

ENGINEERING EXHIBIT

Application for Construction Permit

prepared for

The WBEZ Alliance, Inc.

W217BM Elgin, Illinois

Facility ID 91647

Ch. 217D 0.010 kW

The WBEZ Alliance, Inc. is the permittee of non-commercial educational FM translator station W217BM, Ch. 217D, Elgin, Illinois (BPFT-19980914TC). An *Application for License* (BLFT-20061222ABT) is pending to cover construction of the W217BM facility. The recent grant of the license application was rescinded due to a 7.8 meter difference in “as-built” antenna height above ground and the authorized value. The instant application seeks a minor modification of the W217BM Construction Permit to specify the as-built antenna height. No change in effective radiated power (“ERP”) or site location is sought.

The proposed non-directional antenna system is currently side-mounted on an antenna support structure having FCC Antenna Structure Registration (“ASR”) number 1004381. There is no change in overall structure height.

Figure 1 depicts the 60 dB μ contours of the authorized and the proposed facility. The service area overlap shown demonstrates that the proposal is considered a minor change under §74.1233.

The proposed 0.010 kW ERP complies with the Zone I-A maximum power limitation requirements of §74.1235. The maximum antenna height above average terrain for any of the 12 standard radials is 184 meters (at 120° True), based on use of 3-second digitized N.E.D. terrain data.

The associated primary facility is noncommercial educational station WBEZ(FM) (Ch. 218B, Chicago, IL), under common ownership with W217BM. The 60 dB μ contour of the proposed translator is beyond that of WBEZ, as depicted in **Figure 2**. Inasmuch as primary station WBEZ is a noncommercial educational station, the restrictions of §74.1232 prohibiting ownership of a translator whose coverage contour extends beyond the beyond the primary station's protected contour do not apply. Final signal delivery of the audio programming material to the translator will be accomplished by leased landline (*i.e.*, telephone carrier "T-1") circuits.

Allocation Discussion

The proposed W217BM facility does not involve contour overlap to any authorized FM station except for W219CD (Elgin, IL, Facility ID 90195, BLFT-20040324AAQ). The W217BM antenna is currently authorized to be co-located with second adjacent station W219CD on the same tower structure, which creates a theoretical interference overlap area. Such overlap is permitted in this instance by §74.1204(d), as the actual area of interference is limited to locations in close proximity (*i.e.*, within 5 meters) to the W217BM transmitting antenna which are inaccessible to the general public and are therefore considered to be unpopulated.

The W219CD F(50,50) signal strength within 0.5 km of the site is at least 93 dB μ , resulting in a signal level of 133 dB μ from W217BM as the minimum threshold of interference caused to W219CD (based on U/D methodology as routinely applied for translator evaluation). A free-space determination shows that signal levels of 133 dB μ or greater are only achieved within 5 meters (0.005 km) of the W217BM antenna (centered 145 meters above ground). This region is elevated well above ground and no tall buildings or other accessible structures are adjacent to the tower structure which would allow public access. The same situation applies to the present W217BM Construction Permit (existing overlap and co-location with W219CD), and considering the increase in antenna height specified herein potential interference region will be elevated further on the tower structure.

The only television Channel 6 facility within the 132 km distance specified in §74.1205(a) is WITI(TV), Milwaukee, Wisconsin, at a distance of 125.4 km. **Figure 3** shows the WITI 47 dB μ

F(50,50) Grade B contour, along with the interfering 81 dB μ F(50,10) contour¹ for the proposed translator facility. No overlap occurs between these contours, in compliance with §74.1205(c).

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

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed transmitting antenna is side-mounted on an existing antenna support structure. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No change in structure height is proposed, thus no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

The proposal specifies operation at 10 Watts (0.010 kW) ERP, circularly polarized (20 Watts total power). According to Table I of §1.1307(b)(1), the proposal is excluded from routine evaluation regarding radiofrequency ("RF") exposure since the ERP does not exceed 100 Watts.

Nevertheless, the proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number. 65. Based on OET-69 equation (10), the worst-case signal density at two meters above ground level attributable to the proposed W217BM is 0.03 μ W/cm², which is 0.02 percent of the general population/uncontrolled maximum permitted exposure ("MPE") limit. This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the proposed facility from responsibility for taking any corrective action in the areas where its contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to

¹This contour level does not include the 6 dB receive antenna directivity as permitted by §73.525(e)(1)(iii).

worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

Certification

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.
April 5, 2007

Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

List of Attachments

Figure 1	Coverage Contour Comparison
Figure 2	Coverage Contours – Primary and Translator Stations
Table 3	TV Channel 6 Allocation Study
Form 349	Saved Version of Engineering Sections from FCC Form at Time of Upload

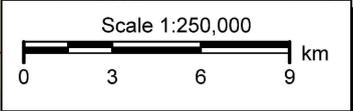
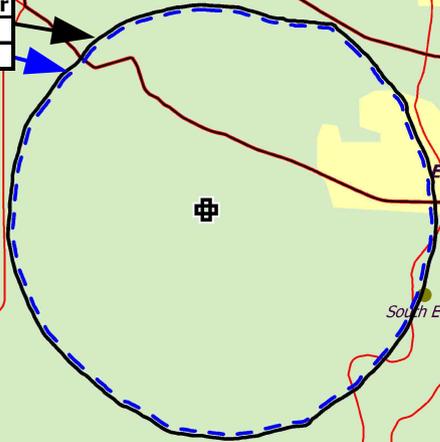
This material was entered April 5, 2007 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.



Figure 1 Coverage Contour Comparison

prepared for
The WBEZ Alliance, Inc.
W217BM Elgin, Illinois
Facility ID 91647
Ch. 217D 0.010 kW
April, 2007

W217BM
60 dBμ Contour
Proposed
Authorized





Primary Station
WBEZ(FM) Chicago, IL
60 dBμ

Proposed W217BM
60 dBμ

Figure 2
Coverage Contours
Primary and Translator Stations

prepared for
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W217BM Elgin, Illinois
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April, 2007

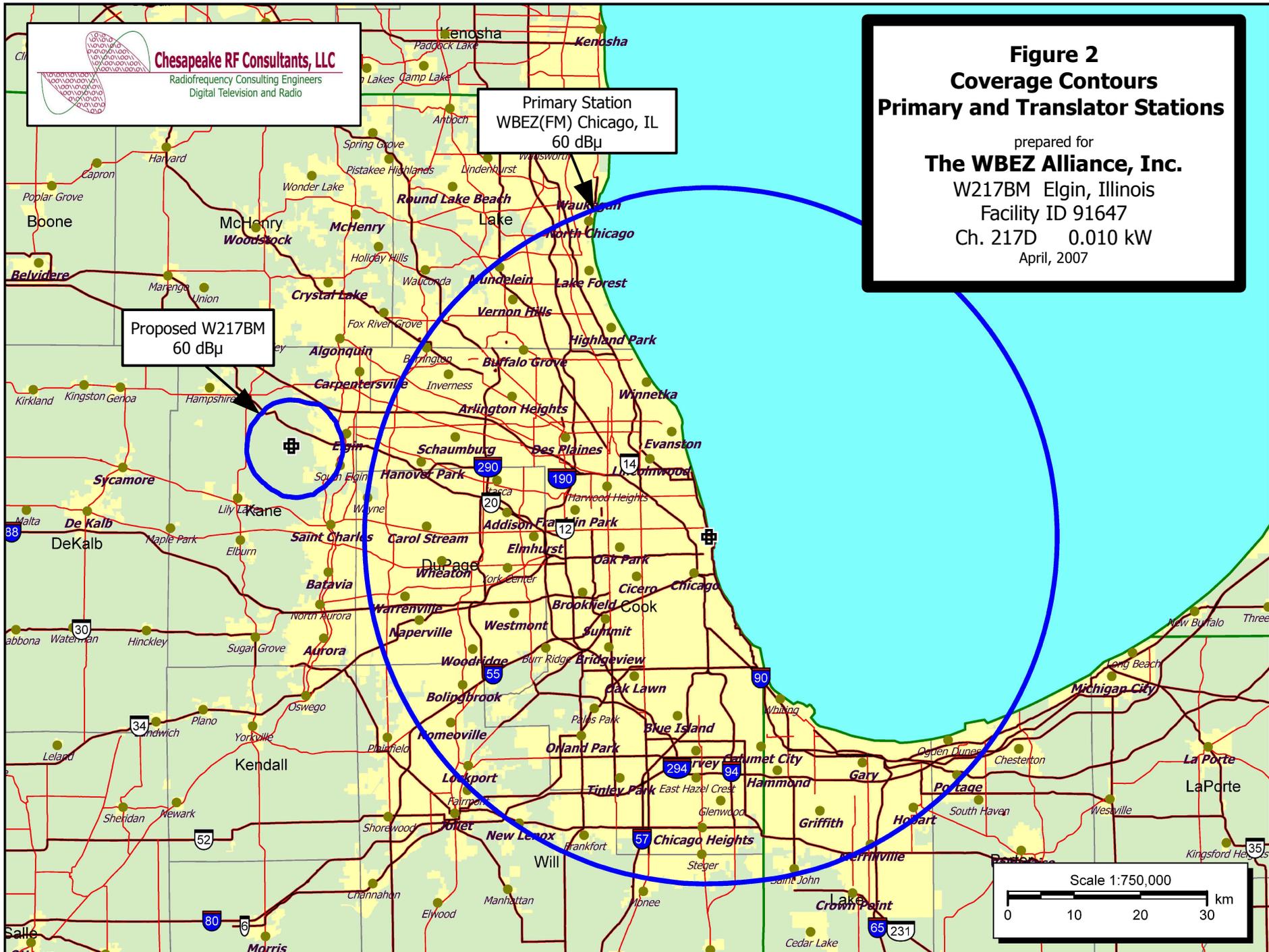
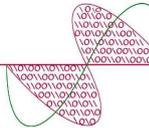
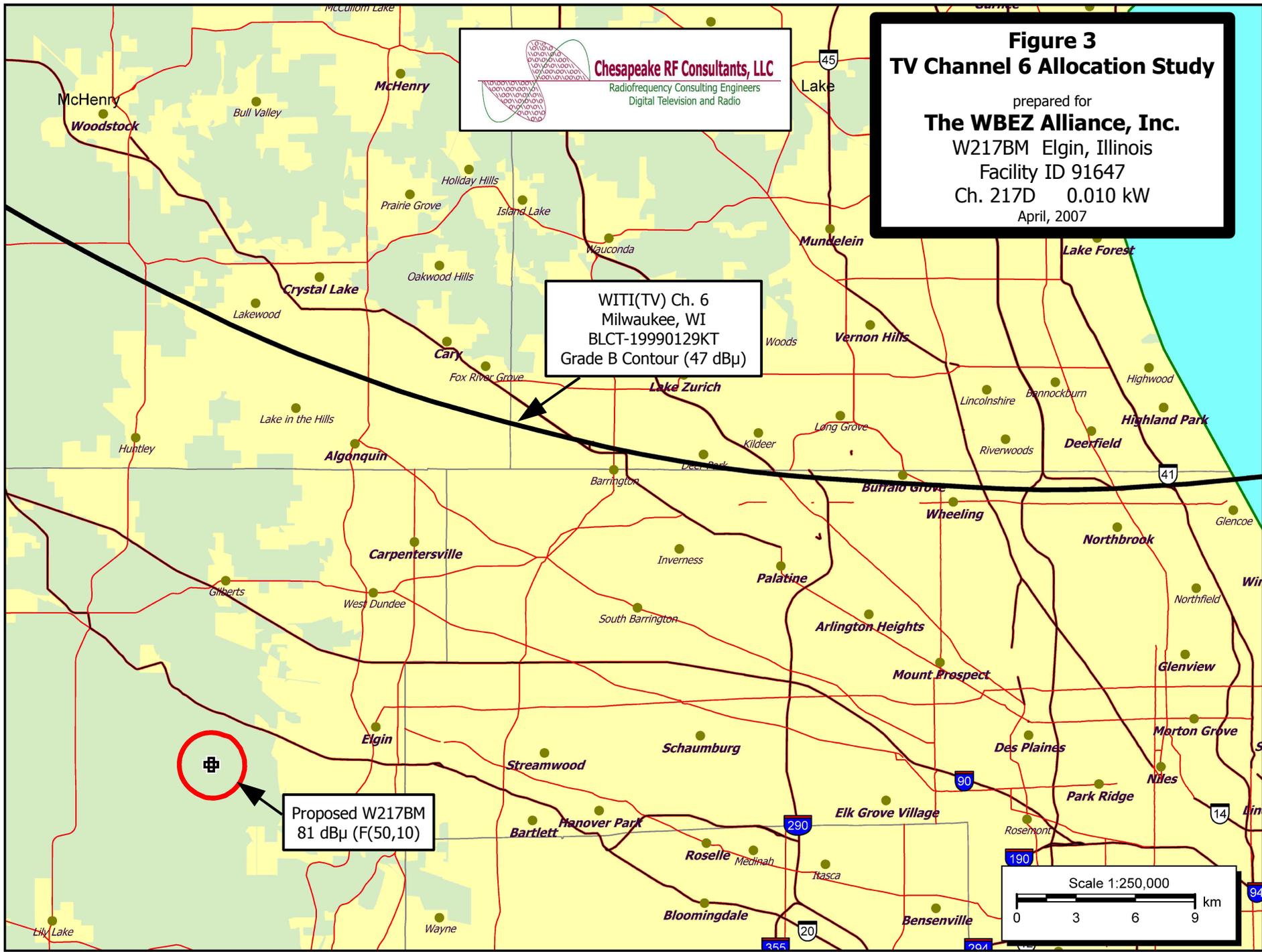


Figure 3
TV Channel 6 Allocation Study
 prepared for
The WBEZ Alliance, Inc.
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 Ch. 217D 0.010 kW
 April, 2007

 **Chesapeake RF Consultants, LLC**
 Radiofrequency Consulting Engineers
 Digital Television and Radio

WITI(TV) Ch. 6
 Milwaukee, WI
 BLCT-19990129KT
 Grade B Contour (47 dBμ)

Proposed W217BM
 81 dBμ (F(50,10))



SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 4/5/2007	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD			
City MANASSAS		State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600		E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Section III-A - Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel: 217											
2. Primary Station:											
Facility Identifier		Call Sign		City		State		Channel			
66649		WBEZ		CHICAGO		IL		218			
3. Delivery Method (Select One): <input type="radio"/> Off-air <input type="radio"/> Microwave <input type="radio"/> Satellite <input type="radio"/> Via <input checked="" type="radio"/> Other											
4. Antenna Location Coordinates: (NAD 27)											
Latitude:											
Degrees 42 Minutes 1 Seconds 12 <input checked="" type="radio"/> North <input type="radio"/> South											
Longitude:											
Degrees 88 Minutes 22 Seconds 53 <input checked="" type="radio"/> West <input type="radio"/> East											
5. Antenna Structure Registration Number: 1004381 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA											
6. Antenna Location Site Elevation Above Mean Sea Level:								272 meters			
7. Overall Tower Height Above Ground Level:								151 meters			
8. Height of Radiation Center Above Ground Level:								145 meters(H) 145 meters(V)			
9. Effective Radiated Power:								0.01 kW(H)		0.01 kW(V)	
10. Transmitting Antenna:											
Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under CDBS Public Access (http://svartifoss2.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.											
<input checked="" type="radio"/> Nondirectional <input type="radio"/> Directional "Off-the-shelf" <input type="radio"/> Directional composite											
Manufacturer ERI Model 100-1											
Rotation:degrees <input type="checkbox"/> No Rotation											
Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	

300	310	320	330	340	350
Additional Azimuths					

Relative Field Polar Plot

11.	<p>For FM Boosters and Fill-in translators only. Applicant certifies that the proposal is for a fill-in translator or booster station entirely within the primary station's protected contour.</p>	<p><input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A</p> <p>See Explanation in [Exhibit 10];</p>
12.	<p>Interference. The proposed facility complies with all of the following applicable rule sections. Check all that apply:</p> <p>Overlap Requirements. <input checked="" type="checkbox"/> a) 47 C.F.R. Section 74.1204 Exhibit Required.</p> <p>Television Channel 6 Protection. <input checked="" type="checkbox"/> b) 47 C.F.R. Section 74.1205 with respect to station(s) Exhibit Required.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 11]</p> <p>[Exhibit 12]</p> <p>[Exhibit 13]</p>
13.	<p>Unattended operation. Applicant certifies that unattended operation is not proposed, or if this application proposes unattended operation, the applicant certifies that it will comply with the requirements of 47 C.F.R. Section 74.1234.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 14]</p>
14.	<p>Multiple Translators. Applicant certifies that it does not have any interest in an application or an authorization for an FM translator station that serves substantially the same area and rebroadcasts the same signal as the proposed FM translator station.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 15]</p>
15.	<p>Environmental Protection Act. Applicant certifies that the proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an Exhibit is required.</p> <p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 16]</p>

PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.