

**ENGINEERING EXHIBIT
SECOND AMENDMENT TO
APPLICATION FOR MODIFICATION OF
DTV STATION CONSTRUCTION PERMIT
(FCC FILE NUMBER BMPCDT-20020408AAK)**

**PREPARED FOR
WTOV-TV HOLDINGS, INC.
STATION WTOV-DT
STEUBENVILLE, OHIO
CH 57 1,000 KW (MAX-DA, BT) 261 METERS**

INTRODUCTION

This engineering exhibit was prepared for WTOV-TV Holdings, Inc. (hereinafter WTOV), permittee of station WTOV-DT, Steubenville, Ohio, in support of an amendment to a pending application (FCC File Number BMPCDT-20020408AAK) for modification of construction permit (FCC File Number BPCDT-19991029ABP). The instant amendment is responsive to a letter received by WTOV dated November 6, 2002, from Mr. Clay Pendarvis, Associate Division Chief, Video Division, Media Bureau, Federal Communications Commission (FCC) (FCC Reference Number 1800E3-MFC).

DENNY & ASSOCIATES, P.C.
CONSULTING ENGINEERS
OXON HILL, MARYLAND

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This letter concludes that the pending application for modification of construction permit cannot be granted because it fails to adequately protect a co-channel digital television (DTV) allotment at London, Ontario. The WTOV-DT construction permit authorizes WTOV-DT to operate with facilities that do not exceed the allotment reference facilities for DTV channel 57 at Steubenville, Ohio. The pending application specifies a new site that will allow WTOV-DT to colocate with WTOV-TV and proposes operation with 1000 kilowatts (kW) maximum average effective radiated power (ERP) and 261 meters antenna radiation height above average terrain (HAAT). The instant amendment proposes the use of a directional antenna to protect the co-channel allotment at London, Ontario. This engineering exhibit demonstrates that the proposed WTOV-DT facilities do not exceed the allotment reference facilities in the direction of the pertinent Canadian allotment by showing that the calculated WTOV-DT interfering 19.5 dB μ F(50,10) contour for the facility proposed lies within the calculated 19.5 dB μ F(50,10) contour for the WTOV-DT allotment reference facilities in the direction of the pertinent Canadian allotment.

FACILITIES

DTV channel 57 was allotted at Steubenville, Ohio, for use by WTOV-DT in the *Second Memorandum Opinion and Order on reconsideration of the Fifth and Sixth Report and Orders*, released December 18, 1998. This allotment is listed in Appendix A of the *Letter of Understanding (LOU) Between the Federal Communications Commission of the United States of America and Industry Canada Related to the Use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz Bands for the Digital Television Broadcasting Service Along the Common Border*, released September 29, 2000. WTOV-DT is allotted¹ channel 57 (728 to 734 megahertz (MHz)) for facilities with omnidirectional average ERP of 1000 kW and antenna radiation center height above average terrain (HAAT) of 268 meters from a reference site located at geographic coordinates 40° 19' 06" North Latitude, 80° 24' 07" West Longitude, referenced to 1927 North American Datum (NAD 27).

¹ Page 14, Appendix A, of the LOU.

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WKTV-DT is authorized (FCC File Number BPCDT-19991029ABP) to operate on channel 57 with maximum average ERP of 210 kW and antenna radiation center HAAT of 251 meters at the allotment site.

WTOV submitted an application (FCC File Number BMPCDT-20020408AAK) to modify the outstanding construction permit for WTOV-DT operation on channel 57 with increased average ERP of 1000 kW and antenna radiation center HAAT of 261 meters from site located at geographic coordinates 40° 20' 33" North Latitude, 80° 37' 14" West Longitude (NAD 27). Using the methodology for the computation of distance and azimuth in Annex III, *Agreement Concerning the Allotment and Assignment of Television Broadcasting Channels in Areas Adjacent to the Border of the United States and Canada, With Working Arrangement* (Analog TV Agreement), entered into force January 5, 1994, the BMPCDT-20020408AAK site is located 18.7 kilometers at an azimuth of 278.3 degrees True from the WTOV-DT allotment reference site.

The channel 57 DTV allotment at London, Ontario, is listed on Page 41, Appendix B, of the LOU as a Canadian Class VU allotment with a

protected service radius of 82 kilometers from a site located at 42° 57' 15" North Latitude, 81° 15' 58" West Longitude (NAD 27).

SEPARATION

Both WTOV-DT and the Canadian channel 57 DTV at London, Ontario, are in Zone I of their respective countries. Using the methodology for the computation of distance and azimuth in Annex III of the Analog TV Agreement, the separation between the WTOV-DT allotment site and the site notified for the channel 57 DTV allotment at London, Ontario, is 301 kilometers. WTOV-DT is a replacement allotment for WTOV-TV, Steubenville, Ohio, which is licensed for operation on channel 9; thus, WTOV-DT is classified as a Canadian Class VU allotment. The minimum distance separation for interfering co-channel channel 57 Canadian Class VU DTV stations to protected co-channel channel 57 Canadian Class VU DTV stations is 352 kilometers (Table 4.2.1 of the LOU). Thus, the WTOV-DT allotment site did not meet the requirements of the distance separation tables of Appendix D of the LOU but were deemed acceptable in the LOU.

Using the same methodology as above, the separation between the instant application site and the notified site for the channel 57 allotment at London, Ontario, is 295.0 kilometers. Thus, the allotment reference site is 51 kilometers short spaced to the cochannel Canadian allotment, and the WTOV-DT modification proposal seeks to increase the existing short spacing to 57 kilometers.

PROPOSED INTERFERENCE CONTOURS

The minimum required field strength for the channel 57 UHF DTV allotment at London, Ontario, is 39 dB μ V/m (Appendix 2, Part 1 of the LOU). The D/U ratio for an interfering co-channel DTV station to a protected DTV station is +19.5 dB (Appendix 2, Part 2 of the LOU). Therefore, the pertinent interfering contour to demonstrate facility equivalence is the WTOV-DT 19.5 dB μ V F(50,10) contour.

Figure 1 of this engineering exhibit is a portion of the Northeastern States United States Geological Survey (USGS) 1:2,000,000 scale National Atlas series map upon which 82-kilometer protected coverage radius of the channel 57 allotment at Cornwall, Ontario, and the calculated interfering

19.5 dB μ F(50,10) contours for the channel 57 reference facilities and the proposed WTOV-DT facilities. Figure 2 of this engineering exhibit is a table in one degree increments of azimuth stating the ERP, antenna radiation center HAAT, and the calculated distance from the allotment reference coordinates and the proposed WTOV-DT site to the interfering 19.5 dB μ F(50,10) contours for the allotment reference facilities and the proposed WTOV-DT facilities. Figure 1 of this engineering exhibit shows that the calculated 19.5 dB μ F(50,10) contour for the proposed WTOV-DT facility is completely enclosed by the 19.5 dB μ F(50,10) contour for the DTV channel 57, Steubenville, reference facilities in the direction of the channel 57 DTV allotment at London, Ontario.

CONCLUSION

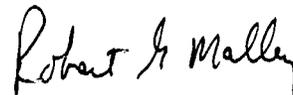
As shown earlier in this exhibit, the proposed WTOV-DT facilities do not exceed those specified in the LOU in the direction of the channel 57 DTV allotment at London, Ontario. Neither the allotted or proposed WTOV-DT sites meet the spacing requirements of Appendix 2 of the LOU with respect to the channel 57 DTV allotment at London, Ontario, during the transition period, as the WTOV-DT channel 57 allotment is in that portion of

the spectrum that is designated to be recovered for other uses in the United States.

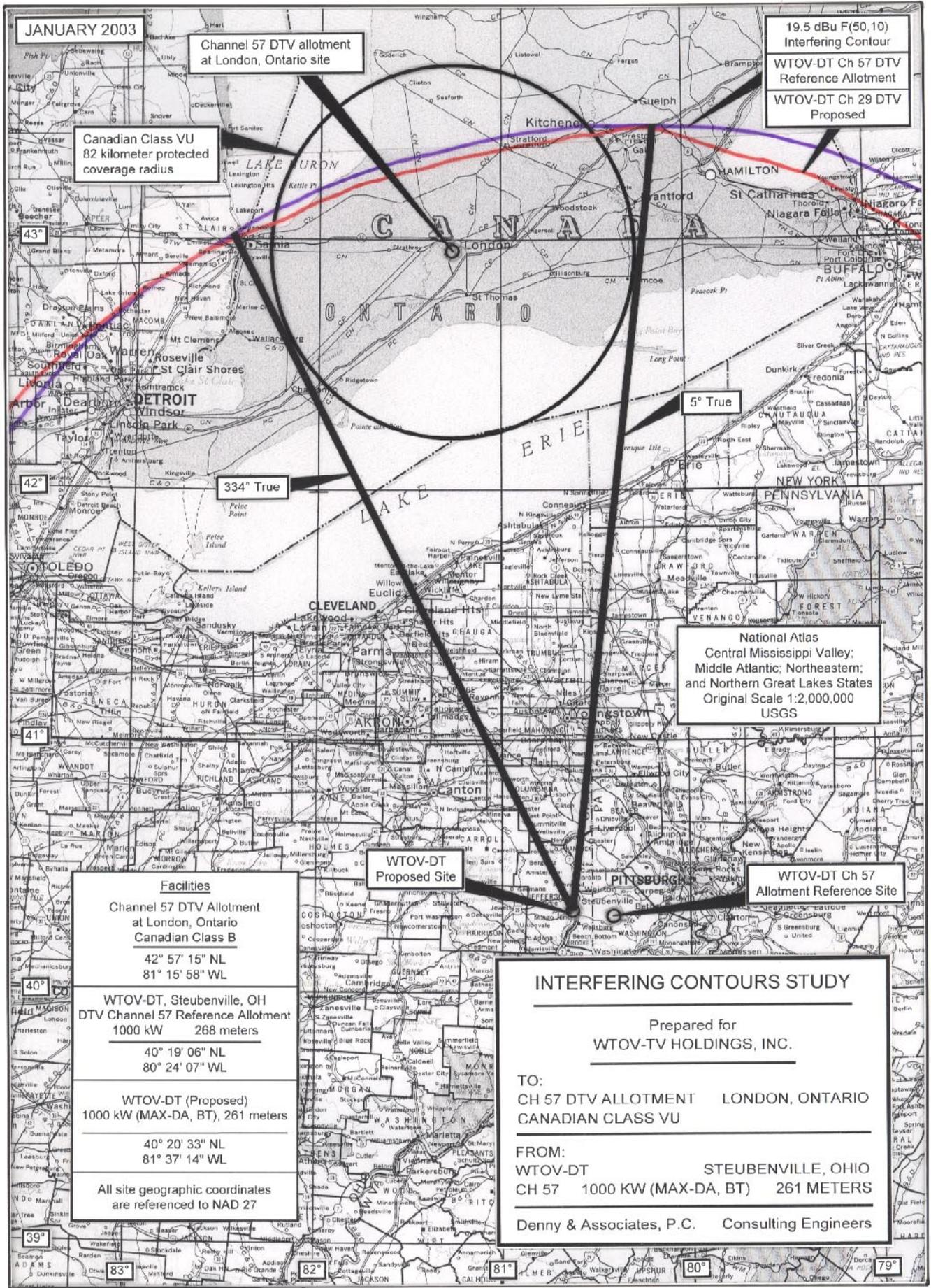
WTOV respectfully requests that this engineering exhibit be forwarded to Industry Canada as an appendix to the required notice called for in Item 2, Page 2, of the LOU.

CERTIFICATION

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed on January 21, 2003.



Robert G. Mallery



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CH 57 1000 KW (MAX-DA, BT) 261 METERS

TABULATION OF DISTANCES TO WTOV-DT 19.5 dBμ F(50,10)
INTERFERING CONTOUR IN THE DIRECTION OF
CHANNEL 57 DTV ALLOTMENT AT LONDON, ONTARIO

| | | | |
|---------------------------------------|------------|--------------------------------|------------|
| <u>DTV Channel 57</u> | | <u>WTOV-DT Channel 57</u> | |
| <u>Allotment Reference Facilities</u> | | <u>Proposed DTV Facilities</u> | |
| 1000 kW | 268 meters | 1000 kW (Max-DA,BT) | 261 meters |

| | | | |
|---------------------------------|--|----------------------------|--|
| Reference Coordinates (NAD 27): | | Site Coordinates (NAD 27): | |
| 40° 19' 06" North Latitude | | 40° 20' 33" North Latitude | |
| 80° 24' 07" West Longitude | | 80° 37' 14" West Longitude | |

| <u>Azimuth</u> (° True) | <u>ERP</u> (kW) | <u>HAAT</u> (meters) | <u>Distance to</u> <u>Contour</u> (km) | <u>ERP</u> (kW) | <u>HAAT</u> (meters) | <u>Distance to</u> <u>Contour</u> (km) |
|----------------------------|--------------------|-------------------------|--|--------------------|-------------------------|--|
| 334 | 1000.0 | 264 | 347.0 | 687.3 | 250 | 333.1 |
| 335 | 1000.0 | 261 | 346.6 | 683.9 | 247 | 332.6 |
| 336 | 1000.0 | 258 | 346.3 | 679.0 | 240 | 331.8 |
| 337 | 1000.0 | 261 | 346.6 | 675.7 | 238 | 331.4 |
| 338 | 1000.0 | 262 | 346.7 | 672.4 | 242 | 331.6 |
| 339 | 1000.0 | 260 | 346.5 | 669.1 | 252 | 332.4 |
| 340 | 1000.0 | 260 | 346.5 | 667.5 | 257 | 332.8 |
| 341 | 1000.0 | 261 | 346.6 | 665.9 | 256 | 332.7 |
| 342 | 1000.0 | 260 | 346.5 | 664.2 | 258 | 332.8 |
| 343 | 1000.0 | 259 | 346.4 | 662.6 | 268 | 333.6 |
| 344 | 1000.0 | 258 | 346.3 | 662.6 | 269 | 333.8 |
| 345 | 1000.0 | 255 | 346.0 | 661.0 | 267 | 333.4 |
| 346 | 1000.0 | 253 | 345.8 | 662.6 | 267 | 333.6 |
| 347 | 1000.0 | 251 | 345.5 | 662.6 | 270 | 333.8 |
| 348 | 1000.0 | 252 | 345.6 | 664.2 | 266 | 333.6 |
| 349 | 1000.0 | 254 | 345.9 | 665.9 | 266 | 333.6 |
| 350 | 1000.0 | 257 | 346.2 | 667.5 | 273 | 334.3 |
| 351 | 1000.0 | 259 | 346.3 | 670.8 | 277 | 334.9 |
| 352 | 1000.0 | 262 | 346.7 | 672.4 | 278 | 335.1 |

Tabulation Of Distances To WTOV-DT 19.5 dBμ F(50,10)
 Interfering Contour In The Direction Of
 Channel 57 DTV Allotment At London, Ontario

Figure 2
 Sheet 2 of 2

| <u>Azimuth</u> (° True) | <u>ERP</u> (kW) | <u>HAAT</u> (meters) | Distance to <u>Contour</u> (km) | <u>ERP</u> (kW) | <u>HAAT</u> (meters) | Distance to <u>Contour</u> (km) |
|----------------------------|--------------------|-------------------------|---------------------------------------|--------------------|-------------------------|---------------------------------------|
| 353 | 1000.0 | 265 | 347.1 | 675.7 | 279 | 335.4 |
| 354 | 1000.0 | 267 | 347.2 | 679.0 | 281 | 335.7 |
| 355 | 1000.0 | 266 | 347.1 | 683.9 | 286 | 336.4 |
| 356 | 1000.0 | 267 | 347.3 | 687.3 | 292 | 337.1 |
| 357 | 1000.0 | 271 | 347.7 | 692.2 | 296 | 337.8 |
| 358 | 1000.0 | 274 | 348.1 | 695.6 | 298 | 338.1 |
| 359 | 1000.0 | 273 | 348.0 | 700.6 | 303 | 338.9 |
| 0 | 1000.0 | 271 | 347.8 | 703.9 | 314 | 340.2 |
| 1 | 1000.0 | 270 | 347.6 | 709.0 | 322 | 341.3 |
| 2 | 1000.0 | 274 | 348.1 | 712.3 | 322 | 341.5 |
| 3 | 1000.0 | 275 | 348.3 | 717.4 | 333 | 343.1 |
| 4 | 1000.0 | 278 | 348.5 | 720.8 | 346 | 344.7 |
| 5 | 1000.0 | 278 | 348.6 | 724.2 | 352 | 345.5 |