

TECHNICAL EXHIBIT  
DIGITAL FLASH-CUT APPLICATION FOR  
TV TRANSLATOR STATION W40BO (FACILITY ID 55114)  
BOSTON, MASSACHUSETTS  
CH 40 3.5 KW (MAX-DA)

Technical Narrative

This Technical Exhibit supports a flash-cut digital television (DTV) application for TV translator station W40BO at Boston, Massachusetts (Facility ID 55114). Station W40BO is licensed (BLTT-20001206ABN) to operate on analog channel 40(-) with a directional antenna maximum visual effective radiated power (ERP) of 20 kilowatts (kW). The antenna radiation center height (RCAMSL) is 292 meters above mean sea level (AMSL). The FCC antenna structure registration number is 1004623 and the site coordinates are 42-18-27, 71-13-27 (NAD-27). Station W40BO is also authorized (BDFCDTT-20060322ACL) to flash-cut on digital channel 40 with a directional ERP of 3.5 kW. This application proposes the same facilities as authorized in the initial application by the FCC.

Proposed Facilities

This application proposes digital operation on the current channel (40), at the current transmitter site, and with the same antenna (correction to site coordinates to match tower registration). The current Antenna Concepts model ACS16CR directional antenna system with the major lobe oriented toward 20 degrees True will be used. The proposed maximum DTV ERP is 3.5 kW and the antenna RCAMSL will be 290.7 meters AMSL.

Figure 1 is a map showing the licensed 74 dBu (analog) and proposed 51 dBu (digital) coverage contours. As can be seen on the map, there is common area where both contours overlap.

#### Allocation Considerations

A study has been conducted to assure that the proposal will not create prohibited interference with other licensed, authorized or pending analog or digital TV, LPTV/translator and Class A TV stations. Using the procedures outlined in the FCC's OET-69 Bulletin, a 1 kilometer grid, and 1990 U.S. Census, the proposal complies with the current FCC policy (i.e., less than 0.5% new interference caused to other pertinent assignments). If necessary, a waiver of the FCC rules is respectfully requested based on use of the procedures outlined in the FCC's OET-69 Bulletin.

The applicant recognizes the proposal is secondary to authorized full-service analog and DTV operations. The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation.

The W40BO site is 302 kilometers from the closest point of the US-Canada border. Figure 2 is a map showing the predicted co-channel analog (NTSC) and DTV interfering contours for the proposed W40BO DTV operation. The predicted 30.2 dBu F(50,10) contour is for interference to co-channel Canadian analog allotments. The predicted 12.4 dBu F(50,10) contour is for interference to co-channel Canadian DTV allotments. As shown, the predicted interfering contours do not overlap Canadian land area.

#### Radiofrequency Electromagnetic Field Exposure

The proposed W40BO 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 antenna is located 262.1 meters above ground level. The proposed

maximum ERP is 3.5 kW. Based on a downward relative field of 0.2, the calculated power density at a point 2 meters (6.6 feet) above ground level will not exceed 1% of the FCC's recommended limit of  $0.42 \text{ mW/cm}^2$  for channel 40 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. 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.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner as part of the tower registration process.

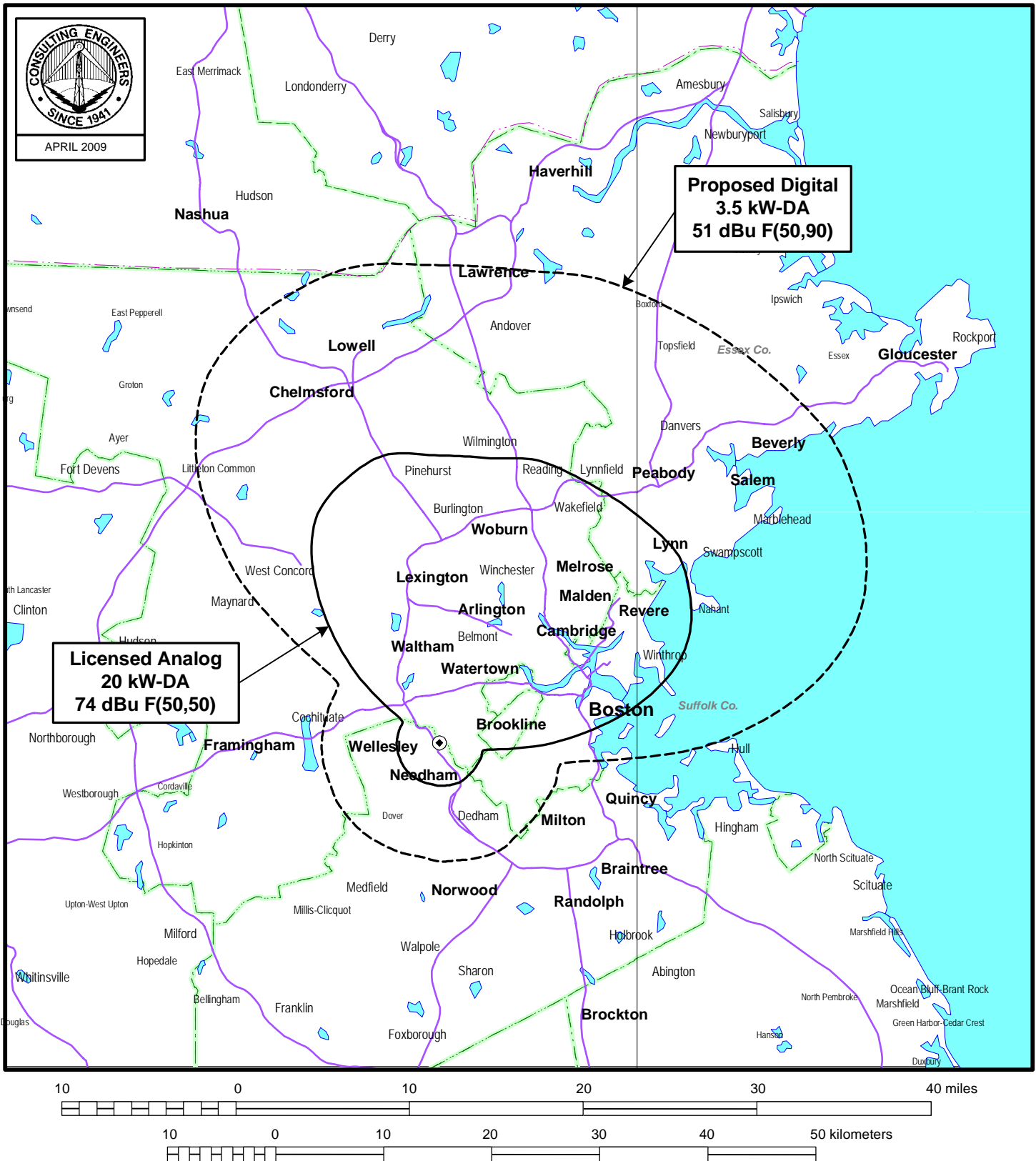


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Figure 1



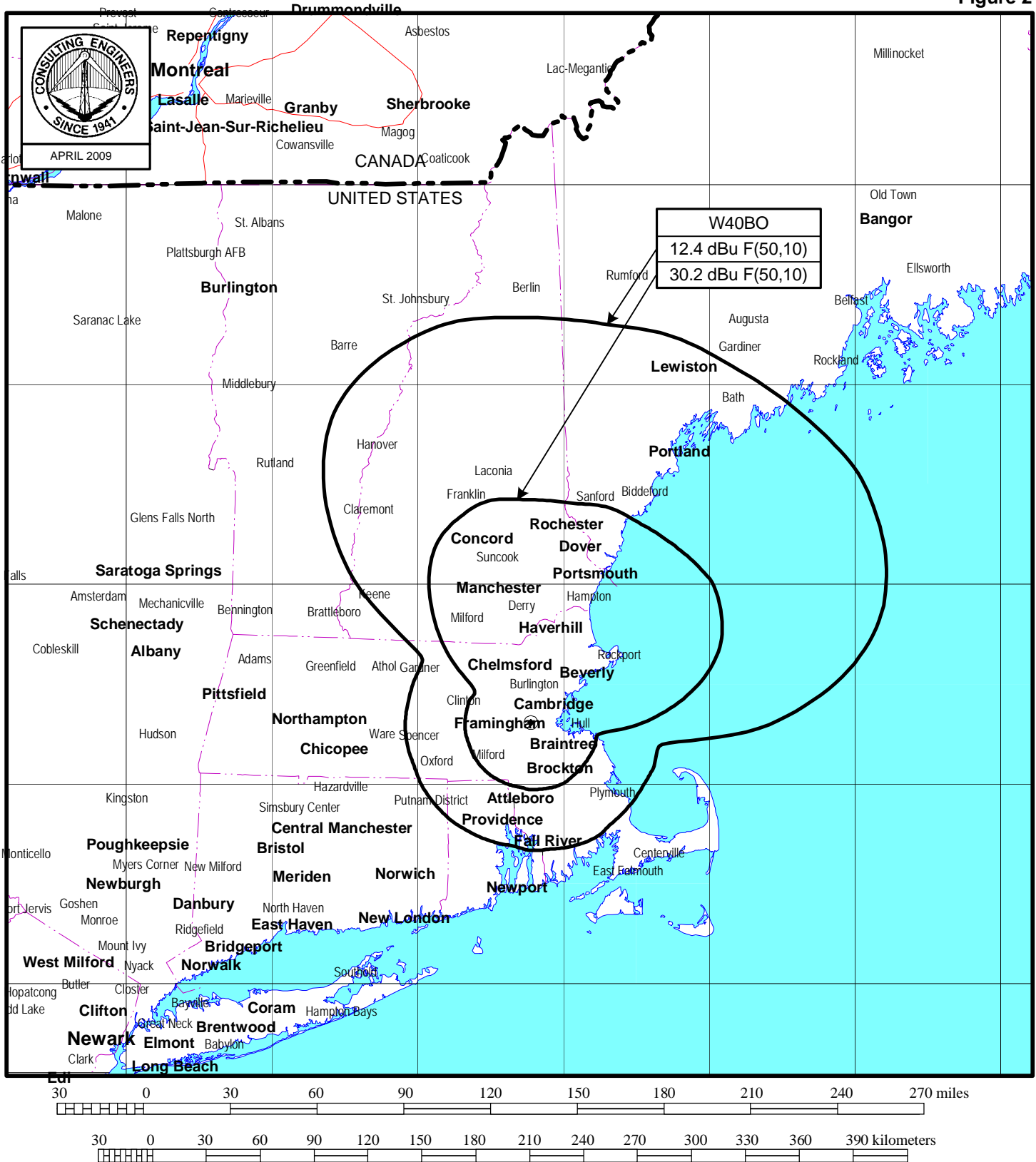
## PREDICTED COVERAGE CONTOURS

STATION W40BO

BOSTON, MASSACHUSETTS

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Figure 2



## PREDICTED CANADA INTERFERING CONTOUR MAP

STATION W40BO

BOSTON, MASSACHUSETTS

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