

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WBIG-FM
WASHINGTON, D.C.

APRIL 5, 2007

CH 262B 50 KW 149 M

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WBIG-FM
WASHINGTON, D.C.
CH 262B 50 KW 149 M

Table of Contents

	Technical Narrative
Figure 1	Proposed Antenna and Supporting Structure
Figure 2	Proposed Transmitter Site Coverage Map
Figure 3	Proposed Transmitter Site Allocation Study

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WBIG-FM
WASHINGTON, D.C.
CH 262B 50 KW 149 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared to support an application for construction permit for WBIG-FM on Channel 262B assigned to Washington, D.C. WBIG-FM and WFRE(FM) on Channel 260B assigned to Frederick, Maryland are both simultaneously filing contingent applications for construction permit to permit WBIG-FM to relocate its transmitter site. WBIG-FM is proposing operation at one of its licensed auxiliary sites and will be diplexed with WMZQ-FM on Channel 254B also assigned to Washington, D.C. This application seeks to increase the WBIG-FM effective radiated power to 50 kilowatts and decrease the antenna height above average terrain of 149 meters.

Proposed Transmitter Location

The transmitting facility will be located on an existing supporting structure and diplexed with WMZQ-FM transmitting antenna. The location is uniquely described by the following geographic coordinates:

38° 53' 13" North Latitude
77° 12' 03" West Longitude

A sketch showing the antenna and existing supporting structure is shown on Figure 1.

Interference Concerns

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially less than 3 kilometers from the transmitting site. The applicant recognizes its responsibility to resolve complaints of interference, including blanketing and receiver-induced interference as required by Sections 73.315(b), 73.316(e) and 73.318.

FCC Predicted Coverage Contours

The predicted coverage contours for the proposed operation were calculated in accordance with the provisions of Section 73.313. In accordance with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors.

The average terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45 degree intervals were obtained from the proposed co-located WMZQ-FM application for construction permit.

Figure 2 is a map showing the predicted coverage contours. As the map illustrates, the FCC predicted 70 dBu contour entirely encompasses the principal community of Washington, D.C.

Laurel, Maryland Monitor Station Protection

The operation of WBIG-FM will not produce a radiation level of greater than 10 mV/m at the Laurel, Maryland FCC Monitor Station. Furthermore, WBIG-FM is increasing the separation distance from the Monitor Station from its present 40.4 kilometers to 45.1 kilometers. This is an increase in the separation distance of 4.7 kilometers between WBIG-FM and the FCC Laurel, Maryland FCC Monitor Station.

Proposed Site Allocation Study

Channel 262B at the proposed site will satisfy the Commission's minimum separation distance requirements, specified in Section 73.207(b) of the Rules, to all known assignments and allotments as shown by the tabulation provided in Sheet 1 of Figure 3 except to WFRE(FM) on Channel 260B assigned to Frederick, Maryland, WPHI-FM on Channel 262B assigned to Media, Pennsylvania and WZBA(FM) on Channel 264B assigned to Westminster, Maryland.

WBIG-FM and WPHI-FM are presently short-spaced under Section 73.213(a) of the Commission's Rules. The existing separation distance between WBIG-FM and WPHI-FM is 206.8 kilometers; the proposed existing separation distance between WBIG-FM and WPHI-FM is 211.9 kilometers. Therefore, WBIG-FM is proposing to increase the separation distance between WBIG-FM and WPHI-FM by 5.1 kilometers.

In addition, the predicted interference between WBIG-FM and WPHI-FM will be reduced. Sheet 3 of Figure 3 is a map which depicts the pertinent protected and interference areas for the licensed WBIG-FM and WPHI-FM operations and for the herein proposed WBIG-FM operation. As shown, there is currently overlap of the WBIG-FM and WPHI-FM protected and interfering contours. The instant proposal will reduce the interference between the WBIG-FM and WPHI-FM.

The following tabulates the area and population within current and proposed interference areas.

Overlap Area	Population (2000 Census)	Area (sq. km)
Current Overlap of WPHI 54 dBu and WBIG 34 dBu (Interference to WPHI)	113,000	426.1
Current Overlap of WBIG 54 dBu and WPHI 34 dBu (Interference to WBIG)	179,000	114.8
Current Total	292,000	540.9
Proposed Overlap of WPHI 54 dBu and WBIG 34 dBu (Interference to WPHI)	112,900	411.9
Proposed Overlap of WBIG 54 dBu and WPHI 34 dBu (Interference to WBIG)	101,800	48.5
Proposed Total	214,700	460.4
Net Interference Reduction	77,300	80.5

As indicated, the proposal will result in a "net" reduction in interference to 77,300 persons within 80.5 square kilometers. Within the small area (21.3 square kilometers) of new interference caused to WPHI-FM, there are more than 5 aural services remaining.

Section 73.215 processing is requested toward WFRE(FM) on Channel 260B assigned to Frederick, Maryland. As observed in the map provided in Sheet 2 of Figure 3, there is existing contour overlap occurring presently between WFRE(FM) and WBIG-FM, even though both stations are fully-spaced to each other.¹ Since WFRE(FM) is also filing as a contingent application for construction permit to slightly reduce its effective radiated power, the amount of contour overlap area will be maintained between WFRE(FM) and the proposed WBIG-FM.² Therefore, WBIG-FM will be in compliance with the Section 73.215 short-spacing provisions.

It is noted that WZBA(FM) on Channel 264B assigned to Westminster, Maryland initiated its present Section 73.215 classification to WBIG-FM. WBIG-FM is not presently licensed as a Section 73.215 classified station. As WBIG-FM is increasing the separation distance between WZBA(FM) and WBIG-FM, from 68.5 kilometers to 72.1 kilometers, WBIG-FM does not need to consider WZBA(FM) as an allocation issue.

¹ The present WFRE(FM) licensed facility, which is a Section 73.215 classified station, receives interference to an area of 40.0 square kilometers containing 41,780 persons from an assumed maximum WBIG-FM Class B facility.

² The proposed WFRE(FM) facility, which will remain a Section 73.215 classified station, receives interference to an area of 40.0 square kilometers containing 34,350 persons from the proposed WBIG-FM facility.

Radiofrequency Electromagnetic Field Exposure

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, *Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*.³ The power density at the base of the tower was calculated using the appropriate procedure contained in Section 2, Supplement A, *Additional Information for Radio and Television Broadcast Stations*, of the Bulletin.

For the calculation, a combined horizontal and vertical polarized effective radiated power of 100 kilowatts is employed with a radiation center of 90 meters above ground level. A Shively model number 6814 six element half-wave length spaced antenna will be employed. Using the Commission's *FM Model* ground level power density model, it is calculated that the maximum power density at ground level resulting from this facility is less than 5 $\mu\text{W}/\text{cm}^2$. This is less than five percent of the maximum Commission guideline value in an uncontrolled environment for a FM radio station.⁴

³ OET Bulletin 65, Second Edition 97-01, August, 1997.

⁴ The FCC maximum guideline for a FM broadcast station in an uncontrolled environment is 0.2 mW/cm^2 .

When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency electromagnetic will not exceed the FCC guidelines.

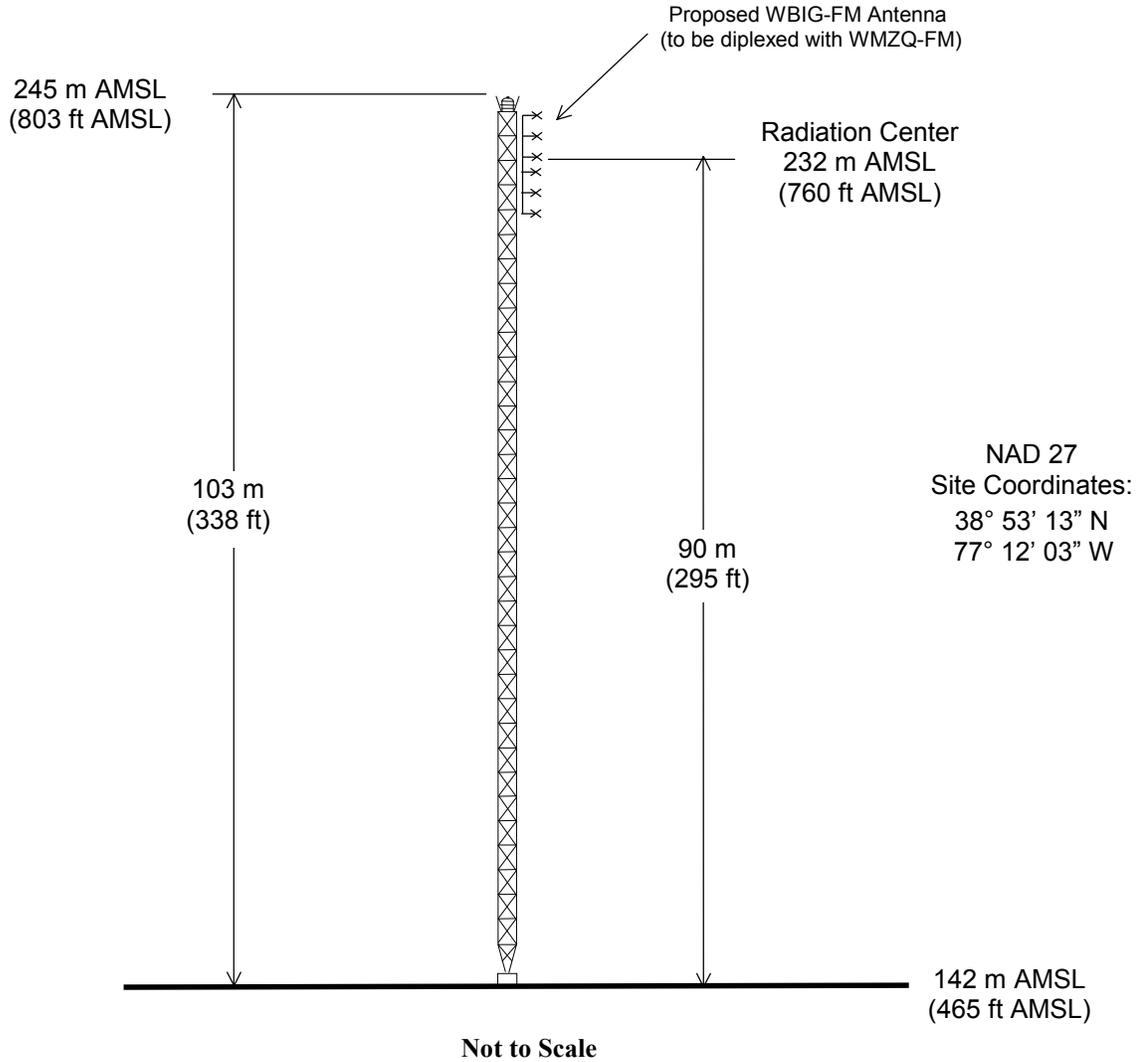
Charles A. Cooper

April 5, 2007

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
941.329.6000



ASRN: 1017714



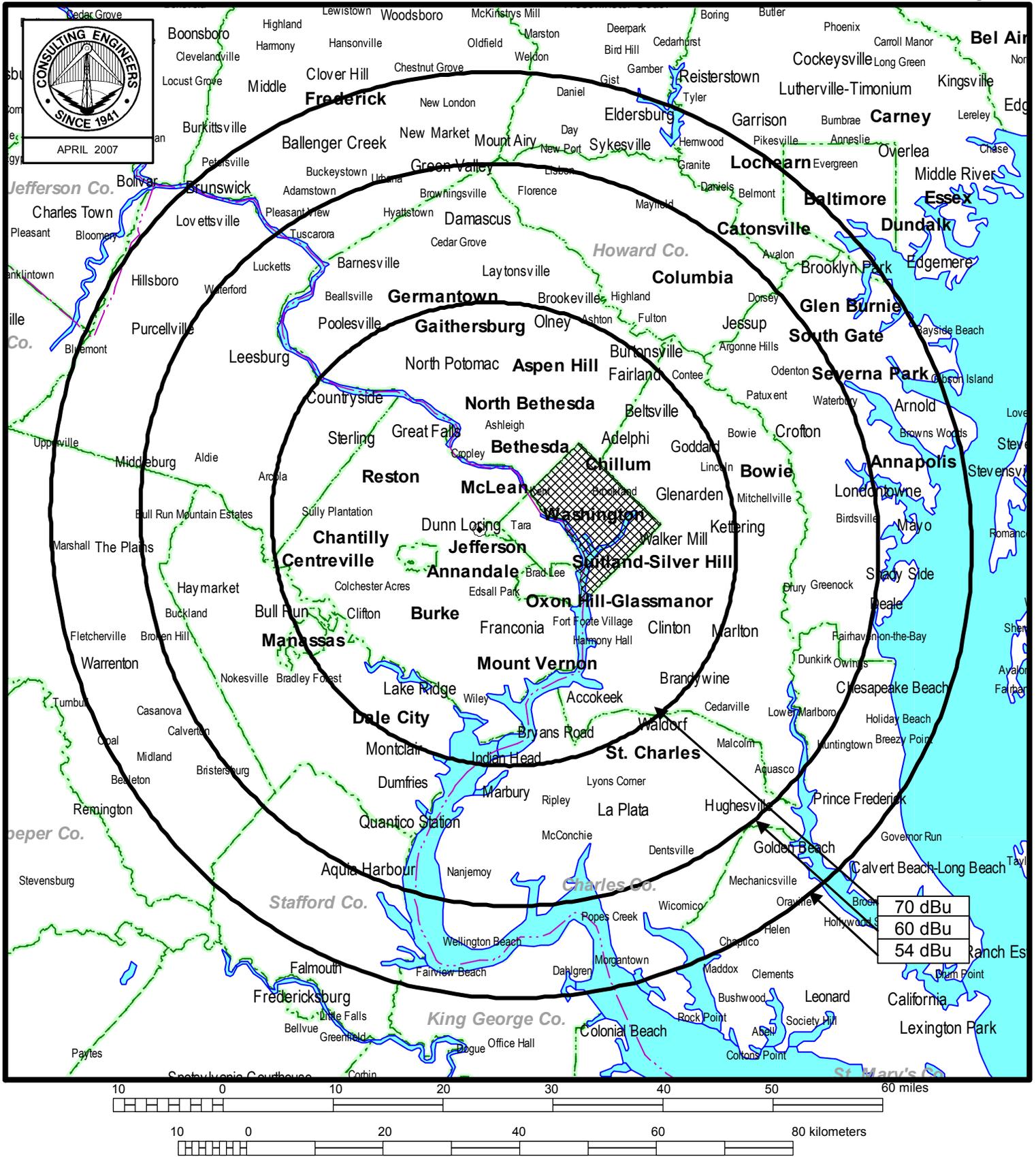
ANTENNA AND SUPPORTING STRUCTURE

RADIO STATION WBIG-FM

WASHINGTON, D.C.

CH 262B 50 KW 149 M

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



PREDICTED COVERAGE MAP

RADIO STATION WBIG-FM

WASHINGTON, DC

CH 262B 50 KW 149 M

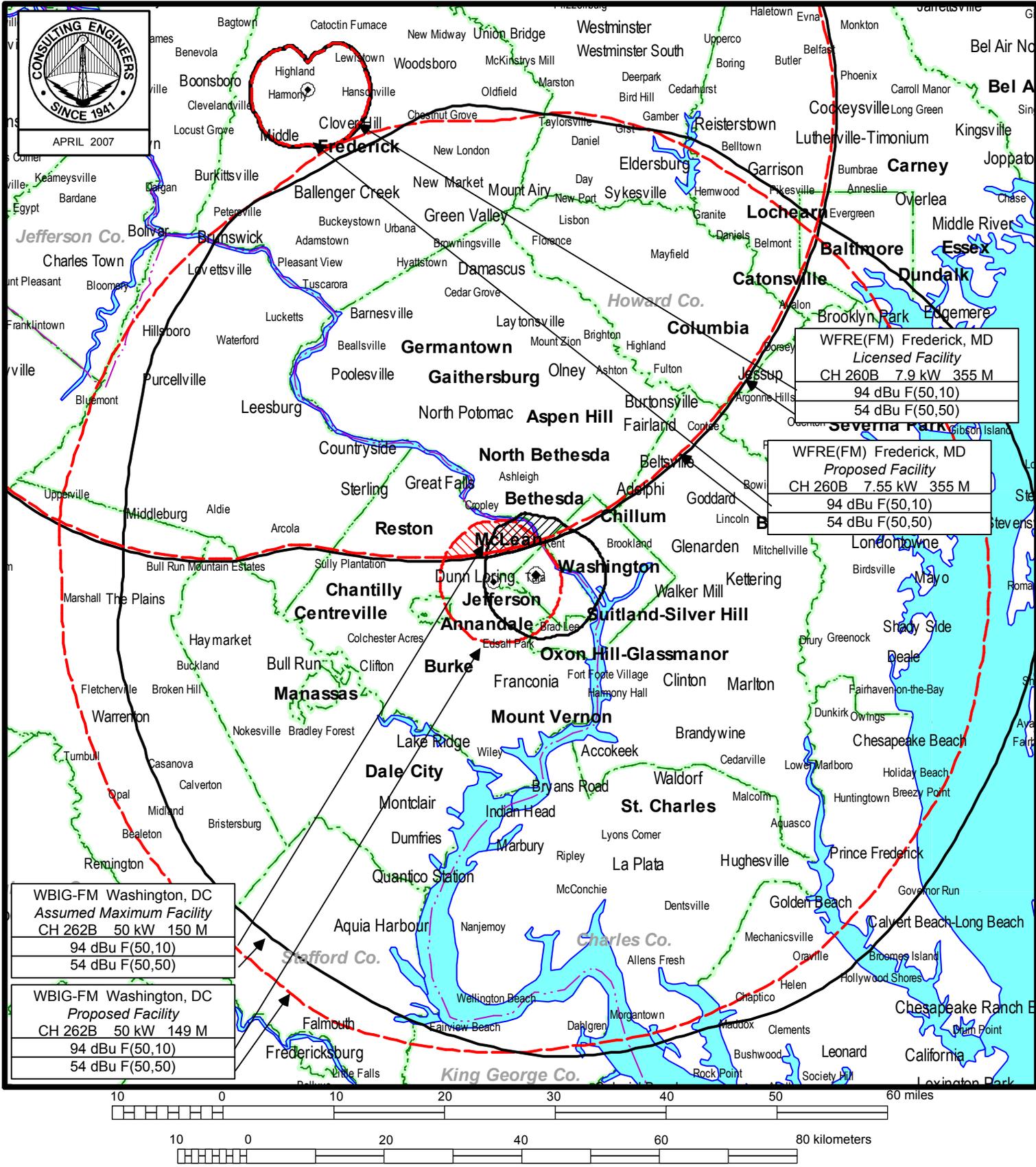
du Treil, Lundin & Rackley, Inc., Sarasota, Florida

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WBIG-FM
WASHINGTON, D.C.
CH 262B 50 KW 149 M

Channel 262B Allocation Study at Proposed Site

38° 53' 13" North Latitude
077° 12' 03" West Longitude

Call Id	City St	File Status Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. min
WFRE 31139	FREDERICK MD	BMLH LIC C 20010314AAO	260B 99.9	7.9 355	N	39-29-59 077-29-58	Y	339.4	72.76	74.0
<i>(Section 73.215 processing requested toward contingent WFRE(FM) application for construction permit. See Sheet 2 of Figure 3.)</i>										
WYFJ 5096	ASHLAND VA	BLED LIC C 19940404KB	261A 100.1	6 98	N	37-44-46 077-29-44	N	191.5	129.23	113.0
WBIG-FM 54459	WASHINGTON DC	BLH LIC C 19930127KC	262B 100.3	36 175	N	38-53-44 077-08-04	N	80.5	5.84	
<i>(Applicant's existing facility.)</i>										
WARV-FM 21826	PETERSBURG VA	BLH LIC C 19931007KC	262A 100.3	4.7 113	N	37-10-27 077-24-01	N	185.3	190.91	178.0
WPHI-FM 25079	PHILADELPHIA PA	BLH LIC C 20030424ABN	262B 100.3	17.0 263	Y	40-02-36 075-14-33	Y	52.0	211.86	241.0
<i>(Continued Section 73.213(a) processing requested toward WPHI-FM. See Sheet 3 of Figure 3.)</i>										
WZEZ 87127	GOOCHLAND VA	BPH CP C 20060922ACV	263A 100.5	2.6 155.2	N	37-47-37 077-55-57		207.9	137.19	113.0
WZBA 59985	WESTMINSTER MD	BPH CP C 20050920ACO	264B 100.7	25 210	Y	39-26-50 076-46-48	Y	30.1	72.05	74.0
<i>(WBIG-FM is increasing the separation distance from this WZBA(FM) initiated short-spacing. Therefore, no allocation issue.)</i>										
WZBA 59985	WESTMINSTER MD	BMLH LIC C 20020425ABM	264B 100.7	27 201.1	Y	39-27-01 076-46-37	Y	30.1	72.48	74.0
<i>(WBIG-FM is increasing the separation distance from this WZBA(FM) initiated short-spacing. Therefore, no allocation issue.)</i>										



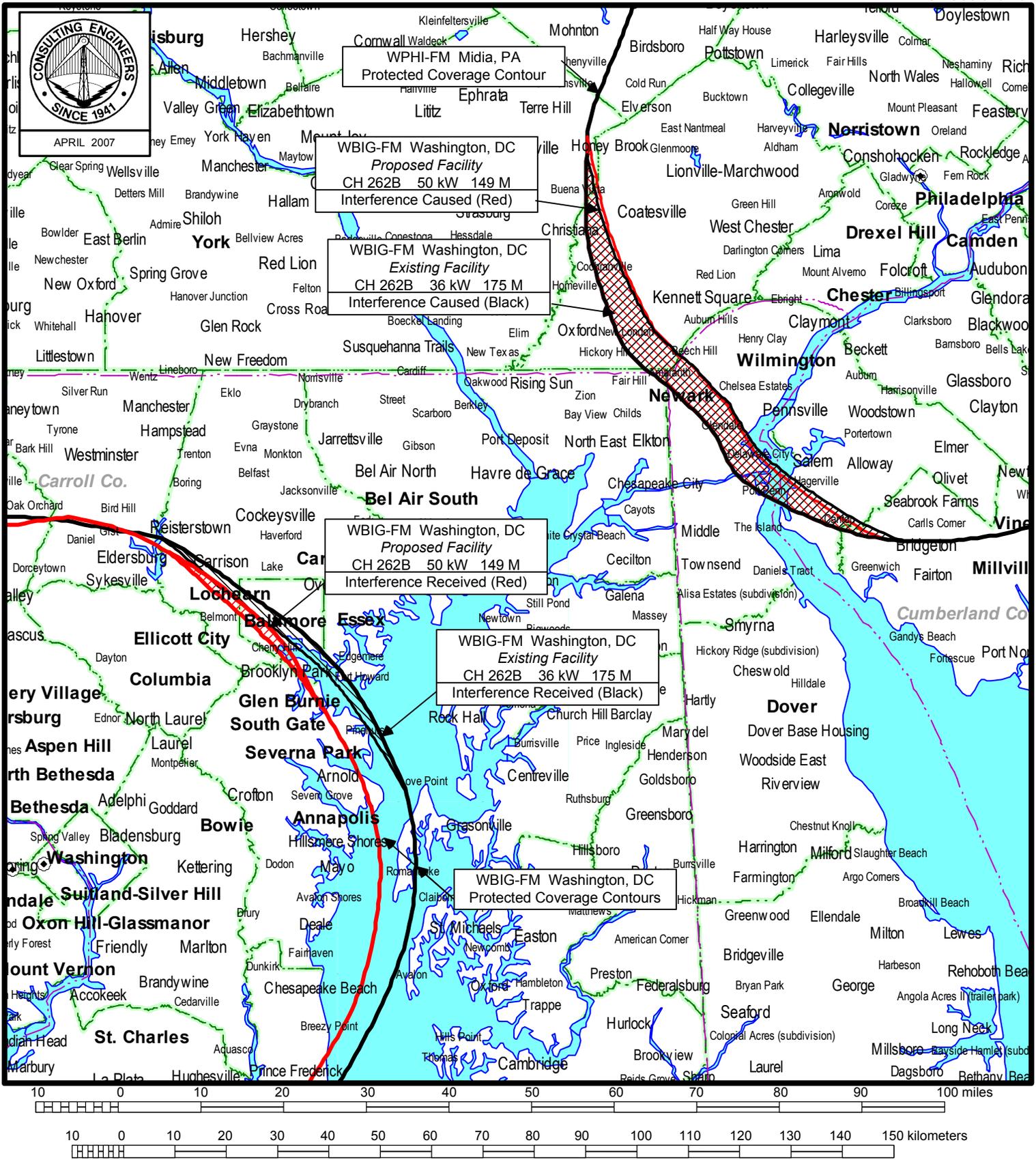
SECTION 73.215 CONTOUR OVERLAP ANALYSIS MAP

RADIO STATION WBIG-FM

WASHINGTON, DC

CH 262B 50 KW 149 M

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



SECTION 73.213(a) INTERFERENCE ANALYSIS MAP

RADIO STATION WBIG-FM

WASHINGTON, DC

CH 262B 50 KW 149 M

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