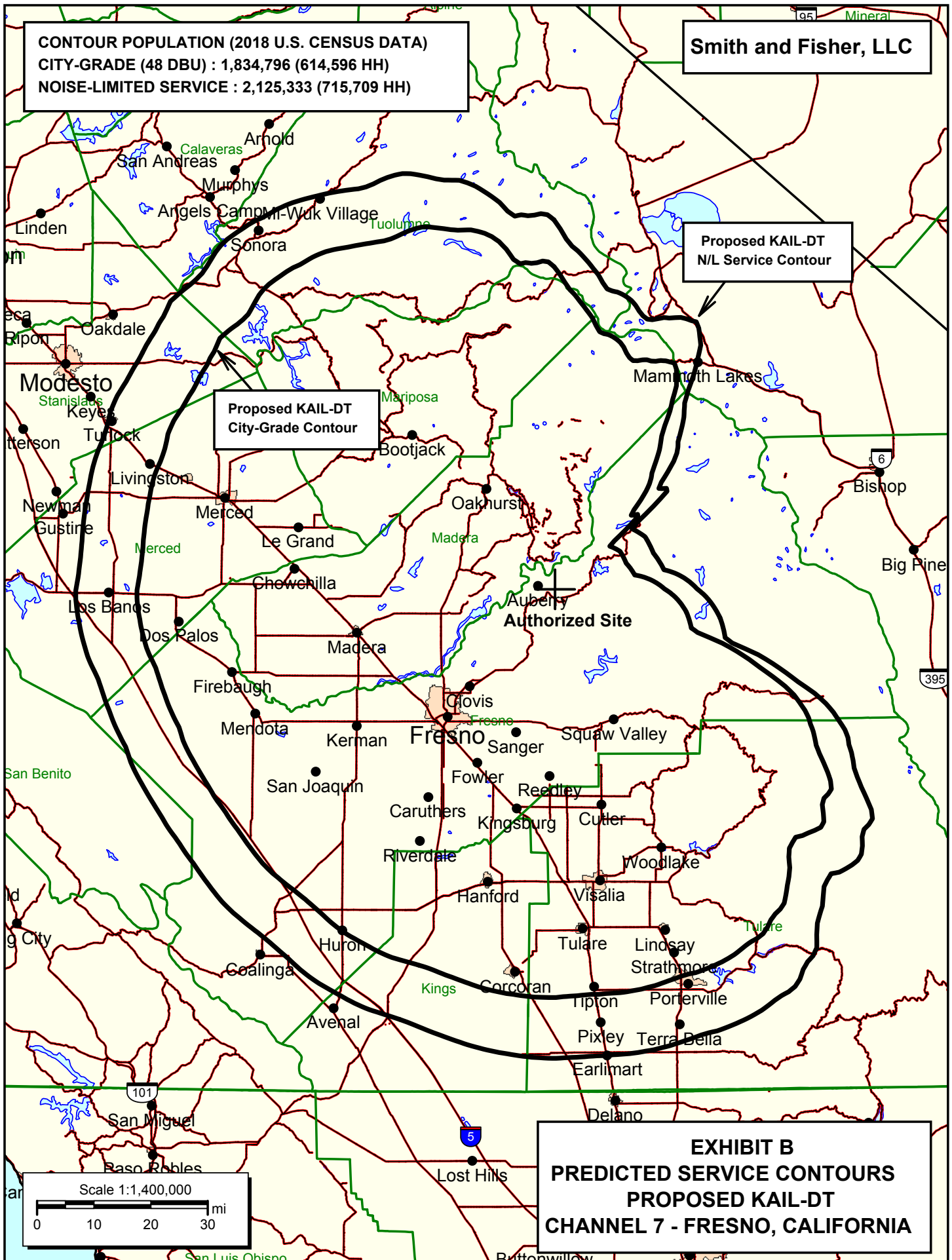
A handwritten signature in blue ink, appearing to read "K. T. Fisher", with a stylized flourish at the end.

November 24, 2020

KEVIN T. FISHER

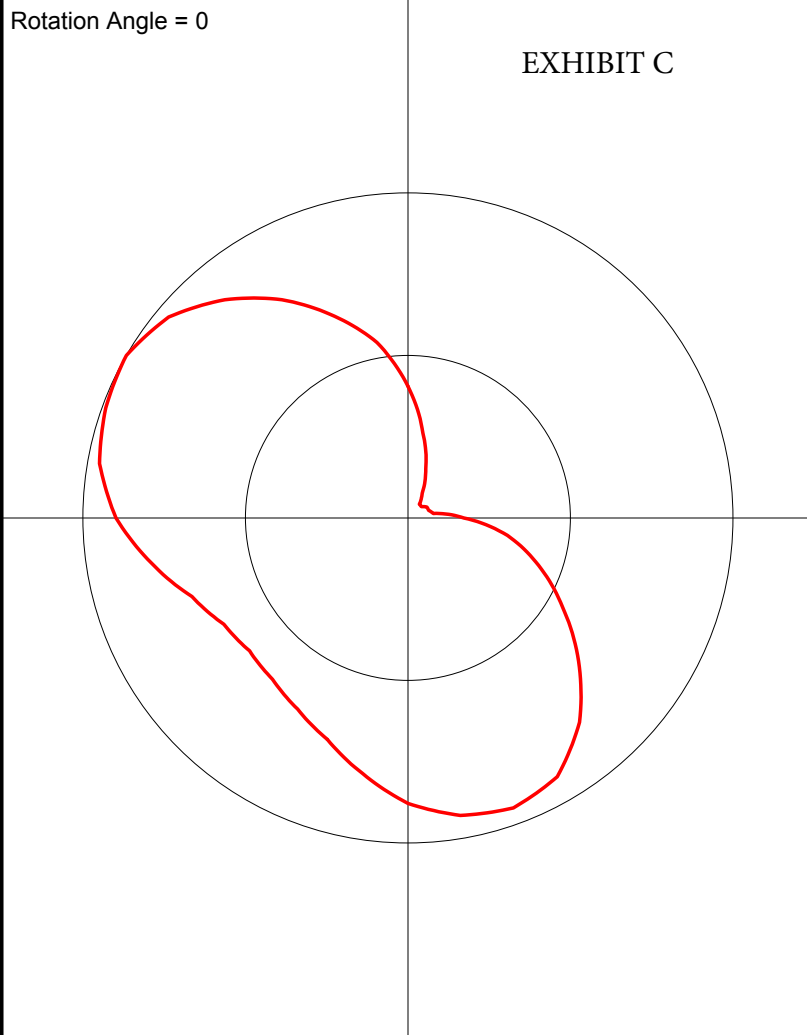
**CONTOUR POPULATION (2018 U.S. CENSUS DATA)**  
**CITY-GRADE (48 DBU) : 1,834,796 (614,596 HH)**  
**NOISE-LIMITED SERVICE : 2,125,333 (715,709 HH)**

**Smith and Fisher, LLC**



Antenna Pattern

Pre-Rotation Antenna Pattern....



Azimuth (deg)	Relative Field
0.0	0.405
10.0	0.265
20.0	0.16
30.0	0.088
40.0	0.055
50.0	0.054
60.0	0.067
70.0	0.068
80.0	0.079
90.0	0.172
100.0	0.311
110.0	0.428
120.0	0.549
130.0	0.685
140.0	0.821
150.0	0.919
160.0	0.949
170.0	0.929
180.0	0.878
190.0	0.799
200.0	0.725
210.0	0.679
220.0	0.648
230.0	0.636
240.0	0.654
250.0	0.707
260.0	0.801
270.0	0.898
280.0	0.963
290.0	0.989
300.0	1.0
310.0	0.961
320.0	0.876
330.0	0.775
340.0	0.66
350.0	0.548

EXHIBIT D

TVSTUDY INTERFERENCE ANALYSIS RESULTS  
PROPOSED KAIL-DT  
CHANNEL 7 – FRESNO, CALIFORNIA  
[AMENDMENT TO LMS-0000035715]

Study created: 2020.11.24 11:55:25

Study build station data: LMS TV 2020-11-16

Proposal: KAIL D7 DT APP FRESNO, CA

File number: BLANK0000035715

Facility ID: 67494

Station data: User record

Record ID: 937

Country: U.S.

Zone: II

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	KABC-TV	D7	DT	CP	LOS ANGELES, CA	BLANK0000035672	339.4 km
Yes	KABC-TV	D7	DT	LIC	LOS ANGELES, CA	BLANK0000058534	339.4
Yes	KRON-TV	D7	DT	LIC	SAN FRANCISCO, CA	BLANK0000112902	277.3
No	KLAS-TV	D7	DT	LIC	LAS VEGAS, NV	BLANK0000112828	411.5
Yes	KSBW	D8	DT	LIC	SALINAS, CA	BLCDT20090901ACY	187.3
No	KOLO-TV	D8	DT	LIC	RENO, NV	BLCDT20090612ABN	252.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D7

Latitude: 37 4 19.90 N (NAD83)

Longitude: 119 25 54.70 W

Height AMSL: 1393.6 m

HAAT: 560.0 m

Peak ERP: 48.8 kW

Antenna: KATHREIN 6X2K52 0.0 deg

Elev Pattn: Generic

Elec Tilt: 2.00

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	8.00 kW	492.0 m	104.3 km
45.0	0.145	92.4	42.6
90.0	1.44	-79.8	40.4
135.0	27.7	460.3	113.4
180.0	37.6	798.9	132.5
225.0	20.1	981.5	129.1
270.0	39.4	920.3	135.8
315.0	41.2	887.4	135.5

Database HAAT does not agree with computed HAAT

Database HAAT: 560 m    Computed HAAT: 569 m

ERP exceeds maximum

ERP: 48.8 kW    ERP maximum: 36.2 kW

Distance to Canadian border: 1283.8 km

Distance to Mexican border: 529.6 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 290.2 degrees    Distance: 217.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 70.3 degrees    Distance: 1275.8 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

No IX check failures found.

POWER DENSITY CALCULATION  
PROPOSED KAIL-DT  
CHANNEL 7 – FRESNO, CALIFORNIA  
[AMENDMENT TO LMS-0000035715]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Fresno facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 48.8 kW (H), an antenna radiation center 32.6 meters above ground, and assuming a vertical relative field value of 20 percent at the steeper elevation angles for the Kathrein panel antenna, maximum power density two meters above ground of  $0.070 \text{ mW/cm}^2$  is calculated to occur near the base of the tower. Since this value is only 34.8 percent of the FCC's  $0.20 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 7 (174-180 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

In addition, once the new KAIL-DT facility is operational, a power density survey of the tower site will be conducted in order to ensure compliance with the Commission's RF human exposure standards.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.