

TECHNICAL EXHIBIT  
MINOR AMENDMENT TO THE  
APPLICATION FOR CONSTRUCTION PERMIT  
STATION WWDP-DT (FACILITY ID 23671)  
NORWELL, MASSACHUSETTS

MARCH 29, 2001

CH 52    337 KW (MAX-DA)    216 M

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Technical Narrative

This Technical Exhibit supports a minor amendment to the application for construction permit for station WWDP at Norwell, Massachusetts. Station WWDP has an application pending to operate with a maximum directional effective radiated power (ERP) of 310 kW and an antenna height above average terrain (HAAT) of 247 meters (BPCDT-19990322KE).

Proposed Facilities

This amendment proposes ONLY to reduce the antenna height and increase directional ERP from the application on file. Changes are being made to FCC form 301, Section III-D, questions 4 (update tower registration); 5-8 (antenna height data); 9 (ERP); 12 (coverage map); and 13 (RFR analysis). A digital operation is proposed at the following NAD 27 coordinates: 42-00-45 N, 71-05-39 W, with a maximum directional ERP of 337 kW and antenna HAAT of 216 meters.

The proposed transmitter site is approximately 336 kilometers from the closest point of the Canadian border. The proposed WWDP-DT operation meets the minimum separation requirements to all Canadian NTSC and DTV stations as defined in the recently adopted U.S./Canada Letter on Understanding (LOU).

Canadian Station	Actual Separation	Required Separation
CAN, Cowansville(65), QU, NTSC-52	378.5 km	192 km
CBMT-3, Sherbrooke, QU, DTV-52	380.7 km	344 km

It is therefore believed that the proposed WWDP-DT operation is in compliance with the U.S./Canada LOU. If coordination with Canada is still necessary, it is respectfully requested.

The site is more than 2,700 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Belfast, Maine, approximately 316 kilometers to the north-northeast. The closest point of the National Radio Quiet Zone (VA/WV) is more than 690 kilometers to the west-southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,800 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Hancock, New Hampshire, approximately 126 kilometers to the northwest. These separations are sufficient to not be a concern for coordination purposes.

### Allocation Study

Interference calculations have been made using the procedures outlined in the FCC's OET-69 bulletin.<sup>1</sup> Interference calculations for the proposed WWDP-DT operation are summarized below.

NTSC/DTV Station	FCC Baseline	Proposed Unique Interference
WYDN(CP), DTV-48, Worcester, MA	4,303,905	2,731 (0.1%)
WJAR, DTV-51 allotment, Providence, RI	6,170,000	43,975 (0.7%)
WEDW, DTV-52 allotment, Bridgeport, CT	3,223,000	19 (0.0%)
WEKW-TV, NTSC-52, Keene, NH	277,889	2,643 (1.0%)

<sup>1</sup> The duTreil, 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 1 km was employed. An Alpha 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.

The proposed WWDP-DT operation does not cause calculated interference to any other analog or DTV assignment. Therefore, the proposal complies with the FCC's 2%/10% interference standard.

#### Class A Consideration

The FCC's CDBS database and list of low power television (LPTV) assignments eligible for Class A status has been reviewed for potential impact. Interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin. The proposed WWDP-DT operation does not cause calculated interference to any current or potential Class A station. If necessary, a waiver of the FCC rules is requested based on use of the FCC's OET-69 procedures to demonstrate no interference to LPTV assignments requesting Class A status.

#### Radiofrequency Electromagnetic Field Exposure

The proposed WWDP-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 214.3 meters above ground level. The maximum DTV ERP is 337 kW. A conservative relative field value of 0.05 was assumed for the antenna's downward radiation (see Figure 2C). The calculated power density at a point 2 meters (6.6 feet) above ground level is  $0.0006 \text{ mW/cm}^2$ . This is less than 0.2% of the FCC's recommended limit of  $0.47 \text{ mW/cm}^2$  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 be in effect with the other stations to 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"

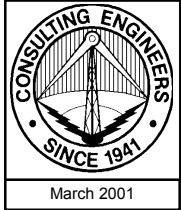
RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WWDP-DT operation appears to be otherwise categorically excluded from environmental processing.

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

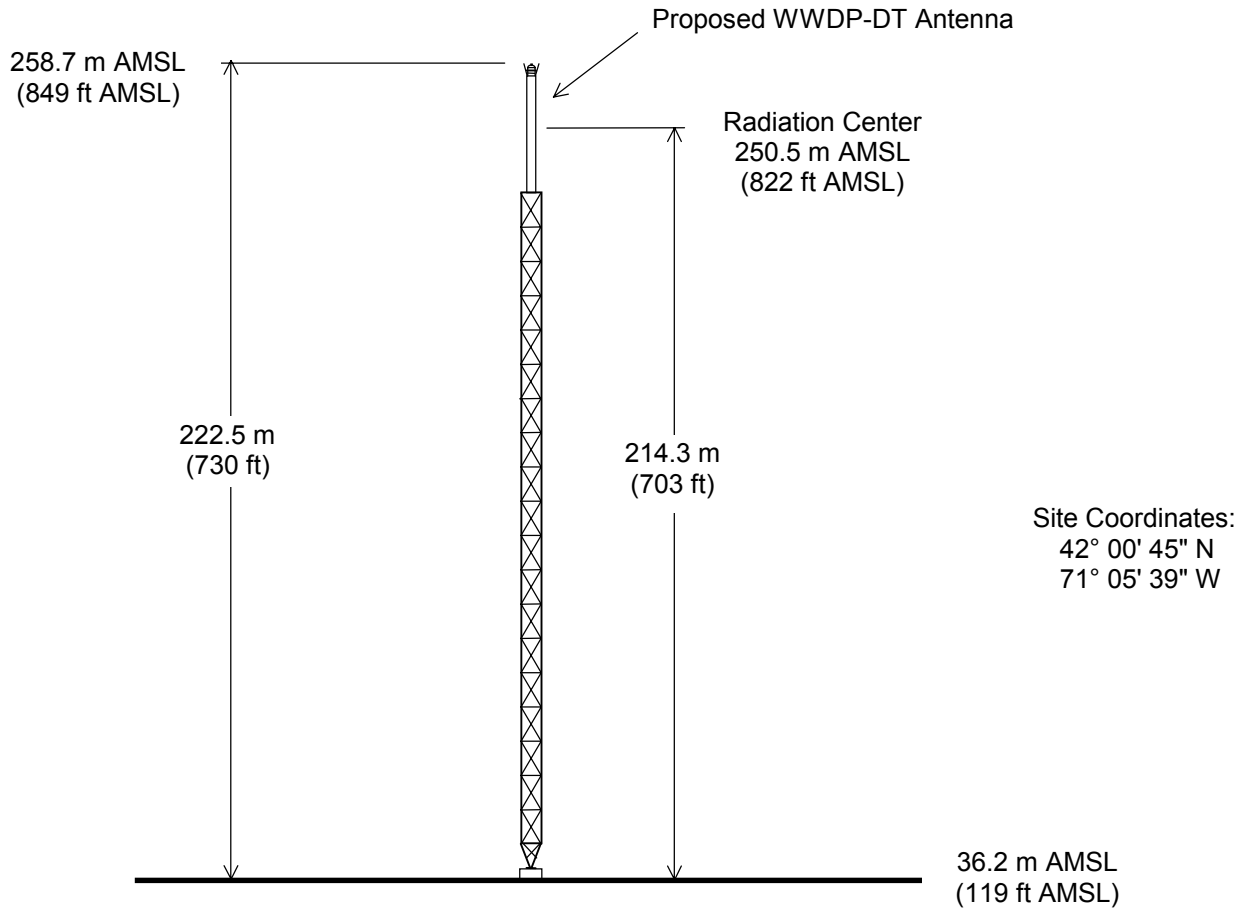
Jonathan N. Edwards

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

March 29, 2001



Tower Reg. No. 1224059



Not to Scale

## ANTENNA AND SUPPORTING STRUCTURE

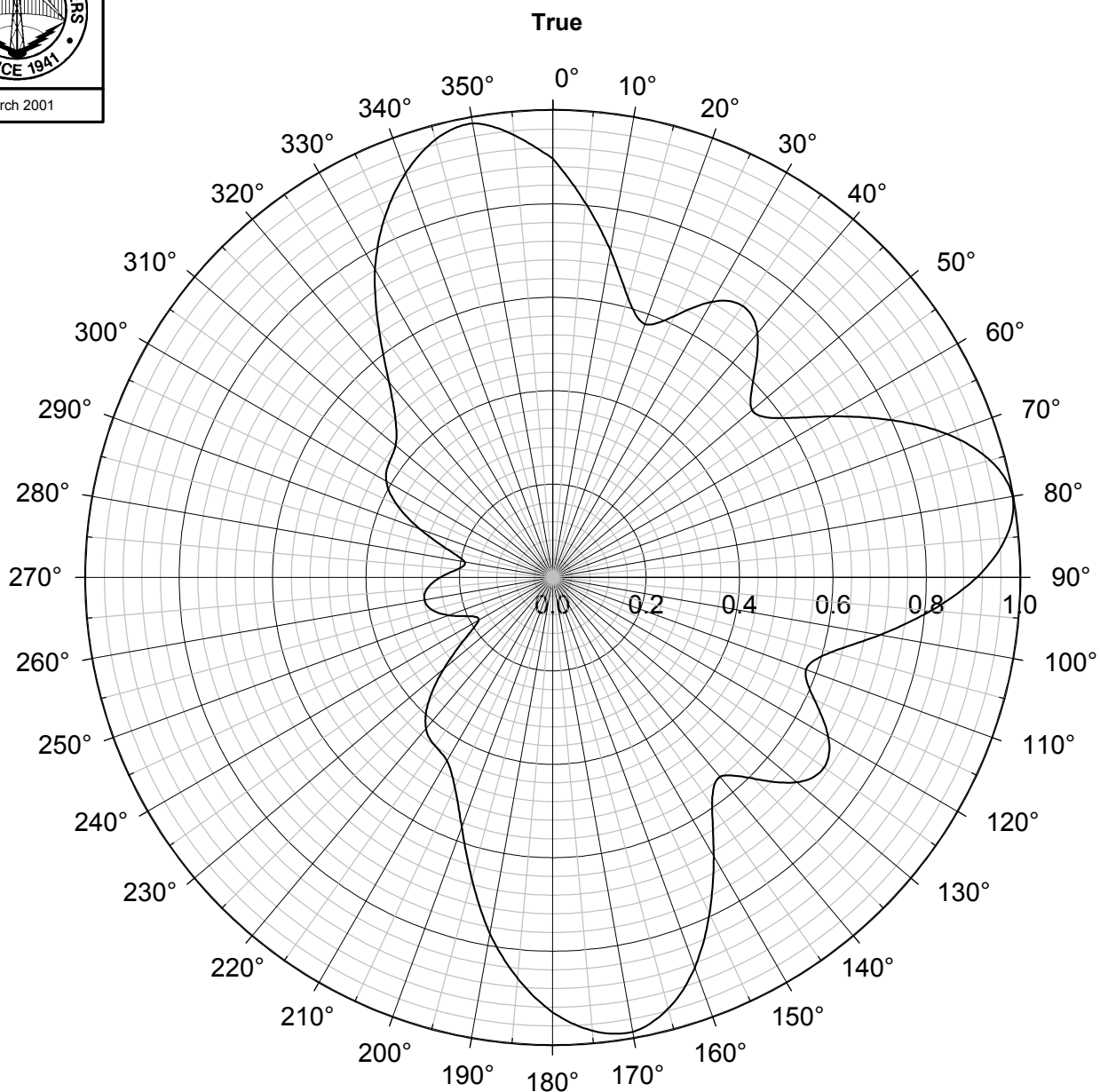
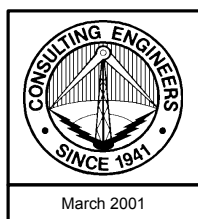
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du Treil, Lundin &amp; Rackley, Inc.    Sarasota, Florida

Figure 2A



## **HORIZONTAL RELATIVE FIELD PATTERN**

STATION WWDP-DT

NORWELL, MASSACHUSETTS

CH 52 337 KW (MAX-DA) 216 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida



## ELEVATION PATTERN

RMS Gain at Main Lobe

30.0 (14.77 dB)

Beam Tilt

0.50 Degrees

RMS Gain at Horizontal

23.5 (13.71 dB)

Frequency

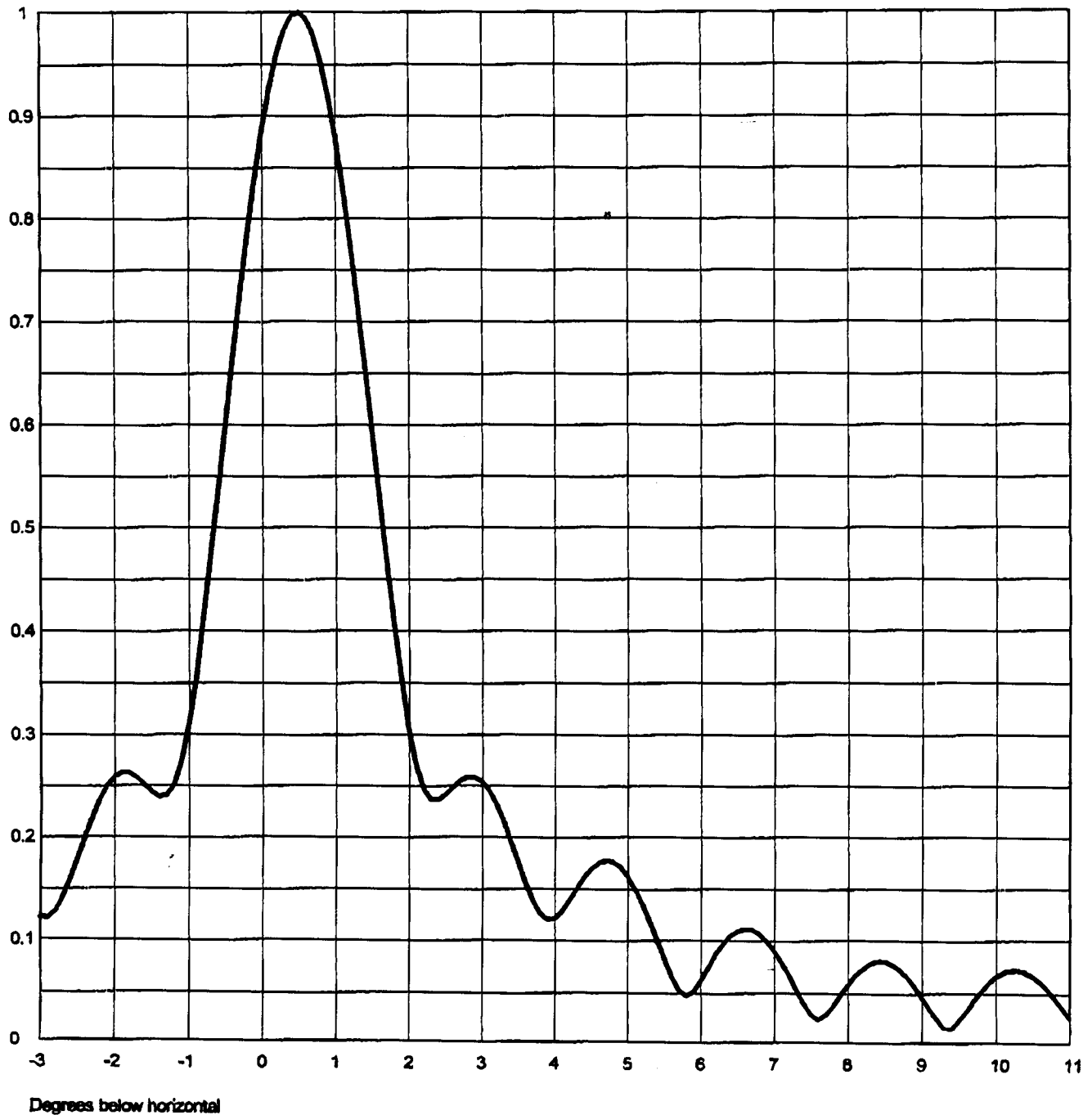
701.00 MHz

Calculated / Measured

Calculated

Drawing #

12U300050



## ELEVATION PATTERN

RMS Gain at Main Lobe

30.0 (14.77 dB)

Beam Tilt

0.50 Degrees

RMS Gain at Horizontal

23.5 (13.71 dB)

Frequency

701.00 MHz

Calculated / Measured

Calculated

Drawing #

12U300050-90

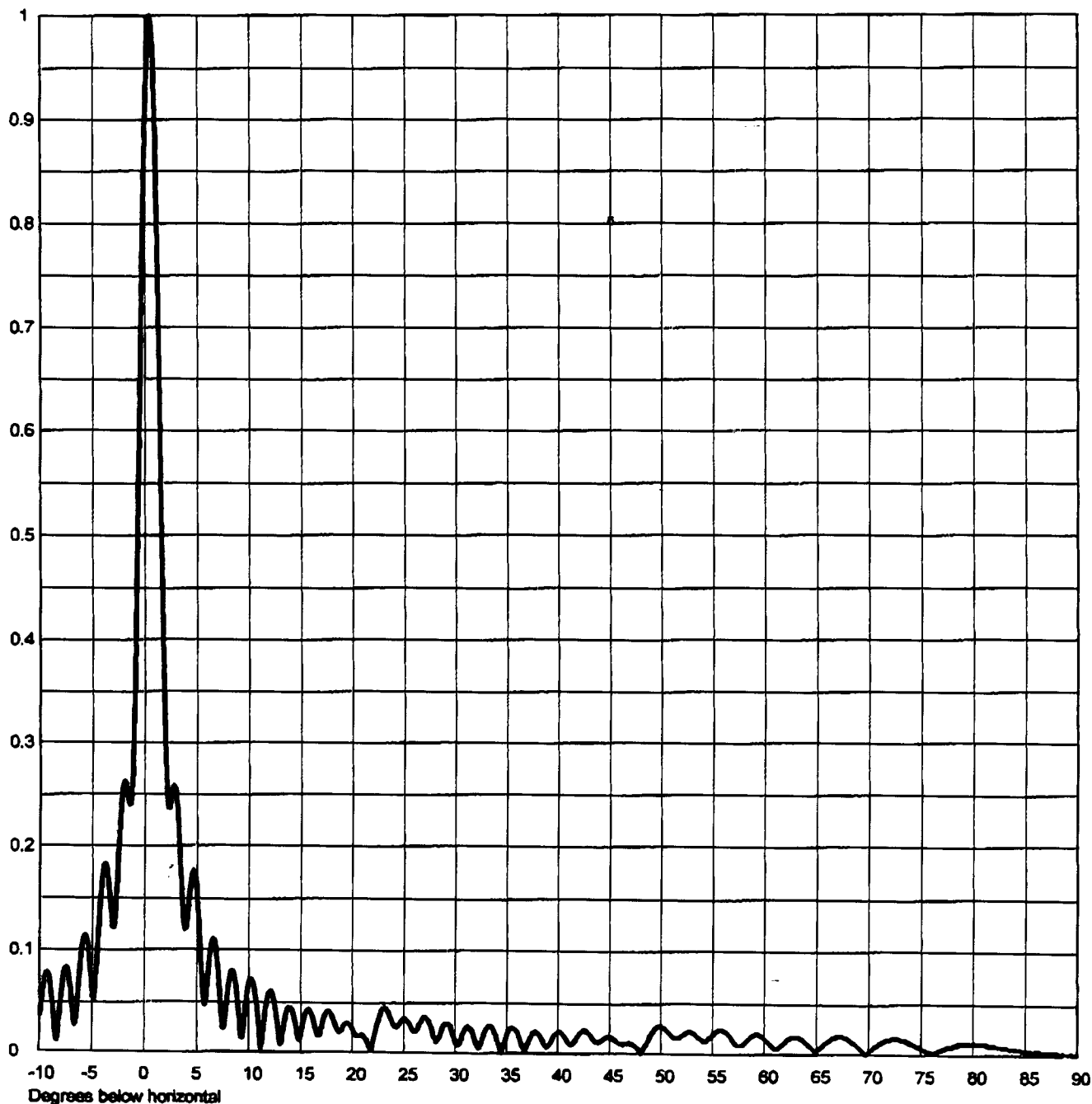
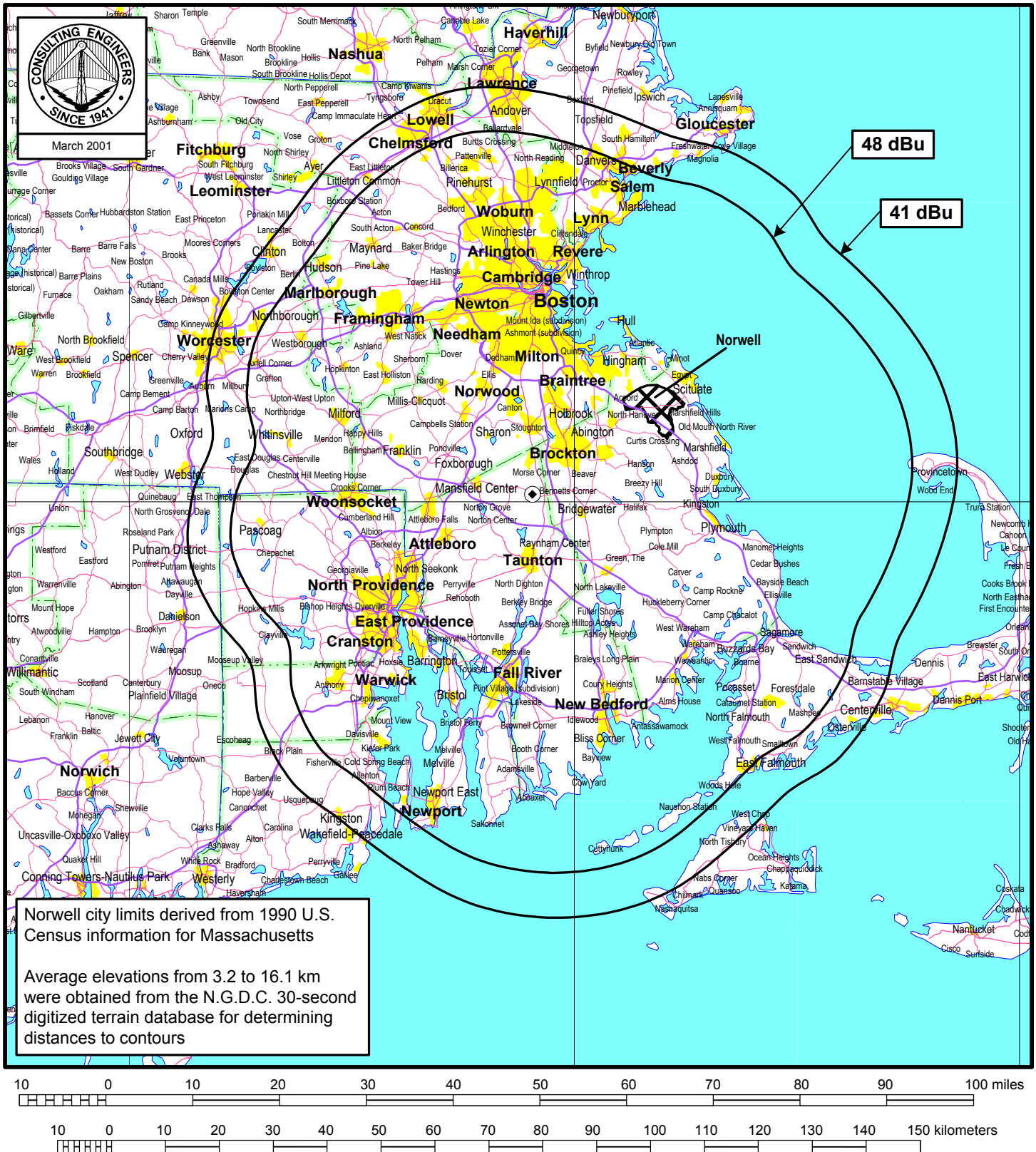


Figure 3



## PREDICTED F(50,90) COVERAGE CONTOURS

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Technical Specifications

Channel	52
Frequency	698-704 MHz
Proposed Site Coordinates (NAD 27)	42° 00' 45" North Latitude 71° 05' 39" West Longitude
Site Elevation above mean sea level	36.2 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	34.3 m
Overall height of antenna structure	
Above ground	222.5 m
Above mean sea level	258.7 m
Height of antenna radiation center	
Above ground	214.3 m
Above mean sea level	250.5 m
Above average terrain	216 m
Transmitter rated power output (average)	10 kW
Transmission line	Dielectric (7")
Length	(770 ft) 235 m
Efficiency (0.867 dB loss)	81.9 %
Antenna	Dielectric TUP-C4SP-12-1
Polarization	Horizontal
Peak Power Gain	67.5
Beam Tilt (electrical)	0.5 degree
Main Lobes	80°, 170° & 350° T

Proposed Operation

Transmitter output power (average)	6.1 kW
Transmission line loss	1.1 kW
Antenna input power	5.0 kW
Maximum Effective Radiated Power (MAX-DA)	337 kW