

TECHNICAL EXHIBIT
AMENDMENT TO PENDING
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION WNCF-DT
MONTGOMERY, ALABAMA
CH 51 58 KW (MAX-DA) 246 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station WNCF-DT which has a paired NTSC (analog) facility on channel 32 at Montgomery, Alabama. This application requests a construction permit (CP) for digital television operation on channel 51 at Montgomery. The Federal Communications Commission (FCC) assigned channel 51 as WNCF-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 284.8 kilowatts with a directional antenna envelope and an antenna height above average terrain (HAAT) of 545 meters for the DTV allotment.

Proposed Facilities

The herein proposed DTV transmitter site, located within the city of Montgomery, is located 38 kilometers from its existing paired NTSC facility. The proposed WNCF-DT antenna will be side-mounted on the existing tower located adjacent to its main studio. It is proposed to operate with a Dielectric TLP-B antenna with a maximum average effective radiated power of 58 kilowatts. The

antenna height above average terrain for the channel 51 DTV operation will be 246 meters. Since the proposed WNCF-DT facility is located further than 5 kilometers from the WNCF-DT reference allocation site, an allocation study was completed to ensure no prohibited interference would occur.

The proposed DTV transmitter site will be located at the existing studio tower. Therefore, the proposed site location is:

32° 22' 04" North Latitude
86° 15' 42" 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.

Figure 4 is the horizontal and vertical plane radiation patterns for the proposed DTV antenna system.

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 Montgomery city limits were derived from information contained in the 1990 U.S. Census of Population and Housing.

Frequency Allocation

The proposed WNCF-DT facility will not cause interference in excess of the maximum permitted to any other station or allotment. Figure 5 is a tabulation of the frequency allotment calculations performed pursuant to OET Bulletin No 69.

Radiofrequency Electromagnetic Field Exposure

The proposed WNCF-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 WNCF-DT antenna is located 224 meters above ground level. The maximum effective radiated power is 58 kilowatts. A relative field value of 0.2 is assumed for the antenna's downward radiation. This 0.2 value is below the maximum downward radiation from the proposed antenna for all depression angles greater than 10° (see Sheet 4 of Figure 4). The calculated power density at a point 2 meters above ground level is 0.002 mW/cm². This is less than 5 percent of the Commission's recommended limit of 0.46 mW/cm² for channel 51 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

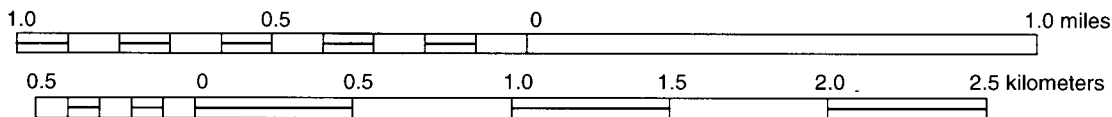
out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WNCF-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

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April 17, 2001

Figure 1

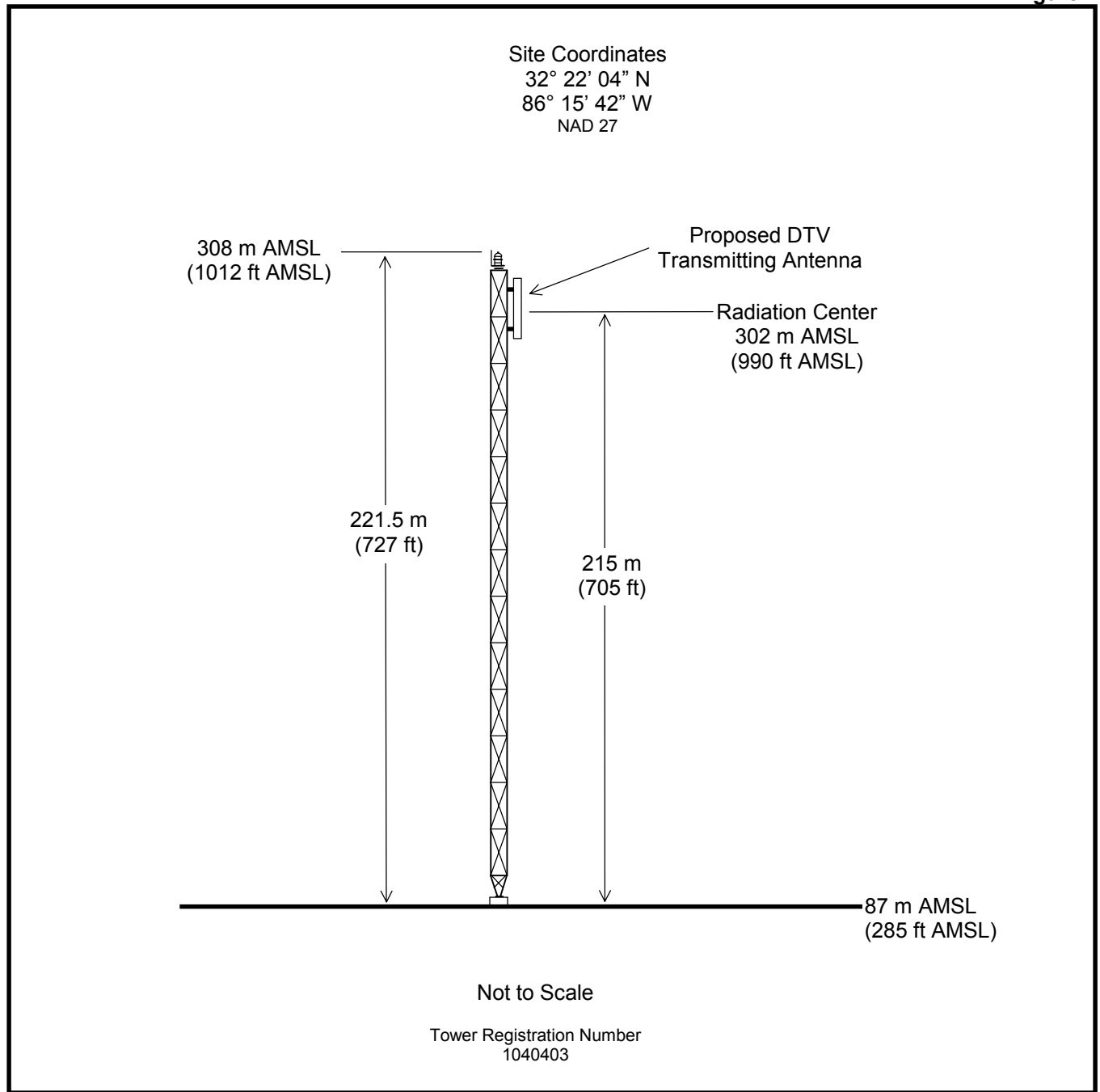


PROPOSED TRANSMITTER LOCATION

TELEVISION STATION WNCN-DT
MONTGOMERY, ALABAMA

CH 51 58 KW (MAX-DA) 246 M

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



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

TELEVISION STATION WNCN-DT
 MONTGOMERY, ALABAMA
 CH 51 58 KW (MAX-DA) 246 M

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

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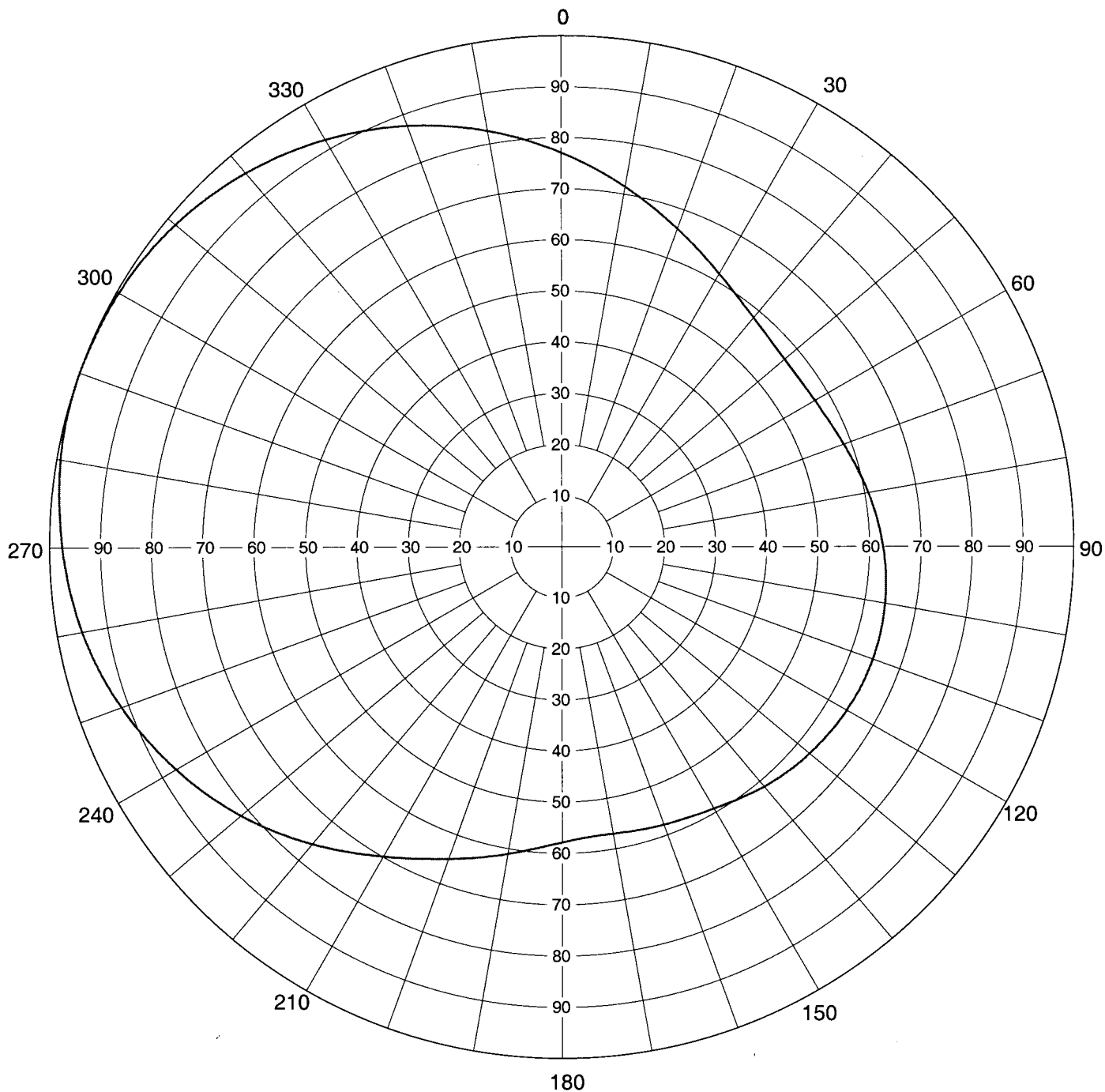
AZIMUTH PATTERN

RMS Gain at Main Lobe
Calculated / Measured

1.70 (2.30 dB)
Calculated

Frequency
Drawing #

695 MHz
TLP-B



PROPOSED DIRECTIONAL ANTENNA PATTERN

HORIZONTAL PLANE

TELEVISION STATION WNCF-DT

MONTGOMERY, ALABAMA

CH 51 58 KW (MAX-DA) 246 M

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

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-B**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.771	45	0.574	90	0.627	135	0.623	180	0.579	225	0.789	270	0.975	315	0.970
1	0.765	46	0.573	91	0.628	136	0.621	181	0.581	226	0.795	271	0.977	316	0.967
2	0.759	47	0.571	92	0.630	137	0.619	182	0.584	227	0.801	272	0.979	317	0.964
3	0.754	48	0.570	93	0.632	138	0.618	183	0.587	228	0.806	273	0.980	318	0.961
4	0.748	49	0.569	94	0.633	139	0.616	184	0.590	229	0.812	274	0.982	319	0.958
5	0.742	50	0.569	95	0.634	140	0.613	185	0.593	230	0.817	275	0.984	320	0.955
6	0.737	51	0.568	96	0.636	141	0.611	186	0.596	231	0.823	276	0.986	321	0.952
7	0.731	52	0.568	97	0.637	142	0.609	187	0.600	232	0.828	277	0.988	322	0.949
8	0.726	53	0.568	98	0.638	143	0.607	188	0.603	233	0.834	278	0.990	323	0.946
9	0.720	54	0.568	99	0.639	144	0.605	189	0.607	234	0.839	279	0.991	324	0.942
10	0.714	55	0.568	100	0.640	145	0.602	190	0.610	235	0.844	280	0.993	325	0.939
11	0.709	56	0.568	101	0.641	146	0.600	191	0.614	236	0.849	281	0.994	326	0.935
12	0.703	57	0.569	102	0.642	147	0.598	192	0.618	237	0.854	282	0.995	327	0.932
13	0.698	58	0.569	103	0.643	148	0.596	193	0.622	238	0.859	283	0.996	328	0.928
14	0.692	59	0.570	104	0.643	149	0.594	194	0.625	239	0.864	284	0.997	329	0.924
15	0.687	60	0.571	105	0.644	150	0.592	195	0.629	240	0.869	285	0.998	330	0.920
16	0.682	61	0.572	106	0.644	151	0.590	196	0.633	241	0.874	286	0.999	331	0.916
17	0.676	62	0.573	107	0.645	152	0.589	197	0.637	242	0.879	287	0.999	332	0.912
18	0.671	63	0.574	108	0.645	153	0.587	198	0.641	243	0.883	288	0.999	333	0.908
19	0.666	64	0.575	109	0.645	154	0.586	199	0.646	244	0.888	289	1.000	334	0.904
20	0.661	65	0.577	110	0.645	155	0.584	200	0.650	245	0.893	290	1.000	335	0.899
21	0.656	66	0.578	111	0.645	156	0.583	201	0.654	246	0.897	291	1.000	336	0.895
22	0.651	67	0.580	112	0.645	157	0.582	202	0.659	247	0.902	292	0.999	337	0.890
23	0.646	68	0.582	113	0.645	158	0.581	203	0.663	248	0.906	293	0.999	338	0.886
24	0.641	69	0.584	114	0.645	159	0.580	204	0.668	249	0.910	294	0.999	339	0.881
25	0.637	70	0.586	115	0.644	160	0.579	205	0.673	250	0.914	295	0.998	340	0.876
26	0.632	71	0.588	116	0.644	161	0.578	206	0.678	251	0.919	296	0.998	341	0.872
27	0.628	72	0.590	117	0.643	162	0.577	207	0.683	252	0.923	297	0.998	342	0.867
28	0.624	73	0.592	118	0.643	163	0.576	208	0.688	253	0.927	298	0.997	343	0.862
29	0.619	74	0.594	119	0.642	164	0.575	209	0.694	254	0.930	299	0.996	344	0.857
30	0.615	75	0.596	120	0.641	165	0.574	210	0.699	255	0.934	300	0.996	345	0.852
31	0.612	76	0.598	121	0.640	166	0.573	211	0.705	256	0.938	301	0.995	346	0.847
32	0.608	77	0.600	122	0.640	167	0.572	212	0.711	257	0.941	302	0.994	347	0.842
33	0.604	78	0.603	123	0.639	168	0.572	213	0.716	258	0.944	303	0.993	348	0.836
34	0.601	79	0.605	124	0.638	169	0.571	214	0.722	259	0.948	304	0.992	349	0.831
35	0.597	80	0.607	125	0.637	170	0.570	215	0.728	260	0.951	305	0.990	350	0.826
36	0.594	81	0.609	126	0.636	171	0.570	216	0.734	261	0.954	306	0.989	351	0.820
37	0.591	82	0.611	127	0.634	172	0.570	217	0.740	262	0.956	307	0.987	352	0.815
38	0.589	83	0.614	128	0.633	173	0.570	218	0.747	263	0.959	308	0.985	353	0.810
39	0.586	84	0.616	129	0.632	174	0.570	219	0.753	264	0.962	309	0.983	354	0.804
40	0.583	85	0.618	130	0.631	175	0.571	220	0.759	265	0.964	310	0.981	355	0.799
41	0.581	86	0.619	131	0.629	176	0.572	221	0.765	266	0.966	311	0.979	356	0.793
42	0.579	87	0.621	132	0.628	177	0.573	222	0.771	267	0.968	312	0.977	357	0.787
43	0.577	88	0.623	133	0.626	178	0.575	223	0.777	268	0.971	313	0.975	358	0.782
44	0.575	89	0.625	134	0.625	179	0.577	224	0.783	269	0.973	314	0.972	359	0.776

PROPOSED DIRECTIONAL ANTENNA TABULATION

HORIZONTAL PLANE

TELEVISION STATION WNCF-DT

MONTGOMERY, ALABAMA

CH 51 58 KW (MAX-DA) 246 M

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

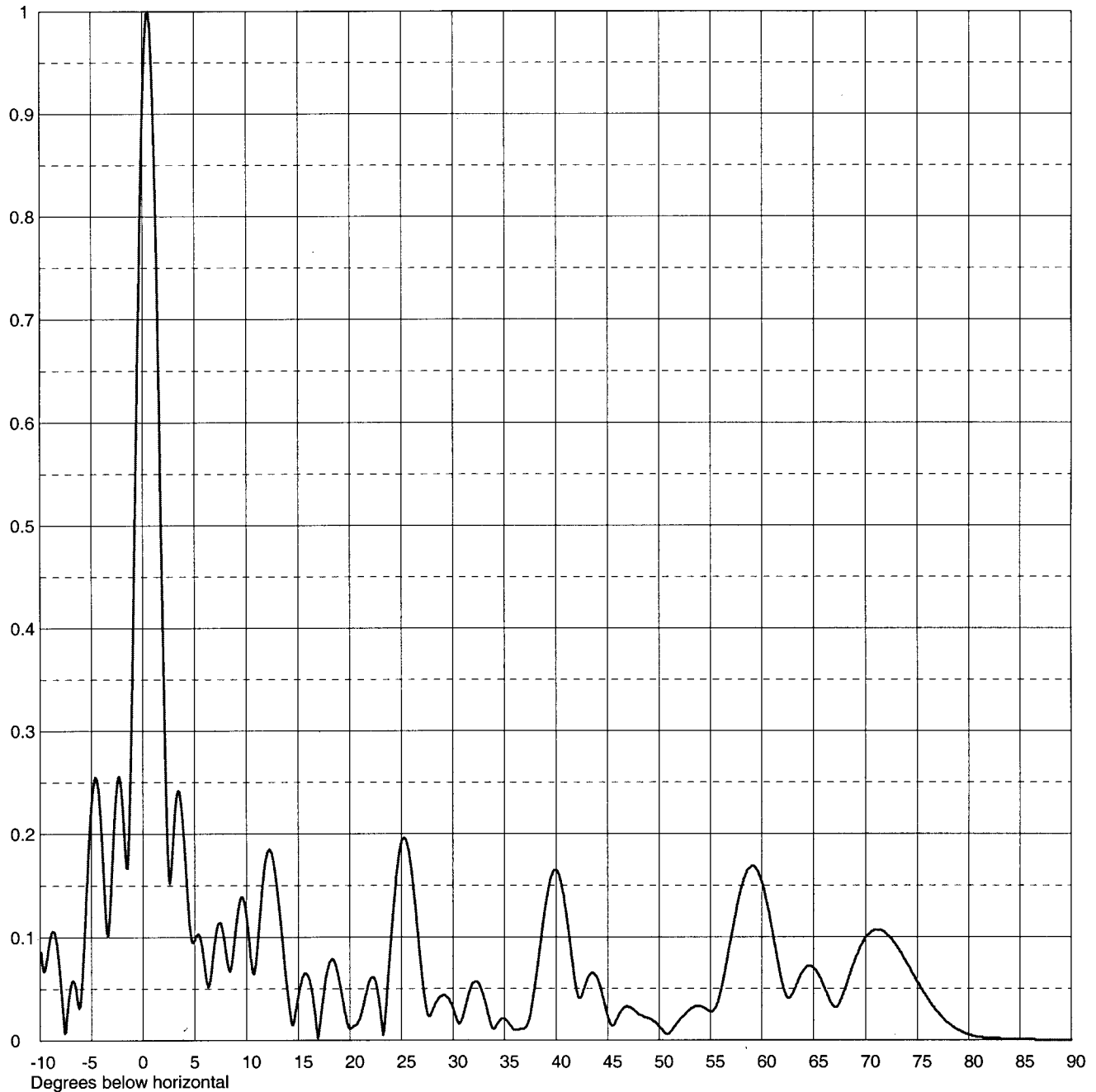
ELEVATION PATTERN

RMS Gain at Main Lobe
RMS Gain at Horizontal
Calculated / Measured

23.0 (13.62 dB)
19.0 (12.79 dB)
Calculated

Beam Tilt
Frequency
Drawing #

0.50 Degrees
695.00 MHz
24L230050-90



PROPOSED DIRECTIONAL ANTENNA PATTERN VERTICAL PLANE

TELEVISION STATION WNCN-DT
MONTGOMERY, ALABAMA
CH 51 58 KW (MAX-DA) 246 M
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **24L230050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.098	2.4	0.178	10.6	0.066	30.5	0.017	51.0	0.007	71.5	0.107
-9.5	0.069	2.6	0.152	10.8	0.067	31.0	0.025	51.5	0.013	72.0	0.103
-9.0	0.100	2.8	0.173	11.0	0.084	31.5	0.044	52.0	0.020	72.5	0.098
-8.5	0.101	3.0	0.206	11.5	0.145	32.0	0.056	52.5	0.025	73.0	0.091
-8.0	0.057	3.2	0.232	12.0	0.182	32.5	0.055	53.0	0.030	73.5	0.083
-7.5	0.008	3.4	0.242	12.5	0.178	33.0	0.041	53.5	0.033	74.0	0.074
-7.0	0.053	3.6	0.236	13.0	0.142	33.5	0.022	54.0	0.033	74.5	0.065
-6.5	0.049	3.8	0.217	13.5	0.093	34.0	0.011	54.5	0.031	75.0	0.056
-6.0	0.043	4.0	0.189	14.0	0.044	34.5	0.019	55.0	0.028	75.5	0.048
-5.5	0.138	4.2	0.156	14.5	0.015	35.0	0.021	55.5	0.032	76.0	0.040
-5.0	0.227	4.4	0.125	15.0	0.043	35.5	0.015	56.0	0.048	76.5	0.033
-4.5	0.254	4.6	0.103	15.5	0.063	36.0	0.010	56.5	0.072	77.0	0.027
-4.0	0.196	4.8	0.095	16.0	0.061	36.5	0.011	57.0	0.099	77.5	0.021
-3.5	0.105	5.0	0.097	16.5	0.035	37.0	0.012	57.5	0.126	78.0	0.017
-3.0	0.165	5.2	0.102	17.0	0.007	37.5	0.026	58.0	0.148	78.5	0.013
-2.8	0.207	5.4	0.103	17.5	0.049	38.0	0.058	58.5	0.163	79.0	0.010
-2.6	0.239	5.6	0.097	18.0	0.075	38.5	0.097	59.0	0.169	79.5	0.007
-2.4	0.255	5.8	0.085	18.5	0.076	39.0	0.133	59.5	0.165	80.0	0.005
-2.2	0.252	6.0	0.069	19.0	0.056	39.5	0.158	60.0	0.153	80.5	0.004
-2.0	0.230	6.2	0.055	19.5	0.028	40.0	0.165	60.5	0.132	81.0	0.003
-1.8	0.196	6.4	0.053	20.0	0.011	40.5	0.151	61.0	0.107	81.5	0.002
-1.6	0.167	6.6	0.065	20.5	0.014	41.0	0.120	61.5	0.079	82.0	0.002
-1.4	0.181	6.8	0.083	21.0	0.022	41.5	0.081	62.0	0.054	82.5	0.002
-1.2	0.252	7.0	0.099	21.5	0.043	42.0	0.047	62.5	0.041	83.0	0.002
-1.0	0.359	7.2	0.111	22.0	0.060	42.5	0.044	63.0	0.046	83.5	0.001
-0.8	0.481	7.4	0.114	22.5	0.056	43.0	0.059	63.5	0.058	84.0	0.001
-0.6	0.605	7.6	0.111	23.0	0.023	43.5	0.066	64.0	0.068	84.5	0.001
-0.4	0.723	7.8	0.101	23.5	0.034	44.0	0.060	64.5	0.072	85.0	0.001
-0.2	0.826	8.0	0.086	24.0	0.101	44.5	0.043	65.0	0.070	85.5	0.001
0.0	0.909	8.2	0.073	24.5	0.160	45.0	0.023	65.5	0.063	86.0	0.001
0.2	0.967	8.4	0.067	25.0	0.193	45.5	0.014	66.0	0.052	86.5	0.000
0.4	0.997	8.6	0.075	25.5	0.192	46.0	0.023	66.5	0.040	87.0	0.000
0.6	0.996	8.8	0.092	26.0	0.162	46.5	0.031	67.0	0.032	87.5	0.000
0.8	0.965	9.0	0.111	26.5	0.112	47.0	0.032	67.5	0.037	88.0	0.000
1.0	0.906	9.2	0.127	27.0	0.061	47.5	0.030	68.0	0.049	88.5	0.000
1.2	0.823	9.4	0.137	27.5	0.026	48.0	0.025	68.5	0.065	89.0	0.000
1.4	0.721	9.6	0.139	28.0	0.029	48.5	0.023	69.0	0.079	89.5	0.000
1.6	0.605	9.8	0.133	28.5	0.039	49.0	0.021	69.5	0.091	90.0	0.000
1.8	0.483	10.0	0.120	29.0	0.044	49.5	0.018	70.0	0.100		
2.0	0.363	10.2	0.102	29.5	0.041	50.0	0.013	70.5	0.105		
2.2	0.256	10.4	0.081	30.0	0.031	50.5	0.007	71.0	0.107		

PROPOSED DIRECTIONAL ANTENNA TABULATION VERTICAL PLANE

TELEVISION STATION WNCN-DT
MONTGOMERY, ALABAMA
CH 51 58 KW (MAX-DA) 246 M
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 5

TECHNICAL EXHIBIT
 AMENDMENT TO PENDING
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Summary of Allocation Analysis

Facility	Channel	TV or DTV?	Baseline Service Population (1990)	Permissible IX(%)	Net New IX Caused by Proposed (1990)	Percent of Baseline (%)
WBIF(TV) Marianna, FL	51	TV	353,200	2.0	0	0.00
WBRC-DT Birmingham, AL	50	DTV	1,598,000	2.0	-1,378	0.00
WSST-DT Cordele, GA	51	DTV	62,000	2.0	0	0.00
WVTM-DT Birmingham, AL	52	DTV	1,564,000	2.0	-200	0.00
WTLK-DT Rome, GA Allotment	51	DTV	3,421,000	2.0	-416	0.00
WTLK-DT Rome, GA Construction P.	51	DTV	3,421,000	2.0	-131	0.00