

Engineering Statement
CBS Broadcasting Inc.
WCBS-TV(Aux) New York, New York
Facility ID 9610
Ch. 36 425 kW 397 m

CBS Broadcasting Inc. (“ViacomCBS”) proposes to modify one of the presently authorized auxiliary antenna Construction Permits for WCBS-TV New York, NY.¹ The proposed facility will utilize the formerly licensed WCBS-TV main antenna at the Empire State Building for emergency, maintenance, and test purposes. An existing Dielectric composite antenna located 397 meters above average terrain (HAAT), will operate with an effective radiated power (ERP) of 425 kW.² This application seeks a slight decrease in ERP while increasing beam tilt to 1.5 degrees to accommodate the interference protection requirements of another station proposing to use this common antenna. This Statement addresses allocations, environmental, and radiofrequency factors related to this proposal.

Coverage map **Figure 1** demonstrates that the proposed service contour will not extend beyond the licensed WCBS-TV main antenna as required by FCC Rule §73.1675.³ Because there are no AM transmitter sites within 3 kilometers of the proposed facility, FCC Rule §1.30002 will not be triggered. The nearest FCC monitoring station is 299 kilometers away at Laurel, Maryland, well beyond the protection radius specified in §73.1690(c). Thus, it is believed that the proposed facility satisfies all allocation matters.

¹ CBS ultimately plans to support three auxiliary antennas: 1.) One World Trade Center; 650 kW at 496 m; File Number 0000091726, 2.) Empire State Building; 490 kW at 312 m; file number 0000059716, and 3.) Empire State Building; 425 kW at 397 m file number 0000059673 - the subject of this modification application.

² The existing ESBTUF80 antenna was designed for shared use by multiple UHF television stations at the Empire State Building. The system consists of horizontally polarized antenna panel elements side-mounted 395 meters above ground level (AGL) on the northwest side of the structure that provide 270-degrees of azimuthal coverage. The remaining 90-degrees of coverage is partially filled by a second panel array side-mounted on the southeast side of the structure at 310 m AGL. Together, the composite system is designed to minimize the undesirable influence of the large support structure and provide non-directional coverage. The panels on the southeast side of the structure include a vertically polarized component.

³ See FCC LMS File Number 0000086487. FCC Rule §73.1675 requires a comparison of Grade B contour locations. Because “Grade B” is not defined in a digital television context, Figure 1 provides 41 dBμ dipole-corrected contours instead.

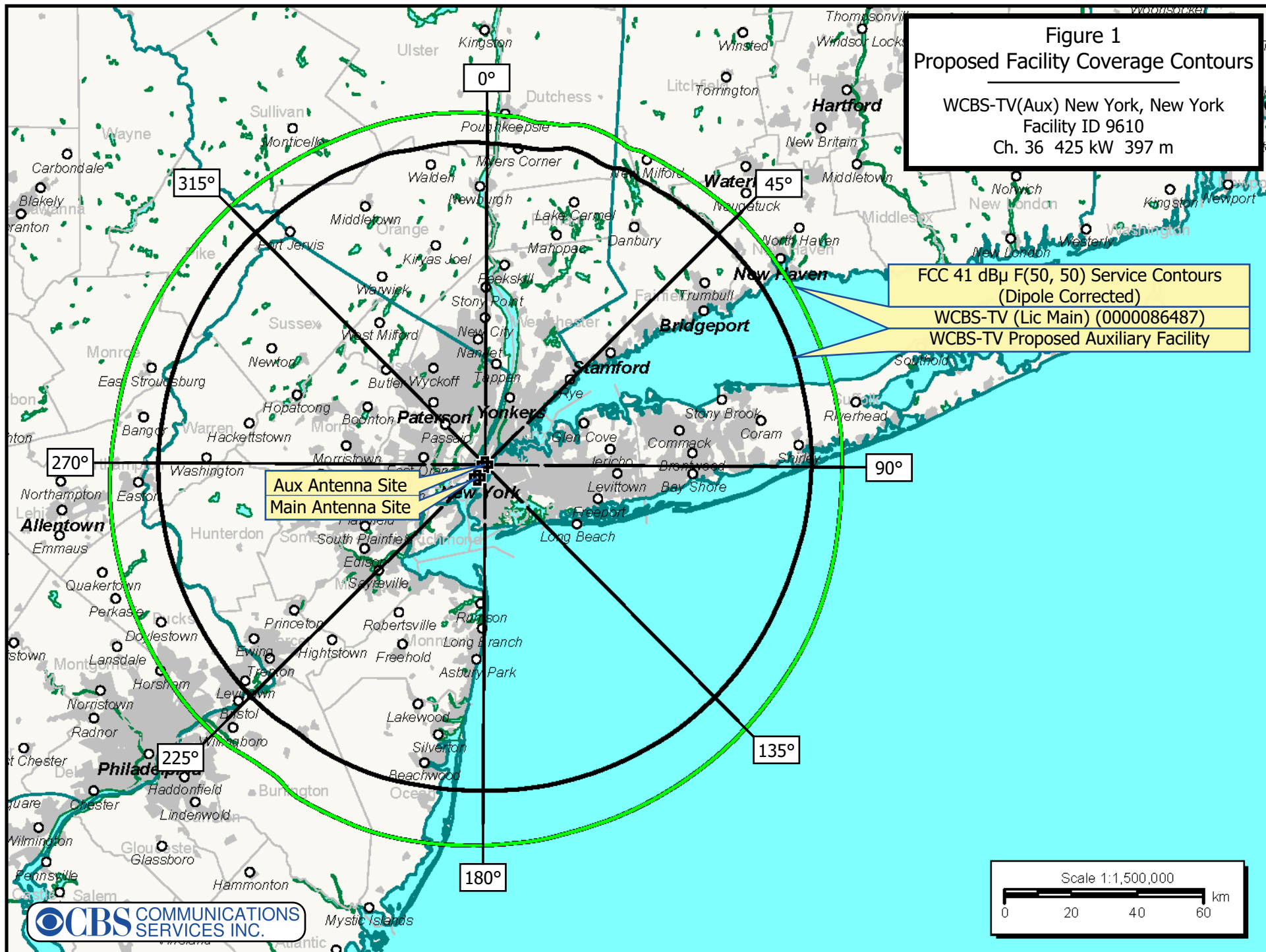
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As the proposed facility uses an existing support structure and antenna, no construction is required.⁴ According to Note 1 of FCC Rule §1.1306, the use of existing facilities is environmentally preferable to new construction. Since there will be no change in overall height, marking specifications, or lighting specifications, this application is categorically excluded from environmental processing.

The proposed operation was evaluated for human exposure to radiofrequency energy using equation ten (10) from the Commission's OET Bulletin No. 65 and the manufacturer's specified 18.1 percent downward (20-90°) relative field pattern. Calculations show that the proposed facility would contribute a power density of $7.4 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure or 1.8 percent of the FCC's $403.3 \mu\text{W}/\text{cm}^2$ "uncontrolled/general population" exposure limit for UHF Channel 36 (605 MHz). According to §1.1307(b)(3), facilities at locations with multiple emitters are categorically excluded from responsibility for taking corrective action in areas where their contribution is less than five percent of the limit.

Access to the observatory and observation deck continue to be periodically surveyed by the building management's RF consultant. Radiofrequency exposure measurements conducted prior to the DTV transition revealed levels within the FCC's guidelines. As the present proposal represents a reduction in total ERP with no change in antenna elements, a similar field reduction is expected upon completion of construction, when these areas will be measured once again. At higher elevations, locks and security measures limit access to the building exterior. Appropriate radiofrequency signs are also posted. ViacomCBS will continue to participate in the building owner's RF exposure protocol that, in cooperation with other tenants and broadcasters, includes restriction of access, power reduction, or shutdown of facilities when predicted or measured RF exposure would otherwise exceed the FCC's limits.

⁴ The proposed change in beam tilt will be achieved by altering the input signals of the existing antenna panels.

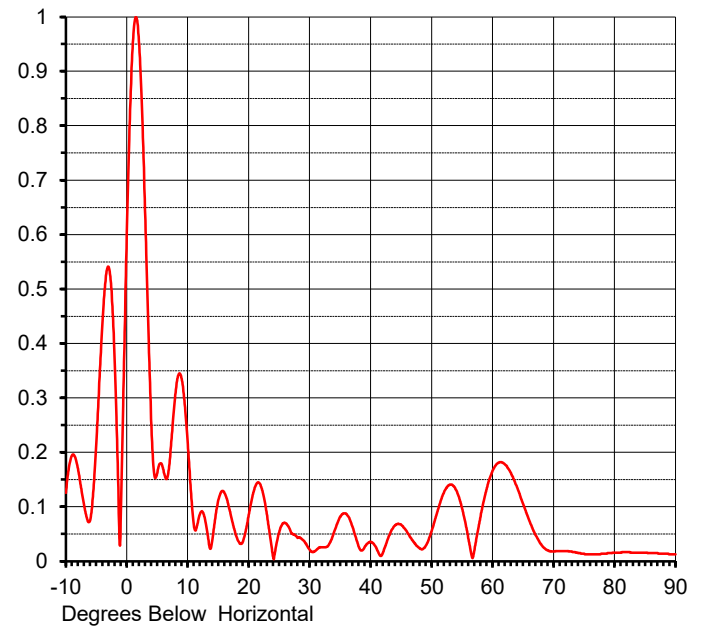
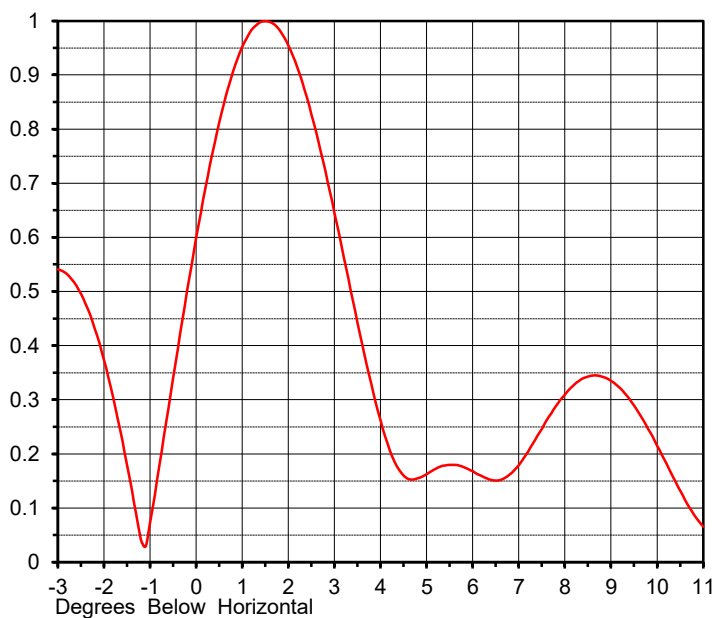


ELEVATION PATTERN

Proposal No. **C-71680-2**
 Date **18-Feb-21**
 Call Letters **WCBS**
 Channel **36**
 Frequency **605 MHz**
 Antenna Type

RMS Directivity at Main Lobe **14.2 (11.52 dB)**
 RMS Directivity at Horizontal **5.1 (7.08 dB)**
Calculated

Beam Tilt **1.50 deg**
 Pattern Number **08U142150**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.126	10.0	0.215	30.0	0.021	50.0	0.056	70.0	0.018
-9.0	0.194	11.0	0.066	31.0	0.020	51.0	0.094	71.0	0.019
-8.0	0.170	12.0	0.087	32.0	0.026	52.0	0.126	72.0	0.019
-7.0	0.103	13.0	0.067	33.0	0.028	53.0	0.141	73.0	0.018
-6.0	0.076	14.0	0.037	34.0	0.054	54.0	0.131	74.0	0.015
-5.0	0.217	15.0	0.112	35.0	0.082	55.0	0.097	75.0	0.014
-4.0	0.436	16.0	0.126	36.0	0.087	56.0	0.043	76.0	0.013
-3.0	0.541	17.0	0.088	37.0	0.064	57.0	0.021	77.0	0.013
-2.0	0.374	18.0	0.045	38.0	0.028	58.0	0.082	78.0	0.014
-1.0	0.073	19.0	0.035	39.0	0.026	59.0	0.133	79.0	0.015
0.0	0.599	20.0	0.085	40.0	0.036	60.0	0.167	80.0	0.016
1.0	0.952	21.0	0.136	41.0	0.022	61.0	0.181	81.0	0.016
2.0	0.955	22.0	0.138	42.0	0.016	62.0	0.178	82.0	0.017
3.0	0.646	23.0	0.084	43.0	0.047	63.0	0.162	83.0	0.016
4.0	0.261	24.0	0.007	44.0	0.066	64.0	0.136	84.0	0.016
5.0	0.163	25.0	0.054	45.0	0.067	65.0	0.105	85.0	0.016
6.0	0.168	26.0	0.070	46.0	0.053	66.0	0.075	86.0	0.015
7.0	0.180	27.0	0.051	47.0	0.036	67.0	0.049	87.0	0.015
8.0	0.310	28.0	0.043	48.0	0.024	68.0	0.030	88.0	0.014
9.0	0.335	29.0	0.038	49.0	0.028	69.0	0.020	89.0	0.013
								90.0	0.013

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