

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION WWAY-DT
WILMINGTON, NORTH CAROLINA
CH 46 800 KW (MAX-DA) 590 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station WWAY-DT which is paired with NTSC (analog) channel 3 at Wilmington, North Carolina. 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 46 as WWAY-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 594 meters for the DTV allotment.

Proposed Facilities

Station WWAY-DT proposes to operate DTV channel 46 from its existing NTSC tower site location. It is proposed to operate with an Andrew ABBP14H4-HTWC4-30/54 directional type antenna with a maximum average effective radiated power of 800 kilowatts. The antenna height above average terrain for the channel 46 DTV operation will be 590 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):

34° 07' 53" North Latitude
78° 11' 17" 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 Wilmington city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

Radiofrequency Electromagnetic Field Exposure

The proposed WWAY-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 WWAY-DT antenna is located 587 meters above ground level. The maximum effective radiated power is 800 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 0.003 mW/cm^2 . This is less than 5 percent of the Commission's recommended limit of 0.44 mW/cm^2 for channel 46 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

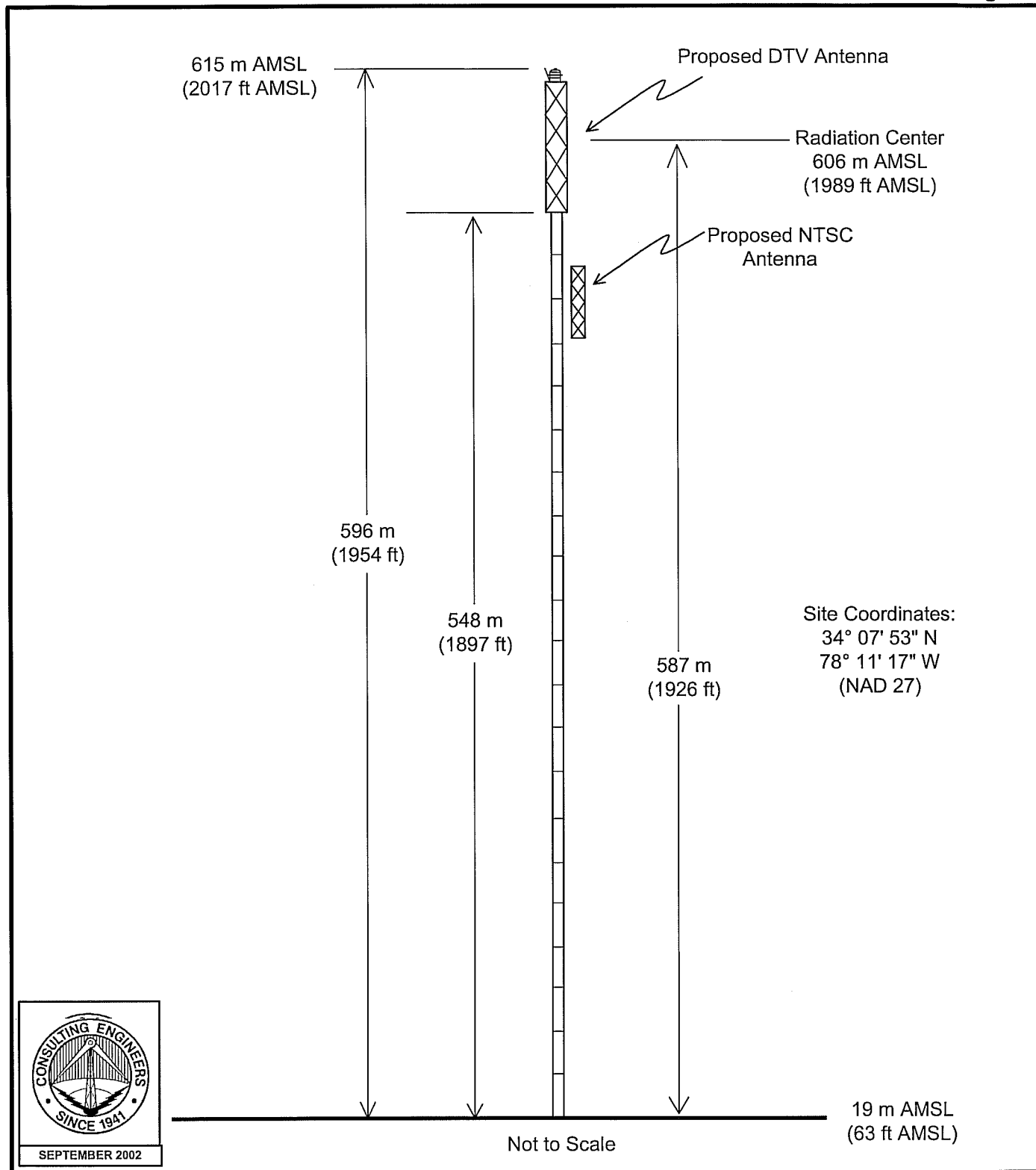
reduced power or shut down. The proposed WWAY-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 324237
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September 20, 2002

Figure 1

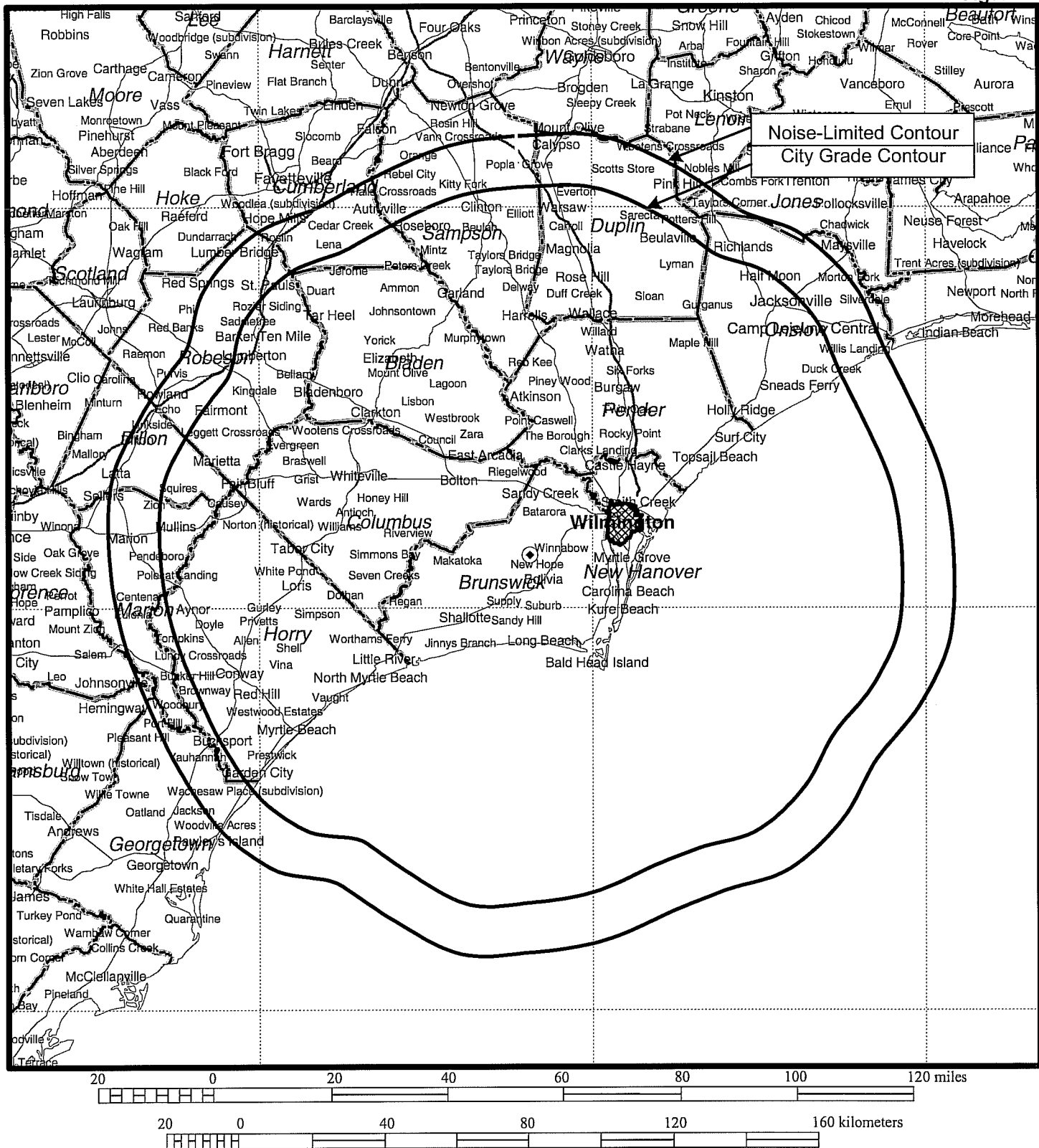


PROPOSED ANTENNA AND SUPPORTING STRUCTURE

TELEVISION STATION WWAY-DT
WILMINGTON, NORTH CAROLINA
CH 46 800 KW (MAX-DA) 590 M

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

Figure 2



DTV NOISE-LIMITED COVERAGE CONTOUR

TELEVISION STATION WWAY-DT
WILMINGTON, NORTH CAROLINA
CH 46 800 KW (MAX-DA) 590 M

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

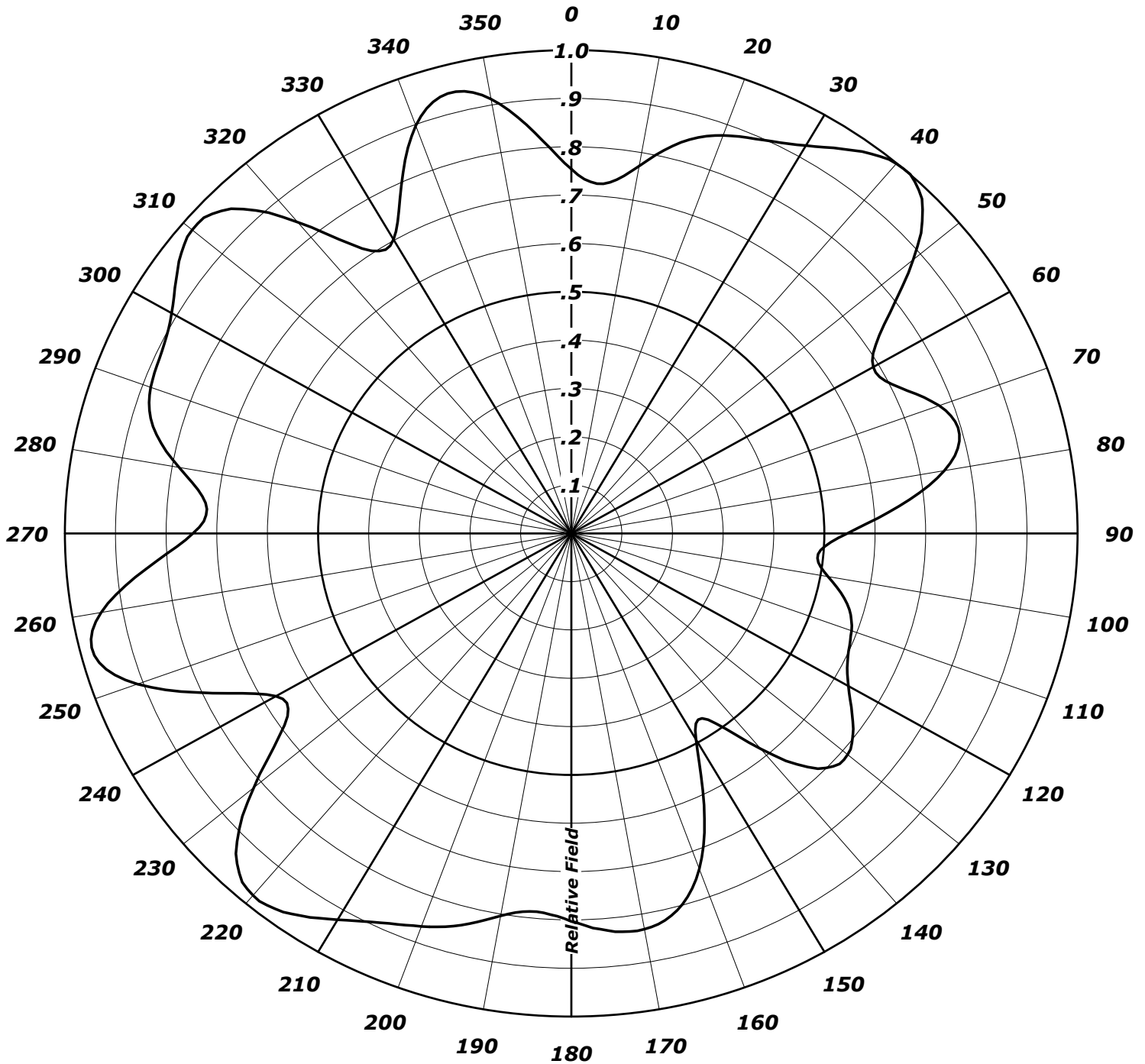
APPENDIX

MANUFACTURER ANTENNA SPECIFICATIONS

ANDREW
AZIMUTH PATTERN

Type: CH46AZ-H-BID-WC

	Numeric	dBd
Directivity:	<u>1.56</u>	<u>(1.93)</u>
Peak(s) At:	<u></u>	
Polarization:	<u>Horizontal</u>	
Channel:	<u>46</u>	
Location:	<u>Wilmington, NC</u>	





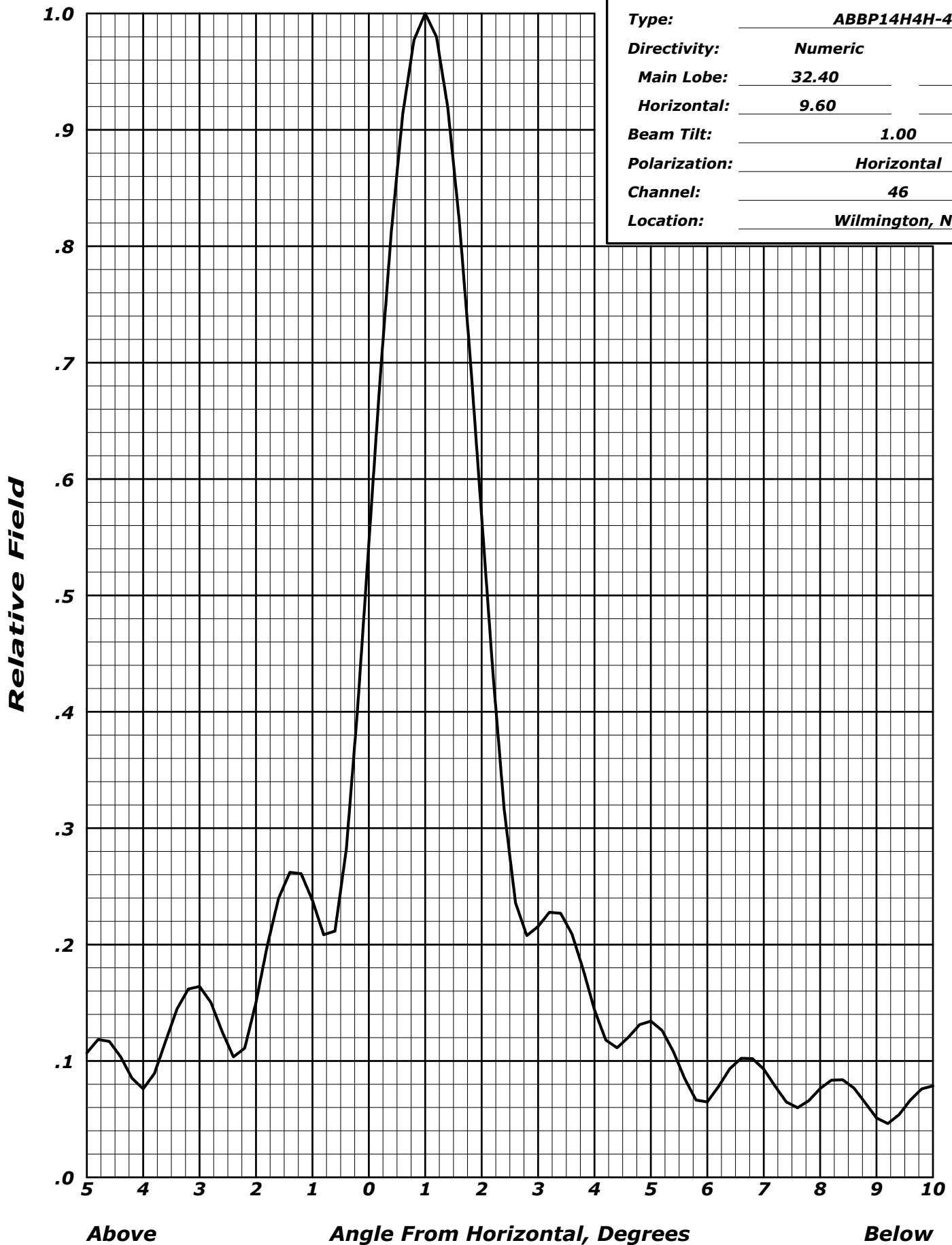
TABULATED DATA FOR AZIMUTH PATTERN

TYPE : CH46AZ-H-BID-WC

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.754	-2.45	110	0.589	-4.60	220	0.978	-0.20	330	0.702	-3.07
2	0.733	-2.69	112	0.594	-4.52	222	0.971	-0.25	332	0.731	-2.73
4	0.726	-2.79	114	0.599	-4.45	224	0.950	-0.45	334	0.772	-2.25
6	0.731	-2.73	116	0.607	-4.34	226	0.917	-0.75	336	0.817	-1.76
8	0.747	-2.53	118	0.617	-4.19	228	0.874	-1.17	338	0.861	-1.30
10	0.772	-2.25	120	0.632	-3.99	230	0.819	-1.74	340	0.898	-0.93
12	0.800	-1.93	122	0.649	-3.75	232	0.763	-2.35	342	0.925	-0.68
14	0.826	-1.66	124	0.669	-3.50	234	0.712	-2.94	344	0.940	-0.54
16	0.848	-1.43	126	0.688	-3.24	236	0.676	-3.40	346	0.942	-0.52
18	0.864	-1.27	128	0.703	-3.06	238	0.662	-3.58	348	0.933	-0.60
20	0.877	-1.14	130	0.712	-2.95	240	0.674	-3.43	350	0.912	-0.80
22	0.886	-1.05	132	0.713	-2.94	242	0.706	-3.02	352	0.884	-1.07
24	0.894	-0.98	134	0.699	-3.12	244	0.755	-2.45	354	0.851	-1.41
26	0.903	-0.89	136	0.672	-3.46	246	0.809	-1.84	356	0.815	-1.78
28	0.913	-0.79	138	0.633	-3.97	248	0.864	-1.27	358	0.782	-2.14
30	0.927	-0.66	140	0.582	-4.70	250	0.912	-0.80	360	0.754	-2.45
32	0.942	-0.52	142	0.530	-5.52	252	0.948	-0.47			
34	0.959	-0.36	144	0.486	-6.26	254	0.970	-0.27			
36	0.977	-0.20	146	0.462	-6.72	256	0.976	-0.21			
38	0.990	-0.09	148	0.464	-6.67	258	0.967	-0.29			
40	0.998	-0.01	150	0.492	-6.16	260	0.943	-0.51			
42	1.000	0.00	152	0.538	-5.38	262	0.908	-0.84			
44	0.988	-0.11	154	0.593	-4.55	264	0.866	-1.25			
46	0.964	-0.32	156	0.646	-3.79	266	0.821	-1.72			
48	0.929	-0.64	158	0.697	-3.14	268	0.780	-2.16			
50	0.881	-1.10	160	0.739	-2.63	270	0.747	-2.53			
52	0.829	-1.63	162	0.772	-2.25	272	0.726	-2.78			
54	0.778	-2.18	164	0.798	-1.96	274	0.722	-2.84			
56	0.734	-2.69	166	0.815	-1.77	276	0.733	-2.70			
58	0.703	-3.06	168	0.827	-1.65	278	0.756	-2.43			
60	0.689	-3.24	170	0.832	-1.60	280	0.786	-2.09			
62	0.690	-3.23	172	0.832	-1.60	282	0.818	-1.75			
64	0.704	-3.04	174	0.829	-1.63	284	0.844	-1.47			
66	0.726	-2.78	176	0.821	-1.71	286	0.864	-1.27			
68	0.751	-2.48	178	0.812	-1.81	288	0.877	-1.14			
70	0.773	-2.24	180	0.803	-1.91	290	0.884	-1.07			
72	0.788	-2.07	182	0.792	-2.02	292	0.888	-1.03			
74	0.794	-2.00	184	0.787	-2.08	294	0.890	-1.01			
76	0.790	-2.05	186	0.786	-2.09	296	0.894	-0.97			
78	0.774	-2.22	188	0.792	-2.02	298	0.901	-0.91			
80	0.748	-2.52	190	0.803	-1.90	300	0.912	-0.80			
82	0.713	-2.94	192	0.818	-1.75	302	0.925	-0.68			
84	0.672	-3.45	194	0.832	-1.60	304	0.941	-0.53			
86	0.628	-4.04	196	0.845	-1.46	306	0.958	-0.38			
88	0.584	-4.67	198	0.856	-1.35	308	0.970	-0.26			
90	0.545	-5.27	200	0.865	-1.26	310	0.977	-0.20			
92	0.513	-5.80	202	0.874	-1.17	312	0.976	-0.21			
94	0.494	-6.13	204	0.883	-1.08	314	0.961	-0.35			
96	0.489	-6.22	206	0.895	-0.97	316	0.933	-0.60			
98	0.497	-6.07	208	0.908	-0.84	318	0.893	-0.98			
100	0.515	-5.77	210	0.923	-0.70	320	0.841	-1.51			
102	0.536	-5.42	212	0.939	-0.55	322	0.787	-2.08			
104	0.556	-5.10	214	0.954	-0.41	324	0.740	-2.62			
106	0.571	-4.87	216	0.968	-0.28	326	0.705	-3.03			
108	0.581	-4.71	218	0.976	-0.21	328	0.692	-3.19			

ANDREW
ELEVATION PATTERN

Type:	ABBP14H4H-46	
Directivity:	Numeric	dBd
Main Lobe:	32.40	(15.11)
Horizontal:	9.60	(9.82)
Beam Tilt:	1.00	
Polarization:	Horizontal	
Channel:	46	
Location:	Wilmington, NC	





TABULATED DATA FOR ELEVATION PATTERN
TYPE : ABBP14H4H-46

Angle Field dB -5 To 10 In 0.25 Increments	Angle Field dB 10 To 90 In 0.5 Increments	Angle Field dB	Angle Field dB
-5.00 0.107 -19.42	8.75 0.067 -23.46	35.00 0.006 -44.15	62.50 0.020 -34.07
-4.75 0.118 -18.56	9.00 0.051 -25.85	35.50 0.009 -41.01	63.00 0.015 -36.36
-4.50 0.110 -19.16	9.25 0.048 -26.35	36.00 0.008 -41.41	63.50 0.013 -37.99
-4.25 0.090 -20.93	9.50 0.060 -24.42	36.50 0.004 -47.03	64.00 0.013 -37.92
-4.00 0.076 -22.38	9.75 0.074 -22.66	37.00 0.005 -45.68	64.50 0.014 -37.14
-3.75 0.096 -20.33	10.00 0.079 -22.09	37.50 0.011 -39.45	65.00 0.014 -36.83
-3.50 0.131 -17.65	10.50 0.049 -26.13	38.00 0.013 -37.86	65.50 0.014 -37.27
-3.25 0.158 -16.05	11.00 0.035 -29.02	38.50 0.010 -39.87	66.00 0.012 -38.56
-3.00 0.164 -15.70	11.50 0.083 -21.66	39.00 0.007 -43.22	66.50 0.009 -40.63
-2.75 0.144 -16.83	12.00 0.088 -21.14	39.50 0.011 -39.17	67.00 0.007 -42.97
-2.50 0.114 -18.84	12.50 0.052 -25.62	40.00 0.016 -36.14	67.50 0.006 -43.81
-2.25 0.109 -19.24	13.00 0.064 -23.86	40.50 0.015 -36.36	68.00 0.007 -42.62
-2.00 0.150 -16.46	13.50 0.094 -20.55	41.00 0.010 -39.91	68.50 0.009 -41.16
-1.75 0.209 -13.59	14.00 0.078 -22.20	41.50 0.007 -43.10	69.00 0.010 -40.18
-1.50 0.251 -12.01	14.50 0.038 -28.36	42.00 0.013 -38.06	69.50 0.010 -39.96
-1.25 0.261 -11.66	15.00 0.063 -24.04	42.50 0.016 -35.89	70.00 0.010 -40.26
-1.00 0.238 -12.47	15.50 0.077 -22.22	43.00 0.014 -37.20	70.50 0.009 -41.26
-0.75 0.209 -13.59	16.00 0.045 -27.01	43.50 0.006 -44.66	71.00 0.007 -42.62
-0.50 0.247 -12.16	16.50 0.017 -35.55	44.00 0.005 -46.56	71.50 0.006 -44.01
-0.25 0.372 -8.59	17.00 0.063 -23.97	44.50 0.013 -37.43	72.00 0.006 -45.04
0.00 0.544 -5.28	17.50 0.065 -23.71	45.00 0.017 -35.24	72.50 0.006 -45.11
0.25 0.718 -2.88	18.00 0.030 -30.34	45.50 0.015 -36.71	73.00 0.006 -44.29
0.50 0.863 -1.28	18.50 0.038 -28.48	46.00 0.008 -42.27	73.50 0.007 -43.48
0.75 0.961 -0.34	19.00 0.064 -23.93	46.50 0.008 -42.21	74.00 0.007 -42.85
1.00 1.000 -0.00	19.50 0.053 -25.59	47.00 0.015 -36.54	74.50 0.007 -42.62
1.25 0.965 -0.31	20.00 0.039 -28.09	47.50 0.018 -34.80	75.00 0.007 -42.73
1.50 0.871 -1.20	20.50 0.066 -23.67	48.00 0.016 -35.86	75.50 0.007 -43.22
1.75 0.733 -2.70	21.00 0.073 -22.75	48.50 0.012 -38.45	76.00 0.006 -44.01
2.00 0.568 -4.92	21.50 0.049 -26.26	49.00 0.014 -36.89	76.50 0.006 -44.96
2.25 0.404 -7.87	22.00 0.058 -24.79	49.50 0.021 -33.53	77.00 0.005 -46.20
2.50 0.276 -11.18	22.50 0.093 -20.62	50.00 0.024 -32.22	77.50 0.004 -47.54
2.75 0.215 -13.36	23.00 0.092 -20.70	50.50 0.022 -33.21	78.00 0.004 -48.40
3.00 0.215 -13.33	23.50 0.073 -22.72	51.00 0.016 -35.92	78.50 0.004 -48.87
3.25 0.227 -12.86	24.00 0.133 -17.54	51.50 0.017 -35.24	79.00 0.004 -48.64
3.50 0.218 -13.23	24.50 0.224 -12.99	52.00 0.027 -31.34	79.50 0.004 -47.96
3.75 0.186 -14.60	25.00 0.279 -11.08	52.50 0.035 -29.04	80.00 0.004 -47.33
4.00 0.144 -16.84	25.50 0.271 -11.33	53.00 0.037 -28.59	80.50 0.005 -46.65
4.25 0.116 -18.69	26.00 0.212 -13.48	53.50 0.032 -29.91	81.00 0.005 -46.20
4.50 0.116 -18.73	26.50 0.128 -17.85	54.00 0.028 -30.90	81.50 0.005 -45.85
4.75 0.128 -17.82	27.00 0.061 -24.32	54.50 0.042 -27.46	82.00 0.005 -45.68
5.00 0.134 -17.44	27.50 0.046 -26.72	55.00 0.068 -23.40	82.50 0.005 -45.60
5.25 0.122 -18.30	28.00 0.046 -26.71	55.50 0.094 -20.53	83.00 0.005 -45.68
5.50 0.096 -20.32	28.50 0.033 -29.70	56.00 0.116 -18.75	83.50 0.005 -45.85
5.75 0.071 -22.97	29.00 0.020 -33.85	56.50 0.128 -17.87	84.00 0.005 -46.02
6.00 0.065 -23.77	29.50 0.021 -33.39	57.00 0.130 -17.71	84.50 0.005 -46.47
6.25 0.082 -21.73	30.00 0.020 -33.85	57.50 0.122 -18.29	85.00 0.005 -46.74
6.50 0.098 -20.19	30.50 0.013 -37.86	58.00 0.105 -19.55	85.50 0.004 -47.23
6.75 0.102 -19.82	31.00 0.009 -40.63	58.50 0.084 -21.55	86.00 0.004 -47.74
7.00 0.093 -20.63	31.50 0.013 -37.86	59.00 0.061 -24.34	86.50 0.004 -48.07
7.25 0.075 -22.49	32.00 0.013 -37.92	59.50 0.041 -27.80	87.00 0.004 -48.64
7.50 0.062 -24.11	32.50 0.009 -41.21	60.00 0.028 -31.09	87.50 0.004 -49.00
7.75 0.064 -23.83	33.00 0.007 -42.62	60.50 0.025 -32.02	88.00 0.003 -49.37
8.00 0.076 -22.35	33.50 0.009 -40.49	61.00 0.026 -31.54	88.50 0.003 -49.90
8.25 0.084 -21.56	34.00 0.009 -41.01	61.50 0.027 -31.49	89.00 0.003 -50.17
8.50 0.080 -21.91	34.50 0.006 -44.58	62.00 0.024 -32.32	89.50 0.003 -50.60