TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION STATION WTIC-DT
HARTFORD, CONNECTICUT

March 26, 2003

CHANNEL 31 425 KW (MAX-DA) 501 M

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Technical Statement

This Technical Exhibit was prepared on behalf of digital television broadcast station WTIC-DT, Hartford, Connecticut, in support of an application for construction permit. WTIC-DT is paired with analog NTSC TV station WTIC-TV, Channel 61. Pursuant to the recent *Report and Order* in MM Docket No. 01-306[*], WTIC-DT was allotted Channel 31, with a maximum effective radiated power (ERP) of 500 kW and antenna height above average terrain (HAAT) of 492 m, as its transitional DTV allotment channel. The instant application proposes operation of the WTIC-DT facility using an existing antenna structure located at the WTIC-DT allotment reference point. The proposal complies with the DTV application "checklist" filing requirements.[†]

Proposed Facilities

The proposed transmitting antenna will employ an inverted antenna mounted on a candelabra to be constructed at the top of an existing antenna structure located on Rattlesnake Mountain near Farmington, Connecticut. The existing antenna structure supports the WTIC-TV analog antenna. The transmitter site elevation is

[*] *See Report and Order*, MM Docket No. 01-306, RM-10152, In the Matter of Amendment of Section 73.622(b), Table of Allotments, Digital Television Broadcast Stations (Hartford, Connecticut), Adopted: January 7, 2003, Released: January 8, 2003, DA 03-43.
[†] See FCC *Public Notice*, "Commission Details Application Filing Procedures Digital Television (DTV)", Released: October 16, 1997; and, FCC *Public Notice*, "Additional Application Processing Guidelines for Digital Television (DTV)", Released: August 10, 1998.

216.4 m AMSL (708 ft AMSL). The antenna center of radiation will be located at 384 m (1260 ft) above ground level and 600 m (1968 ft) AMSL. The proposed WTIC-DT facility will operate on Channel 31 with a maximum directional average ERP of 26.3 dBk (425 kW) and antenna radiation center HAAT of 501 m. The proposed WTIC-DT facility meets the requirements of Section 73.622(f)(8) of the FCC Rules concerning the maximum permissible ERP for DTV stations operating on Channels 14-59. An analysis of the permissible effective radiated power for the proposed facility is included herein at Figure 1. As indicated therein, appropriate ERP adjustments were made in consideration of the increase in antenna HAAT of 9 m and the use of a directional antenna pattern that differs slightly from the allotment pattern.

The proposed facility is located in the Canadian border area. The proposed transmitter site is located 369 km from the closest point on the U.S./Canadian border.[‡] The closest FCC Monitoring station is located at Canadaigua, New York, at distance of 388.5 km at a bearing of 292°True. The closest Radio Astronomy site conducting research on Channel 37 is located at Hancock, New Hampshire, at distance of 153 km at a bearing of 27°True.[§]

The proposed facility provides minimum 48 dBu, f(50,90), coverage of Hartford in compliance with Section 73.625(a)(1) of the FCC Rules. Figure 2 herein is a tabulation of the calculated distances to the predicted WTIC-DT coverage contours. Figure 3 herein is a map depicting the predicted coverage contours of the proposed facility.

[‡] Canadian concurrence of the proposal was obtained at the allotment stage. See *Report and Order* in MM Docket No. 01-306 as referenced above.
[§] The proposed site is located 2.3 km from AM broadcast station WLAT, New Britain, CT, 910 kHz.

Tower Registration

The existing antenna structure has been registered with the FCC. The FCC antenna structure registration number is 1041624. The overall antenna structure height above ground is 408.1 m. This overall structure height will not change as a result of the proposal.

Allocation Considerations

The proposed WTIC-DT facility meets the criteria of Section 73.622(f)(2) of the FCC Rules. Therefore, pursuant to that section, the application shall not be subject to further consideration of electromagnetic interference to other DTV or analog TV broadcast stations.

With respect to Class A TV station protection, the proposal has been evaluated according to the requirements of Section 73.623(c)(5) of the FCC Rules. The analysis reveals no potentially affected Class A TV stations. Therefore, the proposed WTIC-DT facility complies with Section 73.623(c)(5) of the FCC Rules concerning Class A station protection.

Environmental Considerations

With respect to the potential for human exposure to radio frequency (RF) radiation, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground** based on the following conservative assumptions, with the following results:

** The radiation center height above ground is 384 m.

Call Sign	Channel	Peak Visual ERP or Average ERP (kW)	Aural ERP (kW)	Relative Field Factor††	FCC Limit‡‡ (mW/cm^2)	Percentage of Limit
WTIC-DT	31	425	--	0.20	0.381	1.0%

As indicated above, the exposure to RF radiation at 2-m above ground level will not exceed 1.0% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation and it is categorically excluded from environmental processing. The applicant, in coordination with any other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the tower or antenna from radio frequency radiation in excess of the FCC guidelines.

Louis Robert du Treil, Jr.

March 26, 2003

†† This is a conservative estimate of the relative field factor in the downward direction.
‡‡ for general population/uncontrolled environments

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Analysis of Permissible Effective Radiated Power

Azimuth (deg. True)	FCC Allotment Pattern (relative field)	FCC Allotment Permissible ERP (kW)	FCC Allotment Permissible ERP (dBk)	Permissible ERP Adjustment for 9-m Increase in HAAT (dB)	Adjusted Permissible ERP (dBk)	Proposed Antenna Pattern (relative field)	Proposed ERP (dBk)
0	0.945	446.5	26.50	-0.16	26.34	0.941	25.76
10	0.938	439.9	26.43	-0.16	26.28	0.937	25.72
20	0.961	461.8	26.64	-0.16	26.49	0.963	25.96
30	0.986	486.1	26.87	-0.16	26.71	0.985	26.15
40	0.994	494.0	26.94	-0.16	26.78	0.992	26.21
50	0.991	491.0	26.91	-0.16	26.75	0.987	26.17
60	0.972	472.4	26.74	-0.16	26.59	0.966	25.98
70	0.945	446.5	26.50	-0.16	26.34	0.938	25.73
80	0.938	439.9	26.43	-0.16	26.28	0.935	25.70
90	0.963	463.7	26.66	-0.16	26.50	0.963	25.96
100	0.992	492.0	26.92	-0.16	26.76	0.989	26.19
110	1.000	500.0	26.99	-0.16	26.83	0.994	26.23
120	0.994	494.0	26.94	-0.16	26.78	0.987	26.17
130	0.984	484.1	26.85	-0.16	26.69	0.974	26.06

Figure 1
Sheet 1 of 2

Azimuth (deg. True)	FCC Allotment Pattern (relative field)	FCC Allotment Permissible ERP (kW)	FCC Allotment Permissible ERP (dBk)	Permissible ERP Adjustment for 9-m Increase in HAAT (dB)	Adjusted Permissible ERP (dBk)	Proposed Antenna Pattern (relative field)	Proposed ERP (dBk)
140	0.939	440.9	26.44	-0.16	26.29	0.921	25.57
150	0.834	347.8	25.41	-0.16	25.26	0.811	24.46
160	0.716	256.3	24.09	-0.16	23.93	0.695	23.12
170	0.622	193.4	22.87	-0.16	22.71	0.604	21.90
180	0.525	137.8	21.39	-0.16	21.24	0.504	20.33
190	0.387	74.9	18.74	-0.16	18.59	0.363	17.48
200	0.251	31.5	14.98	-0.16	14.83	0.235	13.71
210	0.194	18.8	12.75	-0.16	12.59	0.190	11.86
220	0.195	19.0	12.79	-0.16	12.63	0.195	12.08
230	0.192	18.4	12.66	-0.16	12.50	0.193	12.00
240	0.218	23.8	13.76	-0.16	13.60	0.228	13.44
250	0.328	53.8	17.31	-0.16	17.15	0.348	17.12
260	0.474	112.3	20.51	-0.16	20.35	0.495	20.18
270	0.587	172.3	22.36	-0.16	22.21	0.602	21.88
280	0.676	228.5	23.59	-0.16	23.43	0.691	23.07
290	0.785	308.1	24.89	-0.16	24.73	0.803	24.38
300	0.903	407.7	26.10	-0.16	25.95	0.917	25.53
310	0.973	473.4	26.75	-0.16	26.59	0.979	26.10
320	0.991	491.0	26.91	-0.16	26.75	0.993	26.22
330	0.998	498.0	26.97	-0.16	26.81	0.999	26.28
340	0.998	498.0	26.97	-0.16	26.81	0.996	26.25
350	0.976	476.3	26.78	-0.16	26.62	0.972	26.04

Figure 1
Sheet 2 of 2

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Tabulation of Average Elevations and
Distances to Predicted Coverage Contours

Azimuth (deg.T)	3-16 km Average Terrain (m)	Antenna HAAT (m)	ERP (kW)	48 dBu f(50,90) Contour (km)	41 dBu f(50,90) Contour (km)
0	65.1	534.9	376.3	93.7	107.8
15	157.9	442.1	381.9	87.7	100.4
30	91.6	508.4	412.3	92.5	106.7
45	58.3	541.7	416.5	95.0	109.2
60	45.4	554.6	396.6	95.5	109.5
75	40.8	559.2	369.2	95.2	109.2
90	37.6	562.4	394.1	96.0	109.9
105	42.2	557.8	419.9	96.2	110.2
120	50.3	549.7	414.0	95.5	109.6
135	41.2	558.8	387.6	95.6	109.6
150	56.6	543.4	279.5	91.8	105.7
165	82.6	517.4	177.9	86.6	99.7
180	142.6	457.4	108.0	80.1	91.0
195	61.4	538.6	36.2	76.0	88.0
210	59.0	541.0	15.3	70.2	81.6
225	141.7	458.3	16.2	67.9	78.3
240	163.5	436.5	22.1	68.9	79.3
255	138.5	461.5	76.0	78.0	88.7
270	157.3	442.7	154.0	81.7	92.8
285	171.1	428.9	234.6	83.8	95.2
300	191.0	409.0	357.4	85.6	97.4
315	151.6	448.4	416.5	88.6	101.7
330	103.4	496.6	424.2	91.8	106.0
345	95.3	504.7	413.2	92.2	106.4

Note: The 3-16-km average terrain is 99 m based on the eight conventional radials (0°, 45°, 90°, etc.). The overall antenna radiation center height above average terrain is 501 m based on the eight conventional radials.

PREDICTED COVERAGE CONTOURS

TELEVISION STATION WTIC-DT
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du Treil, Lundin & Rackley, Inc. Sarasota, Florida

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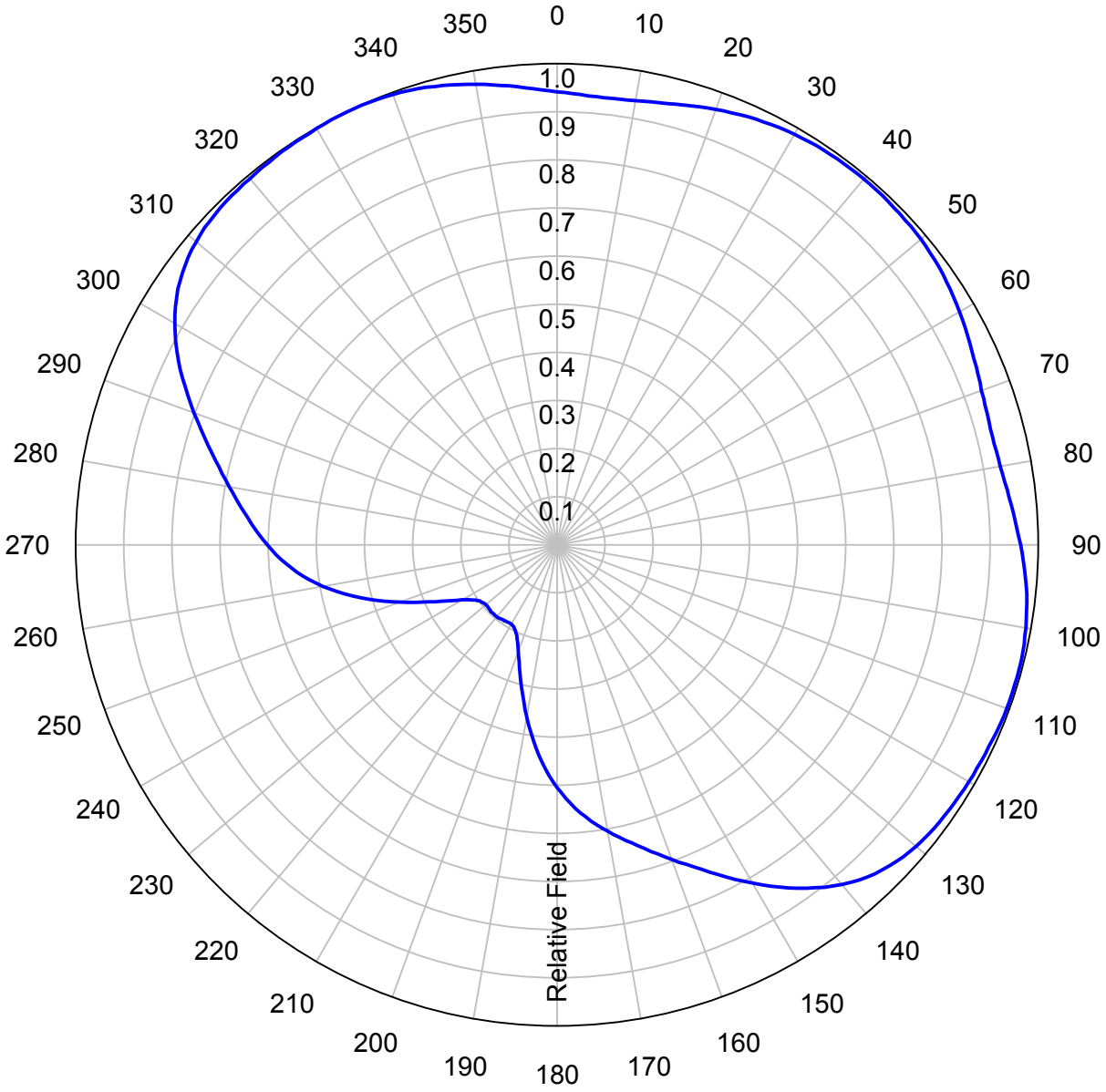
Transmitting Antenna Manufacturer's Pattern Data

(*four pages follow*)

AZIMUTH PATTERN

Type:	ATW-C1	
	Numeric	dBd
Directivity:	1.52	1.82
Peak(s) at:		
Polarization:	Horizontal	
Channel:	32	
Location:		
Note:		



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

3.26.03

AZIMUTH TABULATED DATA

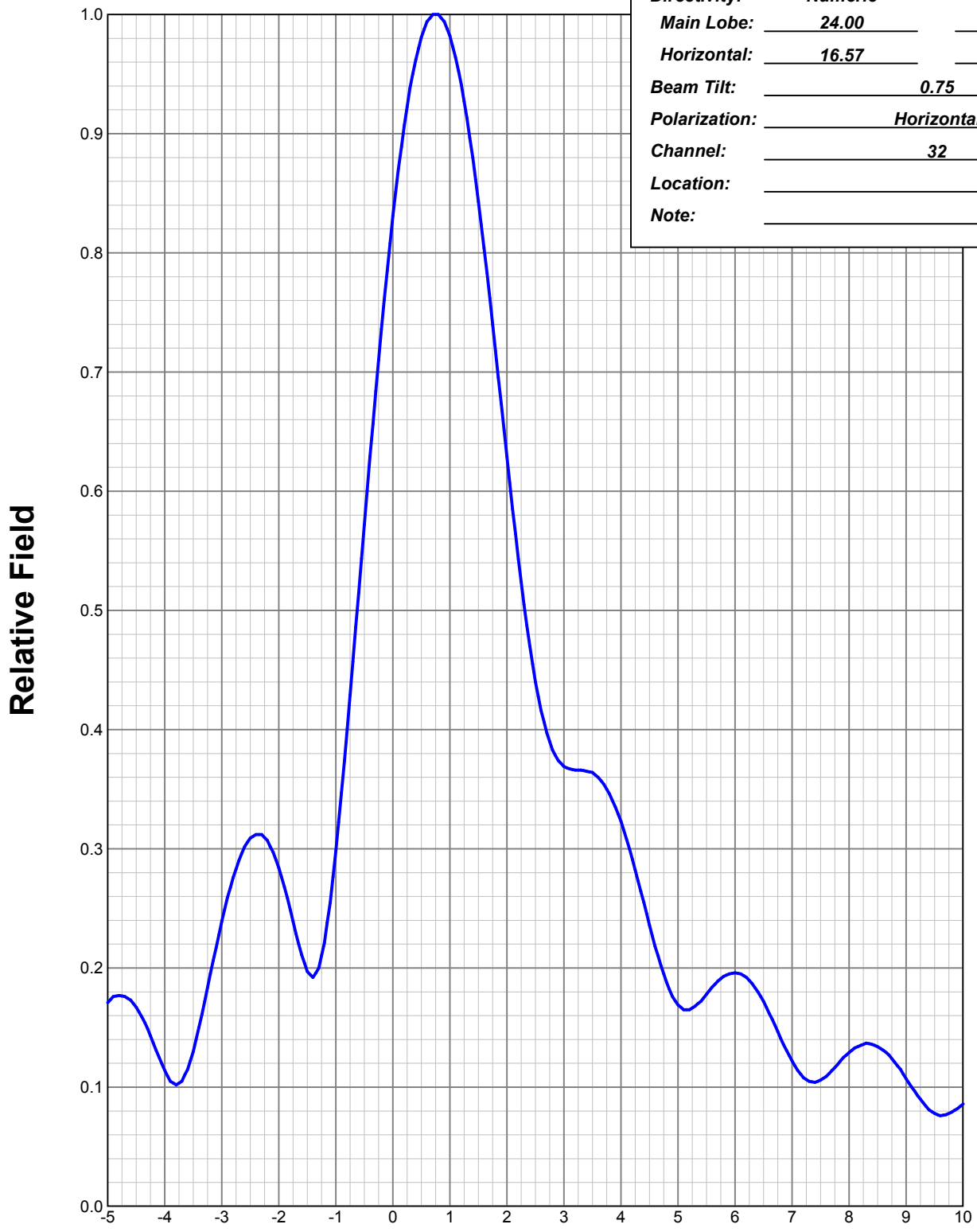
Type: ATW-C1

Polarization: Horizontal

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.941	-0.53	**92**	0.969	-0.27	**184**	0.452	-6.90	**276**	0.654	-3.69
2	0.938	-0.56	**94**	0.975	-0.22	**186**	0.423	-7.47	**278**	0.672	-3.45
4	0.935	-0.58	**96**	0.981	-0.17	**188**	0.393	-8.11	**280**	0.691	-3.21
6	0.934	-0.59	**98**	0.985	-0.13	**190**	0.363	-8.80	**282**	0.711	-2.96
8	0.935	-0.58	**100**	0.989	-0.10	**192**	0.333	-9.55	**284**	0.732	-2.71
10	0.937	-0.57	**102**	0.992	-0.07	**194**	0.305	-10.31	**286**	0.755	-2.44
12	0.941	-0.53	**104**	0.994	-0.05	**196**	0.279	-11.09	**288**	0.778	-2.18
14	0.945	-0.49	**106**	0.994	-0.05	**198**	0.255	-11.87	**290**	0.803	-1.91
16	0.951	-0.44	**108**	0.994	-0.05	**200**	0.235	-12.58	**292**	0.827	-1.65
18	0.957	-0.38	**110**	0.994	-0.05	**202**	0.219	-13.19	**294**	0.852	-1.39
20	0.963	-0.33	**112**	0.993	-0.06	**204**	0.206	-13.72	**296**	0.875	-1.16
22	0.968	-0.28	**114**	0.991	-0.08	**206**	0.198	-14.07	**298**	0.897	-0.94
24	0.974	-0.23	**116**	0.990	-0.09	**208**	0.192	-14.33	**300**	0.917	-0.75
26	0.978	-0.19	**118**	0.988	-0.10	**210**	0.190	-14.42	**302**	0.935	-0.58
28	0.982	-0.16	**120**	0.987	-0.11	**212**	0.190	-14.42	**304**	0.950	-0.45
30	0.985	-0.13	**122**	0.985	-0.13	**214**	0.191	-14.38	**306**	0.962	-0.34
32	0.988	-0.10	**124**	0.983	-0.15	**216**	0.192	-14.33	**308**	0.972	-0.25
34	0.990	-0.09	**126**	0.981	-0.17	**218**	0.194	-14.24	**310**	0.979	-0.18
36	0.991	-0.08	**128**	0.978	-0.19	**220**	0.195	-14.20	**312**	0.985	-0.13
38	0.991	-0.08	**130**	0.974	-0.23	**222**	0.195	-14.20	**314**	0.988	-0.10
40	0.992	-0.07	**132**	0.968	-0.28	**224**	0.195	-14.20	**316**	0.991	-0.08
42	0.992	-0.07	**134**	0.960	-0.35	**226**	0.194	-14.24	**318**	0.992	-0.07
44	0.991	-0.08	**136**	0.950	-0.45	**228**	0.193	-14.29	**320**	0.993	-0.06
46	0.990	-0.09	**138**	0.937	-0.57	**230**	0.193	-14.29	**322**	0.995	-0.04
48	0.989	-0.10	**140**	0.921	-0.71	**232**	0.195	-14.20	**324**	0.996	-0.03
50	0.987	-0.11	**142**	0.903	-0.89	**234**	0.198	-14.07	**326**	0.997	-0.03
52	0.984	-0.14	**144**	0.882	-1.09	**236**	0.205	-13.76	**328**	0.998	-0.02
54	0.981	-0.17	**146**	0.860	-1.31	**238**	0.215	-13.35	**330**	0.999	-0.01
56	0.976	-0.21	**148**	0.836	-1.56	**240**	0.228	-12.84	**332**	1.000	0.00
58	0.971	-0.26	**150**	0.811	-1.82	**242**	0.246	-12.18	**334**	1.000	0.00
60	0.966	-0.30	**152**	0.787	-2.08	**244**	0.267	-11.47	**336**	1.000	0.00
62	0.960	-0.35	**154**	0.762	-2.36	**246**	0.291	-10.72	**338**	0.998	-0.02
64	0.954	-0.41	**156**	0.738	-2.64	**248**	0.318	-9.95	**340**	0.996	-0.03
66	0.948	-0.46	**158**	0.716	-2.90	**250**	0.348	-9.17	**342**	0.993	-0.06
68	0.943	-0.51	**160**	0.695	-3.16	**252**	0.378	-8.45	**344**	0.989	-0.10
70	0.938	-0.56	**162**	0.675	-3.41	**254**	0.408	-7.79	**346**	0.984	-0.14
72	0.935	-0.58	**164**	0.656	-3.66	**256**	0.438	-7.17	**348**	0.978	-0.19
74	0.933	-0.60	**166**	0.638	-3.90	**258**	0.467	-6.61	**350**	0.972	-0.25
76	0.932	-0.61	**168**	0.621	-4.14	**260**	0.495	-6.11	**352**	0.965	-0.31
78	0.933	-0.60	**170**	0.604	-4.38	**262**	0.520	-5.68	**354**	0.959	-0.36
80	0.935	-0.58	**172**	0.587	-4.63	**264**	0.543	-5.30	**356**	0.952	-0.43
82	0.939	-0.55	**174**	0.568	-4.91	**266**	0.564	-4.97	**358**	0.946	-0.48
84	0.944	-0.50	**176**	0.549	-5.21	**268**	0.584	-4.67	**360**	0.941	-0.53
86	0.950	-0.45	**178**	0.527	-5.56	**270**	0.602	-4.41			
88	0.956	-0.39	**180**	0.504	-5.95	**272**	0.620	-4.15			
90	0.963	-0.33	**182**	0.479	-6.39	**274**	0.637	-3.92			

ELEVATION PATTERN

Type:	ATW24H3H	
Directivity:	**Numeric**	**dBd**
Main Lobe:	24.00	13.80
Horizontal:	16.57	12.19
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	32	
Location:		
Note:		



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

3.26.03

ELEVATION TABULATED DATA

Type: ATW24H3H

Polarization: Horizontal

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.171	-15.34	**6.50**	0.172	-15.29	**42.00**	0.023	-32.77	**88.00**	0.007	-43.10
-4.75	0.176	-15.07	**6.75**	0.146	-16.68	**43.00**	0.033	-29.63	**89.00**	0.004	-47.96
-4.50	0.167	-15.55	**7.00**	0.122	-18.27	**44.00**	0.040	-27.96	**90.00**	0.000	0.00
-4.25	0.143	-16.89	**7.25**	0.106	-19.45	**45.00**	0.023	-32.77			
-4.00	0.114	-18.86	**7.50**	0.106	-19.49	**46.00**	0.030	-30.46			
-3.75	0.103	-19.70	**7.75**	0.116	-18.67	**47.00**	0.042	-27.54			
-3.50	0.130	-17.72	**8.00**	0.129	-17.79	**48.00**	0.029	-30.75			
-3.25	0.183	-14.73	**8.25**	0.136	-17.33	**49.00**	0.023	-32.77			
-3.00	0.239	-12.43	**8.50**	0.134	-17.46	**50.00**	0.041	-27.74			
-2.75	0.283	-10.96	**8.75**	0.124	-18.13	**51.00**	0.038	-28.40			
-2.50	0.309	-10.20	**9.00**	0.107	-19.41	**52.00**	0.020	-33.98			
-2.25	0.309	-10.19	**9.25**	0.090	-20.92	**53.00**	0.032	-29.90			
-2.00	0.284	-10.93	**9.50**	0.078	-22.16	**54.00**	0.045	-26.94			
-1.75	0.239	-12.43	**9.75**	0.078	-22.16	**55.00**	0.035	-29.12			
-1.50	0.197	-14.11	**10.00**	0.086	-21.31	**56.00**	0.019	-34.42			
-1.25	0.211	-13.53	**11.00**	0.097	-20.26	**57.00**	0.035	-29.12			
-1.00	0.298	-10.52	**12.00**	0.061	-24.29	**58.00**	0.047	-26.56			
-0.75	0.429	-7.35	**13.00**	0.085	-21.41	**59.00**	0.039	-28.18			
-0.50	0.572	-4.85	**14.00**	0.052	-25.68	**60.00**	0.020	-33.98			
-0.25	0.710	-2.97	**15.00**	0.071	-22.97	**61.00**	0.028	-31.06			
0.00	0.831	-1.61	**16.00**	0.054	-25.35	**62.00**	0.047	-26.56			
0.25	0.922	-0.70	**17.00**	0.054	-25.35	**63.00**	0.050	-26.02			
0.50	0.981	-0.17	**18.00**	0.058	-24.73	**64.00**	0.037	-28.64			
0.75	1.000	0.00	**19.00**	0.040	-27.96	**65.00**	0.019	-34.42			
1.00	0.982	-0.16	**20.00**	0.057	-24.88	**66.00**	0.027	-31.37			
1.25	0.927	-0.66	**21.00**	0.036	-28.87	**67.00**	0.046	-26.74			
1.50	0.843	-1.48	**22.00**	0.050	-26.02	**68.00**	0.055	-25.19			
1.75	0.740	-2.62	**23.00**	0.042	-27.54	**69.00**	0.052	-25.68			
2.00	0.629	-4.03	**24.00**	0.038	-28.40	**70.00**	0.038	-28.40			
2.25	0.524	-5.61	**25.00**	0.047	-26.56	**71.00**	0.019	-34.42			
2.50	0.440	-7.13	**26.00**	0.029	-30.75	**72.00**	0.016	-35.92			
2.75	0.390	-8.18	**27.00**	0.045	-26.94	**73.00**	0.034	-29.37			
3.00	0.369	-8.66	**28.00**	0.035	-29.12	**74.00**	0.049	-26.20			
3.25	0.366	-8.73	**29.00**	0.034	-29.37	**75.00**	0.058	-24.73			
3.50	0.364	-8.78	**30.00**	0.043	-27.33	**76.00**	0.060	-24.44			
3.75	0.350	-9.12	**31.00**	0.025	-32.04	**77.00**	0.056	-25.04			
4.00	0.323	-9.82	**32.00**	0.040	-27.96	**78.00**	0.048	-26.38			
4.25	0.282	-11.00	**33.00**	0.036	-28.87	**79.00**	0.037	-28.64			
4.50	0.236	-12.54	**34.00**	0.026	-31.70	**80.00**	0.026	-31.70			
4.75	0.195	-14.20	**35.00**	0.041	-27.74	**81.00**	0.016	-35.92			
5.00	0.169	-15.44	**36.00**	0.028	-31.06	**82.00**	0.009	-40.92			
5.25	0.167	-15.57	**37.00**	0.030	-30.46	**83.00**	0.007	-43.10			
5.50	0.178	-14.99	**38.00**	0.041	-27.74	**84.00**	0.009	-40.92			
5.75	0.191	-14.38	**39.00**	0.024	-32.40	**85.00**	0.011	-39.17			
6.00	0.196	-14.15	**40.00**	0.033	-29.63	**86.00**	0.011	-39.17			
6.25	0.190	-14.45	**41.00**	0.040	-27.96	**87.00**	0.010	-40.00			