

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 dBμ 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.



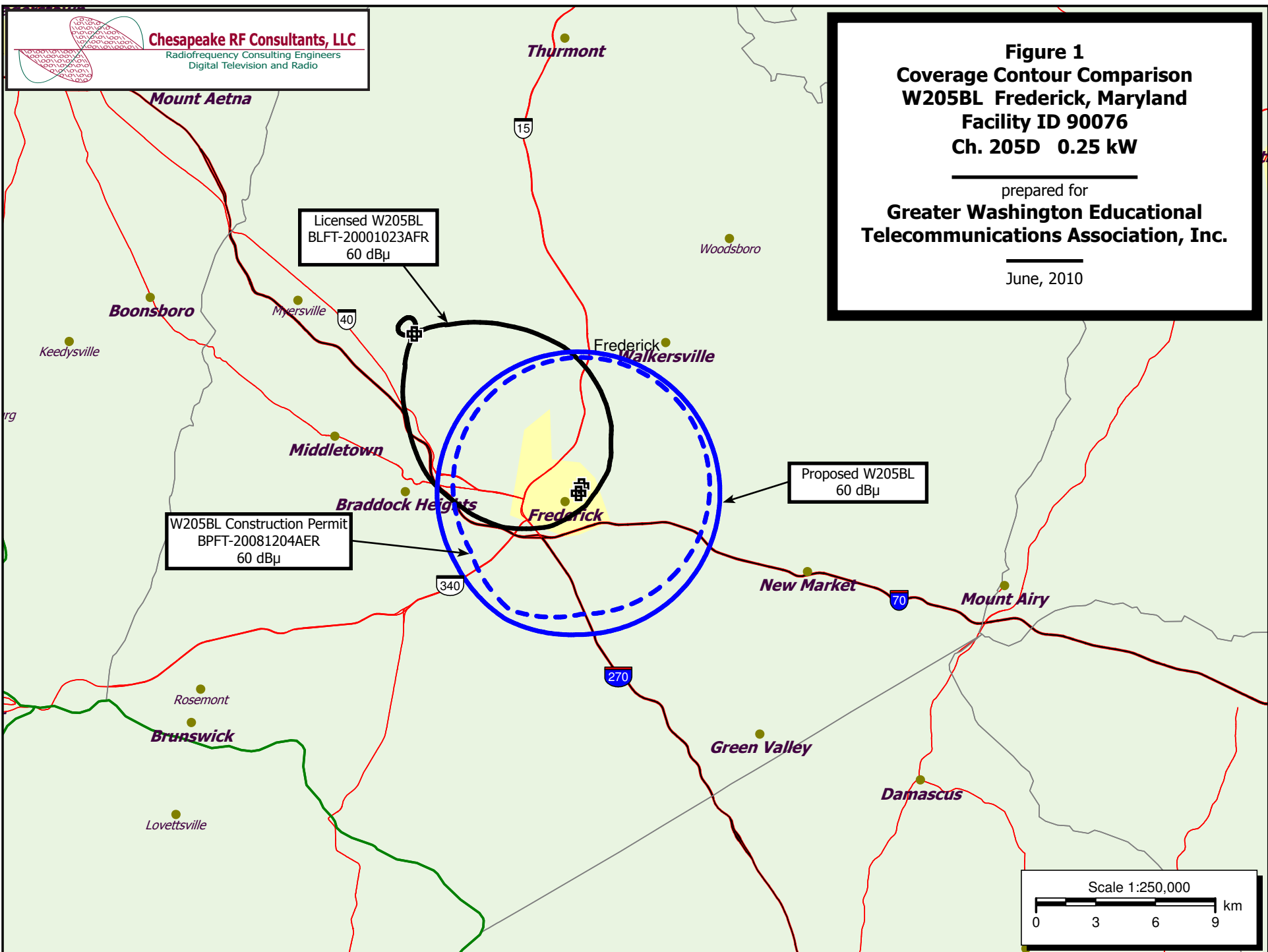
Joseph M. Davis, P.E.
June 7, 2010

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.



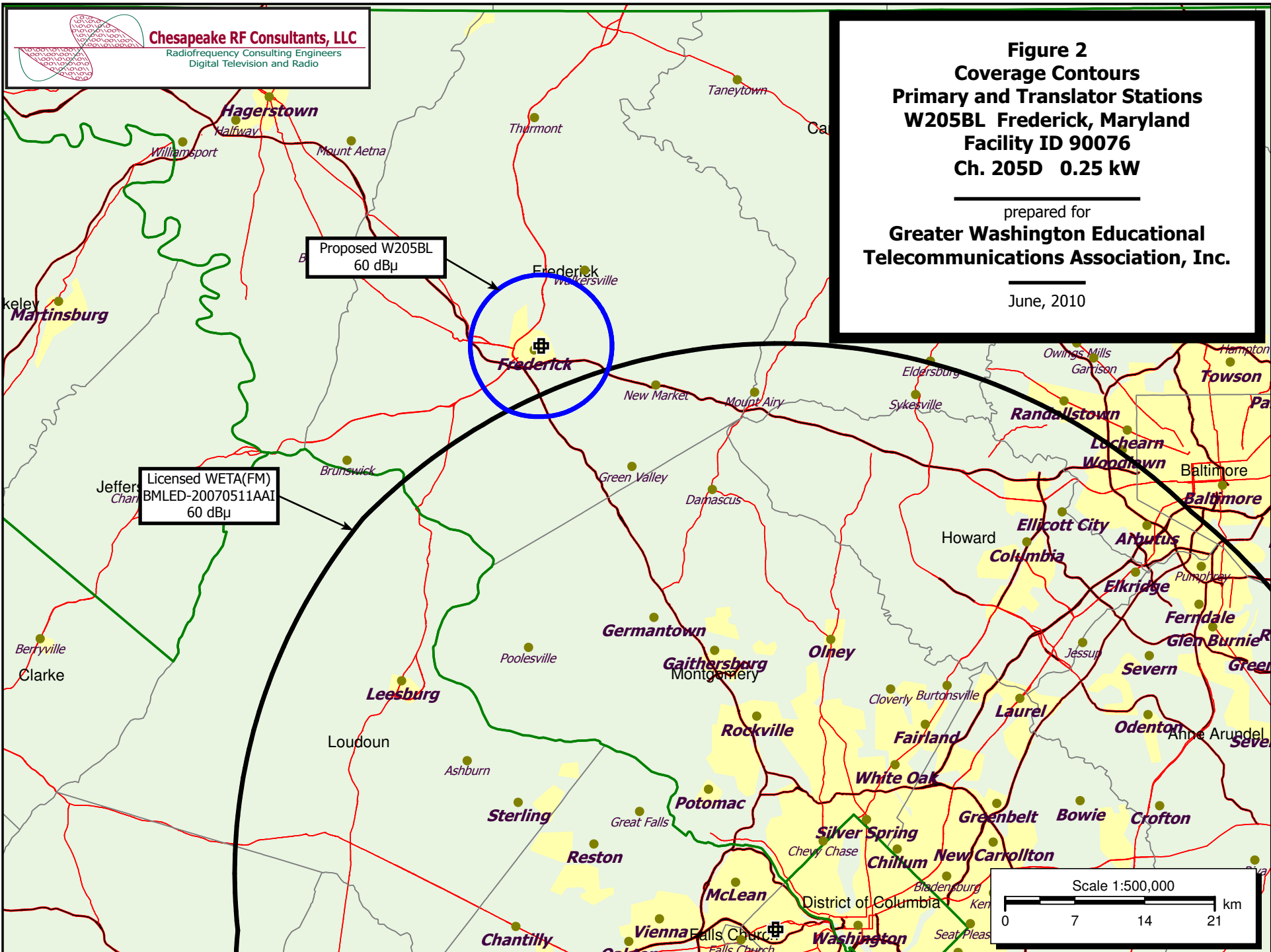
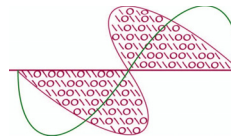


Table 1

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 dBμ 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		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	
39 25 05.0 N.										DATA 06-05-10	
77 24 11.0 W.										SEARCH 06-07-10	
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY	STATE			<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
205B	WVEP	LIC	HN	251.4	94.2	39 08 38.0	3.600	134.5	56.8	-47.4*<	13.6
Martinsburg	WV			70.7	BLED19870220KA	78 26 09.0	495	900	West Virginia Educational		
205B1	WEAA	LIC	CN	96.6	70.8	39 20 31.0	12.500	85.1	19.2	-21.3*<	27.9
Baltimore	MD			277.1	BLED1622	76 35 13.0	67	142	Morgan State College		
206B1	WGMS	LIC	DCY	343.0	32.3	39 41 47.0	0.900	23.5	15.6	1.7<	6.6
Hagerstown	MD			162.9	BLED19930608KA	77 30 50.0	408	709	Greater Washington Educati		
203B	WAMU	LIC	C	153.4	59.9	38 56 10.0	50.000	5.5	48.6	47.3	10.1
Washington	DC			333.6	BMLED20070112AHP	77 05 33.0	152	223	Exec. Comm. Of Bd. Of Trus		
207B	WPFW	LIC	CN	153.4	59.9	38 56 09.0	50.000	4.8	44.1	48.0	14.6
Washington	DC			333.6	BLED1662	77 05 33.0	125	195	Pacifica Foundation, Inc.		
205D	WVEP-FM1	LIC	DV	259.4	41.0	39 20 59.0	0.210	5.6	1.8	28.3	15.4
Charles Town	WV			79.1	BLFTB20070611ABN	77 52 15.0		216	West Virginia Educational		
204B	WXPB	LIC	DEX	44.0	95.8	40 02 07.0	7.000	58.9	39.8	29.8	45.8
Middletown	PA			224.5	BLED20070705AEB	76 37 19.0	216	354	The Trustees Of The Univer		
06+T	WDCN-LP	CP	D N	158.3	62.4	38 53 45.0	3.000	4.6	21.4	139.5R	36.4M
Fairfax	VA			338.4	BPTVL20090416ARB	77 08 08.0	182	198	Signal Above Llc		
06ZT	WDCN-LP	LI	D N	158.3	62.4	38 53 45.0	3.000	4.6	19.4	139.5R	38.4M
Fairfax	VA			338.4	BLTVL20070410ACR	77 08 08.0	182	198	Signal Above Llc		
202A	WZXQ	LIC	DCX	354.2	60.6	39 57 40.0	0.110	0.7	18.7	52.8	40.8
Chambersburg	PA			174.1	BLED20050830ADO	77 28 32.0	352	725	Four Rivers Community Broa		
258B	WIHT	LIC	CN	153.0	56.6	38 57 49.0	22.000	0.0	0.0	14.5R	42.1M
Washington	DC			333.1	BLH19931215KE	77 06 18.0	229	306	Amfm Radio Licenses, L.L.C		
208D	W208BL	CP	DC	227.3	55.3	39 04 49.0	0.010	0.1	7.2	48.1	46.9
Berryville	VA			47.0	BPFT20090818AAA	77 52 24.0		561	Liberty University, Inc.		
204A	WWCF	LIC	CX	319.6	72.9	39 54 58.0	0.009	18.4	12.1	47.5	50.7
Mcconnellsburg	PA			139.3	BLED20051128AJL	77 57 25.0	364	663	Morris Broadcasting & Comm		
208D	W208BL	LIC	C	227.3	55.3	39 04 49.0	0.001	0.1	5.1	48.1	49.0
Berryville	VA			47.0	BLFT20080625AAA	77 52 26.0		561	Liberty University, Inc.		
208B	WITF-FM	LIC	CX	23.7	112.7	40 20 44.0	5.900	4.6	56.0	100.9	55.5
Harrisburg	PA			204.0	BMLED20040130ADW	76 52 07.0	415	599	Witf, Inc.		
205B	WQSU	LIC	CN	17.8	179.1	40 57 06.0	12.000	115.8	46.5	56.2	108.9
Selinsgrove	PA			198.2	BLED19830920AC	76 45 03.0	189	381	Susquehanna University		
204A	WSYC-FM	LIC	CX	352.2	73.6	40 04 30.0	0.130	8.6	6.0	58.0	57.5
Shippensburg	PA			172.1	BMLED20080812ACT	77 31 15.0	-47	212	Shippensburg University of		
06ZT	W06CP	CP	D N	241.0	102.9	38 57 57.0	3.000	4.6	22.3	139.5R	76.0M
Mt. Olive	VA			60.4	BNPTVL20000831CKO	78 26 32.0	188	360	Word Of God Fellowship, In		

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)
"@" 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
	65669	WETA	WASHINGTON
			State
			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
	0		10
	60		70
	120		130
	180		190
	240		250
	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.

☐ Yes ☐ No
☒ N/A

See Explanation in

b. FM Boosters. Applicant certifies that the FM Booster station's service contour is entirely within the primary station's protected coverage contour.	<div>[Exhibit 10] <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A</div> <div>See Explanation in [Exhibit 11]</div>
12. Interference. The proposed facility complies with all of the following applicable rule sections. Check all that apply: Overlap Requirements. <input checked="" type="checkbox"/> a) 47 C.F.R. Section 74.1204 Exhibit Required. Television Channel 6 Protection. <input checked="" type="checkbox"/> b) 47 C.F.R. Section 74.1205 with respect to station(s) Exhibit Required.	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> <div>See Explanation in [Exhibit 12]</div> <div>[Exhibit 13]</div> <div>[Exhibit 14]</div>
13. 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.	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> <div>See Explanation in [Exhibit 15]</div>
14. 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.	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> <div>See Explanation in [Exhibit 16]</div>
15. 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. 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.	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> <div>See Explanation in [Exhibit 17]</div>
PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.	