



**Kessler and Gehman Associates**  
Consultants • Broadcast • Wireless

**DIGITAL TELEVISION  
TRANSLATOR POST  
TRANSITION CHANNEL  
DISPLACEMENT  
RELIEF APPLICATION  
FOR W44CR-D  
FACILITY ID 49432**

Youngstown, OH

**Prepared For:**

Northeastern Educational  
Television of Ohio, Inc.  
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Kent, OH 44240

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**Prepared On:**

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## **1.0 MINOR MODIFICATION CHANNEL DISPLACEMENT RELIEF ELIGIBILITY**

Northeastern Educational Television of Ohio, Inc. (“*NETO*”) is the licensee of a digital Low Power Television Translator Station having call sign W44CR-D, Facility ID 49432. W44CR-D is licensed<sup>1</sup> to operate on channel 44 with an ERP of 1.5KW through a directional antenna using a stringent Emission Mask. LPTV/translator stations that currently broadcast on channels (38-51) are automatically displaced because they are in the new 600 MHz band for mobile broadband service and thus W44CR-D is clearly eligible to file for channel displacement relief in the April 10, 2018 through June 1, 2018 post-incentive auction special displacement window and is the purpose of the instant application.

Pursuant to 47 CFR Section 74.787(b) the instant application is considered a “minor” change because:

- The change in frequency is related to displacement relief as outlined above.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Appendix C.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station’s antenna location.

## **2.0 STATION TRANSMITTER LOCATION AND ELEVATION**

It is proposed to keep W44CR-D at its licensed location on an existing tower which has an ASR number of 1015316. Appendix A illustrates the pertinent elevations of the tower and the antenna. The instant application does not

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<sup>1</sup> FCC File No.: BLDTT-20091029ABS

propose to increase or modify the existing support structure to accommodate the new antenna.

### **3.0 ALLOCATION ANALYSIS AND WAIVER REQUEST**

Appendix B are the summarized results from TVStudy V2.2.5. Appendix B demonstrates that the proposed facility is predicted to cause 5.59% interference to pre-transition station WQED(DT) Facility ID 41315, FCC File No.: BLEDT-20091127ABD.

Using TVStudy V2.2.5, all UHF channels were studied in detail far beyond the Channel Study data provided by the Commission released in Public Notice DA 18-124. It was determined that there are no channels available which could replicate the licensed W44CR-D facility and comply with the provisions of 47 CFR Section 73.3700(g). TVStudy analysis has indicated that Channel 13 allows the best replication of the Channel 44 W44CR-D licensed facility in the post transition period.

It is therefore respectfully requested to waive 47 CFR Section 73.3700(g)(2)(i) requiring protection to pre-auction channel 13 WQED(DT). NETO understands and agrees to a condition that it will not begin transmitting on channel 13 prior to the discontinuation of WQED(DT) from using channel 13. NETO also understands that if a conditionally granted W44CR-D facility is to remain silent for a consecutive 12-month period prior to discontinuation of operation by WQED(DT), the Commission will consider a request for extension or reinstatement pursuant to Section 312(g) of the Act and a request for waiver of the applicable Commission rule.

#### **4.0 AM STATION PROXIMITY**

There are two AM Stations are located within 3.2 km of the proposed facility. Pursuant to 47 C.F.R. Section 1.30002(e), the construction or extension of an antenna-supporting structure shall be considered subject to the moment method analysis and prior notification requirement; however, the instant application does not propose to extend the existing structure or build a new structure. Thus, the proposed facility is exempt from further AM analysis consideration.

#### **5.0 INTERNATIONAL COORDINATION**

The proposed W44CR-D facility will have a 21.00 dBμ contour which cuts into the Canadian border and thus will require coordination with the Canadian authorities.

#### **6.0 RADIO FREQUENCY RADIATION COMPLIANCE**

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain<sup>2</sup> extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

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<sup>2</sup> Terrain extraction is based upon a 3 arc second point spacing terrain database.

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study in Appendix D demonstrates that the peak exposure is 0.04% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources near the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

## **7.0 CERTIFICATION**

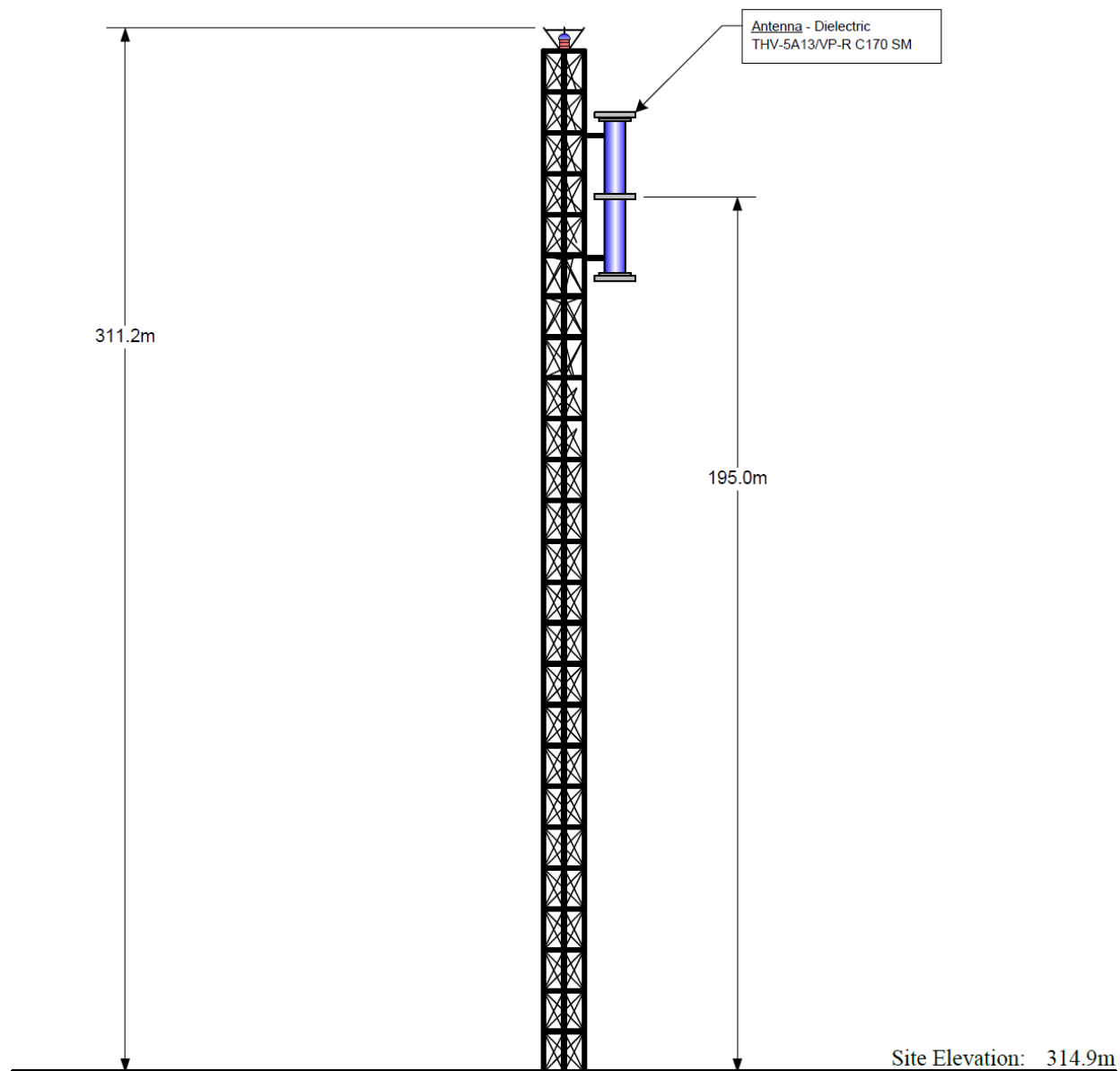
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed June 20, 2018.

Kessler and Gehman Associates, Inc.



Ryan Wilhour  
Consulting Engineer

## APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	195.0 m
Antenna CRAMSL:	509.9 m
Antenna HAAT:	187.3 m

NAD 83 Coordinates:	
N. Latitude:	41 ° 04' 48.6 "
W. Longitude:	80° 38' 24.4 "

NOTE: NOT TO SCALE

FCC Tower Registration Number:	1015316
FAA Study Number	2013-AGL-8829-OE

## W44CR-D – Post Transition Channel Displacement Relief

Youngstown, OH

### APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2018.06.20 09:10:41

Study build station data: LMS TV 2018-06-19

Proposal: W44CR-D D13 LD APP YOUNGSTOWN, OH  
File number: 0000052443 Amendment  
Facility ID: 49432  
Station data: User record  
Record ID: 3269  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Search options:  
Non-U.S. records included  
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WAKN-LP	N11-	TX	LIC	AKRON, OH	BLTVL20081031ABD	79.0 km
No	WMFD-TV	D12	DT	LIC	MANSFIELD, OH	BLCDT20081112ALJ	169.8
Yes	WICU-TV	D12	DT	LIC	ERIE, PA	BLCDT20090619ABT	121.4
Yes	WICU-TV	D12	DT	APP	ERIE, PA	BPCDT20120619ABB	121.5
No	WBPA-LP	D12+	LD	APP	PITTSBURGH, PA	BLANK0000054803	90.6
No	WBOY-TV	D12	DT	LIC	CLARKSBURG, WV	BLANK0000003150	201.3
No	WHYY-TV	D13	DT	CP	WILMINGTON, DE	BLANK0000034583	470.3
No	WTSF	D13	DT	CP	ASHLAND, KY	BLANK0000029774	331.8
No	WJZ-TV	D13	DT	LIC	BALTIMORE, MD	BLCDT20110914AAS	390.2
No	WNYI	D13	DT	APP	ITHACA, NY	BLANK0000029367	396.6
No	WNYI	D13	DT	CP	ITHACA, NY	BLANK0000025008	423.2
No	WHAM-TV	D13	DT	LIC	ROCHESTER, NY	BLCDT20110121ABX	340.1
Yes	WIVX-LD	D13	LD	CP	LOUDONVILLE, OH	BLANK0000029911	69.7
Yes	WTVG	D13	DT	APP	TOLEDO, OH	BLANK0000036074	240.8
Yes	WTVG	D13	DT	LIC	TOLEDO, OH	BLCDT20110415ABN	240.8
Yes	WQED	D13	DT	LIC	PITTSBURGH, PA	BLEDT20091127ABD	90.6
No	WYOU	D13	DT	LIC	SCRANTON, PA	BLCDT20051123AJU	399.2
No	WIVC-LP	N13-	TX	LIC	CHARLOTTESVILLE, VA	BLTVL20070504AGQ	363.3
No	WSET-TV	D13	DT	LIC	LYNCHBURG, VA	BLCDT20091013ABE	427.3
Yes	WVFX	D13	DT	CP	CLARKSBURG, WV	BLANK0000034189	199.4
No	WVUX-LD	D13	LD	LIC	Fairmont, WV	BLANK0000021955	202.7
No	WOWK-TV	D13	DT	LIC	HUNTINGTON, WV	BLANK0000003187	315.9
No	WWPX-TV	D13	DT	CP	MARTINSBURG, WV	BLANK0000034933	283.3
Yes	CKCO-DT	D13	DT	LIC	KITCHENER, ON	BLANKCANADA182	258.3

Non-directional AM stations within 0.8 km:  
WBBW 1240 L ND1 U YOUNGSTOWN, OH BL

Directional AM stations within 3.2 km:  
WGFT 1330 L DAD D CAMPBELL, OH BMML20141024ADS

Record parameters as studied:

Channel: D13  
Mask: Full Service  
Latitude: 41 4 48.60 N (NAD83)  
Longitude: 80 38 24.40 W  
Height AMSL: 509.9 m  
HAAT: 187.3 m  
Peak ERP: 3.00 kW  
Antenna: Dielectric THV-5A13/VP-R C170 SM 155.0 deg  
Elev Pattn: Generic  
Elec Tilt: 0.50

48.0 dBu contour:  
Azimuth ERP HAAT Distance



## W44CR-D – Post Transition Channel Displacement Relief

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0.0 deg	2.96 kW	187.3 m	55.6 km
45.0	2.76	194.0	55.5
90.0	2.34	174.9	53.1
135.0	0.780	172.6	45.1
180.0	0.183	167.5	33.8
225.0	1.10	181.4	48.2
270.0	2.70	191.5	55.2
315.0	2.59	229.5	56.9

\*\*Proposal 21.00 dBu contour crosses Canadian border, coordination required  
Distance to Canadian border: 135.0 km

Distance to Mexican border: 2245.7 km

Conditions at FCC monitoring station: Canandaigua NY  
Bearing: 52.7 degrees Distance: 345.2 km

Proposal is not within the West Virginia quiet zone area

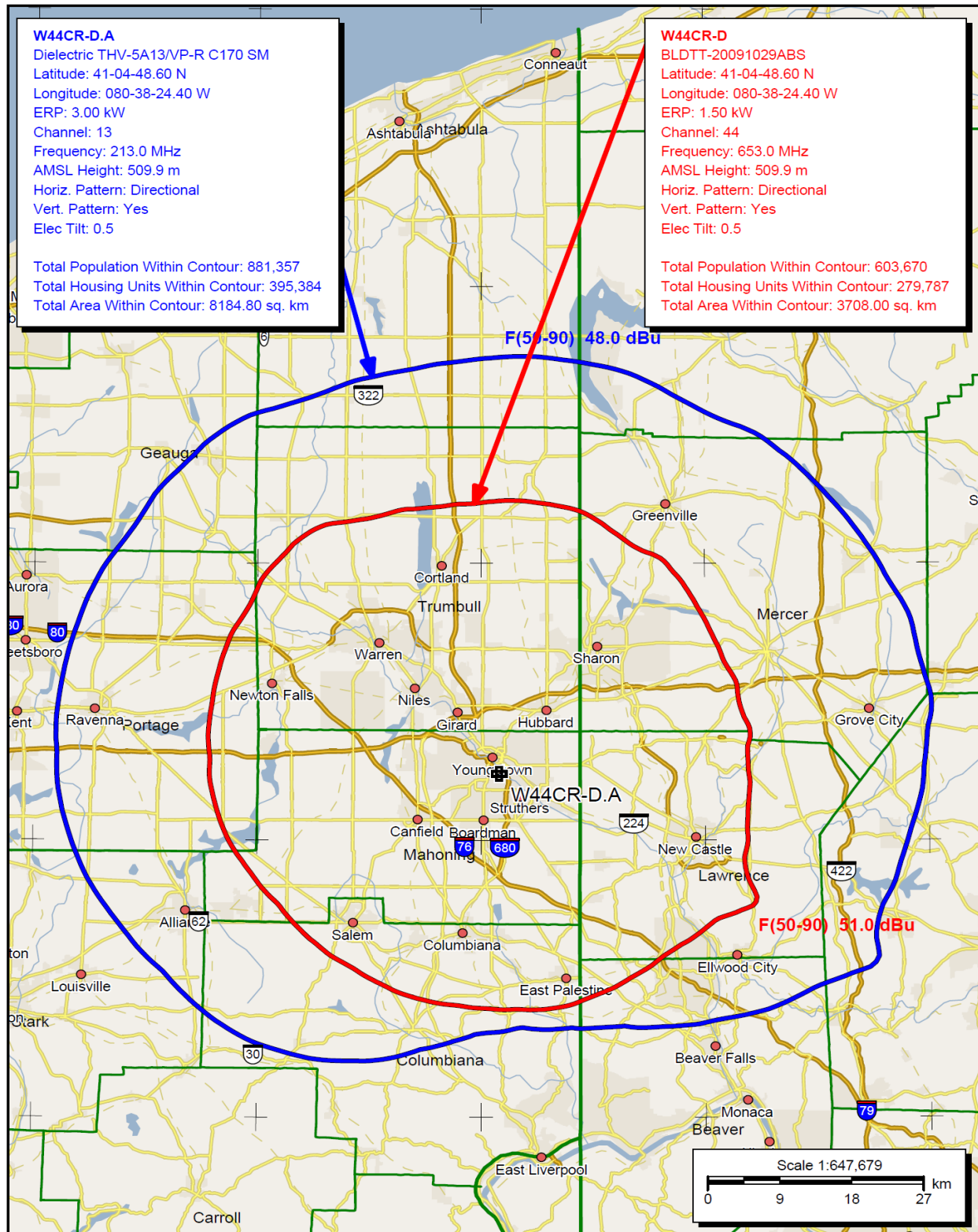
Conditions at Table Mountain receiving zone:  
Bearing: 275.3 degrees Distance: 2070.0 km

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

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

\*\*IX check failure to BLEDT20091127ABD LIC scenario 1, 5.58% interference caused  
\*\*IX check failure to BLEDT20091127ABD LIC scenario 2, 5.59% interference caused

APPENDIX C – 48dBμ F(50,90) Licensed and Proposed Contour



## APPENDIX D – Far Field Exposure to RF Emissions

