

# **ENGINEERING REPORT**

**FM Translator  
Minor Change  
Permit Application  
(Amendment)**

for

**K288GA**

**Fac ID: 138081**

as a Translator for  
**KNWC(FM) – Sioux Falls, SD**

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# Discussion

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This firm of Munn-Reese has been retained to prepare the required engineering report in support of a Minor Change Application for an FM Translator K288GA – Sioux Falls, SD. Presently K288GA is licensed to operate with 220 watts ERP at 509 meters AMSL operating on CH288D. Operation at a different site with 220 watts ERP at 506 meters AMSL operating at CH288D is proposed.

The Translator as proposed will be mounted on a tower bearing Antenna Registration Number: 1275764. The translator will be tri-plexed with W298CY and KNWC-FM(AUX).

A map of the present and proposed service area has been included in **Exhibit 1.0**.

It has been determined the Translator may be used in the area without interference to any existing FM broadcast station or facility. The present and proposed allocation details are found in **Exhibits 2.0**. It is believed sufficient clearance exists precluding the need for additional contour protection showings. The present and proposed facilities have overlap of filed strength contours with translator K286CN. Per 74.1204(c) a change in facilities will be accepted when the overlap does not increase or if the proposed facilities does not cause the overlap to move closer to the station receiving the overlap. The present and proposed allocations are provided in **Exhibits 2.0** to demonstrate the reduction in overlap of filed strength contours with 2<sup>nd</sup> adjacent K286CN, and demonstrate that the proposed facilities are moving farther away from K286CN .

The applicant certifies the proposed translator 34 dBu F(50:10) Interference contour does not enter Canadian territory. Documentation of the proposed 34 dBu F(50:10) Interference contour will be supplied upon request.

This translator is not within the affected distance of any TV Channel 6 stations.

The applicant would like to note use of the NED 03 second terrain database for terrain-based showings contained here-in.

# Exhibit 1.0 - Present and Proposed Service Contours

**Munn-Reese.com**

**K288GA**  
 BLFT20081023ABE  
 Latitude: 43-32-02.99 N  
 Longitude: 096-44-21.92 W  
 ERP: 0.22 kW  
 Channel: 288  
 Frequency: 105.5 MHz  
 AMSL Height: 509.0 m  
 Elevation: 457.0 m  
 Horiz. Pattern: Omni  
 Vert. Pattern: No  
 Prop Model: None

**K288GA.P**  
 Proposed Operation  
 Latitude: 43-29-14 N  
 Longitude: 096-47-04 W  
 ERP: 0.22 kW  
 Channel: 288  
 Frequency: 105.5 MHz  
 AMSL Height: 506.0 m  
 Elevation: 453.0 m  
 Horiz. Pattern: Omni  
 Vert. Pattern: No  
 Prop Model: None

**K288GA.P - HAAT**  
 N. Lat. = 432914.0 W. Lng. = 964704.0  
 HAAT and Distance to Contour,  
 FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	60-F5
000	448.7	57.3	0.2200	-6.58	9.64
030	440.9	65.1	0.2200	-6.58	10.22
060	439.7	66.3	0.2200	-6.58	10.30
090	438.4	67.6	0.2200	-6.58	10.39
120	432.3	73.7	0.2200	-6.58	10.81
150	436.2	69.8	0.2200	-6.58	10.55
180	430.2	75.8	0.2200	-6.58	10.95
210	434.3	71.7	0.2200	-6.58	10.68
240	445.1	60.9	0.2200	-6.58	9.92
270	468.6	37.4	0.2200	-6.58	7.61
300	468.5	37.5	0.2200	-6.58	7.62
330	452.9	53.1	0.2200	-6.58	9.26

Ave El= 444.65 M HAAT= 61.35 M AMSL= 506.0

■ K288GA (288)  
■ K288GA.P (288)

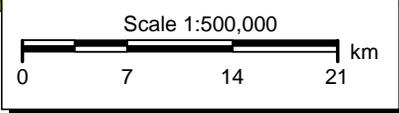
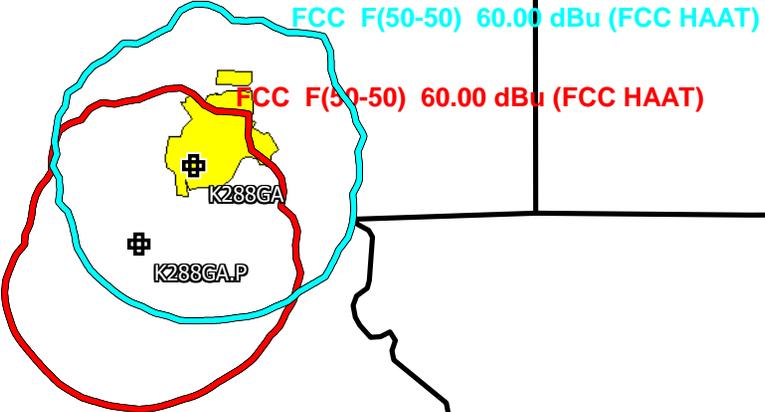


Exhibit 2.0 - Present Allocation  
 University Of Northwestern - St. Paul  
 CH# 288D - 105.5 MHz, Pwr= 0.22 kw, HAAT= 67.5 M, COR= 509 M  
 Average Protected F(50-50)= 10.39 km  
 Omni-directional

REFERENCE  
 43 32 02.90 N.  
 96 44 23.10 W.

DISPLAY DATES  
 DATA 08-10-20  
 SEARCH 08-11-20

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
288D Sioux Falls	K288GA	LIC SD		0.0 0.0	0.00 BLFT20081023ABE	43 32 02.90 96 44 23.10	0.220 68	509	---Reference---		University Of Northwestern
286D Sioux Falls	K286CN	LIC SD		50.1 230.1	1.39 BLFT20171018AAS	43 32 31.90 96 43 35.20	0.250	1.1 493	8.2	-11.5*	-7.8*
287C2 Sheldon	KIWA-FM	LIC IA		118.7 299.3	80.79 BLH20140430ACH	43 10 52.90 95 51 57.10	50.000 89	68.2 522	43.1	1.4	21.1 Sheldon Broadcasting Co.,
291C2 Slayton	KJOE	LIC MN		57.3 237.9	75.41 BLH20160119AAM	43 53 51.90 95 56 51.10	10.000 330	5.2 851	53.0	58.3	21.3 Wallace Christensen
288D Brookings	K288EV	LIC SD		356.7 176.7	86.11 BMLFT20030520AAQ	44 18 26.80 96 48 05.10	0.250 53	35.0 549	10.3	40.5	39.5 University Of Northwestern
289C2 Winnebago	KSUX	LIC N NE		172.3 352.4	133.68 BLH19910327KA	42 20 32.90 96 31 14.10	50.000 141	82.4 516	55.7	40.9	63.7 Ksux/kscj Radio Broadcasti
290C1 Mitchell	KMIT	LIC SD		281.1 100.1	123.17 BLH20010919AAS	43 44 15.90 98 14 40.30	100.000 199	8.5 618	64.9	105.2	57.2 Saga Communications Of Sou
286C2 Tracy	KARL	LIC N MN		38.0 218.6	112.09 BMLH20080813ADU	44 19 31.90 95 52 20.10	45.000 153	4.8 594	44.5	95.2	66.4 Subarctic Media, LLC
289C3 Jackson	KUXX	LIC MN		85.8 267.0	143.34 BLH19940502KE	43 36 53.80 94 57 48.90	25.000 100	55.3 527	34.8	76.5	93.0 Community First Broadcasti
288A Montevideo	KMGH	LIC MN		30.7 211.4	171.59 BLH19821019AP	44 51 23.80 95 37 47.10	3.000 90	71.6 398	21.5	88.2	113.7 Iowa City Broadcasting Com
287C1 Orchard	KGRD	LIC NE		226.5 45.4	190.05 BLED19990707KB	42 20 45.00 98 25 06.30	100.000 153	90.3 744	60.4	90.0	116.0 The Praise Network, Inc.
285C3 Spencer	KMRR	LIC IA		101.5 282.6	131.85 BLH19970508KE	43 17 12.80 95 08 34.90	25.000 85	3.7 521	35.7	117.1	94.7 Saga Communications Of Iow

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
 In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding.  
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
 "\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

Proposed Allocation

University Of Northwestern - St. Paul

REFERENCE  
43 29 14.00 N.  
96 47 04.00 W.

CH# 288D - 105.5 MHz, Pwr= 0.22 kw, HAAT= 61.4 M, COR= 506 M  
Average Protected F(50-50)= 9.96 km  
Omni-directional

DISPLAY DATES  
DATA 08-20-20  
SEARCH 08-25-20

CH CITY	CALL	TYPE STATE	ANT ---	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
288D Sioux Falls	K288GA	LIC SD	---	34.6 214.7	6.34 BLFT20081023ABE	43 32 02.90 96 44 23.10	0.220 68	32.7 509	9.8 University Of Northwestern	-37.2*<	-39.9*<
286D Sioux Falls	K286CN	LIC SD	---	37.4 217.4	7.69 BLFT20171018AAS	43 32 31.90 96 43 35.20	0.250	1.1 493	8.6 Midwest Communications, In	-4.5*<	-2.0*<
287C2 Sheldon	KIWA-FM	LIC IA	---	114.3 294.9	81.69 BLH20140430ACH	43 10 52.90 95 51 57.10	50.000 89	67.4 522	42.6 Sheldon Broadcasting Co.,	3.5	23.9
291C2 Slayton	KJOE	LIC MN	---	55.6 236.1	81.29 BLH20160119AAM	43 53 51.90 95 56 51.10	10.000 330	5.2 851	52.9 Wallace Christensen	66.0	27.4
289C2 Winnebago	KSUX	LIC N NE	---	170.3 350.5	129.07 BLH19910327KA	42 20 32.90 96 31 14.10	50.000 141	82.2 516	55.6 Ksux/kscj Radio Broadcasti	36.1	58.2
288D Brookings	K288EV	LIC SD	---	359.2 179.1	91.20 BMLFT20030520AAQ	44 18 26.80 96 48 05.10	0.250 53	34.5 549	10.3 University Of Northwestern	47.0	48.9
290C1 Mitchell	KMIT	LIC SD	---	283.8 102.8	120.78 BLH20010919AAS	43 44 15.90 98 14 40.30	100.000 199	8.4 618	64.6 Saga Communications Of Sou	104.9	55.2
286C2 Tracy	KARL	LIC N MN	---	37.8 218.4	118.42 BMLH20080813ADU	44 19 31.90 95 52 20.10	45.000 153	4.9 594	44.6 Subarctic Media, LLC	102.4	72.8
289C3 Jackson	KUXX	LIC MN	---	83.8 265.1	147.40 BLH19940502KE	43 36 53.80 94 57 48.90	25.000 100	55.7 527	35.0 Community First Broadcasti	81.2	97.7
287C1 Orchard	KGRD	LIC NE	---	226.9 45.8	183.85 BLED19990707KB	42 20 45.00 98 25 06.30	100.000 153	90.2 744	60.4 The Praise Network, Inc.	83.4	109.3
288A Montevideo	KMGH	LIC MN	---	30.8 211.6	177.92 BLH19821019AP	44 51 23.80 95 37 47.10	3.000 90	71.5 398	21.5 Iowa City Broadcasting Com	96.0	121.5
285C3 Spencer	KMRR	LIC IA	---	99.0 280.1	134.47 BLH19970508KE	43 17 12.80 95 08 34.90	25.000 85	3.7 521	36.0 Saga Communications Of Iow	120.0	97.5

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference zone= West Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
< = Contour Overlap