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

ENGINEERING EXHIBIT

Application for Digital Television Station
Auxiliary Antenna Construction Permit

prepared for

Gray Television Licensee, LLC
WTAP-TV Parkersburg, WV
Facility ID 4685
Ch. 49 77.6 kW 179 m

Gray Television Licensee, LLC ("Gray") is the licensee of television station WTAP-TV, Channel 49, Parkersburg, WV (BLCDT-20040423ABG). WTAP-TV is presently licensed to operate with 47.4 kW effective radiated power ("ERP)" with a nondirectional antenna at 193 meters height above average terrain ("HAAT"). A Construction Permit (BMPCDT-20110930AHE) authorizes expansion of the WTAP-TV facility to 315 kW ERP at 197 meters HAAT using a replacement nondirectional antenna. *Gray* has recently completed construction of the expansion facility and a license application is pending (BLCDT-20120109ACS). *Gray* herein seeks an auxiliary antenna construction permit for WTAP-TV.

The proposed auxiliary antenna, located on the same tower structure as the main facility, will operate at 77.6 kW ERP nondirectional at an antenna HAAT of 179 meters. The proposed auxiliary facility will employ the same antenna (Andrew ALP16M2-HSOC-49) that was associated with the former main facility. This antenna was repositioned at an elevation 17.1 meters below its former height to allow installation of the new main antenna.

The antenna is side-mounted on the existing WTAP-TV antenna supporting structure (FCC Antenna Structure Registration number 1239800). No change to the overall structure height will result from this proposal.

Figure 1 shows that the 41 dBµ contour of the proposed auxiliary facility does not extend beyond the 41 dBµ contour of the 315 kW main facility (BLCDT-20120109ACS, pending). Thus the proposal complies with §73.1675(a) and no interference study is necessary despite any extension in contour beyond the WTAP-TV Appendix B facility.

As an auxiliary facility, compliance with the 95 percent population match (Certification Item 1(e) on Form 301) is not required. In this case, the proposed auxiliary facility's predicted service population is 359,339 persons which is a 102.4 percent match of the Appendix B facility (350,813 persons).

The nearest FCC monitoring station is 410 km distant at Laurel, MD. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). No authorized AM stations are located within 3.2 kilometers of the site. The site location is within the Canadian coordination zone (268 km to the Canada border), however no further international coordination should be necessary for an auxiliary facility that complies with §73.1675(a).

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

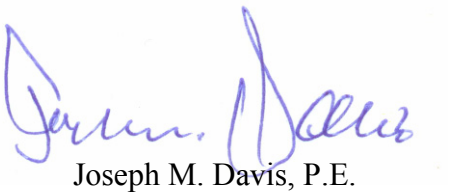
The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 25 percent horizontally polarized antenna relative field in downward elevations (pattern data shows less than 25 percent relative field at angles 15 to 90 degrees below the antenna), the calculated power density at a height of two meters above ground level is 12.3 $\mu W/cm^2$ which is 2.7 percent of the "uncontrolled / general public" maximum permissible exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's 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 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.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposed transmitting antenna is an existing, side-mounted antenna.

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.



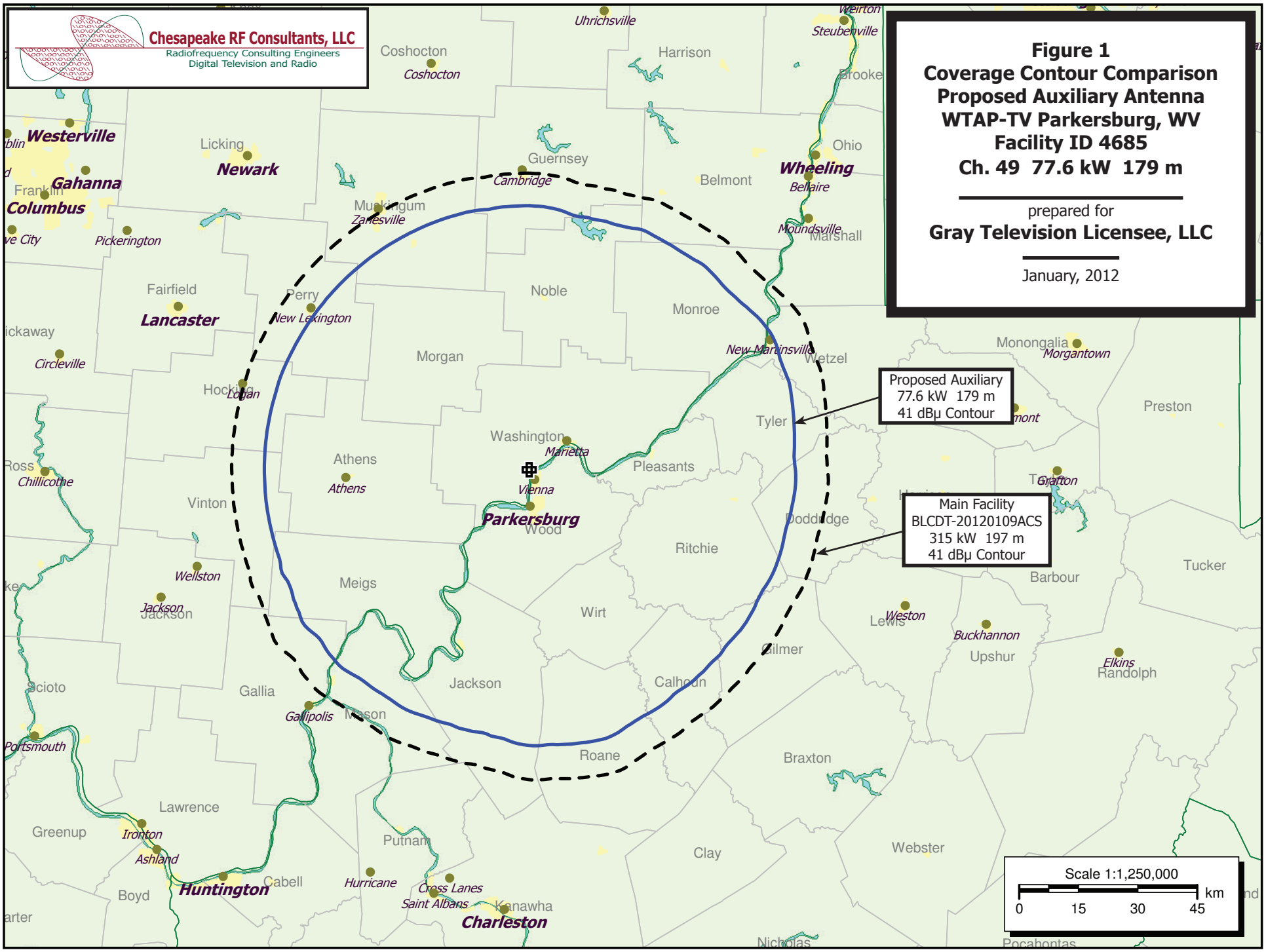
Joseph M. Davis, P.E.
January 31, 2012

Chesapeake RF Consultants, LLC
207 Old Dominion Road
Yorktown, VA 23692
703-650-9600

List of Attachments

Figure 1 Coverage Contour Comparison
Form 301 Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered January 31, 2012 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.


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 1
Coverage Contour Comparison
Proposed Auxiliary Antenna
WTAP-TV Parkersburg, WV
Facility ID 4685
Ch. 49 77.6 kW 179 m
prepared for
Gray Television Licensee, LLC
January, 2012
Proposed Auxiliary
77.6 kW 179 m
41 dBµ Contour
Main Facility
BLCDT-20120109ACS
315 kW 197 m
41 dBµ Contour
Scale 1:1,250,000
km
0 15 30 45
Parkersburg
Vienna
Marietta
Athens
Pleasants
Wood
Ritchie
Tyler
Wetzel
Monongalia
Morgantown
Preston
Barbour
Tucker
Lewis
Weston
Upshur
Randolph
Elkins
Buckhannon
Braxton
Webster
Clay
Calhoun
Jackson
Roane
Wirt
Gilmer
Meigs
Gallia
Lawrence
Putnam
Cabell
Huntington
Ashland
Ironton
Greenup
Boyd
Kanawha
Charleston
Saint Albans
Cross Lanes
Hurricane
Gallipolis
Portsmouth
Jackson
Wellston
Vinton
Hocking
Logan
Perry
New Lexington
Fairfield
Lancaster
Circleville
Ross
Chillicothe
Pickerington
Columbus
Gahanna
Westerville
Licking
Newark
Muskingum
Zanesville
Guernsey
Cambridge
Noble
Monroe
Morgan
New Martinsville
Belmont
Ohio
Wheeling
Bellaire
Moundsville
Marshall
Harrison
Coshocton
Uhrichsville
Steubenville
Brooke
Weirton

SECTION III-D - DTV Engineering

Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1.	The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
	(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	(•) Yes ( ) No
	(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	( ) Yes ( ) No
	(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	( ) Yes ( ) No
	(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	( ) Yes (•) No ( ) N/A
	(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	(•) Yes ( ) No ( ) N/A
2.	The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must **submit the Exhibit** called for in Item 13.	(•) Yes ( ) No
3.	Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	(•) Yes ( ) No
4.	The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	(•) Yes ( ) No
5.	The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	(•) Yes ( ) No

SECTION III-D - DTV 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 Number: DTV 49 Analog TV, if any	
2.	Zone: (•) I ( ) II ( ) III	
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 39 Minutes 21 Seconds 0 (•) North ( ) South Longitude: Degrees 81 Minutes 33 Seconds 56 (•) West ( ) East	
4.	Antenna Structure Registration Number: 1239800 ☐ Not Applicable ☐ Notification filed with FAA	
5.	Antenna Location Site Elevation Above Mean Sea Level:	295.7 meters
6.	Overall Tower Height Above Ground Level:	141.1 meters
7.	Height of Radiation Center Above Ground Level:	116.9 meters
8.	Height of Radiation Center Above Average Terrain :	179.3 meters
9.	Maximum Effective Radiated Power (average power):	77.6 kW
10.	Antenna Specifications:	

10. Antenna Specifications:

a. Manufacturer AND Model ALP16M2-HSOC-49

b. Electrical Beam Tilt:
0.5 degrees ☐ Not Applicable

c. Mechanical Beam Tilt:
degrees toward azimuth
degrees True ☑ Not Applicable
Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 45]

d. Polorization:
◉ Horizontal ○ Circular ○ Elliptical

e. Directional Antenna Relative Field Values: ☑ Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]
[Relative Field Values]

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 46]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? ◉ Yes ○ No [Exhibit 47]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 48]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 49]

If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, 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.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.

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	Relationship to Applicant (e.g., Consulting Engineer)	
JOSEPH M. DAVIS, P.E.	CONSULTING ENGINEER	
Signature	Date	
	1/31/2012	
Mailing Address		
CHESAPEAKE RF CONSULTANTS, LLC		
207 OLD DOMINION ROAD		
City	State or Country (if foreign address)	Zip Code
YORKTOWN	VA	23692 -
Telephone Number (include area code)	E-Mail Address (if available)	
7036509600	JOSEPH.DAVIS@RF-CONSULTANTS.COM	