

ENGINEERING EXHIBIT

Application for Modification Of Construction Permit

prepared for

Greater Washington Educational Telecommunications Association, Inc.

W205BL Frederick, Maryland

Facility ID 90076

Ch. 205D 0.25 kW

Greater Washington Educational Telecommunications Association, Inc. (“GWETA”) is the licensee of non-commercial educational FM translator station W205BL, Ch. 205D, Frederick, MD (BLFT-20001023AFR). A Construction Permit (“CP”, BPFT-20081204AER) authorizes relocation of W205BL. *GWETA* herein seeks a minor modification of the CP to relocate W205BL to an alternate site, located 0.4 km from the current CP site and 11.5 km from the licensed site.

The proposed non-directional antenna system will be side-mounted on an existing antenna support structure which is not registered with the FCC. No change in overall structure height (49.1 meters AGL) is proposed. According to TOWAIR, the existing structure does not pass the FAA’s slope test with respect to Frederick Municipal Airport, 2.1 km distant. A notice has been submitted to the FAA (2010-AEA-2359-OE¹) and upon issuance of a Determination of No Hazard the structure will be registered with the FCC. This application will be amended to supply the FCC Antenna Structure Registration number when it becomes available.

The W205BL effective radiated power (“ERP”) will be increased, commensurate with a decrease in effective antenna height at the proposed site. **Figure 1** depicts the 60 dB μ contours of

¹A prior FAA study 1994-AEA-2076-OE for the structure showed no hazard.

the licensed, authorized, and proposed facilities. The service area overlap shown demonstrates that the proposal is considered a minor change under §74.1233.

The proposed 0.25 kW ERP complies with the Zone I-A maximum power limitation requirements of §74.1235(b)(1). The maximum antenna height above average terrain for any of the 12 standard radials is 32.0 meters (at 210° True), based on use of USGS National Elevation Dataset (NED) 3 arc-second digitized terrain data. See **Table 1** for a summary of terrain and contour distance data.

The associated primary facility is noncommercial educational station WETA(FM) (Ch. 215B, Washington, DC), under common ownership with W205BL. Although the proposed W205BL will provide some level of fill-in service, most of the 60 dB μ contour will extend beyond that of WETA as depicted in **Figure 2**.

The proposed W205BL facility does not cause prohibited contour overlap to any other FM full power or translator station. No prohibited contour overlap is caused to any television Channel 6 facility within the 140 km distance specified in §74.1205(a). **Table 2** supplies a summary of the allocation situation. Thus, the proposed W205BL facility complies with §74.1204 and §74.1205 regarding protection of other stations.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed transmitting antenna will be side-mounted on an existing antenna support structure. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

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-65 equation (10), and considering the worst-case of 100 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 13.8 $\mu\text{W}/\text{cm}^2$, which is 6.9 percent of the general population/uncontrolled

maximum permitted exposure limit. The calculated signal density is even lower when the antenna's elevation pattern is considered. There are no other non-excluded emitters located at this site or near enough to be considered a significant contributor.

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 be posted. With respect to worker safety, the applicant will coordinate exposure procedures with any pertinent facilities 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.
June 7, 2010

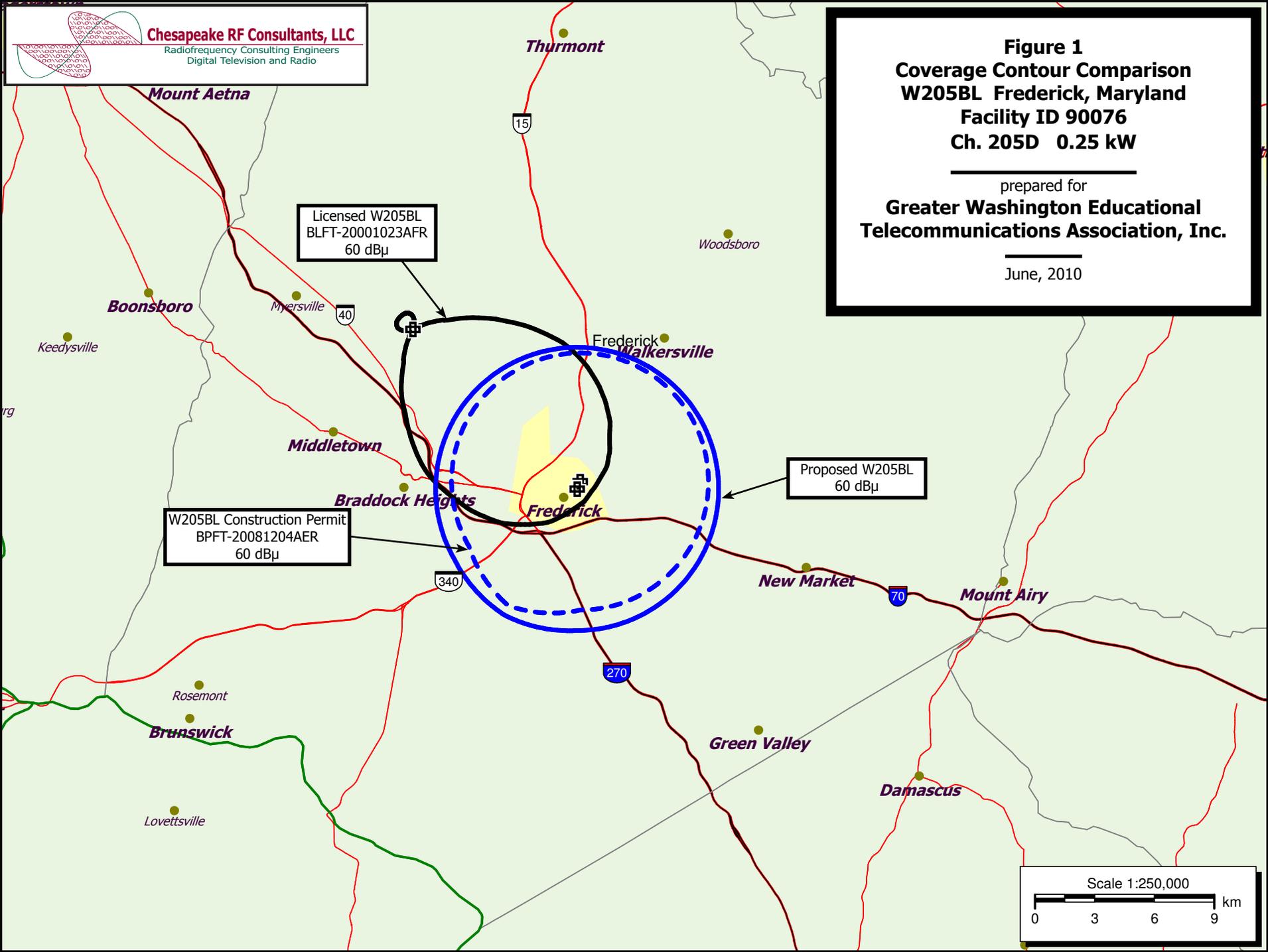
Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

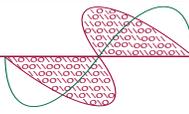
List of Attachments

Figure 1	Coverage Contour Comparison
Figure 2	Coverage Contours – Primary and Translator Stations
Table 1	Terrain and Contour Data
Table 2	Channel Allocation Summary
Form 349	Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered June 7, 2010 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number 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
W205BL Frederick, Maryland
Facility ID 90076
Ch. 205D 0.25 kW
prepared for
Greater Washington Educational
Telecommunications Association, Inc.
June, 2010





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

Figure 2
Coverage Contours
Primary and Translator Stations
W205BL Frederick, Maryland
Facility ID 90076
Ch. 205D 0.25 kW

prepared for
Greater Washington Educational
Telecommunications Association, Inc.

June, 2010

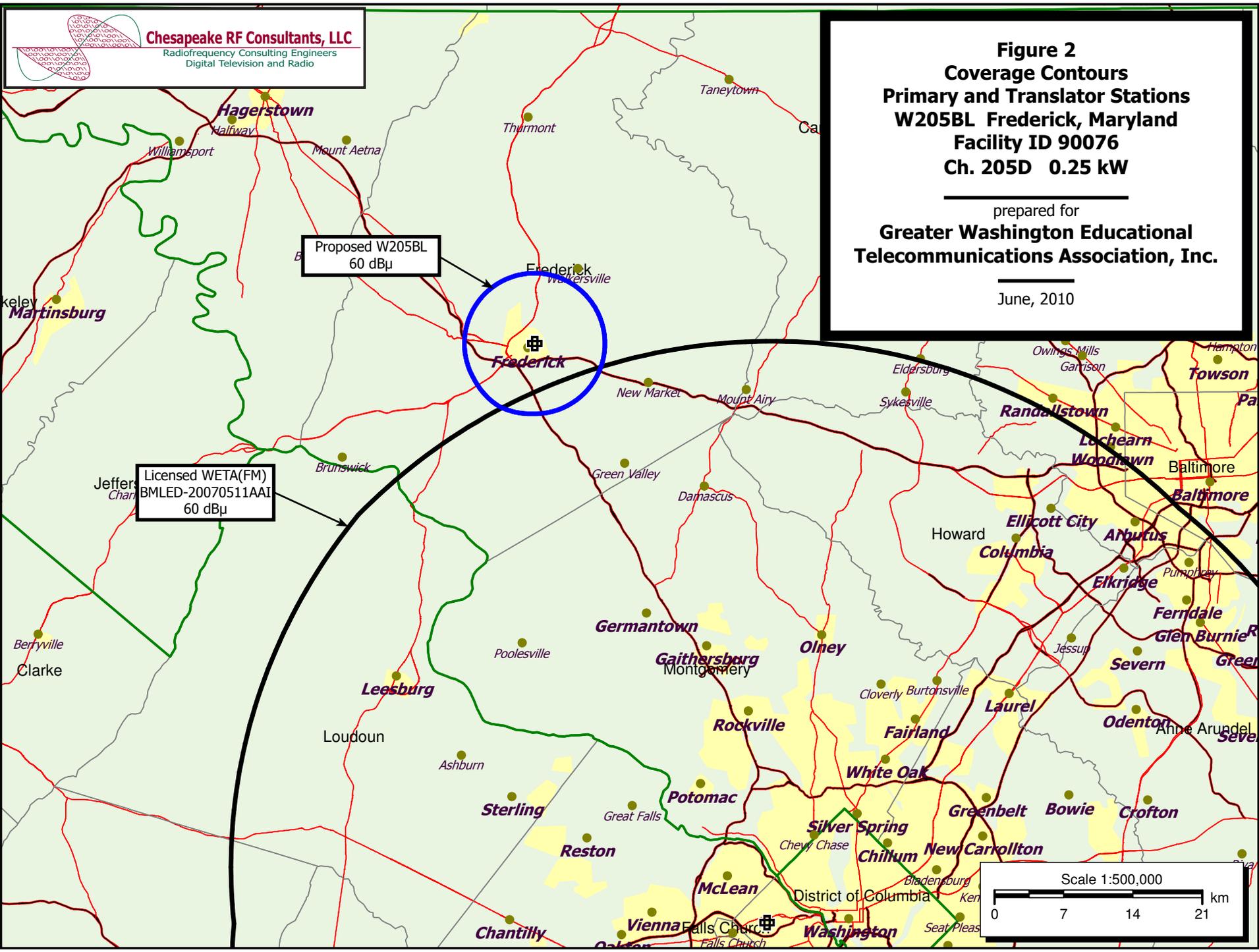
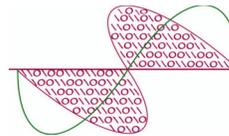


Table 1

Terrain and Contour Data
Greater Washington Educational
Telecommunications Association, Inc.
W205BL Frederick, MD



Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers
Digital Television and Radio

Latitude	39-25-05 N (NAD-27)
Longitude	077-24-11 W
ERP	0.25 kW
Channel	205
Frequency	88.9 MHz
C/R Height	125.0 m AMSL
Horiz. Antenna Pattern	Omni
Type of contour	FCC F(50,50)
Terrain Data	NED 3 Second US Terrain

Aazimuth (°T)	Average Elevation (m AMSL)	Antenna HAAT (m)	60 dB μ Contour Distance (km)
0	107.4	17.6	7.09
30	103.0	22.0	7.09
60	141.5	-16.5	7.09
90	128.4	-3.4	7.09
120	141.1	-16.1	7.09
150	120.5	4.5	7.09
180	110.2	14.8	7.09
210	93.0	32.0	7.29
240	147.3	-22.3	7.09
270	159.4	-34.4	7.09
300	212.8	-87.8	7.09
330	260.2	-135.2	7.09
Average (12 radials)		-18.7	

Table 2

**Channel Allocation Study Summary
Greater Washington Educational
Telecommunications Association, Inc.
W205BL Frederick, MD**



Proposed w205BL

REFERENCE 39 25 05.0 N. 77 24 11.0 W. CH# 205D - 88.9 MHz, Pwr= 0.25 kw, HAAT= -18.7 M, Average Protected F(50-50)= 7.1 km Omni-directional COR= 125 M DISPLAY DATES DATA 06-05-10 SEARCH 06-07-10

CH CITY	CALL	TYPE ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
205B Martinsburg	WVEP	LIC HN WV	251.4 70.7	94.2 BLED19870220KA	39 08 38.0 78 26 09.0	3.600 495	134.5 900	56.8 West Virginia Educational	-47.4*<	13.6
205B1 Baltimore	WEAA	LIC CN MD	96.6 277.1	70.8 BLED1622	39 20 31.0 76 35 13.0	12.500 67	85.1 142	19.2 Morgan State College	-21.3*<	27.9
206B1 Hagerstown	WGMS	LIC DCY MD	343.0 162.9	32.3 BLED19930608KA	39 41 47.0 77 30 50.0	0.900 408	23.5 709	15.6 Greater Washington Educati	1.7<	6.6
203B Washington	WAMU	LIC C DC	153.4 333.6	59.9 BMLLED20070112AHP	38 56 10.0 77 05 33.0	50.000 152	5.5 223	48.6 Exec. Comm. Of Bd. Of Trus	47.3	10.1
207B Washington	WPFW	LIC CN DC	153.4 333.6	59.9 BLED1662	38 56 09.0 77 05 33.0	50.000 125	4.8 195	44.1 Pacifica Foundation, Inc.	48.0	14.6
205D Charles Town	WVEP-FM1	LIC DV WV	259.4 79.1	41.0 BLFTB20070611ABN	39 20 59.0 77 52 15.0	0.210	5.6 216	1.8 West Virginia Educational	28.3	15.4
204B Middletown	WXPH	LIC DEX PA	44.0 224.5	95.8 BLED20070705AEB	40 02 07.0 76 37 19.0	7.000 216	58.9 354	39.8 The Trustees Of The Univer	29.8	45.8
06+T Fairfax	WDCN-LP	CP D N VA	158.3 338.4	62.4 BPTVL20090416ARB	38 53 45.0 77 08 08.0	3.000 182	4.6 198	21.4 Signal Above Llc	139.5R	36.4M
06ZT Fairfax	WDCN-LP	LI D N VA	158.3 338.4	62.4 BLTVL20070410ACR	38 53 45.0 77 08 08.0	3.000 182	4.6 198	19.4 Signal Above Llc	139.5R	38.4M
202A Chambersburg	WZXQ	LIC DCX PA	354.2 174.1	60.6 BLED20050830ADO	39 57 40.0 77 28 32.0	0.110 352	0.7 725	18.7 Four Rivers Community Broa	52.8	40.8
258B Washington	WIHT	LIC CN DC	153.0 333.1	56.6 BLH19931215KE	38 57 49.0 77 06 18.0	22.000 229	0.0 306	0.0 Amfm Radio Licenses, L.l.c	14.5R	42.1M
208D Berryville	w208BL	CP DC VA	227.3 47.0	55.3 BPFT20090818AAA	39 04 49.0 77 52 24.0	0.010	0.1 561	7.2 Liberty University, Inc.	48.1	46.9
204A Mcconnellsburg	WWCF	LIC CX PA	319.6 139.3	72.9 BLED20051128AJL	39 54 58.0 77 57 25.0	0.009 364	18.4 663	12.1 Morris Broadcasting & Comm	47.5	50.7
208D Berryville	w208BL	LIC C VA	227.3 47.0	55.3 BLFT20080625AAA	39 04 49.0 77 52 26.0	0.001	0.1 561	5.1 Liberty University, Inc.	48.1	49.0
208B Harrisburg	WITF-FM	LIC CX PA	23.7 204.0	112.7 BMLLED20040130ADW	40 20 44.0 76 52 07.0	5.900 415	4.6 599	56.0 witf, Inc.	100.9	55.5
205B Selinsgrove	WQSU	LIC CN PA	17.8 198.2	179.1 BLED19830920AC	40 57 06.0 76 45 03.0	12.000 189	115.8 381	46.5 Susquehanna University	56.2	108.9
204A Shippensburg	WSYC-FM	LIC CX PA	352.2 172.1	73.6 BMLLED20080812ACT	40 04 30.0 77 31 15.0	0.130 -47	8.6 212	6.0 Shippensburg University Of	58.0	57.5
06ZT Mt. Olive	w06CP	CP D N VA	241.0 60.4	102.9 BNPTVL20000831CKO	38 57 57.0 78 26 32.0	3.000 188	4.6 360	22.3 word Of God Fellowship, In	139.5R	76.0M

Terrain database is NED 03 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM Contour distances are on direct line to and from reference station. Reference Zone = 1, Co to 3rd adjacent. Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X) "s" affixed to 'IN' or 'OUT' values = site inside protected contour. "<" = Contour overlap

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 6/7/2010	
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: 205											
2. Primary Station:											
Facility ID Number			Call Sign			City			State		
65669			WETA			WASHINGTON			DC		
3. Delivery Method (Select One): <input checked="" type="radio"/> Off-air <input type="radio"/> Microwave <input type="radio"/> Satellite <input type="radio"/> Via <input type="radio"/> Other											
4. Antenna Location Coordinates: (NAD 27)											
Latitude: Degrees 39 Minutes 25 Seconds 5 <input checked="" type="radio"/> North <input type="radio"/> South											
Longitude: Degrees 77 Minutes 24 Seconds 11 <input checked="" type="radio"/> West <input type="radio"/> East											
5. Antenna Structure Registration Number: <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Notification filed with FAA											
6. Antenna Location Site Elevation Above Mean Sea Level:									88 meters		
7. Overall Tower Height Above Ground Level:									49 meters		
8. Height of Radiation Center Above Ground Level:									37 meters(H) 37 meters(V)		
9. Effective Radiated Power:									0.25 kW(H) 0.25 kW(V)		
10. Transmitting Antenna: Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under CDBS Public Access (http://licensing.fcc.gov/prod/cdbforms/pubacc/prod/cdb_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 100A-2F 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. For FM Boosters and Fill-in translators only.			
a. FM Fill-in translators. Applicant certifies that the FM translator's (a) coverage contour does not extend beyond the protected contour of the commercial FM primary station to be rebroadcast, or (b) entire 60 dBu contour is contained within the lesser of: (i) the 2 mV/m daytime contour of the AM primary station to be rebroadcast, or (ii) a 25-mile radius centered at the AM primary station's transmitter site.		<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A	
		See Explanation in	

	<p>b. FM Boosters. Applicant certifies that the FM Booster station's service contour is entirely within the primary station's protected coverage contour.</p>	<p>[Exhibit 10] <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A See Explanation in [Exhibit 11]</p>
<p>12.</p>	<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 See Explanation in [Exhibit 12] [Exhibit 13] [Exhibit 14]</p>
<p>13.</p>	<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 See Explanation in [Exhibit 15]</p>
<p>14.</p>	<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 See Explanation in [Exhibit 16]</p>
<p>15.</p>	<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 See Explanation in [Exhibit 17]</p>
<p>PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.</p>		