

***COMPREHENSIVE TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT***

**WSWY-LD – INDIANAPOLIS, INDIANA
FACILITY ID: 68035**

DIGITAL NETWORKS—MIDWEST, LLC

FEBRUARY 2021

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Midwest, LLC** ("Midwest"), licensee of digital low power television station WSWY-LD at Indianapolis, Indiana, and are in support of their application for construction permit.¹ This application proposes a relocation of the licensed facility.

WSWY-LD is licensed to operate on television channel 20 as a digital low-power television facility. The station is authorized to operate with a maximum effective radiated power of 2.76 kW at a center of radiation of 261.9 meters above mean sea level, 51.8 meters above ground, using a composite directional antenna. The proposed center of radiation is 315 meters above mean sea level, which corresponds to 30.0 meters above ground level, or 47.7 meters above average terrain. The composite directional antenna proposed for use by the facility consists of two Kathrein-Scala PR-TV antennas with equal power division between them. One of the antennas in the array would be oriented at 40 degrees true, while the other would be oriented at 230 degrees true. The proposed maximum ERP for WSWY-LD is 1.50 kW.

The proposed relocation of the facility would be consistent with the provisions of Section 73.3572 of the Commission's Rules. Exhibit E-1 illustrates the predicted 51 dBu F(50,90) service contour from the licensed WSWY-LD facility, as well as the corresponding contour from the proposed facility. As this map demonstrates, the respective service contours overlap each other. Additionally, the two sites are located fewer than thirty miles apart.

¹ The Facility ID for WSWY-LD at Indianapolis, Indiana is 68035.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

The proposed technical parameters would not result in interference to other proposed, authorized, or licensed facilities in excess of that permitted under the Commission's Rules. Exhibit E-2 provides tabular output from *TVStudy*. This study demonstrates that the proposed technical parameters would not result in impermissible interference, and that no interference check failures exist.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed antenna would be mounted to an existing tower that does not require registration with the Commission. The addition of the antenna to this tower would not increase the existing environmental impact already present from the tower.

Using the equations in Supplement A of *OET Bulletin 65*, the calculated worst-case power density at ground level assuming a downward radiation relative field of 0.3 is $5.75 \mu\text{W}/\text{cm}^2$. This value is less than the upper limit of the uncontrolled environment condition upper limit. There are no other broadcast facilities authorized to use the proposed tower.

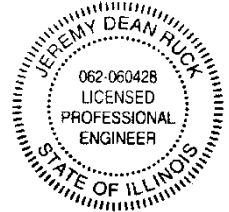
Midwest certifies it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2021

Jeremy D. Ruck, PE
February 6, 2021

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

2.6.2021

WSWY-LD

0000117690

Latitude: 39-29-41.80 N

Longitude: 086-58-40.90 W

ERP: 2.76 kW

Channel: 20

Frequency: 509.0 MHz

AMSL Height: 261.9 m

Horiz. Pattern: Directional

Prop Model: FCC Contour

WSWY-LD.X

PROPOSED

Latitude: 39-44-04.70 N

Longitude: 086-37-08.60 W

ERP: 1.50 kW

Channel: 20

Frequency: 509.0 MHz

AMSL Height: 315.0 m

Horiz. Pattern: Directional

Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- Licensed 51 dBu F(50,90) Service Contour
- Proposed 51 dBu F(50,90) Service Contour
- Area of Contour Overlap
- Licensed Site 30-mile Radius

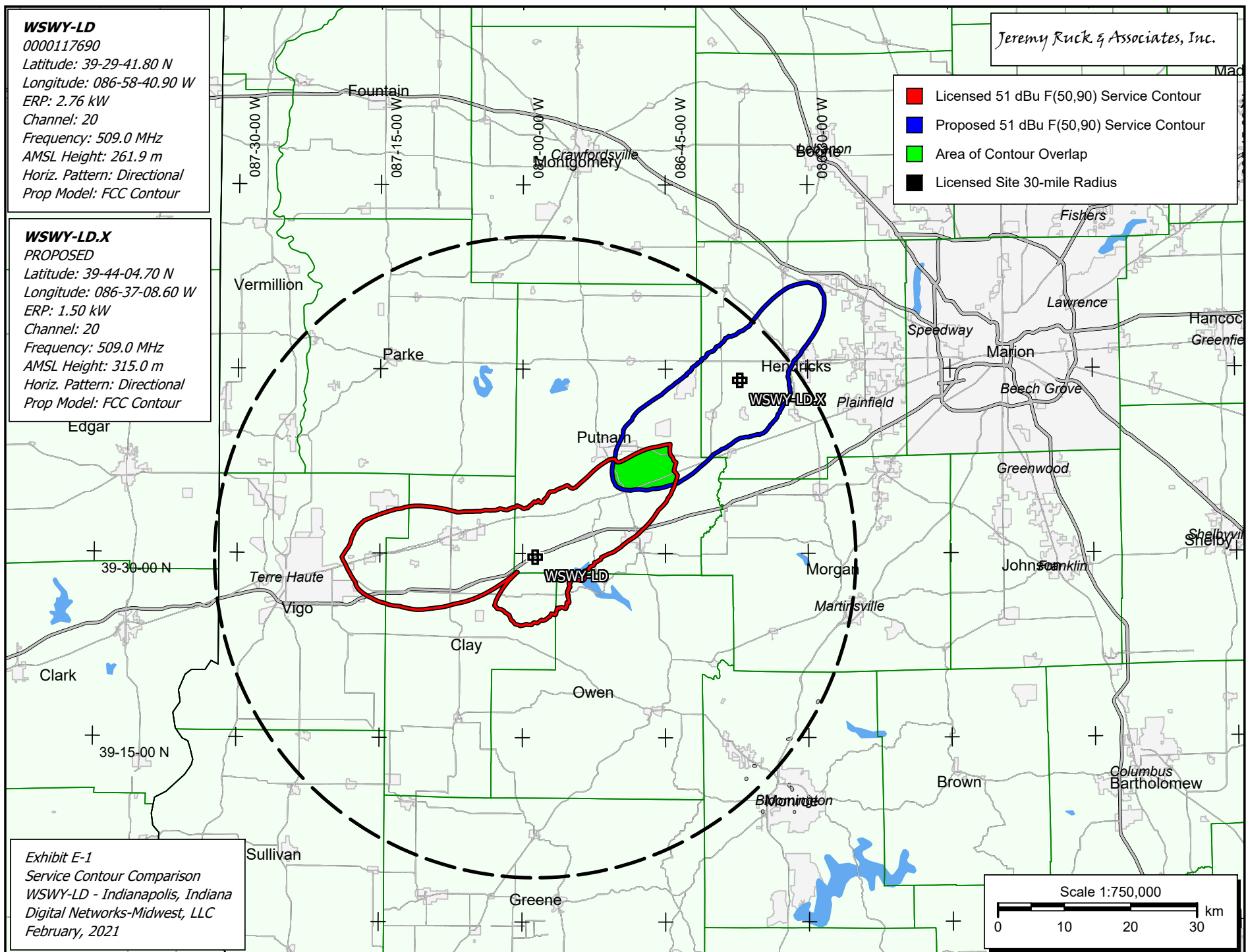


Exhibit E-1

Service Contour Comparison

WSWY-LD - Indianapolis, Indiana

Digital Networks-Midwest, LLC

February, 2021

Exhibit E-2 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: WSWY-LD CH 20 ATC 421405 315 m AMSL 1.5 kW ERP PR-TV x2 1@40 1@230, Model:
Longley-Rice
Start: 2021.02.06 15:50:30

Study created: 2021.02.06 15:50:30

Study build station data: LMS TV 2021-01-30

Proposal: WSWY-LD D20- LD LIC Indianapolis, IN
File number: BLANK0000117690
Facility ID: 68035
Station data: User record
Record ID: 286
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	WGN-TV	D19	DT	LIC	CHICAGO, IL	BMLCDT20080201APP	253.2 km
No	WGN-TV	D19	DT	APP	CHICAGO, IL	BLANK0000127570	253.2
No	W19DT-D	D19	LD	CP	FORT WAYNE, IN	BNPDTL20091228AAW	194.6
No	WIPB	D19	DT	LIC	MUNCIE, IN	BLANK0000087336	111.9
No	K20KF-D	D20	LD	LIC	DAVENPORT, IA	BLDRTL20120821AAP	423.3
No	WUVI-LD	D20	LD	LIC	Chicago, IL	BLANK0000019528	202.2
No	WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	253.2
Yes	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	190.4
No	W20ED-D	D20	LD	CP	DECATUR, IL	BDCCDTT20130322AII	202.9
No	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDRTL20120328AJA	202.3
No	WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	194.6
No	WKUT-LD	D20	LD	LIC	BOWLING GREEN, KY	BLANK0000088311	213.8
No	WTVS	D20	DT	LIC	DETROIT, MI	BLANK0000117036	417.4
No	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO	BLANK0000054925	360.2
No	WLWT	D20	DT	LIC	CINCINNATI, OH	BLANK0000087261	192.4
No	WLWT	D20	DT	CP	CINCINNATI, OH	BLANK0000127507	192.4
No	WOHZ-CD	D20	DC	LIC	MANSFIELD, OH	BLANK0000079972	358.2
No	WLWD-LD	D20	LD	LIC	SPRINGFIELD, OH	BLANK0000017721	202.1
No	WZTV	D20	DT	LIC	NASHVILLE, TN	BLANK0000115725	386.1
No	WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	442.0
No	W21DJ-D	D21	LD	CP	FORT WAYNE, IN	BNPDTL20091228AAU	194.6
No	WJYS	D21	DT	LIC	HAMMOND, IN	BLANK0000087539	253.2
No	WFYI	D21	DT	LIC	INDIANAPOLIS, IN	BLEDT20100803ADB	40.1
No	WRLW-CD	D21-	DC	LIC	SALEM, IN	BLANK0000112941	134.2
No	WKYT-TV	D21	DT	LIC	LEXINGTON, KY	BLANK0000074953	268.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20-
Mask: Full Service
Latitude: 39 44 4.70 N (NAD83)
Longitude: 86 37 8.60 W
Height AMSL: 315.0 m
HAAT: 47.7 m
Peak ERP: 1.50 kW
Antenna: SCA-PR-TV x2 Array 1@60 1@270 (ID 1007073) 0.0 deg
Elev Pattern: Generic

49.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.014 kW	37.1 m	7.0 km
45.0	0.612	25.7	16.2
90.0	0.051	49.6	11.2
135.0	0.011	58.0	8.4

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

2.6.2021

Exhibit E-2 - TVStudy Interference Study

180.0	0.012	68.8	9.3
225.0	0.003	51.2	5.9
270.0	1.50	55.9	26.9
315.0	0.021	34.9	7.5

Distance to Canadian border: 381.0 km

Distance to Mexican border: 1741.0 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 9.7 degrees Distance: 323.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 277.7 degrees Distance: 1583.3 km

No land mobile station failures found

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%

----- Interference to BLANK0000115806 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	
Undesireds:	WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	190.4 km
	WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	236.5
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	256.8
	WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	333.1
	KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDDT20110121ACA	312.5
	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO	BLANK0000054925	219.4
	WLWT	D20	DT	LIC	CINCINNATI, OH	BLANK0000087261	380.8
	WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	349.9

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	37414.9	1,388,405	37328.2	1,381,609	37149.4	1,374,900	37149.4	1,374,900	0.00 0.00

Undesired		Total IX	Unique IX, before	Unique IX, after
WSWY-LD D20- LD LIC	1.0	8		0.0 0
WWME-CD D20 DC LIC	153.0	2,453	146.0 2,445	146.0 2,445
WTSN-CD D20 DC LIC	2.0	8	1.0 0	1.0 0
WFFT-TV D20 DT LIC	1.0	8	0.0 0	0.0 0
KNLJ D20 DT LIC	9.0	968	5.0 1	5.0 1
KEFN-CD D20z DC LIC	3.0	15	2.0 15	2.0 15
WLWT D20 DT LIC	5.0	75	3.0 61	3.0 61
WHA-TV D20 DT LIC	18.9	4,173	9.9 3,204	9.9 3,204

----- Interference to BLANK0000115806 LIC scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	
Undesireds:	WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	190.4 km
	WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	236.5
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	256.8
	WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	333.1
	KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDDT20110121ACA	312.5
	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO	BLANK0000054925	219.4
	WLWT	D20	DT	CP	CINCINNATI, OH	BLANK0000127507	380.8
	WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	349.9

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

2.6.2021

2

Exhibit E-2 - TVStudy Interference Study

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
37414.9 1,388,405	37328.2 1,381,609	37148.4 1,374,872	37148.4 1,374,872	0.00 0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WSWY-LD D20- LD LIC	1.0 8		0.0 0	
WWME-CD D20 DC LIC	153.0 2,453	146.0 2,445	146.0 2,445	
WTSN-CD D20 DC LIC	2.0 8	1.0 0	1.0 0	
WFFT-TV D20 DT LIC	1.0 8	0.0 0	0.0 0	
KNLJ D20 DT LIC	9.0 968	5.0 1	5.0 1	
KEFN-CD D20z DC LIC	3.0 15	2.0 15	2.0 15	
WLWT D20 DT CP	6.0 103	4.0 89	4.0 89	
WHA-TV D20 DT LIC	18.9 4,173	9.9 3,204	9.9 3,204	

Interference to BLANK0000115806 LIC scenario 3

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	
Undesireds: WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	190.4 km
WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	236.5
WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	256.8
WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	333.1
KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDDT20110121ACA	312.5
WLWT	D20	DT	LIC	CINCINNATI, OH	BLANK0000087261	380.8
WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	349.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
37414.9 1,388,405	37328.2 1,381,609	37151.4 1,374,915	37151.4 1,374,915	0.00 0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WSWY-LD D20- LD LIC	1.0 8		0.0 0	
WWME-CD D20 DC LIC	153.0 2,453	146.0 2,445	146.0 2,445	
WTSN-CD D20 DC LIC	2.0 8	1.0 0	1.0 0	
WFFT-TV D20 DT LIC	1.0 8	0.0 0	0.0 0	
KNLJ D20 DT LIC	9.0 968	6.0 1	6.0 1	
WLWT D20 DT LIC	5.0 75	3.0 61	3.0 61	
WHA-TV D20 DT LIC	18.9 4,173	9.9 3,204	9.9 3,204	

Interference to BLANK0000115806 LIC scenario 4

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	
Undesireds: WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	190.4 km
WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	236.5
WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	256.8
WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	333.1
KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDDT20110121ACA	312.5
WLWT	D20	DT	CP	CINCINNATI, OH	BLANK0000127507	380.8
WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	349.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
37414.9 1,388,405	37328.2 1,381,609	37150.4 1,374,887	37150.4 1,374,887	0.00 0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WSWY-LD D20- LD LIC	1.0 8		0.0 0	
WWME-CD D20 DC LIC	153.0 2,453	146.0 2,445	146.0 2,445	
WTSN-CD D20 DC LIC	2.0 8	1.0 0	1.0 0	
WFFT-TV D20 DT LIC	1.0 8	0.0 0	0.0 0	
KNLJ D20 DT LIC	9.0 968	6.0 1	6.0 1	
WLWT D20 DT CP	6.0 103	4.0 89	4.0 89	
WHA-TV D20 DT LIC	18.9 4,173	9.9 3,204	9.9 3,204	

Interference to proposal scenario 1
8.77% interference received

Call	Chan	Svc	Status	City, State	File Number	Distance
------	------	-----	--------	-------------	-------------	----------

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

2.6.2021

3

Exhibit E-2 - TVStudy Interference Study

Desired:	WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	
Undesireds:	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	190.4 km
	WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	194.6
	WLWT	D20	DT	LIC	CINCINNATI, OH	BLANK0000087261	192.4
	WFYI	D21	DT	LIC	INDIANAPOLIS, IN	BLEDT20100803ADB	40.1

Service area	Terrain-limited						
526.5	26,958	526.5	26,958	493.2	24,595	6.32	8.77

Undesired		Total IX		Unique IX	Prcnt Unique IX	
WAND D20 DT LIC	18.2	1,148	3.0	8	0.57	0.03
WFFT-TV D20 DT LIC	1.0	8	0.0	0	0.00	0.00
WLWT D20 DT LIC	18.2	103	9.1	47	1.72	0.17
WFYI D21 DT LIC	11.1	2,244	6.0	1,168	1.15	4.33

Interference to proposal scenario 2
8.86% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WSWY-LD	D20-	LD	LIC	Indianapolis, IN	BLANK0000117690	
Undesireds:	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000115806	190.4 km
	WFFT-TV	D20	DT	LIC	FORT WAYNE, IN	BLANK0000086952	194.6
	WLWT	D20	DT	CP	CINCINNATI, OH	BLANK0000127507	192.4
	WFYI	D21	DT	LIC	INDIANAPOLIS, IN	BLEDT20100803ADB	40.1

Service area	Terrain-limited						
526.5	26,958	526.5	26,958	491.2	24,569	6.70	8.86

Undesired		Total IX		Unique IX	Prcnt Unique IX	
WAND D20 DT LIC	18.2	1,148	3.0	8	0.57	0.03
WFFT-TV D20 DT LIC	1.0	8	0.0	0	0.00	0.00
WLWT D20 DT CP	20.2	129	11.1	73	2.11	0.27
WFYI D21 DT LIC	11.1	2,244	6.0	1,168	1.15	4.33

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

2.6.2021