

ENGINEERING EXHIBIT

Application for Digital Television Station Auxiliary Antenna Construction Permit

prepared for

CBS Broadcasting Inc.
WCBS-DT New York, NY
Facility ID 9610
Pre-Transition Ch. 56

CBS Broadcasting Inc. (“*CBS*”) is the licensee of television station WCBS-TV, analog Channel 2, digital Channel 56, New York, NY. *CBS* herein proposes to construct a new auxiliary antenna for WCBS-DT for use as needed during the pre-transition period.

WCBS-DT is presently licensed on Channel 56 to operate at 349 kW effective radiated power (“ERP”) using a non-directional antenna at a height above average terrain (“HAAT”) of 397 meters. The proposed auxiliary antenna will operate on Channel 56 at 349 kW ERP (non-directional) and an antenna HAAT of 312 meters at the same site as the licensed WCBS-DT facility.

WCBS-DT is licensed to operate with a panel-type antenna that is side-mounted on the tower structure atop the Empire State Building. The main WCBS-DT antenna is shared with several other UHF digital television stations. The main shared antenna is scheduled to be replaced during July, 2008 in order to accommodate the post-transition operations of WCBS-DT and certain other UHF digital stations. The proposed auxiliary antenna will be permanently installed and available for use during this period and at other times for maintenance of the main antenna and when workers must access the Empire State Building’s tower structure.

The proposed auxiliary antenna is a Dielectric custom model ESBTUA80 and will also be shared with the same stations that utilize the main WCBS-DT antenna. The proposed auxiliary antenna system will employ panel radiators oriented in four different azimuths and will be installed at the 83rd to 85th floor level aperture on the northwest corner of the Empire state building (310 meters AGL). In order to reduce the azimuthal pattern distortion produced by side-mounting

an omnidirectional antenna on the side of a building, the stack of panels facing the southeast direction (one of four overall panel stacks) will be situated on the opposite corner of the building at the same elevation. The result is a custom antenna configuration that maintains a nondirectional pattern as best as possible given the unique support structure circumstances at the Empire State Building.

Elliptical polarization is proposed, as the southeast panel stack will have a vertically-polarized component. The three panel stacks on the northwest building corner will be horizontally polarized only. The maximum horizontally polarized ERP is 349 kW, and the maximum vertically polarized ERP is 174.5 kW. The vertically polarized component will not exceed the horizontally polarized component at any azimuth.

The Empire State Building's FCC Antenna Structure Registration number is 1007048. No change to the overall structure height is required to carry out this proposal.

Figure 1 shows that the 41 dB μ contour of the proposed auxiliary facility does not extend beyond the 41 dB μ contour of the main facility, in compliance with §73.1675(a).

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposal will involve installation of a side-mounted transmitting antenna at an established multi-user site. 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. 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 25 percent antenna relative field in downward elevations (pattern data shows

less than 25 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the building at two meters above ground level attributable to the proposed facility is $7.7 \mu\text{W}/\text{cm}^2$, which is 1.6 percent of the general population/uncontrolled maximum permitted exposure limit. This is well below the five percent threshold limit described in §1.1307(b)(3) 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.

Access to the Empire State Building rooftop, antenna support structure, and any areas within the building that may exceed exposure limits is strictly controlled by the building owner. *CBS* will continue to participate in the building's RF exposure safety program along with the other broadcasters and FCC licensees that utilize the Empire State Building as a transmission site. As necessary, based on calculations or actual measurements considering all emitters, exposure abatement procedures will be confirmed and amended as appropriate. The RF safety program will continue to be employed protecting maintenance and installation workers from excessive exposure when work must be performed in locations where high RF levels may be present. Such areas are placed under strict restricted access and properly identified.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. 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, mast 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.
May 18, 2008

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

List of Attachments

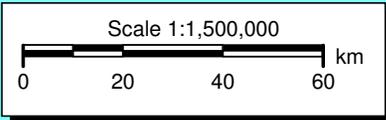
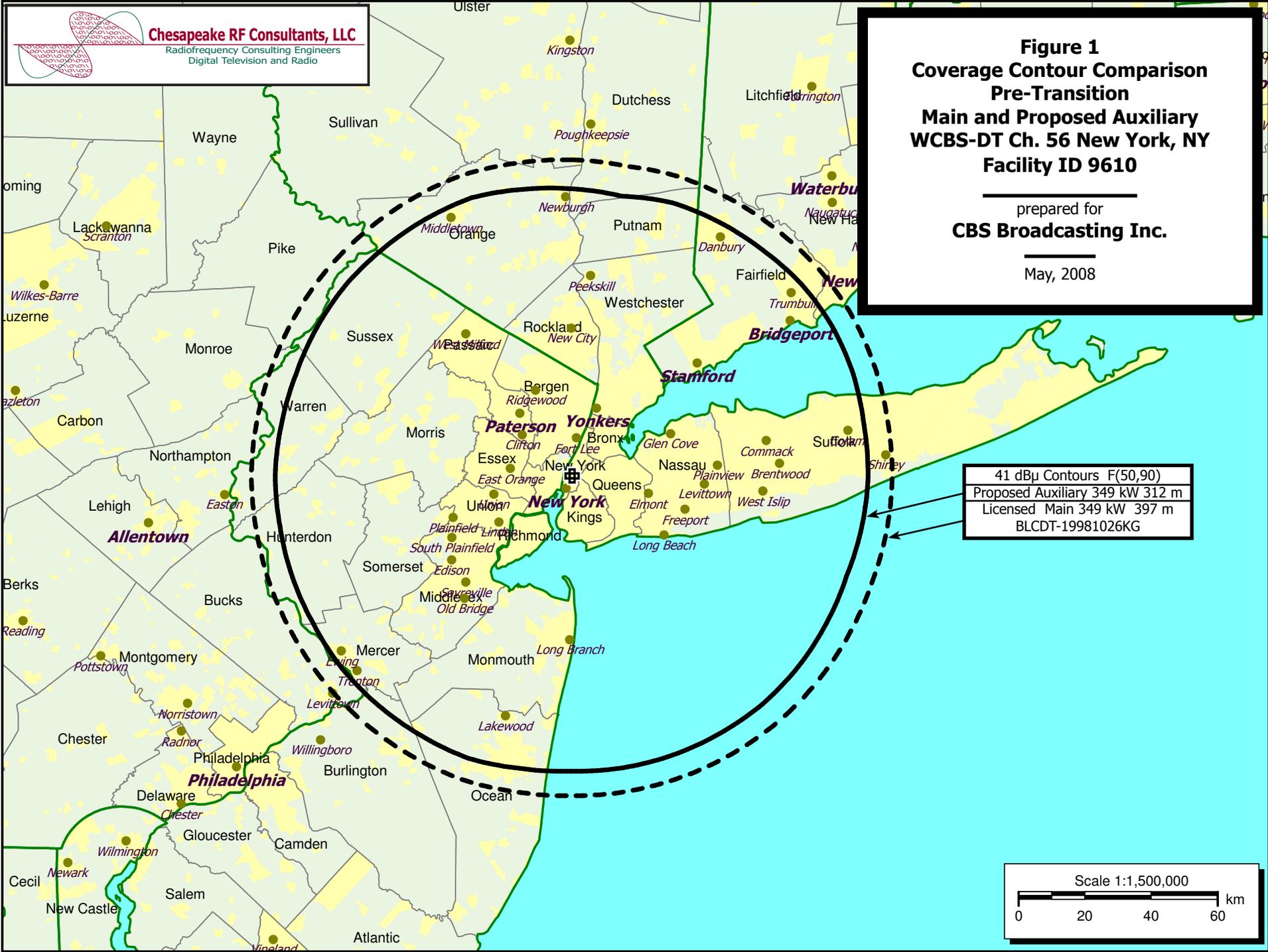
Figure 1 Coverage Contour Comparison
Form 301 Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered May 18, 2008 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
Pre-Transition
Main and Proposed Auxiliary
WCBS-DT Ch. 56 New York, NY
Facility ID 9610

prepared for
CBS Broadcasting Inc.

May, 2008



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.	
<p>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.</p> <p>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.</p>	
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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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").	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> 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.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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 56 Analog TV, if any 2
2. Zone:	<input checked="" type="radio"/> I <input type="radio"/> II <input type="radio"/> III
3. Antenna Location Coordinates: (NAD 27)	Latitude: Degrees 40 Minutes 44 Seconds 54 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 73 Minutes 59 Seconds 10 <input checked="" type="radio"/> West <input type="radio"/> East
4. Antenna Structure Registration Number: 1007048	<input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level:	15.5 meters
6. Overall Tower Height Above Ground Level:	443 meters
7. Height of Radiation Center Above Ground Level:	310 meters
8. Height of Radiation Center Above Average Terrain :	312 meters
9. Maximum Effective Radiated Power (average power):	349 kW
10. Antenna Specifications:	

a. Manufacturer DIE Model ESBTUA80

b. Electrical Beam Tilt:
1 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 42]

d. Polarization:
 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 43]

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 44]
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 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]
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 JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 5/18/2008	
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).