

**ENGINEERING REPORT**  
**Minor Modification Construction**  
**Permit Application**

for

**K292DN**  
**Facility ID: 5474**

as a non-Fill-In Translator for  
**KSLT(FM) – Spearfish, SD**

January 2023

***MUNN-REESE***

Broadcast Engineering Consultants  
Coldwater, MI 49036

## Discussion

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This firm has been retained to prepare the required engineering report in support of a Minor Modification Construction Permit Application for an FM Translator K292DN. Currently this translator is licensed to operate with an AMSL of 1337 meters and an ERP of 0.031 kW Horizontally polarized operating on CH292D. This proposal requests a an AMSL of 1383 meters and an ERP of 0.250 kW (H&V) operating on CH228D. The Fill-In Translator will rebroadcast Primary Station KSLT(FM) – Spearfish, SD Facility ID No. 5475. The proposed coordinates are different from the present coordinates. This is a correction of coordinates and not a site change.

The Translator as proposed will is mounted on a tower that does not have an Antenna Structure Registration Number.

A map of the present and proposed service area and status as a fill-in for KSLT has been included in **Exhibit 1.0**.

The present K292DN is presently receives 72.1 km of overlapping interference from co-channel KZLK as shown in **Exhibit 2.0**. It has been determined that the Translator moved to CH2228D may be used in the area without interference to or from any existing FM broadcast station or facility. General allocation details for the proposed is shown in **Exhibit 2.1**.

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: K292DN - Present and Proposed as a Fill-in for KSLT(FM)

## K292DN

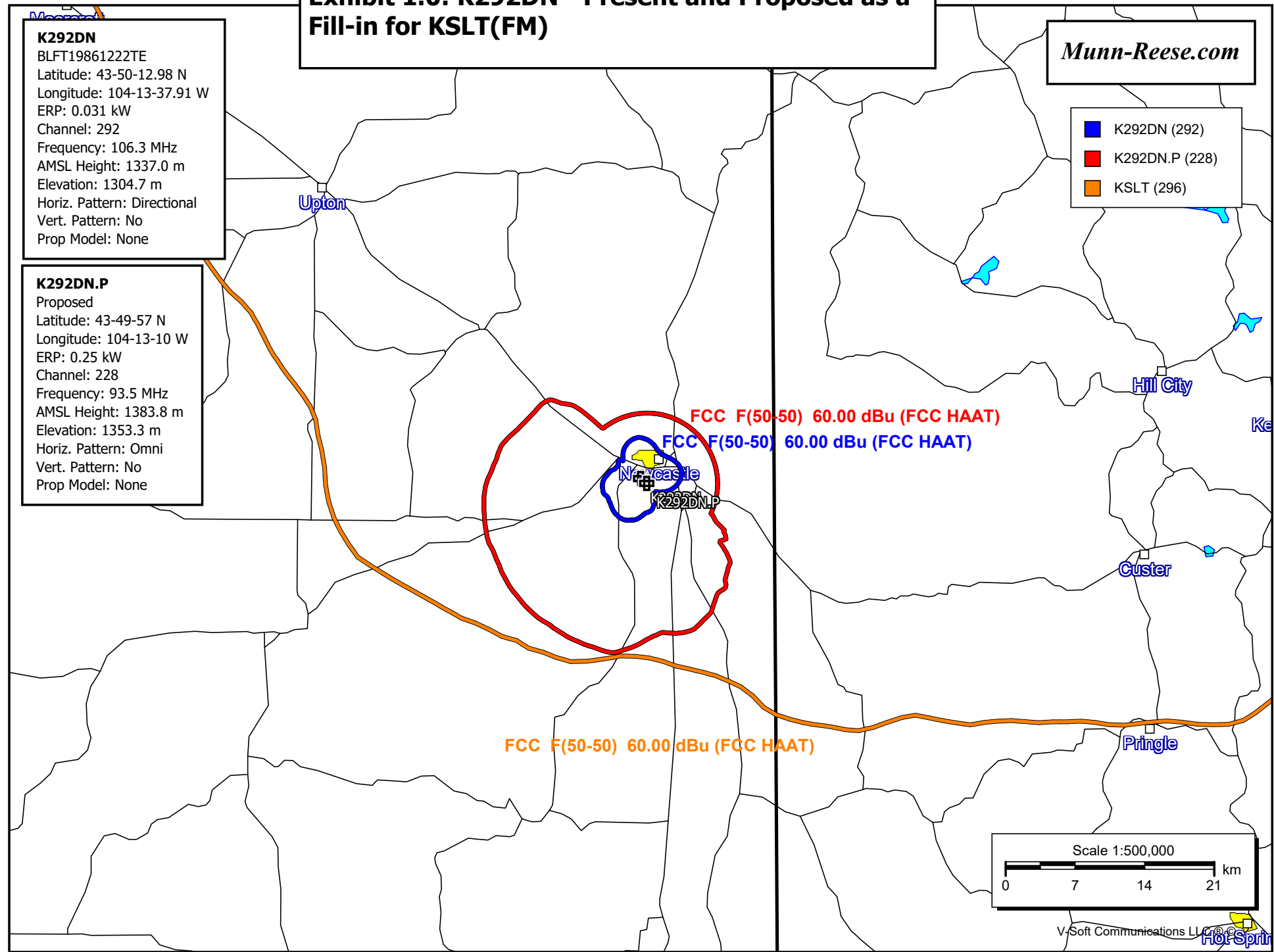
BLFT19861222TE  
Latitude: 43-50-12.98 N  
Longitude: 104-13-37.91 W  
ERP: 0.031 kW  
Channel: 292  
Frequency: 106.3 MHz  
AMSL Height: 1337.0 m  
Elevation: 1304.7 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

## K292DN.P

Proposed  
Latitude: 43-49-57 N  
Longitude: 104-13-10 W  
ERP: 0.25 kW  
Channel: 228  
Frequency: 93.5 MHz  
AMSL Height: 1383.8 m  
Elevation: 1353.3 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

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- K292DN (292)
- K292DN.P (228)
- KSLT (296)



# Exhibit 2.0 - Present Allocation

University Of Northwestern -

REFERENCE 43 50 12.90 N. 104 13 39.70 W. CH# 292D - 106.3 MHz, Pwr= 0.25 kW DA, HAAT= -6.0 M, COR= 1337 M DISPLAY DATES DATA 01-25-23 SEARCH 01-25-23  
Average Protected F(50-50)= 7.09 km  
Standard Directional

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*
292C1 Rapid City	KZLK	LIC _CN SD		71.4 252.1	82.30 BLH20010925AAW	44 04 07.00 103 15 03.70	100.000 212	146.7 1321	51.1 Riverfront Broadcasting, L	-71.3*	8.1
289C1 Edgemont	AU9410647	VAC ____ SD		158.9 339.0	35.12 RM11253	43 32 31.90 104 04 13.76	100.000 299	10.3 1498	73.3 From CDBS	18.6	-38.4*
292D Newcastle	K292DN	LIC DHN WY		0.0 74.1	0.00 BLFT19861222TE	43 50 12.90 104 13 39.70	0.031 -6	1337	---Reference---		
291C1 Moorcroft	KXXL	LIC _CN WY		294.3 113.5	108.00 BLH20080403ABM	44 13 49.90 105 27 47.00	100.000 120	82.5 1542	52.6 Keyhole Broadcasting, LLC	20.9	48.1
292D Hot Springs	K292EC	LIC DHN SD		125.0 305.5	76.14 BLFT19890313TI	43 26 29.90 103 27 17.70	0.068 214	2.2 1361	0.6 University Of Northwestern	68.4	59.6
294D Hot Springs	K294DL/K2	CP DCN SD		125.0 305.5	75.86 0000199249	43 26 33.90 103 27 28.70	0.115 214	0.0 1279	0.8 University Of Northwestern	70.3	71.3
289D Rapid City	K289AI	LIC _CN SD		74.8 255.5	80.15 BLFT20130315ACZ	44 01 19.00 103 15 36.70	0.250 118	1.1 1250	7.1 Haugo Broadcasting, Inc.	72.0	72.0
294D Rapid City	K294BT	LIC _CN SD		71.6 252.2	82.26 BLFT20120313AAG	44 04 00.00 103 15 02.70	0.250 121	1.1 1222	7.1 Black Hills Broadcasting,	74.1	74.1
294D Gillette	K294BD	LIC _CN WY		293.8 112.8	114.12 BLFT20150714ABU	44 14 34.90 105 32 21.00	0.250 1583	1.1 1583	15.3 Legend Communications Of W	107.1	97.2
294D Gillette	K294BD	CP _CN WY		293.8 112.8	114.12 0000147331	44 14 35.00 105 32 21.00	0.250 1551	1.1 1551	13.4 Legend Communications Of W	107.1	99.0

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. Call signs with strikeout need not be protected.  
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.

# Exhibit 2.1 - Proposed Allocation

University Of Northwestern -

REFERENCE  
43 49 57.00 N.  
104 13 10.00 W.

CH# 228D - 93.5 MHz, Pwr= 0.25 kw, HAAT= 30.9 M, COR= 1384 M  
Average Protected F(50-50)= 7.18 km  
Omni-directional

DISPLAY DATES  
DATA 01-25-23  
SEARCH 01-27-23

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*
230C1 Rapid City	KMKK	LIC _CN SD		72.6 253.3	81.47 BMLH20151105AAG	44 02 49.00 103 14 46.70	100.000 209	3.7 1310	31.0 Homeslice Media Group, LLC	70.9	34.6
226C0 Sturgis	KRCS	LIC _CN SD		44.1 224.6	77.74 BMLH20041019ABB	44 19 57.90 103 32 21.60	100.000 323	3.6 1661	34.5 Homeslice Media Group, LLC	67.1	36.3
227C3 Antelope Valley-Cre	KLED	LIC NCN WY		293.9 112.9	114.92 BLH20120410ABY	44 14 34.90 105 32 21.00	13.500 136	56.4 1564	37.3 Legend Communications Of W	43.5	54.7
228C1 Casper	KWYX	LIC _CN WY		235.1 53.6	208.14 BMLH20100607AFR	42 44 27.80 106 18 33.00	3.800 530	142.7 2497	62.6 Cochise Broadcasting LLC	48.2	90.5
281C1 Rapid City	KIQK	LIC _CN SD		74.3 255.0	79.90 BLH19940826KA	44 01 18.90 103 15 34.60	100.000 164	0.0 1292	0.0 Haugo Broadcasting, Inc.	21.5R	58.4M
229C3 Pine Ridge	KVAR	LIC _CN SD		130.8 311.9	168.77 BMLED20081120ACF	42 49 46.90 102 39 09.60	12.000 146	70.6 1290	47.5 Alleycat Communications	84.8	105.4
227C0 Gering	KMOR	LIC _CN NE		171.6 351.9	223.86 0000199934	41 50 22.80 103 49 37.00	100.000 339	119.4 1630	80.4 Nebraska Rural Radio Assoc	88.1	120.2
228C1 Eagle Butte	AL0168	VAC ____ SD		59.7 241.8	271.18 RM11770	45 01 31.93 101 14 23.53	100.000 299	168.5 997	69.3 From CDBS	95.6	178.2

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. Call signs with strikeout need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
« = Station meets FCC minimum distance spacing for its class.