Kessler and Gehman Associates
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APPLICATION FOR SPECIAL TEMPORARY AUTHORITY FOR W44CR-D FCC FACILITY ID 49432

Youngstown, OH

Prepared For:

Northeastern Educational
Television of Ohio, Inc
1750 Campus Center Drive
Kent, OH 44240-5191

Prepared By:

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Prepared On:

September 24, 2018

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1.0 PURPOSE OF SPECIAL TEMPORARY AUTHORITY

This engineering statement was prepared on behalf of Northeastern Educational Television of Ohio, Inc ("NETO"), licensee of digital TV translator station W44CR-D located to serve Youngstown, OH. On March 23, 2018 a 120-day advance notification letter was issued to NETO which informs that T-Mobile is preparing to commence operations on its 600MHz spectrum on December 31, 2018 and W44CR-D is likely to cause harmful interference to its operations. As such, the licensed W44CR-D facility must cease its channel 44 operation before December 31, 2018.

NETO filed a channel 13 displacement application[1] during the April 10, 2018 through June 1, 2018 post-incentive auction translator channel displacement window. The pending application is predicted to cause 5.59% interference to pre-transition station WQED(DT) Facility ID 41315, FCC File No.: BLEDT-20091127ABD. The pending application requests a waiver of 47 CFR Section 73.3700(g)(2)(i) requiring protection to the pre-transition facility. The pending application is not mutually exclusive with any displacement applications filed during the window and a construction permit granted is expected soon with a special operating condition that commencement of the station will not be allowed until WQED(DT) has transitioned from channel 13 to channel 4 on August 2, 2019.

If NETO takes no action to apply for an alternate channel STA, then W44CR-D will be forced to go dark from December 30, 2018 through August 1, 2019. The purpose of the instant STA is to request operation of W44CR-D using substantially the same same technical parameters as its licensed[2] facility with the major exception of substituting channel 31 for 44 and going with a full service mask. Granting the instant STA shall serve the public interest by allowing

[1] FCC File No.: 0000052443
[2] FCC File No.: BLDTT-20091029ABS

W44CR-D to remain on-the-air without interruption from December 30, 2018 through August 1, 2019 while waiting for WQED(DT) to vacate its pre-transition channel 13 facility.

2.0 PREDICTED COVERAGE AND ALLOCATION ANALYSIS

Appendix A demonstrates the predicted noise limited coverage contours of the proposed STA and the licensed facility. The TV translator protected contour is calculated from the effective radiated power and antenna height above average terrain, using the F(50,90) signal propagation method specified in 47 CFR Section 73.625(b)(1). As illustrated the STA contour overlaps the licensed contour providing the same coverage area.

Appendix B and C are two similar runs using TVStudy V2.2.5. Appendix B considers pre-transition facilities only which excludes masking from post-transition applications and construction permits. In some cases, post-transition masking may hide prohibited interference to pre-transition stations. Appendix B indicates that no prohibited interference is caused to any pre-transition stations. Appendix C considers pre and post transition stations and indicates that 1.38% prohibited interference is cased to a post transition facility WYTV having FCC file No.: 0000034845. WYTV is a phase 4 station having a testing period which begins on June 22, 2019 and a phase completion date of August 2, 2019.

As Appendix B and C indicate, W44CR-D may operate on channel 31 from December 31, 2019 through June 21, 2019 with no impact to any pre or post transition stations in the market. From June 22, 2019 through August 1, 2019 WYTV will be in its testing phase which will require W44CR-D to coordinate with them and shut down while WYTV is testing.

It is respectfully requested to allow W44CR-D to operate on channel 31 from December 31, 2019 through June 21, 2019 and conditionally operate from June

22 through August 1, 2019 such that WYTV may test their post transition facilities unimpeded.

3.0 ANTENNA STRUCTURE REGISTRATION AND TOWER MODIFICATION

The structure to which the W44CR-D STA antenna will be mounted to has an antenna structure registration ("ASR") number of 1015316. The addition of the side mount antenna will not require any modifications to the ASR.

4.0 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[3] 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:

> 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

[3] Terrain extraction is based upon a 3 arc second point spacing terrain database.

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 0.01% of the most restrictive permissible exposure threshold. There are no other sources of RFR in and around the tower site and thus the proposed STA is not considered a significant source to RFR exposure for either controlled or uncontrolled scenarios. 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.

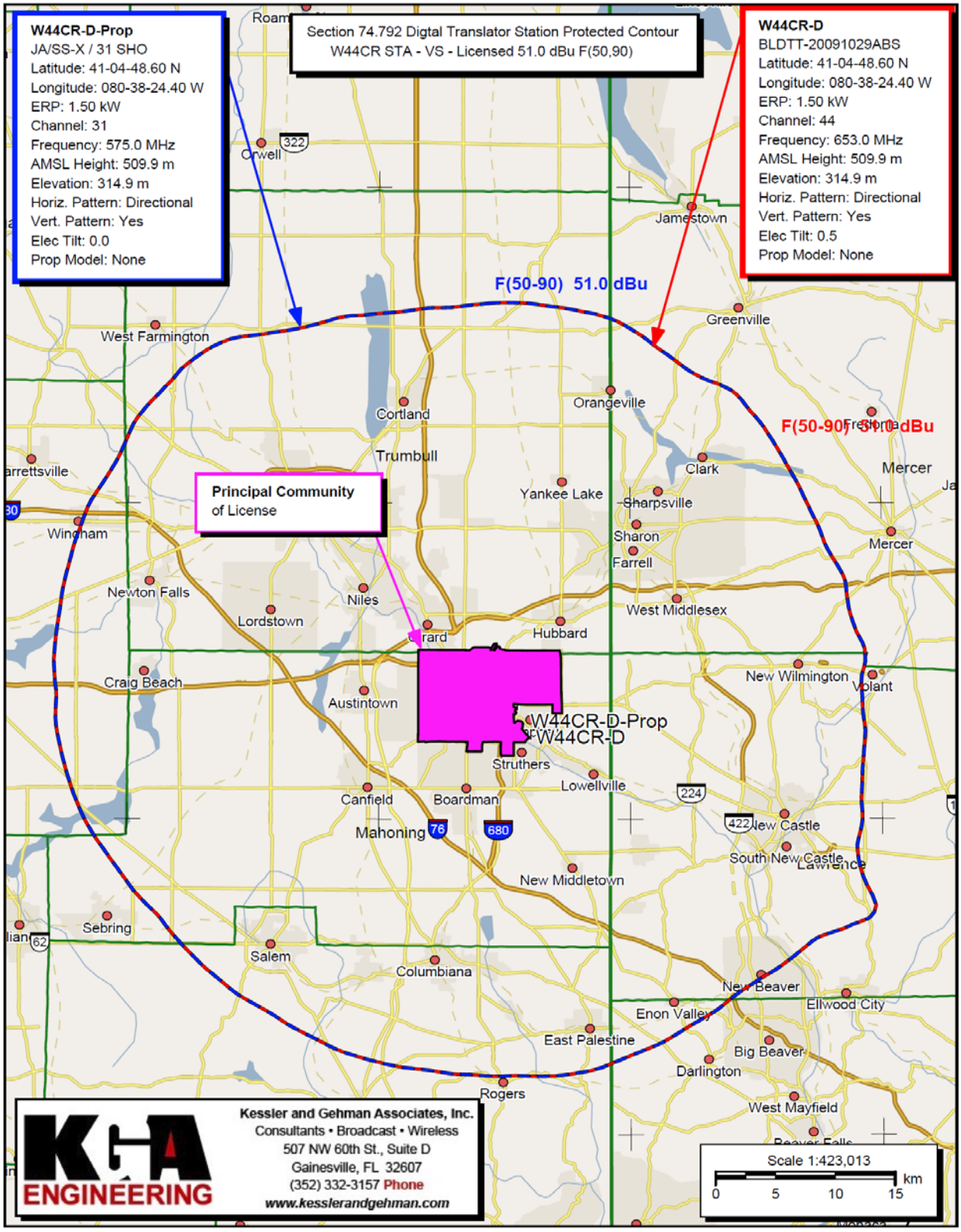
5.0 CERTIFICATION

I, Ryan Wilhour, am an engineering associate of Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida and have been working in the field of radio and television broadcast consulting since 1996. I am a graduate of the University of Florida with a Bachelor of Science degree in electrical engineering. The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge.

Ryan Wilhour

Consulting Engineer
September 24, 2018

Appendix A – Contour Analysis



Appendix B – TVStudy V2.2.5 Pre-Transition Allocation Analysis

```
Study created: 2018.09.24 06:52:27

Study build station data: LMS TV 2018-09-20

    Proposal: W44CR-D D31 LD LIC YOUNGSTOWN, OH
 File number: Lic Replicated on Channel 31
 Facility ID: 49432
Station data: User record
   Record ID: 3444
     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
All post-transition APP, CP, and baseline records excluded

Stations potentially affected by proposal:
```

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WOOH-LP	N16-	TX	LIC	ZANESVILLE, OH	BLTT20021211AAM	168.3 km
No	WIIC-LD	N29+	TX	LIC	PITTSBURGH, PA	BLTTL19981230JB	90.6
No	W29CO	N29z	TX	LIC	SHARON, PA	BLTTL20031216ACI	24.8
Yes	WBNX-TV	D30	DT	LIC	AKRON, OH	BLCDT20070430AXX	94.4
No	NEW	D30	LD	APP	ERIE, PA	BNPDTL20100714AAI	125.9
No	WPCW	D30	LD	CP	JEANNETTE, PA	BLANK0000053374	162.0
No	WBPA-LP	N30+	TX	LIC	PITTSBURGH, PA	BLANK0000007299	88.9
No	WPTG-CD	D30	DC	CP	PITTSBURGH, PA	BLANK0000029758	90.6
Yes	W29CO	D30z	LD	APP	SHARON, PA	BLANK0000054172	24.8
No	W30CO-D	D30	LD	LIC	WHEELING, WV	BLDTT20100112AAM	113.6
No	WETA-TV	D31	DT	CP	WASHINGTON, DC	BLANK0000029879	384.5
No	WETA-TV	D31	LD	CP	WASHINGTON, DC	BDRTEDT20090811ACE	342.9
No	WPPX-TV	D31	DT	LIC	WILMINGTON, DE	BLCDT20031203AFL	470.6
No	WANE-TV	D31	DT	LIC	FORT WAYNE, IN	BLCDT20090622ACE	380.3
No	WDKY-TV	D31	DT	LIC	DANVILLE, KY	BLCDT20120308AAK	475.5
No	WNNY-LD	D31	LD	CP	AUBURN, NY	BDCCDTL20110901ACT	394.2
No	WJOS-LD	D31	LD	APP	POMEROY, OH	BLANK0000054745	255.9
No	WTZP-LD	D31	LD	APP	PORTSMOUTH, OH	BLANK0000054002	330.1
Yes	WWBP-LP	N31+	TX	LIC	FREEDOM, PA	BLTTL20040909ABD	54.1
Yes	WWBP-LP	D31	LD	APP	FREEDOM, PA	BDFCDTL20121022ACD	68.8
No	WGAL	D31	LD	APP	LANCASTER, PA	BDRTCDT20090824ADR	294.9
Yes	WIIC-LD	D31+	LD	LIC	PITTSBURGH, PA	BLANK0000001503	90.6
No	KDKA-TV	D31	LD	APP	PITTSBURGH, PA	BDRTCDT20090630ADY	170.9
No	WSWB	D31	DT	LIC	SCRANTON, PA	BLCDT20140326AAZ	412.2
No	WUDJ-LD	D31	LD	CP	CROZET, VA	BLANK0000052863	390.7
No	W31CQ	N31+	TX	LIC	ELKINS, WV	BLTTL20070711ACO	253.9
No	WNLO	D32	DT	APP	BUFFALO, NY	BLANK0000036123	258.3
No	WNLO	D32	DT	LIC	BUFFALO, NY	BLANK0000053502	259.0
No	W32ED-D	D32	LD	CP	CANTON, OH	BLANK0000013880	107.2
No	WRAP-LP	D32	LD	CP	CLEVELAND, OH	BLANK0000001539	94.9
Yes	WRAP-LP	D32	LD	APP	CLEVELAND, OH	BLANK0000058798	48.3
No	WRAP-LP	N32-	TX	LIC	CLEVELAND, OH	BLTTL20110902ABQ	90.8
No	WYFX-LD	D32	LD	APP	YOUNGSTOWN, OH	BLANK0000053007	2.7
No	WTAJ-TV	D32	DT	LIC	ALTOONA, PA	BLCDT20051018ACE	193.5
No	W32DH-D	D32	LD	LIC	ERIE, PA	BLDTL20101122AHG	116.8
No	CITS-DT-2	D30	DT	LIC	LONDON, ON	BLANKCANADA185	216.7

```
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: D31
       Mask: Full Service
   Latitude:  41  4 48.60 N (NAD83)
  Longitude:  80 38 24.40 W
Height AMSL: 509.9 m
       HAAT: 0.0 m
   Peak ERP: 1.50 kW
    Antenna: ERI-ALP8L2-HSOC-44 (ID 72361) 0.0 deg
Elev Pattrn: Generic
  Elec Tilt: 0.50

50.4 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   1.26 kW   187.3 m   36.9 km
 45.0      0.717      194.0     34.4
 90.0      0.554      174.9     32.0
135.0      0.681      172.6     32.9
180.0      0.582      167.5     31.8
225.0      0.633      181.4     33.0
270.0       1.14      191.5     36.6
315.0       1.49      229.5     40.2

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m   Computed HAAT: 187 m

Proposal 25.42 dBu contour does not cross Canadian border
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%


---- Below is IX received by proposal Lic Replicated on Chan ----

**MX with scenario 1, 2.15% interference received
**MX with scenario 2, 2.36% interference received
**MX with scenario 3, 2.15% interference received
**MX with scenario 4, 2.37% interference received
**MX with scenario 5, 2.15% interference received
**MX with scenario 6, 2.36% interference received
```

Appendix C – TVStudy V2.2.5 Pre and Post Transition Allocation Analysis

```
Study created: 2018.09.24 07:07:55
Study build station data: LMS TV 2018-09-20
    Proposal: W44CR-D D31 LD LIC YOUNGSTOWN, OH
 File number: Lic Replicated on Channel 31
 Facility ID: 49432
Station data: User record
   Record ID: 3445
     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	WOOH-LP	N16-	TX	LIC	ZANESVILLE, OH	BLTT20021211AAM	168.3 km
No	WIIC-LD	N29+	TX	LIC	PITTSBURGH, PA	BLTTL19981230JB	90.6
No	W29CO	N29z	TX	LIC	SHARON, PA	BLTTL20031216ACI	24.8
Yes	WBNX-TV	D30	DT	LIC	AKRON, OH	BLCDT20070430AXX	94.4
No	WHIZ-TV	D30	DT	CP	ZANESVILLE, OH	BLANK0000024560	171.2
No	NEW	D30	LD	APP	ERIE, PA	BNPDTL20100714AAI	125.9
No	WPCW	D30	LD	CP	JEANNETTE, PA	BLANK0000053374	162.0
No	WBPA-LP	N30+	TX	LIC	PITTSBURGH, PA	BLANK0000007299	88.9
No	WPTG-CD	D30	DC	CP	PITTSBURGH, PA	BLANK0000029758	90.6
Yes	W29CO	D30z	LD	APP	SHARON, PA	BLANK0000054172	24.8
No	W30CO-D	D30	LD	LIC	WHEELING, WV	BLDTT20100112AAM	113.6
No	WETA-TV	D31	DT	CP	WASHINGTON, DC	BLANK0000029879	384.5
No	WETA-TV	D31	LD	CP	WASHINGTON, DC	BDRTEDT20090811ACE	342.9
No	WPPX-TV	D31	DT	LIC	WILMINGTON, DE	BLCDT20031203AFL	470.6
No	WANE-TV	D31	DT	LIC	FORT WAYNE, IN	BLCDT20090622ACE	380.3
No	WNIT	D31	DT	CP	SOUTH BEND, IN	BLANK0000024784	466.7
No	WDKY-TV	D31	DT	LIC	DANVILLE, KY	BLCDT20120308AAK	475.5
No	WMYD	D31	DT	CP	DETROIT, MI	BLANK0000034676	259.2
No	WNNY-LD	D31	LD	CP	AUBURN, NY	BDCCDTL20110901ACT	394.2
No	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	405.3
No	WNED-TV	D31	DT	APP	BUFFALO, NY	BLANK0000034601	259.0
No	WNED-TV	D31	DT	CP	BUFFALO, NY	BLANK0000026684	259.0
No	WDTN	D31	DT	CP	DAYTON, OH	BLANK0000034768	341.4
No	WJOS-LD	D31	LD	APP	POMEROY, OH	BLANK0000054745	255.9
No	WTZP-LD	D31	LD	APP	PORTSMOUTH, OH	BLANK0000054002	330.1
Yes	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000034845	2.7
No	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	193.3
Yes	WWBP-LP	N31+	TX	LIC	FREEDOM, PA	BLTTL20040909ABD	54.1
Yes	WWBP-LP	D31	LD	APP	FREEDOM, PA	BDFCDTL20121022ACD	68.8
No	WGAL	D31	LD	APP	LANCASTER, PA	BDRTCDT20090824ADR	294.9
No	WTXF-TV	D31	DT	CP	PHILADELPHIA, PA	BLANK0000034830	470.5
Yes	WIIC-LD	D31+	LD	LIC	PITTSBURGH, PA	BLANK0000001503	90.6
No	KDKA-TV	D31	LD	APP	PITTSBURGH, PA	BDRTCDT20090630ADY	170.9
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No	W31CQ	N31+	TX	LIC	ELKINS, WV	BLTTL20070711ACO	253.9
No	WOAY-TV	D31	DT	CP	OAK HILL, WV	BLANK0000028013	349.9
No	WDIV-TV	D32	DT	CP	DETROIT, MI	BLANK0000027872	263.6
No	WNLO	D32	DT	APP	BUFFALO, NY	BLANK0000036123	258.3
No	WNLO	D32	DT	LIC	BUFFALO, NY	BLANK0000053502	259.0
No	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	234.4
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No	WTAJ-TV	D32	DT	LIC	ALTOONA, PA	BLCDT20051018ACE	193.5
No	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5

```
No   W32DH-D   D32        LD  LIC     ERIE, PA                BLDTL20101122AHG        116.8
No   WKHU-CD   D32        DC  CP      KITTANNING, PA          BLANK0000027841          98.3
No   CITS-DT-2 D30        DT  LIC     LONDON, ON              BLANKCANADA185          216.7

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

Directional AM stations within 3.2 km:
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    Channel: D31
       Mask: Full Service
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  Longitude:  80 38 24.40 W
Height AMSL: 509.9 m
       HAAT: 0.0 m
   Peak ERP: 1.50 kW
    Antenna: ERI-ALP8L2-HSOC-44 (ID 72361) 0.0 deg
Elev Pattrn: Generic
  Elec Tilt: 0.50

50.4 dBu contour:
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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 BLANK0000034845 CP scenario 1, 1.37% interference caused
**IX check failure to BLANK0000034845 CP scenario 2, 1.38% interference caused

---- Below is IX received by proposal Lic Replicated on Chan ----

**MX with scenario 1, 89.58% interference received
**MX with scenario 2, 89.59% interference received
**MX with scenario 3, 89.58% interference received
**MX with scenario 4, 89.59% interference received
**MX with scenario 5, 89.58% interference received
**MX with scenario 6, 89.59% interference received
```

Appendix D – Far Field Exposure to RF Emissions