

**TECHNICAL STATEMENT  
MINOR CHANGE TO POST-AUCTION  
CONSTRUCTION PERMIT – LMS FILE NO. 0000027445  
WBNG-TV 23.8 KW ERP 373.6 M HAAT CH. 8  
BINGHAMTON, NEW YORK**

**INTRODUCTION**

WBNG License, LLC (the “Applicant”), the licensee of digital television station WBNG-TV, Facility ID No. 23337, proposes to modify this station’s post-auction construction permit,<sup>1</sup> which authorizes a new channel and technical parameters that were assigned through the Incentive Auction and TV-Repack process.<sup>2</sup> Specifically, the Applicant seeks to utilize a different antenna system for WBNG-TV, which will be top-mounted at an elevation significantly higher than the originally authorized side-mounted system. Because there are certain technical changes related to utilizing the proposed top-mount antenna, including an increase in antenna height of more than 2 meters and a decrease in effective radiated power (ERP), the Applicant is seeking to modify the underlying construction permit to specify those changes.

**PROPOSED MINOR MODIFICATION**

As stated above, the Applicant proposes to modify WBNG-TV’s post-auction construction permit to specify a new top-mount antenna for post-auction operation on Channel 8. The new antenna will be an elliptically polarized nondirectional Dielectric Model THV-7A8/VP-R 04. This new antenna will be designed to operate such that the horizontally polarized ERP will be 23.8 kW and the vertically polarized ERP will be 10.2 kW. Because the new top-mount configuration is designed to replace the antenna previously employed by WBNG-TV for

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<sup>1</sup> FCC File No. 0000027445, which is set to expire on July 3, 2020.

<sup>2</sup> *Incentive Auction Closing and Channel Reassignment Public Notice* (“CCRPN”), DA 17-31432, FCC Rcd 2786 (2017).



analog operation on Channel 12, the overall tower height will remain the same as demonstrated in Figure 1. This exhibit also shows that the new antenna radiation center will be 231.7 meters above ground level (AGL), which is a significant increase from the current authorized height of 201.2 meters. The new antenna radiation center above mean sea level (AMSL) is 769.7 meters and the resulting height above average terrain (HAAT) is calculated to be 373.6 meters.<sup>3</sup>

The contour map attached as Figure 2 demonstrates that the proposed facility will provide a 43 dBu signal over the entire community of Binghamton, NY as required in 47 CFR §73.625.

## **TVSTUDY ANALYSIS**

A TVStudy analysis was performed for the proposed modification using a terrain profile point spacing of 0.1 km and a summary of the results is provided in Figure 3. Although this summary does not indicate any interference check failures, the following four items were flagged: (1) Directional AM station within 3.2 km; (2) ERP exceeds maximum; (3) Proposal is within coordination distance of Canadian border; and, (4) Mutual exclusivity with another pending application was found due to interference received. Those four items are discussed in more detail below.

### **1. Directional AM Station within 3.2 km**

The WBNG-TV supporting tower is located in the vicinity of AM station WNBF 1290 kHz in Binghamton, NY, which operates directionally in the nighttime mode only. Detuning equipment is currently installed on the WBNG-TV tower structure, which the Applicant routinely inspects and maintains to ensure that there is no disturbance to the AM station's antenna pattern. Because the Applicant intends to replace WBNG-TV's former analog Channel 12 antenna and transmission line with new equipment for operation on Channel 8, the physical characteristics of the tower structure will remain essentially unchanged, including its overall

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<sup>3</sup> The antenna HAAT was calculated using the TVStudy software, v2.2.5.



height. Nevertheless, the existing detuning apparatus will be adjusted as necessary following the proposed antenna replacement to avoid interaction with WNBF's AM antenna system.

## 2. ERP Exceeds Maximum

The technical parameters associated with the underlying authorization exceed the DTV maximum power and height requirements in 47 CFR §73.622(f)(7). This modification also specifies a combination of power and height that exceed those requirements, but the resulting noise-limited (NL) 36 dBu contour will not expand the coverage of the authorized facility. A contour map that shows the proposed facility is totally encompassed by the authorized facility is provided in Figure 4.

## 3. International Coordination

This application does not specify a change in antenna location or propose parameters that will exceed the authorized contour in any direction, which is demonstrated in the contour map of Figure 4. The aforementioned TVStudy analysis also found that the new vertical characteristics will not result in calculated interference to any Canadian stations or assignments. Therefore, no further coordination of WBNG-TV's new channel reassignment is required.

## 4. Mutual Exclusivity

The TVStudy results indicate that the proposed modification is mutually exclusive with FCC File BPCDT-20110516ACI, which is a prior filed DTV maximization application for non-reassigned station WGAL Channel 8 in Lancaster, PA, Facility ID No. 53390. The WGAL application requests processing based on the results of a TVStudy analysis in which a terrain profile point spacing of 0.1 km was used.<sup>4</sup> Applying the same analysis settings used by WGAL, it was determined that neither application is predicted to cause or receive more than 0.5 percent pairwise (station-to-station) interference. The study results listed in Table 1 below confirm that

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<sup>4</sup> The application on-file for WGAL in FCC File BPCDT-20110516ACI specifies the following analysis setting: Cell size = 2.0 km; Profile point spacing = 0.1. For this reason, the same analysis settings have been utilized for WBNG-TV's proposal.



the technical parameters specified for WGAL in BPCDT-20110516ACI will not cause more than 0.5 percent of new interference to the facility modification proposed herein for WBNG-TV.

Table 1

tvstudy v2.2.5 (4uoc83)							
Database: localhost, Study: BPCDT20110516ACI, Model: Longley-Rice							
Proposal: WGAL D8 DT APP *P LANCASTER, PA							
File number: BPCDT20110516ACI							
Facility ID: 53930							
Station data: LMS TV 2020-06-25							
Record ID: 25076f91600de63001601e691b4818bc							
Country: U.S.							
Zone: I							
Study cell size: 2.00 km							
Profile point spacing: 0.10 km							
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Interference to WBNG8_CP-MOD20200625 APP scenario 1							
Desired:	Call WBNG-TV	Chan D8	Svc DT	Status APP	City, State BINGHAMTON, NY	File Number WBNG8_CP-MOD20200625	Distance
Undesireds:	WGAL	D8	DT	BL	LANCASTER, PA	DTVBL53930	231.8 km
	WGAL	D8	DT	APP	LANCASTER, PA	BPCDT20110516ACI	231.8
	WNJB	D8	DT	LIC	NEW BRUNSWICK, NJ	BLANK0000040678	200.3
	WXXA-TV	D8	DT	CP	ALBANY, NY	BLANK0000034860	171.5
	WVNY-TV	D8	DT	LIC	CARTHAGE, NY	BLANK0000115928	211.5
	WBPH-TV	D9	DT	APP	BETHLEHEM, PA	BPCDT20110518ADP	171.5
	W09DJ-D	D9-	DC	LIC	WILKES-BARRE, ETC., PA	BLANK0000113176	96.2
	CFTO-DT	D8	DT	LIC	TORONTO, ON	BLANKCANADA232	330.7
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	34720.6	1,609,763	30922.7	1,167,718	29798.7	1,118,718	29766.4 1,117,272 0.11 0.13
Undesired			Total IX		Unique IX, before		Unique IX, after
WGAL D8 DT BL			173.4	18,002	56.5	15,651	
WGAL D8 DT APP			241.9	20,859			88.8 17,097
WNJB D8 DT LIC			265.6	7,531	92.6	2,518	80.5 1,775
WXXA-TV D8 DT CP			397.3	8,674	208.7	3,620	204.6 3,620
WVNY-TV D8 DT LIC			669.5	20,467	440.6	13,778	432.6 13,667
W09DJ-D D9- DC LIC			28.4	5,903	20.3	5,554	20.3 5,554
CFTO-DT D8 DT LIC			8.0	188	0.0	0	0.0 0
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## ENVIRONMENTAL IMPACT

This application specifies an existing FCC registered tower that was constructed before March 16, 2001.<sup>5</sup> Given that the collocation of WBNG-TV's new antenna will not result in a substantial increase in the size of the existing antenna-supporting structure,<sup>6</sup> the criteria

<sup>5</sup> 47 CFR Part 1, App. B, § III.A. "An antenna may be mounted on an existing tower constructed after March 16, 2001 without such collocation being reviewed through the Section 106 process set forth in the NPA, unless: 1. The Section 106 review process for the existing tower set forth in 36 CFR part 800 (including any applicable program alternative approved by the Council pursuant to 36 CFR 800.14) and any associated environmental reviews required by the FCC have not been completed; or, 2. The mounting of the new antenna will result in a substantial increase in the size of the tower as defined in Stipulation I.E, above; or, 3. The tower as built or proposed has been determined by the FCC to have an adverse effect on one or more historic properties, where such effect has not been avoided or mitigated through a conditional no adverse effect determination, a Memorandum of Agreement, a Programmatic Agreement, or otherwise in compliance with Section 106 and the NPA; or, 4. The collocation licensee or the owner of the tower has received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties."

<sup>6</sup> 47 CFR Part 1, App. B, § I.C. A substantial increase in size means: "(1) The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional



outlined in 47 CFR § 1.1307(a) for certain types of facilities that may significantly affect the environment do not apply. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate a television broadcast antenna in full compliance with the maximum permissible exposure (MPE) limits as described in more detail below. The following technical parameters are proposed for WBNG-TV:

Frequency:	180 - 186 MHz (VHF Channel 8)
Effective Radiated Power:	23.8 kW (H); 10.2 kW (V)
Antenna Type:	Nondirectional; Dielectric Model THV-7A8/VP-R 04
Antenna Polarization:	Elliptical
Antenna Height AGL:	231.7 meters
Location coordinates NAD83:	42-03-31.0 N, 075-57-05.0 W
Site elevation AMSL:	538.0 meters
Overall tower height AGL:	240.5 meters
FCC ASRN:	1016566

Because there are multiple RF sources mounted on the tower, the MPE-Based Exemption criteria in 47 CFR §1.1370(b) for such circumstances was applied and the findings support an exemption from further routine environmental evaluation. As determined in Table 2 below, the summation of all the normalized powers is not more than 1 and therefore the site does not collectively exceed 100 percent of the general MPE limit for uncontrolled environments. Accordingly, the proposed modification is not subject to further evaluation under 47 CFR § 1.1307(a) or (b) and is categorically excluded from environmental processing by 47 CFR § 1.1306.

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*antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or (2) The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or (3) The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or (4) The mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site."*

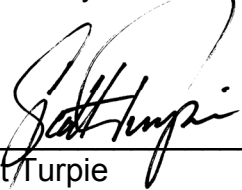


Table 2

MULTIPLE RADIOFREQUENCY SOURCES - MPE-BASED SUMMATION								
Call sign	MHz	Pol	Power (H+V)	RCAGL	R <sup>1</sup>	Method of Evaluation	MPE-Based <i>TH-ERP(W)</i>	Normalized Powers
WBNG-TV	183	E	34.0 <i>ERP-kW</i>	231.7 m	229.7 m	Exemption	202078.8	0.168
WAAL(FM)	99.1	C	17.4 <i>ERP-kW</i>	150.0 m	148.0 m	Exemption	83892.3	0.207
WLF495	6975	V	66.2 <i>EIRP-dBm</i>	62.2 m	60.2 m	Exemption	69581.6	0.037
							<b>Total:</b>	<b>0.412</b>
<sup>1</sup> Separation distance based on a human head height of 2 meters.								

Steps to limit exposure to persons authorized to access the transmitter site will be consistent with the appropriate recommendations in *FCC OET Bulletin No. 65, Edition 97-01*, (OET-65). All maintenance and other related work to be performed at elevations higher than 2 meters above ground will be coordinated to prevent exposure to RF fields in excess of the controlled limit. Such preventative steps shall include reducing power or shutting down the facility.

Respectfully submitted,



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June 26, 2020

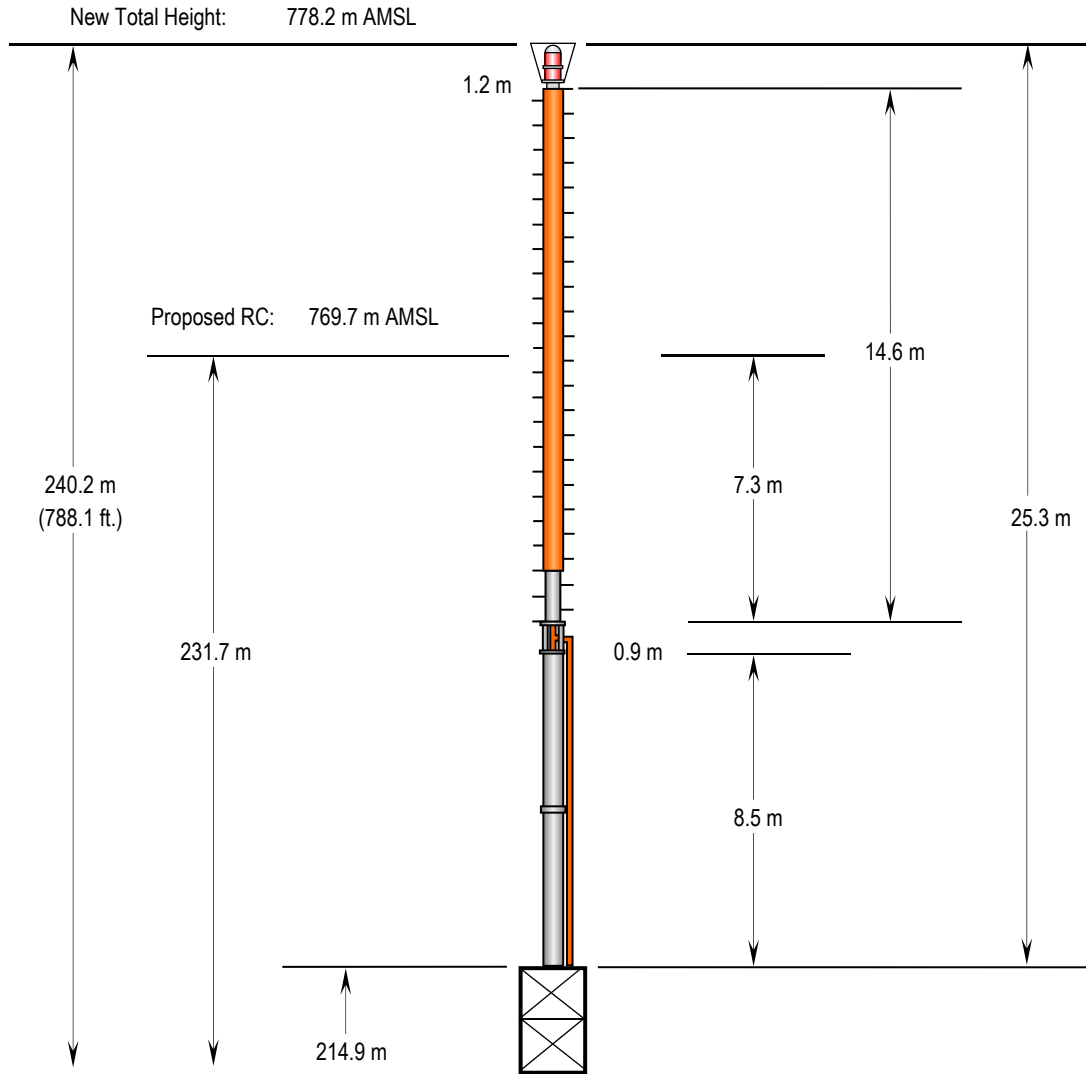
Attachment

- Figure 1 – Antenna Sketch
- Figure 2 – Principle Community Coverage Map
- Figure 3 – TVStudy Analysis
- Figure 4 – Authorized & Proposed NL Contours

**Tower Specifications**

	<b>FAA</b>	<b>Proposal</b>	<b>ASR</b>
Site Elevation AMSL:	1,765 ft.	1,765 ft.*	538.0 m
Overall Height AGL:	789 ft.	789 ft.*	240.5 m
Total Height AMSL:	2,554 ft.	2,554 ft.	778.5 m
Tower Height AGL:			214.9 m

\*FAA rounding (Site = nearest whole foot; Overall = next highest foot)

**Dielectric****Mechanical Specifications**

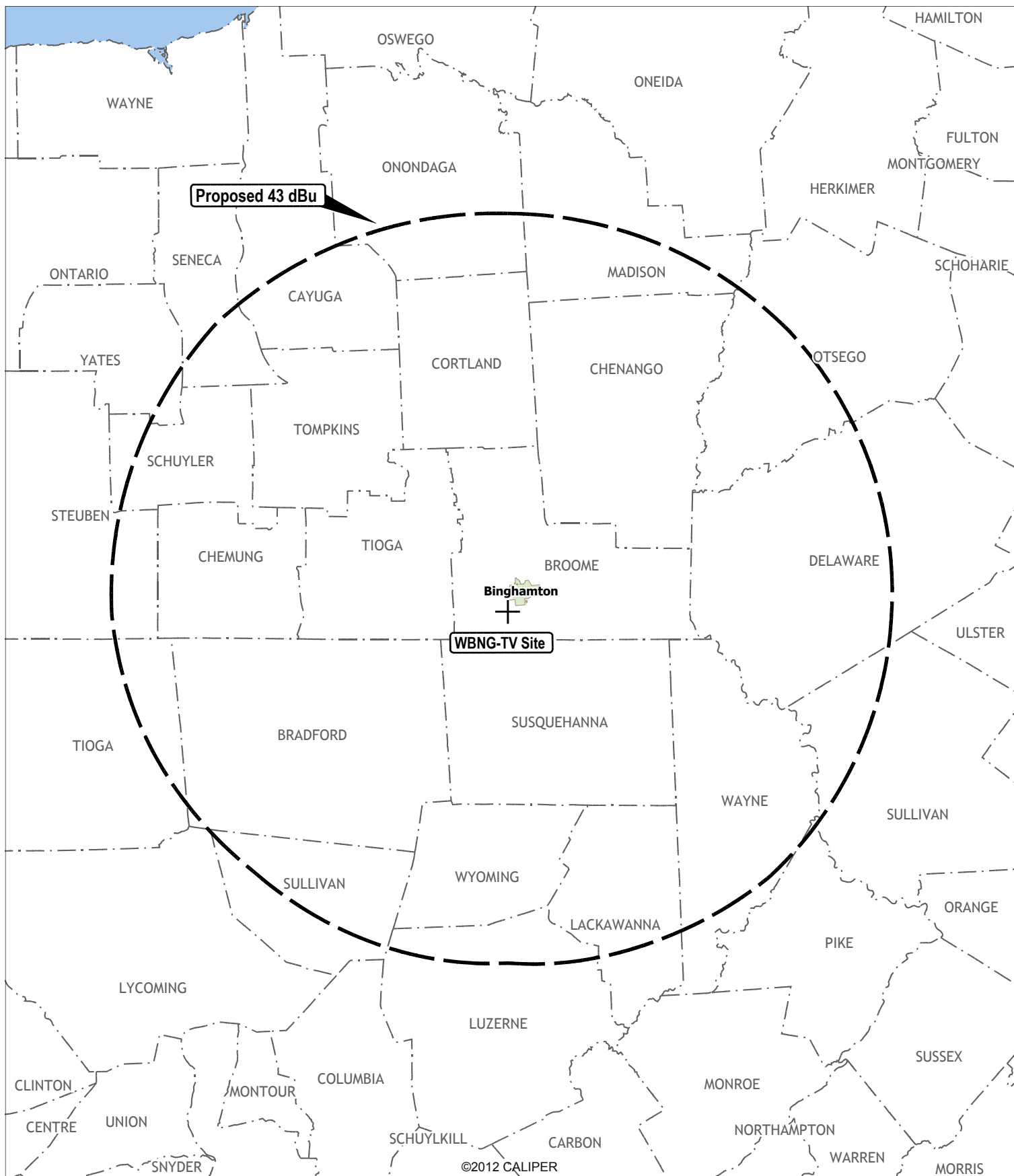
Height with Lightning Protector:  
 Height less Lightning Protector:  
 Height of Center of Radiation:  
 Antenna Support Pole:

**Antenna**

52 ft. (15.8 m)  
 48 ft. (14.6 m)  
 24 ft. (7.3 m)  
 28 ft. (8.5 m)

**Full stack**

83 ft. (25.3 m)  
 79 ft. (24.1 m)  
 40 ft. (12.0 m)



**FIGURE 2**  
**PROPOSED CITY-GRADE CONTOUR**  
**COVERAGE OF PRINCIPAL COMMUNITY**  
**WBNG-TV 23.8 KW ERP 373.6 M HAAT CH. 8**  
**BINGHAMTON, NEW YORK**

June 2020





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### FIGURE 3 Interference Analysis Summary TVSTUDY, VERSION 2.2.5.

Study created: 2020.06.25 12:15:43

Study build station data: LMS TV 2020-06-25

Proposal: WBNG-TV D8 DT APP BINGHAMTON, NY  
File number: WBNG8\_CP-MOD20200625  
Facility ID: 23337  
Station data: User record  
Record ID: 606  
Country: U. S.  
Zone: I

Search options:  
Non-U. S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WNYA	D7	DT	CP	PITTSFIELD, MA	BLANK0000078439	171.5 km
No	WNYA	D7	DT	BL	PITTSFIELD, MA	DTVBL136751	173.1
Yes	WICZ-TV	D7	DT	CP	BINGHAMTON, NY	BLANK0000034576	0.7
Yes	WICZ-TV	D7	DT	BL	BINGHAMTON, NY	DTVBL62210	0.7
No	WABC-TV	D7	DT	LIC	NEW YORK, NY	BLCDT20121031ABC	219.2
No	WABC-TV	D7	DT	CP	NEW YORK, NY	BMPCDT20080620AMV	220.2
No	WBBZ-TV	D7	DT	LIC	SPRINGVILLE, NY	BLCDT20100525AEW	234.7
No	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDT20090622ACH	466.5
Yes	WNJB	D8	DT	LIC	NEW BRUNSWICK, NJ	BLANK0000040678	200.3
Yes	WXXA-TV	D8	DT	CP	ALBANY, NY	BLANK0000034860	171.5
Yes	WXXA-TV	D8	DT	BL	ALBANY, NY	DTVBL11970	171.5
Yes	WNNY-TV	D8	DT	LIC	CARTHAGE, NY	BLANK0000115928	211.5
Yes	WWCP-TV	D8	DT	LIC	JOHNSTOWN, PA	BLANK0000001637	339.6
Yes	WGAL	D8	DT	APP	LANCASTER, PA	BPCDT20110516AC1	231.8
Yes	WGAL	D8	DT	LIC	LANCASTER, PA	BLCDT20110323ABF	231.8
No	WHAM-TV	D9	DT	LIC	ROCHESTER, NY	BLANK0000094853	179.3
Yes	WBPH-TV	D9	DT	APP	BETHLEHEM, PA	BPCDT20110518ADP	171.5
Yes	WBPH-TV	D9	DD	APP	BETHLEHEM, PA	BLANK0000063055	171.5
Yes	WBPH-TV	D9	DT	LIC	BETHLEHEM, PA	BLANK0000064341	171.5
Yes	WBPH-TV	D9	DT	CP	BETHLEHEM, PA	BLANK0000067446	171.5
Yes	WBPH-TV	D9	DD	APP	BETHLEHEM, PA	BLANK0000067447	171.5
No	WO9DJ-D	D9-	DC	LIC	WILKES-BARRE, ETC., PA	BLANK0000113176	96.2
No	WO9DB-D	D9z	DC	LIC	WILLIAMSPORT, PA	BLANK0000001611	125.3
Yes	CFTO-DT	D8	DT	LIC	TORONTO, ON	BLANKCANADA232	330.7

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:  
WNBF 1290 L DAN D BINGHAMTON, NY BL19991018AA0  
WNBF 1290 L DAN N BINGHAMTON, NY BL19991018AA0

Record parameters as studied:

Channel: D8  
Latitude: 42 3 31.00 N (NAD83)  
Longitude: 75 57 5.00 W  
Height AMSL: 769.7 m  
HAAT: 373.6 m  
Peak ERP: 23.8 kW  
Antenna: Omnidirectional  
Elev Pattn: Generic  
Elec Tilt: 0.50

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	23.8 kW	426.4 m	109.1 km
45.0	23.8	420.1	108.5
90.0	23.8	371.6	104.7
135.0	23.8	337.2	101.9
180.0	23.8	244.3	96.5
225.0	23.8	305.9	99.5
270.0	23.8	417.2	108.3
315.0	23.8	465.7	112.2

ERP exceeds maximum  
ERP: 23.8 kW ERP maximum: 15.3 kW

\*\*Proposal is within coordination distance of Canadian border  
Distance to Canadian border: 187.9 km

Distance to Mexican border: 2618.7 km

Conditions at FCC monitoring station: Canandaigua NY  
Bearing: 311.8 degrees Distance: 143.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 274.9 degrees Distance: 2448.9 km

Study cell size: 2.00 km  
Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

----- Below is IX received by proposal WBNG8\_CP-MOD20200625 -----

\*\*MX with BPCDT20110516AC1 APP scenario 1, 4.32% interference received  
Proposal receives 3.66% interference from scenario 2  
\*\*MX with BPCDT20110516AC1 APP scenario 3, 4.25% interference received  
Proposal receives 3.59% interference from scenario 4

