

TECHNICAL EXHIBIT
MINOR MODIFICATION OF CONSTRUCTION PERMIT
STATION WMC-DT (FACILITY ID 19184)
MEMPHIS, TENNESSEE

FEBRUARY 13, 2002

CH 52 394 KW 338 M

TECHNICAL EXHIBIT
MINOR MODIFICATION OF CONSTRUCTION PERMIT
STATION WMC-DT (FACILITY ID 19184)
MEMPHIS, TENNESSEE
CH 52 394 KW 338 M

Table of Contents

	Technical Narrative
Figure 1	Antenna and Supporting Structure
Figure 2	Vertical Antenna Pattern
Figure 3	Predicted F(50,90) Coverage Contours

TECHNICAL EXHIBIT
MINOR MODIFICATION OF CONSTRUCTION PERMIT
STATION WMC-DT (FACILITY ID 19184)
MEMPHIS, TENNESSEE
CH 52 394 KW 338 M

Technical Narrative

This Technical Exhibit was prepared on behalf of digital television station WMC-DT at Memphis, Tennessee, in support of an application for minor modification of construction permit. Station WMC-DT is authorized to operate on channel 52 with a non-directional antenna effective radiated power (ERP) of 790 kW and an antenna height above average terrain (HAAT) of 341 meters (BPCDT-19991025ADE). The proposed WMC-DT facility will operate with a non-directional ERP of 394 kW and an antenna HAAT of 338 meters.

Proposed Facilities

This application proposes only to reduce the non-directional ERP and modify the antenna HAAT by implementation of the 3-second terrain database. There will be no change in actual antenna location on the tower. The transmitter site coordinates remain: 35-16-33 N, 89-46-38 W). The FCC antenna structure registration number is 1057943. The proposed facilities (394 kW, 338 m) comply with Section 73.622(f)(8)(i) of the FCC rules concerning maximum allowable ERP and antenna height for DTV stations.

There are no AM broadcast stations located within 3.2 kilometers of the WMC-DT transmitter site. Since there will be no change in tower structure or antenna and the ERP is being reduced, no adverse impact is expected to any other surrounding station.

Furthermore, the applicant recognizes its responsibility to correct problems that may result from its proposed operation.

The transmitter site is beyond the 400 km coordination zones with Canada and Mexico. The closest FCC monitoring station is at Powder Springs, Georgia, more than 400 kilometers to the east-southeast. The closest point of the National Radio Quiet Zone (VA/WV) is more than 800 kilometers to the east-northeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,400 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at North Liberty Iowa, more than 700 kilometers to the north-northwest. These separations are sufficient to not be a concern for coordination purposes.

Allocation Considerations

Interference calculations have been made using the procedures outlined in the FCC's OET-69 bulletin, using a 2 kilometer grid spacing. The proposed WMC-DT operation does not cause excessive (greater than 2%, up to 10% total) calculated interference to any analog or DTV assignment. Below is the list of stations considered in the OET-69 analysis.

Stations Potentially Affected by Proposed WMC-DT						
Chan	Call	City/State	Bear (°T)	Dist (km)	Status	App. Ref. No.
48	KVTJ	JONESBORO AR	299	76.7	LIC	BLCT-19980706KH
50	WPXX-TV	MEMPHIS TN	206	7.9	CP MOD	BMPCT-19920501KI
51	WPXX-DT	MEMPHIS TN	206	7.9	CP	BPCDT-19990514KE
51	WFBI-DT	MEMPHIS TN	206	7.9	PLN	DTVPLN-DTVP1423
52	WVTM-DT	BIRMINGHAM AL	125	337.8	PLN	DTVPLN-DTVP1427
52	960920LN	TUSCUMBIA AL	111	182.5	APP	BPCT-19960920LN
52	NEW	EL DORADO AR	223	332.3	ADD	BPRM-20000717AFS
52	WVUT-DT	VINCENNES IN	28	427.2	PLN	DTVPLN-DTVP1438
52	KOLR-DT	SPRINGFIELD MO	308	357.0	PLN	DTVPLN-DTVP1442
52	NEW	ST. LOUIS MO	354	373.2	ADD	BPRM-19960725AAF
52	WJTV-DT	JACKSON MS	190	342.3	PLN	DTVPLN-DTVP1443
52	WCTE-DT	COKEVILLE TN	75	412.3	PLN	DTVPLN-DTVP1448
53	WHBQ-DT	MEMPHIS TN	209	12.8	PLN	DTVPLN-DTVP1466
56	961211KE	MEMPHIS TN	206	7.9	APP	BPET-19961211KE
56	961211KK	MEMPHIS TN	300	43.1	APP	BPET-19961211KK
56	961118KJ	MEMPHIS TN	206	7.9	APP	BPET-19961118KJ
56	961213KH	MEMPHIS TN	197	14.1	APP	BPET-19961213KH
56	970331LE	MEMPHIS TN	300	43.1	APP	BPET-19970331LE

From the above list of stations considered, the table below shows the calculated interference caused to each station. Only stations that are predicted to receive interference from the proposed WMC-DT operation are shown in the interference table.

Study Station	Baseline	Net Population Change/Interference
53 WHBQ-DT MEMPHIS TN (PLN)	1,343,097	6,827 (0.5%) New Interference

The proposed WMC-DT operation does not cause calculated interference to any other analog or DTV station. Therefore, it is believed the proposal complies with the FCC's "de minimis" interference policy.

With respect to Class A TV station protection, the proposal has been evaluated according to the requirements of Section 73.613 of the FCC Rules. The analysis reveals predicted overlap caused to station WBXP-CA on channel 44 at Memphis. OET-69 studies indicate that no new interference is predicted to be caused from the proposed WMC-DT ERP reduction to WBXP-CA. No other Class A stations are potentially affected.

Environmental Considerations

The proposed WMC-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 356.6 meters above ground level. The proposed non-directional ERP is 394 kW. A conservative relative field value of 0.1 was assumed for the calculation (see Figure 2B). Therefore, the "worst-case" calculated power density at a point 2 meters above ground level will be 0.0010 mW/cm^2 . This is less than 1% of the FCC's recommended limit of 0.47 mW/cm^2 for channel 52 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this will be a multi-user site, an agreement will control site access. 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 WMC-DT operation appears to be otherwise categorically excluded from environmental processing.

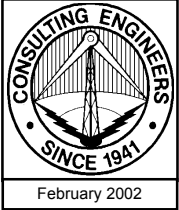


Jonathan N. Edwards

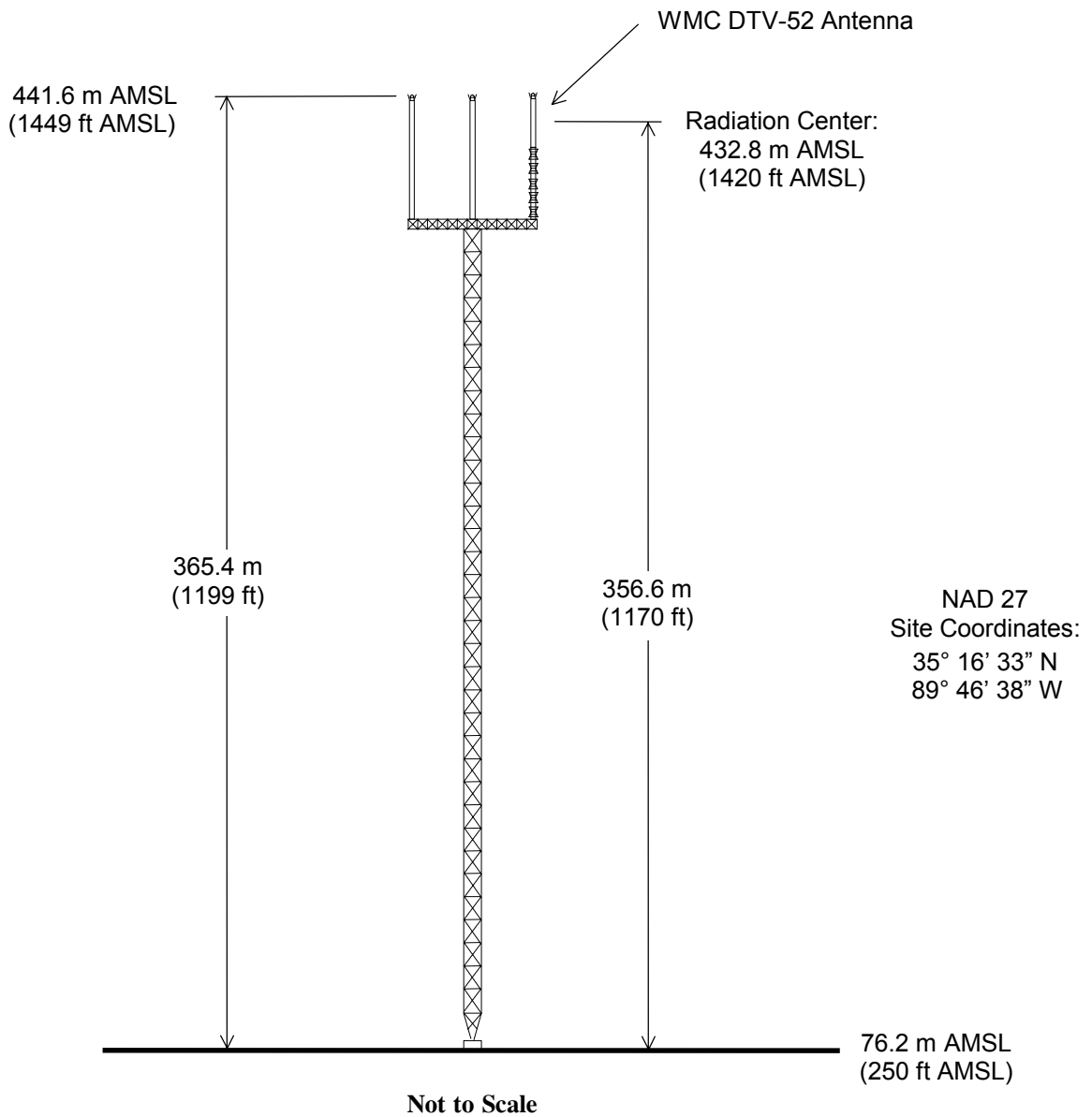
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
(941) 329-6000

February 13, 2002

Figure 1



Registration No. 1057943



ANTENNA AND SUPPORTING STRUCTURE

STATION WMC-DT

MEMPHIS, TENNESSEE

CH 52 394 KW 338 M

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

Figure 2A

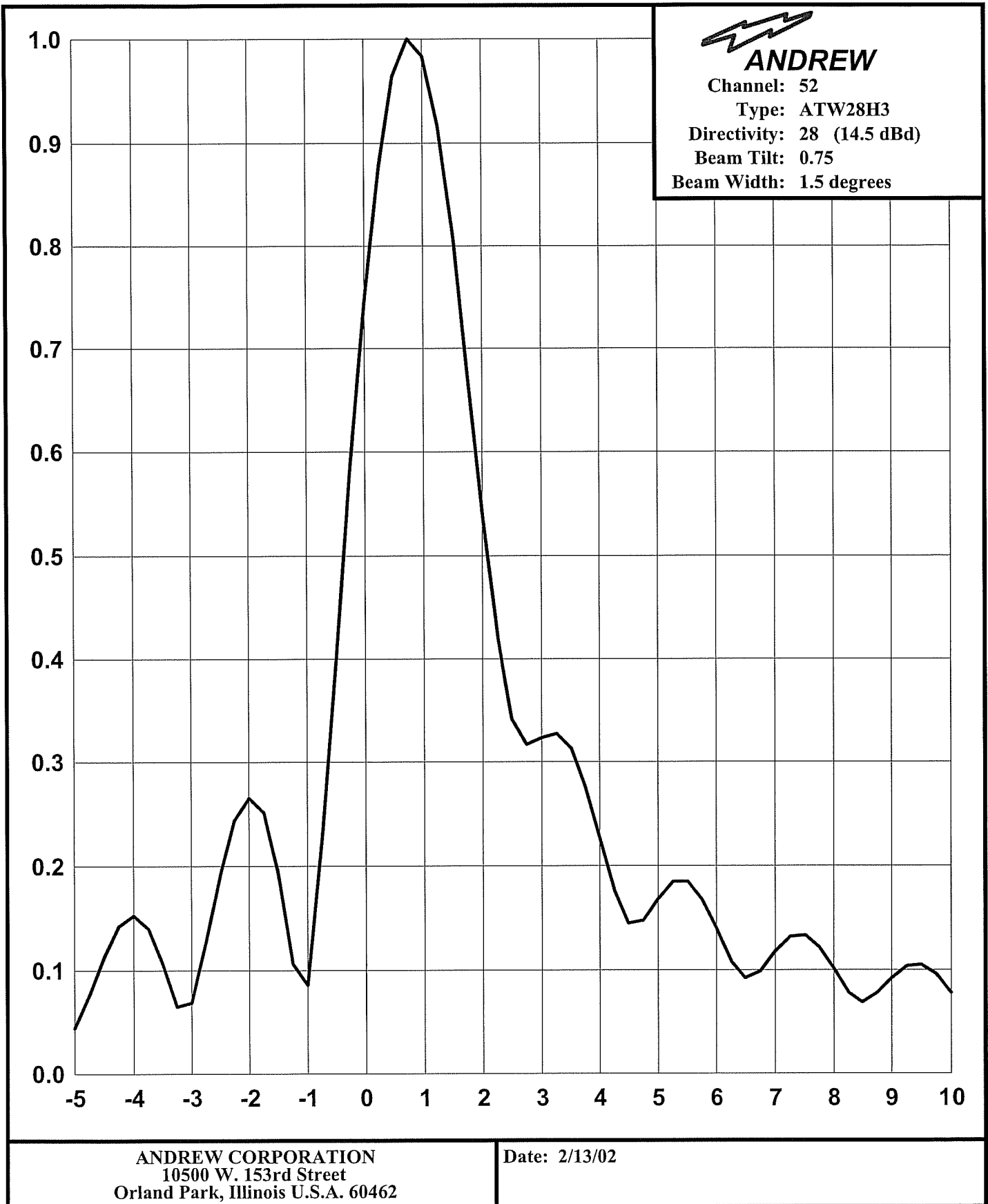


Figure 2B

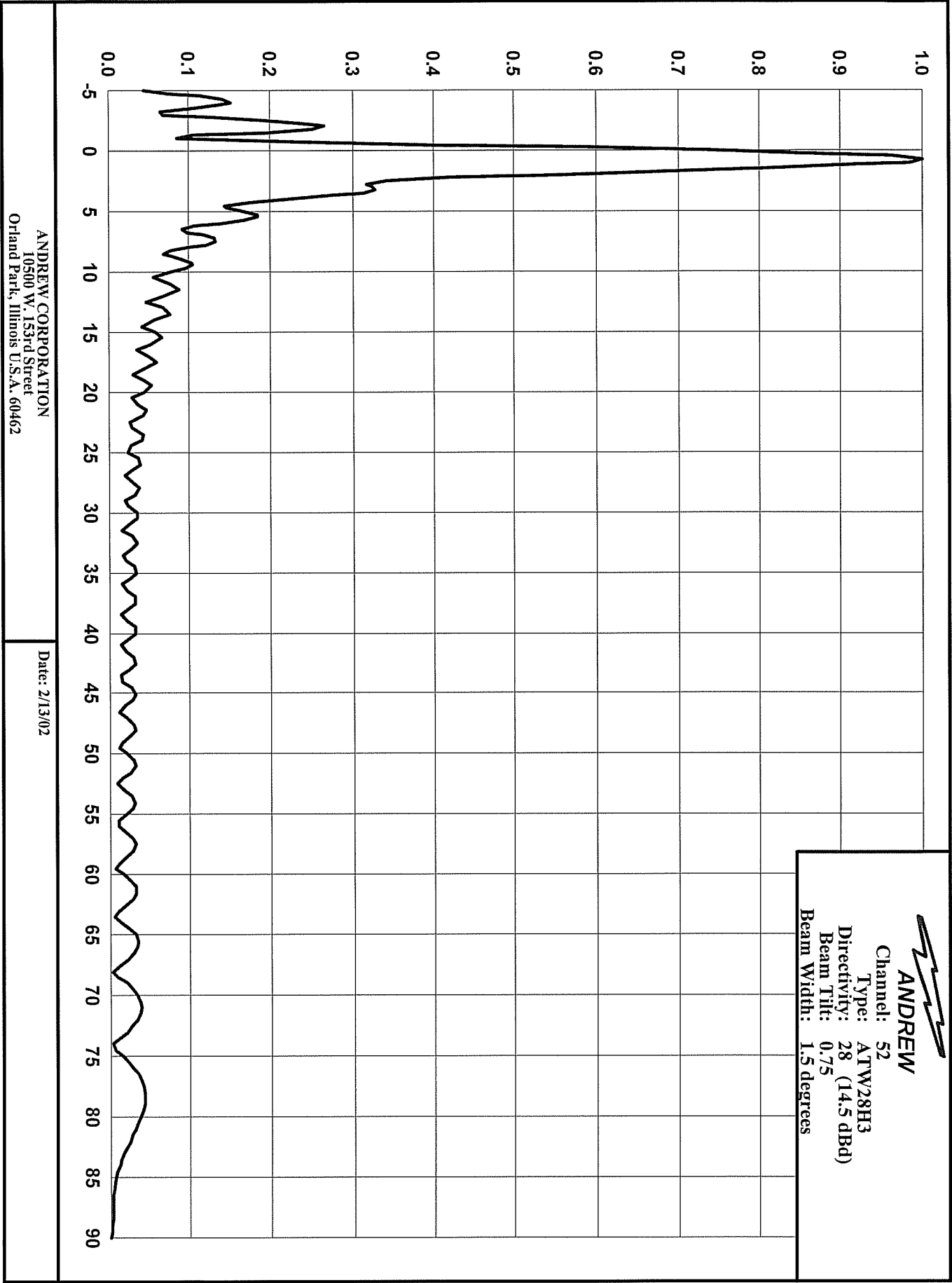
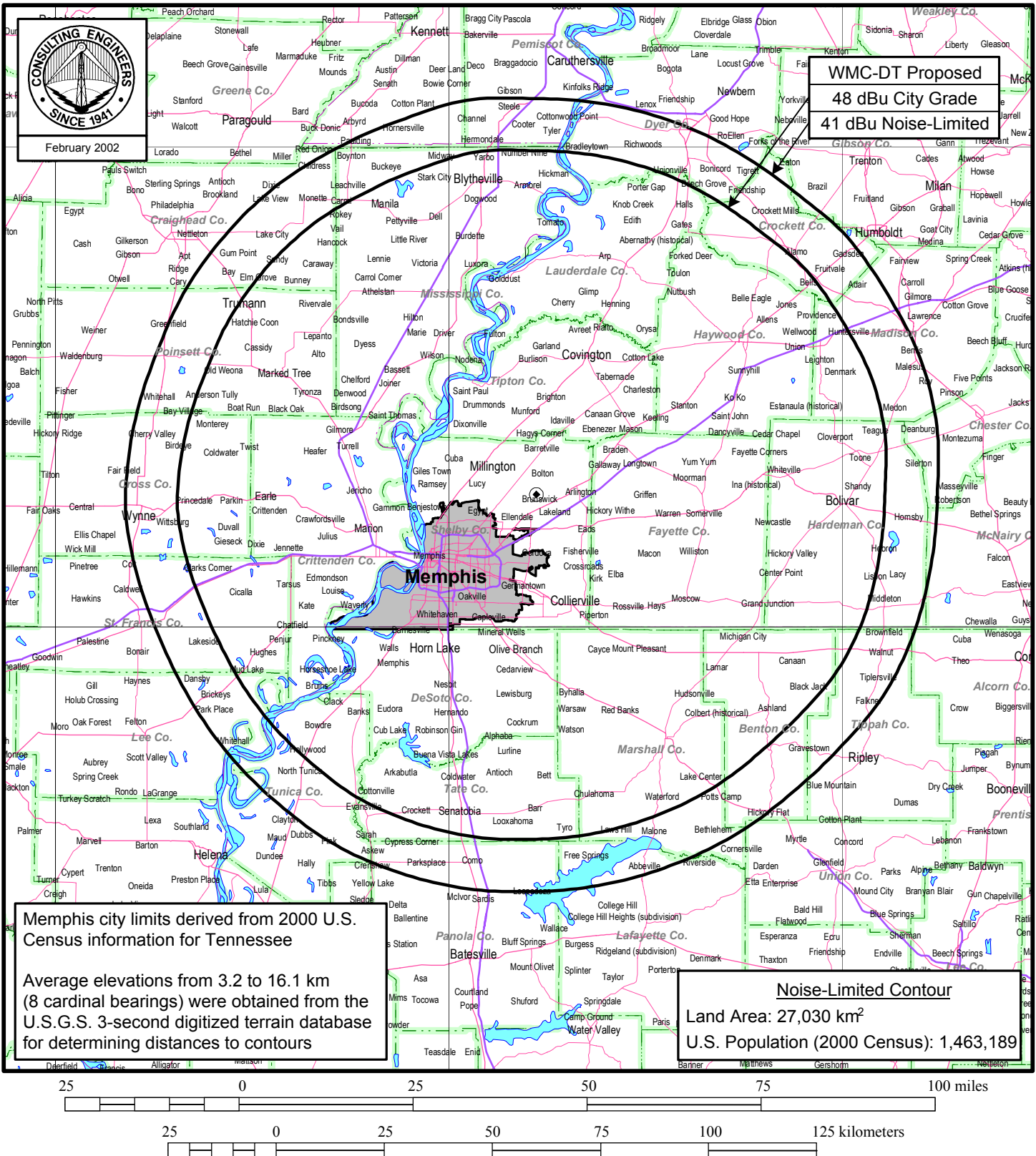


Figure 3



PREDICTED F(50,90) COVERAGE CONTOURS

STATION WMC-DT

MEMPHIS, TENNESSEE

CH 52 394 KW 338 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

SECTION III-D - DTV ENGINEERING DATA

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this location as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No
(c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must submit the Exhibit called for in Item 13.	<input checked="" type="radio"/> Yes <input type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	<input checked="" type="radio"/> Yes <input type="radio"/> No

SECTION III-D - DTV Engineering**TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel Number: DTV 52 Analog TV, if any 5
2.	Zone: I <input type="radio"/> II <input checked="" type="radio"/> III <input type="radio"/>
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 35 Minutes 16 Seconds 33 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 89 Minutes 46 Seconds 38 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Antenna Structure Registration Number: 1057943 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5.	Antenna Location Site Elevation Above Mean Sea Level: 76.2 meters

6.	Overall Tower Height Above Ground Level:	365.4 meters
7.	Height of Radiation Center Above Ground Level:	356.6 meters
8.	Height of Radiation Center Above Average Terrain :	338 meters
9.	Maximum Effective Radiated Power :	394 kW
10.	<p>Antenna Specifications:</p> <p>a. Manufacturer AND Model ATW28H3-HTO-52S</p> <p>b. Electrical Beam Tilt: 0.75 degrees <input type="checkbox"/> Not Applicable</p> <p>c. Mechanical Beam Tilt: degrees toward azimuth degrees True <input checked="" type="checkbox"/> Not Applicable</p> <p>Attach as an Exhibit all data specified in 47 C.F.R. Section 73.685. [Exhibit 39]</p> <p>d. Polarization: <input checked="" type="radio"/> Horizontal <input type="radio"/> Circular <input type="radio"/> Elliptical</p> <p>e. Directional Antenna Relative Field Values: <input checked="" type="checkbox"/> Not applicable (Nondirectional)</p>	
11.	<p>Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if Certification Checklist items 1(a), (b), or (c) are answered "No".)</p> <p>If No, attach as an Exhibit justification therefore, including a summary of any previously granted waivers.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>[Exhibit 41]</p>
12.	If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if Certification Checklist item 3 is answered "No.")	[Exhibit 42]
13.	<p>Environmental Protection Act. Submit in an Exhibit the following:</p> <p>If Certification Checklist Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.</p> <p>By checking "Yes" to Certification Checklist Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p> <p>If Certification Checklist Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.</p>	
<p>PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.</p>		

SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JONATHAN N. EDWARDS	Relationship to Applicant (e.g., Consulting Engineer) TECHNICAL CONSULTANT	
Signature	Date 2/13/2002	
Mailing Address 201 FLETCHER AVENUE		
City SARASOTA	State or Country (if foreign address) FL	Zip Code 34237 -
Telephone Number (include area code) 9413296000	E-Mail Address (if available) JON@DLR.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 39

Description: SEE EXHIBIT 43 - FIGURE 2

Attachment 39

Exhibit 42

Description: SEE EXHIBIT 43 - FIGURE 3

COMPLIES WITH SECTION 73.625

Attachment 42

Exhibit 43

Description: COMPREHENSIVE TECHNICAL EXHIBIT

TECHNICAL NARRATIVE
FIGURE 1 - ANTENNA AND SUPPORTING STRUCTURE
FIGURE 2 - VERTICAL ANTENNA PATTERN
FIGURE 3 - PREDICTED F(50,90) COVERAGE CONTOURS

Attachment 43

Description	Type	Conversion	
		Status	File
COMPREHENSIVE TECHNICAL EXHIBIT	Adobe Acrobat File	not needed	PDF