

TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
FM STATION WRNX
AMHERST, MASSACHUSETTS
CH 265A 0.87 KW (MAX-DA) 262 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for a construction permit for FM station WRNX at Amherst, Massachusetts. Station WRNX is currently licensed (BMLH-20021119ABP, Facility ID 25906) to operate on channel 265A (100.9 MHz) with a directional antenna (DA) maximum effective radiated power (ERP) of 1.35 kilowatts (kW) and an antenna height above average terrain (HAAT) of 211 meters. The purpose of this instant application is to change transmitter location and operate on channel 265A at Amherst, Massachusetts with a DA maximum ERP of 0.87 kW and an HAAT of 262 meters. The instant application is considered a "minor" change in facilities in accordance with Section 73.3573(a)(1)(i) and 73.3573(g).

Contingent Application/Section 73.215 Processing

This application is one of two contingent applications on FCC Form 301 for minor modifications filed pursuant to Section 73.3517(e) of the Commission's Rules. The contingent applications are for: (1) minor modification of WKNL, New London, Connecticut (FCC Facility ID No. 48547); and (2) this instant minor modification of WRNX. The parties request processing and grant of these two contingent applications together. The contingent applications agreement between the licensees is attached to this application.

Processing under Section 73.215 is requested with respect to short-spacings with WRCH on channel 263B at New Britain, Connecticut and the contingent application of WKNL on channel 265A at New London, Connecticut as detailed below.

Response to Paragraph 5 - Antenna Structure Registration

As indicated on the TOWAIR determination results attached as Figure 1, the proposed structure does not require registration.

Response to Paragraph 14 - Community Coverage

Compliance with the community coverage requirements of Section 73.315 has been demonstrated by a supplemental showing using an alternative contour prediction method contained in an Attachment (see Exhibit 27).

Response to Paragraph 16 - Interference

Figure 2 is a separation study from the proposed transmitter site coordinates. As shown, the proposed transmitter site complies with the minimum distance separation requirements of Section 73.207 for Class A operation on channel 265 towards all existing, authorized and proposed stations and allotments, with the exceptions of the licensed operations of WRCH on channel 263B at New Britain, Connecticut and the licensed and proposed operations of WKNL on channel 265A at New London, Connecticut. Therefore, it is proposed to utilize the contour protection provisions of Section 73.215 with respect to these short-spacings.

Figure 3 demonstrates that the proposed Amherst channel 265A operation complies with the contour protection provisions of Section 73.215 with respect to the licensed operation of WRCH and the proposed operation (contingent application) of WKNL. Maximum Class facilities have been presumed for the licensed operation of WRCH and actual facilities have been presumed for the proposed WKNL and WRNX operations, as specified in Section 73.215.¹

¹ The distances between the proposed WRNX transmitter site and the WRCH and WKNL transmitter sites complies with the minimum distance separation requirement of Section 73.215(e).

Response to Paragraph 17 - Environmental Considerations

The proposed WRNX facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields.

A Shively 2-bay, 0.5 wavelength spaced directional antenna will be side-mounted on a 20.7 meter level on the supporting structure. As shown on Figure 4, attached, the maximum vertical plane relative field for depression angles towards the tower base (-60° to -90° elevation) is less than 0.15. Therefore using a "worst-case" vertical relative field value of 0.15, a total ERP of 1.74 kW (horizontal plus vertical) and an antenna center or radiation height above the ground level of 18.7 meters, the calculated power density at 2 meters above the base of the tower is 0.0037 milliwatt per square centimeter (mW/cm^2), or 1.9 percent of the Commission's recommended limit for a "uncontrolled" exposure areas ($0.2 \text{ mW}/\text{cm}^2$ for FM frequencies). Thus, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, procedures will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure 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.

Finally, it is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure.

If there are any questions, or additional information is required, please contact the office of the undersigned.



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December 15, 2010

TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	42-15-07.3 north
Longitude	072-38-39.3 west

Measurements (Meters)

Overall Structure Height (AGL)	22.9
Support Structure Height (AGL)	22.9
Site Elevation (AMSL)	342.9

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

[Tower Construction Notifications](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

CDBS FM SEPARATION STUDY - PROPOSED WRNX SITE

Channel: 265 Coordinates: 042-15-07 072-38-41 (NAD 27)
 Class: A Buffer Distance: 20 km

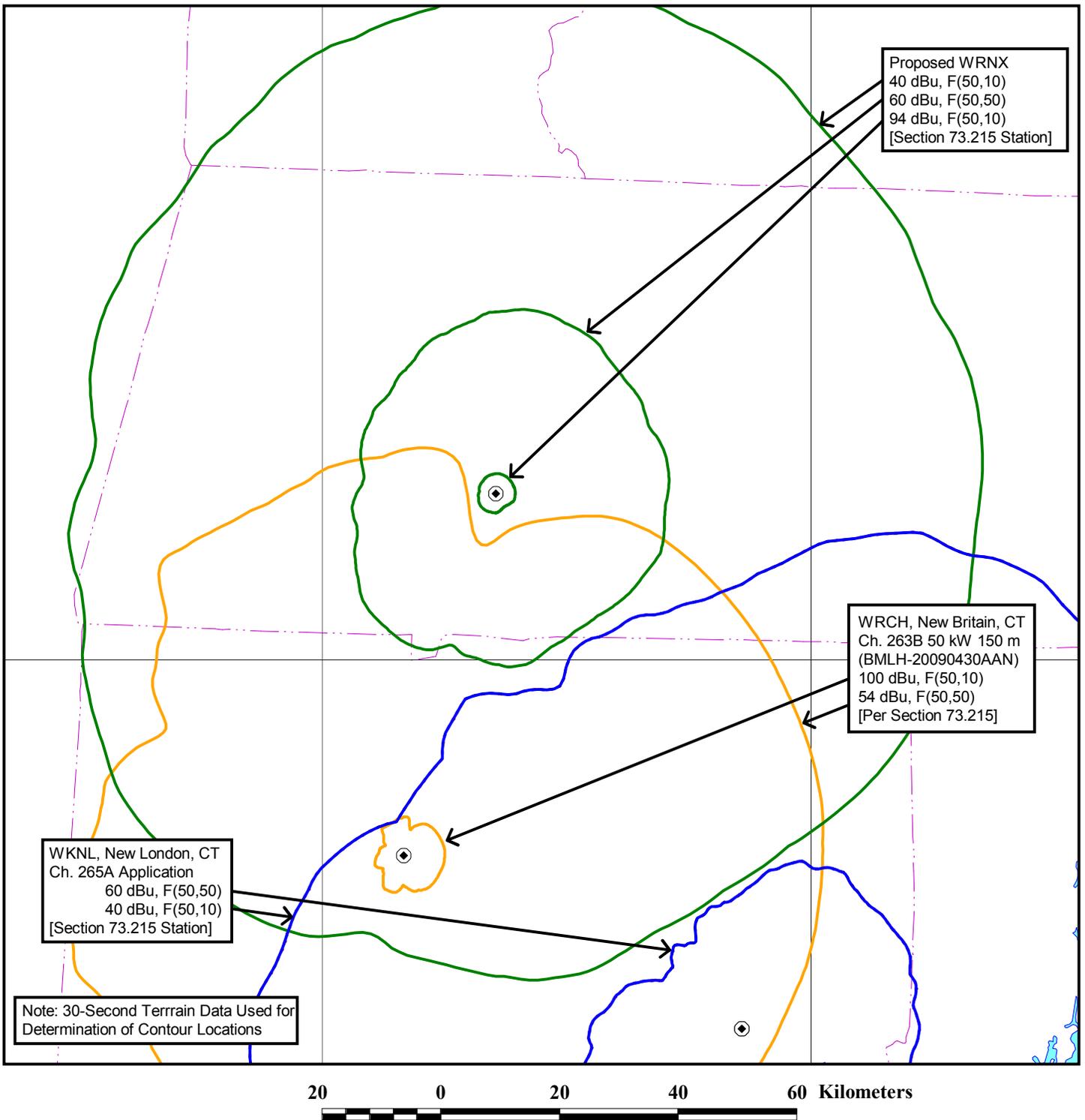
Date: 12/15/2010
 Page: 1 of 1

Callsign	Status	Chan.	Serv.	Freq.	City		State	Latitude	Dist. (km)	Sep. (km)	Spacing (km)	
Fac. ID	ARN			Class	DA	Ant. ID	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	73.215	Comment
WRCH	LIC	263	FM	100.5	NEW BRITAIN			CT	041-42-13	62.86	69	-6.14
1910	BMLH	20090430AAN		B	N		7.5	381	072-49-57	194.35	63 N	SHORT¹
WTHK	LIC	264	FM	100.7	WILMINGTON			VT	042-57-33	81.81	72	9.81
57728	BLH	19991215ABK		A	N	30489	0.13	452	072-55-22	343.95	49 N	CLOSE
WZLX	LIC	264	FM	100.7	BOSTON			MA	042-20-50	129.21	113	16.21
13806	BLH	19911018KF		B	N		21.5	235	071-04-59	84.76	96 N	CLEAR
WRNX	LIC	265	FM	100.9	AMHERST			MA	042-18-14	10.87		
25906	BMLH	20021119ABP		A	D	14499	1.35	211	072-31-59	57.8		
WKNL	LIC	265	FM	100.9	NEW LONDON			CT	041-26-27	99.32	115	-15.68
48547	BLH	20061102ABO		A	N		3	99	072-08-29	155.02	92 N	SHORT²
WKNL	APP	265	FM	100.9	NEW LONDON			CT	041-26-27	99.32	115	-15.68
48547				A	Y		6	99	072-08-29	155.02	92 N	SHORT²
WKLI-FM	LIC	265	FM	100.9	ALBANY			NY	042-43-54	114.85	115	-0.15
4682	BMLH	19910301KC		A	N		6	91	073-52-56	298.15	92 N	CLOSE
WGIR-FM	LIC	266	FM	101.1	MANCHESTER			NH	042-58-54	118.62	113	5.62
35240	BLH	19910718KC		B	N		11.5	313	071-35-21	46.43	96 N	CLOSE

¹ It is proposed to utilize the contour protection provisions of Section 73.215 with respect to this short-spacing. The proposal complies with the minimum distance separation requirements of Section 73.215(e). See Figure 3.

² Station WKNL is concurrently filing a contingent minor change application and the instant WRNX contingent application will utilize the contour protection provisions of Section 73.215 with respect to the short-spacing with the WKNL contingent application. Furthermore, the proposal complies with the minimum distance separation requirements of Section 73.215(e). See Figure 3.

Figure 3



COMPLIANCE WITH SECTION 73.215

STATION WRNX
AMHERST, MASSACHUSETTS
CH 265A 0.87 KW (MAX-DA) 262 M

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

FIELD ELEVATION PATTERN

ANT. MFG.: SHIVELY LABS

ANT. TYPE: 2 BAY 1/2WAVE

Power Gain .70 -1.54 dB

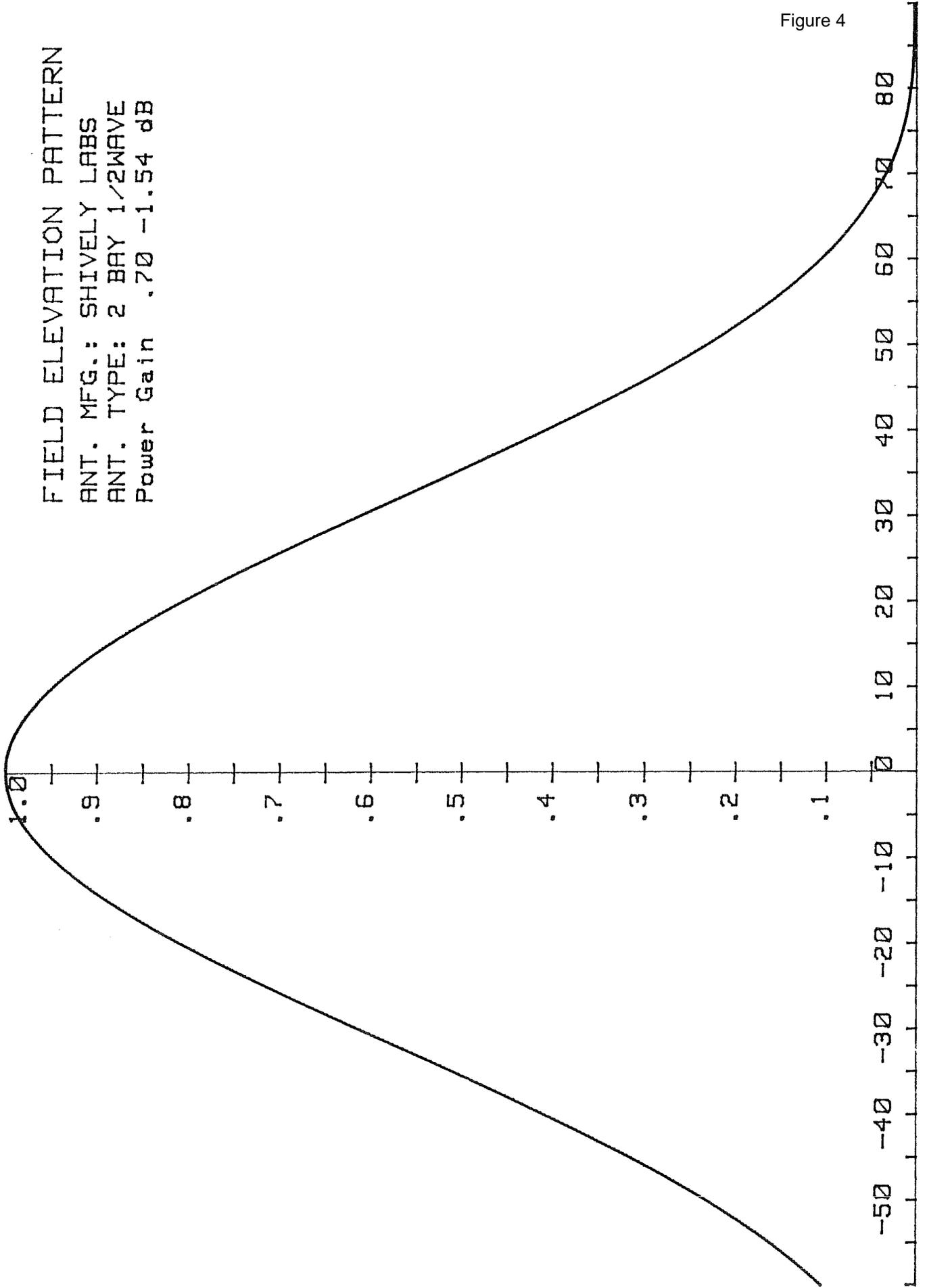


Figure 4