

# ENGINEERING REPORT

PROPOSED KTNC-DT  
CHANNEL 63  
CONCORD, CALIFORNIA  
[AMENDMENT TO BPCDT-19991019ABG]

MAY, 2001

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FCC Form 301, Section III-D

**SMITH AND FISHER** • BROADCASTING AND TELECOMMUNICATIONS CONSULTANTS

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EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of PAPPAS CONCORD PARTNERS, licensee of KTNC-TV, Concord, California, in support of its amendment to its Application for Construction Permit for a new digital television station to operate on Channel 63 as KTNC-DT (BPCDT-19991019ABG).

Exhibit B is a vertical sketch of the proposed antenna and supporting structure, and Exhibit C provides antenna pattern data. Exhibit D is a tabulation of elevation and contour data, followed by a map of the predicted service contours as Exhibit E. Since the proposed ERP is greater than that specified in the allotment, an allocation study is included as Exhibit F.

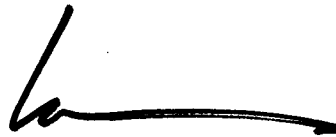
It should be noted that the Livermore monitoring station is approximately 39 kilometers southeast of the proposed facility. However, Mount Diablo is also southeast of the proposed site, and is in between it and the monitoring station. Thus, there will not be line-of-sight to the monitoring station, and its activities will be unaffected by this proposal.

We have studied the RF transmissions of this facility with regard to their environmental effect. Employing the methods set forth in *OST Bulletin No. 65* and considering the vertical pattern of the proposed Andrew antenna, we calculate maximum power density two meters above ground from the proposed facility to be  $0.0082 \text{ mw/cm}^2$ , at locations 21 meters from the tower base, which is but 1.6 percent of the  $0.51 \text{ mw/cm}^2$  reference at this frequency for uncontrolled areas. Further, KTNC-DT will take whatever preventive steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the

EXHIBIT A

vicinity of the antenna are not exposed to excessive RF energy. On this basis, a grant of this application would clearly be a minor environmental action.

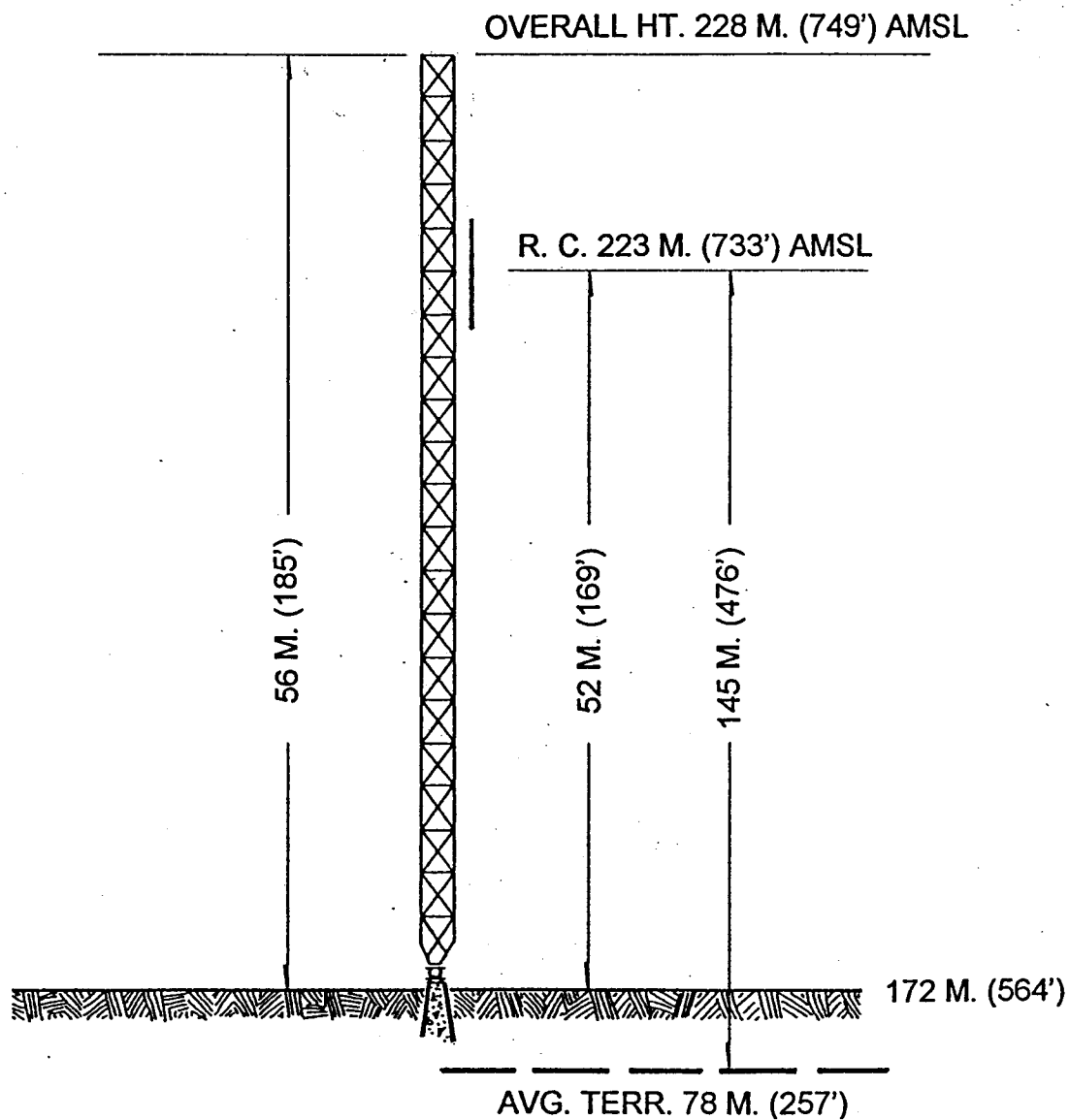
I declare under penalty of perjury that the foregoing statements and the attached Engineering Report, which was prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in black ink, appearing to read 'Neil M. Smith', with a long horizontal stroke extending to the right.

NEIL M. SMITH

May 2, 2001

NOT TO SCALE



SITE COORDINATES:

38° 01' 15"  
121° 59' 13"

EXHIBIT B

ELEVATION OF ANTENNA STRUCTURE

PROPOSED KTNC-DT  
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**ANDREW**  
**ELEVATION PATTERN**

ALP12L2

Type:

Directivity:

Main Lobe

Horizontal

Beam Tilt:

Polarization:

Channel:

Location:

Numeric

12.64

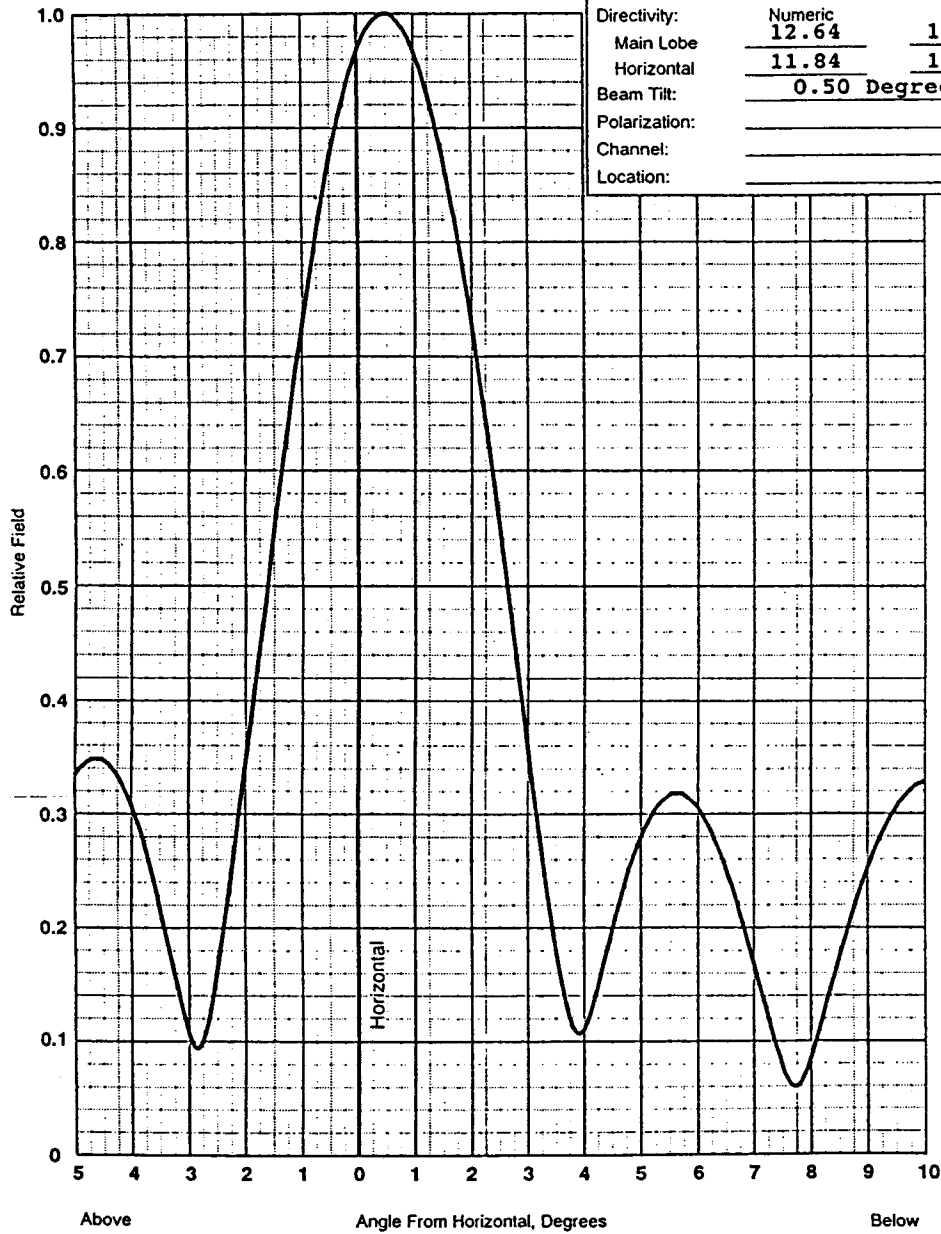
dBd

11.02

11.84

10.73

0.50 Degrees



ANDREW CORPORATION  
10500 W. 153rd Street  
Orland Park, Illinois U.S.A. 60462

Form 5278B (8/90)

**EXHIBIT C-1**

**VERTICAL RELATIVE FIELD PATTERN**

**PROPOSED KTNC-DT**  
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EXHIBIT C-2

PROPOSED OPERATING PARAMETERS

PROPOSED KTNC-DT  
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Transmitter power output	-0.06 dbk, 0.986 kw
Transmission line loss	0.96 db
Antenna input power	-1.02 dbk
Antenna gain, main lobe, max.	11.02 db
ERP, main lobe, max.	10.00 dbk, 10 kw
Transmitter:	Type-accepted
Transmission Line:	Andrew HJ8-50B Air Helix; 200 feet; loss: 0.48 db/100 feet
Antenna:	Andrew ALP12L2-HSO-63

EXHIBIT D

## ELEVATION AND CONTOUR DATA

PROPOSED KTNC-DT  
 CHANNEL 63 - CONCORD, CALIFORNIA  
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Az. (° T)	Avg. Elev. AMSL 2 to 10 Miles		Effective Antenna Ht. AAT		Distance to Predicted Contour (km)			
	(meters)	(feet)	(meters)	(feet)	48 dbμ		41 dbμ	
					km.	mi.	km.	mi.
0	0	0	223	733	53	33	61	38
45	4	14	219	719	52	33	61	38
90	13	43	210	690	52	32	60	37
135	376	1234	-153	-501	30	19	37	23
180	122	401	101	332	44	28	52	32
225	79	259	144	474	48	30	56	35
270	21	69	202	664	51	32	59	37
315	10	33	213	700	52	32	60	37

*NOTE: Due to rounding, metric figures may not add precisely*

Height of radiation center above mean sea level	223 meters, 733 feet
Height of average terrain above mean sea level	78 meters, 257 feet
Height of radiation center above average terrain	145 meters, 476 feet
Effective radiated power, main lobe, maximum	10 dbk, 10 kw

Geographic Coordinates

N 38° 01' 15", W 121° 59' 13"

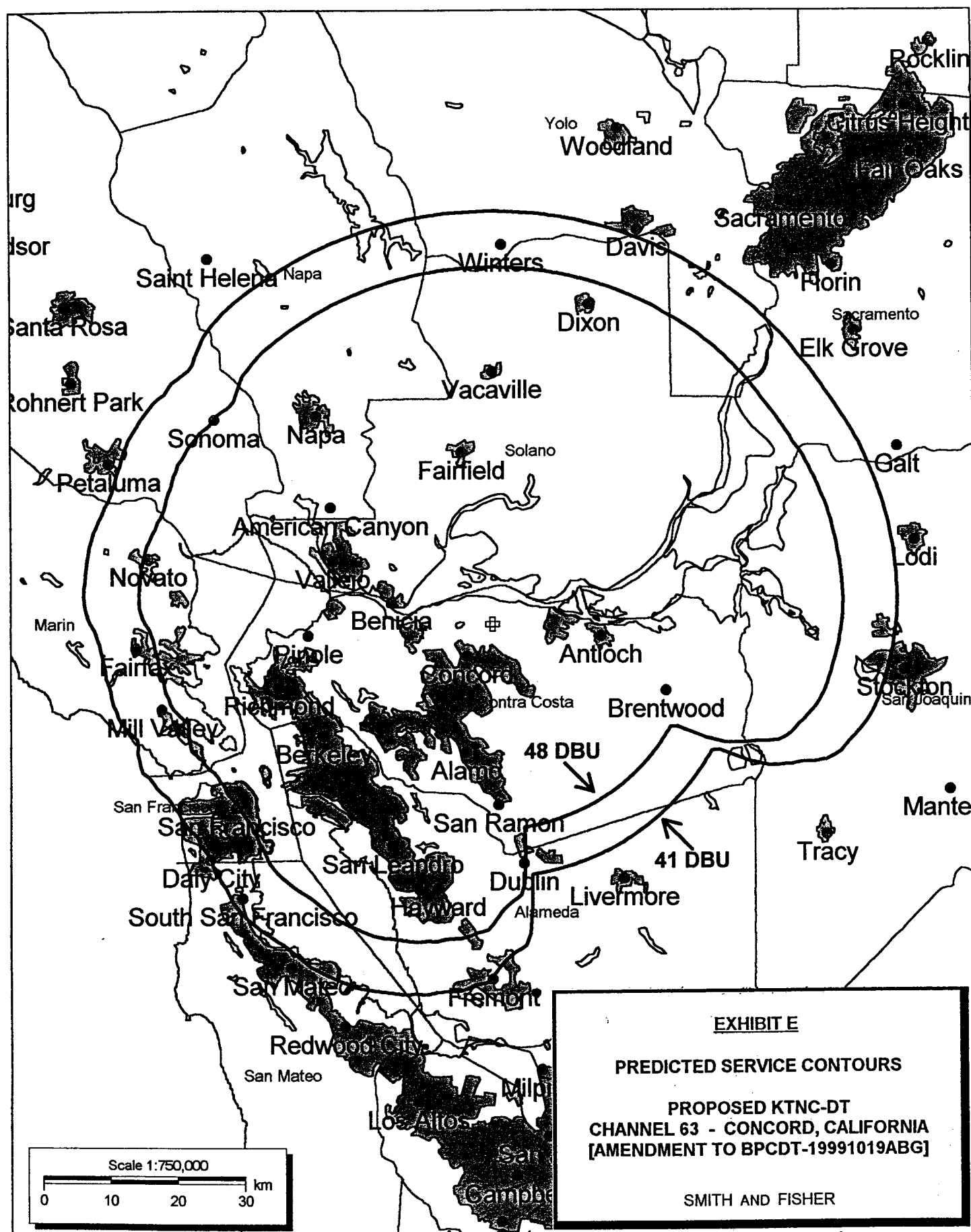




EXHIBIT F-1

ALLOCATION AND INTERFERENCE STUDY

PROPOSED KTNC-DT  
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The Commission allotted Channel 63 to KTNC-DT with a nominal ERP of 61.0 kw at 856 meters above average terrain. The instant application specifies an ERP of 10 kw nondirectional at 145 meters, at a different site, which is allowable under the FCC's *de minimis* standards with respect to various NTSC and DTV facilities.

In evaluating the interference effect of this proposal, we have relied upon the V-Soft Communications "Probe" computer program, which has been found generally to mimic the FCC's program. Changes in interference caused by KTNC-DT to other pertinent stations are tabulated in Exhibit F-2.

As indicated, the proposed KTNC-DT facility would not contribute more than two percent DTV interference to the service population of any affected NTSC or DTV station. In addition, this proposal does not result in any NTSC or DTV station receiving more than ten percent total DTV interference to viewers living within its present service area.

Therefore, this proposal meets the FCC's *de minimis* interference standards for DTV operations.

EXHIBIT F-2

DE MINIMIS INTERFERENCE ANALYSIS

PROPOSED KTNC-DT  
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NTSC FACILITIES

Call Sign	City, State	Ch.	Grade B Population F(50,50)	INTERFERENCE LOSSES (POPULATION)						
				NTSC & DTV		NTSC & DTV		With		KTNC-DT Contribution % <sup>2</sup>
				NTSC Only	Without KTNC-DT	Unmasked DTV	% <sup>1</sup>	KTNC-DT	Unmasked DTV	
KSTS(Impl.)	San Jose, CA	48	6,731,461	120,411	357,608	237,197	3.5	359,193	238,783	1,585 <0.1
KSTS(Lic.)	San Jose, CA	48	6,680,996	109,428	345,748	236,320	3.5	347,115	237,687	1,367 0.1
KFTL	Stockton, CA	64	9,375,894	490,560	490,560	0	0	496,307	5,747	5,747 0.1

DTV FACILITIES

Call Sign	City, State	Ch.	NTSC/DTV <sup>3</sup> Grade B Pop. Longley-Rice	INTERFERENCE LOSSES (POPULATION)						
				NTSC Only	NTSC & DTV Without		NTSC & DTV With		KTNC-DT Contribution % <sup>2</sup>	
					KTNC-DT	Unmasked DTV	KTNC-DT	Unmasked DTV		
										% <sup>1</sup>
-- NONE --										

- <sup>1</sup> Cannot exceed 10%, under FCC *de minimis* interference standards.  
<sup>2</sup> Cannot exceed 2%, under FCC *de minimis* interference standards.  
<sup>3</sup> Larger of either NTSC Grade B population (with no DTV losses) or DTV Grade B population with all losses.