

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION KGBT-DT
HARLINGEN, TEXAS
CH 31 1,000 KW (MAX-DA) 368 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station KGBT-DT which is paired with NTSC (analog) channel 4 at Harlingen, Texas. This application requests modification of its construction permit (CP) for its digital television operation on channel 46 at Wilmington. The Federal Communications Commission (FCC) assigned channel 31 as KGBT-DT's DTV allotment in the Memorandum, Opinion and Order (MO&O) concerning reconsideration of the 6th Report and Order in MM Docket No. 87-268. The FCC assigned an effective radiated power of 1,000 kilowatts with a directional antenna envelope and an antenna height above average terrain (HAAT) of 396 meters for the DTV allotment.

Proposed Facilities

Station KGBT-DT proposes to operate DTV channel 31 from its existing NTSC tower site location. It is proposed to operate with an Andrew ATW25H4-HSCX-31H directional type antenna with a maximum average effective radiated power of 1,000 kilowatts. The antenna height above average terrain for the channel 31 DTV operation will be 368 meters. Since the proposed

facilities do not exceed those allocated by the Commission, no allocation study is necessary for this "checklist" application.

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

26° 08' 56" North Latitude
97° 49' 19" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1.

The Appendix contains the antenna manufacturer's horizontal and vertical plane radiation patterns for the proposed DTV antenna system.

Figure 2 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 Harlingen city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

Radiofrequency Electromagnetic Field Exposure

The proposed KGBT-DT facilities were evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level to workers and the general public. The radiation center for the proposed KGBT-DT antenna is located 366 meters above ground level. The maximum effective radiated power is 1,000 kilowatts. A relative field value of 0.2 is assumed for the antenna's downward radiation. The calculated power density at a point 2 meters above ground level is 0.01 mW/cm^2 . This is less than 5 percent of the Commission's recommended limit of 0.38 mW/cm^2 for channel 31 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site, an agreement will control access to the site. 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

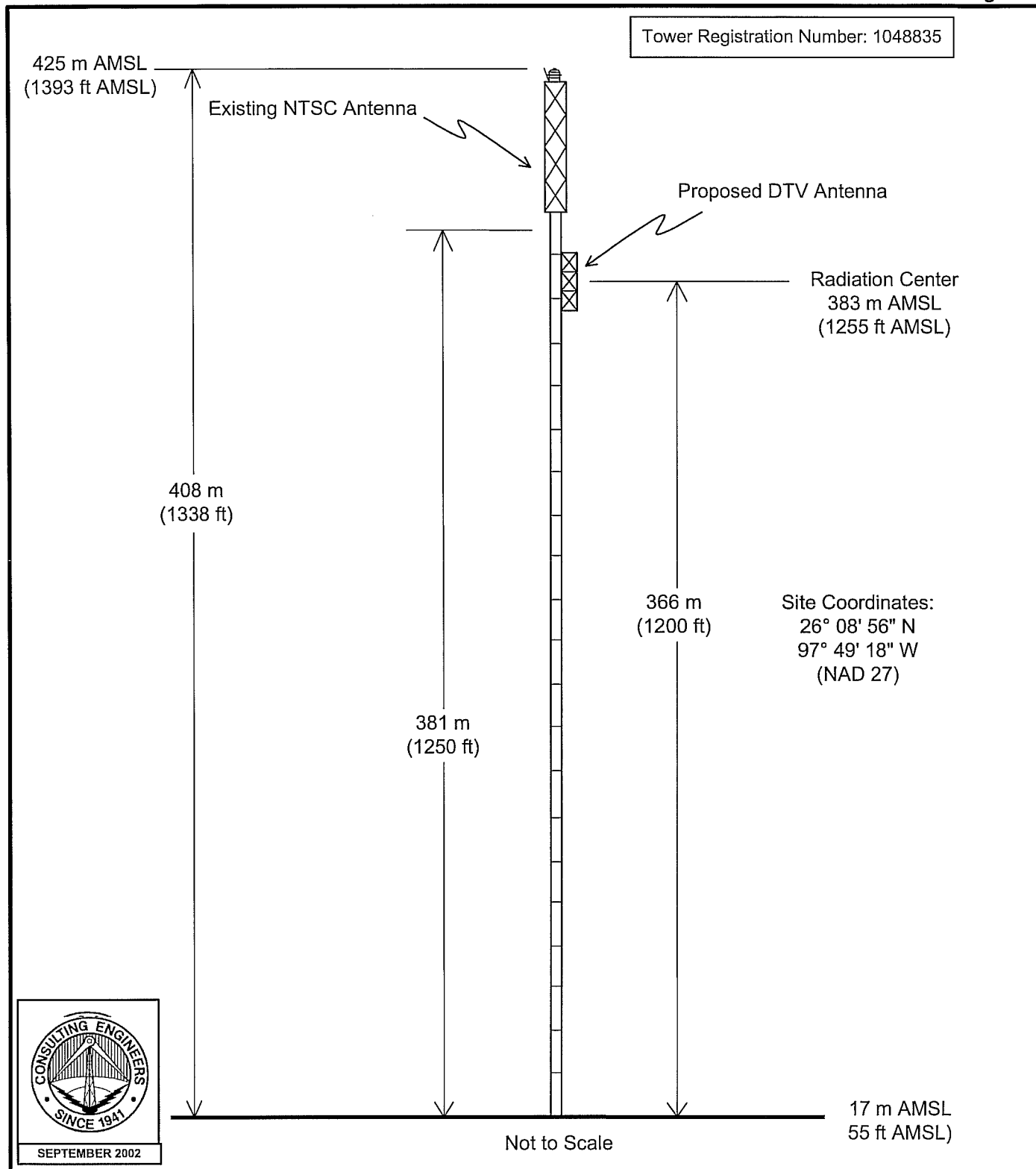
reduced power or shut down. The proposed KGBT-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

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

September 20, 2002

Figure 1



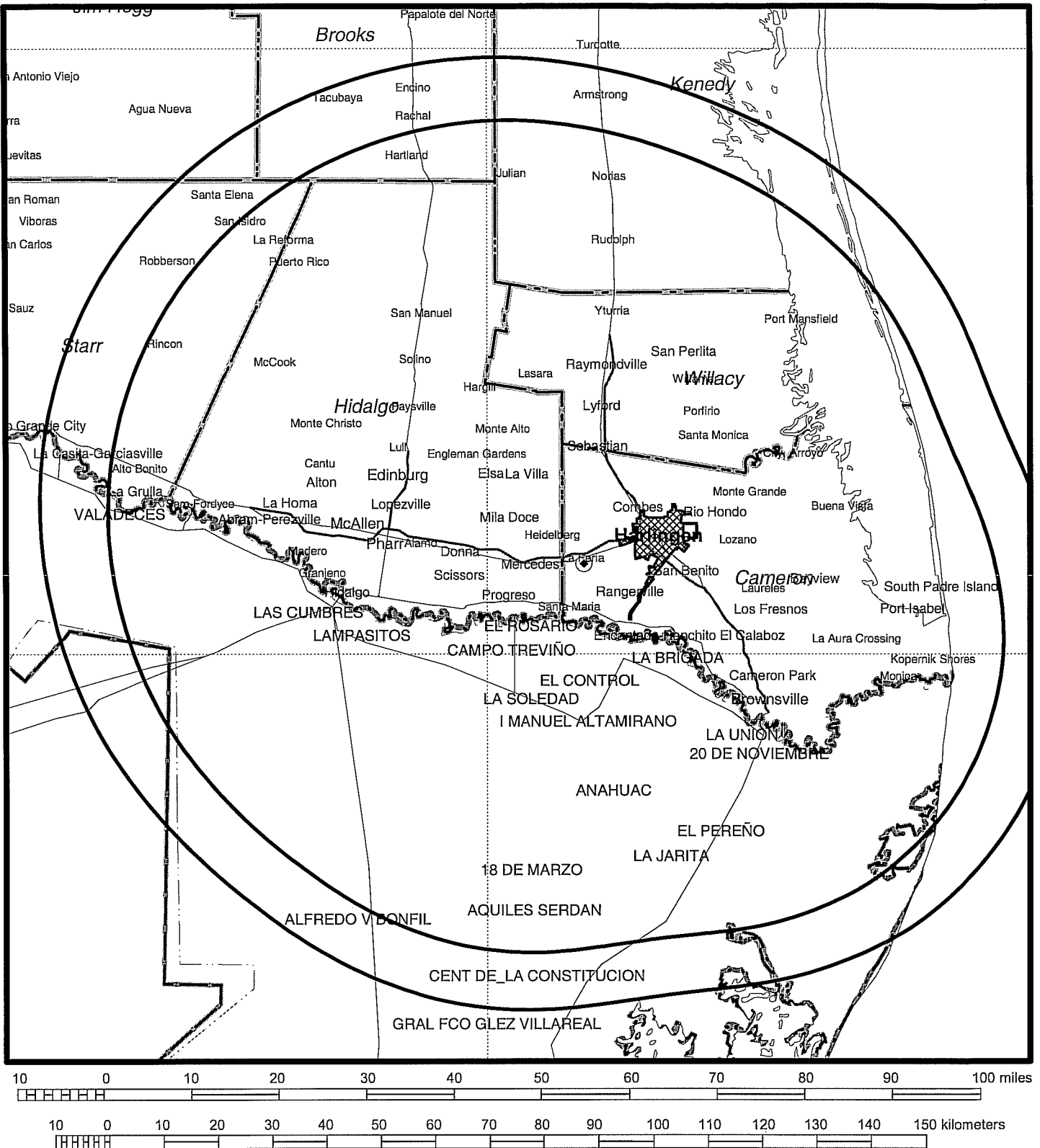
PROPOSED ANTENNA AND SUPPORTING STRUCTURE

TELEVISION STATION KGBT-DT
HARLINGEN, TEXAS

CH 31 1000 KW (MAX-DA) 368 M

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

Figure 2



DTV NOISE-LIMITED COVERAGE CONTOUR

TELEVISION STATION KGBT-DT
HARLINGEN, TEXAS
CH 31 1000 KW (MAX-DA) 368 M

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

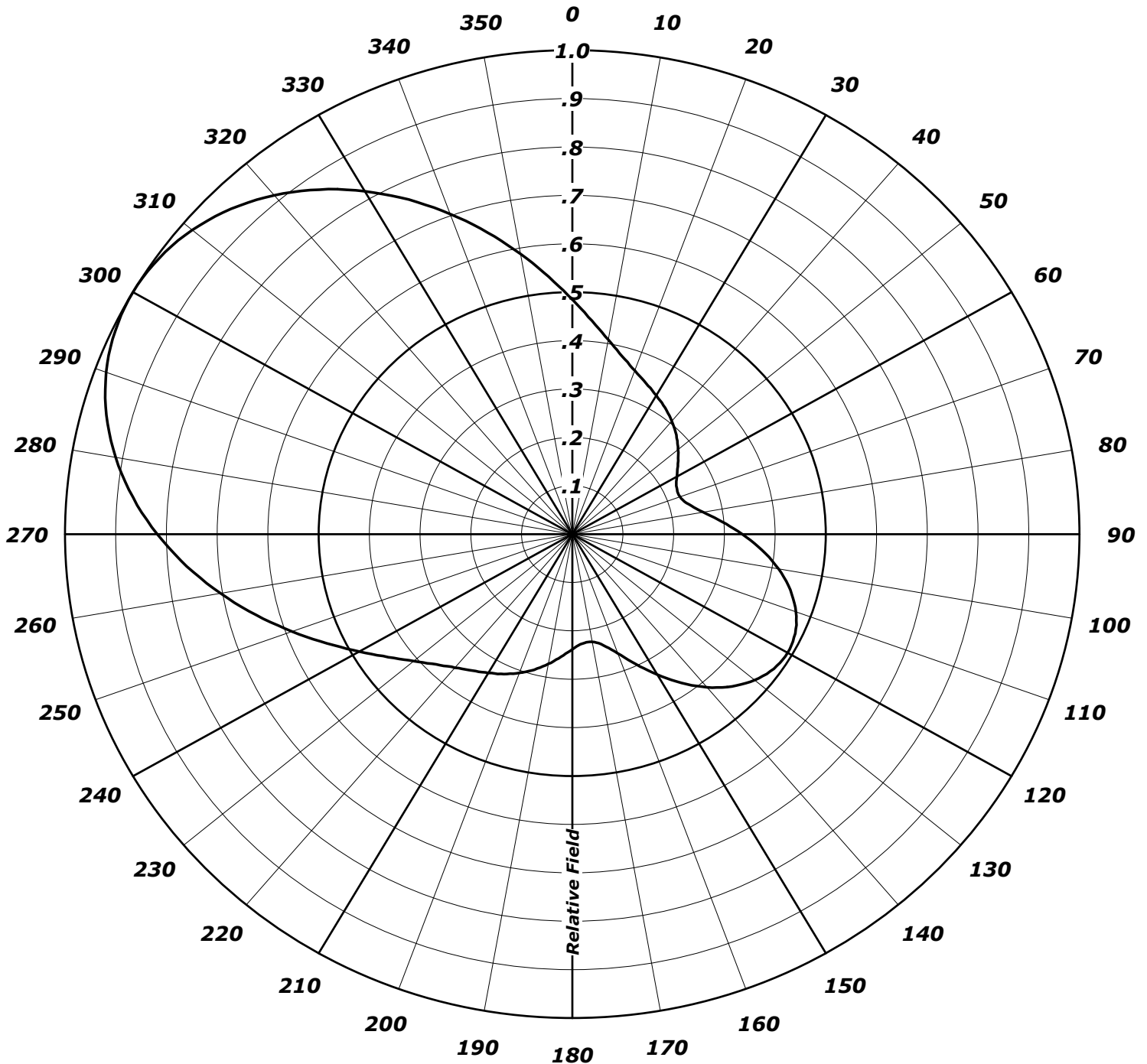
APPENDIX

MANUFACTURER ANTENNA SPECIFICATIONS

ANDREW
AZIMUTH PATTERN

Type: CH31AZ-H-BID-CX

	Numeric	dBd
Directivity:	<u>3.33</u>	<u>(5.22)</u>
Peak(s) At:	<u></u>	
Polarization:	<u>Horizontal</u>	
Channel:	<u>31</u>	
Location:	<u>Harlingen, TX</u>	





TABULATED DATA FOR AZIMUTH PATTERN
TYPE : CH31AZ-H-BID-CX

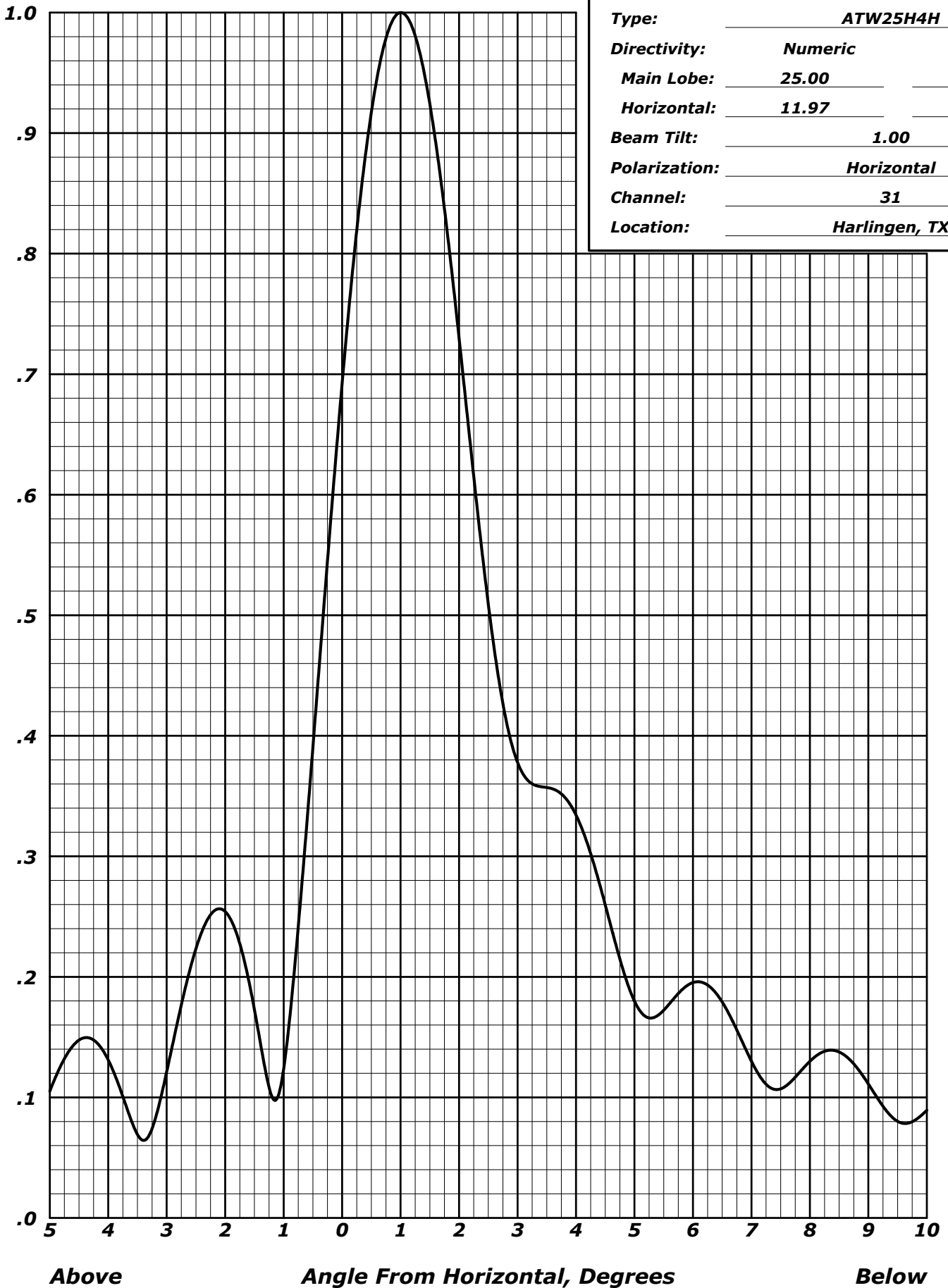
Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.485	-6.29	110	0.469	-6.58	220	0.360	-8.87	330	0.818	-1.74
2	0.467	-6.61	112	0.476	-6.45	222	0.367	-8.71	332	0.796	-1.98
4	0.450	-6.94	114	0.482	-6.34	224	0.376	-8.50	334	0.774	-2.23
6	0.435	-7.23	116	0.486	-6.27	226	0.385	-8.29	336	0.751	-2.49
8	0.421	-7.51	118	0.489	-6.21	228	0.396	-8.05	338	0.728	-2.76
10	0.408	-7.79	120	0.490	-6.20	230	0.408	-7.79	340	0.704	-3.05
12	0.396	-8.05	122	0.489	-6.21	232	0.421	-7.51	342	0.681	-3.34
14	0.385	-8.29	124	0.486	-6.27	234	0.435	-7.23	344	0.657	-3.65
16	0.376	-8.50	126	0.482	-6.34	236	0.450	-6.94	346	0.634	-3.96
18	0.367	-8.71	128	0.476	-6.45	238	0.467	-6.61	348	0.610	-4.29
20	0.360	-8.87	130	0.469	-6.58	240	0.485	-6.29	350	0.588	-4.61
22	0.353	-9.04	132	0.460	-6.74	242	0.504	-5.95	352	0.566	-4.94
24	0.347	-9.19	134	0.450	-6.94	244	0.523	-5.63	354	0.544	-5.29
26	0.341	-9.34	136	0.439	-7.15	246	0.544	-5.29	356	0.523	-5.63
28	0.336	-9.47	138	0.426	-7.41	248	0.566	-4.94	358	0.504	-5.95
30	0.331	-9.60	140	0.413	-7.68	250	0.588	-4.61	360	0.485	-6.29
32	0.326	-9.74	142	0.398	-8.00	252	0.610	-4.29			
34	0.321	-9.87	144	0.383	-8.34	254	0.634	-3.96			
36	0.316	-10.01	146	0.367	-8.71	256	0.657	-3.65			
38	0.311	-10.14	148	0.351	-9.09	258	0.681	-3.34			
40	0.305	-10.31	150	0.335	-9.50	260	0.704	-3.05			
42	0.299	-10.49	152	0.319	-9.92	262	0.728	-2.76			
44	0.293	-10.66	154	0.304	-10.34	264	0.751	-2.49			
46	0.286	-10.87	156	0.289	-10.78	266	0.774	-2.23			
48	0.279	-11.09	158	0.275	-11.21	268	0.796	-1.98			
50	0.272	-11.31	160	0.262	-11.63	270	0.818	-1.74			
52	0.265	-11.54	162	0.251	-12.01	272	0.839	-1.52			
54	0.258	-11.77	164	0.242	-12.32	274	0.860	-1.31			
56	0.251	-12.01	166	0.234	-12.62	276	0.879	-1.12			
58	0.244	-12.25	168	0.229	-12.80	278	0.897	-0.94			
60	0.238	-12.47	170	0.226	-12.92	280	0.914	-0.78			
62	0.232	-12.69	172	0.225	-12.96	282	0.930	-0.63			
64	0.228	-12.84	174	0.226	-12.92	284	0.944	-0.50			
66	0.226	-12.92	176	0.228	-12.84	286	0.957	-0.38			
68	0.225	-12.96	178	0.232	-12.69	288	0.968	-0.28			
70	0.226	-12.92	180	0.238	-12.47	290	0.978	-0.19			
72	0.229	-12.80	182	0.244	-12.25	292	0.986	-0.12			
74	0.234	-12.62	184	0.251	-12.01	294	0.992	-0.07			
76	0.242	-12.32	186	0.258	-11.77	296	0.996	-0.03			
78	0.251	-12.01	188	0.265	-11.54	298	0.999	-0.01			
80	0.262	-11.63	190	0.272	-11.31	300	1.000	0.00			
82	0.275	-11.21	192	0.279	-11.09	302	0.999	-0.01			
84	0.289	-10.78	194	0.286	-10.87	304	0.996	-0.03			
86	0.304	-10.34	196	0.293	-10.66	306	0.992	-0.07			
88	0.319	-9.92	198	0.299	-10.49	308	0.986	-0.12			
90	0.335	-9.50	200	0.305	-10.31	310	0.978	-0.19			
92	0.351	-9.09	202	0.311	-10.14	312	0.968	-0.28			
94	0.367	-8.71	204	0.316	-10.01	314	0.957	-0.38			
96	0.383	-8.34	206	0.321	-9.87	316	0.944	-0.50			
98	0.398	-8.00	208	0.326	-9.74	318	0.930	-0.63			
100	0.413	-7.68	210	0.331	-9.60	320	0.914	-0.78			
102	0.426	-7.41	212	0.336	-9.47	322	0.897	-0.94			
104	0.439	-7.15	214	0.341	-9.34	324	0.879	-1.12			
106	0.450	-6.94	216	0.347	-9.19	326	0.860	-1.31			
108	0.460	-6.74	218	0.353	-9.04	328	0.839	-1.52			



ANDREW ELEVATION PATTERN

Type:	ATW25H4H	
Directivity:	Numeric	dBd
Main Lobe:	25.00	(13.98)
Horizontal:	11.97	(10.78)
Beam Tilt:	1.00	
Polarization:	Horizontal	
Channel:	31	
Location:	Harlingen, TX	

Relative Field





TABULATED DATA FOR ELEVATION PATTERN
TYPE : ATW25H4H

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	0.105	-19.57	8.75	0.128	-17.87	35.00	0.029	-30.66	62.50	0.008	-41.55
-4.75	0.132	-17.59	9.00	0.111	-19.09	35.50	0.019	-34.33	63.00	0.013	-37.40
-4.50	0.148	-16.62	9.25	0.093	-20.66	36.00	0.021	-33.41	63.50	0.022	-32.99
-4.25	0.148	-16.62	9.50	0.080	-21.92	36.50	0.031	-30.06	64.00	0.030	-30.48
-4.00	0.131	-17.65	9.75	0.080	-21.96	37.00	0.036	-28.85	64.50	0.035	-29.19
-3.75	0.101	-19.94	10.00	0.089	-20.98	37.50	0.032	-29.89	65.00	0.036	-28.81
-3.50	0.069	-23.20	10.50	0.107	-19.40	38.00	0.022	-33.19	65.50	0.035	-29.22
-3.25	0.074	-22.60	11.00	0.099	-20.11	38.50	0.017	-35.41	66.00	0.030	-30.47
-3.00	0.121	-18.32	11.50	0.071	-22.95	39.00	0.025	-31.90	66.50	0.023	-32.80
-2.75	0.177	-15.06	12.00	0.063	-23.95	39.50	0.034	-29.49	67.00	0.014	-36.86
-2.50	0.223	-13.02	12.50	0.082	-21.76	40.00	0.034	-29.30	67.50	0.006	-44.20
-2.25	0.252	-11.99	13.00	0.087	-21.25	40.50	0.027	-31.28	68.00	0.008	-41.71
-2.00	0.254	-11.90	13.50	0.069	-23.24	41.00	0.018	-35.09	68.50	0.017	-35.54
-1.75	0.228	-12.86	14.00	0.050	-26.02	41.50	0.018	-34.78	69.00	0.025	-32.16
-1.50	0.173	-15.24	14.50	0.060	-24.47	42.00	0.028	-31.09	69.50	0.031	-30.15
-1.25	0.108	-19.30	15.00	0.073	-22.72	42.50	0.034	-29.32	70.00	0.035	-29.00
-1.00	0.124	-18.15	15.50	0.067	-23.44	43.00	0.033	-29.59	70.50	0.038	-28.46
-0.75	0.242	-12.34	16.00	0.048	-26.41	43.50	0.025	-31.90	71.00	0.038	-28.44
-0.50	0.390	-8.17	16.50	0.043	-27.34	44.00	0.016	-35.73	71.50	0.036	-28.90
-0.25	0.545	-5.27	17.00	0.057	-24.81	44.50	0.018	-34.74	72.00	0.032	-29.86
0.00	0.692	-3.19	17.50	0.062	-24.12	45.00	0.028	-31.09	72.50	0.027	-31.41
0.25	0.819	-1.73	18.00	0.050	-26.04	45.50	0.034	-29.34	73.00	0.021	-33.75
0.50	0.917	-0.75	18.50	0.035	-29.09	46.00	0.034	-29.47	73.50	0.013	-37.42
0.75	0.979	-0.19	19.00	0.042	-27.46	46.50	0.027	-31.47	74.00	0.006	-44.39
1.00	1.000	0.00	19.50	0.054	-25.32	47.00	0.017	-35.30	74.50	0.001	-56.89
1.25	0.981	-0.17	20.00	0.052	-25.70	47.50	0.016	-36.01	75.00	0.009	-41.35
1.50	0.924	-0.69	20.50	0.037	-28.58	48.00	0.025	-32.11	75.50	0.015	-36.39
1.75	0.837	-1.54	21.00	0.031	-30.21	48.50	0.033	-29.71	76.00	0.021	-33.56
2.00	0.730	-2.73	21.50	0.043	-27.35	49.00	0.035	-29.12	76.50	0.026	-31.72
2.25	0.616	-4.21	22.00	0.050	-26.04	49.50	0.031	-30.19	77.00	0.030	-30.47
2.50	0.509	-5.86	22.50	0.043	-27.36	50.00	0.022	-33.11	77.50	0.033	-29.64
2.75	0.427	-7.40	23.00	0.029	-30.70	50.50	0.014	-37.07	78.00	0.035	-29.12
3.00	0.378	-8.45	23.50	0.031	-30.27	51.00	0.018	-35.13	78.50	0.036	-28.85
3.25	0.360	-8.87	24.00	0.043	-27.37	51.50	0.027	-31.36	79.00	0.036	-28.79
3.50	0.357	-8.94	24.50	0.046	-26.77	52.00	0.034	-29.40	79.50	0.036	-28.90
3.75	0.352	-9.08	25.00	0.036	-28.76	52.50	0.035	-29.02	80.00	0.035	-29.18
4.00	0.334	-9.52	25.50	0.025	-31.99	53.00	0.031	-30.10	80.50	0.033	-29.60
4.25	0.302	-10.39	26.00	0.031	-30.20	53.50	0.023	-32.83	81.00	0.031	-30.15
4.50	0.260	-11.71	26.50	0.042	-27.63	54.00	0.014	-36.88	81.50	0.029	-30.83
4.75	0.215	-13.36	27.00	0.042	-27.51	54.50	0.015	-36.21	82.00	0.026	-31.63
5.00	0.180	-14.90	27.50	0.032	-29.89	55.00	0.024	-32.26	82.50	0.024	-32.54
5.25	0.166	-15.60	28.00	0.023	-32.84	55.50	0.032	-29.85	83.00	0.021	-33.56
5.50	0.172	-15.27	28.50	0.030	-30.46	56.00	0.036	-28.93	83.50	0.018	-34.70
5.75	0.186	-14.60	29.00	0.039	-28.11	56.50	0.034	-29.27	84.00	0.016	-35.94
6.00	0.195	-14.19	29.50	0.039	-28.20	57.00	0.028	-30.93	84.50	0.014	-37.29
6.25	0.193	-14.28	30.00	0.029	-30.77	57.50	0.019	-34.23	85.00	0.012	-38.76
6.50	0.179	-14.94	30.50	0.021	-33.65	58.00	0.012	-38.65	85.50	0.010	-40.33
6.75	0.156	-16.14	31.00	0.028	-30.94	58.50	0.015	-36.72	86.00	0.008	-42.03
7.00	0.130	-17.72	31.50	0.038	-28.50	59.00	0.024	-32.56	86.50	0.006	-43.86
7.25	0.111	-19.10	32.00	0.038	-28.46	59.50	0.031	-30.11	87.00	0.005	-45.84
7.50	0.107	-19.41	32.50	0.029	-30.81	60.00	0.035	-29.01	87.50	0.004	-48.02
7.75	0.117	-18.65	33.00	0.020	-34.01	60.50	0.035	-29.00	88.00	0.003	-50.49
8.00	0.130	-17.72	33.50	0.025	-31.87	61.00	0.031	-30.05	88.50	0.002	-53.43
8.25	0.138	-17.19	34.00	0.035	-29.17	61.50	0.024	-32.37	89.00	0.001	-57.28
8.50	0.138	-17.22	34.50	0.037	-28.74	62.00	0.015	-36.54	89.50	0.001	-60.00