TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION KTVF-DT
FAIRBANKS, ALASKA
CH 26 12 KW (MAX-DA) -11 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station KTVF-DT which is paired with NTSC (analog) channel 11 at Fairbanks, Alaska. This application requests a modification of its construction permit (CP) for a digital television operation on channel 26 at Fairbanks.[1] It is proposed by this modification, with respect to the current construction permit, to decrease the maximum effective radiated power and change the antenna system to a directional pattern. No other changes are proposed.

Station KTVF-DT proposes to operate DTV channel 26 from its existing tower site location. It is proposed to operate with an Andrew AL8-HSOC “omnioid” type directional antenna with a maximum average effective radiated power of 12 kilowatts. The antenna height above average terrain for the channel 26 DTV operation will remain at -11 meters. Since the proposed facilities do not exceed those allocated by the Commission, no allocation study is necessary for this “checklist” application.

[1] See FCC Construction Permit File Number: BPCDT-19980209KE.

The existing DTV transmitter site is described by the following coordinates (NAD-27):

64° 50′ 36″ North Latitude
147° 42′ 48″ West Longitude

A map of the transmitter site is provided in Figure 1. A sketch of antenna and pertinent elevations are included as Figure 2.

The Appendix contains the antenna manufacturer’s horizontal and vertical plane radiation patterns for the proposed DTV antenna system. The proposed “omnioid” type antenna will be oriented such that the main lobe will be at 110° true.

Figure 3 is a map showing the DTV predicted coverage contour. The map provides the predicted F(50,90) noise limited contour. The extent of the contour has been calculated using the normal FCC prediction method. The Fairbanks city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

Radiofrequency Electromagnetic Field Exposure

The proposed KTVF-DT facilities were evaluated in terms of potential radiofrequency electromagnetic field exposure at the rooftop to workers and the general public. The radiation center for the proposed KTVF-DT antenna is located 11 meters above the rooftop. The maximum effective radiated power is 12 kilowatts. A relative field value of 0.12 is assumed for the antenna's downward radiation. The

calculated power density at a point 2 meters above the rooftop is 0.07 mW/cm^2. This is less than 5 percent of the Commission's recommended limit of 1.82 mW/cm^2 for channel 26 in a "controlled" environment.

The KTVF transmitter site rooftop can be considered as a controlled environment as a lockable door limits access. Furthermore, any personal working on the building rooftop are aware of the electromagnetic environment.

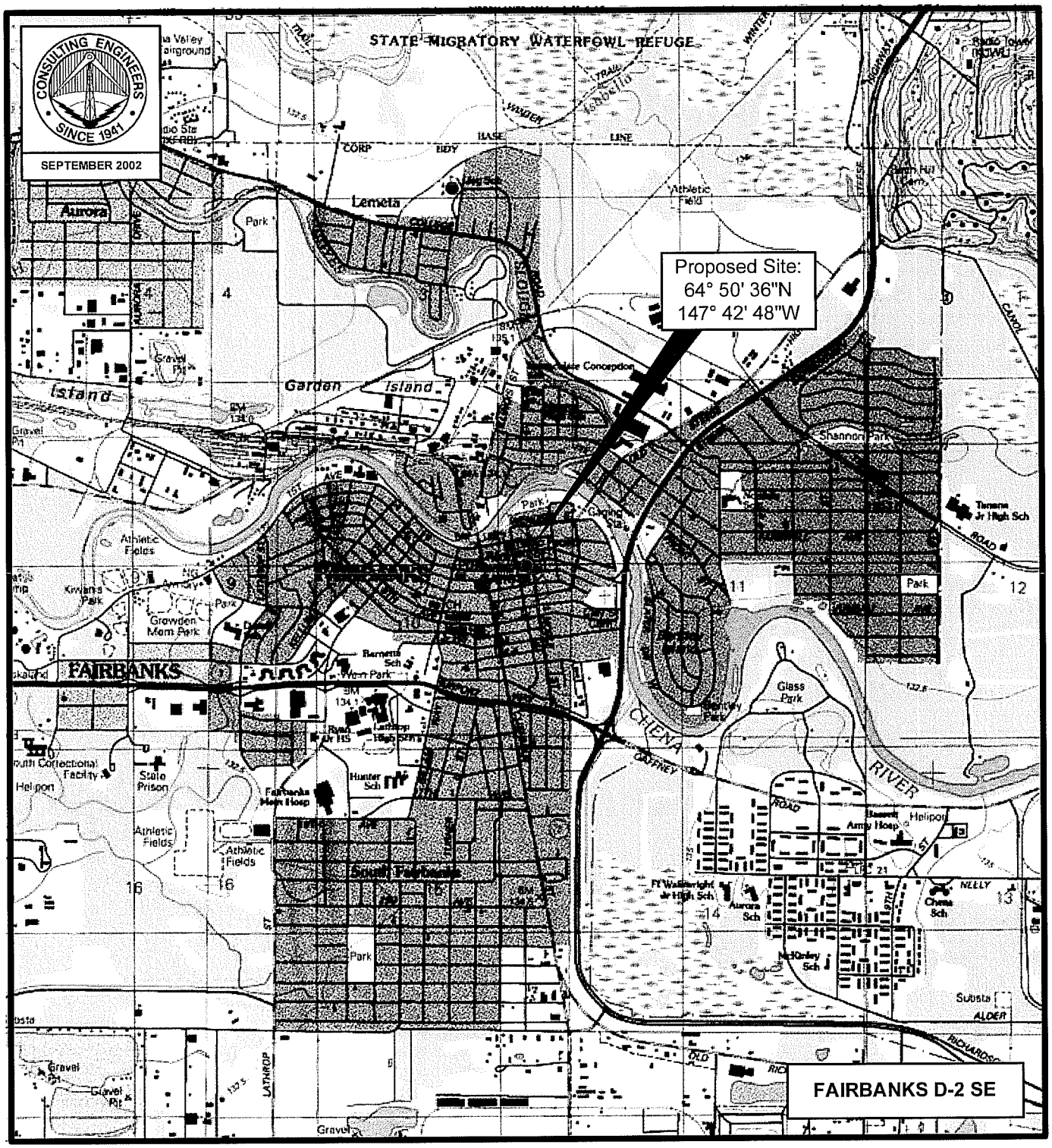
In the event that workers or other authorized personnel enter restricted areas or climb the rooftop tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over 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.

Jerome J. Manarchuck

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 324237
941.329.6000

September 23, 2002

Figure 1



0.5 0 0.5 1.0 1.5 2.0 miles

0.5 0 0.5 1.0 1.5 2.0 2.5 kilometers

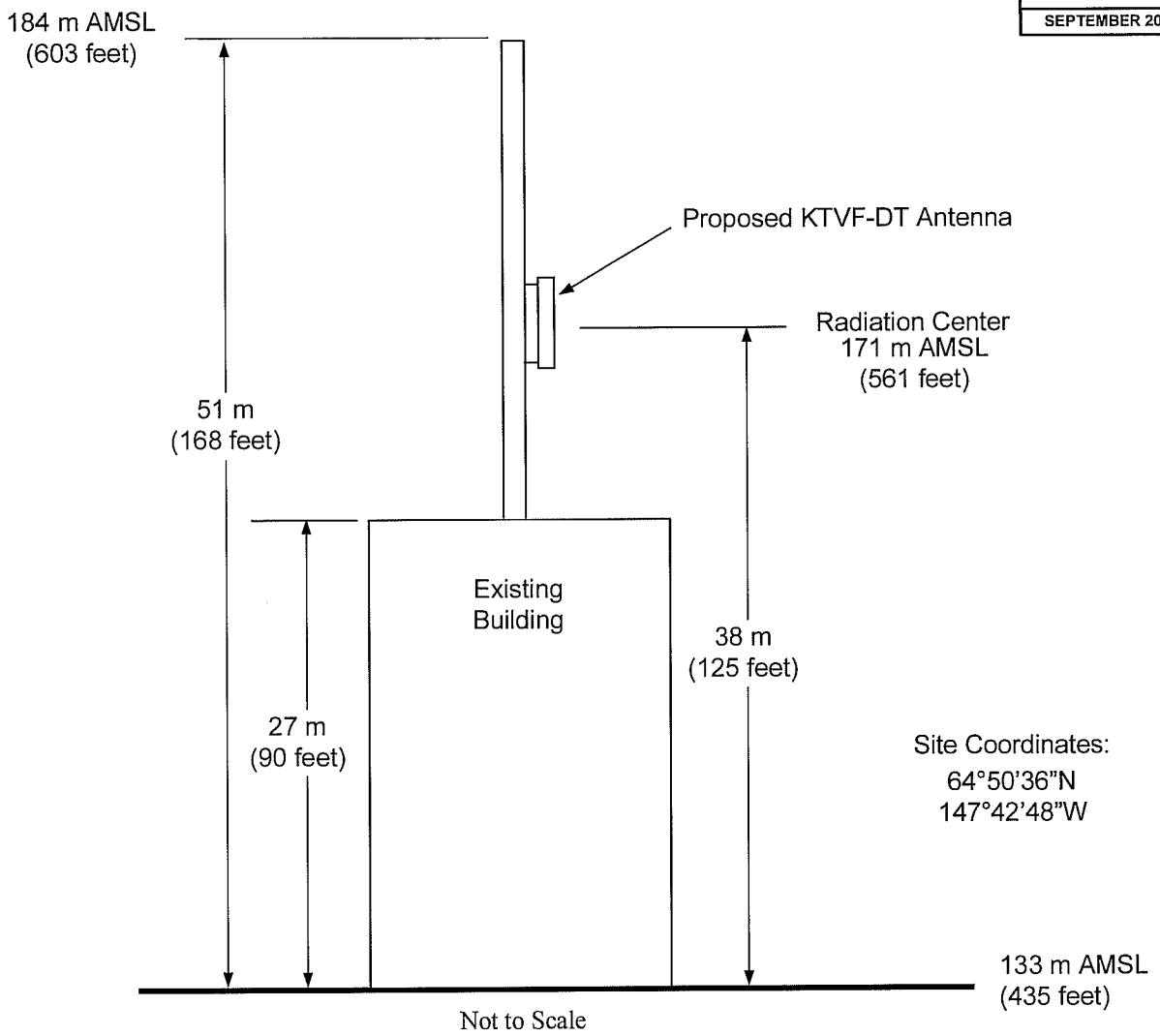
PROPOSED TRANSMITTER LOCATION

TELEVISION STATION KTVF-DT
FAIRBANKS, ALASKA
CH 26 12 KW (MAX-DA) -11 M

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

Figure 2

FCC Reg. No. 1040111



CONSULTING ENGINEERS SINCE 1941

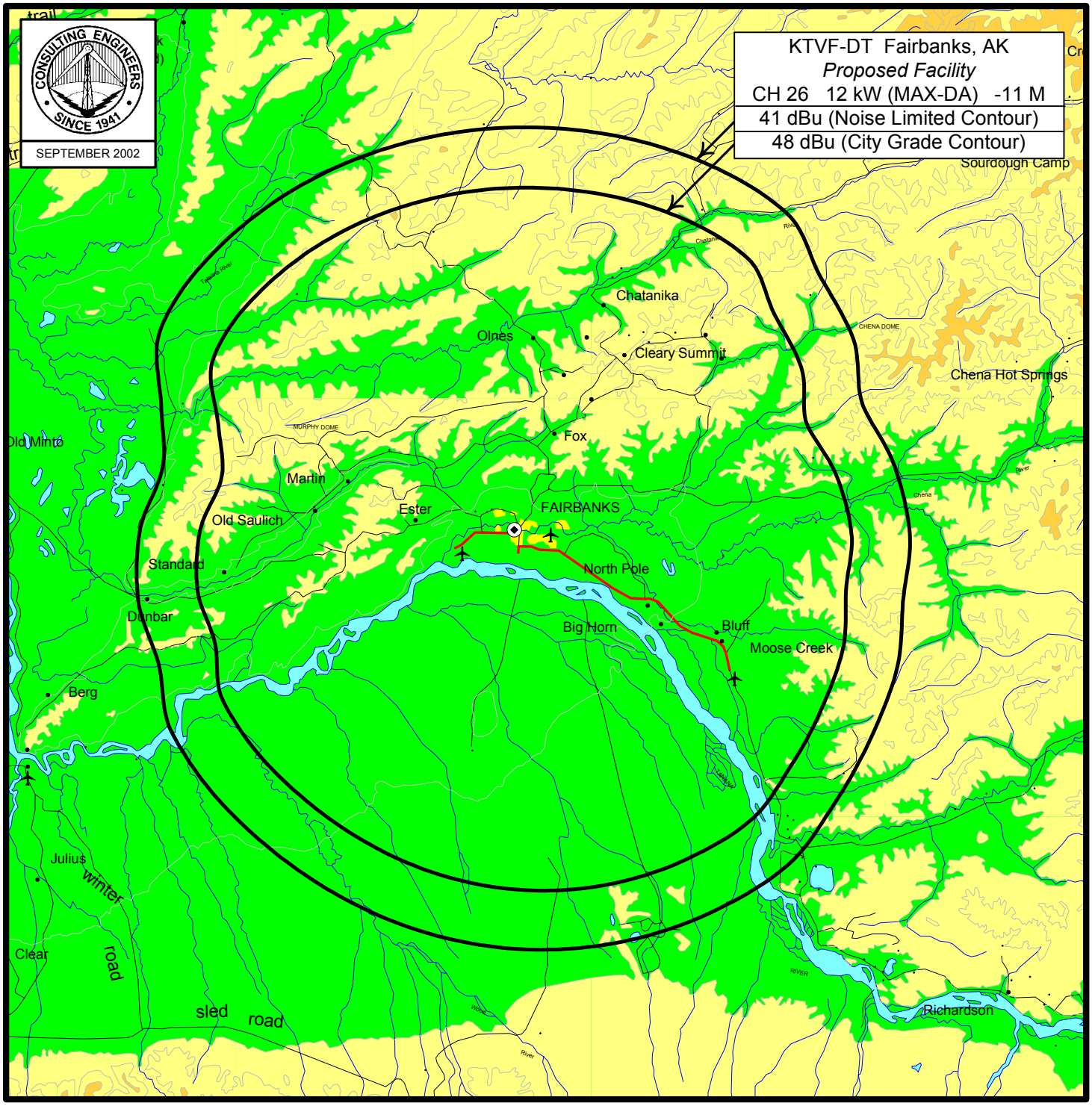
SEPTEMBER 2002

PROPOSED ANTENNA AND SUPPORTING STRUCTURE

TELEVISION STATION KTVF-DT
FAIRBANKS, ALASKA
CH 26 12 KW (MAX-DA) -11 M

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

Figure 3



PREDICTED COVERAGE CONTOURS

TELEVISION STATION KTVF-DT

FAIRBANKS, ALASKA

CH 26 12 KW (MAX-DA) -11 M

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

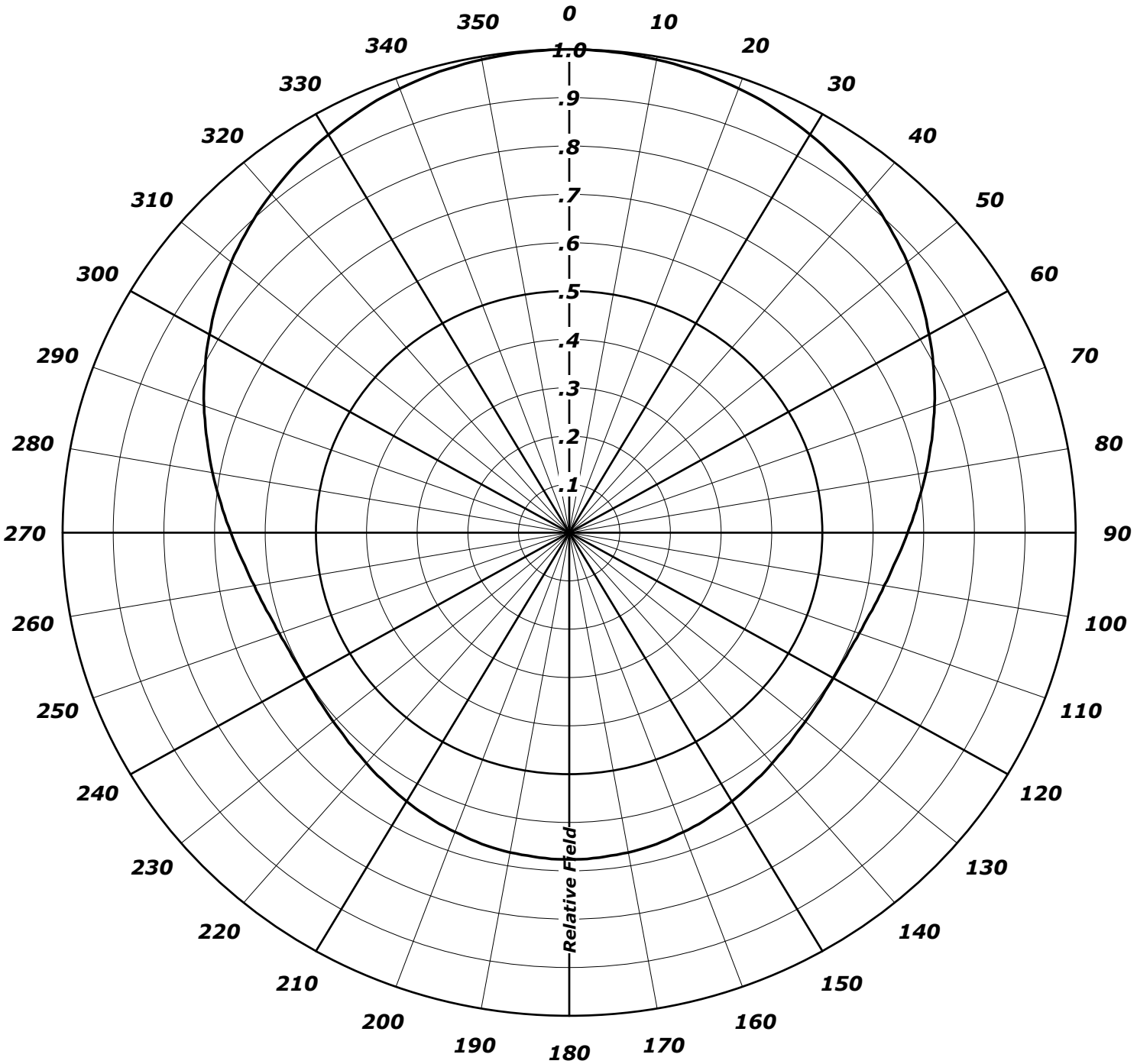
APPENDIX

MANUFACTURER TRANSMITTING ANTENNA SPECIFICATIONS

ANDREW

AZIMUTH PATTERN

Type:	ALP-OC	
	Numeric	dBd
Directivity:	1.70	(2.30)
Peak(s) At:		
Polarization:		
Channel:		
Location:		



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

ANDREW

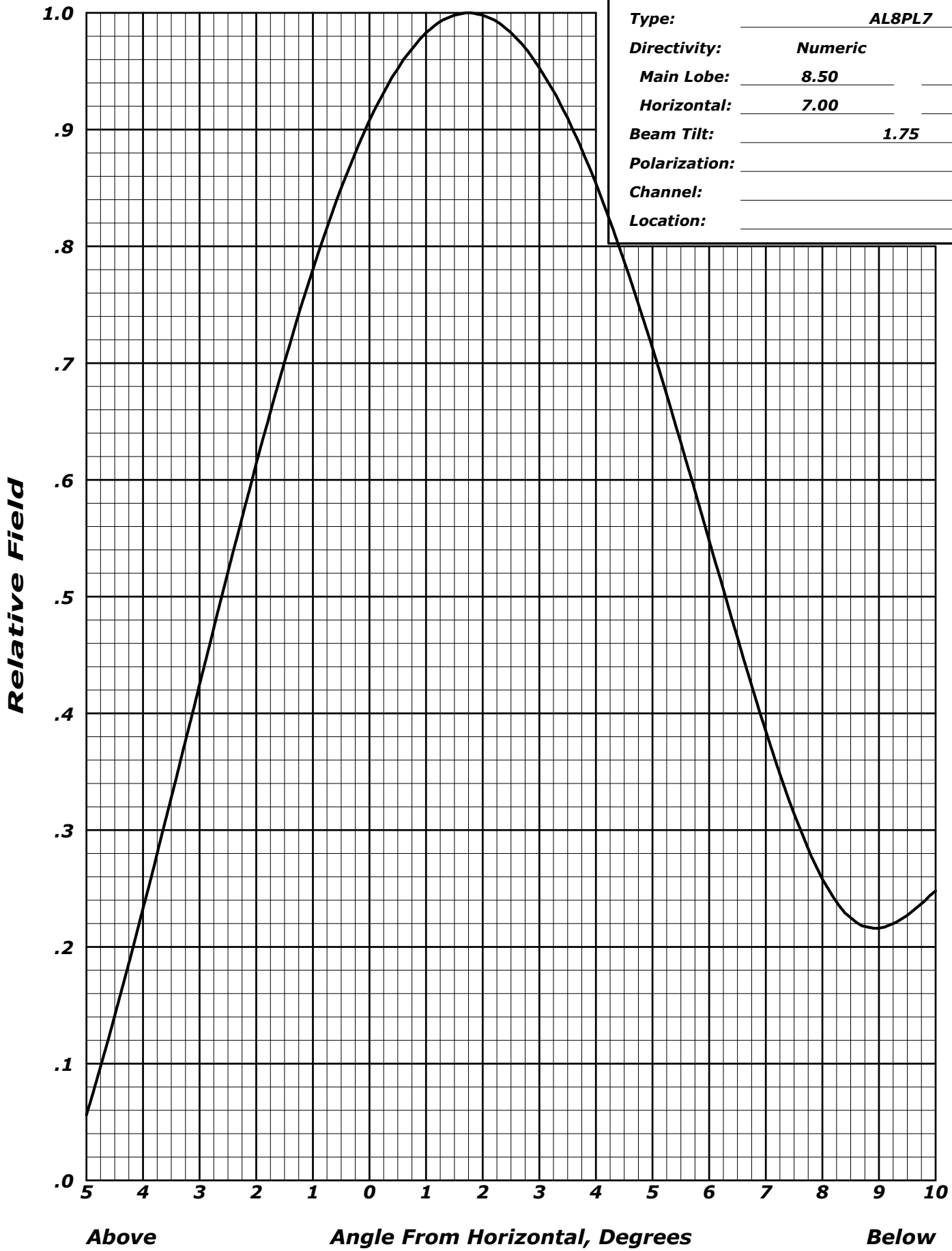
TABULATED DATA FOR AZIMUTH PATTERN
TYPE : ALP-OC

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	110	0.609	-4.31	220	0.623	-4.11	330	0.951	-0.44
2	1.000	0.00	112	0.606	-4.35	222	0.619	-4.17	332	0.957	-0.38
4	0.999	-0.01	114	0.604	-4.38	224	0.616	-4.21	334	0.963	-0.33
6	0.998	-0.02	116	0.603	-4.39	226	0.613	-4.25	336	0.969	-0.27
8	0.996	-0.03	118	0.602	-4.41	228	0.610	-4.29	338	0.974	-0.23
10	0.994	-0.05	120	0.602	-4.41	230	0.608	-4.32	340	0.978	-0.19
12	0.992	-0.07	122	0.602	-4.41	232	0.606	-4.35	342	0.982	-0.16
14	0.989	-0.10	124	0.603	-4.39	234	0.604	-4.38	344	0.986	-0.12
16	0.986	-0.12	126	0.604	-4.38	236	0.603	-4.39	346	0.989	-0.10
18	0.982	-0.16	128	0.606	-4.35	238	0.602	-4.41	348	0.992	-0.07
20	0.978	-0.19	130	0.608	-4.32	240	0.602	-4.41	350	0.994	-0.05
22	0.974	-0.23	132	0.610	-4.29	242	0.602	-4.41	352	0.996	-0.03
24	0.969	-0.27	134	0.613	-4.25	244	0.603	-4.39	354	0.998	-0.02
26	0.963	-0.33	136	0.616	-4.21	246	0.604	-4.38	356	0.999	-0.01
28	0.957	-0.38	138	0.619	-4.17	248	0.606	-4.35	358	1.000	0.00
30	0.951	-0.44	140	0.623	-4.11	250	0.609	-4.31	360	1.000	0.00
32	0.945	-0.49	142	0.627	-4.05	252	0.612	-4.26			
34	0.938	-0.56	144	0.630	-4.01	254	0.616	-4.21			
36	0.931	-0.62	146	0.634	-3.96	256	0.621	-4.14			
38	0.923	-0.70	148	0.638	-3.90	258	0.626	-4.07			
40	0.915	-0.77	150	0.642	-3.85	260	0.631	-4.00			
42	0.907	-0.85	152	0.646	-3.80	262	0.638	-3.90			
44	0.898	-0.93	154	0.649	-3.76	264	0.644	-3.82			
46	0.889	-1.02	156	0.653	-3.70	266	0.652	-3.72			
48	0.880	-1.11	158	0.656	-3.66	268	0.660	-3.61			
50	0.871	-1.20	160	0.659	-3.62	270	0.668	-3.50			
52	0.861	-1.30	162	0.662	-3.58	272	0.677	-3.39			
54	0.851	-1.40	164	0.665	-3.54	274	0.686	-3.27			
56	0.841	-1.50	166	0.668	-3.50	276	0.695	-3.16			
58	0.831	-1.61	168	0.670	-3.48	278	0.705	-3.04			
60	0.820	-1.72	170	0.672	-3.45	280	0.715	-2.91			
62	0.810	-1.83	172	0.673	-3.44	282	0.725	-2.79			
64	0.799	-1.95	174	0.674	-3.43	284	0.735	-2.67			
66	0.788	-2.07	176	0.675	-3.41	286	0.746	-2.55			
68	0.778	-2.18	178	0.676	-3.40	288	0.756	-2.43			
70	0.767	-2.30	180	0.676	-3.40	290	0.767	-2.30			
72	0.756	-2.43	182	0.676	-3.40	292	0.778	-2.18			
74	0.746	-2.55	184	0.675	-3.41	294	0.788	-2.07			
76	0.735	-2.67	186	0.674	-3.43	296	0.799	-1.95			
78	0.725	-2.79	188	0.673	-3.44	298	0.810	-1.83			
80	0.715	-2.91	190	0.672	-3.45	300	0.820	-1.72			
82	0.705	-3.04	192	0.670	-3.48	302	0.831	-1.61			
84	0.695	-3.16	194	0.668	-3.50	304	0.841	-1.50			
86	0.686	-3.27	196	0.665	-3.54	306	0.851	-1.40			
88	0.677	-3.39	198	0.662	-3.58	308	0.861	-1.30			
90	0.668	-3.50	200	0.659	-3.62	310	0.871	-1.20			
92	0.660	-3.61	202	0.656	-3.66	312	0.880	-1.11			
94	0.652	-3.72	204	0.653	-3.70	314	0.889	-1.02			
96	0.644	-3.82	206	0.649	-3.76	316	0.898	-0.93			
98	0.638	-3.90	208	0.646	-3.80	318	0.907	-0.85			
100	0.631	-4.00	210	0.642	-3.85	320	0.915	-0.77			
102	0.626	-4.07	212	0.638	-3.90	322	0.923	-0.70			
104	0.621	-4.14	214	0.634	-3.96	324	0.931	-0.62			
106	0.616	-4.21	216	0.630	-4.01	326	0.938	-0.56			
108	0.612	-4.26	218	0.627	-4.05	328	0.945	-0.49			

ANDREW

ELEVATION PATTERN

Type:	AL8PL7	
Directivity:	Numeric	dBd
Main Lobe:	8.50	(9.29)
Horizontal:	7.00	(8.45)
Beam Tilt:	1.75	
Polarization:		
Channel:		
Location:		



ANDREW CORPORATION
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ANDREW

TABULATED DATA FOR ELEVATION PATTERN
TYPE : AL8PL7

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5 To 10			10 To 90								
In 0.25 Increments			In 0.5 Increments								
-5.00	0.056	-25.04	8.75	0.218	-13.25	35.00	0.075	-22.50	62.50	0.112	-19.02
-4.75	0.098	-20.22	9.00	0.216	-13.31	35.50	0.087	-21.21	63.00	0.109	-19.25
-4.50	0.141	-17.02	9.25	0.220	-13.15	36.00	0.098	-20.18	63.50	0.105	-19.58
-4.25	0.186	-14.61	9.50	0.227	-12.88	36.50	0.105	-19.58	64.00	0.101	-19.91
-4.00	0.233	-12.65	9.75	0.237	-12.51	37.00	0.110	-19.17	64.50	0.095	-20.45
-3.75	0.280	-11.06	10.00	0.248	-12.11	37.50	0.112	-19.02	65.00	0.090	-20.92
-3.50	0.328	-9.68	10.50	0.270	-11.37	38.00	0.111	-19.09	65.50	0.084	-21.51
-3.25	0.377	-8.48	11.00	0.287	-10.84	38.50	0.107	-19.41	66.00	0.077	-22.27
-3.00	0.425	-7.43	11.50	0.298	-10.52	39.00	0.100	-20.00	66.50	0.071	-22.97
-2.75	0.473	-6.50	12.00	0.299	-10.49	39.50	0.091	-20.82	67.00	0.064	-23.88
-2.50	0.521	-5.66	12.50	0.292	-10.69	40.00	0.080	-21.94	67.50	0.058	-24.73
-2.25	0.568	-4.92	13.00	0.277	-11.15	40.50	0.068	-23.35	68.00	0.051	-25.85
-2.00	0.614	-4.24	13.50	0.255	-11.87	41.00	0.055	-25.19	68.50	0.045	-26.94
-1.75	0.658	-3.64	14.00	0.227	-12.88	41.50	0.041	-27.74	69.00	0.040	-27.96
-1.50	0.701	-3.09	14.50	0.195	-14.20	42.00	0.029	-30.75	69.50	0.035	-29.12
-1.25	0.742	-2.59	15.00	0.161	-15.86	42.50	0.022	-33.15	70.00	0.032	-29.90
-1.00	0.780	-2.16	15.50	0.128	-17.86	43.00	0.026	-31.70	70.50	0.030	-30.46
-0.75	0.816	-1.77	16.00	0.101	-19.91	43.50	0.037	-28.64	71.00	0.030	-30.46
-0.50	0.850	-1.41	16.50	0.087	-21.21	44.00	0.050	-26.02	71.50	0.031	-30.17
-0.25	0.880	-1.11	17.00	0.090	-20.92	44.50	0.062	-24.15	72.00	0.033	-29.63
0.00	0.908	-0.84	17.50	0.105	-19.58	45.00	0.074	-22.62	72.50	0.035	-29.12
0.25	0.931	-0.62	18.00	0.125	-18.06	45.50	0.084	-21.51	73.00	0.038	-28.40
0.50	0.952	-0.43	18.50	0.144	-16.83	46.00	0.092	-20.72	73.50	0.042	-27.54
0.75	0.969	-0.27	19.00	0.159	-15.97	46.50	0.099	-20.09	74.00	0.045	-26.94
1.00	0.983	-0.15	19.50	0.169	-15.44	47.00	0.104	-19.66	74.50	0.048	-26.38
1.25	0.992	-0.07	20.00	0.174	-15.19	47.50	0.106	-19.49	75.00	0.051	-25.85
1.50	0.998	-0.02	20.50	0.173	-15.24	48.00	0.106	-19.49	75.50	0.053	-25.51
1.75	1.000	0.00	21.00	0.167	-15.55	48.50	0.105	-19.58	76.00	0.056	-25.04
2.00	0.998	-0.02	21.50	0.155	-16.19	49.00	0.101	-19.91	76.50	0.057	-24.88
2.25	0.992	-0.07	22.00	0.140	-17.08	49.50	0.096	-20.35	77.00	0.059	-24.58
2.50	0.983	-0.15	22.50	0.120	-18.42	50.00	0.089	-21.01	77.50	0.060	-24.44
2.75	0.970	-0.26	23.00	0.099	-20.09	50.50	0.080	-21.94	78.00	0.061	-24.29
3.00	0.953	-0.42	23.50	0.078	-22.16	51.00	0.070	-23.10	78.50	0.061	-24.29
3.25	0.933	-0.60	24.00	0.060	-24.44	51.50	0.059	-24.58	79.00	0.061	-24.29
3.50	0.910	-0.82	24.50	0.050	-26.02	52.00	0.048	-26.38	79.50	0.061	-24.29
3.75	0.883	-1.08	25.00	0.053	-25.51	52.50	0.035	-29.12	80.00	0.060	-24.44
4.00	0.854	-1.37	25.50	0.066	-23.61	53.00	0.023	-32.77	80.50	0.059	-24.58
4.25	0.822	-1.71	26.00	0.083	-21.62	53.50	0.011	-39.17	81.00	0.058	-24.73
4.50	0.787	-2.08	26.50	0.098	-20.18	54.00	0.009	-40.92	81.50	0.056	-25.04
4.75	0.751	-2.49	27.00	0.112	-19.02	54.50	0.020	-33.98	82.00	0.054	-25.35
5.00	0.713	-2.94	27.50	0.122	-18.27	55.00	0.032	-29.90	82.50	0.052	-25.68
5.25	0.673	-3.44	28.00	0.128	-17.86	55.50	0.044	-27.13	83.00	0.050	-26.02
5.50	0.632	-3.99	28.50	0.131	-17.65	56.00	0.056	-25.04	83.50	0.047	-26.56
5.75	0.591	-4.58	29.00	0.129	-17.79	56.50	0.066	-23.61	84.00	0.044	-27.13
6.00	0.548	-5.22	29.50	0.124	-18.13	57.00	0.076	-22.38	84.50	0.041	-27.74
6.25	0.507	-5.91	30.00	0.115	-18.79	57.50	0.085	-21.41	85.00	0.038	-28.40
6.50	0.465	-6.65	30.50	0.103	-19.74	58.00	0.093	-20.63	85.50	0.035	-29.12
6.75	0.424	-7.45	31.00	0.088	-21.11	58.50	0.099	-20.09	86.00	0.031	-30.17
7.00	0.385	-8.29	31.50	0.073	-22.73	59.00	0.105	-19.58	86.50	0.028	-31.06
7.25	0.348	-9.17	32.00	0.056	-25.04	59.50	0.109	-19.25	87.00	0.024	-32.40
7.50	0.314	-10.06	32.50	0.042	-27.54	60.00	0.112	-19.02	87.50	0.020	-33.98
7.75	0.284	-10.93	33.00	0.034	-29.37	60.50	0.114	-18.86	88.00	0.016	-35.92
8.00	0.258	-11.77	33.50	0.037	-28.64	61.00	0.115	-18.79	88.50	0.012	-38.42
8.25	0.239	-12.45	34.00	0.048	-26.38	61.50	0.115	-18.79	89.00	0.008	-41.94
8.50	0.225	-12.96	34.50	0.061	-24.29	62.00	0.114	-18.86	89.50	0.004	-47.96