

TECHNICAL EXHIBIT
MINOR CHANGE APPLICATION
STATION WBOT(FM) (FACILITY ID 19633)
BROCKTON, MASSACHUSETTS

SEPTEMBER 9, 2005

CH 249A 1.7 KW 173 M

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Technical Narrative

The engineering exhibit of which this statement is part was prepared on behalf of Radio One Licenses, LLC (Radio-One), licensee of FM Broadcast Station WBOT Brockton, Massachusetts. Station WBOT operates on channel 249A with effective radiated power (ERP) of 2 kilowatts with antenna height above average terrain (HAAT) of 173 meters.¹ By means of this application, Radio-One seeks to employ a non-directional antenna and reduce effective radiated power (ERP).

This application requests continued processing pursuant to § 73.215 with respect to station WOQL-FM (Winchendon, MA). In addition, the WBOT application is contingent on the grant of a WOQL application, either on file or soon to be filed, specifying a change in the WOQL directional antenna pattern.

Proposed Transmitter Location

Station WBOT will remain at its current site, which is co-located with station WGBH(FM). The geographic coordinates (NAD27) as listed for tower registration are:

42° 12' 42" North Latitude
71° 06' 51" West Longitude.

¹ See BPH-20050215ABK

As Figure 1 shows, the proposed antenna will be side-mounted at the 29.9 meters (98 feet) level (AGL) or 217.6 meters (714 feet) AMSL. The height above average terrain (HAAT) will remain 173 meters.

There are no AM stations located within 3.2 kilometers of the proposed site nor are there any FM or TV stations within 3 kilometers of the proposed site, except for collocated station WGBH (FM).

Proposed Coverage Analysis

Sheet 1 of Figure 2 is a map showing the predicted coverage contours for the proposed WBOT operation. As the proposal does not cover 80 percent of Brockton using the normal FCC prediction method, use of alternate propagation techniques as described in the following paragraph results in compliance with the principal community coverage requirement of Section 73.315(a).

Alternate Propagation Methods

When the terrain in one or more directions from the antenna site departs widely from the average terrain, the FCC rules permit use on an alternative or supplemental coverage showing (see Section 73.313). The Commission staff has established that “Where ΔH is used as the sole determinate that the terrain along a radial widely departs from the 50 meter standard, a ΔH of 20 meters or less, or 100 meters or more”. Several of the extended radials through Brockton meet this criterion. For example, on a radial at 141 degrees true, the ΔH was determined to be 17.4 meters, which demonstrates compliance with the ΔH requirement of 20 meters or less.

As shown in Sheet 2 of Figure 2, the 70 dBu contour determined by the use of Longley-Rice propagation provides 92 percent of the population of Brockton and 87 percent of the area. The Longley-Rice propagation method has been widely used and accepted by the

FCC, therefore details of its use are not provided. In the calculation of the Longley-Rice coverage, a roughness correction factor of 3 dB was employed. Sheet 1 of Figure 3 shows three graphs of the Longley-Rice field strength versus distance for the radials in Figure 2.

Also shown on Sheet 2 of Figure 2 is the proposed WBOT 70 dBu contour based on the Point-to-Point (PTP) model. Using this method, 70 dBu coverage is also provided to all of Brockton. The FCC's Office of Engineering Technology developed the PTP method. Sheet 2 of Figure 3 shows the graphical results of the PTP study on the three radials indicated in Figure 2.

Based on use of two alternate propagation methods, 70 dBu coverage of at least 80 percent of Brockton is easily obtained.

The following tabulates the distance to the 70 dBu contours along each radial based on the FCC's F(50,50) method, the Longley-Rice model (with the 3-dB clutter factor) and the Point-to-Point model.

Radial	70 dBu Field Strength (km)		Difference		PTP Distance to 70 dBu (KM)
	FCC F(50,50)	Longley-Rice	KM	Percent	
140°	15.1	19.2	4.1	+27	20.3
152°	14.8	18.7	3.9	+26	21.9
164°	14.6	18.6	4.0	+27	27.0

The difference between the distances to the 70 dBu contours for the Longley-Rice model exceeds the FCC predicted field strength distance for each radial substantially more than the minimum 10 percent, as required by FCC policy on supplemental showings. If waiver of the provisions of Section 73.315(a) is still required, it is respectfully requested.

Allocation Considerations

As shown on Sheet 1 of Figure 4, three “short-spacings” are associated with the proposed WBOT operation. Station WJFD-FM New Bedford, MA on channel 247B is short-spaced by 2.3 kilometers and station WCTK on channel 251B is short-spaced by 1.6 kilometers. There is no proposed change in site location and the proposed ERP towards WJFD-FM and WCTK will be reduced by 0.7 dB. Therefore, these short-spacings are not impacted by the proposal.

A short-spacing with the licensed operation of WOQL will be maintained. Therefore, continued processing of the WBOT application employing the provisions of §73.215 is requested. A map showing the pertinent contours of WBOT as proposed, and WOQL as proposed, is attached as Sheet 2 of Figure 4.²

Radiofrequency Electromagnetic Field Exposure

The proposed 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 2-Bay, half-wave spaced antenna is located 29.9 meters above ground level. The total ERP (horizontal & vertical polarizations) is 3.4 kW. Based on the FCC’s FM Model program, the “worst-case” calculated power density at a point 2 meters above ground level will be not exceed 0.0125 mW/cm^2 . This is 6.3% of the FCC's recommended limit of 0.2 mW/cm^2 for FM frequencies for an “uncontrolled” environment.

Since this value exceeds the categorically excluded limit of 5%, all other broadcasting operations in the vicinity have been studied. The only nearby station of concern is WGBH(FM), Ch 209B, Boston, MA, 100 kW, 54 M (AGL). The individual RF contributions are shown in the table below:

Station	Antenna	RF contribution (mW/cm ²)	Limit (mW/cm ²)	% of Limit
WBOT(pro)	Shively 6810	0.0125	0.2	6.3
WGBH(FM)	Harris FMH-8AC	0.140	0.2	70

The total RF contributions from all nearby stations, including WBOT are 76% for an “uncontrolled” environment. Therefore, the proposal appears to comply with the RF standards. 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.

Access to the transmitting site is 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.



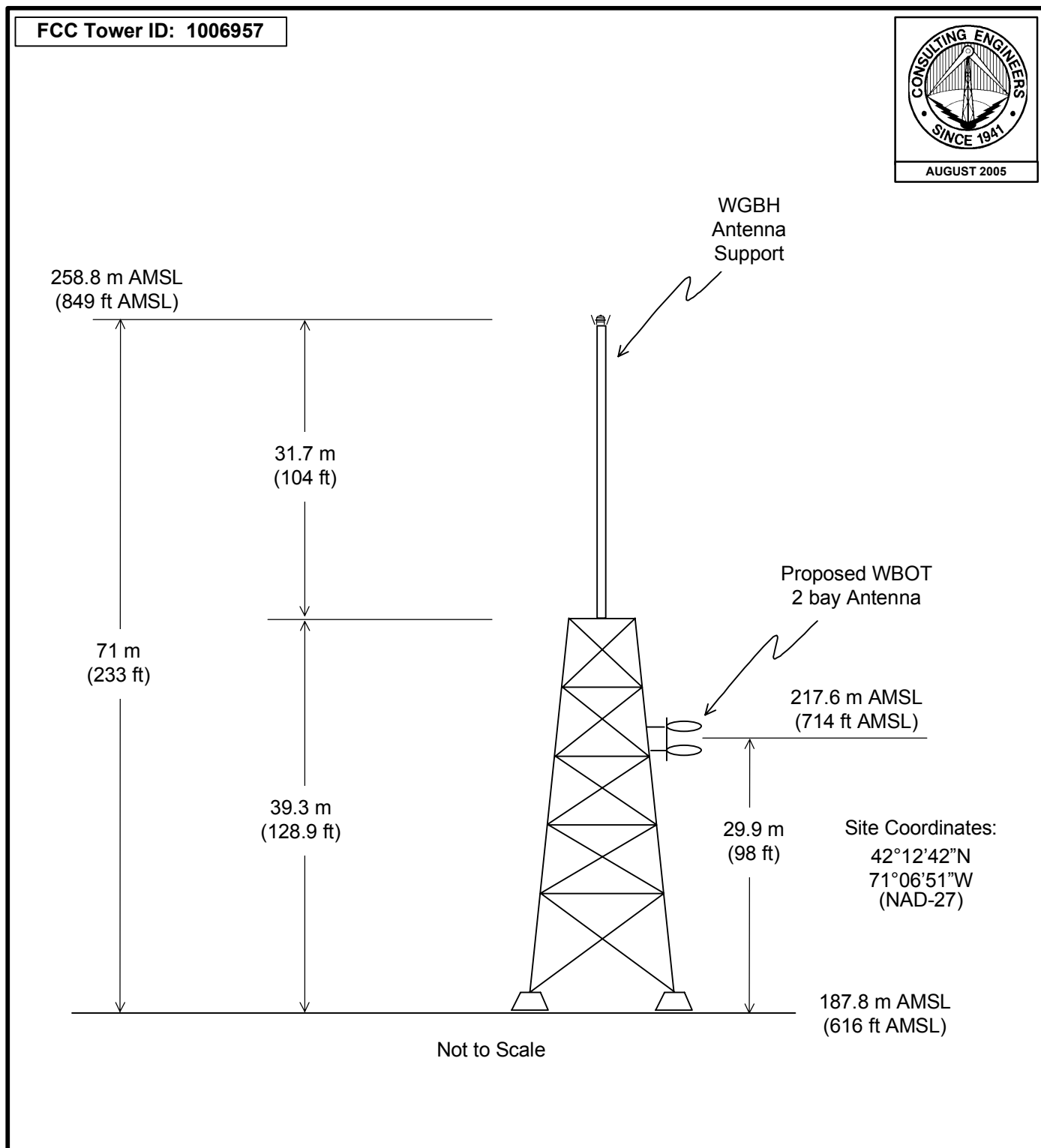
Louis R. du Treil, Sr.

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

September 9, 2005

² See the pending application of WOQL.

Figure 1



ANTENNA AND SUPPORTING STRUCTURE

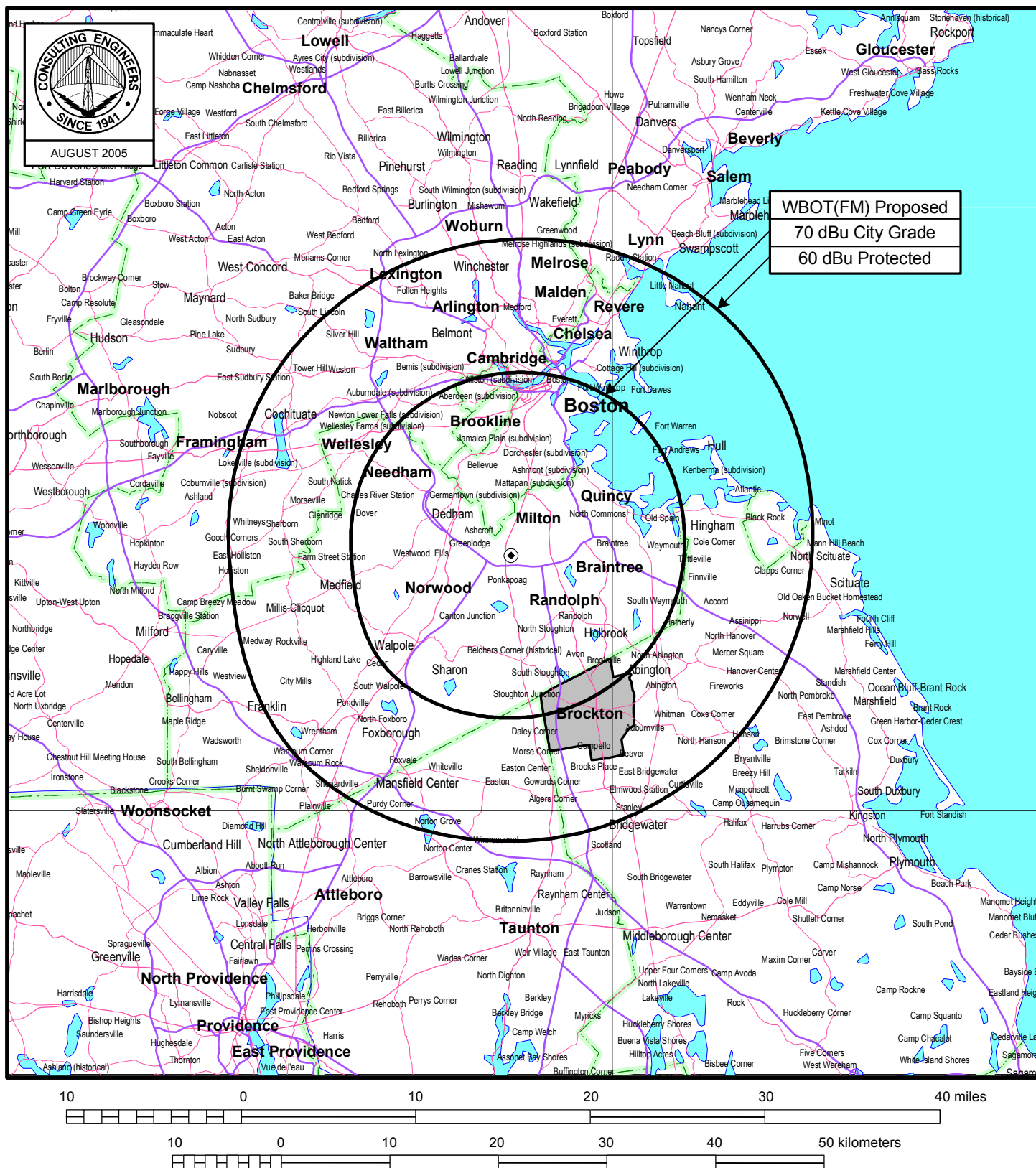
FM BROADCAST STATION WBOT

BROCKTON, MASSACHUSETTS

CH 249A 1.7 KW 173 M

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

Figure 2
Sheet 1 of 2



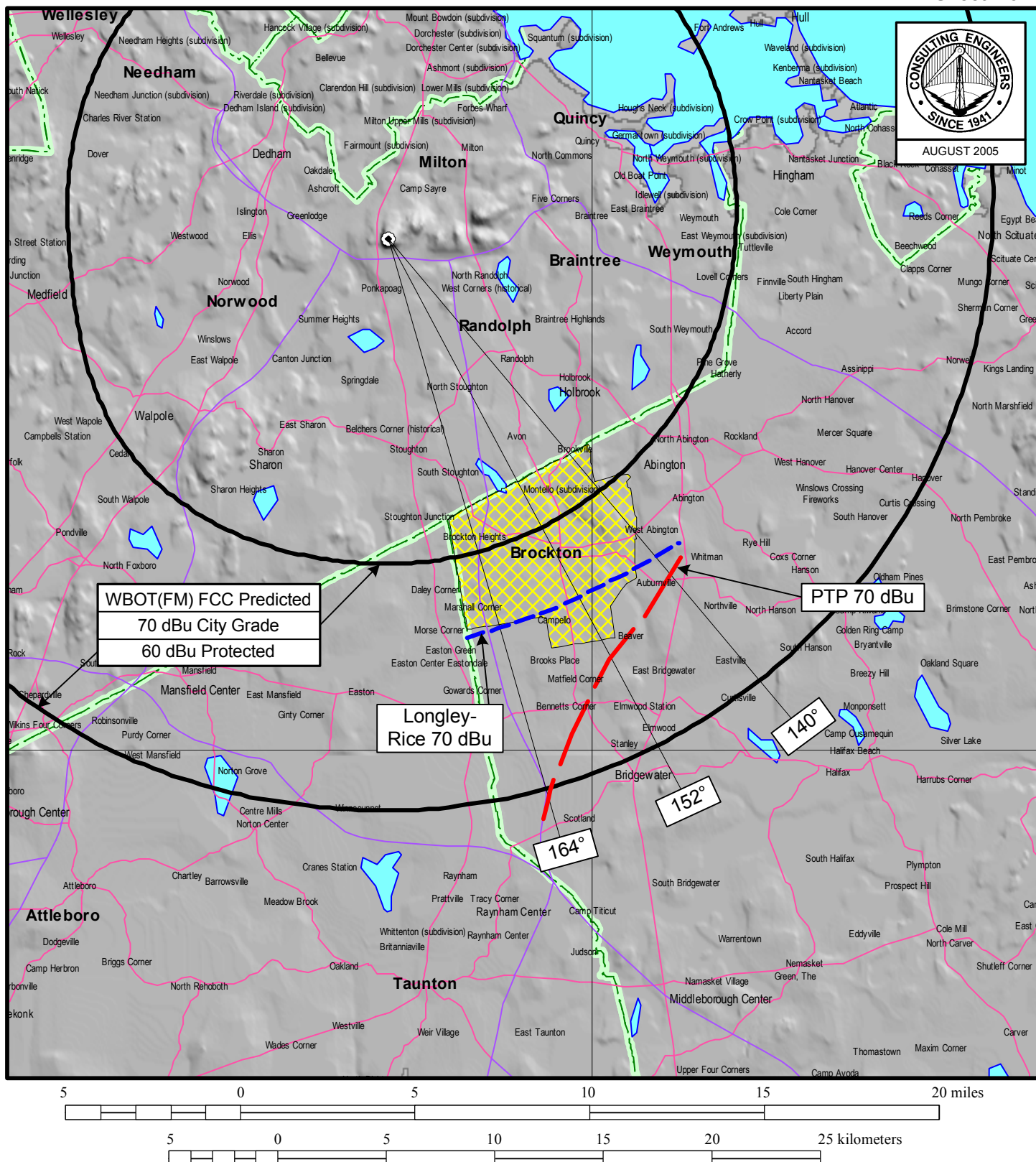
FCC PREDICTED COVERAGE CONTOURS

STATION WBOT(FM)

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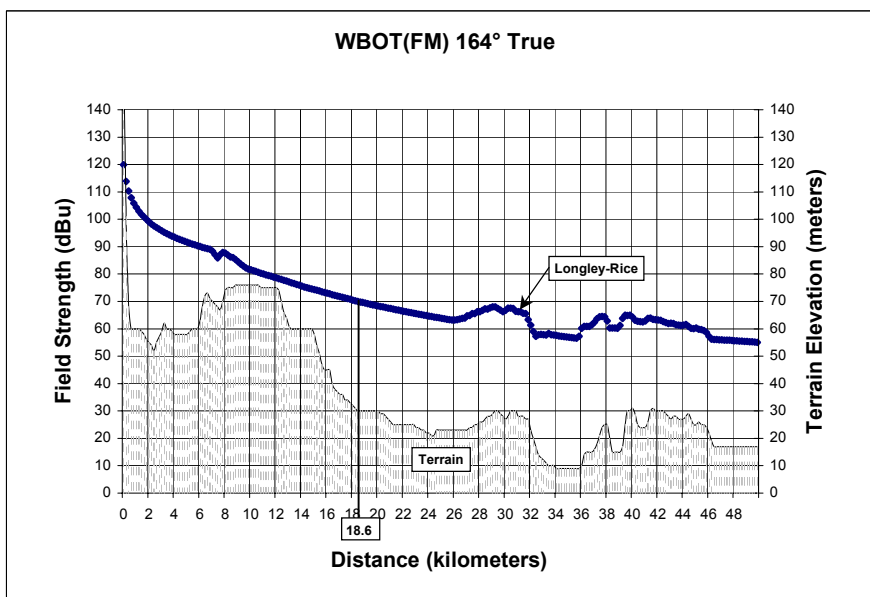
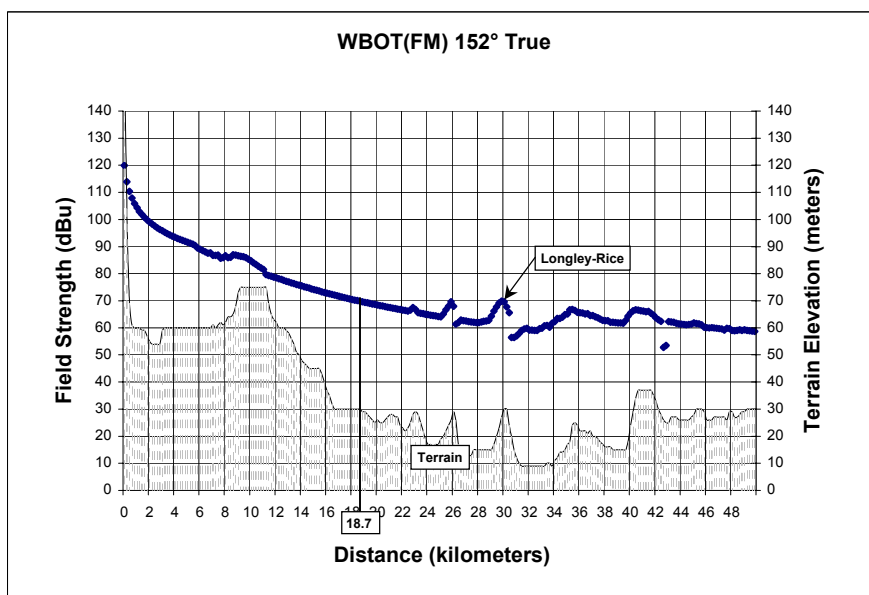
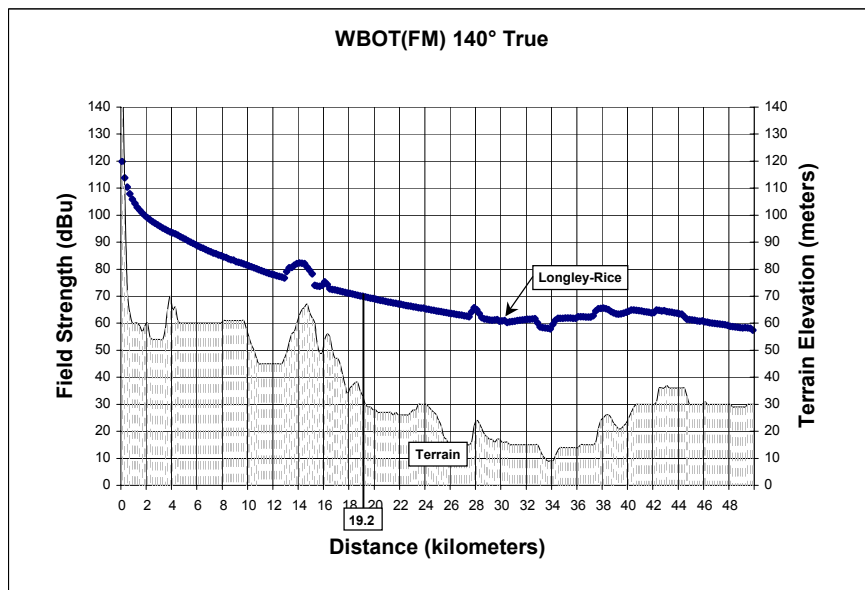
du Treil, Lundin & Rackley, Inc Sarasota, Florida



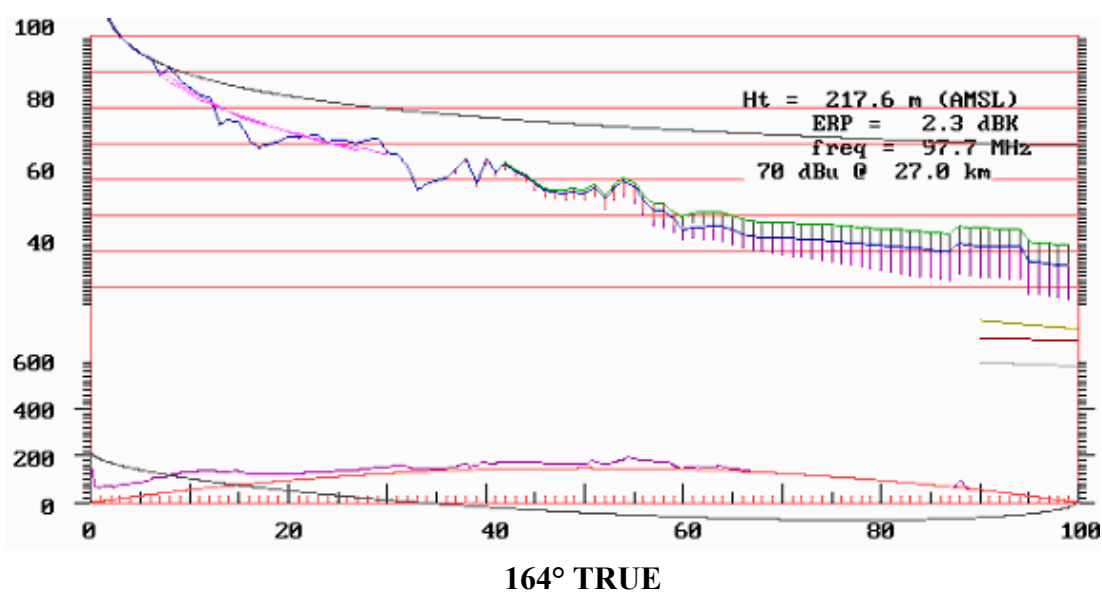
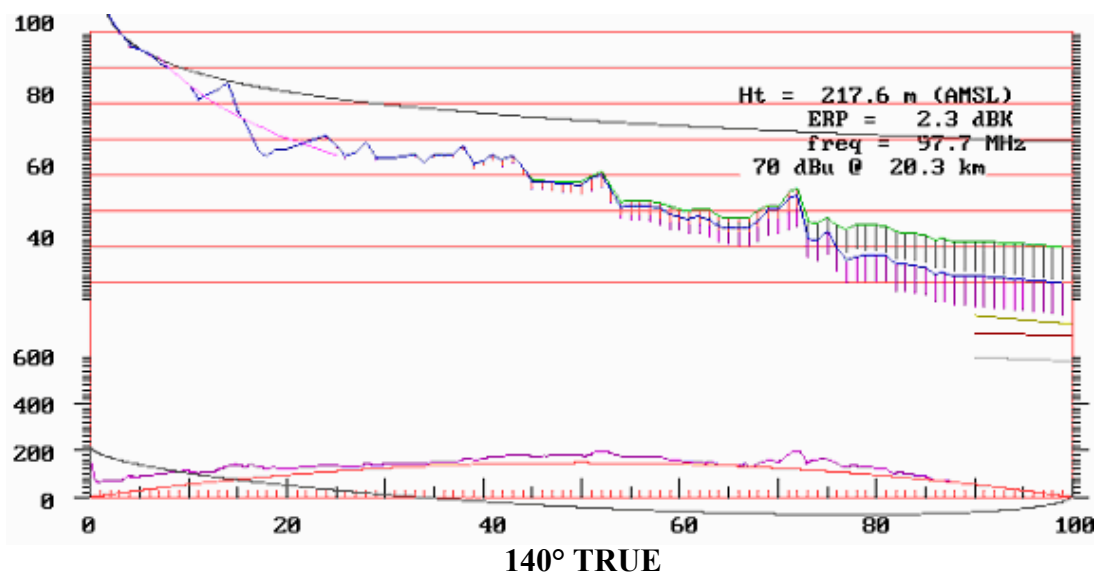
COVERAGE BASED ON ALTERNATE PROPAGATION METHODS

STATION WBOT(FM)
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LONGLEY-RICE DATA



POINT-TO-POINT (PTP) DATA



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CDBS FM SEPARATION STUDY

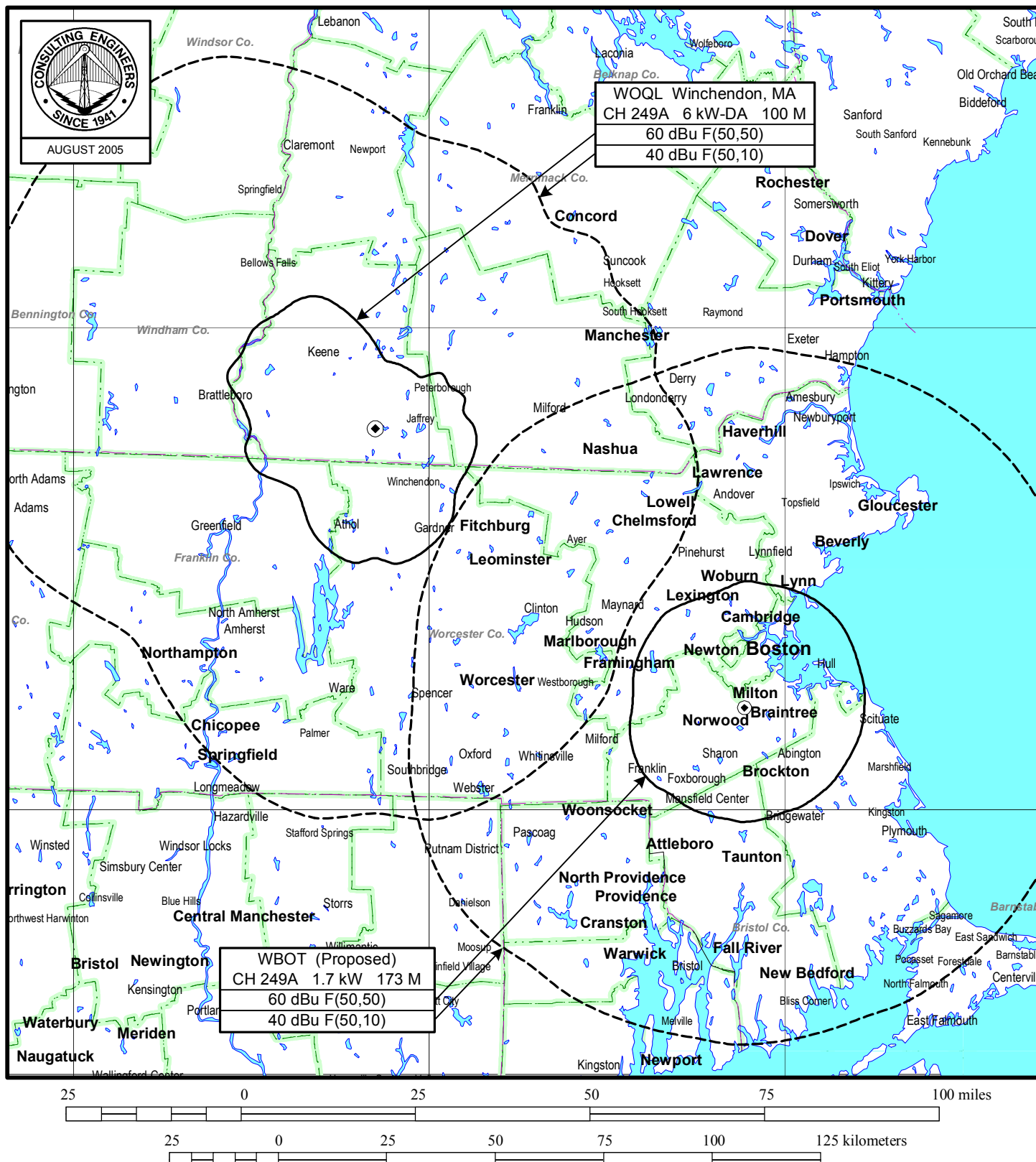
Channel: 249 A
8/8/2005

Separation Buffer: 32 km
Coordinates: 42-12-42 N 71-06-51 W

Call Id	City St	Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km) 73.215 73.207	
WJFD-FM 18720	NEW BEDFORD MA	BLH LIC C	19831028AA	247 B 97.3	50.000 152	N	41-38-20 070-52-27	N	162.6	66.66 -2.34	63.0 Short ¹	69.0
WOKQ 22887	DOVER NH	BLH LIC C	19940214KE	248 B 97.5	50.000 150	N	43-13-26 070-58-18	N	5.9	113.05 0.05	96.0 Close	113.0
WBOT 19633	BROCKTON MA	BPH CP C	20050215ABK	249 A 97.7	2.000 173	Y	42-12-42 071-06-51	Y	90.0	0.00		
WBOT 19633	BROCKTON MA	BLH LIC C	19990611KA	249 A 97.7	2.700 150	N	42-07-28 071-00-05	N	136.2	13.44		
WOQL 9795	WINCHENDON MA	BLH LIC C	20041229ADT	249 A 97.7	6.000 100	Y	42-47-24 072-09-06	Y	307.4	106.77 -8.23	92.0 Short ²	115.0
WCTY 72346	NORWICH CT	BLH LIC C	19920206KD	249 A 97.7	1.900 125	N	41-28-28 072-06-14	N	225.3	116.03 1.03	92.0 Close	115.0
	NANTUCKET MA	RM VAC C	10997	249 A 97.7	0.000		41-17-12 070-06-06		140.4	132.84 17.84	92.0 Clear	115.0
WCTK 25869	NEW BEDFORD MA	BLH LIC C	19790808AG	251 B 98.1	47.000 155	N	41-37-21 070-55-07	N	166.1	67.42 -1.58	63.0 Short ¹	69.0

¹ Grandfathered short-spacing - no proposed change in site. See Technical Narrative.

² Contour protection provided. See Sheet 2 of Figure 4.



CONTOUR OVERLAP MAP

STATION WBOT(FM)

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