



**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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**Prepared On:**

May 30, 2018

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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, **it is respectfully requested that a 0.10 km profile point spacing be used instead of the 1.0 km default when evaluating the proposed facility for interference.** As indicated the proposed facility is predicted to receive 16.81% aggregate inbound interference, which is acceptable to NETO. Appendix B also demonstrates that the proposed facility is predicted to cause 8.92% interference to pre-transition station WQHS-DT Facility ID 60556, FCC File No.: BLCDT-20031030AGJ.

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 34 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 34 WQHS-DT. NETO understands and agrees to a condition that it will not begin transmitting on channel 34 prior to the discontinuation of WQHS-DT from using channel 34. 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 WQHS-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 25.68 dB $\mu$  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 0.02% 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**

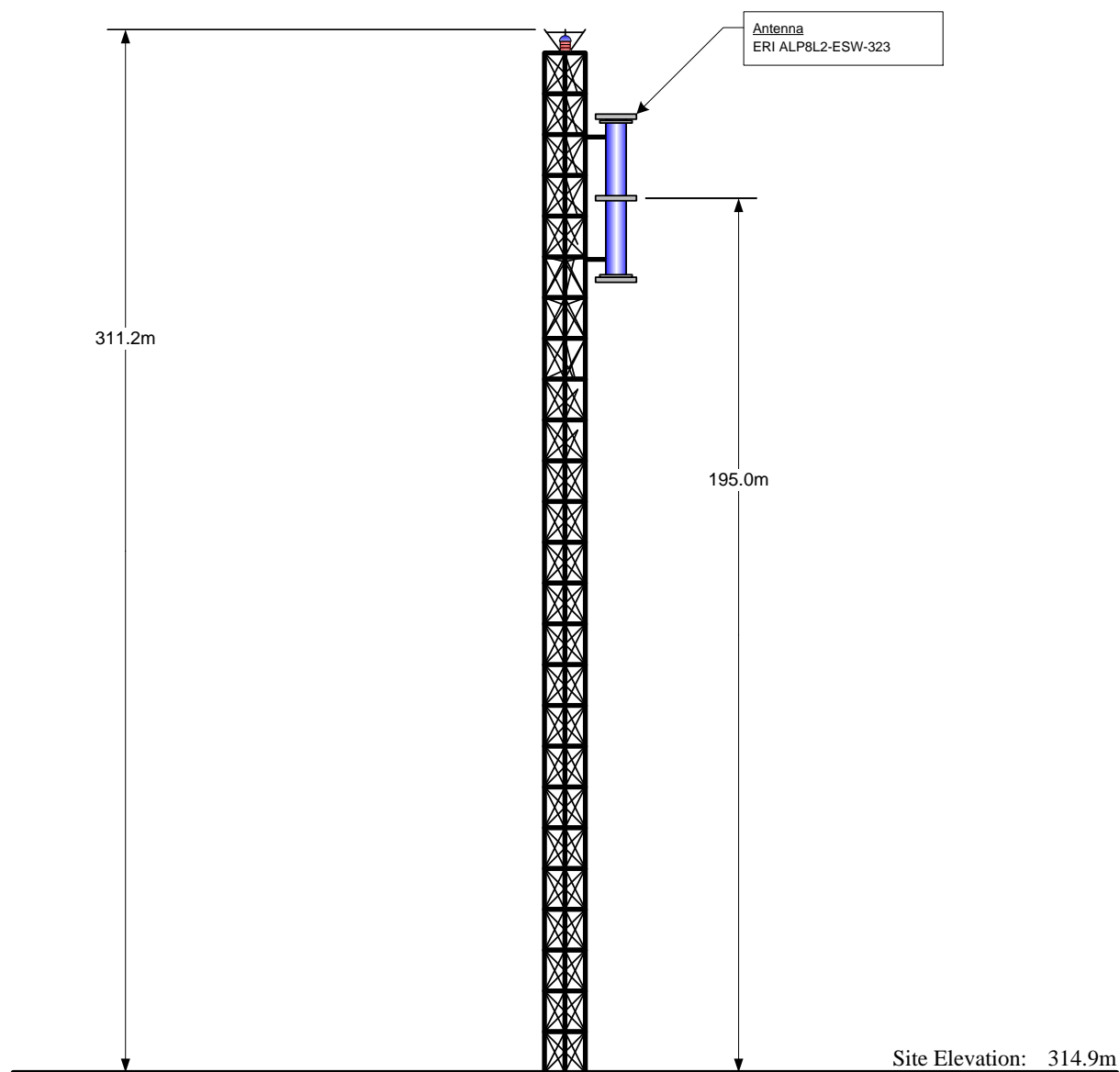
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed May 30, 2018.

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: 2018.05.30 09:38:47

Study build station data: LMS TV 2018-05-30

Proposal: W44CR-D D34 LD LIC YOUNGSTOWN, OH  
File number: W44CR Ch 34 ERI Rotated 260  
Facility ID: 49432  
Station data: User record  
Record ID: 3207  
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	WBPA-LP	N30+	TX	LIC	PITTSBURGH, PA	BLANK0000007299	88.9 km
No	WWBP-LP	N31+	TX	LIC	FREEDOM, PA	BLTTL20040909ABD	54.1
No	WRAP-LP	N32-	TX	LIC	CLEVELAND, OH	BLTTL19960911JC	100.1
No	WRAP-LP	N32-	TX	LIC	CLEVELAND, OH	BLTTL20110902ABQ	90.8
No	WGRZ	D33	DT	APP	BUFFALO, NY	BLANK0000035664	250.4
No	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDT20050705AAG	250.4
No	W33BW	N33+	TX	LIC	ASHLAND, OH	BLTTL20020211ABL	145.5
No	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000033638	0.0
Yes	WPXI	D33	LD	LIC	PITTSBURGH, PA	BLCDT20130111ABQ	32.7
No	WNPB-TV	D33	DT	LIC	MORGANTOWN, WV	BLEDT20121205ACJ	170.9
No	WRC-TV	D34	DT	CP	WASHINGTON, DC	BLANK0000034340	385.1
No	WPPX-TV	D34	DT	CP	WILMINGTON, DE	BLANK0000034931	470.2
No	WISE-TV	D34	DT	CP	FORT WAYNE, IN	BLANK0000027665	380.7
No	WKBD-TV	D34	DT	CP	DETROIT, MI	BLANK0000034396	270.9
No	WIVT	D34	DT	LIC	BINGHAMTON, NY	BLCDT20090819AGR	405.4
No	WKBW-TV	D34	DT	CP	BUFFALO, NY	BLANK0000034829	240.7
No	WVTT-CD	D34	DC	LIC	OLEAN, NY	BLDTA20141217ABD	230.0
No	WCET	D34	DT	LIC	CINCINNATI, OH	BLEDT20061031AAR	395.1
Yes	WQHS-DT	D34	DT	LIC	CLEVELAND, OH	BLCDT20031030AGJ	94.9
No	WKEF	D34	DT	CP	DAYTON, OH	BLANK0000034522	341.0
Yes	W38ET-D	D34	LD	APP	EASTLAKE, OH	BLANK0000054261	75.9
No	W45BT-D	D34	LD	APP	BROOKVILLE, PA	BLANK0000050401	127.9
No	NEW	D34	LD	APP	ERIE, PA	BNPDTL20090825BRL	116.8
Yes	WJAC-TV	D34	DT	LIC	JOHNSTOWN, PA	BLCDT20051123AKN	160.4
No	WCAU	D34	DT	LIC	PHILADELPHIA, PA	BLANK0000053192	470.6
No	WSWB	D34	DT	CP	SCRANTON, PA	BLANK0000034421	412.2
No	W34EV-D	D34	LD	CP	Charlottesville, VA	BLANK0000008300	371.1
No	WPXW-TV	D34	DT	LIC	MANASSAS, VA	BLCDT20090612AIZ	384.5
No	WLSL-TV	D34	DT	CP	ROANOKE, VA	BLANK0000029619	433.3
No	WVPB-TV	D34	DT	LIC	HUNTINGTON, WV	BLEDT20120214AAS	316.8
Yes	WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000034624	170.9
No	W51EG-D	D34	LD	APP	PARKERSBURG, WV	BLANK0000054632	222.8
No	WOUC-TV	D35	DT	LIC	CAMBRIDGE, OH	BLEDT20050427AAB	122.7
Yes	WVIZ	D35	DT	CP	CLEVELAND, OH	BLANK0000034584	94.0
No	NEW	D35	LD	APP	ERIE, PA	BNPDTL20090825BID	116.8
No	WJAC-TV	D35	DT	CP	JOHNSTOWN, PA	BLANK0000027312	160.4
No	WTAP-TV	D35	DT	CP	PARKERSBURG, WV	BLANK0000025208	207.7
No	W41AP	N41-	TX	LIC	SANDUSKY, OH	BLTTL19891227IS	178.2
No	CIII-DT-22D33		DT	LIC	STEVENSON, ON	BLANKCANADA222	188.2
No	CHCJ-DT	D35	DT	LIC	HAMILTON, ON	BLANKCANADA174	247.6
No	CIII-DT-29D35		DT	LIC	SARNIAOIL SPRINGS, ON	BLANKCANADA217	221.9

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

Directional AM stations within 3.2 km:

## W44CR-D – Post Transition Channel Displacement Relief

Youngstown, OH

WGFT 1330 L DAD D CAMPBELL, OH BMML20141024ADS

Record parameters as studied:

Channel: D34  
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: 15.0 kW  
Antenna: ERI ALP8L2-ESW-323 260.0 deg  
Elev Pattn: Generic  
Elec Tilt: 0.50

50.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.37 kW	187.3 m	37.0 km
45.0	1.83	194.0	38.9
90.0	8.62	174.9	45.9
135.0	14.8	172.6	48.5
180.0	13.6	167.5	47.8
225.0	13.2	181.4	48.5
270.0	14.9	191.5	49.6
315.0	7.75	229.5	48.5

\*\*Proposal 25.68 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: 0.10 km

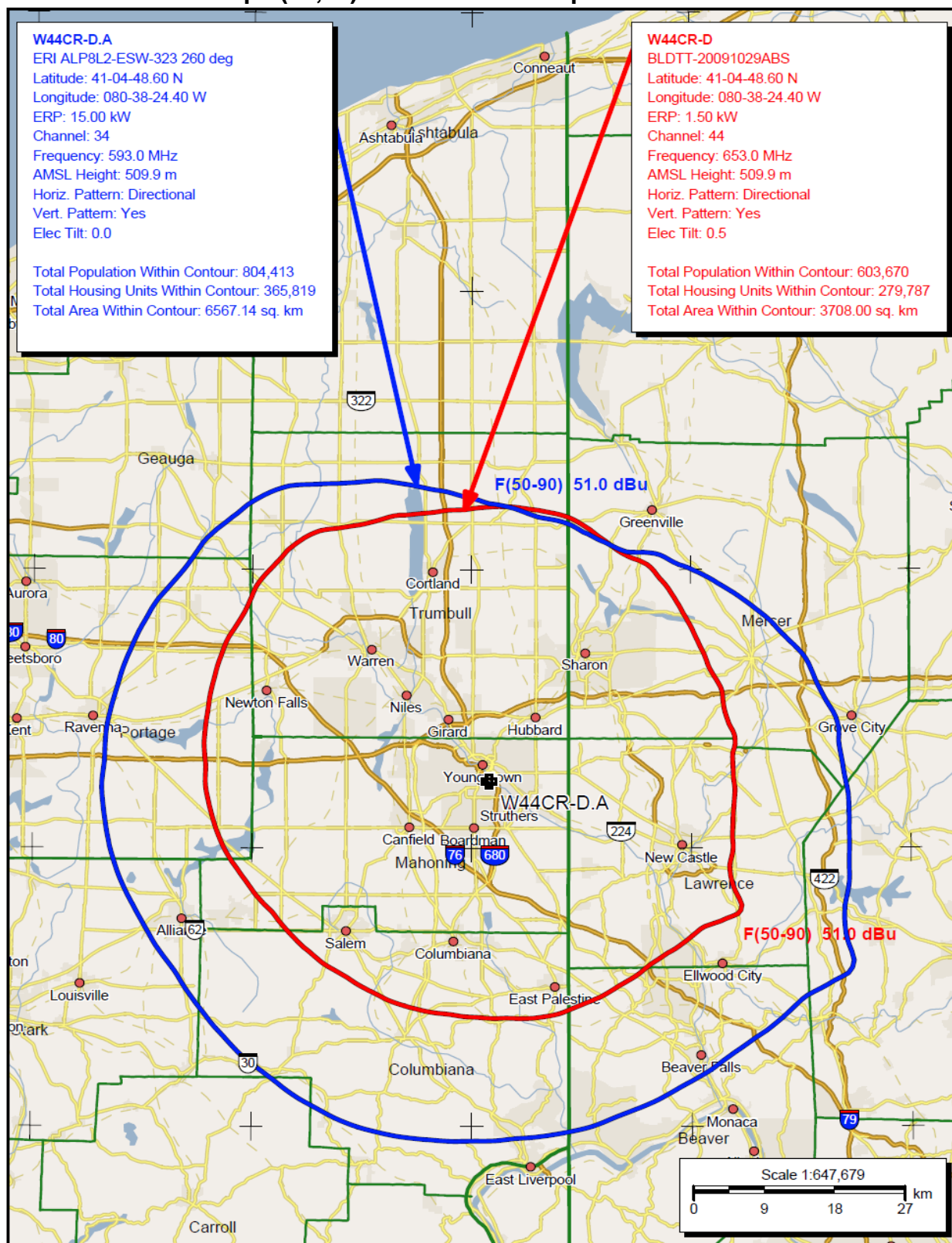
Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

\*\*IX check failure to BLCDDT20031030AGJ LIC scenario 1, 8.92% interference caused

---- Below is IX received by proposal W44CR Ch 34 ERI Rotate ----

\*\*MX with scenario 1, 16.81% interference received

APPENDIX C – 51dBμ F(50,90) Licensed and Proposed Contour



## APPENDIX D – Far Field Exposure to RF Emissions

