

## EXHIBIT 12

### ENGINEERING REPORT

Engineering Data for Section I and Section III-A of  
FCC Form 349, and Additional Engineering Data in Support of  
Request for Waiver of Minor Change Requirement

#### I: Introduction

This Engineering Report has been prepared for Northeast Broadcasting Company, Inc. (“Northeast”), applicant in the Federal Communications Commission’s Auction 83 for a new FM translator on Channel 243D at Needham, Massachusetts, File Number BNPFT-20030317JQI. The Report provides complete engineering data for this long form application for the proposed translator, and also includes information and data in support of a request for waiver of the requirements of Section 74.1233(a)(1) of the Commission’s Rules, to permit operation of the proposed translator on Channel 291D. The Report includes this Section I and the following sections:

- II: Necessity for Change to Non-Precluded Frequency
- III: Projected Operation of FM Translator on Channel 291D
- IV: Detailed Analysis of Available LPFM Filing Opportunities
- V: Compliance with Environmental Rules
- Statement of Engineer

The argument in favor of the requested waiver is contained in a separate part of Exhibit 12.

The Commission’s use of the Arbitron market grid for the Boston market, to protect future Low Power FM station filing opportunities, prevents the applicant from continuing to specify Channel 243D. As a result of the applicable allocation considerations for the pertinent precluded frequencies, it was not feasible to amend to one of the adjacent channel frequencies or an intermediate frequency channel in the amendment filing window that extended from April 1 through April 19, 2013. This is explained in Section II of this Report.

The requested waiver is sought in order to specify non-precluded Channel 291D as the translator output frequency. This Report shows in detail in Section III that the projected operation of the proposed FM translator on Channel 291D would conform with all of the Commission’s allocation requirements for a new FM translator.

Furthermore, and most importantly, the Report shows in great detail in Section IV that there is absolutely no possibility that the projected operation of the translator on Channel 291D would ever block a new LPFM station at the proposed site, or anywhere else. This determination takes into account all the different types of LPFM facilities, up to 250 watts effective radiated power, that the Commission has considered at various times.

A substitute Tech Box portion of Section III-A of FCC Form 349 for this long form application is provided in a separate part of Exhibit 12. The only change from the original short form application is in the proposed translator output channel.

The location of the proposed translator would remain the same as that shown in the original short form application, and the 60 dBu contour for operation of the translator on Channel 291D therefore would clearly overlap the 60 dBu contour for the proposed translator on Channel 243D. The requested waiver is only for changing the frequency of the proposed FM translator to a non-precluded channel.

Unless the waiver request is approved, this opportunity for the proposed Northeast FM translator to promptly commence needed fill-in service on Channel 291D for FM station WXRV, Andover, Massachusetts, will be lost without resulting in any additional filing opportunities for new LPFM stations.

## II: Necessity for Change to Non-Precluded Frequency

The Boston Arbitron market grid identifies filing opportunities for a new LPFM station on Channel 243 very close to the location specified in the pending Northeast FM translator application. A study of the possibility of moving on Channel 243D to another location reveals that it is not possible to move the proposed translator far enough from the Boston grid points while maintaining some overlap of 60 dBu contours with the operation specified in the original short form application.

This Section provides complete information to establish that it would not be feasible for the proposed FM translator to operate on any of the frequencies (first, second or third adjacent channel or intermediate frequency channel) precluded by Channel 243D. The geographical coordinates of the proposed translator site are as follows:

North latitude: 42° 18' 12"  
West longitude: 71° 13' 08".

The pertinent contours for the proposed translator and the FM stations of interest are depicted in Figure 1 of this Section. The transmitting facilities for the FM stations are listed in Table A of this Section.

For operation of the proposed FM translator on third-adjacent Channel 240D, and also on first-adjacent Channel 242D, there would be first-adjacent-channel contour overlap with WSRS(FM) on Channel 241B. Additionally, as the proposed translator 60 dBu contour falls entirely within the WSRS(FM) 54 dBu F(50,50) protected contour, it would not be possible to move the translator to a different site in order to protect WSRS(FM) and still provide some overlap of 60 dBu contours with the original short form application.

Operation on second-adjacent Channel 241D would result in co-channel contour overlap between the proposed FM translator and WSRS(FM) on Channel 241B, and it would not be possible to move the translator to a different site to protect WSRS(FM) and still provide overlap of translator service areas.

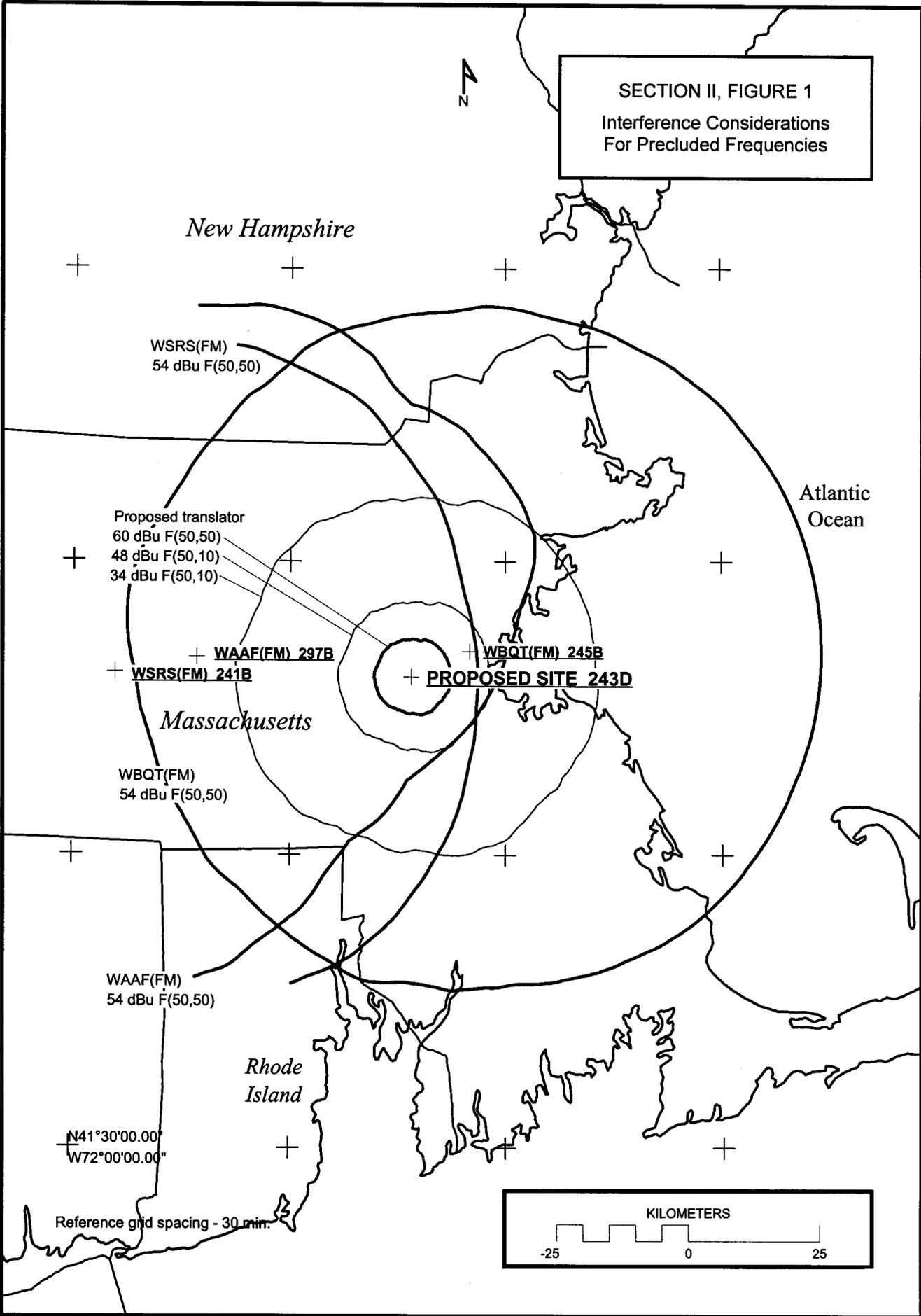
For operation of the proposed FM translator on first-adjacent Channel 244D, and also on third-adjacent Channel 246D, there would be first-adjacent-channel contour overlap with WBQT(FM) on Channel 245B, and it would not be possible to move the translator to a different site to protect WBQT(FM) while providing overlap of translator service areas.

Operation on second-adjacent Channel 245D would result in co-channel contour overlap between the proposed FM translator and WBQT(FM) on Channel 245B, and it would not be possible to move the translator to a different site to protect WBQT(FM) while providing overlap of translator service areas.

On the intermediate frequency Channels 296D and 297D, there would be first-adjacent channel contour overlap, and co-channel contour overlap, respectively, between the proposed FM translator and WAAF(FM) on Channel 297B. In both instances the proposed translator 60 dBu contour falls entirely within the WAAF(FM) 54 dBu F(50,50) protected contour, and it would not be possible to move the translator to a different site to protect WAAF(FM) and still provide some overlap of 60 dBu contours with the original short form application.

Accordingly, none of the frequencies precluded by the proposed FM translator on Channel 243D is available for use. The applicant therefore proposes operation on Channel 291D.

SECTION II, FIGURE 1  
Interference Considerations  
For Precluded Frequencies



## SECTION II, TABLE A

FM Station Facilities for  
Study of Precluded Frequencies

Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities	
			Effective Radiated Power and Antenna	Antenna Height Above Average Terrain
241B	WSRS(FM), Worcester, MA License BMLH-20051227AFL	N 42° 18' 34" W 71° 54' 13"	16.5 kW Nondirectional	263 meters
245B	WBQT(FM), Boston, MA License BLH-19960903KE	N 42° 20' 50" W 71° 04' 59"	22.5 kW Nondirectional	224 meters
297B	WAAF(FM), Westborough, MA License BLH-20051019ABP	N 42° 20' 09" W 71° 42' 57"	9.6 kW Directional	335 meters

### III: Projected Operation of FM Translator on Channel 291D

This Section of this Report provides complete data to show that the projected operation of the proposed Northeast FM translator on Channel 291D meets the Commission's allocation requirements for a new fill-in FM translator.

The operation of the proposed Northeast FM translator on Channel 291D would conform with the requirements of Section 74.1204 of the Commission's Rules for an FM translator with respect to overlap of predicted contours with the licensed operation of any FM station, LPFM station or FM translator, and the operation of such facilities specified in a construction permit or pending application, on the same channel and the first adjacent channels, on one of the second-adjacent channels, and on one of the third-adjacent channels, as shown in this Section. On the other second-adjacent channel and third-adjacent channel, the proposed translator site is located within the predicted protected contours of two existing FM stations. This Section demonstrates that under Section 74.1204(d) of the Rules no objectionable interference will be caused to either station. The operation of the proposed FM translator on Channel 291D therefore would not result in objectionable interference to any station.

The facilities assumed for the FM stations included in the contour overlap studies shown in Figures 1, 2 and 3 of this Section are listed in the accompanying Table A.

Figure 1 of this Section shows the pertinent predicted contours for the proposed FM translator and co-channel FM station WCOD-FM, Hyannis, Massachusetts, on Channel 291B.

The pertinent predicted contours for the proposed FM translator and first-adjacent-channel stations WWKX(FM), Woonsocket, Rhode Island, on Channel 292A; and WFNQ(FM), Nashua, New Hampshire, on Channel 292A, are shown in Figure 2 of this Section.

Figure 3 of this Section depicts the location of the proposed FM translator site with respect to the predicted protected contours of the nearby FM stations on the second- and third-adjacent channels. As shown in Figure 3, the proposed translator is located within the 54 dBu contour for WROR-FM, Framingham, Massachusetts, on Channel 289B; and WMJX(FM), Boston, Massachusetts, on Channel 294B.

The potential for interference from the proposed FM translator to WROR-FM and WMJX(FM) was evaluated by determining the three-dimensional volume in which the ratio of undesired to desired signal between the proposed translator and each of these stations equals or exceeds 40 dB, using free space propagation calculations for the translator signal.

With respect to WROR-FM, the predicted F(50,50) WROR-FM signal at the proposed FM translator site is 87.0 dBu, and interference would occur where the translator signal is 127.0 dBu (2240 mV/m) or greater. For WMJX(FM) the predicted F(50,50) WMJX(FM) signal at the proposed translator site is 87.1 dBu, and interference would occur where the translator signal is 127.1 dBu (2260 mV/m) or greater.

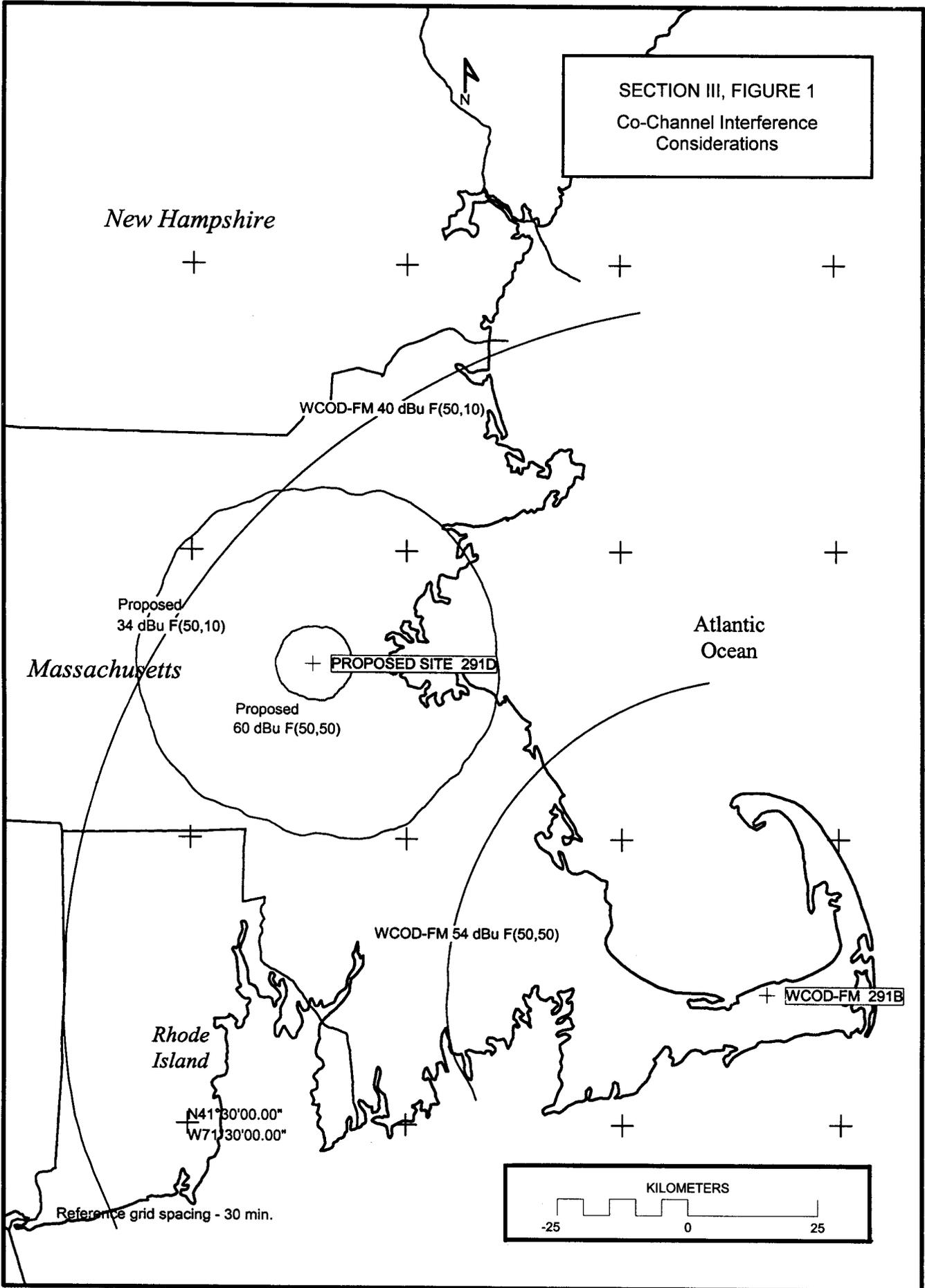
Computations show that, for operation at 10 watts effective radiated power and assuming uniform radiation from the proposed FM translator antenna in all directions, interference to either WROR-FM or WMJX(FM) would not extend beyond a distance of 10 meters from the translator antenna in any direction.

The map of Figure 4 of this Section is the most recent edition of the USGS 7-1/2-minute topographic map that depicts the vicinity of the proposed FM translator site. The proposed site is located in an urban area, but the translator antenna would be at a considerable height (152 meters) above ground, and there are no nearby exceptionally tall buildings. The proposed operation of the FM translator on Channel 291D conforms with the requirements of Section 74.1204(d) of the Commission's Rules, as the three-dimensional space within which interference to WROR-FM and WMJX(FM) may be expected does not include any places that could be considered populated, or any streets and highways; and the proposed FM translator therefore would not result in objectionable interference to WROR-FM or WMJX(FM).

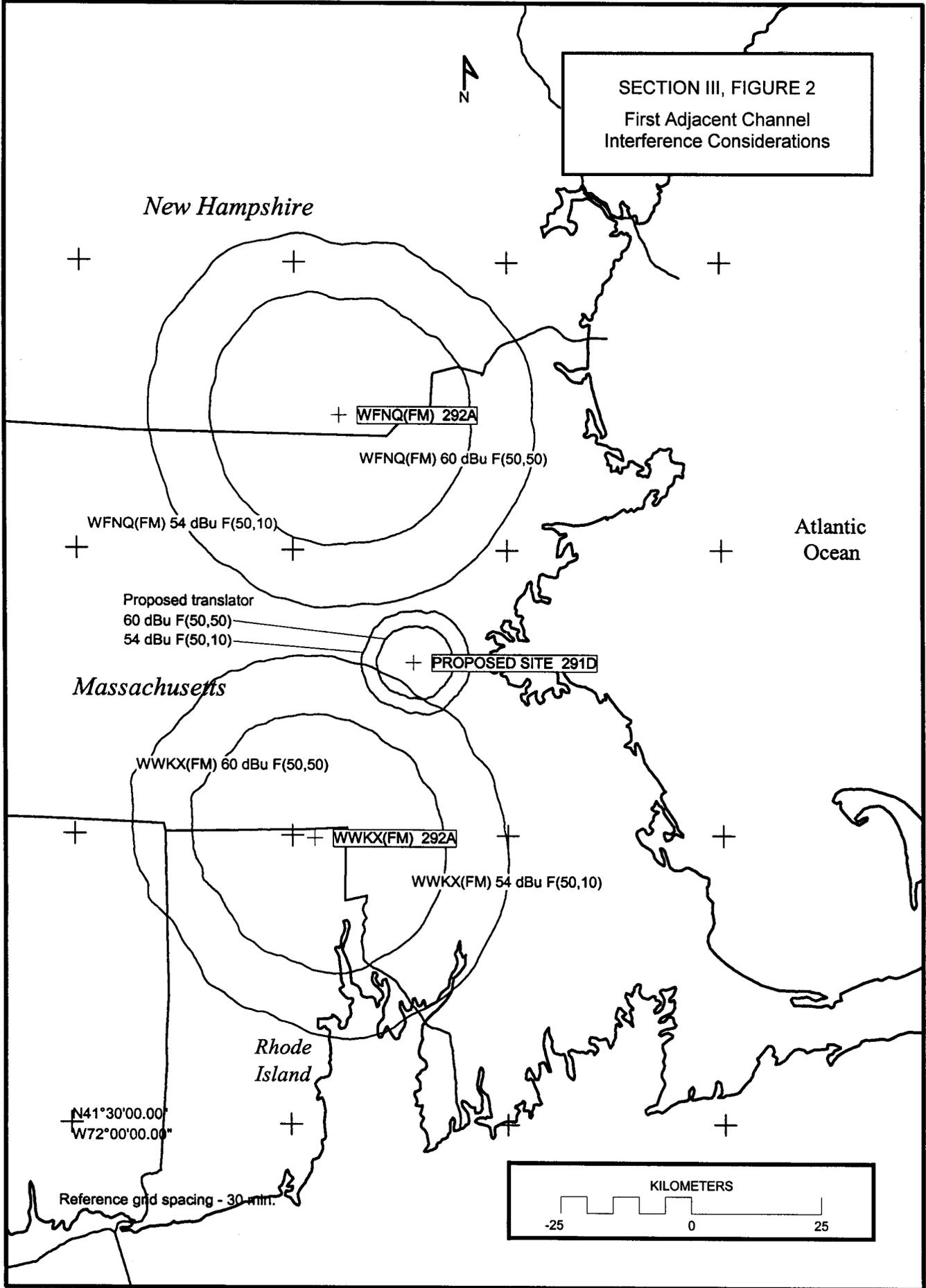
Fill-in service from the proposed FM translator would be provided for WXRV(FM), Andover, Massachusetts, as depicted in Figure 5 of this Section.

The predicted contours shown in Sections II and III of this Report were determined in accordance with the requirements of Section 73.313 of the Commission's Rules, from computerized calculations based on the NGDC 30-second terrain database and Figures 1 and 1a of Section 73.333 of the Rules. Distances to the contours were calculated at azimuthal increments of one degree.

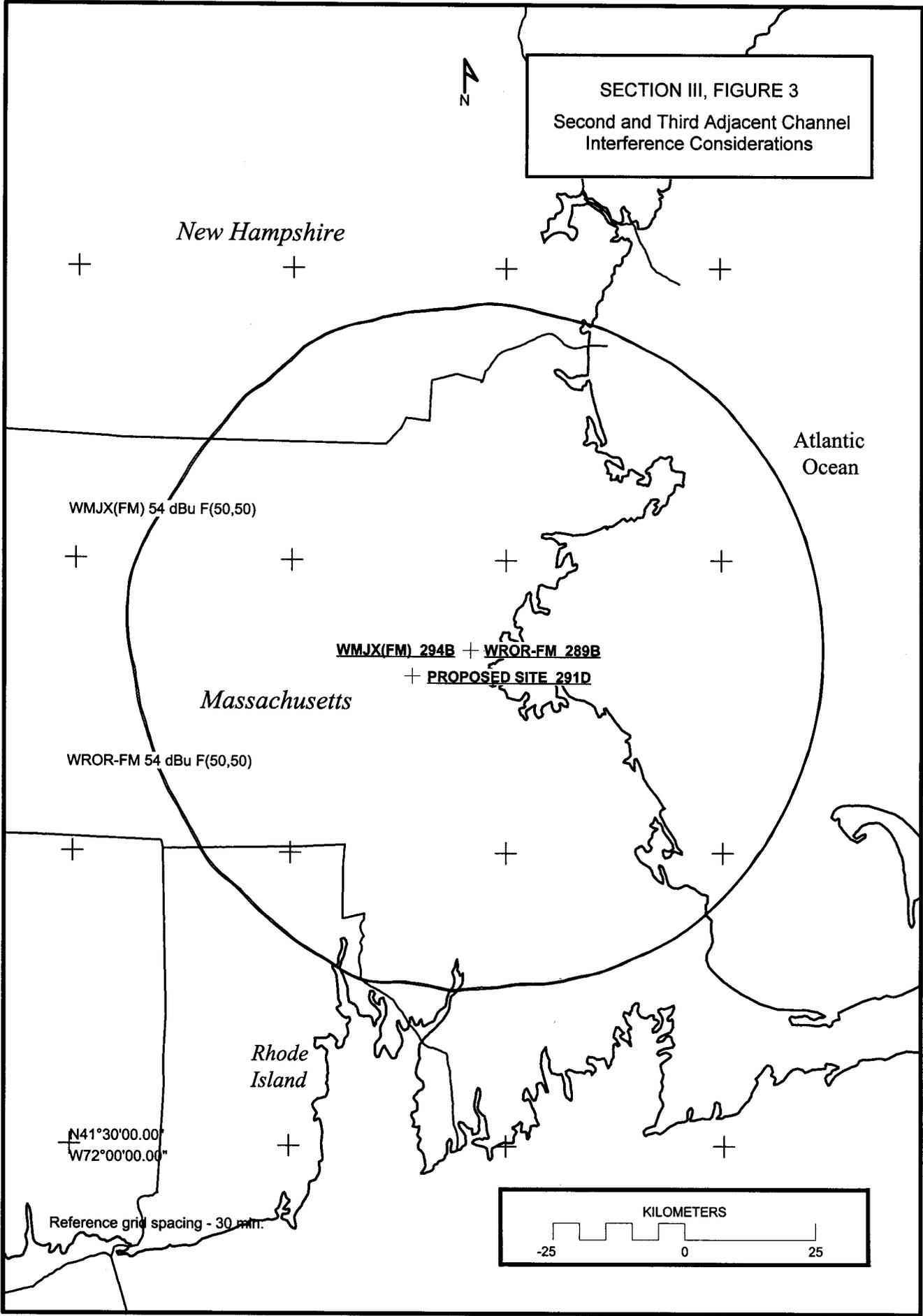
SECTION III, FIGURE 1  
Co-Channel Interference  
Considerations



SECTION III, FIGURE 2  
First Adjacent Channel  
Interference Considerations



SECTION III, FIGURE 3  
Second and Third Adjacent Channel  
Interference Considerations



*New Hampshire*

Atlantic  
Ocean

WMJX(FM) 54 dBu F(50,50)

**WMJX(FM) 294B + WROR-FM 289B**

**+ PROPOSED SITE 291D**

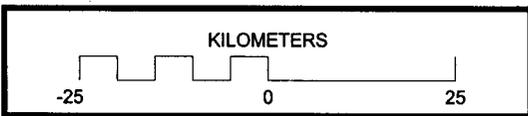
*Massachusetts*

WROR-FM 54 dBu F(50,50)

*Rhode  
Island*

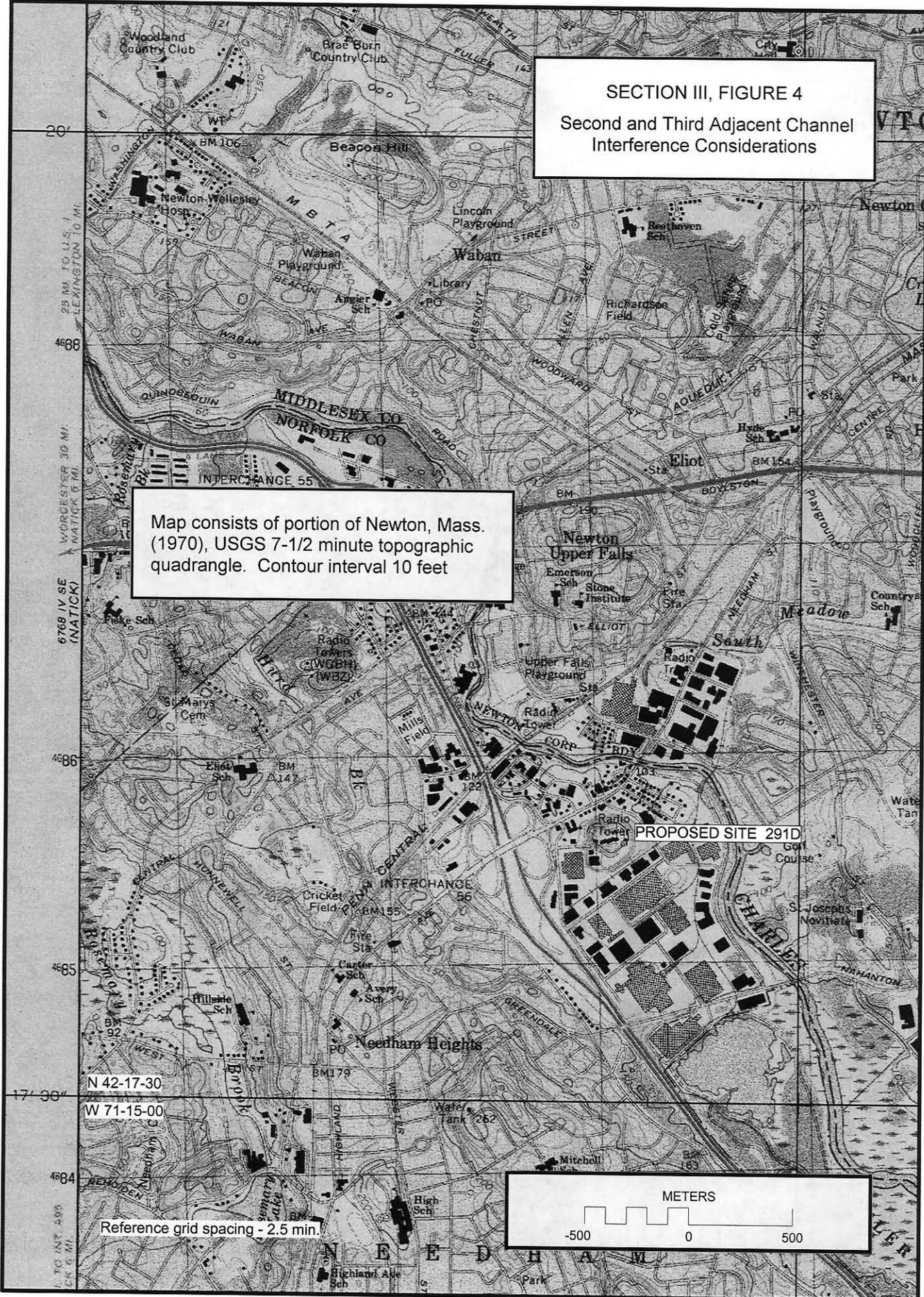
N41°30'00.00"  
W72°00'00.00"

Reference grid spacing - 30 min.



SECTION III, FIGURE 4  
Second and Third Adjacent Channel  
Interference Considerations

Map consists of portion of Newton, Mass.  
(1970), USGS 7-1/2 minute topographic  
quadrangle. Contour interval 10 feet



## SECTION III, TABLE A

FM Station Facilities for  
Interference Studies

Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities	
			Effective Radiated Power and Antenna	Antenna Height Above Average Terrain
289B	WROR-FM, Framingham, MA License BLH-20000223AAP	N 42° 20' 50" W 71° 04' 59"	23.0 kW Nondirectional	224 meters
291B	WCOD-FM, Hyannis, MA License BMLH-20080703AGY	N 41° 43' 44" W 70° 10' 02"	50 kW Nondirectional	131 meters
292A	WFNQ(FM), Nashua, NH License BLH-19920527KA	N 42° 44' 07" W 71° 23' 37"	0.95 kW Nondirectional	165 meters
292A	WWKX(FM), Woonsocket, RI License BLH-19921228KB	N 41° 59' 43" W 71° 26' 54"	1.15 kW Nondirectional	158 meters
294B	WMJX(FM), Boston, MA License BLH-19911018KC	N 42° 20' 50" W 71° 04' 59"	21.5 kW Nondirectional	235 meters

SECTION III, FIGURE 5  
FM Translator Fill-In Service

*New Hampshire*

+ WXRV(FM) 223B

*Massachusetts*

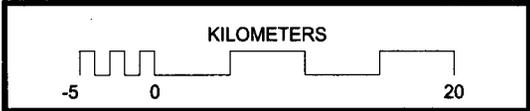
Atlantic  
Ocean

+ PROPOSED SITE 291D  
Proposed  
54 dBu F(50,50)

+ WXRV(FM) 54 dBu F(50,50)

Reference grid spacing - 15 min.

N42°00'00.00"  
W71°30'00.00"



#### IV: Detailed Analysis of Available LPFM Filing Opportunities

This Section of this Report provides complete information to establish that changing the frequency of the proposed Northeast FM translator from Channel 243D to Channel 291D, and operating at the proposed site with up to maximum facilities for a fill-in translator, could not block any future LPFM licensing opportunities at the proposed site or at any other location (this would be true even if the proposal in the Commission's Fifth Report and Order, Fourth Further Notice of Proposed Rulemaking and Fourth Order on Reconsideration in MM Docket No. 99-25 (FCC 12-28) to allow certain LPFM stations to operate with up to 250 watts effective radiated power were to be adopted in the future). An FM translator is the only type of new FM service that could be established on Channel 291 at the proposed site.

For operation of the proposed FM translator on Channel 291D, the frequencies that require evaluation are Channels 288 through 294. This analysis is based on the distance separation requirements of Section 73.807 of the Commission's Rules (as amended in the Commission's Fifth Order on Reconsideration and Sixth Report and Order in MM Docket No. 99-25 (FCC 12-144), and also taking into account the spacings proposed for LPFM station power levels above 100 watts). Although the intermediate frequency spacings for LPFM stations at power levels of 100 watts and below have been eliminated, for reference purposes intermediate frequency Channels 237 and 238 also have been evaluated with respect to power levels over 100 watts.

In Figures 1 through 3 of this Section, circles of a given radius from the proposed translator site show the greatest distance a new L100 LPFM station would need to be located from the translator on a particular frequency. In Figures 1 through 3 the outer circles represent the greatest distance proposed for a new L250 LPFM station. Figures 1 through 4 depict arcs drawn from the transmitter sites of pertinent existing FM stations that define the distance a new LPFM station would need to be located from these FM stations. Data for the FM stations, including the applicable distance separation requirements, is provided in Tables A through D of this Section.

Figure 1 of this Section demonstrates that operation of the proposed FM translator on Channel 291D would not eliminate any co-channel LPFM filing opportunities on Channel 291 for a distance of at least 39 kilometers (and also 44 kilometers) from the translator site (the greatest required co-channel spacing between an LPFM station and an FM translator). As shown, the minimum required spacings between an LPFM station and FM stations WCOD-FM on Channel 291B; WFNQ(FM) on Channel 292A; and WWKX(FM) on Channel 292A already rule out a new LPFM station on Channel 291 within 39 kilometers (and 44 kilometers) of the proposed translator site.

As shown in Figure 2 of this Section, operation of the proposed FM translator on Channel 291D would not eliminate any first-adjacent-channel LPFM filing opportunities on Channels 290 and 292 for a distance of at least 28 kilometers (and also 30 kilometers) from the translator site (the greatest required first-adjacent channel spacing between an LPFM station and an FM translator). The minimum required spacing between an LPFM station and FM station WROR-FM on Channel 289B already rules out a new LPFM station on Channel 290 within 28 kilometers (and 30 kilometers) of the proposed translator site. Similarly, the minimum required spacings to FM stations WCOD-FM on Channel 291B; WFNQ(FM) on Channel 292A; and WWKX(FM) on Channel 292A already rule out a new LPFM station on Channel 292.

Figure 3 of this Section demonstrates that operation of the proposed FM translator on Channel 291D would not eliminate any LPFM filing opportunities on second-adjacent Channels 289 and 293 for a distance of at least 21 kilometers (and also 22 kilometers) from the translator site (the greatest required second-adjacent channel spacing between an LPFM station and an FM translator). The minimum required spacing between an LPFM station and FM station WROR-FM on Channel 289B already rules out any possibility of a new LPFM station on Channel 289 within 21 kilometers (and 22 kilometers) of the proposed translator site; and the minimum required spacing to FM station WMJX(FM) on Channel 294B already rules out a new LPFM station on Channel 293 within that distance.

Additionally, Figure 3 of this Section shows that operation of the proposed FM translator on Channel 291D would not eliminate any LPFM filing opportunities on third-adjacent Channels 288 and 294 for a distance of at least 21 kilometers (and also 22 kilometers) from the translator site (again, the greatest required third-adjacent channel spacing between an LPFM station and an FM translator). The minimum required spacing between an LPFM station and FM station WROR-FM on Channel 289B already rules out any new LPFM station on Channel 288 within 21 kilometers (and 22 kilometers) of the proposed translator site; and the minimum required spacing to FM station WMJX(FM) on Channel 294B already rules out a new LPFM station on Channel 294 within this distance.

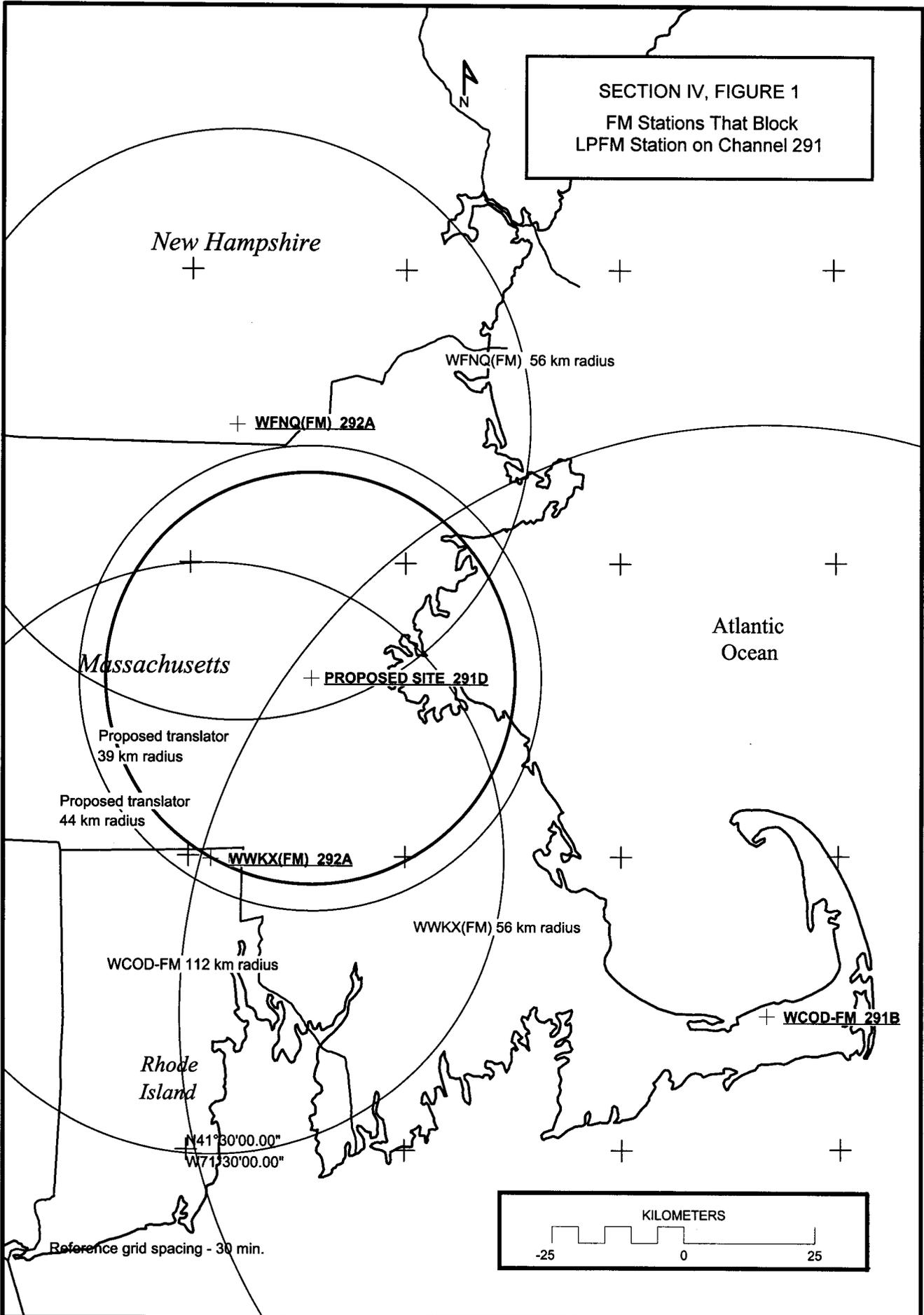
With respect to the intermediate frequency Channels 237 and 238, Figure 4 of this Section shows that operation of the proposed FM translator on Channel 291D would not eliminate any LPFM filing opportunities for a distance of at least 4 kilometers from the translator site, the intermediate frequency spacing proposed for a new L250 LPFM station. FM station WHRB(FM) on Channel 237A already rules out a new LPFM station on Channel 237 or 238.

The analysis in this Section is fully in agreement with the Commission's Arbitron market grid method for determining LPFM filing opportunities. As shown in Figures 5 and 6 of this Section, the market grid method identifies no filing opportunities for a new L100 LPFM station on Channel 291, or on any of the frequencies precluded by Channel 291, on the Boston Arbitron market grid or on the Providence-Warwick-Pawtucket Arbitron market grid. Although Figures 7 and 8 of this Section show filing opportunities for a new L100 LPFM station on Channel 291 on the Worcester, MA Arbitron market grid, Table E of this Section demonstrates that the nearest such protected grid points are well over 50 kilometers from the proposed FM translator site. There are no other Arbitron market grids within 39 kilometers of the proposed FM translator site.

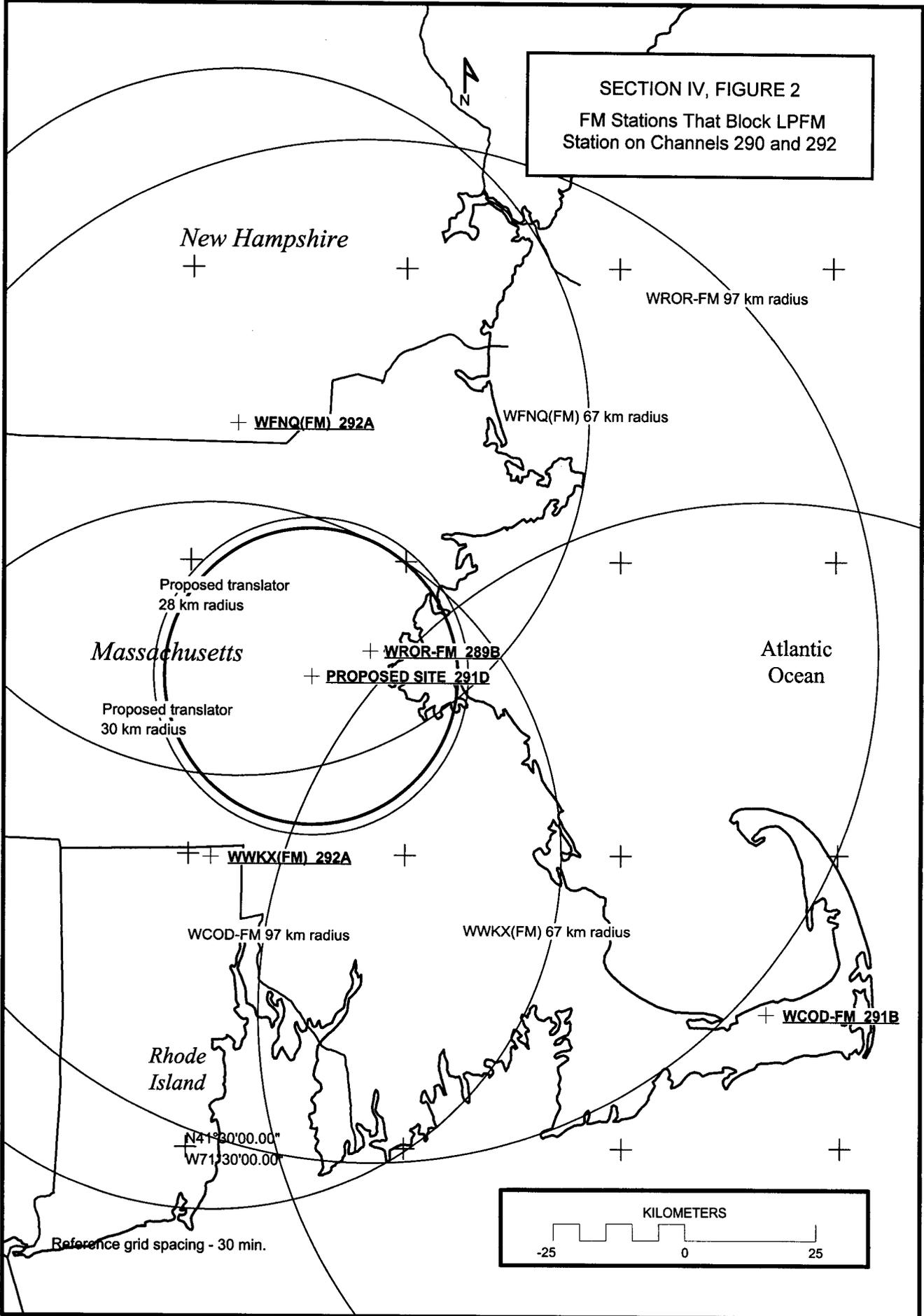
With respect to available channels for a new LPFM station at the proposed translator site, this Section clearly establishes no LPFM station can specify operation at the proposed translator site on Channel 291 or any of the frequencies precluded by Channel 291. The Commission's LPFM Channel Finder program indicates that Channels 235, 271 and 275 would still be available for use by an L100 LPFM station at the proposed translator site (assuming the LPFM applicant receives a waiver of the second adjacent channel spacing requirement). The results of the Commission's program are provided in Figure 8 of this Section.

It has therefore been firmly established in this Section that operation of the proposed FM translator on Channel 291D would in no way impede the Commission's objective of making channels available for new LPFM applicants.

SECTION IV, FIGURE 1  
FM Stations That Block  
LPFM Station on Channel 291



SECTION IV, FIGURE 2  
FM Stations That Block LPFM  
Station on Channels 290 and 292



SECTION IV, FIGURE 3

FM Stations That Block LPFM  
Station on Channels 288, 289,  
293 and 294

WROR-FM and WMJX(FM)  
112 km radius

*New Hampshire*

*Massachusetts*

Proposed translator  
21 km radius

**WMJX(FM) 294B + WROR-FM 289B**  
+ **PROPOSED SITE 291D**

Proposed translator  
22 km radius

Atlantic  
Ocean

WROR-FM and WMJX(FM)  
97 km radius

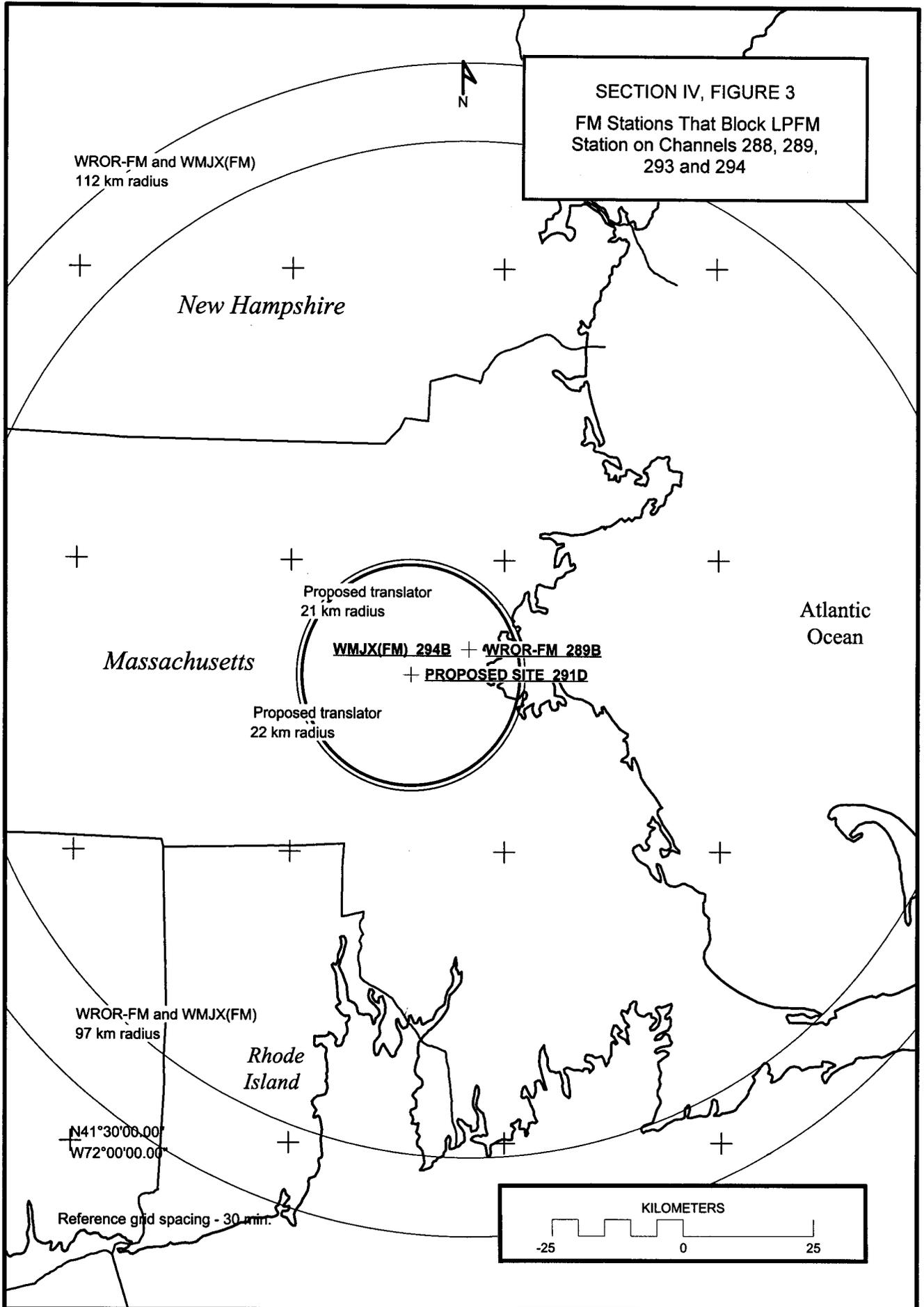
*Rhode  
Island*

N41°30'00.00"  
W72°00'00.00"

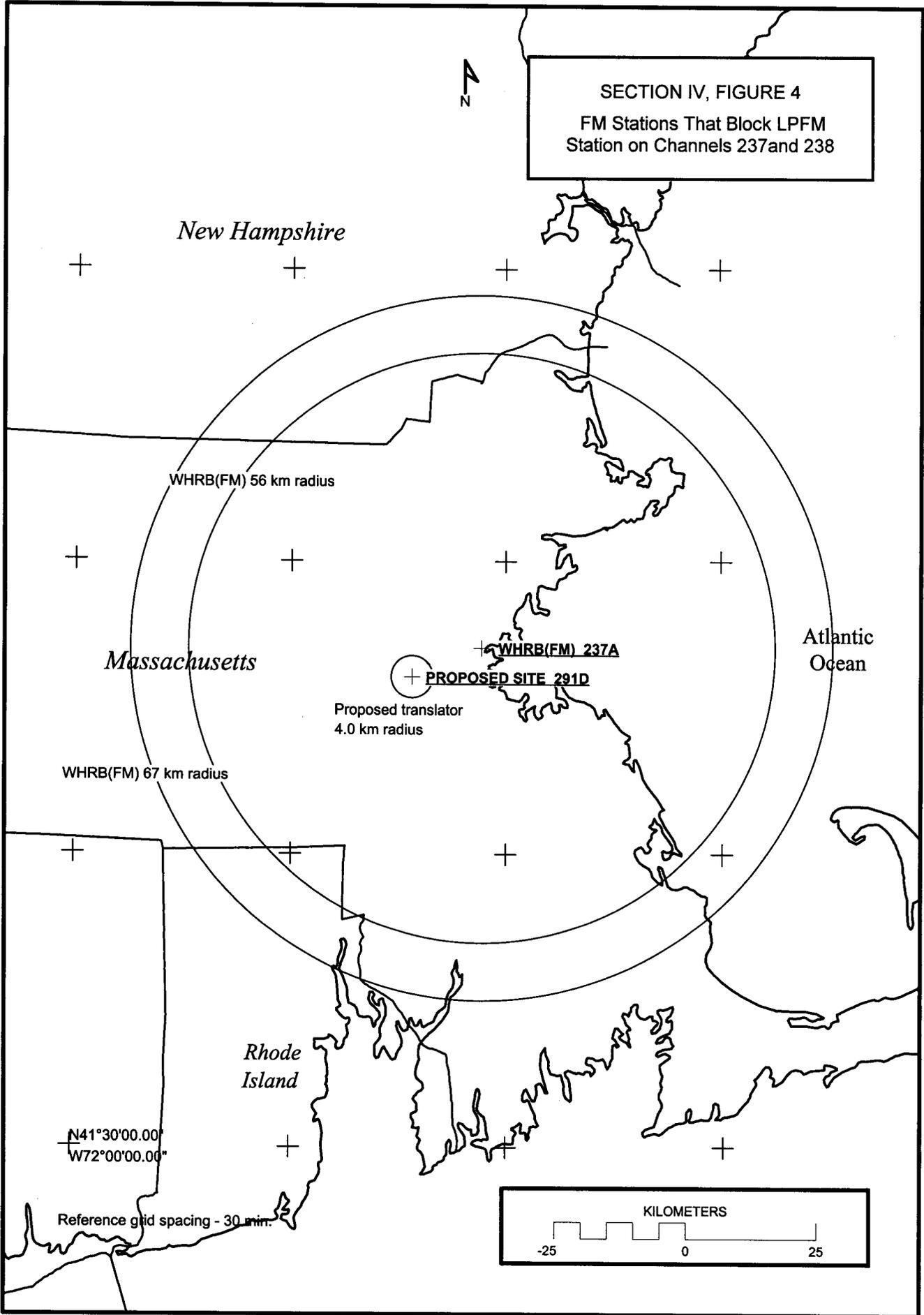
Reference grid spacing - 30 min.

KILOMETERS

-25 0 25



SECTION IV, FIGURE 4  
FM Stations That Block LPFM  
Station on Channels 237 and 238



SECTION IV, TABLE A

FM Stations That Block LPFM Station  
on Co-Channel 291 Within 39 km  
(and 44 km) of Proposed Translator Site

FM Stations Ruling Out LPFM Station				
LPFM Channel	Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Required Separation for LPFM Station
291L100 (and 291L250)	291B	WCOD-FM, Hyannis, MA License BMLH-20080703AGY	N 41° 43' 44" W 70° 10' 02"	112 km
	292A	WFNQ(FM), Nashua, NH License BLH-19920527KA	N 42° 44' 07" W 71° 23' 37"	56 km
	292A	WWKX(FM), Woonsocket, RI License BLH-19921228KB	N 41° 59' 43" W 71° 26' 54"	56 km

SECTION IV, TABLE B

FM Stations That Block LPFM Station on  
First-Adjacent Channels 290 and 292 Within  
28 km (and 30 km) of Proposed Translator Site

FM Stations Ruling Out LPFM Station				
LPFM Channel	Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Required Separation for LPFM Station
290L100 (and 291L250)	289B	WROR-FM, Framingham, MA License BLH-20000223AAP	N 42° 20' 50" W 71° 04' 59"	97 km
292L100 (and 292L250)	291B	WCOD-FM, Hyannis, MA License BMLH-20080703AGY	N 41° 43' 44" W 70° 10' 02"	97 km
	292A	WFNQ(FM), Nashua, NH License BLH-19920527KA	N 42° 44' 07" W 71° 23' 37"	67 km
	292A	WWKX(FM), Woonsocket, RI License BLH-19921228KB	N 41° 59' 43" W 71° 26' 54"	67 km

SECTION IV, TABLE C

FM Stations That Block LPFM Station on  
Second-Adjacent Channels 290 and 293 and  
Third-Adjacent Channels 288 and 294 Within  
21 km (and 22 km) of Proposed Translator Site

FM Stations Ruling Out LPFM Station				
LPFM Channel	Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Required Separation for LPFM Station
288L100 (and 288L250)	289B	WROR-FM, Framingham, MA License BLH-20000223AAP	N 42° 20' 50" W 71° 04' 59"	97 km
289L100 (and 289L250)	289B	WROR-FM, Framingham, MA License BLH-20000223AAP	N 42° 20' 50" W 71° 04' 59"	112 km
293L100 (and 293L250)	294B	WMJX(FM), Boston, MA License BLH-19911018KC	N 42° 20' 50" W 71° 04' 59"	97 km
294L100 (and 294L250)	294B	WMJX(FM), Boston, MA License BLH-19911018KC	N 42° 20' 50" W 71° 04' 59"	112 km

SECTION IV, TABLE D

FM Stations That Block LPFM Station on  
Intermediate Frequency Channels 237 and 238  
Within 4 km of Proposed Translator Site

FM Stations Ruling Out LPFM Station				
LPFM Channel	Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Required Separation for LPFM Station
237L250	237A	WHRB(FM), Cambridge, MA License BLH-20111115ABD	N 42° 21' 08" W 71° 03' 25"	67 km
238L250	237A	WHRB(FM), Cambridge, MA License BLH-20111115ABD	N 42° 21' 08" W 71° 03' 25"	56 km

SECTION IV, FIGURE 5

LPFM Channel Index for Boston Arbitron Market

MICRO\_BOSTONMA01031148

Boston, MA  
 Latitude 42-21-30  
 Longitude 071-03-37  
 Grid Size 31 x 31  
 Micro FM 100 watts at 30m HAAT  
 Co-Channel and 1st Adjacent Protected  
 2nd Adjacent Channel Not Protected  
 3rd Adjacent Channel Not Protected  
 I.F. Not Protected  
 TV Channel 6 Protected  
 CP Records Protected  
 APP Records Protected  
 FM Translators Protected  
 TV Channel 6 Translators/LP Protected  
 Auc83 FX App Records Not Protected

Chan	Avail	Chan	Avail	Chan	Avail	Chan	Avail	Chan	Avail
200	0	220	0	240	0	260	12	280	0
201	0	221	0	241	0	261	0	281	0
202	0	222	0	242	0	262	0	282	0
203	0	223	0	243	390	263	0	283	0
204	0	224	0	244	0	264	0	284	0
205	0	225	0	245	0	265	0	285	0
206	0	226	0	246	0	266	0	286	0
207	12	227	0	247	0	267	0	287	7
208	0	228	0	248	0	268	0	288	0
209	0	229	0	249	0	269	0	289	0
210	0	230	0	250	0	270	0	290	0
211	0	231	0	251	9	271	39	291	0
212	0	232	0	252	0	272	0	292	0
213	0	233	0	253	0	273	0	293	0
214	0	234	0	254	0	274	0	294	0
215	0	235	570	255	0	275	341	295	0
216	0	236	0	256	0	276	0	296	0
217	0	237	0	257	0	277	0	297	0
218	0	238	0	258	0	278	0	298	0
219	0	239	0	259	0	279	0	299	0
								300	0
-----		Total						1380	

SECTION IV, FIGURE 6

LPFM Channel Index for Providence-Warwick-Pawtucket Arbitron Market

MICRO\_PROVIDENCEWARWICKPAW08161730

Providence-Warwick-Paw  
 Latitude 41-49-26  
 Longitude 071-24-48  
 Grid Size 31 x 31  
 Micro FM 100 Watts at 30m HAAT  
 Co-Channel and 1st Adjacent Protected  
 2nd Adjacent Channel Not Protected  
 3rd Adjacent Channel Not Protected  
 I.F. Not Protected  
 TV Channel 6 Protected  
 CP Records Protected  
 APP Records Protected  
 FM Translators Protected  
 TV Channel 6 Translators/LP Protected  
 Auc83 FX App Records Not Protected

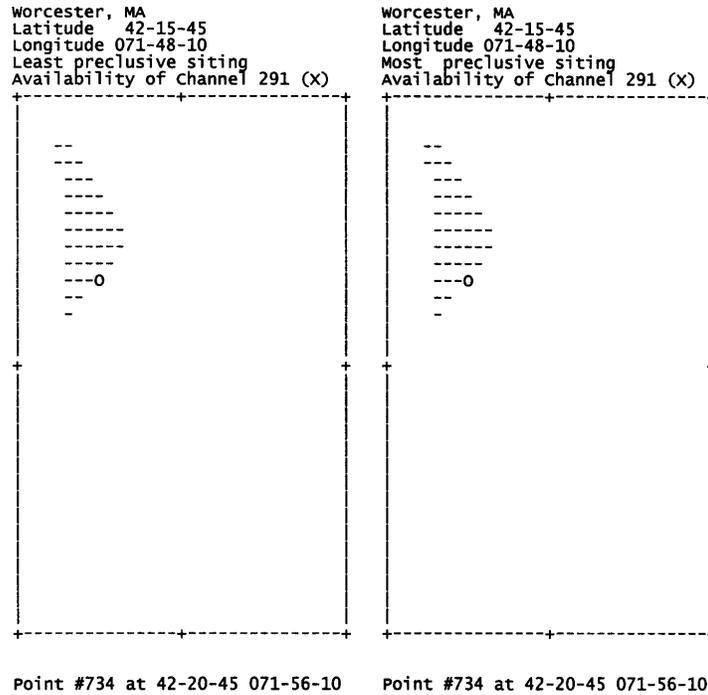
Chan	Avail								
200	0	220	0	240	0	260	0	280	0
201	0	221	0	241	0	261	0	281	0
202	0	222	0	242	0	262	0	282	3
203	0	223	0	243	133	263	0	283	2
204	0	224	3	244	0	264	0	284	0
205	0	225	0	245	0	265	0	285	0
206	0	226	0	246	0	266	560	286	0
207	0	227	0	247	0	267	0	287	0
208	0	228	0	248	0	268	0	288	0
209	0	229	8	249	31	269	0	289	0
210	0	230	0	250	0	270	0	290	0
211	0	231	0	251	0	271	0	291	0
212	0	232	0	252	0	272	0	292	0
213	0	233	0	253	0	273	0	293	0
214	0	234	0	254	0	274	0	294	0
215	0	235	313	255	0	275	287	295	0
216	0	236	196	256	0	276	0	296	0
217	0	237	0	257	0	277	0	297	0
218	0	238	0	258	0	278	0	298	0
219	0	239	0	259	0	279	0	299	0
								300	0

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 Total 1536



SECTION IV, FIGURE 8

Worcester, MA Arbitron Market Grids for Channel 291



SECTION IV, TABLE E

Distance From Translator Site to Nearest  
Worcester, MA Grid Points for Channel 291

FCC Grid Point Number	Geographical Coordinates of Grid Point	Distance from FM Translator
674	N 42° 22' 45", W 71° 54' 10"	57 km
675	N 42° 23' 45", W 71° 54' 10"	57 km
704	N 42° 21' 45", W 71° 55' 10"	58 km
707	N 42° 24' 45", W 71° 55' 10"	59 km
734	N 42° 20' 45", W 71° 56' 10"	59 km
795	N 42° 19' 45", W 71° 58' 10"	62 km
825	N 42° 18' 45", W 71° 59' 10"	63 km

## SECTION IV, FIGURE 9

### FCC LPFM Channel Finder Results



#### Low Power FM (LPFM) Channel Finder Results

More search options at LPFM Channel Finder Search

[AM QUERY](#)   [FM QUERY](#)   [TV QUERY](#)   [TV STATION PROFILES & PUBLIC INSPECTION FILES](#)   [COBS SEARCH](#)   [MEDIA BUREAU](#)

Tue Aug 20 18:56:00 2013      EXCLUDES second-adjacent channel spacings  
EXCLUDES intermediate frequency (I.F.) spacings

Input options:      Latitude, Longitude: 42° 18' 12", 71 13' 8"

Google Map: [5.6 km radius \(approximate 60 dBu service contour coverage\)](#)

 **CONDITIONAL.** The requested latitude and longitude meet the PROPOSED LPFM spacing requirements for one or more second adjacent and/or intermediate frequency (I.F.) channels.

These proposed spacing rules are not yet in effect.

**Channels Available for LPFM LP100 Stations**  
**[Channels 201 to 300, corresponding to 88.1 to 107.9 MHz]**

Channel 235 ---- 94.9 MHz  
Channel 271 ---- 102.1 MHz  
Channel 275 ---- 102.9 MHz

## V: Compliance with Environmental Rules

The antenna system for the proposed FM translator will be mounted on an existing registered tower. Under Section 1.1307(b) of the Commission's Rules, the proposed FM translator is exempt from routine evaluation with respect to radiofrequency radiation because the effective radiated power does not exceed 100 watts. The applicant will operate the proposed FM translator at reduced power, or temporarily cease operation, as may be required to protect all workers from exposure to hazardous levels of radiofrequency radiation.

Fred W. Volken  
Engineering Consultant

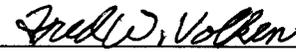
August 2013

Sierra Madre, California

## Statement of Engineer

FRED W. VOLKEN, whose place of business is located at 348 W. Sierra Madre Blvd., Sierra Madre, California, hereby states that he is a graduate physicist holding the degree Bachelor of Arts from Occidental College, Los Angeles, California; that his qualifications as an engineering consultant are a matter of record with the Federal Communications Commission; that he has prepared, or supervised the preparation of, the attached Engineering Report as engineering consultant for Northeast Broadcasting Company, Inc., applicant for a new FM translator at Needham, Massachusetts; and that all of the information contained in this Engineering Report is accurate and correct to the best of his knowledge and ability.

I state under penalty of perjury that the foregoing is true and correct. Executed on August 29, 2013.

  
Fred W. Volken