

**EXHIBIT A**

**ENGINEERING STATEMENT**

The engineering data contained herein have been prepared on behalf of D.T.V. LLC, licensee of low-power television station WRAP-LP, Channel 32 in Cleveland, Ohio, in support of its Application for Construction Permit seeking displacement relief and specifying digital operation on Channel 16. The licensed WRAP-LP facility receives significant predicted interference (25.4% of its service population) from the repack facility of WDIV-DT, Channel 32 in Detroit, Michigan. It is proposed herein to operate the digital facility of WRAP-LP from a new site, located 14.6 kilometers from that licensed to the station.

It is proposed to mount a Dielectric directional antenna at the 207-meter level of the existing 313.9-meter tower. The proposed effective radiated power for the facility is 15.0 kW in the horizontal plane. Exhibit B-1 is a map upon which the predicted 51 dBu service contour is plotted. Proposed service contour coverage population is based on the 2015 U.S. Census database. In Exhibit B-2 we have plotted the licensed 74 dBu contour of WRAP-LP in relation to the 51 dBu service contour proposed herein. As shown the licensed analog service contour is completely contained within that of the proposed digital facility. Azimuth and elevation pattern data for the proposed antenna is provided in Exhibit C.

Exhibit D contains the summary results from a TVStudy interference study, which was conducted using a cell size of 1.0 kilometer and an increment spacing of 1.0 kilometer. It concludes that the proposed WRAP-LD facility meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A facilities, except to Class A television station W16DO-D, Channel 16 in Cleveland, Ohio. However, that station is being repacked to Channel 27 and a grant of the instant proposal is predicated on

**SMITH AND FISHER**

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**EXHIBIT A**

W16DO-D moving to its new channel. As a result, a waiver of the Commission's contingent application Rule is requested and believed to be justified, since WRAP-LD will not commence operation on Channel 16 until such time as W16DO-D begins operating on Channel 27. It is also important to note that a grant of the WRAP-LD proposal on Channel 16 requires a waiver of Section 74.709 of the Commission's Rules with regard to protection of Land Mobile assignments on Channel 15 in Cleveland, Ohio, and Channel 16 in Detroit, Michigan. Those assignments have never been implemented and therefore no interference to any such facility would occur as a result of operation of WRAP-LD on Channel 16 in Cleveland. A detailed justification for the waiver request of that Rule is provided elsewhere in the instant application.

A detailed power density calculation is provided in Exhibit E.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1012992 to this tower.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.



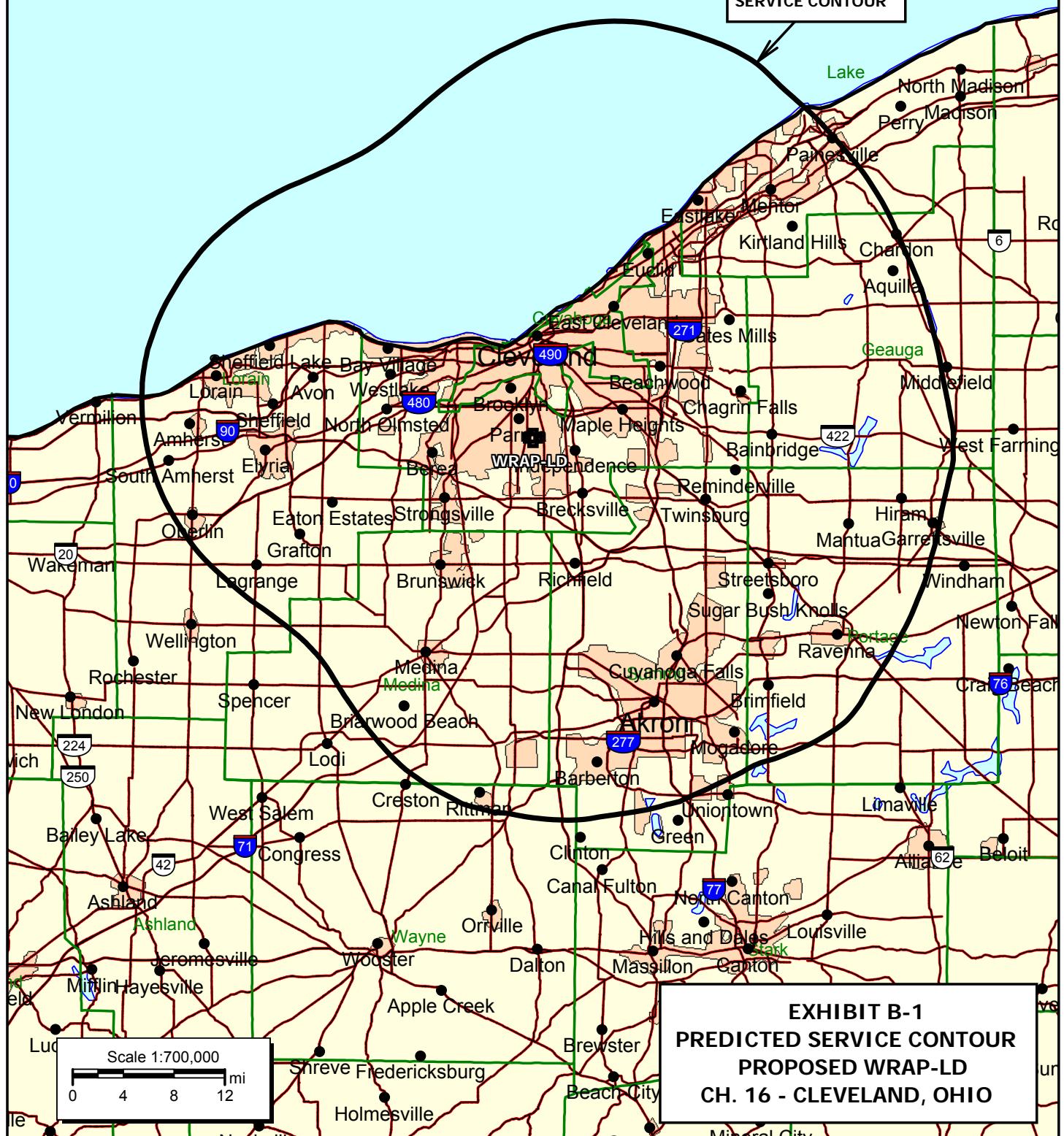
April 17, 2019

KEVIN T. FISHER

**CONTOUR POPULATION  
2015 U.S. CENSUS DATA  
2,624,207 (1,213,223 HH)**

**SMITHANDFISHER**

**FCC 51 DBU  
SERVICE CONTOUR**

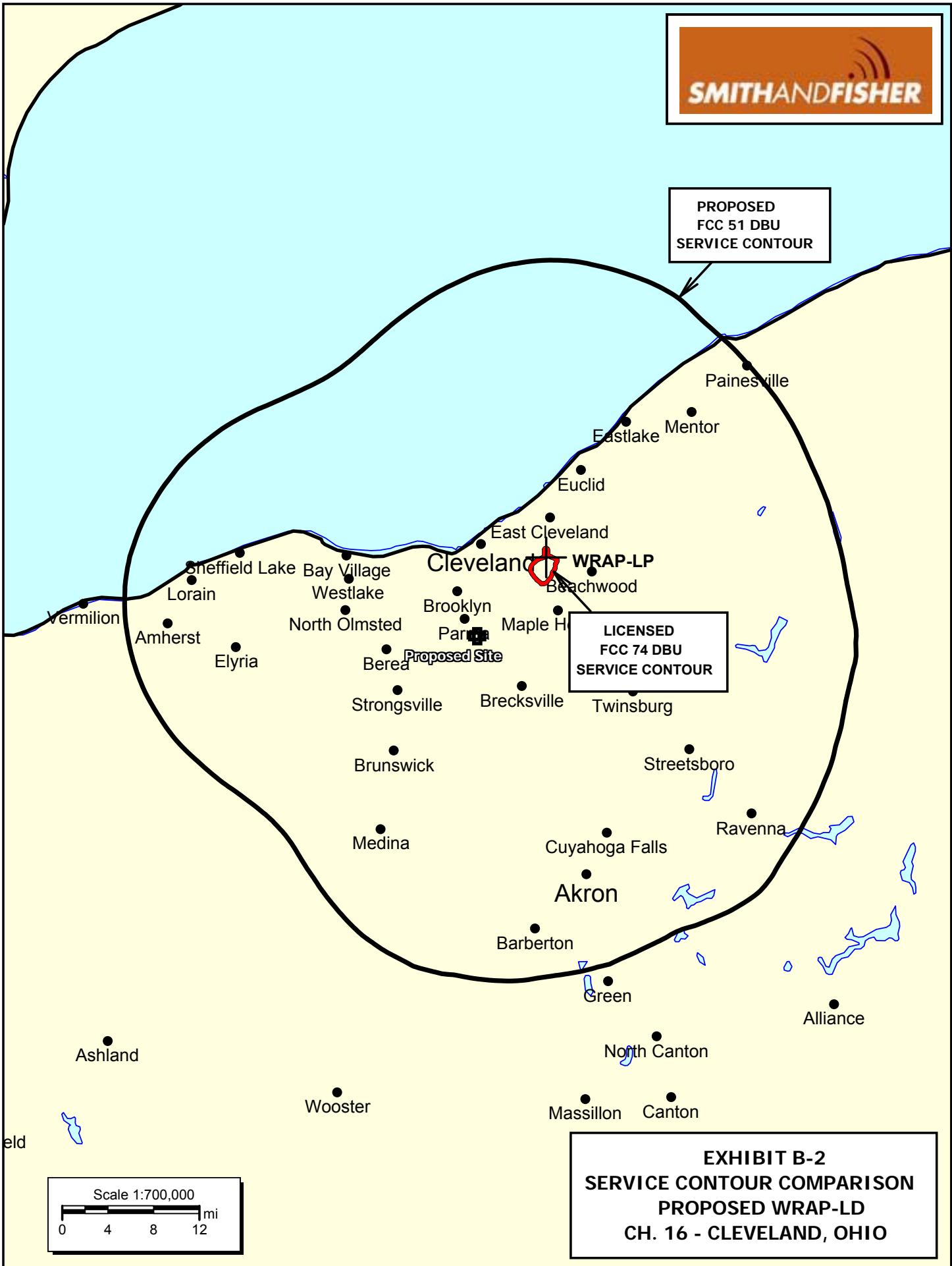


**EXHIBIT B-1  
PREDICTED SERVICE CONTOUR  
PROPOSED WRAP-LD  
CH. 16 - CLEVELAND, OHIO**

**SMITHANDFISHER**

PROPOSED  
FCC 51 DBU  
SERVICE CONTOUR

LICENSED  
FCC 74 DBU  
SERVICE CONTOUR





## ELEVATION PATTERN

Exhibit No.

Date **19 Mar 2019****EXHIBIT C**

Call Letters

Channel **16**Antenna Type **TLP-8TLP/VP**

Location

Customer

RMS Gain at Main Lobe

**8.0 (9.03 dB)**

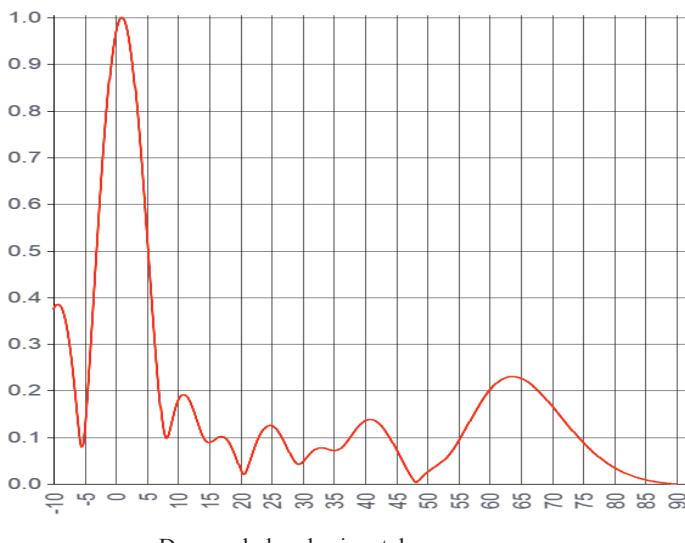
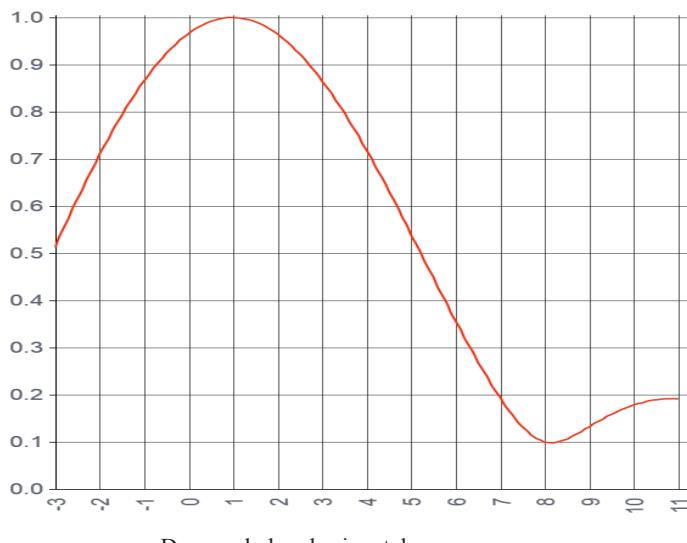
Beam Tilt

**1 Degrees**

RMS Gain at Horizontal

**7.5 (8.74 dB)**

Drawing #

**08L080100****Calculated**

Angle	Field								
-10	<b>0.374</b>	10	<b>0.178</b>	30	<b>0.047</b>	50	<b>0.025</b>	70	<b>0.167</b>
-9	<b>0.383</b>	11	<b>0.191</b>	31	<b>0.062</b>	51	<b>0.035</b>	71	<b>0.151</b>
-8	<b>0.346</b>	12	<b>0.174</b>	32	<b>0.074</b>	52	<b>0.044</b>	72	<b>0.135</b>
-7	<b>0.258</b>	13	<b>0.137</b>	33	<b>0.077</b>	53	<b>0.055</b>	73	<b>0.119</b>
-6	<b>0.130</b>	14	<b>0.102</b>	34	<b>0.075</b>	54	<b>0.071</b>	74	<b>0.104</b>
-5	<b>0.114</b>	15	<b>0.089</b>	35	<b>0.072</b>	55	<b>0.092</b>	75	<b>0.089</b>
-4	<b>0.303</b>	16	<b>0.096</b>	36	<b>0.075</b>	56	<b>0.115</b>	76	<b>0.076</b>
-3	<b>0.513</b>	17	<b>0.102</b>	37	<b>0.089</b>	57	<b>0.139</b>	77	<b>0.064</b>
-2	<b>0.709</b>	18	<b>0.093</b>	38	<b>0.107</b>	58	<b>0.162</b>	78	<b>0.053</b>
-1	<b>0.866</b>	19	<b>0.067</b>	39	<b>0.124</b>	59	<b>0.183</b>	79	<b>0.043</b>
0	<b>0.967</b>	20	<b>0.032</b>	40	<b>0.135</b>	60	<b>0.201</b>	80	<b>0.035</b>
1	<b>1.000</b>	21	<b>0.029</b>	41	<b>0.138</b>	61	<b>0.215</b>	81	<b>0.028</b>
2	<b>0.964</b>	22	<b>0.067</b>	42	<b>0.132</b>	62	<b>0.224</b>	82	<b>0.022</b>
3	<b>0.865</b>	23	<b>0.100</b>	43	<b>0.119</b>	63	<b>0.229</b>	83	<b>0.017</b>
4	<b>0.717</b>	24	<b>0.121</b>	44	<b>0.099</b>	64	<b>0.230</b>	84	<b>0.012</b>
5	<b>0.539</b>	25	<b>0.125</b>	45	<b>0.075</b>	65	<b>0.227</b>	85	<b>0.009</b>
6	<b>0.355</b>	26	<b>0.114</b>	46	<b>0.050</b>	66	<b>0.220</b>	86	<b>0.006</b>
7	<b>0.192</b>	27	<b>0.092</b>	47	<b>0.025</b>	67	<b>0.209</b>	87	<b>0.004</b>
8	<b>0.099</b>	28	<b>0.064</b>	48	<b>0.005</b>	68	<b>0.197</b>	88	<b>0.002</b>
9	<b>0.132</b>	29	<b>0.044</b>	49	<b>0.013</b>	69	<b>0.183</b>	89	<b>0.001</b>

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EXHIBIT D

TVSTUDY INTERFERENCE ANALYSIS RESULTS  
PROPOSED WRAP-LD  
CHANNEL 16 – CLEVELAND, OHIO

Study created: 2019.04.16 16:05:00

Study build station data: LMS TV 2019-04-16

Proposal: WRAP-LP D16 LD CP CLEVELAND, OH

File number: BLANK0000001539

Facility ID: 55107

Station data: User record

Record ID: 543

Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WHPS-CD	D15	DC APP	DETROIT, MI		BLANK0000034680	163.0 km
No	WHPS-CD	D15	DC CP	DETROIT, MI		BLANK0000026746	161.9
No	WEWS-TV	D15	DT LIC	CLEVELAND, OH		BLCDT20091211ACS	1.6
No	W23BZ-D	D15	LD CP	COLUMBUS, OH		BLANK0000054838	195.4
No	WOHL-CD	D15	DC CP	LIMA, OH		BLANK0000029918	213.6
No	WPSU-TV	D15	DD LIC	CLEARFIELD, PA		BLEDT20130614ACC	274.0
No	WFWC-CD	D16	DC CP	FORT WAYNE, IN		BLANK0000025862	289.5
No	WCUH-LD	D16	LD LIC	FORT WAYNE, IN		BLANK0000008063	276.8
No	WDNI-CD	D16	DC CP	INDIANAPOLIS, IN		BLANK0000034782	409.0
No	WEID-LD	D16	LD LIC	SOUTH BEND, IN		BLDTL20141105ADE	364.2
No	W20CT-D	D16	LD CP	AUGUSTA, KY		BLANK0000053659	350.7
No	WOBC-CD	D16	DC CP	BATTLE CREEK, MI		BLANK0000027730	303.9
No	WSMH	D16	DT LIC	FLINT, MI		BLCDT20090804ABG	282.9
No	WNYO-TV	D16	DT CP	BUFFALO, NY		BLANK0000034641	292.3
No	W16DR-D	D16	LD CP	ELMIRA, NY		BNPDTL20100513ABR	392.5
No	W16BE-D	D16	LD LIC	HORNELL, ALFRED, NY		BLDTL20120216ADJ	348.5
No	WXXI-TV	D16	DT LIC	ROCHESTER, NY		BLEDT20140612AAV	390.7
Yes	W16DO-D	D16	DC LIC	CLEVELAND, OH		BLANK0000001124	0.5
Yes	WOSU-TV	D16	DT CP	COLUMBUS, OH		BLANK0000033620	170.5
No	WPTD	D16	DT LIC	DAYTON, OH		BLEDT20090923ACN	283.6
No	W16DM-D	D16	LD CP	LIMA, OH		BNPDTL20100609AFI	248.2
No	WOOH-LP	N16-	TX LIC	ZANESVILLE, OH		BLTT20021211AAM	160.9

Yes WOOG-LP	D16	LD APP	ZANESVILLE, OH	BDFCDTT20060330ADJ	160.9
Yes WSEE-TV	D16	DT LIC	ERIE, PA	BLCDT20071219AAS	159.8
Yes WINP-TV	D16	DT CP	PITTSBURGH, PA	BLANK0000034405	179.3
No W16CE	N16-	TX LIC	CHARLESTON, WV	BLTTL20030606ABF	334.3
No WUSV-LD	D16	LD LIC	CLARKSBURG, WV	BLDTL20140616AEQ	262.8
No W41DK-D	D16	LD CP	KEYSER, WV	BLANK0000035614	314.2
No W16CV-D	D16	LD LIC	PARKERSBURG, WV	BLDTL20140527AHW	223.2
No WBNX-TV	D17	DT CP	AKRON, OH	BLANK0000028072	0.5
No WKYC	D17	DT LIC	CLEVELAND, OH	BLCDT20090619ADC	1.1
No W44DC-D	D17	LD CP	COLUMBUS, OH	BLANK0000054287	192.6
No WOIW-LD	D17	LD LIC	Lima, OH	BLANK0000068365	219.1
No WJMB-CD	D17	DC LIC	BUTLER, PA	BLDTA20121108ALX	159.6
No W30CO-D	D17	LD CP	WHEELING, WV	BLANK0000054635	167.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D16

Mask: Full Service

Latitude: 41 22 58.00 N (NAD83)

Longitude: 81 42 6.00 W

Height AMSL: 517.9 m

HAAT: 0.0 m

Peak ERP: 15.0 kW

Antenna: 0.0 deg

Elev Pattn: Generic

Elec Tilt: 1.00

48.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	5.44 kW	314.9 m	53.3 km
45.0	14.8	271.1	56.2
90.0	13.4	267.7	55.5
135.0	14.8	246.4	54.8
180.0	11.2	156.7	48.1
225.0	1.34	223.7	41.1
270.0	6.30	268.5	51.6
315.0	2.21	287.3	47.0

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 255 m

\*\*Proposal 23.94 dBu contour crosses Canadian border, coordination required

Distance to Canadian border: 66.5 km

Distance to Mexican border: 2186.6 km

Conditions at FCC monitoring station: Allegan MI

Bearing: 292.6 degrees Distance: 376.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 273.8 degrees Distance: 1978.9 km

\*\*Proposal fails distance check to land mobile station: Cleveland OH ch. 15, 12.8 km

\*\*Proposal fails contour check to land mobile station: Detroit MI ch. 16

Proposal is not within the Offshore Radio Service protected area

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 BLANK0000001124 LIC scenario 1, 90.44% interference caused

---- Below is IX received by proposal BLANK0000001539 ----

Proposal receives 12.13% interference from scenario 1

**EXHIBIT E**

**POWER DENSITY CALCULATION**

**PROPOSED WRAP-LD  
CHANNEL 16 – CLEVELAND, OHIO**

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Cleveland facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 15.0 kW, an antenna radiation center 207 meters above ground, and the specific elevation pattern of the proposed Dielectric antenna, maximum power density two meters above ground of  $0.00051 \text{ mW/cm}^2$  is calculated to occur 100 meters east of the base of the tower. Since this is only 0.2 percent of the  $0.32 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 16 (482-488 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.