

TECHNICAL EXHIBIT
AMENDMENT TO
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION WGNM-DT
MACON, GEORGIA

August 5, 2003

CH 45	1000 KW (MAX-DA)	223 M
-------	------------------	-------

TECHNICAL EXHIBIT
AMENDMENT TO
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION WGNM-DT
MACON, GEORGIA
CH 45 1000 KW (MAX-DA) 223 M

Table of Contents

Engineering Statement

Figure 1	Proposed Antenna and Supporting Structure
Figure 2	Antenna Data
Figure 3	Predicted Coverage Contours
Figure 4	Allocation Study
Figure 5	FM and TV Stations Within 16 kilometers

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION WGNM-DT
MACON, GEORGIA
CH 45 1000 KW (MAX-DA) 223 M

Technical Narrative

This Technical Exhibit supports an amendment to the pending application for modification of construction permit for the digital operation of station WGNM(TV), on analog channel 64 at Macon, Georgia. Specifically, this amendment will modify the WGNM-DT application for construction permit (BPCDT-19991029AFL), by reducing the antenna radiation center height above average terrain (HAAT) and increasing the maximum directional effective radiated power (ERP). No other changes are proposed.

Station WGNM-DT currently has a pending application for operation on channel 45 with a directional antenna maximum ERP of 750 kilowatts and an HAAT of 242 meters. It is proposed to relocate and side mount the WGNM-DT antenna 19 meters lower on the tower. It is proposed to increase the maximum ERP to 1000 kilowatts and decrease the HAAT to 223 meters.

The coordinates of the existing site are N 32° 45' 51" W 83° 33' 32". An Andrew ATW26HS3-HSC3-45S horizontally polarized antenna will be side-mounted on the existing 194.2 meter (637 foot tower/antenna structure). The main lobe of the antenna will be oriented at 325° true.

Figure 1 is a tower sketch showing the location of the proposed WGNM-DT antenna system. Notification to the FAA is not necessary, as there is no proposed change in the overall height of the existing structure. The FCC Tower Registration number for the existing structure is 1045776.

Figure 2 provides the antenna data for the proposed Andrew ATW26HS3-HSC3-45S directional antenna system. A graph and tabulation of both the horizontal and vertical relative field patterns are included.

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. A tabulation of known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed DTV site is attached as Figure 5. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems which are a result of its proposed DTV operation.

The proposed transmitter site is more than 990 kilometers from the closest point of the Canadian border. The proposed DTV site is more than 1280 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Power Springs, Georgia, approximately 163 kilometers to the northwest. The proposed DTV site is outside the National Radio Quiet Zone (VA/WV), the closest point being more than 590 kilometers to the northeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is approximately 2096 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at Green Bank, West Virginia, more than

700 kilometers to the northeast. These separations are sufficient to not be a concern for coordination purposes.

Figure 3 is a map showing the predicted 41 dBu f(50,90) and 48 dBu f(50,90) contours for the proposed WGNM-DT operation. The extent of the contours has been calculated using the normal FCC prediction method and employing the N.G.D.C. 30-second terrain database. The Macon city limits were derived from information contained in the 2000 U.S. Census for Georgia.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).¹ Interference calculations for the proposed WGNM-DT operation are summarized below.

Protected NTSC/DTV/Class A Station	FCC Service Population	Proposed Interference Population
WPBA(TV), Ch. 30, Atlanta, GA	No Interference Caused	
WDMA-LP, Ch. 31, Macon, GA	No Interference Caused	
W55CR, Ch. 38, Atlanta, GA	No Interference Caused	
WLTZ(TV), Ch. 38, Columbus, GA	No Interference Caused	
W38CU, Ch. 38, Roswell, GA	No Interference Caused	
W51AR, Ch. 38, Tifton, GA	No Interference Caused	
W38CU, Ch. 38, Atlanta, GA	No Interference Caused	
WMGT(TV), Ch. 41, Macon, GA	No Interference Caused No Interference Caused	
CP		
Licensed		

¹ The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. An Sun based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

WGIQ-DT, Ch. 44, Louisville, AL CP MOD Allotment	No Interference Caused No Interference Caused	
WHSB(TV), Ch. 44, Monroe, GA Application	3,034,653	159 (0.01%)
WHSB-DT, Ch. 44, Monroe, GA Allotment CP	No Interference Caused No Interference Caused	
WVAG(TV), Ch. 44, Valdosta, GA Licensed	No Interference Caused	
NEW(TV), Ch. 44, Aiken, SC Application	No Interference Caused	
WNAL-DT, Ch. 45, Gadsden, AL Allotment	595,071	21 (0.00%)
WPXH-DT, Ch. 45, Gadsden, AL Licensed	No Interference Caused	
WGIQ-DT, Ch. 44, Louisville, AL Application	No Interference Caused	
WMCF-TV, Ch. 45, Montgomery, AL Licensed	No Interference Caused	
WVUP-CA, Ch. 45, Tallahassee, FL	No Interference Caused	
WASV-TV, Ch. 45, Asheville, NC CP Allotment	1,370,807	132 (0.01%) No Interference Caused
WJPM-DT, Ch. 45, Florence, SC Allotment	No Interference Caused	
WTCI, Ch. 45, Chattanooga, TN	No Interference Caused	
WGCL-TV, Ch. 46, Atlanta, GA	No Interference Caused	
WVAN-DT, Ch. 46, Savannah, GA	No Interference Caused	


From the above, it is apparent that the proposed WGNM-DT operation on channel 45 complies with the FCC's interference standard towards all authorized analog and DTV assignments.

Consideration has been given to the RF emission rules whose implementation date was October 15, 1997. The vertical relative field pattern and tabulation for the proposed antenna are shown on Figure 2. Based on a conservative relative field factor of 0.1, the proposed power density at 2 meters above ground at the tower base will be 0.0101 mW/cm², which is less than 5% of the recommended limit of 0.44 mW/cm² for channel

45, applicable to general population/uncontrolled exposure areas. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the Commission's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a proposed 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 operation appears to be otherwise categorically excluded from environmental processing.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

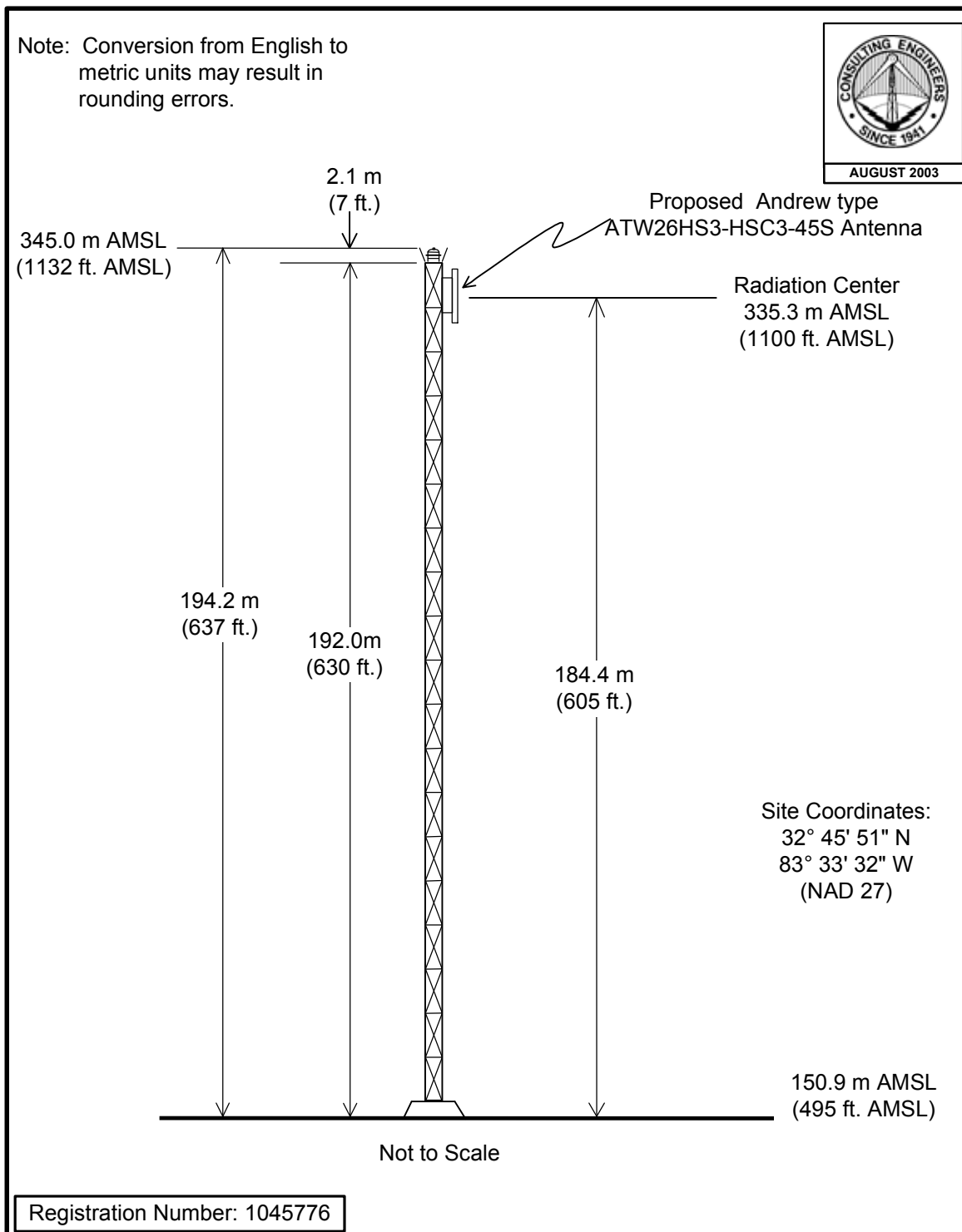


Jerome J. Manarchuck

du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237

August 5, 2003

Figure 1



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION WGNM-DT

MACON, GEORGIA

CH 45 1000 KW (MAX-DA) 223 M

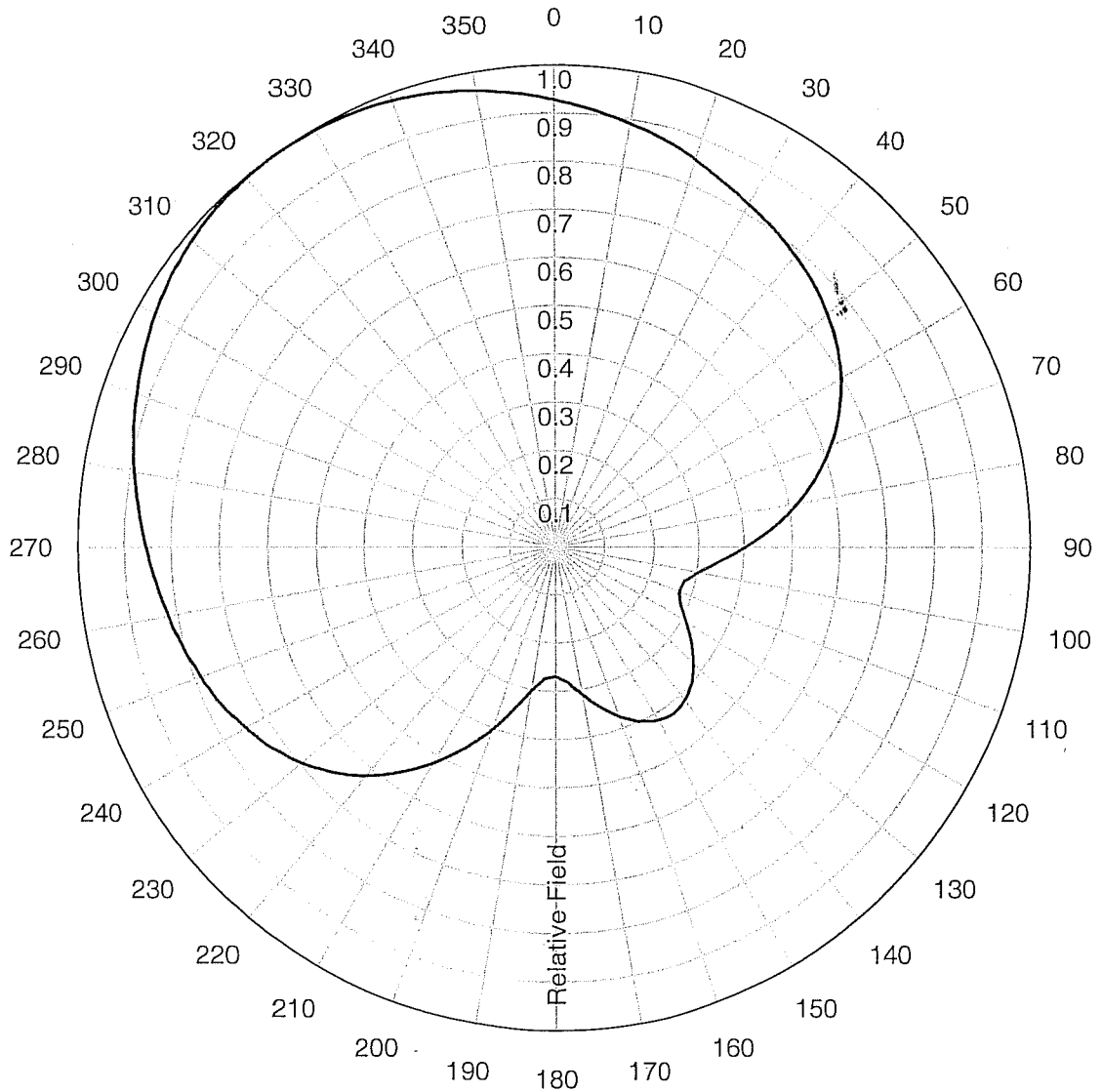
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



ANDREW

AZIMUTH PATTERN

Type:	ATW-C3	
	Numeric	dBd
Directivity:	2.00	3.01
Peak(s) at:		
Polarization:	Horizontal	
Channel:	45	
Location:		
Note:		



ANDREW

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



ANDREW®

**AZIMUTH PATTERN
FCC FILING FORMAT**

Type: ATW-C3
Polarization: Horizontal

Angle	Field	ERP (kW)	ERP (dBk)
0	0.928	861.184	29.351
10	0.891	793.881	28.998
20	0.854	729.316	28.629
30	0.820	672.400	28.276
40	0.787	619.369	27.919
50	0.749	561.001	27.490
60	0.696	484.416	26.852
70	0.618	381.924	25.820
80	0.517	267.289	24.270
90	0.403	162.409	22.106
100	0.303	91.809	19.629
110	0.270	72.900	18.627
120	0.311	96.721	19.855
130	0.373	139.129	21.434
140	0.414	171.396	22.340
150	0.414	171.396	22.340
160	0.374	139.876	21.457
170	0.311	96.721	19.855
180	0.270	72.900	18.627
190	0.303	91.809	19.629
200	0.402	161.604	22.085
210	0.517	267.289	24.270
220	0.618	381.924	25.820
230	0.696	484.416	26.852
240	0.748	559.504	27.478
250	0.787	619.369	27.919
260	0.820	672.400	28.276
270	0.854	729.316	28.629
280	0.891	793.881	28.998
290	0.927	859.329	29.342
300	0.961	923.521	29.654
310	0.985	970.225	29.869
320	0.998	996.004	29.983
330	0.998	996.004	29.983
340	0.985	970.225	29.869
350	0.961	923.521	29.654



ANDREW®

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

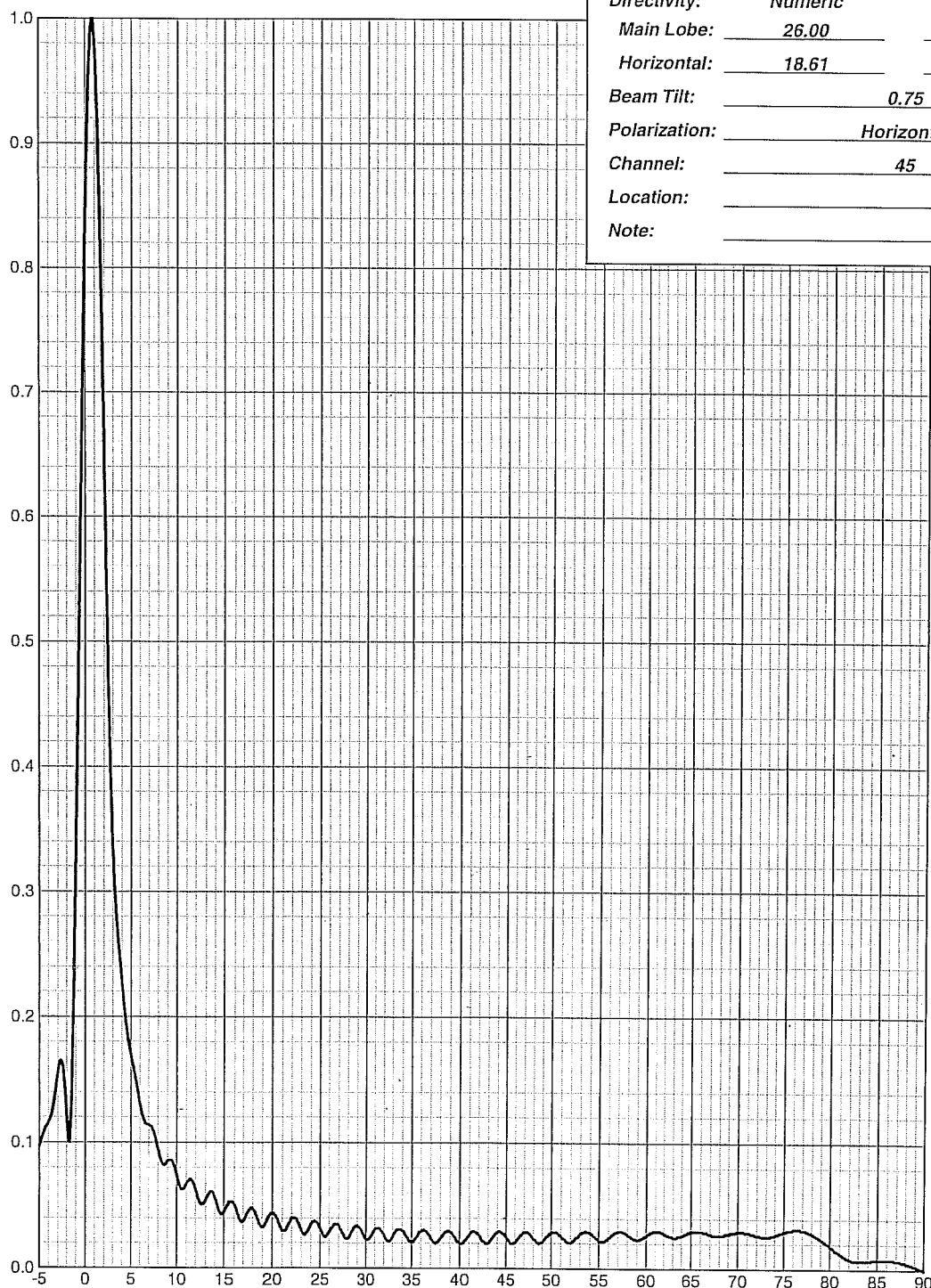


ANDREW®

ELEVATION PATTERN

Type:	ATW26HS3H	
Directivity:	Numeric	dBd
Main Lobe:	26.00	14.15
Horizontal:	18.61	12.70
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	45	
Location:		
Note:		

Relative Field



ANDREW®

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

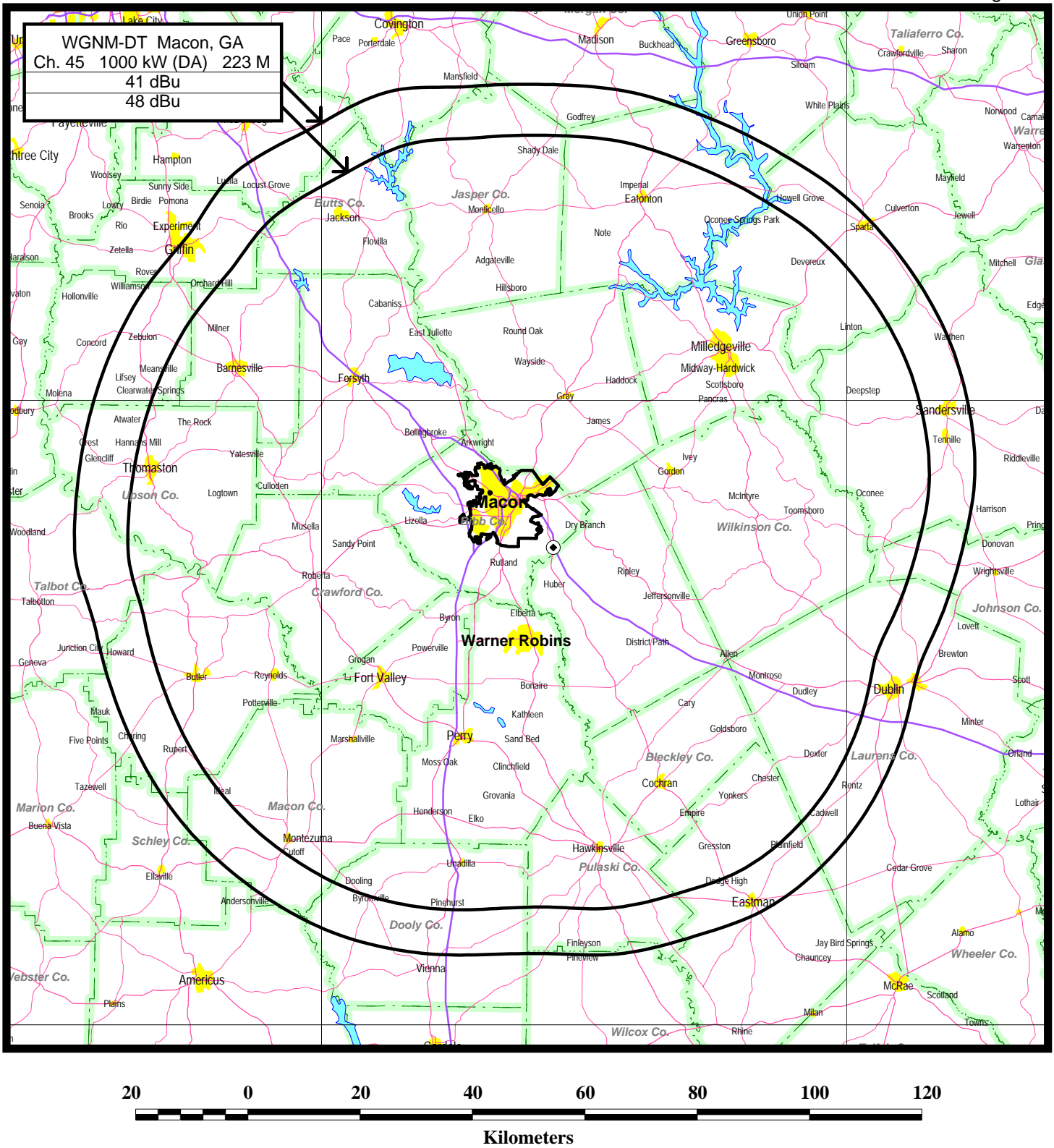
**ANDREW®****ELEVATION TABULATED DATA**Type: ATW26HS3HPolarization: Horizontal

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.097	-20.26	6.50	0.117	-18.64	42.00	0.027	-31.37	88.00	0.005	-46.02
-4.75	0.103	-19.74	6.75	0.115	-18.82	43.00	0.020	-33.98	89.00	0.003	-50.46
-4.50	0.108	-19.33	7.00	0.114	-18.86	44.00	0.029	-30.75	90.00	0.000	0.00
-4.25	0.113	-18.98	7.25	0.113	-18.98	45.00	0.025	-32.04			
-4.00	0.116	-18.71	7.50	0.109	-19.25	46.00	0.021	-33.56			
-3.75	0.120	-18.42	7.75	0.102	-19.83	47.00	0.029	-30.75			
-3.50	0.128	-17.86	8.00	0.094	-20.54	48.00	0.024	-32.40			
-3.25	0.141	-17.02	8.25	0.087	-21.21	49.00	0.021	-33.56			
-3.00	0.155	-16.19	8.50	0.083	-21.62	50.00	0.029	-30.75			
-2.75	0.164	-15.70	8.75	0.083	-21.67	51.00	0.026	-31.70			
-2.50	0.164	-15.70	9.00	0.085	-21.41	52.00	0.021	-33.56			
-2.25	0.148	-16.57	9.25	0.086	-21.31	53.00	0.028	-31.06			
-2.00	0.121	-18.34	9.50	0.085	-21.41	54.00	0.029	-30.75			
-1.75	0.101	-19.96	9.75	0.081	-21.83	55.00	0.022	-33.15			
-1.50	0.132	-17.59	10.00	0.074	-22.62	56.00	0.025	-32.04			
-1.25	0.223	-13.05	11.00	0.067	-23.48	57.00	0.030	-30.46			
-1.00	0.342	-9.32	12.00	0.063	-24.01	58.00	0.027	-31.37			
-0.75	0.475	-6.47	13.00	0.055	-25.19	59.00	0.023	-32.77			
-0.50	0.610	-4.29	14.00	0.056	-25.04	60.00	0.027	-31.37			
-0.25	0.736	-2.66	15.00	0.045	-26.94	61.00	0.030	-30.46			
0.00	0.846	-1.45	16.00	0.051	-25.85	62.00	0.028	-31.06			
0.25	0.929	-0.64	17.00	0.038	-28.40	63.00	0.025	-32.04			
0.50	0.982	-0.16	18.00	0.047	-26.56	64.00	0.027	-31.37			
0.75	1.000	0.00	19.00	0.033	-29.63	65.00	0.030	-30.46			
1.00	0.984	-0.14	20.00	0.044	-27.13	66.00	0.030	-30.46			
1.25	0.934	-0.59	21.00	0.030	-30.46	67.00	0.028	-31.06			
1.50	0.860	-1.31	22.00	0.040	-27.96	68.00	0.027	-31.37			
1.75	0.766	-2.32	23.00	0.030	-30.46	69.00	0.028	-31.06			
2.00	0.663	-3.57	24.00	0.035	-29.12	70.00	0.030	-30.46			
2.25	0.560	-5.04	25.00	0.032	-29.90	71.00	0.029	-30.75			
2.50	0.466	-6.63	26.00	0.029	-30.75	72.00	0.027	-31.37			
2.75	0.390	-8.18	27.00	0.034	-29.37	73.00	0.026	-31.70			
3.00	0.333	-9.55	28.00	0.024	-32.40	74.00	0.027	-31.37			
3.25	0.294	-10.62	29.00	0.034	-29.37	75.00	0.030	-30.46			
3.50	0.268	-11.44	30.00	0.023	-32.77	76.00	0.032	-29.90			
3.75	0.247	-12.15	31.00	0.031	-30.17	77.00	0.031	-30.17			
4.00	0.227	-12.88	32.00	0.027	-31.37	78.00	0.028	-31.06			
4.25	0.208	-13.62	33.00	0.025	-32.04	79.00	0.024	-32.40			
4.50	0.192	-14.33	34.00	0.030	-30.46	80.00	0.018	-34.89			
4.75	0.179	-14.94	35.00	0.021	-33.56	81.00	0.013	-37.72			
5.00	0.169	-15.44	36.00	0.030	-30.46	82.00	0.008	-41.94			
5.25	0.161	-15.89	37.00	0.024	-32.40	83.00	0.007	-43.10			
5.50	0.151	-16.42	38.00	0.024	-32.40	84.00	0.007	-43.10			
5.75	0.142	-16.95	39.00	0.029	-30.75	85.00	0.008	-41.94			
6.00	0.131	-17.65	40.00	0.020	-33.98	86.00	0.008	-41.94			
6.25	0.122	-18.24	41.00	0.027	-31.37	87.00	0.007	-43.10			



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

Figure 3



PREDICTED COVERAGE CONTOURS

STATION WGNM-DT
 MACON, GEORGIA
 CH 45 1000 KW (MAX-DA) 223 M

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

du Treil, Lundin, and Rackley

Coordinates: 32-45-51 83-33-32 Frequency Range: 200-300 Range: 16

Date: 8/5/2003

CDBS FM Inquiry List

Page: 1

Rec Type	Fac Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bear	Dist. (km)
C	76358	WBKG	LIC	205	FM	C3	MACON	GA	D	32-45-51	083-33-32	5.000	153.0	264.0	0.0	0.0
C	46996	WDEN-F	LIC	256	FM	C1	MACON	GA	N	32-45-51	083-33-32	100.000	177.0	290.0	0.0	0.0
C	52551	WPEZ	LIC	229	FM	C1	JEFFERSONVILL	GA	N	32-45-12	083-33-46	100.000	207.0	321.0	196.8	1.3
C	54672	WMKS	LIC	222	FM	A	MACON	GA	N	32-46-26	083-38-15	3.000	100.0	211.0	278.4	7.4
C	25387	WFXM	APP	296	FM	A	GORDON	GA	N	32-50-59	083-28-38	3.000	143.0	276.0	38.7	12.2
C	46996	WDEN-F	APP	256	FM	C1	MACON	GA	N	32-53-48	083-32-05	100.000	185.0	318.5	8.7	14.9
C	68679	WAYS	LIC	288	FM	C3	MACON	GA	D	32-53-48	083-32-05	6.100	201.0	339.0	8.7	14.9
C	65043	WRBV	LIC	269	FM	A	WARNER	GA	N	32-38-19	083-38-33	4.900	108.0	212.0	209.3	16.0

du Treil, Lundin, and Rackley

Coordinates: 32-45-51 83-33-32 Channel Range: 2-100 Range: 16

Date: 8/5/2003

CDBS Tv Inquiry List

Page: 1

Rec Type	Facility Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bearing	Dist. (km)
C	127341	NEW	ADD	18	DM		WARNER	GA	D	32-45-51	083-33-32	498.820	192	308	0	0
C	135937	WGNM-T	GRA	45	DR		MACON	GA	N	32-45-51	083-33-32	1000.00	223	335	0	0
C	24618	WGNM	APP	45	DT		MACON	GA	D	32-45-51	083-33-32	750.000	242	354	0	0
C	24618	WGNM	LIC	64	TV		MACON	GA	D	32-45-51	083-33-32	1150.00	223	335	0	0
C	122343	WMAZ-T	GRA	4	DR		MACON	GA	N	32-45-10	083-33-32	5.000	238	352	179.0	1.26
C	43847	WMGT-T	CP	40	DT		MACON	GA	N	32-45-12	083-33-46	48.000	237	351	196.8	1.26
C	46991	WMAZ-T	CP	4	DT		MACON	GA	N	32-45-10	083-33-32	14.000	180.8	295	179.0	1.26
C	43847	WMGT-T	CP	41	TV		MACON	GA	N	32-45-12	083-33-46	1000.00	237	351	196.8	1.26
C	46991	WMAZ-T	LIC	13	TV		MACON	GA	N	32-45-10	083-33-32	316.000	238	352	179.0	1.26
C	43847	WMGT-T	LIC	41	TV		MACON	GA	N	32-45-12	083-33-46	1050.00	241	351	196.8	1.26
C	54728	WPGA-T	CP	32	DT		PERRY	GA	D	32-45-09	083-33-35	18.000	185.1	302	183.5	1.3
C	54728	WPGA-T	LIC	58	TV		PERRY	GA		32-45-09	083-33-35	1290.00	247	361	183.5	1.3
C	58262	WGXA	CP	16	DT		MACON	GA	D	32-44-58	083-33-35	1000.00	226	343	182.8	1.63
C	58262	WGXA	LIC	24	TV		MACON	GA	N	32-44-58	083-33-35	1290.00	244	358	182.8	1.63
C	87140	970331	APP	35	TV		WARNER	GA	D	32-41-16	083-26-41	2570.00	160	277	128.4	13.65
C	21150	WDMA-L	CP	31	CA		MACON	GA	D	32-50-31	083-40-19	32.000		311	309.3	13.66