

***APPLICATION FOR MODIFICATION  
OF CONSTRUCTION PERMIT***

**K35KD – FARGO, NORTH DAKOTA  
FACILITY ID: 68013 / BDFCDT-20120416AAW**

**DIGITAL NETWORKS—MIDWEST, LLC**

**AUGUST 2020**

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**8.31.2020**

## **APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT**

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Midwest, LLC** ("Midwest"), licensee of analog low power television station K35KD, and permittee of a digital flash-cut facility for that station at Fargo, North Dakota, and are in support of their application for modification of construction permit for the latter.<sup>1</sup>

The current construction permit for the flash-cut facility authorizes operation on television channel 35 with a maximum effective radiated power of 15 kW at a center of radiation of 407 meters above mean sea level, 126 meters above ground level, utilizing a non-directional antenna. The proposed facility would also operate on television channel 35, but with a maximum effective radiated power of 2 kW. The proposed center of radiation is 307.3 meters above mean sea level, which corresponds to an elevation of 29.0 meters above ground level. It is proposed that a directional antenna consisting of a single Kathrein-Scala PR-TV antenna oriented at 310 degrees true be used.

The map in Exhibit E-1 provides a comparison between the service contours resulting from the licensed, authorized, and proposed technical parameters. This map demonstrates that the proposed 51 dBu F(50,90) service contour overlaps both the licensed analog 74 dBu F(50,50) contour, and the authorized 51 dBu F(50,90) contour. Additionally, this map also demonstrates that the proposed transmitter site is located within 30 miles of the licensed and authorized sites.

Exhibit E-2 is the output from *TVStudy* for the proposed facility. This study demonstrates that there are no outgoing interference check failures to any proposed or authorized facility. This

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<sup>1</sup> The Facility ID for K35KD at Fargo, North Dakota is 68013

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study was performed at a cell size resolution of 1.0 kilometers, and a profile spacing increment of 1.0 kilometer.

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, due to its height, does not require registration with the Commission. The addition of the proposed antenna to this tower would not increase the already existing environmental impact present from the structure.

In addition, the proposed facility would not result in human exposure at ground level to radiofrequency radiation in excess of the Commission's safety standards. 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  $8.25 \mu\text{W}/\text{cm}^2$ . This value is substantially below the upper limit of the uncontrolled environment condition. 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.

The proposed facility complies with the provisions of Section 74.709 of the Commission's Rules. No land mobile protection issues have been identified based on the tables in that section of the rules, or on the output of *TVStudy*. The proposed facility also complies with Sections 74.793(e)-(h) and 74.793(h) of the Commission's Rules. The proposed facility is not located within the vicinity of the Table Mountain receiving zone, nor is it located within the West Virginia quiet

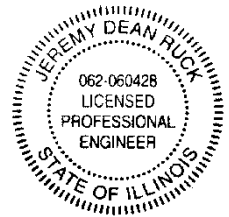
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zone area. The proposed facility is located 673 kilometers from the Grand Island, Nebraska monitoring station. Although the proposed facility is located in proximity to the Canadian border, the predicted 25.77 dBu contour does not cross into Canada.

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  
August 31, 2020

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**K35KD**

BLTT-20070907AEX  
Latitude: 46-45-35 N  
Longitude: 096-36-28 W  
ERP: 19.80 kW  
Channel: 35Z  
Frequency: 599.0 MHz  
AMSL Height: 407.0 m  
Horiz. Pattern: Directional  
Prop Model: FCC Contour

**K35KD-D.C**

BDFCDTL-20120416AAQ  
Latitude: 46-45-35 N  
Longitude: 096-36-28 W  
ERP: 15.00 kW  
Channel: 35  
Frequency: 599.0 MHz  
AMSL Height: 407.0 m  
Horiz. Pattern: Omni  
Prop Model: FCC Contour

**K35KD-D.X**

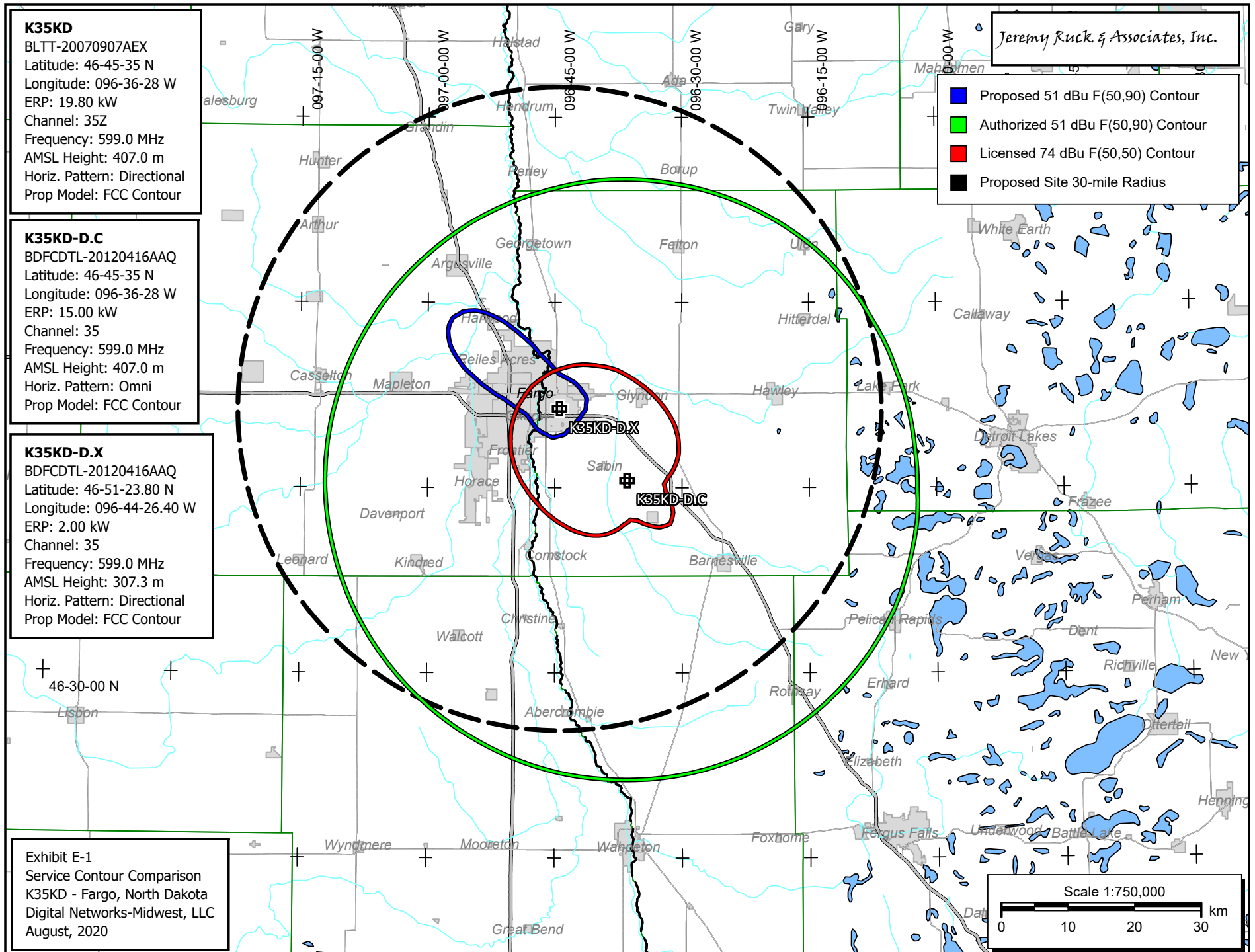
BDFCDTL-20120416AAQ  
Latitude: 46-51-23.80 N  
Longitude: 096-44-26.40 W  
ERP: 2.00 kW  
Channel: 35  
Frequency: 599.0 MHz  
AMSL Height: 307.3 m  
Horiz. Pattern: Directional  
Prop Model: FCC Contour

**Exhibit E-1**

Service Contour Comparison  
K35KD - Fargo, North Dakota  
Digital Networks-Midwest, LLC  
August, 2020

Jeremy Ruck & Associates, Inc.

- Proposed 51 dBu F(50,90) Contour
- Authorized 51 dBu F(50,90) Contour
- Licensed 74 dBu F(50,50) Contour
- Proposed Site 30-mile Radius



Scale 1:750,000



## Exhibit E-2 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: K35KD DFC CP MOD CH 35 ASRN 1059614 2 kW ERP 307.3 m AMSL PR-TV @310, Model: Longley-Rice  
Start: 2020.08.31 17:05:53

Study created: 2020.08.31 17:05:53

Study build station data: LMS TV 2020-08-31

Proposal: K35KD D35 LD CP FARGO, ND  
File number: BDFCDTL20120416AAQ  
Facility ID: 68013  
Station data: User record  
Record ID: 207  
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	K28DD	N28+	TX	LIC	BEMIDJI, MN	BLTT20080610AAL	160.1 km
No	K34AF-D	D34	LD	LIC	ALEXANDRIA, MN	BLDTL20120313ABQ	142.7
No	K34NP-D	D34	LD	LIC	RED LAKE, MN	BLANK0000068189	168.7
No	K34LV-D	D34	LD	CP	HORACE, ND	BNPDTL20100505ADL	24.7
No	K34MV-D	D34	LD	CP	VALLEY CITY, ND	BNPDTL20100505ALT	121.0
No	K35LK-D	D35	LD	CP	ASHBY, MN	BNPDTL20100505AKT	110.6
No	K35MY-D	D35	LD	LIC	BIRCHDALE, MN	BLANK0000068185	273.1
No	K35JN-D	D35	LD	LIC	DULUTH, MN	BLDTL20140220ACK	351.4
No	K35JN-D	D35	LD	CP	DULUTH, MN	BPDTL20140626ABA	351.4
No	K35DK-D	D35	LD	LIC	GRANITE FALLS, MN	BLDTL20110824ACZ	245.1
No	K38MM-D	D35	LD	CP	INTERNATIONAL FALLS, MN	BLANK0000051966	315.1
No	K35NY-D	D35	LD	LIC	REDWOOD FALLS, MN	BLANK0000063426	291.0
No	K35KI-D	D35	LD	LIC	ST. JAMES, MN	BLDTL20120625AAV	348.1
No	KSTP-TV	D35	DT	APP	ST. PAUL, MN	BLANK0000036053	342.3
No	KSTP-TV	D35	DT	LIC	ST. PAUL, MN	BLCDT20090622ABR	342.3
No	K35KH-D	D35	LD	LIC	WALKER, MN	BLDTT20130719BZI	166.0
No	K35NR-D	D35	LD	LIC	WILLMAR, MN	BLANK0000060745	229.0
No	K35KR-D	D35	LD	CP	HATTON, ND	BNPDTL20100505ADH	90.4
No	K42IM-D	D35	LD	CP	MINOT, ND	BLANK0000029548	375.8
No	K35GR-D	D35+	LD	LIC	BADGER, SD	BLANK0000022021	266.2
No	K35LZ-D	D35	LD	CP	HUMBOLDT, SD	BNPDTL20100510AIK	356.7
No	K35KS-D	D35	LD	CP	SUMMIT, SD	BNPDTL20100505ADY	170.5
No	K36KH-D	D36	LD	LIC	ALEXANDRIA, MN	BLDTT20100819ABB	142.7
No	K36OA-D	D36	LD	LIC	RED LAKE, MN	BLANK0000068188	168.7
No	K36LN-D	D36	LD	CP	ARGUSVILLE, ND	BNPDTL20100504ANI	27.8
No	KVLY-TV	D36	DT	LIC	FARGO, ND	BLANK0000078038	68.1
No	K42FH	N42+	TX	LIC	BEMIDJI, MN	BLTT20050922AEL	165.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D35  
Mask: Full Service  
Latitude: 46 51 23.80 N (NAD83)  
Longitude: 96 44 26.40 W  
Height AMSL: 307.3 m  
HAAT: 30.7 m  
Peak ERP: 2.00 kW  
Antenna: SCA PR-TV 310.0 deg  
Elev Pattern: Generic

50.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.007 kW	33.8 m	5.3 km
45.0	0.004	29.8	4.5

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## Exhibit E-2 - TVStudy Interference Study

90.0	0.003	26.9	4.0
135.0	0.001	27.1	3.3
180.0	0.003	29.7	4.1
225.0	0.005	31.6	4.6
270.0	0.016	32.2	6.3
315.0	1.77	34.6	20.9

Proposal 25.77 dBu contour does not cross Canadian border  
Distance to Canadian border: 238.3 km

Distance to Mexican border: 1870.4 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 192.2 degrees Distance: 673.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 225.5 degrees Distance: 1010.3 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%

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Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	K35KD	D35	LD	CP	FARGO, ND	BDFCDTL20120416AAQ	

	Service area	Terrain-limited	IX-free	Percent IX
201.1	94,197	201.1 94,197	201.1 94,197	0.00 0.00

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