EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of EMMIS RADIO LICENSE, LLC, licensee of KMVN(FM), Channel 230B, Los Angeles, California, in support of its Application for Construction Permit to operate an FM booster facility in Santa Clarita, California.

It is intended to utilize an array of Scala CL-FM circularly-polarized log-periodic antennas mounted at the 5.3-meter level of an existing 20-meter non-broadcast communications tower. The array will consist of two horizontally polarized antennas oriented at 110 degrees true, one vertically polarized antenna oriented at 150 degrees true, and two horizontally polarized antennas oriented at 190 degrees true. The antenna array will be fed by a 250-watt transmitter with a power output of 231 watts. The effective radiated power of the array will be 250 watts (H,V).

Exhibit B provides directional antenna pattern data, and proposed operating parameters are tabulated in Exhibit C. Exhibit D-1 is a map upon which the predicted service contours are plotted. Exhibit D-2 is a map upon which the proposed booster's 54 dBu contour is plotted in relation to that of KMVN. It is important to note that KMVN's contour is based on a revised effective radiated power since the station is a grand-fathered super height/power station. The reduced ERP is that of a maximum Class B authorization, as required in Section 74.1231(b)(Note) of the Commission's Rules. In addition, the proposed ERP of the booster along each of 12 equally-spaced radials meets the requirements of Section 74.1235(b)(1) of the Rules.

An interference study is included in Exhibit E, and a power density calculation is provided in Exhibit F.

EXHIBIT A

Since no change in the overall height or location of the existing tower is proposed herein, the FAA has not been notified of this application. Due to the diminutive height of the tower and its proximity to the nearest airport runway, FCC Antenna Structure Registration is not required. This conclusion has been confirmed by the Commission's TOWAIR Program.

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

KEVIN T. FISHER

December 27, 2006

EXHIBIT B-1

INDIVIDUAL ANTENNA SPECIFICATIONS

KATHREIN
SCALA DIVISION

CL-FM

FM LOG-PERIODIC ANTENNA

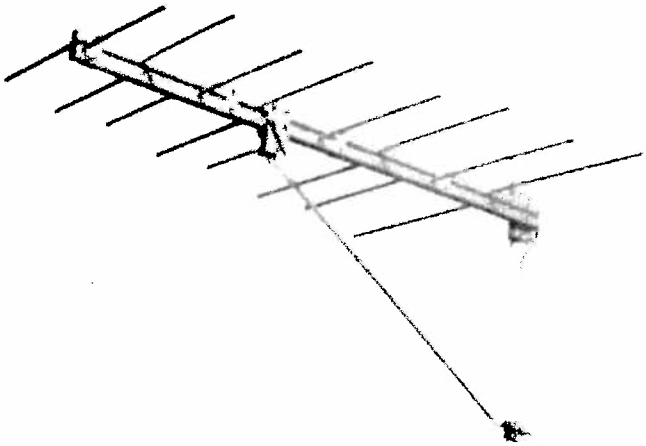
7 dBd gain

88–108 MHz

The Kathrein Scala Division CL-FM is a ruggedly built log-periodic antenna, designed for professional FM transmit and receive applications.

Like all Kathrein Scala Division antennas, the CL-FM is made of the finest materials using state of the art electrical and mechanical designs, resulting in superior performance and long service life.

The CL-FM may be used stand-alone or in stacked arrays for higher gain, increased side-lobe suppression, or custom azimuth patterns.

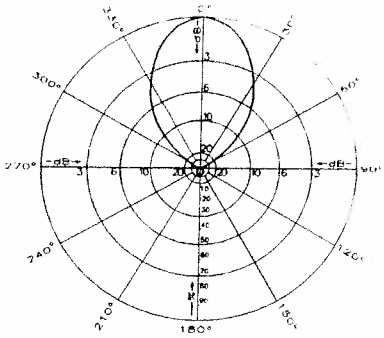


Specifications:

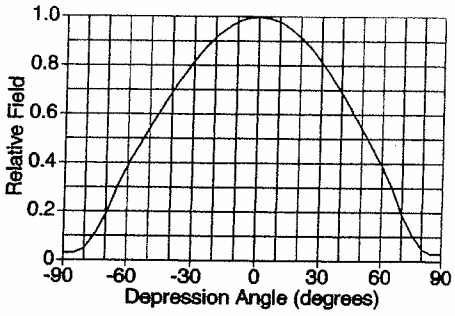
Frequency range	88–108 MHz (broadband)
Gain	7 dBd
Impedance	50 or 75 ohms
VSWR	< 1.5:1
Polarization	Horizontal or vertical
Front-to-back ratio	>25 dB
Maximum input power	250 watts, type "N" 75 ohm connector 500 watts, type "N" 50 ohm connector
Azimuth pattern	52 degrees (half-power) horizontal polarization
Elevation pattern	78 degrees (half-power) horizontal polarization
Connector	Female 50Ω or 75Ω N
Weight	45 lb (20.4 kg)
Dimensions	104 x 67.9 inches (2642 x 1724 mm)
Equivalent flat plate area	
CL-FM/HCM	5.31 ft² (0.494 m²)
CL-FM/HRM	5.86 ft² (0.544 m²)
CL-FM/VRM	5.86 ft² (0.544 m²)
Wind survival rating*	120 mph (200 kph)
Shipping dimensions	116 x 14.5 x 6 inches (2946 x 369 x 153 mm)
Shipping weight	56 lb (25.4 kg)
Mounting	For masts of 2.375 inches (60 mm) OD.
CL-FM/HCM	Horizontal polarization center-mount
CL-FM/HRM	Horizontal polarization rear-mount
CL-FM/VRM	Vertical polarization rear-mount

See reverse for order information.

* Mechanical design is based on environmental conditions as stipulated in EIA-222-F (June 1996) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.



Azimuth pattern (E-plane)



Elevation pattern (H-plane)

10492-D

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-6575
Email: broadcast@kathrein.com Internet: www.kathrein-scala.com

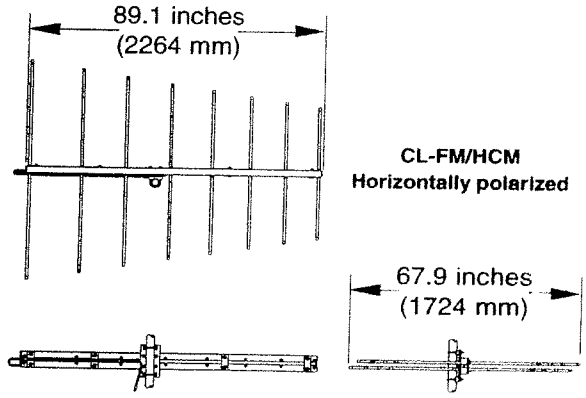
KATHREIN
SCALA DIVISION

CL-FM

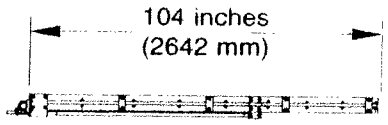
FM LOG-PERIODIC ANTENNA

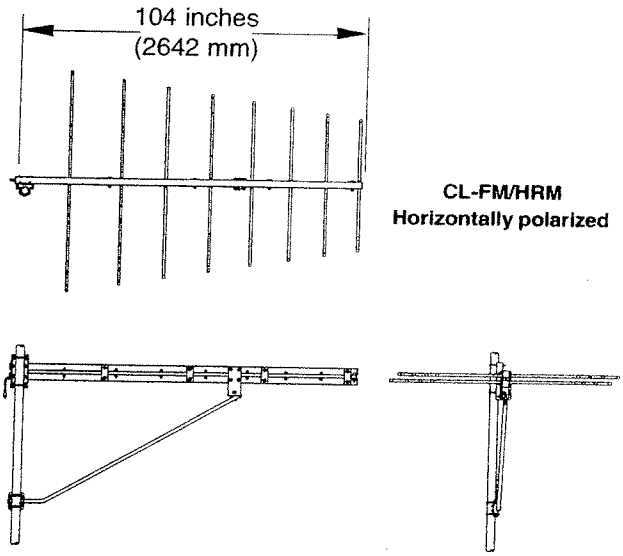
7 dBd gain

88–108 MHz

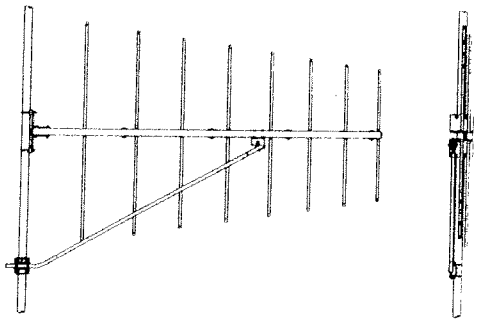


CL-FM/HCM
Horizontally polarized





CL-FM/HRM
Horizontally polarized



CL-FM/VRM
Vertically polarized

Vertically polarized antennas require lateral stabilization (not supplied) to prevent the antenna from turning on the mounting pipe.

Order Information:

Model	Description
CL-FM/HCM/50N	Antenna with 50Ω N connector Horizontal polarization center-mount
CL-FM/HCM/75N	Antenna with 75Ω N connector Horizontal polarization center-mount
CL-FM/HRM/50N	Antenna with 50Ω N connector Horizontal polarization rear-mount

Order Information:

Model	Description
CL-FM/HRM/75N	Antenna with 75Ω N connector Horizontal polarization rear-mount
CL-FM/VRM/50N	Antenna with 50Ω N connector Vertical polarization rear-mount
CL-FM/VRM/75N	Antenna with 75Ω N connector Vertical polarization rear-mount

All specifications are subject to change without notice

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Email: broadcast@kathrein.com Internet: www.kathrein-scala.com

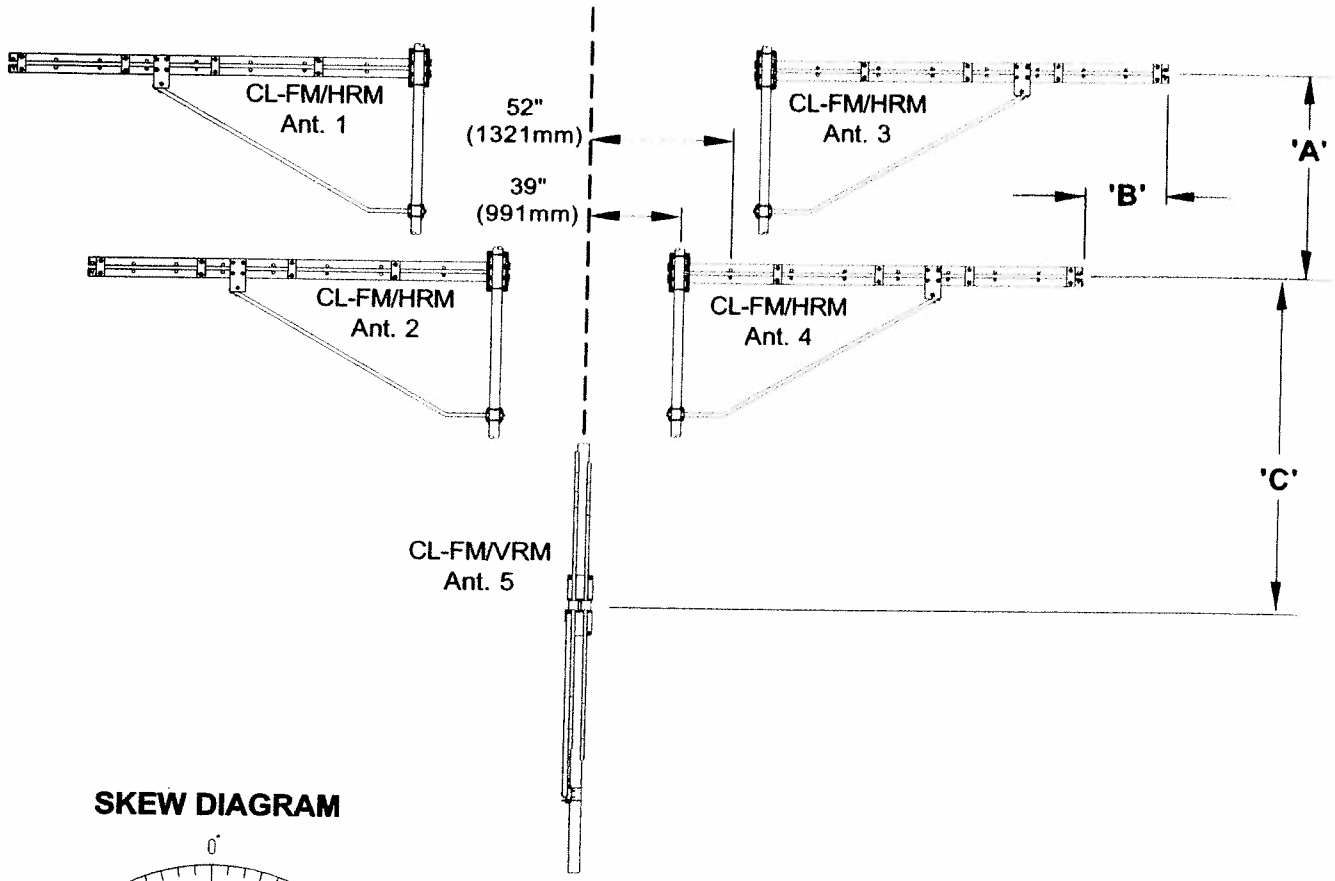
EXHIBIT B-2

ANTENNA ARRAY SPECIFICATIONS

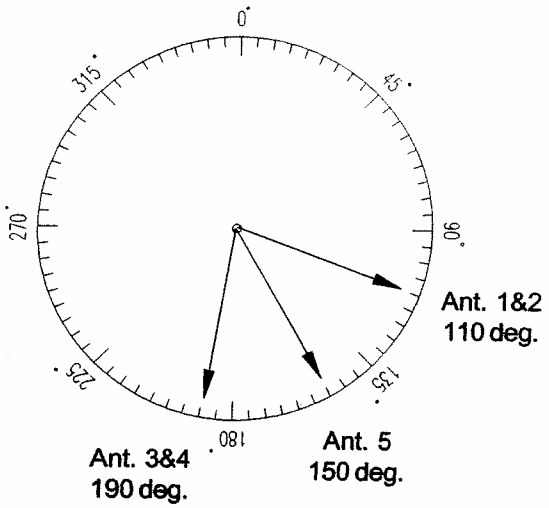
KATHREIN
SCALA DIVISION

CL-FM SPECIAL
Log Periodic Antenna Array
Stacking Instructions

Unrotated side view



SKEW DIAGRAM



Frequency: 88-108 MHz

Sapcing 'A': 81 in. (2057mm)

Spacing 'B': 30 in. (762mm)

Spacing 'C': 105 in. (2667mm)

Kathrein Inc. , Scala Division
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Medford, OR 97501 (USA)
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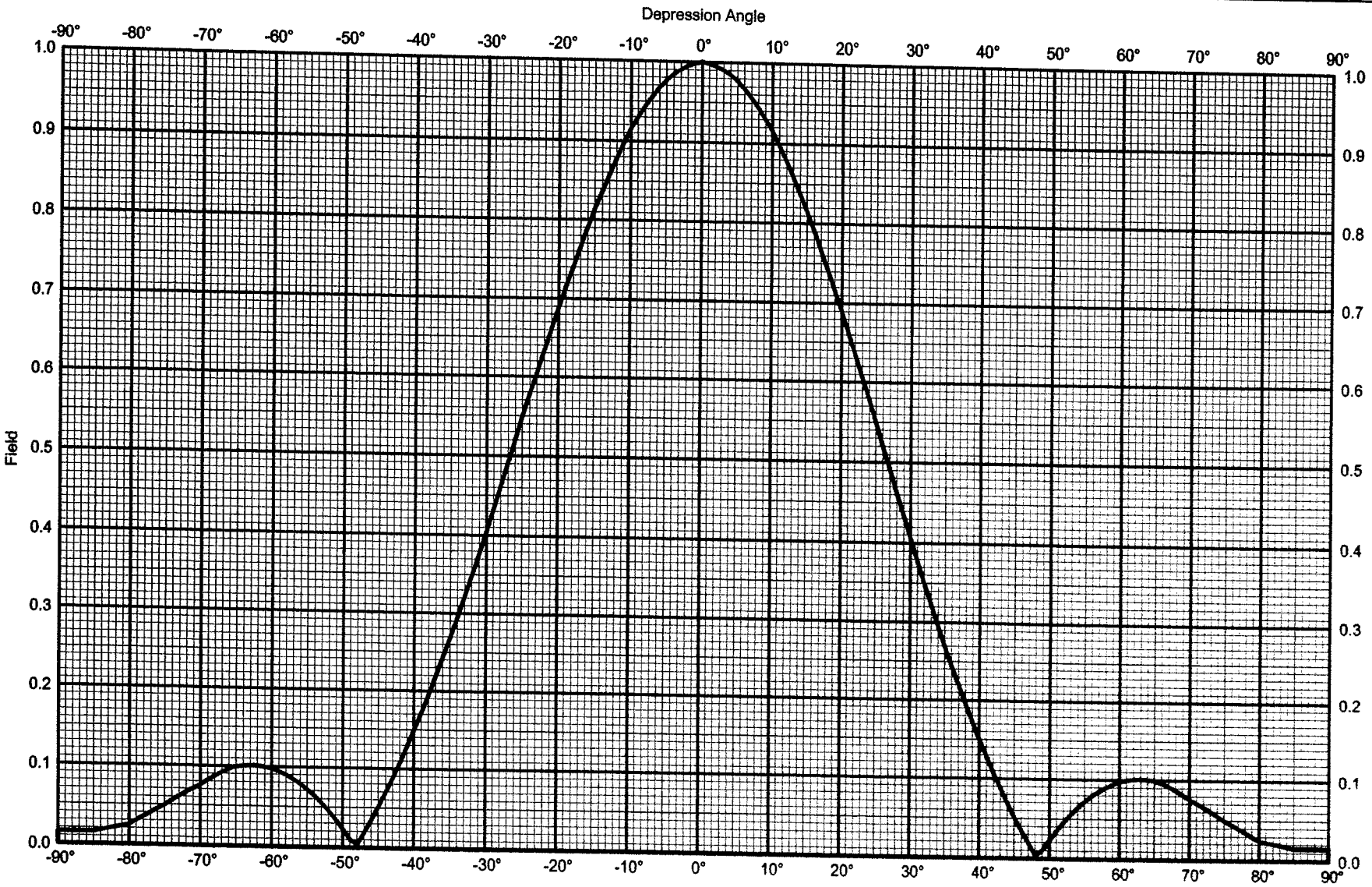
Phone: (541) 779-6500
Fax: (541) 779-3991
e-mail: mail@kathrein.com

EXHIBIT B-3

ANTENNA ELEVATION PATTERN DATA



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http://www.kathrein-scala.com

Four CL-FM Log-periodic Antennas
Oriented two each at 110 and 190 deg.
each pair w/ 1/4 wave offset
for reduced rear lobe

Horizontal Polarization
Gain: 6.0 dBd.
Vertical plane Pattern

KATHREIN
SCALA DIVISION

Four CL-FM Log-periodic Antennas
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Horizontal Polarization
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Vertical plane Pattern

Angle	Field	Rel.dB	dBd	PwrMult
-90	0.015	-36.32	-30.32	0.00
-89	0.015	-36.33	-30.33	0.00
-88	0.015	-36.34	-30.34	0.00
-87	0.015	-36.37	-30.37	0.00
-86	0.015	-36.40	-30.40	0.00
-85	0.015	-36.44	-30.44	0.00
-84	0.017	-35.41	-29.41	0.00
-83	0.019	-34.50	-28.50	0.00
-82	0.021	-33.71	-27.71	0.00
-81	0.022	-33.00	-27.00	0.00
-80	0.024	-32.37	-26.37	0.00
-79	0.029	-30.61	-24.61	0.00
-78	0.035	-29.19	-23.19	0.00
-77	0.040	-28.02	-22.02	0.01
-76	0.045	-27.03	-21.03	0.01
-75	0.049	-26.19	-20.19	0.01
-74	0.055	-25.18	-19.18	0.01
-73	0.061	-24.33	-18.33	0.01
-72	0.066	-23.61	-17.61	0.02
-71	0.071	-22.99	-16.99	0.02
-70	0.075	-22.47	-16.47	0.02
-69	0.081	-21.78	-15.78	0.03
-68	0.087	-21.21	-15.21	0.03
-67	0.092	-20.74	-14.74	0.03
-66	0.096	-20.37	-14.37	0.04
-65	0.099	-20.07	-14.07	0.04
-64	0.100	-19.97	-13.97	0.04
-63	0.101	-19.93	-13.93	0.04
-62	0.100	-19.96	-13.96	0.04
-61	0.099	-20.06	-14.06	0.04
-60	0.097	-20.24	-14.24	0.04
-59	0.094	-20.56	-14.56	0.04
-58	0.089	-20.97	-14.97	0.03
-57	0.084	-21.48	-15.48	0.03
-56	0.078	-22.12	-16.12	0.02
-55	0.071	-22.92	-16.92	0.02
-54	0.064	-23.94	-17.94	0.02
-53	0.055	-25.23	-19.23	0.01
-52	0.045	-26.94	-20.94	0.01
-51	0.034	-29.29	-23.29	0.00
-50	0.023	-32.92	-26.92	0.00
-49	0.010	-40.09	-34.09	0.00
-48	0.004	-48.42	-42.42	0.00
-47	0.018	-34.67	-28.67	0.00
-46	0.034	-29.33	-23.33	0.00

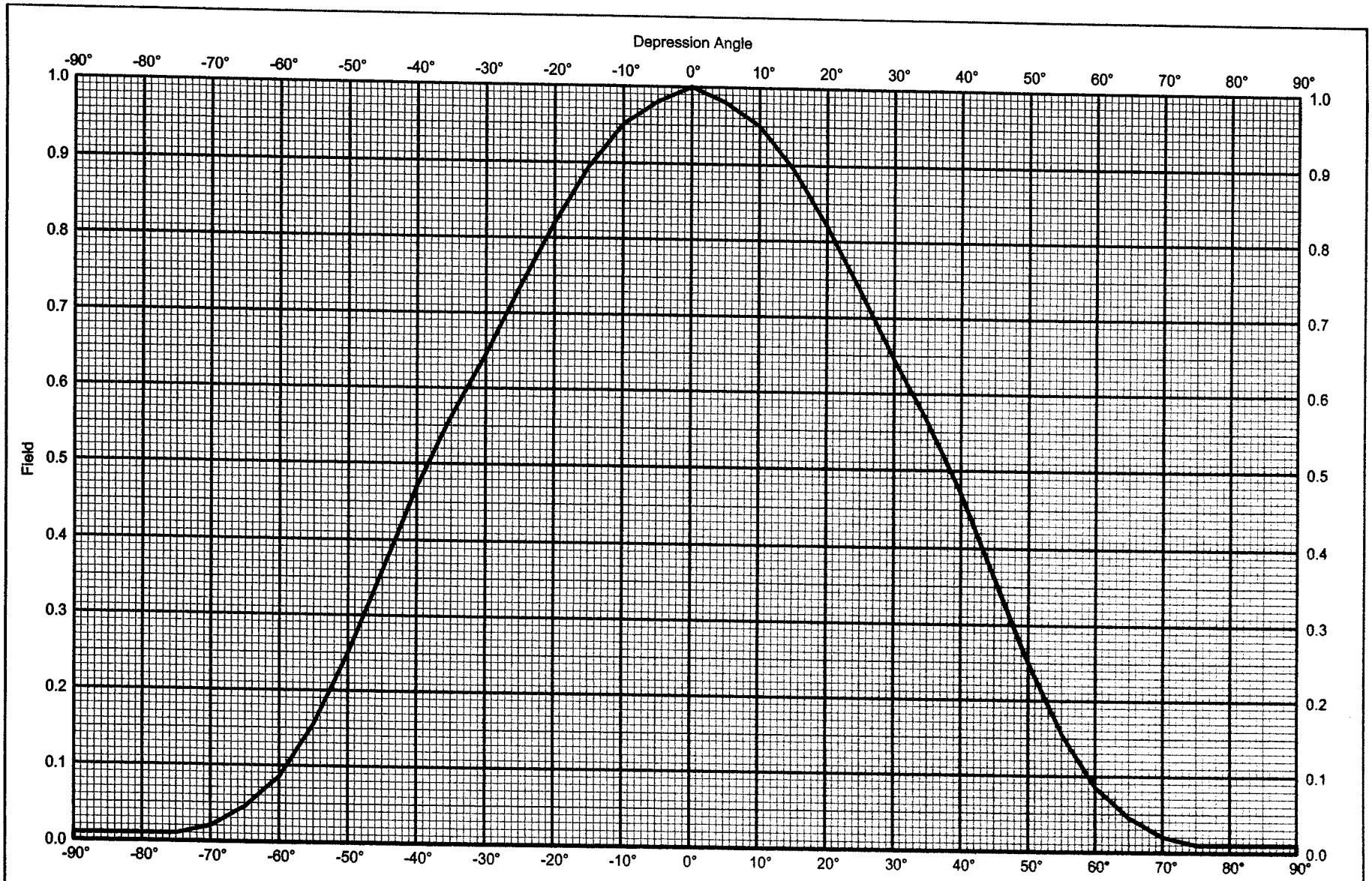
Angle	Field	Rel.dB	dBd	PwrMult
-45	0.051	-25.87	-19.87	0.01
-44	0.069	-23.28	-17.28	0.02
-43	0.087	-21.19	-15.19	0.03
-42	0.107	-19.42	-13.42	0.05
-41	0.128	-17.89	-11.89	0.06
-40	0.149	-16.53	-10.53	0.09
-39	0.171	-15.32	-9.32	0.12
-38	0.194	-14.23	-8.23	0.15
-37	0.218	-13.21	-7.21	0.19
-36	0.243	-12.29	-6.29	0.24
-35	0.269	-11.42	-5.42	0.29
-34	0.294	-10.62	-4.62	0.35
-33	0.321	-9.86	-3.86	0.41
-32	0.349	-9.15	-3.15	0.48
-31	0.377	-8.48	-2.48	0.57
-30	0.405	-7.85	-1.85	0.65
-29	0.433	-7.26	-1.26	0.75
-28	0.462	-6.71	-0.71	0.85
-27	0.491	-6.18	-0.18	0.96
-26	0.520	-5.68	0.32	1.08
-25	0.549	-5.20	0.80	1.20
-24	0.578	-4.77	1.23	1.33
-23	0.606	-4.36	1.64	1.46
-22	0.634	-3.96	2.04	1.60
-21	0.661	-3.59	2.41	1.74
-20	0.689	-3.23	2.77	1.89
-19	0.715	-2.91	3.09	2.04
-18	0.741	-2.60	3.40	2.19
-17	0.766	-2.32	3.68	2.34
-16	0.791	-2.04	3.96	2.49
-15	0.815	-1.78	4.22	2.64
-14	0.836	-1.55	4.45	2.79
-13	0.857	-1.34	4.66	2.93
-12	0.878	-1.13	4.87	3.07
-11	0.897	-0.94	5.06	3.20
-10	0.915	-0.77	5.23	3.33
-9	0.930	-0.63	5.37	3.44
-8	0.944	-0.51	5.49	3.54
-7	0.956	-0.39	5.61	3.64
-6	0.967	-0.29	5.71	3.72
-5	0.977	-0.20	5.80	3.80
-4	0.984	-0.14	5.86	3.86
-3	0.990	-0.09	5.91	3.90
-2	0.995	-0.05	5.95	3.94
-1	0.998	-0.02	5.98	3.96
0	1.000	0.00	6.00	3.98

KATHREIN
SCALA DIVISION

Four CL-FM Log-periodic Antennas
Oriented two each at 110 and 190 deg.
each pair w/ 1/4 wave offset
for reduced rear lobe

Horizontal Polarization
Gain: 6.0 dBd.
Vertical plane Pattern

Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	6.00	3.98
1	0.998	-0.02	5.98	3.96
2	0.995	-0.05	5.95	3.94
3	0.990	-0.09	5.91	3.90
4	0.984	-0.14	5.86	3.86
5	0.977	-0.20	5.80	3.80
6	0.967	-0.29	5.71	3.72
7	0.956	-0.39	5.61	3.64
8	0.944	-0.50	5.50	3.54
9	0.930	-0.63	5.37	3.44
10	0.915	-0.77	5.23	3.34
11	0.897	-0.94	5.06	3.20
12	0.878	-1.13	4.87	3.07
13	0.858	-1.34	4.66	2.93
14	0.836	-1.55	4.45	2.79
15	0.815	-1.78	4.22	2.64
16	0.791	-2.04	3.96	2.49
17	0.766	-2.32	3.68	2.34
18	0.741	-2.60	3.40	2.19
19	0.715	-2.91	3.09	2.04
20	0.689	-3.23	2.77	1.89
21	0.661	-3.59	2.41	1.74
22	0.634	-3.96	2.04	1.60
23	0.606	-4.36	1.64	1.46
24	0.578	-4.77	1.23	1.33
25	0.549	-5.20	0.80	1.20
26	0.520	-5.68	0.32	1.08
27	0.491	-6.18	-0.18	0.96
28	0.462	-6.71	-0.71	0.85
29	0.433	-7.26	-1.26	0.75
30	0.405	-7.85	-1.85	0.65
31	0.377	-8.48	-2.48	0.57
32	0.349	-9.15	-3.15	0.48
33	0.321	-9.86	-3.86	0.41
34	0.294	-10.62	-4.62	0.35
35	0.269	-11.42	-5.42	0.29
36	0.243	-12.29	-6.29	0.24
37	0.218	-13.21	-7.21	0.19
38	0.194	-14.23	-8.23	0.15
39	0.171	-15.32	-9.32	0.12
40	0.149	-16.53	-10.53	0.09
41	0.128	-17.89	-11.89	0.06
42	0.107	-19.42	-13.42	0.05
43	0.087	-21.19	-15.19	0.03
44	0.069	-23.28	-17.28	0.02
45	0.051	-25.87	-19.87	0.01
46	0.034	-29.33	-23.33	0.00
47	0.018	-34.66	-28.66	0.00
48	0.004	-48.41	-42.41	0.00
49	0.010	-40.09	-34.09	0.00
50	0.023	-32.92	-26.92	0.00
51	0.034	-29.29	-23.29	0.00
52	0.045	-26.94	-20.94	0.01
53	0.055	-25.23	-19.23	0.01
54	0.064	-23.94	-17.94	0.02
55	0.071	-22.92	-16.92	0.02
56	0.078	-22.12	-16.12	0.02
57	0.084	-21.48	-15.48	0.03
58	0.089	-20.97	-14.97	0.03
59	0.094	-20.56	-14.56	0.04
60	0.097	-20.24	-14.24	0.04
61	0.099	-20.06	-14.06	0.04
62	0.100	-19.96	-13.96	0.04
63	0.101	-19.93	-13.93	0.04
64	0.100	-19.97	-13.97	0.04
65	0.099	-20.07	-14.07	0.04
66	0.096	-20.37	-14.37	0.04
67	0.092	-20.74	-14.74	0.03
68	0.087	-21.21	-15.21	0.03
69	0.081	-21.78	-15.78	0.03
70	0.075	-22.47	-16.47	0.02
71	0.071	-22.99	-16.99	0.02
72	0.066	-23.61	-17.61	0.02
73	0.061	-24.33	-18.33	0.01
74	0.055	-25.18	-19.18	0.01
75	0.049	-26.19	-20.19	0.01
76	0.045	-27.03	-21.03	0.01
77	0.040	-28.02	-22.02	0.01
78	0.035	-29.19	-23.19	0.00
79	0.029	-30.61	-24.61	0.00
80	0.024	-32.37	-26.37	0.00
81	0.022	-33.00	-27.00	0.00
82	0.021	-33.71	-27.71	0.00
83	0.019	-34.50	-28.50	0.00
84	0.017	-35.41	-29.41	0.00
85	0.015	-36.44	-30.44	0.00
86	0.015	-36.40	-30.40	0.00
87	0.015	-36.37	-30.37	0.00
88	0.015	-36.34	-30.34	0.00
89	0.015	-36.33	-30.33	0.00
90	0.015	-36.32	-30.32	0.00



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One CL-FM Log-periodic Antennas

Oriented at 150 deg.

Gain: 7.0 dBd.

Vertical Polarization

Vertical plane Pattern

KATHREIN
SCALA DIVISION

One CL-FM Log-periodic Antennas
Oriented at 150 deg.
Gain: 7.0 dBd.
Vertical Polarization

Vertical plane Pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.010	-40.00	-33.00	0.00	-45	0.360	-8.87	-1.87	0.65
-89	0.010	-40.00	-33.00	0.00	-44	0.382	-8.36	-1.36	0.73
-88	0.010	-40.00	-33.00	0.00	-43	0.404	-7.87	-0.87	0.82
-87	0.010	-40.00	-33.00	0.00	-42	0.426	-7.41	-0.41	0.91
-86	0.010	-40.00	-33.00	0.00	-41	0.448	-6.97	0.03	1.01
-85	0.010	-40.00	-33.00	0.00	-40	0.470	-6.56	0.44	1.11
-84	0.010	-40.00	-33.00	0.00	-39	0.488	-6.22	0.78	1.20
-83	0.010	-40.00	-33.00	0.00	-38	0.507	-5.90	1.10	1.29
-82	0.010	-40.00	-33.00	0.00	-37	0.525	-5.59	1.41	1.38
-81	0.010	-40.00	-33.00	0.00	-36	0.544	-5.29	1.71	1.48
-80	0.010	-40.00	-33.00	0.00	-35	0.562	-5.00	2.00	1.59
-79	0.010	-40.00	-33.00	0.00	-34	0.579	-4.75	2.25	1.68
-78	0.010	-40.00	-33.00	0.00	-33	0.595	-4.50	2.50	1.78
-77	0.010	-40.00	-33.00	0.00	-32	0.612	-4.26	2.74	1.88
-76	0.010	-40.00	-33.00	0.00	-31	0.628	-4.03	2.97	1.98
-75	0.010	-40.00	-33.00	0.00	-30	0.645	-3.81	3.19	2.09
-74	0.012	-38.42	-31.42	0.00	-29	0.663	-3.57	3.43	2.20
-73	0.014	-37.08	-30.08	0.00	-28	0.681	-3.34	3.66	2.32
-72	0.016	-35.92	-28.92	0.00	-27	0.699	-3.11	3.89	2.45
-71	0.018	-34.89	-27.89	0.00	-26	0.717	-2.89	4.11	2.58
-70	0.020	-33.98	-26.98	0.00	-25	0.735	-2.67	4.33	2.71
-69	0.025	-32.04	-25.04	0.00	-24	0.752	-2.48	4.52	2.83
-68	0.030	-30.46	-23.46	0.00	-23	0.769	-2.28	4.72	2.96
-67	0.035	-29.12	-22.12	0.01	-22	0.786	-2.09	4.91	3.10
-66	0.040	-27.96	-20.96	0.01	-21	0.803	-1.91	5.09	3.23
-65	0.045	-26.94	-19.94	0.01	-20	0.820	-1.72	5.28	3.37
-64	0.053	-25.51	-18.51	0.01	-19	0.835	-1.57	5.43	3.49
-63	0.061	-24.29	-17.29	0.02	-18	0.850	-1.41	5.59	3.62
-62	0.069	-23.22	-16.22	0.02	-17	0.865	-1.26	5.74	3.75
-61	0.077	-22.27	-15.27	0.03	-16	0.880	-1.11	5.89	3.88
-60	0.085	-21.41	-14.41	0.04	-15	0.895	-0.96	6.04	4.01
-59	0.099	-20.09	-13.09	0.05	-14	0.906	-0.86	6.14	4.11
-58	0.113	-18.94	-11.94	0.06	-13	0.917	-0.75	6.25	4.21
-57	0.127	-17.92	-10.92	0.08	-12	0.928	-0.65	6.35	4.32
-56	0.141	-17.02	-10.02	0.10	-11	0.939	-0.55	6.45	4.42
-55	0.155	-16.19	-9.19	0.12	-10	0.950	-0.45	6.55	4.52
-54	0.174	-15.19	-8.19	0.15	-9	0.956	-0.39	6.61	4.58
-53	0.193	-14.29	-7.29	0.19	-8	0.962	-0.34	6.66	4.64
-52	0.212	-13.47	-6.47	0.23	-7	0.968	-0.28	6.72	4.70
-51	0.231	-12.73	-5.73	0.27	-6	0.974	-0.23	6.77	4.75
-50	0.250	-12.04	-5.04	0.31	-5	0.980	-0.18	6.82	4.81
-49	0.272	-11.31	-4.31	0.37	-4	0.984	-0.14	6.86	4.85
-48	0.294	-10.63	-3.63	0.43	-3	0.988	-0.10	6.90	4.89
-47	0.316	-10.01	-3.01	0.50	-2	0.992	-0.07	6.93	4.93
-46	0.338	-9.42	-2.42	0.57	-1	0.996	-0.03	6.97	4.97
					0	1.000	0.00	7.00	5.01

KATHREIN
SCALA DIVISION

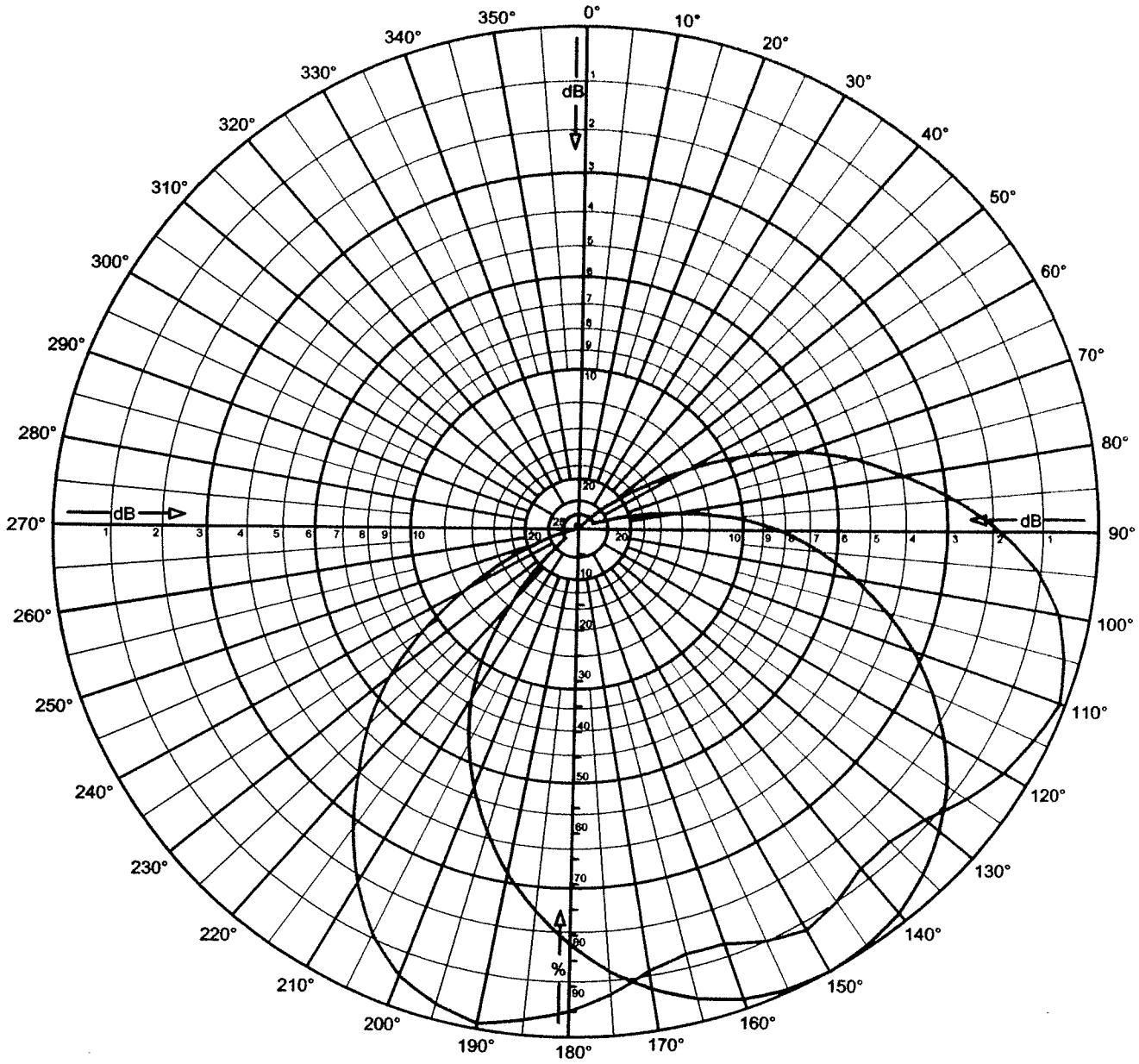
One CL-FM Log-periodic Antennas
Oriented at 150 deg.
Gain: 7.0 dBd.
Vertical Polarization

Vertical plane Pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	7.00	5.01	45	0.360	-8.87	-1.87	0.65
1	0.996	-0.03	6.97	4.97	46	0.338	-9.42	-2.42	0.57
2	0.992	-0.07	6.93	4.93	47	0.316	-10.01	-3.01	0.50
3	0.988	-0.10	6.90	4.89	48	0.294	-10.63	-3.63	0.43
4	0.984	-0.14	6.86	4.85	49	0.272	-11.31	-4.31	0.37
5	0.980	-0.18	6.82	4.81	50	0.250	-12.04	-5.04	0.31
6	0.974	-0.23	6.77	4.75	51	0.231	-12.73	-5.73	0.27
7	0.968	-0.28	6.72	4.70	52	0.212	-13.47	-6.47	0.23
8	0.962	-0.34	6.66	4.64	53	0.193	-14.29	-7.29	0.19
9	0.956	-0.39	6.61	4.58	54	0.174	-15.19	-8.19	0.15
10	0.950	-0.45	6.55	4.52	55	0.155	-16.19	-9.19	0.12
11	0.939	-0.55	6.45	4.42	56	0.141	-17.02	-10.02	0.10
12	0.928	-0.65	6.35	4.32	57	0.127	-17.92	-10.92	0.08
13	0.917	-0.75	6.25	4.21	58	0.113	-18.94	-11.94	0.06
14	0.906	-0.86	6.14	4.11	59	0.099	-20.09	-13.09	0.05
15	0.895	-0.96	6.04	4.01	60	0.085	-21.41	-14.41	0.04
16	0.880	-1.11	5.89	3.88	61	0.077	-22.27	-15.27	0.03
17	0.865	-1.26	5.74	3.75	62	0.069	-23.22	-16.22	0.02
18	0.850	-1.41	5.59	3.62	63	0.061	-24.29	-17.29	0.02
19	0.835	-1.57	5.43	3.49	64	0.053	-25.51	-18.51	0.01
20	0.820	-1.72	5.28	3.37	65	0.045	-26.94	-19.94	0.01
21	0.803	-1.91	5.09	3.23	66	0.040	-27.96	-20.96	0.01
22	0.786	-2.09	4.91	3.10	67	0.035	-29.12	-22.12	0.01
23	0.769	-2.28	4.72	2.96	68	0.030	-30.46	-23.46	0.00
24	0.752	-2.48	4.52	2.83	69	0.025	-32.04	-25.04	0.00
25	0.735	-2.67	4.33	2.71	70	0.020	-33.98	-26.98	0.00
26	0.717	-2.89	4.11	2.58	71	0.018	-34.89	-27.89	0.00
27	0.699	-3.11	3.89	2.45	72	0.016	-35.92	-28.92	0.00
28	0.681	-3.34	3.66	2.32	73	0.014	-37.08	-30.08	0.00
29	0.663	-3.57	3.43	2.20	74	0.012	-38.42	-31.42	0.00
30	0.645	-3.81	3.19	2.09	75	0.010	-40.00	-33.00	0.00
31	0.628	-4.03	2.97	1.98	76	0.010	-40.00	-33.00	0.00
32	0.612	-4.26	2.74	1.88	77	0.010	-40.00	-33.00	0.00
33	0.595	-4.50	2.50	1.78	78	0.010	-40.00	-33.00	0.00
34	0.579	-4.75	2.25	1.68	79	0.010	-40.00	-33.00	0.00
35	0.562	-5.00	2.00	1.59	80	0.010	-40.00	-33.00	0.00
36	0.544	-5.29	1.71	1.48	81	0.010	-40.00	-33.00	0.00
37	0.525	-5.59	1.41	1.38	82	0.010	-40.00	-33.00	0.00
38	0.507	-5.90	1.10	1.29	83	0.010	-40.00	-33.00	0.00
39	0.488	-6.22	0.78	1.20	84	0.010	-40.00	-33.00	0.00
40	0.470	-6.56	0.44	1.11	85	0.010	-40.00	-33.00	0.00
41	0.448	-6.97	0.03	1.01	86	0.010	-40.00	-33.00	0.00
42	0.426	-7.41	-0.41	0.91	87	0.010	-40.00	-33.00	0.00
43	0.404	-7.87	-0.87	0.82	88	0.010	-40.00	-33.00	0.00
44	0.382	-8.36	-1.36	0.73	89	0.010	-40.00	-33.00	0.00
					90	0.010	-40.00	-33.00	0.00

EXHIBIT B-4

ANTENNA AZIMUTH PATTERN DATA



5xCL-FM/DV FM log-Periodic array
H-pol: 4xCL-FM/HRM/HV skewed 110 & 190 '
w/ 1/4 wave offset to reduce rear
Fed w/ 55% power
V-pol: CL-FMVRM skewed 150 degrees
Horizontal plane pattern
Dual polarization

KATHREIN
SCALA DIVISION
Post Office Box 4580
Medford, OR 97501 (USA)
Phone:(541)779-6500
Fax:(541)779-3991
http://www.kathrein-scala.com

KATHREIN
SCALA DIVISION

H-POL

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	0.010	-40.00	-36.60	0.00	180	0.960	-0.36	3.04	2.01
10	0.010	-40.00	-36.60	0.00	190	1.000	0.00	3.40	2.19
20	0.010	-40.00	-36.60	0.00	200	0.949	-0.45	2.95	1.97
30	0.010	-40.00	-36.60	0.00	210	0.819	-1.74	1.66	1.47
40	0.021	-33.45	-30.05	0.00	220	0.641	-3.86	-0.46	0.90
50	0.084	-21.52	-18.12	0.02	230	0.464	-6.67	-3.27	0.47
60	0.245	-12.21	-8.81	0.13	240	0.245	-12.21	-8.81	0.13
70	0.464	-6.67	-3.27	0.47	250	0.084	-21.52	-18.12	0.02
80	0.641	-3.86	-0.46	0.90	260	0.021	-33.45	-30.05	0.00
90	0.819	-1.74	1.66	1.47	270	0.010	-40.00	-36.60	0.00
100	0.949	-0.45	2.95	1.97	280	0.010	-40.00	-36.60	0.00
110	1.000	0.00	3.40	2.19	290	0.010	-40.00	-36.60	0.00
120	0.960	-0.36	3.04	2.01	300	0.010	-40.00	-36.60	0.00
130	0.891	-1.01	2.39	1.73	310	0.010	-40.00	-36.60	0.00
140	0.875	-1.16	2.24	1.67	320	0.011	-39.27	-35.87	0.00
150	0.917	-0.75	2.65	1.84	330	0.012	-38.31	-34.91	0.00
160	0.875	-1.16	2.24	1.67	340	0.011	-39.27	-35.87	0.00
170	0.891	-1.01	2.39	1.73	350	0.010	-40.00	-36.60	0.00

KATHREIN
SCALA DIVISION

V-POL

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	0.030	-30.46	-26.96	0.00	180	0.817	-1.75	1.75	1.50
10	0.030	-30.46	-26.96	0.00	190	0.690	-3.22	0.28	1.07
20	0.030	-30.46	-26.96	0.00	200	0.544	-5.30	-1.80	0.66
30	0.030	-30.46	-26.96	0.00	210	0.390	-8.18	-4.68	0.34
40	0.030	-30.46	-26.96	0.00	220	0.190	-14.42	-10.92	0.08
50	0.030	-30.46	-26.96	0.00	230	0.050	-26.02	-22.52	0.01
60	0.030	-30.46	-26.96	0.00	240	0.030	-30.46	-26.96	0.00
70	0.050	-26.02	-22.52	0.01	250	0.030	-30.46	-26.96	0.00
80	0.190	-14.42	-10.92	0.08	260	0.030	-30.46	-26.96	0.00
90	0.390	-8.18	-4.68	0.34	270	0.030	-30.46	-26.96	0.00
100	0.544	-5.30	-1.80	0.66	280	0.030	-30.46	-26.96	0.00
110	0.690	-3.22	0.28	1.07	290	0.030	-30.46	-26.96	0.00
120	0.817	-1.75	1.75	1.50	300	0.030	-30.46	-26.96	0.00
130	0.916	-0.76	2.74	1.88	310	0.030	-30.46	-26.96	0.00
140	0.980	-0.18	3.32	2.15	320	0.030	-30.46	-26.96	0.00
150	1.000	0.00	3.50	2.24	330	0.030	-30.46	-26.96	0.00
160	0.980	-0.18	3.32	2.15	340	0.030	-30.46	-26.96	0.00
170	0.916	-0.76	2.74	1.88	350	0.030	-30.46	-26.96	0.00

ANTENNA AZIMUTH PATTERN (COMPOSITE)

PROPOSED KMVN BOOSTER
CHANNEL 230 - SANTA CLARITA, CALIFORNIA

Azimuth (° T)	Maximum Relative Field	ERP (dbk)	ERP (kw)	HAAT (m.)	Azimuth (° T)	Maximum Relative Field	ERP (dbk)	(ERP)	HAAT (m.)
0	0.010	-46.0	<1	-97	180	0.960	-6.4	229	-56
10	0.010	-46.0	<1	-154	190	1.000	-6.0	250	-72
20	0.010	-46.0	<1	-219	200	0.949	-6.5	224	-103
30	0.010	-46.0	<1	-237	210	0.819	-7.7	170	-126
40	0.021	-39.6	<1	-145	220	0.641	-9.9	102	-178
50	0.084	-27.5	2	-141	230	0.464	-12.7	54	-162
60	0.245	-18.2	15	-168	240	0.245	-18.2	15	-97
70	0.464	-12.7	54	-138	250	0.084	-27.5	2	45
80	0.641	-9.9	102	-117	260	0.021	-39.6	<1	106
90	0.819	-7.7	170	-63	270	0.010	-46.0	<1	85
100	0.949	-6.5	224	-118	280	0.010	-46.0	<1	65
110	1.000	-6.0	250	-156	290	0.010	-46.0	<1	42
120	0.960	-6.4	229	-161	300	0.010	-46.0	<1	-7
130	0.916	-6.8	209	-269	310	0.010	-46.0	<1	31
140	0.980	-6.2	240	-156	320	0.011	-45.2	<1	18
150	1.000	-6.0	250	-73	330	0.012	-44.4	<1	-18
160	0.980	-6.2	240	-16	340	0.011	-45.2	<1	-39
170	0.916	-6.8	209	5	350	0.010	-46.0	<1	-63

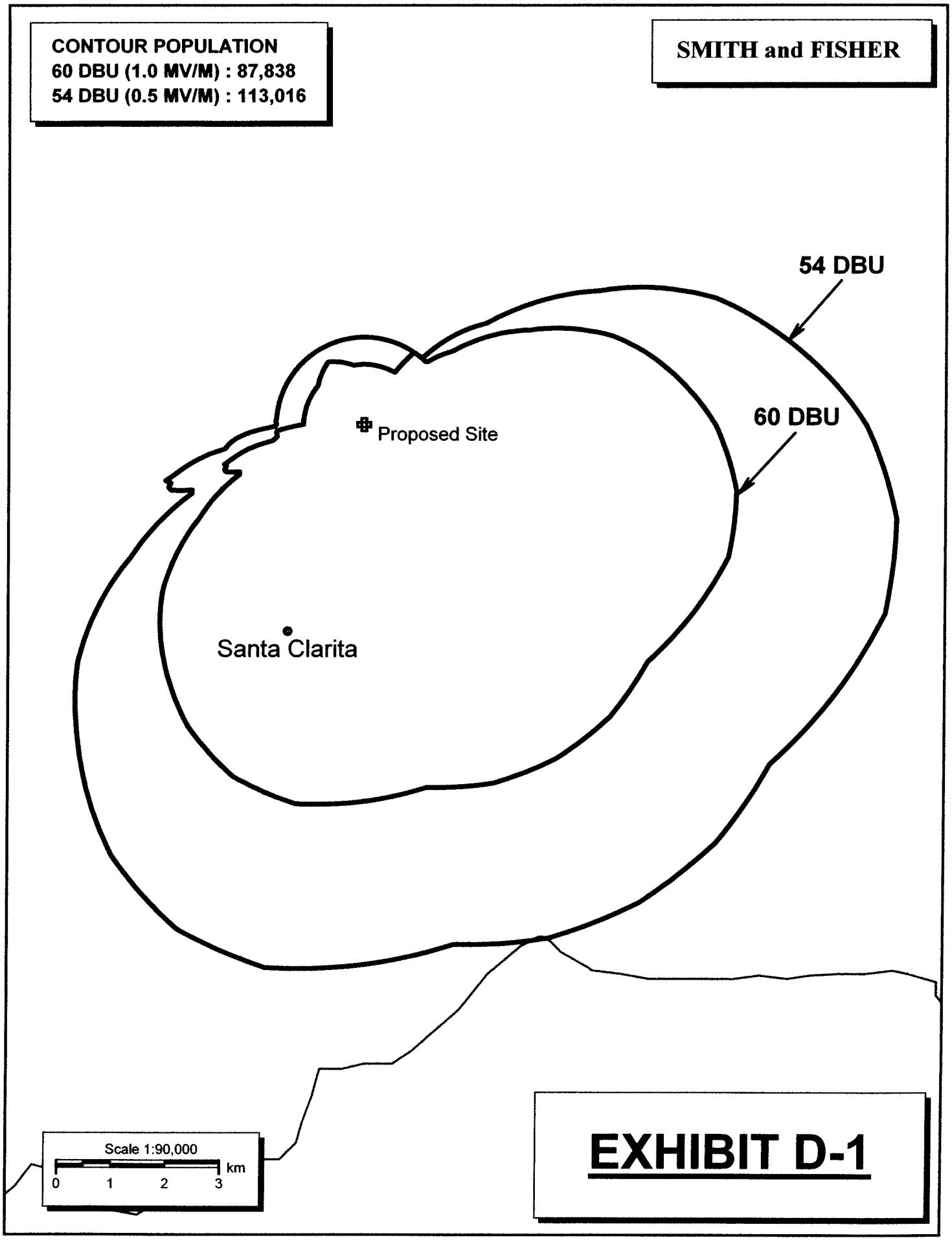
EXHIBIT C

PROPOSED OPERATING PARAMETERS

PROPOSED KMVN BOOSTER
CHANNEL 230 - SANTA CLARITA, CALIFORNIA

Transmitter Power Output – Horizontal:	117 watts
Transmitter Power Output – Vertical:	114 watts
Transmission Line Efficiency:	97.5%
Antenna Power Gain – Horizontal:	2.19
Antenna Power Gain – Vertical:	2.24
Effective Radiated Power – Horizontal:	250 watts
Effective Radiated Power – Vertical:	250 watts
Transmitter Make and Model:	Type-accepted
Rated Output	250 watts
Transmission Line Make and Model:	Andrew LDF7-50A
Size and Type:	1-5/8" foam heliax
Length:	50 feet*
Antenna Make and Model:	Scala CL-FM Special
Orientation	150° T
Beam Tilt	none

*estimated


CONTOUR POPULATION
60 DBU (1.0 MV/M) : 87,838
54 DBU (0.5 MV/M) : 113,016
SMITH and FISHER
54 DBU
60 DBU
Proposed Site
Santa Clarita
Scale 1:90,000
0 1 2 3 km
EXHIBIT D-1

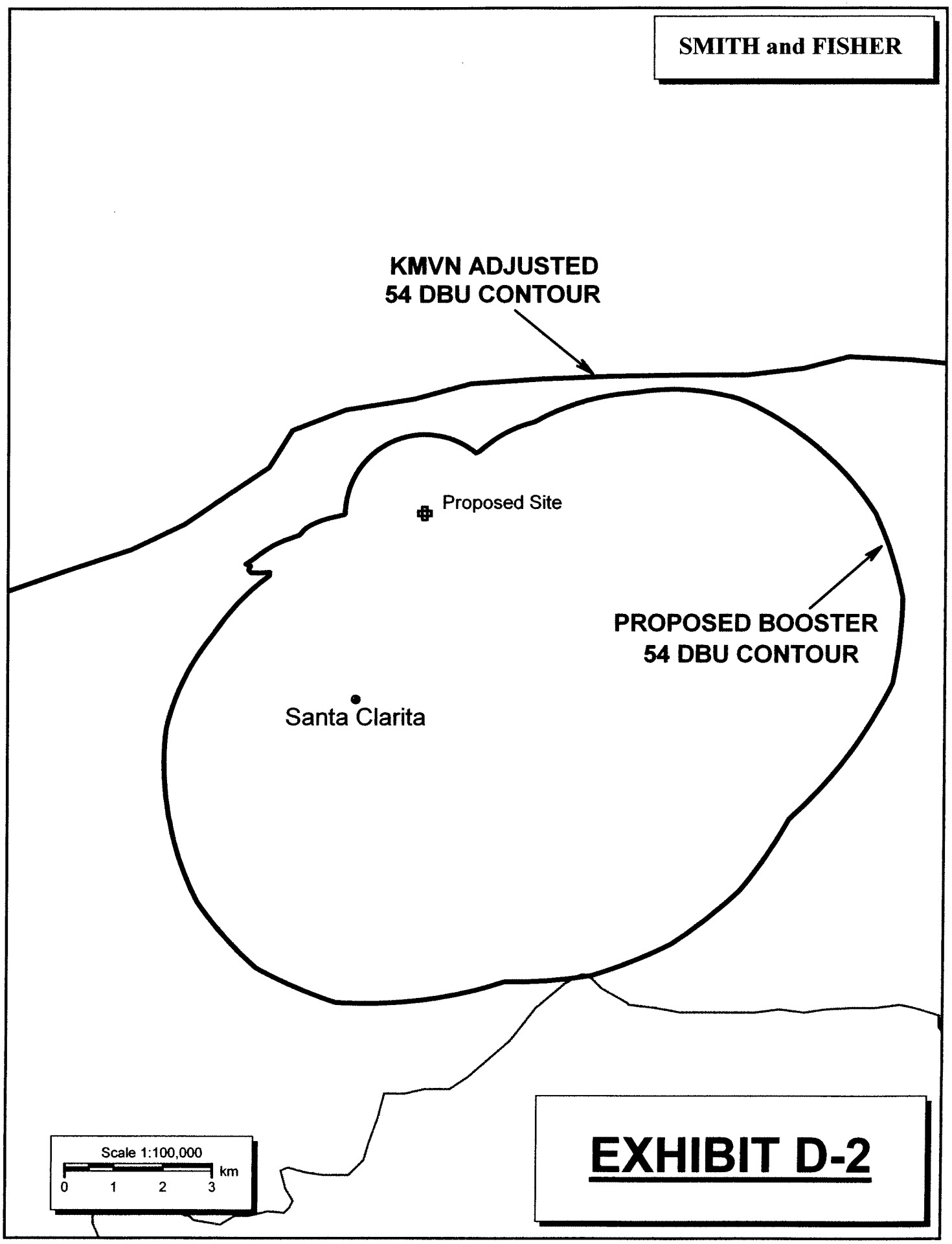

SMITH and FISHER
KMVN ADJUSTED
54 DBU CONTOUR
Proposed Site
PROPOSED BOOSTER
54 DBU CONTOUR
Santa Clarita
Scale 1:100,000
km
0
1
2
3
EXHIBIT D-2

EXHIBIT E-1

INTERFERENCE ANALYSIS

We have conducted an interference study with respect to the proposed booster facility. In doing so, we have applied the contour protection requirements of Section 74.1204 of the Commission's Rules with respect to all facilities of concern. The results of the study reveal that the proposed facility meets these Rules except with respect to KBUA(FM), Channel 232A in San Fernando, California, and its booster, KBUA-FM1, licensed to serve Valencia and Newhall, California.

The proposed KMVN booster site is located outside the protected 60 dBu contour of KBUA. However, the proposed booster's interfering 100 dBu contour overlaps a small portion of the KBUA contour, as shown in Exhibit E-2. No actual interference to KBUA reception is predicted to occur, due to the fact that the area within the KMVN booster's predicted 100 dBu contour is uninhabited, according to the 2000 U.S. Census. Indeed, the area surrounding the proposed booster site is extremely rugged, as shown on the topographic map in Exhibit E-3. In addition, based on a Longley-Rice service analysis, and most of the overlap area within the predicted KMVN interference contour does not receive 60 dBu service from KBUA, due to significant intervening terrain between the KBUA site and that of the proposed KMVN booster. This is why KBUA finds it necessary to operate a booster (KBUA-FM1) in this area. A Longley-Rice interference study reveals that the proposed KMVN booster does not cause any interference to KBUA in areas where the latter has a signal level of at least 60 dBu (1.0 mv/m).

EXHIBIT E-1

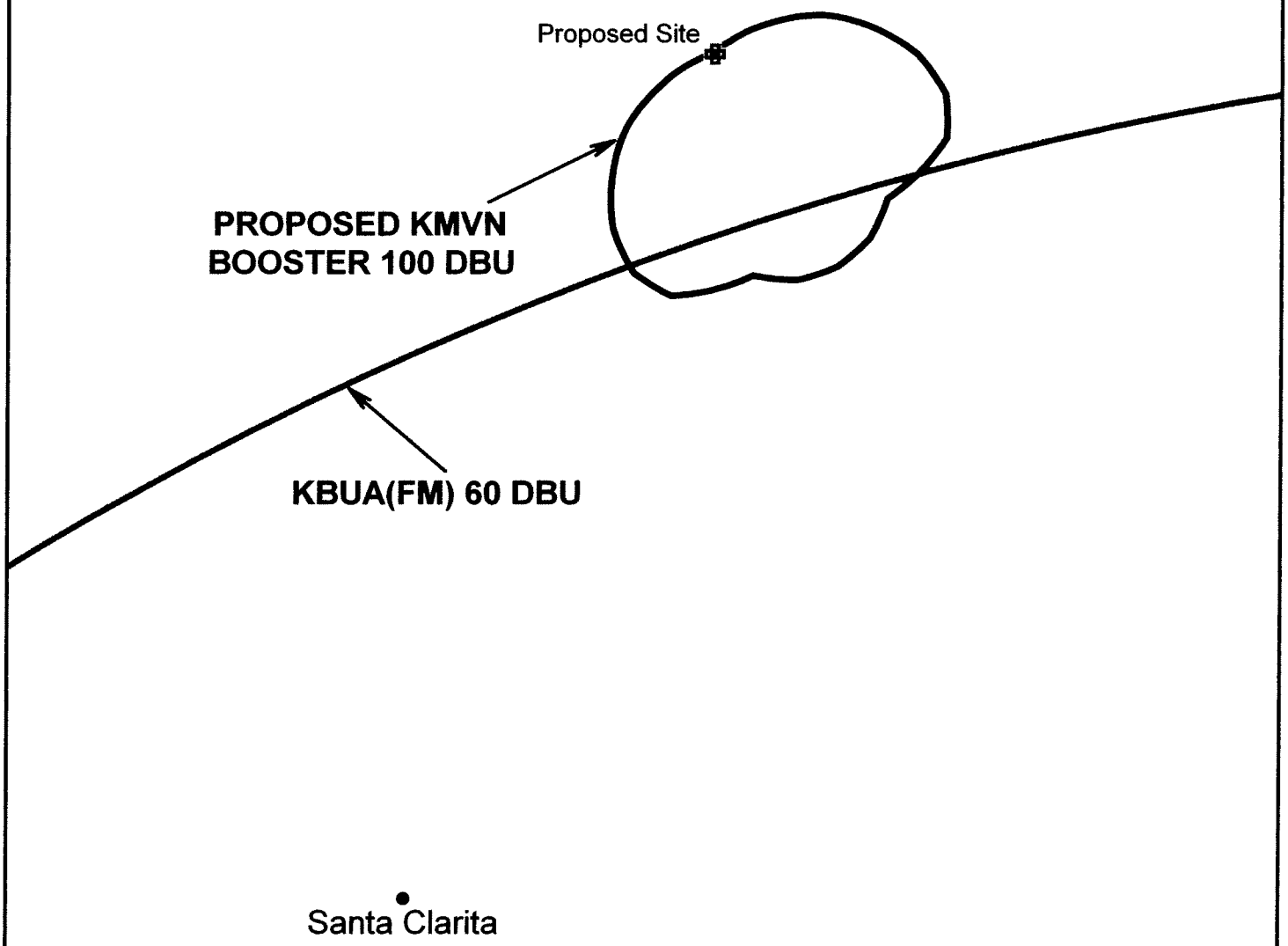
With regard to the KBUA booster, the proposed KMVN booster site is located within the 60 dBu contour of that station, as shown in Exhibit E-4. Indeed, KBUA-FM1 places a 68.5 dBu signal at the proposed KMVN booster site. The corresponding KMVN booster interfering contour (68.5 + 40 dBu = 108.5 dBu) comprises an area of only 1.39 square kilometers that contains no people, according to the 2000 U.S. Census. The predicted interference area is shown on a topographic map in Exhibit E-5. A Longley-Rice interference study confirms that the proposed KMVN booster causes no predicted interference to KBUA-FM1.

As a result, a waiver of Section 74.1204 of the Commission's Rules with respect to interference to KBUA and KBUA-FM1 is requested and believed to be justified based on the above-referenced studies.

It is interesting to note that both KBUA and KBUA-FM1 are severely short-spaced to KMVN. However, both of these facilities on Channel 232 operate without significant interference to KMVN. It is believed that, for the same reason, the proposed KMVN booster will not interfere with the reception of KBUA in the Santa Clarita valley.

2000 U.S. CENSUS POPULATION W/IN PROPOSED 100 DBU CONTOUR = 0

SMITH and FISHER



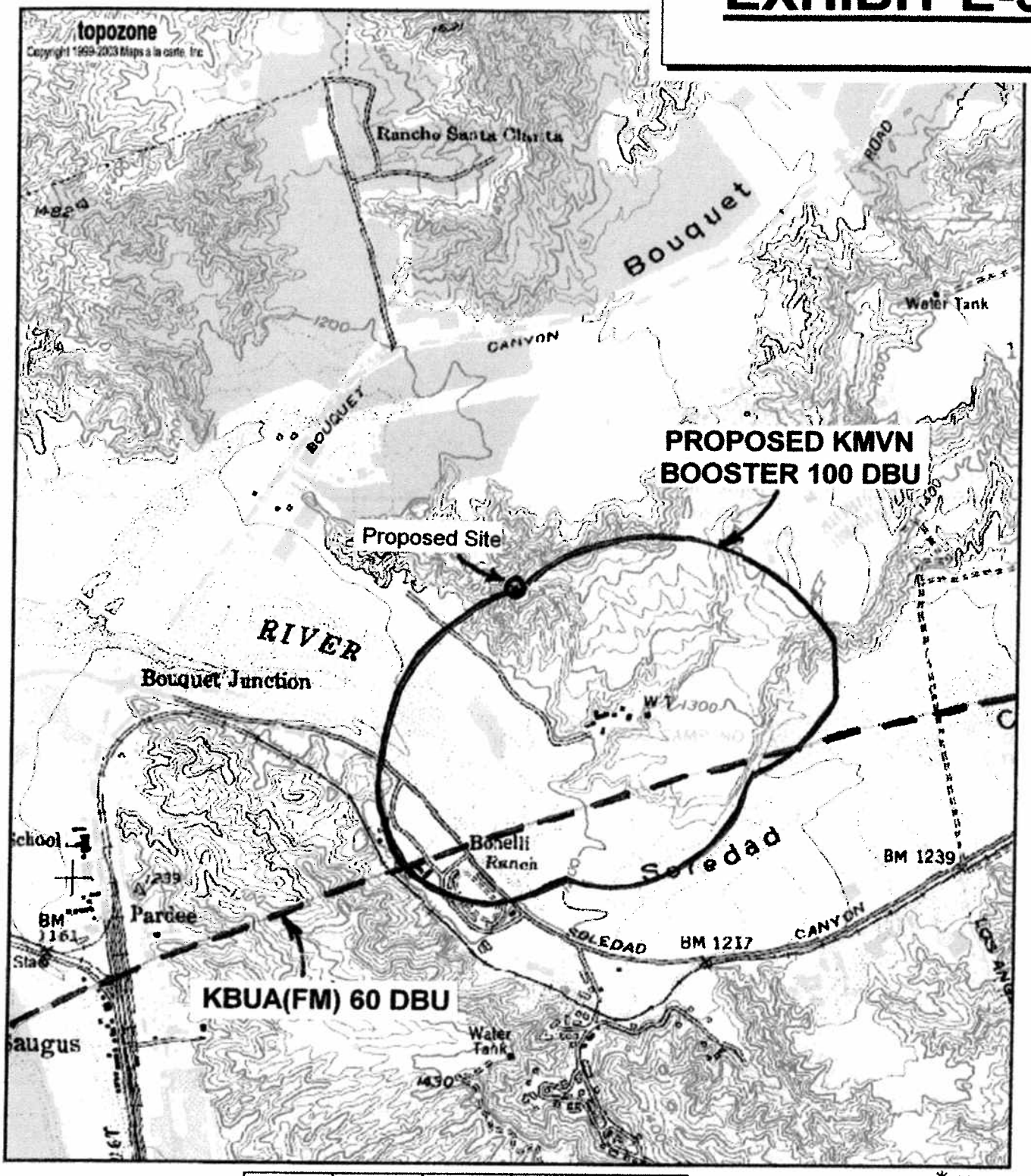
Scale 1:30,000

0 0.23 0.47 0.7 mi

EXHIBIT E-2

SMITH and FISHER

EXHIBIT E-3



0 0.3 0.6 0.9 1.2 1.5 km

0 0.2 0.4 0.6 0.8 1 mi

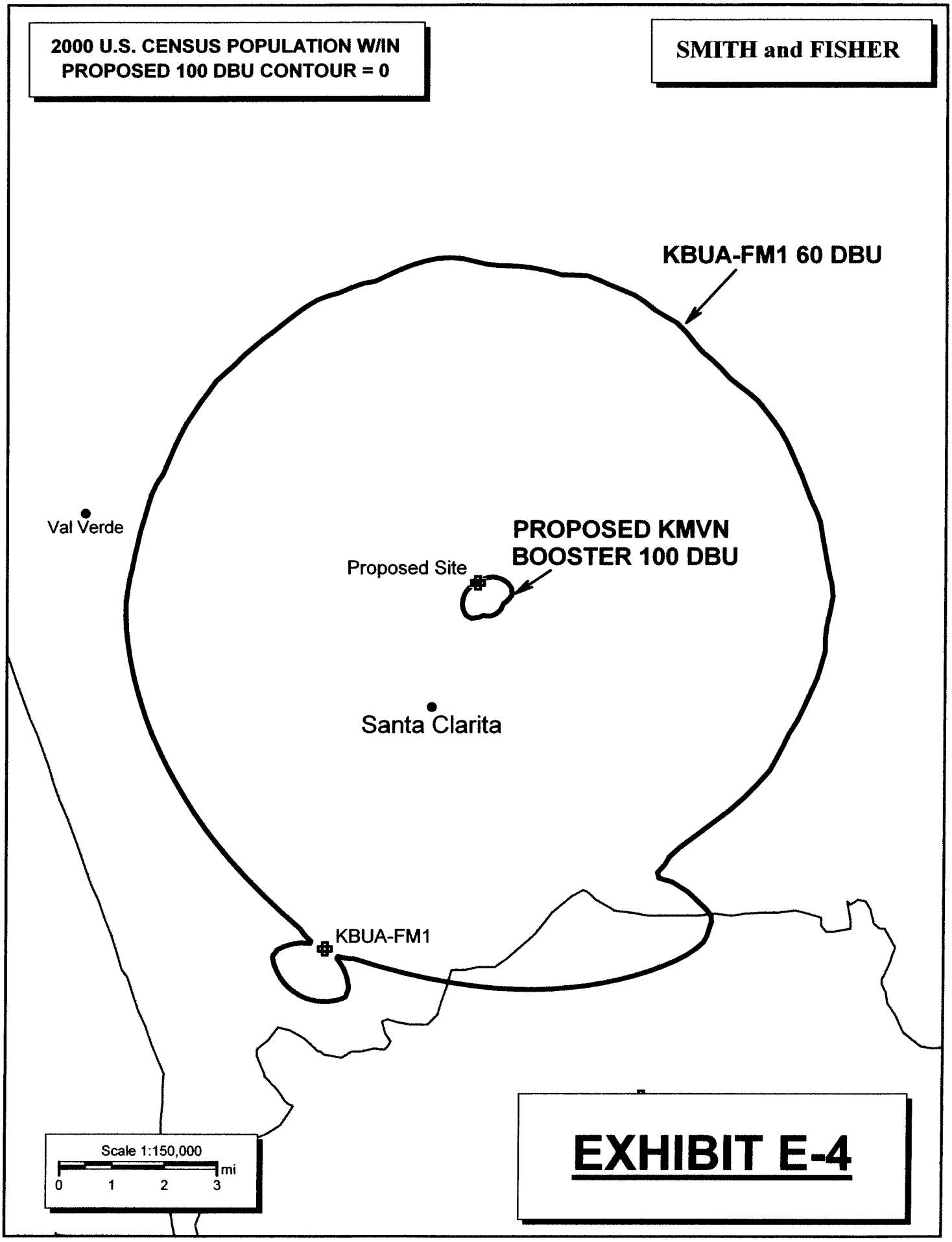
34° 25' 34"N, 118° 31' 33"W (NAD27)

USGS NEWHALL (CA) Quadrangle

Projection is UTM Zone 11 NAD83 Datum

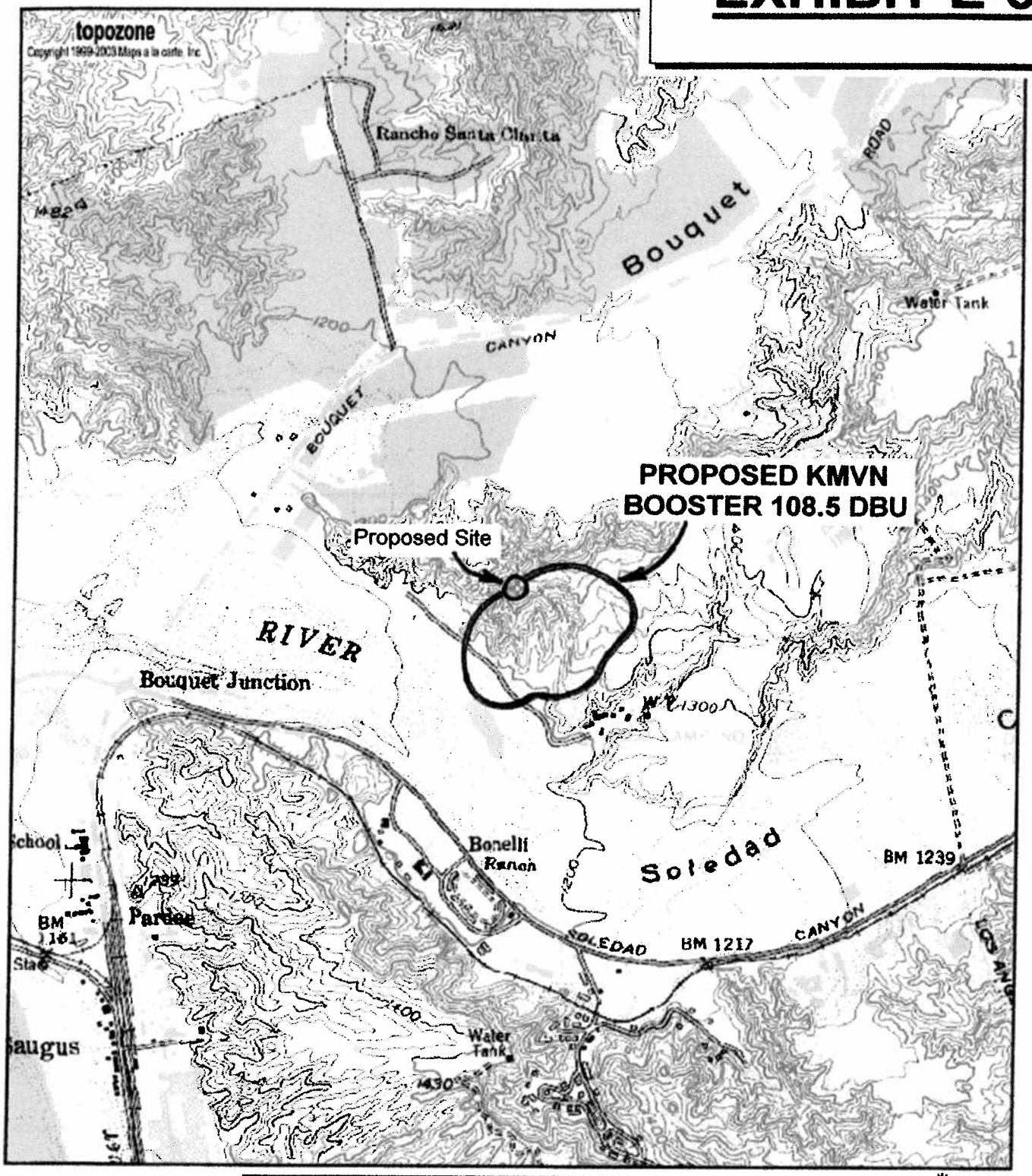
M=13.667

G=-0.863


2000 U.S. CENSUS POPULATION W/IN
PROPOSED 100 DBU CONTOUR = 0
SMITH and FISHER
KBUA-FM1 60 DBU
Val Verde
PROPOSED KMVN
BOOSTER 100 DBU
Proposed Site
Santa Clarita
KBUA-FM1
Scale 1:150,000
mi
0
1
2
3
EXHIBIT E-4

SMITH and FISHER

EXHIBIT E-5



0 0.3 0.6 0.9 1.2 1.5 km

0 0.2 0.4 0.6 0.8 1 mi

34° 25' 34"N, 118° 31' 33"W (NAD27)

USGS NEWHALL (CA) Quadrangle

Projection is UTM Zone 11 NAD83 Datum

M=13.667

G=-0.863

EXHIBIT F

POWER DENSITY CALCULATION

PROPOSED KMVN BOOSTER
CHANNEL 230 – SANTA CLARITA, CALIFORNIA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Santa Clarita facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 250 watts (H, V), an antenna radiation center 5.3 meters above ground, and the elevation patterns of the Scala antenna, maximum power density two meters above ground of 0.119 mw/cm^2 is calculated to occur 7 meters southeast of the base of the tower. Since this is only 59.5 percent of the 0.2 mw/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the FM band, and since the proposed booster would be the only source of broadcast RF at this site, a grant of this proposal may be considered a minor environmental action with respect to public and occupational ground-level exposure to nonionizing electromagnetic radiation.

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 nonionizing radiation.