Statement C

ALLOCATION CONSIDERATIONS

prepared for

WGBH Educational Foundation

WGBH (FM) Boston, Massachusetts

Ch. 209B 21 kW 323 m

Maximum Power

The WGBH licensed facility of 100 kW effective radiated power (ERP) and 198 meters antenna height above average terrain (HAAT) exceeds the Class B maximum facility of 50 kW at 150 meters. Since WGBH is located in Zone I, WGBH operates under §73.511(c) of the Commission's Rules, which permits continued operation above 50 kW for such "grandfathered overpower" stations. The instant proposal seeks to maintain the "grandfathered overpower" status of WGBH, in that the proposal's 21 kW / 323 meter combination also exceeds the maximum Class B facility. However, the nominal distance to the 60 dBμ contour for the proposed WGBH facility is smaller than that of the existing, licensed facility (as shown below).

Facility	ERP (kW)	HAAT (m)	60 dBμ contour distance (km)
Licensed WGBH	100	198	63.6
Proposed WGBH	21	323	58.6
Maximum Class B	50	150	52.2

The land area to be covered by the proposed WGBH facility's 60 dBμ (1 mV/m) contour is 9,286 square kilometers, which is less than the 10,080 square kilometers currently encompassed.[2] **Figure 3A** depicts the licensed and proposed 60 dBμ contours. Since the proposed site is located 14.9 km to the northwest from the licensed site, the proposed 60 dBμ contour extends beyond that of the licensed facility, towards the northwest.

It is noted that §73.211(c) of the Commission's Rules do not permit a "grandfathered overpower" station modification to extend the 60 dBμ contour beyond that currently authorized. However, since WGBH is a non-commercial educational station operating in the reserved portion

[2]An ERP of 35 kW would provide an "equivalent" superpower facility to the present WGBH operation (i.e.: a 60 dBμ contour distance of 63.6 km). However, in order to avoid new prohibited overlap with WBPV (see **Figure 4D**), the proposed WGBH ERP is reduced to 21 kW.

of the FM band, and §73.211 pertains to commercial stations only, the restriction on extending the contour location is not believed to be applicable. Additionally, the companion rule section regarding non-commercial stations, §73.511(c), states that grandfathered overpower stations may continue to operate and is silent with respect to facility modifications. Further, if the proposed WGBH facility's ERP is reduced to conform to a standard Class B facility, the 60 dBμ contour would still be extended beyond that currently authorized towards the northwest.

The proposed relocation of the WGBH facility would result in various operating efficiencies for *WGBH Educational Foundation (WEF)*, as *WEF* is the licensee of WGBH-TV and WGBX-TV (and has applications pending to construct WGBH-DT and WGBX-DT) from the site proposed herein for the WGBH (FM) facility. More importantly, *WEF* representatives also report that current reception of WGBH in downtown areas of Boston (the principal community for WGBH) is impaired by multipath interference, due primarily to large buildings and the antenna height (198 meters HAAT) provided by the existing site. Such interference is expected to be reduced with use of the proposed facility, as the antenna height will be significantly increased (to 323 meters HAAT) and a better line-of-sight will be provided to downtown Boston. This expectation is born out by the performance of other FM stations located near the proposed site. If a waiver of the Commission's Rules regarding maximum ERP is required, then one is respectfully requested on behalf of *WEF* for the reasons stated above.

FM Facilities

A study of distances to other facilities from the proposed transmitter site shows that the following existing FM facilities require study in regard to prohibited overlap under §73.509 of the Commission's Rules:

Channel	Call	City	State	Lat	Distance
Applicant/Licensee			ERP / HAAT	Long	Bearing
208B	WVPR	LIC Windsor	, VT	43-26-17	159.85
Vermont Public Radio			1.80 kW 657M	72-27- 8	322.02
208A	WSKB	LIC Westfield	, MA	42- 7-55	130.34
Westfield State College			0.10 kW -66M	72-47-51	261.78
209B	WFGB	LIC Kingston	, NY	42- 4-35	238.49
Sound of Life, Inc.			3.10 kW 453M	74- 6-26	264.71
209A	WTBR-FM	LIC Pittsfield	, MA	42-27-34	168.65
Pittsfield Public School Committee			0.38 kW -35M	73-16-31	276.32
210A	WSCB	LIC Springfield	, MA	42- 5-59	111.58
Springfield College			0.10 kW 11M	72-33-30	258.34
211A	WBPV	LIC Charlton	, MA	42- 8- 1	62.60
Bay Path Vocational High School			0.10 kW 119M	71-57-26	251.97
212A	WZBC	LIC Newton	, MA	42-20- 5	5.78
Trustees of the Boston College			1.00 kW 67M	71-10-31	61.98

The attached **Figures 4A** through **4F** depict the pertinent protected and interfering contours of the stations listed and the proposed WGBH facility. The contours were plotted using the actual ERP and height above terrain along each radial for each facility, as specified in §73.509(c). For the facilities under study, the antenna elevation above mean sea level, geographic coordinates, and ERP (including directional antenna relative field values, where appropriate) were retrieved from the FCC's engineering database. The requisite contours were determined using NGDC 30-second terrain data along each radial of interest from each transmitter site and an implementation of the Commission's TVFMFS computer program which simulates the FM propagation curves. The F(50,10) distances are used to calculate distance to interfering contours, however if the distance is less than 16 km the F(50,50) curves are used, as specified by §73.509(c)(1).

Figure 4A illustrates that there is no prohibited overlap between the proposed WGBH Channel 209 facility and pertinent co-channel facilities. **Figures 4B** and **4C** depict the allocation situation with pertinent first and second adjacent facilities, respectively. **Figure 4D** is a detail map, showing that prohibited contour overlap does not occur with second-adjacent station WBPV (FM).

The allocation situation with respect to third-adjacent station WZBC is illustrated in the attached **Figure 4E** and **4F**. There is presently prohibited contour overlap between WZBC and the licensed WGBH facility. WZBC, a former 10 Watt Class D station, sought a waiver of the Commission's Rules on contour overlap in its application to increase power to 1 kW and achieve Class A status (see file number BPED-1861, June 21, 1974). WZBC also agreed in that application to accept interference from WGBH. The grant of that application created a situation (now "grandfathered") with considerable contour overlap between WGBH and WZBC.

Figure 4E depicts the WZBC protected F(50,50) 60 dBμ contour, along with the licensed and proposed WGBH interfering F(50,10) 100 dBμ contour. The area of contour overlap increases from 99.4 square km to 132 square km under the instant proposal. However, using the appropriate undesired-to-desired (U/D) ratio at locations within the overlap area, the net interference area to WZBC *decreases,* as described below.

Specifically, the area shaded yellow on **Figure 4E** represents those locations where the licensed WGBH F(50,10) signal strength exceeds the WZBC signal strength by 40 dB or more. This interference area encompasses 58 square km and a population of 55,022 persons. WZBC's 1974 application used this same method to illustrate the expected interference WZBC would experience from WGBH, which was accepted and agreed to by WZBC. The area tinted red on **Figure 4E** indicate where the U/D from the proposed WGBH facility is at least 40 dB with respect to WZBC. This area involves 17 square km and a population of 19,922 persons. Thus, the net interference area and population to WZBC decreases 71 and 64 percent, respectively, under the instant proposal. If a waiver of §73.509(a) of the Commission's Rules is necessary, then one is respectfully requested on behalf of *WEF*.

The Commission's Rules permit certain "grandfathered" commercial FM stations that are short-spaced to modify their facility under §73.213(a)(4) without regard to distance or interference protection to a third-adjacent station (such as the relationship between WGBH and WZBC in this case). Given the degree of contour overlap in this case, the circumstances that created the overlap, and since overall interference will actually decrease when the 40 dB U/D ratio is applied, it is

believed that the WGBH situation is similar to those grandfathered short-spaced stations addressed in §73.213(a).

Figure 4F illustrates the existing and proposed overlap of the WZBC interfering 100 dBμ contour with the 60 dBμ contour of the existing and proposed WGBH facilities. In each case, the WZBC 100 dBμ contour is entirely encompassed by the WGBH 60 dBμ contour and does not change its physical location. Hence, no change in the area or location of overlap occurs, and the proposal complies with §73.509(d).

A spacing study was performed as required by §73.507(c) regarding facilities differing in frequency by 10.6 or 10.8 MHz from the proposal. The instant proposal meets the minimum distance separation requirements of §73.207 in all such instances. The nearest stations on the pertinent channels are summarized below.

Channel	Call		City	State	Lat	Distance	Reqrd
Applicant/Licensee					Long	Bearing	Clear
262B	WHEB	LIC	Portsmouth	, NH	43- 3-11	91.04	20.0
Knight Broadcasting of New Hampshire, In			50.00 kW 140M		70-46- 4	24.84	71.04
262A	WHKK	CP	Middletown	, RI	41-35-48	79.36	15.0
Citadel License, Inc.			1.55 kW 200M		71-11-24	177.16	64.36
262A	WHKK	LIC	Middletown	, RI	41-33-55	82.84	15.0
Citadel License, Inc.			4.20 kW 90M		71-17- 7	182.77	67.84
263B	WRCH	LIC	New Britain	, CT	41-42-13	148.35	20.0
Radio Corporation of Hartford			7.50 kW 381M		72-49-57	243.52	128.35

TV Channel 6 Protection

The instant proposal complies with the Commission's protection requirements to TV Channel 6 stations. Under §73.525(a)(1), an affected TV Channel 6 station must be considered with a proposed non-commercial educational facility on Channel 209 if the distance between the respective transmitter sites is less than 196 km. Within a 196 km radius of the proposed WGBH Channel 209 facility, two TV Channel 6 facilities were identified: WLNE-TV (New Bedford, MA,

file number BLCT-920604KF, 79.4 km distant) and WCSH (TV) (Portland, ME, BLCT-840405KF, 177.3 km).

The licensed and proposed WGBH transmitter sites are both within the WLNE-TV Grade B contour. **Figure 4G** depicts the WLNE-TV Grade B (47 dBμ) contour, along with the predicted areas of interference for the licensed and proposed WGBH operations. The interference area was determined per the procedure in §73.511(e) of the Commission's Rules. As shown on **Figure 4G**, an area of new interference to WLNE-TV will exist, having an area of 184 square km and a population of 44,501 persons. However, an area experiencing existing interference from the licensed WGBH operation will no longer receive interference from the proposed WGBH facility. This area contains 1139 square km of land area and 359,074 persons. Hence, interference is eliminated to more than eight persons for every one person that would experience new interference. Since the proposal would eliminate interference to more than double the number of persons that experience new interference, the provisions of §73.525(b)(2) are satisfied and no further consideration of interference to WLNE-TV is necessary.

For completeness, however, it is noted that the population predicted to receive new interference may be reduced from that stated above. A large portion of the new interference area can be eliminated from consideration under the provisions of §73.525(e)(3)(iii), as this area is (1) beyond the DMA®[3] boundary of WLNE-TV's Providence, RI - New Bedford, MA area of operation, (2) outside the WLNE-TV Grade A contour, and (3) within the Principal Community Coverage contour of another television station having the same network affiliation as WLNE-TV (WCVB-TV, Ch.5, Boston, MA, an ABC affiliate). Further, a portion of the new interference area also can be eliminated under the provisions of §73.525(e)(3)(iv), as this area receives first-adjacent interference from WCVB-TV (Channel 5, Boston, MA), which is co-located at the proposed WGBH site. For maintaining the clarity of **Figure 4G**, those exclusion areas are not shown, however, further details can be provided if necessary.

[3]DMA is a registered trademark of Nielson Media Research. Since Arbitron no longer compiles ADI data, the Commission accepts showings using the Nielsen DMA.

With respect to Channel 6 television station WCSH, **Figure 4H** is supplied to demonstrate compliance with the Commission's requirements. **Figure 4H** depicts the WCSH Grade B (47 dBμ) contour, along with the interfering 73.3 dBμ F(50,10) from the proposed WGBH facility.[4] As shown on **Figure 4H**, there is no overlap between these contours, which complies with §73.525(c).

Canadian Considerations

The proposed site is located 301 km from the common border between the United States and Canada. The instant proposal meets the minimum distance separation requirements referenced in §73.504(a) in all such instances. The nearest station on the pertinent channels is summarized below.

Channel	Call	City	State	Lat / Long	Distance / Bearing	Reqrd Clear
Applicant/Licensee						
209B	CBF-2	Sherbrooke	, QU	45-23-48	346.24	237.0
		0.68 kW 173M		71-49-54	352.27	109.24

It is thus believed that the facility proposed herein will satisfy all of the pertinent Commission Rules and Policies now in effect regarding allocation matters and contour protection.

[4]The interfering contour level is determined in accordance with §73.525(e)(1)(ii), and considers the additional 6 dB receiving antenna directivity as permitted by §73.525(e)(1)(iii).

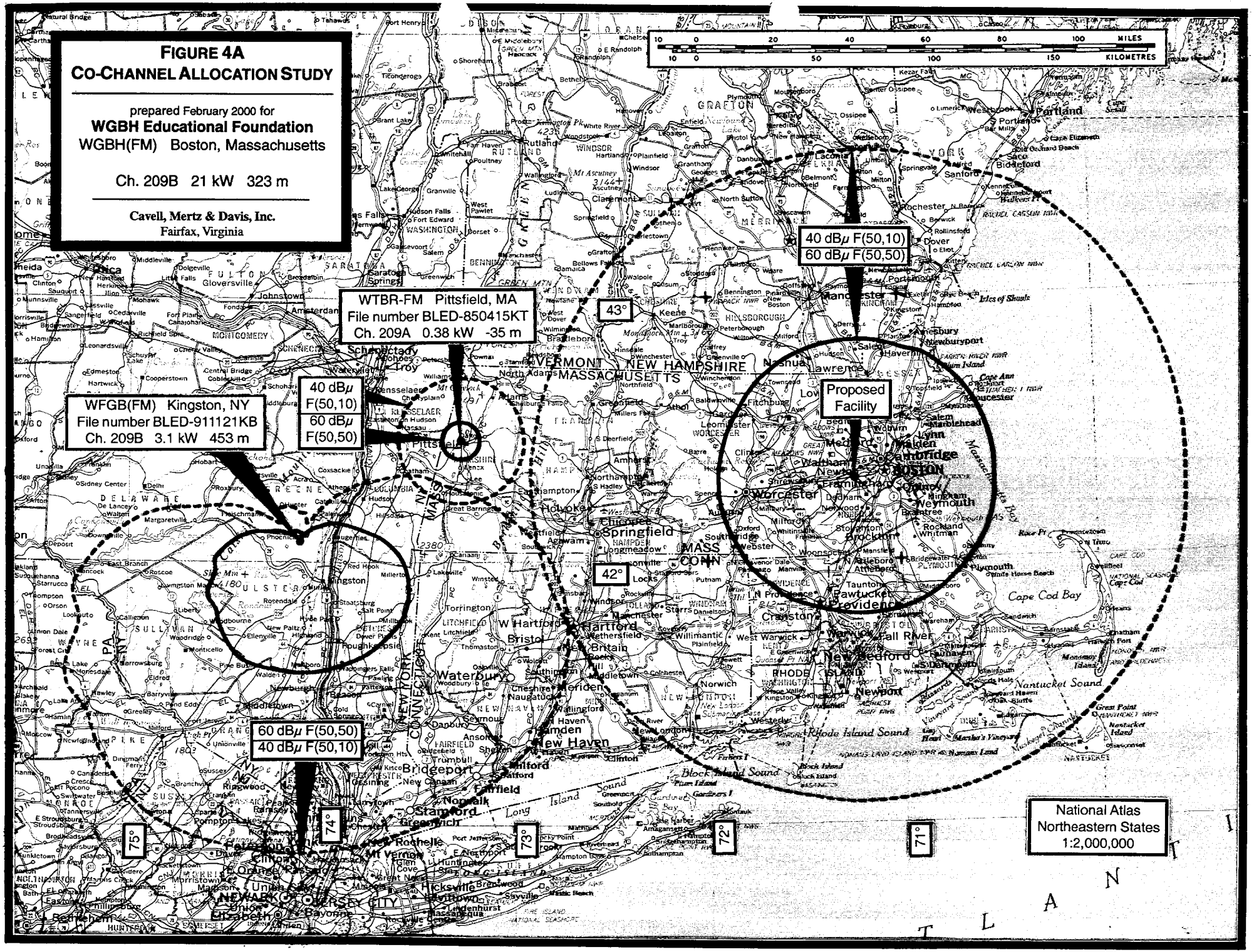
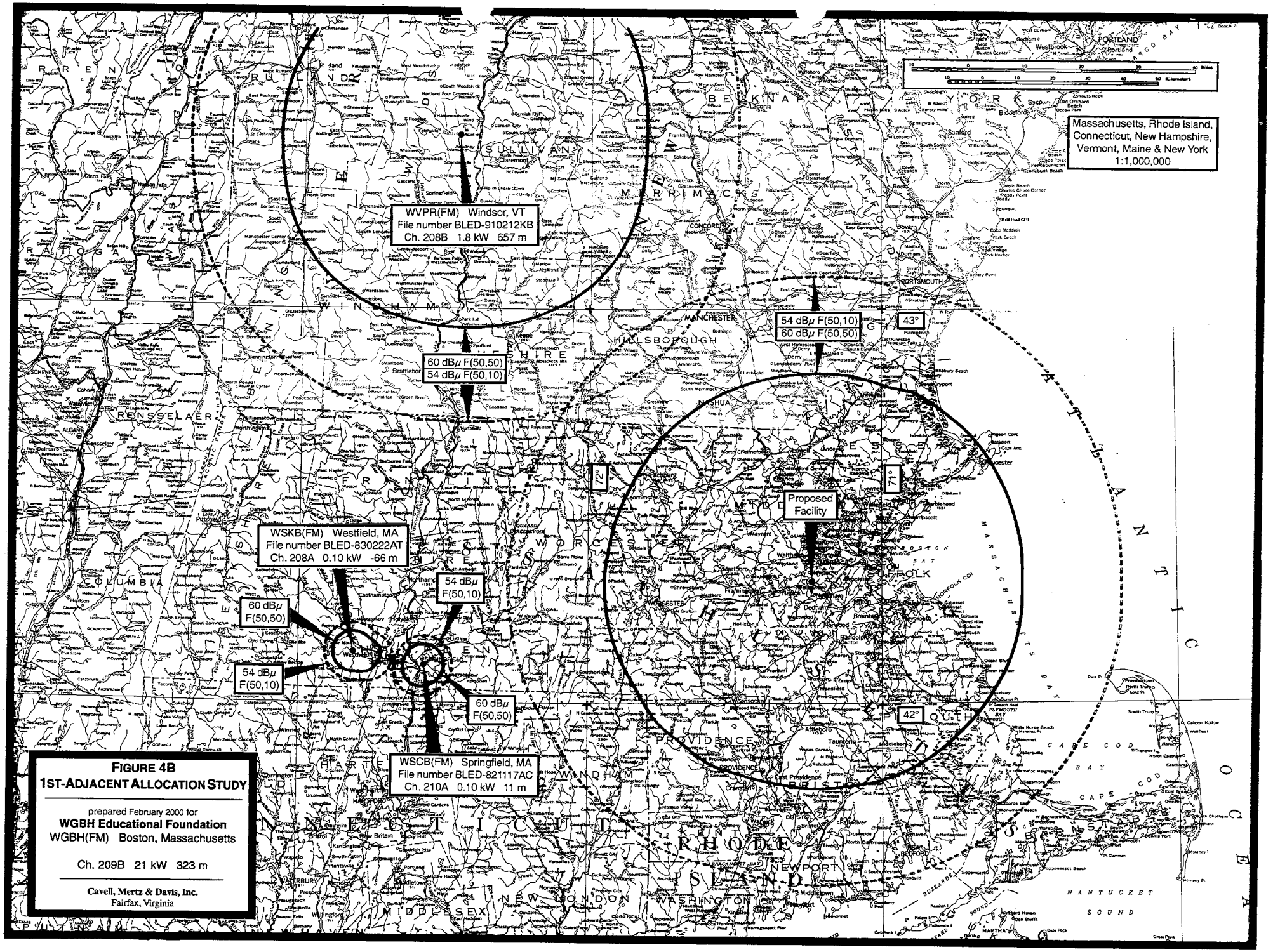


FIGURE 4A
CO-CHANNEL ALLOCATION STUDY
prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts
Ch. 209B 21 kW 323 m
Cavell, Mertz & Davis, Inc.
Fairfax, Virginia
10 0 20 40 60 80 100 MILES
10 0 50 100 150 KILOMETRES
WTBR-FM Pittsfield, MA
File number BLED-850415KT
Ch. 209A 0.38 kW -35 m
WFGB(FM) Kingston, NY
File number BLED-911121KB
Ch. 209B 3.1 kW 453 m
40 dBμ F(50,10)
60 dBμ F(50,50)
40 dBμ F(50,10)
60 dBμ F(50,50)
60 dBμ F(50,50)
40 dBμ F(50,10)
Proposed Facility
43°
42°
74°
75°
73°
72°
71°
National Atlas
Northeastern States
1:2,000,000


WVPR(FM) Windsor, VT
File number BLED-910212KB
Ch. 208B 1.8 kW 657 m
60 dBμ F(50,50)
54 dBμ F(50,10)
54 dBμ F(50,10)
60 dBμ F(50,50)
43°
72°
71°
42°
Proposed Facility
WSKB(FM) Westfield, MA
File number BLED-830222AT
Ch. 208A 0.10 kW -66 m
54 dBμ F(50,10)
60 dBμ F(50,50)
54 dBμ F(50,10)
60 dBμ F(50,50)
WSCB(FM) Springfield, MA
File number BLED-821117AC
Ch. 210A 0.10 kW 11 m
Massachusetts, Rhode Island, Connecticut, New Hampshire, Vermont, Maine & New York
1:1,000,000
FIGURE 4B
1ST-ADJACENT ALLOCATION STUDY
prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts
Ch. 209B 21 kW 323 m
Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

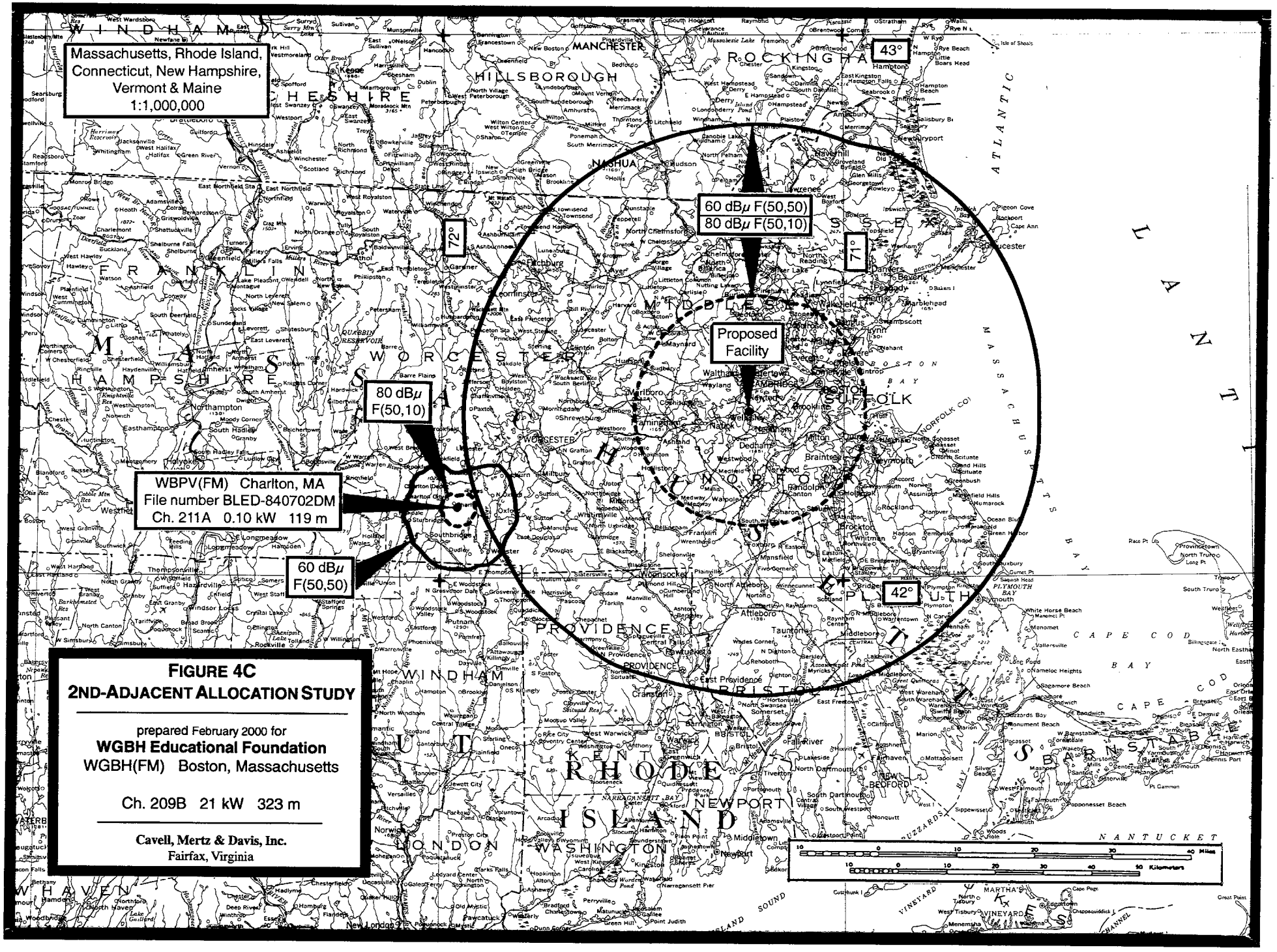


FIGURE 4C
2ND-ADJACENT ALLOCATION STUDY

prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts

Ch. 209B 21 kW 323 m

Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

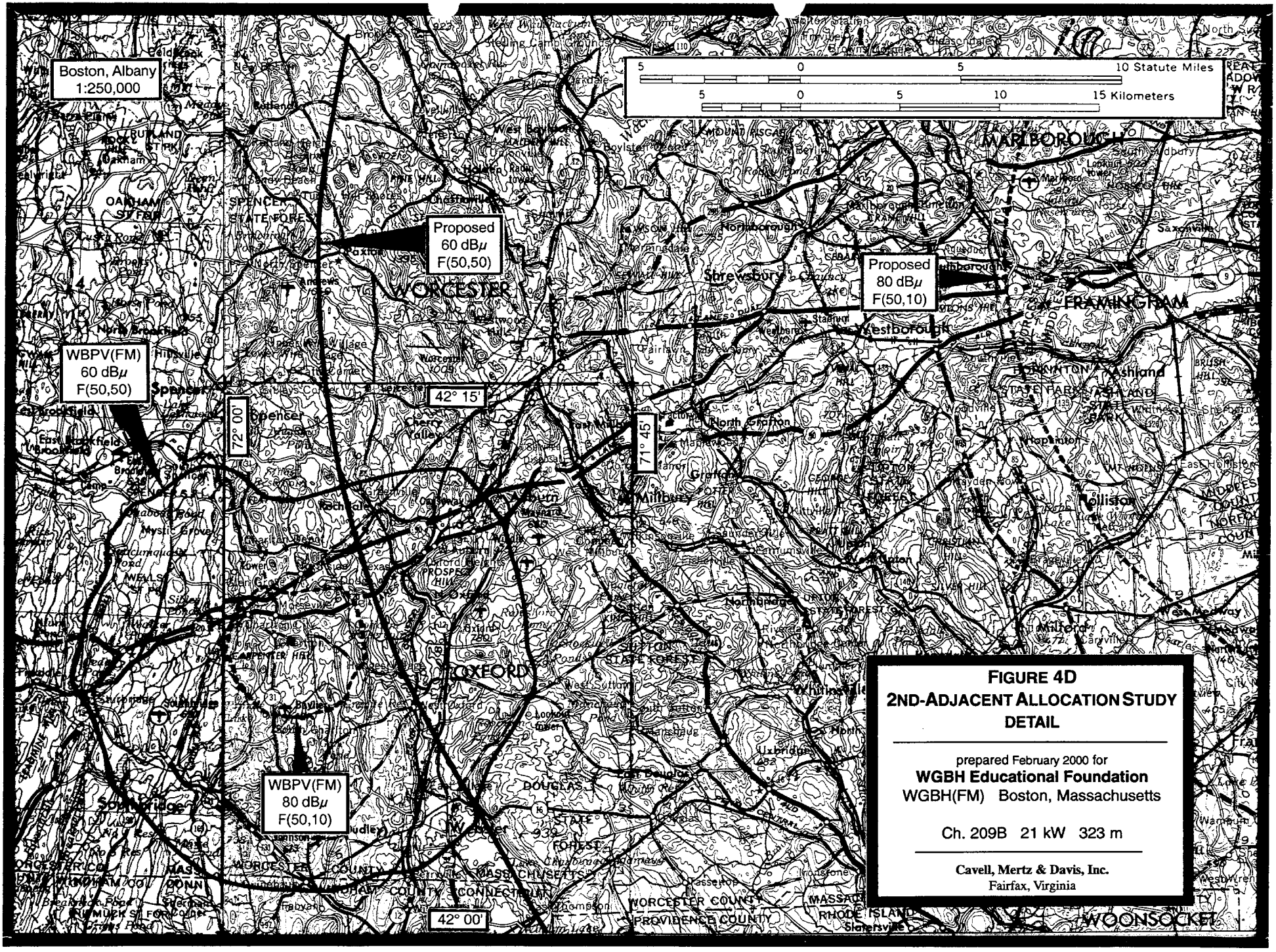


FIGURE 4D
2ND-ADJACENT ALLOCATION STUDY DETAIL

prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts

Ch. 209B 21 kW 323 m

Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

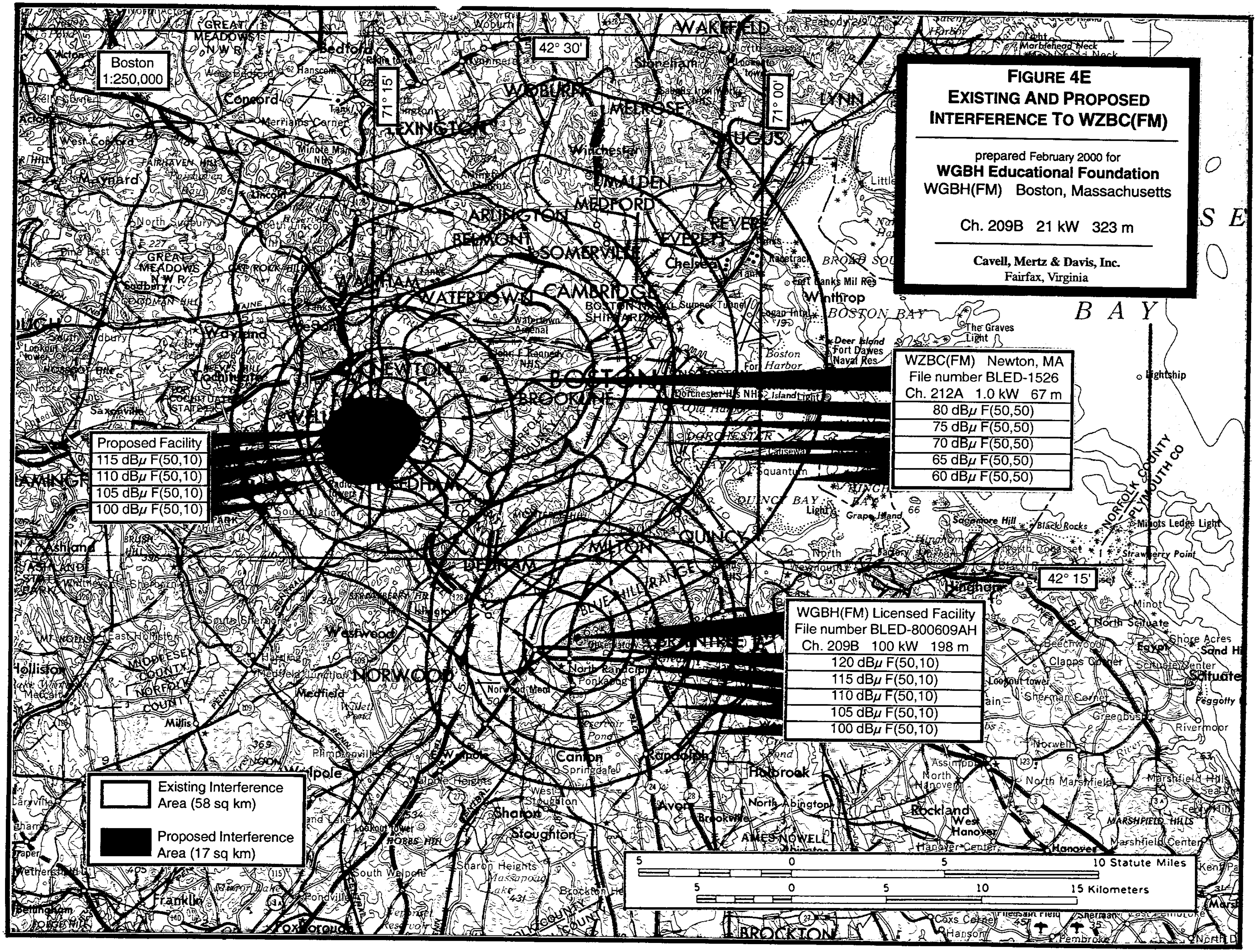


FIGURE 4E
EXISTING AND PROPOSED
INTERFERENCE TO WZBC(FM)
prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts
Ch. 209B 21 kW 323 m
Cavell, Mertz & Davis, Inc.
Fairfax, Virginia
Boston
1:250,000
42° 30'
71° 15'
71° 00'
42° 15'
WZBC(FM) Newton, MA
File number BLED-1526
Ch. 212A 1.0 kW 67 m
80 dBμ F(50,50)
75 dBμ F(50,50)
70 dBμ F(50,50)
65 dBμ F(50,50)
60 dBμ F(50,50)
Proposed Facility
115 dBμ F(50,10)
110 dBμ F(50,10)
105 dBμ F(50,10)
100 dBμ F(50,10)
WGBH(FM) Licensed Facility
File number BLED-800609AH
Ch. 209B 100 kW 198 m
120 dBμ F(50,10)
115 dBμ F(50,10)
110 dBμ F(50,10)
105 dBμ F(50,10)
100 dBμ F(50,10)
Existing Interference
Area (58 sq km)
Proposed Interference
Area (17 sq km)
5 0 5 10 Statute Miles
5 0 5 10 15 Kilometers
BOSTON
CAMBRIDGE
NEWTON
BROOKLINE
WATERTOWN
WALTHAM
SOMERVILLE
MEDFORD
MALDEN
EVERETT
Chelsea
Winthrop
ARLINGTON
BELMONT
LEXINGTON
WOBURN
MELROSE
WAKEFIELD
LYNN
SAUGUS
REVERE
QUINCY
MILTON
DEDHAM
NORWOOD
Westwood
Canton
Randolph
Holbrook
Sharon
Stoughton
Hingham
BROCKTON
BOSTON BAY
QUINCY BAY
BAY

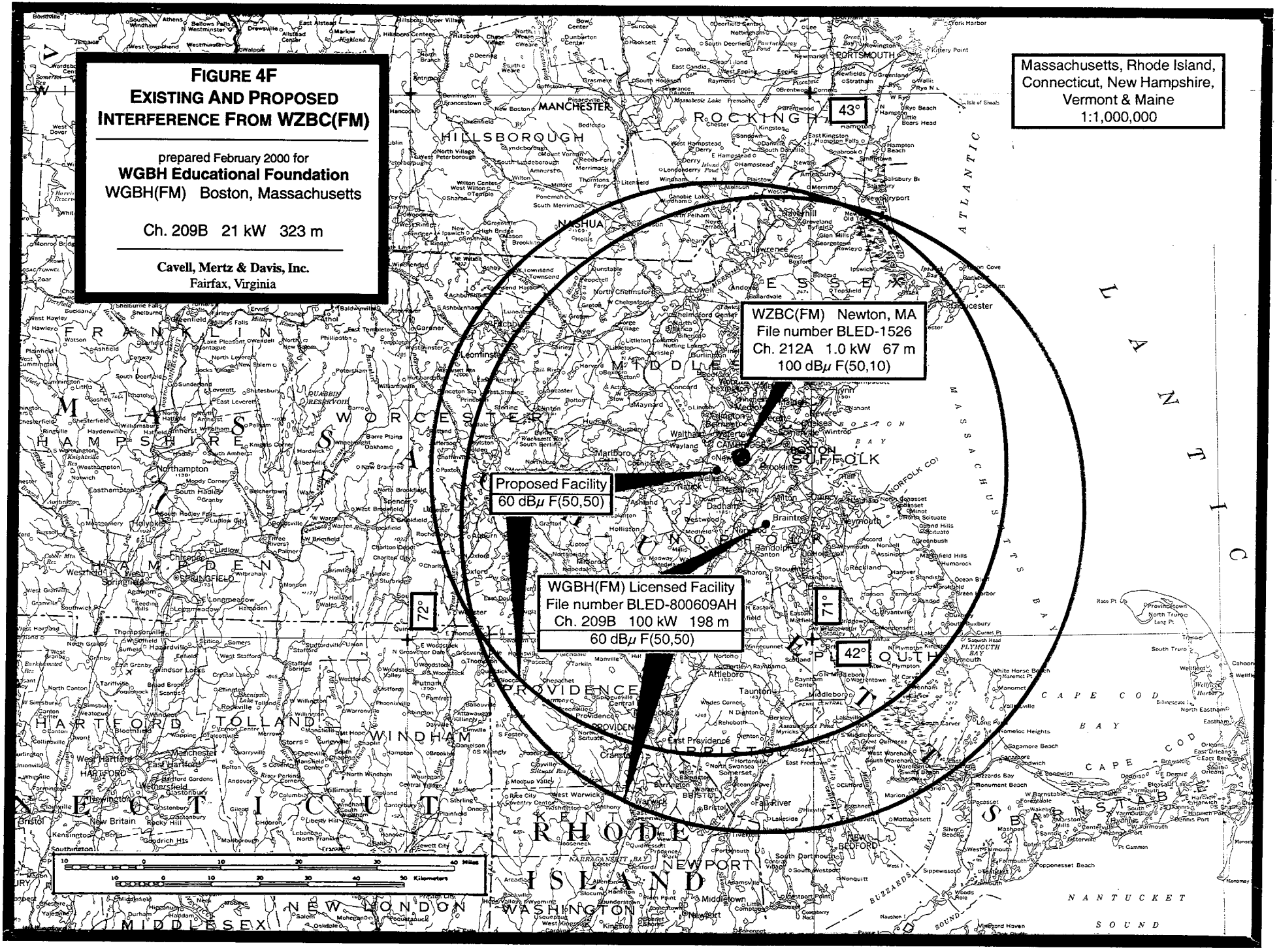


FIGURE 4F
EXISTING AND PROPOSED
INTERFERENCE FROM WZBC(FM)
prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts
Ch. 209B 21 kW 323 m
Cavell, Mertz & Davis, Inc.
Fairfax, Virginia
Massachusetts, Rhode Island,
Connecticut, New Hampshire,
Vermont & Maine
1:1,000,000
WZBC(FM) Newton, MA
File number BLED-1526
Ch. 212A 1.0 kW 67 m
100 dBμ F(50,10)
Proposed Facility
60 dBμ F(50,50)
WGBH(FM) Licensed Facility
File number BLED-800609AH
Ch. 209B 100 kW 198 m
60 dBμ F(50,50)
43°
42°
72°
71°
ATLANTIC
OCEAN
BOSTON
MANCHESTER
NASHUA
PORTSMOUTH
PROVIDENCE
NEWPORT
NEW BEDFORD
PLYMOUTH
CAPE COD BAY
NANTUCKET SOUND
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND
NEW HAMPSHIRE
VERMONT
SPRINGFIELD
HARTFORD
WORCESTER
Miles
Kilometers

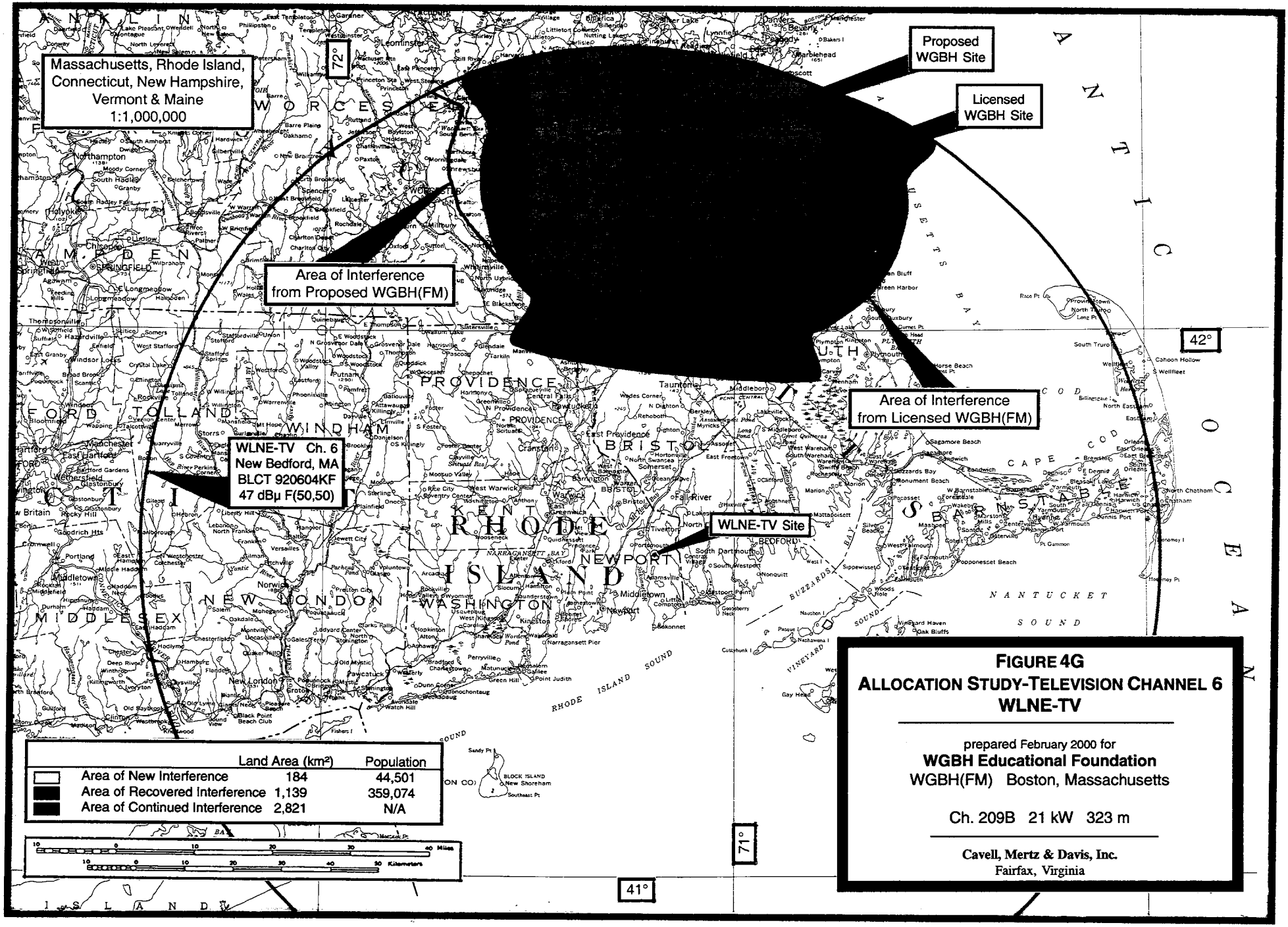


FIGURE 4G
ALLOCATION STUDY-TELEVISION CHANNEL 6
WLNE-TV

prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts

Ch. 209B 21 kW 323 m

Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

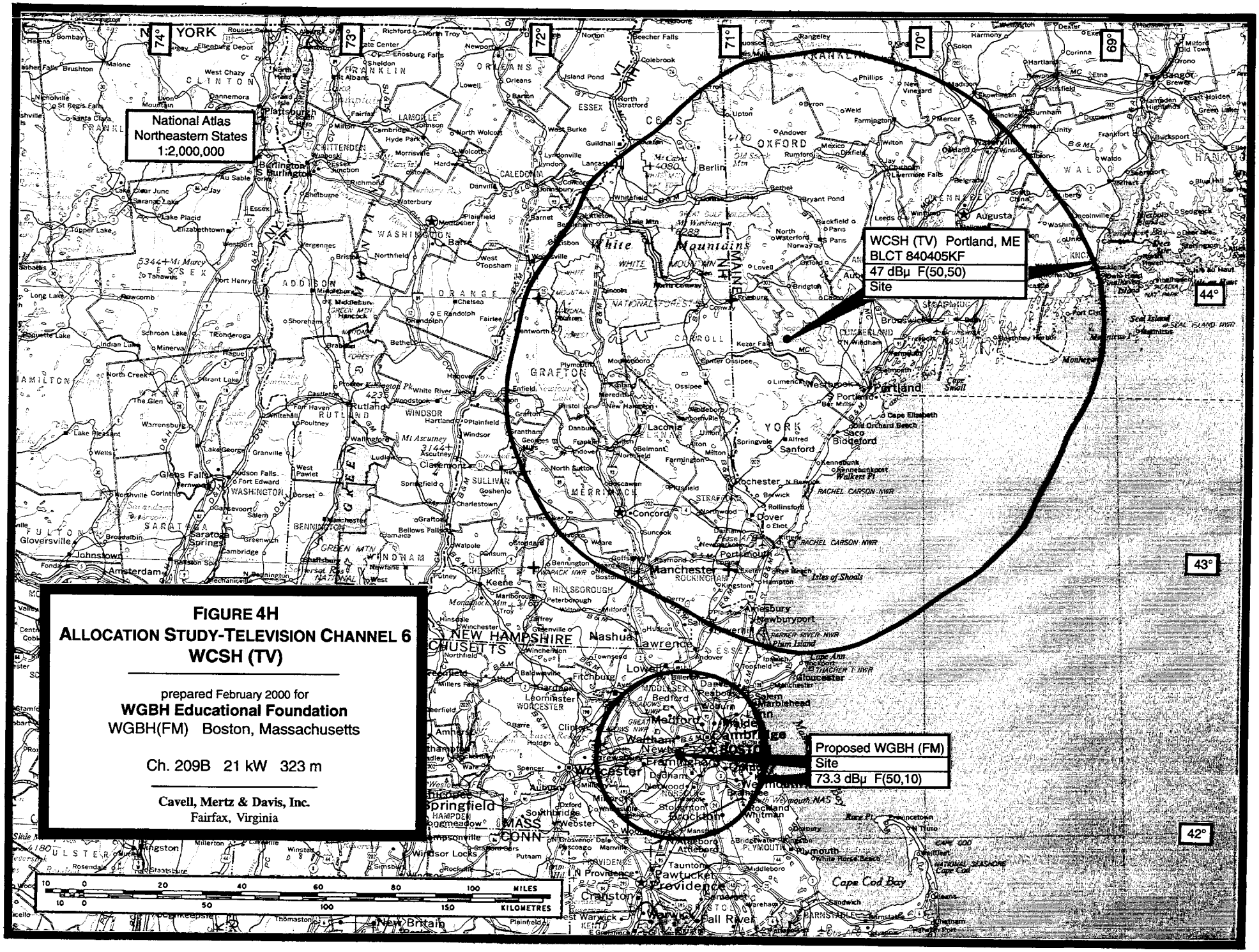


FIGURE 4H
ALLOCATION STUDY-TELEVISION CHANNEL 6
WCSH (TV)

prepared February 2000 for
WGBH Educational Foundation
WGBH(FM) Boston, Massachusetts

Ch. 209B 21 kW 323 m

Cavell, Mertz & Davis, Inc.
Fairfax, Virginia