

MINOR CHANGE APPLICATION
K215EW DEER LODGE, MT, CH 220D
HI-LINE RADIO FELLOWSHIP, INC.
JANUARY 2023

This minor change application is being filed in regards to K215EW Deer Lodge, Montana, facility ID 83139 on behalf of the licensee, Hi-Line Radio Fellowship, Inc. K215EW is being displaced by a new FM Construction Permit (“CP”) on channel 215A for KUMD Deer Lodge, Montana, facility ID 767108, CP number 0000165512. K215EW seeks to change channel from 215D to a non-adjacent channel 220D. Since KUMD is located on channel 215A at a nearby transmitter site, none of the 1st, 2nd or 3rd adjacent channels are available for use by K215EW.

K215EW is proposing only a change in channel. No other changes will be made to the currently licensed transmission system. It will continue to use its current antenna system a Nicom BKG1-P dipole mounted at the same heights with the same Effective Radiated Power (“ERP”) of 0.035 Kilowatts (35 watts) with vertical polarization only.

Figure 1 is a detailed channel interference study conducted on channel 220D. As can be seen, there is no prohibitive overlaps with any other pertinent same, 1st, 2nd or 3rd adjacent channel stations. The only station of concern is the operation of KTVM-TV Butte, Montana, TV Channel 6, facility ID 18066. Figure 2 shows the current contour overlap with K215EW operating on channel 215D. It documents that the calculated proposed interference contour towards KTVM-TV is 70.9 dBμ. Figure 3 shows that the new proposed operation of K215EW on channel 220D will have a reduced interference area towards KTVM-TV. The new calculated interference contour is calculated at 83.8 dBμ. Figure 4 shows the predicted 83.8 dBμ interference contour documenting there is no population within this contour. Figure 5 is the original permission letter from KTVM-TV allowing the operation of K215EW.

Figure 6 is the directional antenna data. This pattern is not being changed from the current licensed values. The Nicom antenna is broadband in design.

Figure 7 is the TERP calculations which shows that the proposed operation meet the ERP limits for a non-fill-in translator.

It was determined that the proposed operation of K215EW on channel 220D will meet all of the current Commission rules and regulations.

FIGURE 1 - DETAILED CHANNEL INTERFERENCE STUDY

K215EW DEER LODGE, MT, CH. 220D

REFERENCE 46 30 47.70 N. CH# 220D - 91.9 MHZ, Pwr= 0.035 kW DA, HAAT= 228.1 M, COR= 1814 M DISPLAY DATES
112 40 22.60 W. Average Protected F(50-50)= 12.02 km DATA 01-25-23
Standard Directional SEARCH 01-25-23

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*
06 2C Butte	KTVM-TV	LI _HN MT		162.4 342.6	58.95 BLCDT-20100629AVB	46 00 27.00 112 26 32.99	19.200 591	0.9 2566	94.4	95.4R	-36.4M
217C1 Butte	KAPC	CP _CN MT		162.4 342.6	58.95 0000162760	46 00 27.00 112 26 33.00	10.000 571	5.4 2550	56.5	42.5	2.2 The University of Montana
220A Hamilton	KUFN	LIC _CN MT		255.8 74.7	124.23 BLED19981204KB	46 13 45.70 114 14 04.30	0.900 130	110.2 1685	42.0	4.3	48.9 The University of Montana
219A Helena	KUHM	LIC _CN MT		59.9 240.3	57.30 BLED19990507KB	46 46 10.70 112 01 24.90	0.910 232	39.3 1543	25.7	6.6	14.2 The University of Montana
220C2 Bozeman	KGLT	LIC DCN MT		121.2 302.2	117.91 BLED20160816AAD	45 57 24.70 111 22 16.90	12.000 262	104.2 1697	39.8	7.6	63.3 Board Of Regents - Montana
223C1 Butte	KAAR	LIC _CN MT		162.4 342.6	58.93 0000190464	46 00 27.50 112 26 33.80	4.500 550	4.0 2531	47.9	44.0	9.8 Townsquare License, LLC
220C2 Great Falls	KFRW	LIC _CN MT		24.1 204.8	159.67 BMLE20130716AAZ	47 49 12.80 111 47 59.00	50.000 142	134.0 1282	48.5	12.6	68.3 Family Stations, Inc.
220C2 Great Falls	KFRW	STA _CN MT		24.1 204.8	159.67 0000199424	47 49 12.80 111 47 59.00	50.000 142	134.0 1282	48.5	12.6	68.3 Family Stations, Inc.
220D Philipsburg	K220ED	LIC DVN MT		248.1 67.6	52.35 BLFT19960111VD	46 20 09.70 113 18 14.20	0.050	7.3 1600	2.4	35.5	17.2 Hi-Line Radio Fellowship,
217C2 Butte	KAPC	LIC _CN MT		162.4 342.6	58.96 BLED19990222KB	46 00 26.70 112 26 33.10	0.800 571	1.9 2550	34.4	46.1	21.8 The University of Montana
219D Butte	K219KM	LIC _VN MT		168.8 348.9	57.46 0000140524	46 00 21.70 112 31 44.20	0.020 541	5.3 1707	3.7	41.0	38.0 Educational Media Foundati
220D Missoula	K220JX	LIC _VN MT		292.7 111.8	108.50 BLFT20121206ABY	46 52 54.70 113 59 11.30	0.033 -157	13.5 1122	4.2	84.8	70.6 CSN International
222C Ronan	KKMT	LIC _EN MT		319.9 138.7	185.15 0000158352	47 46 25.00 114 16 07.00	60.000 707	12.8 1721	93.1	163.2	91.6 Anderson Radio Broadcastin
218D Rattlesnake Valley	K218AI	LIC _CN MT		291.7 110.8	107.66 BLFT20121114AGD	46 51 48.70 113 59 06.30	0.250 -278	1.1 1013	7.1	96.3	100.4 The University of Montana
219A Dillon	KUMW	LIC _CN MT		178.9 358.9	144.98 0000186974	45 12 32.70 112 38 17.00	1.000 -62	19.1 1603	12.7	114.9	114.0 The University of Montana
218D Darby	K218BT	LIC _CN MT		245.5 64.4	128.06 BLFT19960529TC	46 01 33.70 114 10 42.30	0.009 -306	0.2 1199	3.1	118.4	124.8 Faith Communications Corpo
218C1 Plains	KPLG	LIC _CN MT		300.7 119.1	191.95 BMLE20040607AAB	47 22 21.70 114 51 34.40	1.800 1232	2.8 2084	57.7	179.2	128.5 Hi-Line Radio Fellowship,
06 -- White Sulphur Sprin	K06NV-D«	LI D_N MT		91.7 273.0	139.55 BLDTV-20120618ACA	46 27 43.70 110 51 24.69	0.060	1.3 1849	5.3	6.6R	132.9M
218A Great Falls	KAHF	LIC _CN MT		42.5 223.5	155.19 BLED20060703ACM	47 31 56.80 111 16 40.90	1.000 91	1.6 1149	14.6	141.1	135.2 American Family Associatio
217A Somers	KFLF	LIC DCN MT		329.7 148.7	201.46 0000179758	48 04 06.80 114 02 23.40	1.000 79	0.4 1170	6.1	190.7	189.4 Educational Media Foundati
220A Grangeville	763701	CP _CN ID		256.0 73.5	276.03 0000167207	45 51 47.60 116 07 25.50	0.058 718	75.5 1890	23.4	191.2	216.3 Salt & Light Radio, Inc.
223C Havre	KPQX	LIC _CN MT		49.4 231.6	292.25 BLH19850903KO	48 10 54.90 109 41 03.70	100.000 545	12.3 1905	84.2	267.5	204.6 New Media Broadcasters, In
217A Big Timber	KXEB	CP _CN MT		106.6 288.6	229.43 0000167574	45 53 25.27 109 50 20.36	1.000 148	1.6 1488	18.9	219.3	208.5 Hi-Line Radio Fellowship,
217C3 Challis	762200	CP _CN ID		207.4 26.4	244.43 0000166765	44 33 08.90 114 05 24.80	0.100 807	0.7 2606	30.5	233.3	213.5 Idaho State Board Of Educa
219C1 Billings	KEMC	LIC _CN MT		105.2 288.2	331.16 BMLE20181220AAT	45 39 30.80 108 34 16.50	100.000 158	101.1 1280	69.0	221.3	255.9 Montana State University -

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	Page # 2	
										IN (Overlap	*OUT* in km)
219C1 Moscow	KRFA-FM	LIC _VN ID		274.8 91.7	329.90 BLED20090312ABT	46 40 53.60 116 58 16.60	28.000 282	87.3 1128	59.7 Washington State	232.4	255.6 Universit
219C Lethbridge	CBBCFM	LIC DCN AB		358.5 178.4	358.41	49 44 10.10 112 48 12.10	100.000 185	90.4 1081	64.9	256.2	236.6
220A Sun Valley	KWRV	LIC _CN ID		203.8 22.6	344.97 BLED20090121ADD	43 39 40.60 114 24 11.10	0.100 657	83.0 2755	26.6 Minnesota Public	251.6	279.4 Radio
217A Ashton	KANP	LIC _CN ID		159.1 340.0	277.52 BLED20101013ADV	44 10 29.60 111 25 49.80	0.200 198	1.0 1972	11.4 Hi-Line Radio	265.6	265.2 Fellowship I
223C1 Park City	KBXI	LIC _CN MT		102.8 285.9	336.29 BLH20050804ADF	45 45 53.80 108 27 21.50	100.000 189	8.7 1239	66.7 Anthony Media, Inc.	318.6	267.5
219C3 Mccall	KBSM	LIC _CN ID		239.3 56.8	317.01 0000093141	45 00 29.60 116 08 03.40	0.220 602	36.5 2347	24.0 Idaho State Board Of Educa	271.2	277.6
221A St. Maries	KXJO	LIC NCN ID		288.6 105.7	310.77 BLED20101015ABV	47 20 08.10 116 34 21.80	0.200 7	9.6 926	6.7 Spokane Public Radio, Inc.	290.9	279.0
217A1 Waterton Park	R12873	VAC ____ AB		342.4 161.5	297.70	49 03 31.93 113 54 26.43	0.250 100	1.1 1834	18.0 From CDBS	285.2	279.1
221C Byron	KCWB	LIC _CN WY		128.0 310.5	354.69 BLH20140625AHD	44 29 51.80 109 09 14.50	100.000 575	59.1 2362	31.0 Legend Communications Of W	287.1	280.3
221C Byron	KCWB	STA _CN WY		128.0 310.5	354.69 0000200303	44 29 51.80 109 09 14.50	100.000 575	59.1 2362	31.0 Legend Communications Of W	287.1	280.3
218A Rexburg	KBYR-FM	LIC _CN ID		166.5 347.2	307.76 BLED20060621AAE	43 49 01.70 111 46 44.90	1.000 14	1.6 1531	14.0 Brigham Young University -	295.1	293.4
221AA Etzikom	AL04542	ALO ____ AB		18.1 199.2	358.33	49 33 59.10 111 07 54.80	6.000 100	39.3 946	38.0	306.8	299.8
221A Etzikom	AL4046	VAC ____ AB		18.1 199.2	358.33	49 33 59.12 111 07 54.84	6.000 100	39.3 946	38.0 From CDBS	306.8	299.8
219A Ririe	KSQS	LIC DCN ID		169.1 349.7	335.80 BLED20060908AAG	43 32 36.60 111 53 09.80	0.250 162	20.7 1707	13.7 Faith Communications Corp.	304.0	302.9
221A Bonners Ferry	KIBX	LIC _CN ID		312.2 129.6	356.55 BLED20000908AAJ	48 36 36.70 116 15 27.60	0.074 838	28.7 1873	19.2 Spokane Public Radio, Inc.	318.5	320.3

Terrain database is GLOBE 30 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)
Reference station has protected zone issue: Canada

FIGURE 2 - OVERLAP WITH KTVM-TV AS CURRENTLY LICENSED
K215EW DEER LODGE, MT, CH. 220D

FMCommander Single Allocation Study - 01-25-2023 - GLOBE 30 Sec

K215EW's Overlaps 97.38 Req km, -38.42 Mar km)

K215EW CH 215 D DA

Lat= 46 30 47.70, Lng= 112 40 22.60

0.035 kW 228.1 m HAAT, 1814 m COR

Intef. = 70.9 dBu Prot. = 47 dBu

KTVM-TV CH 06 2C BLCDT-20100629AVB

Lat= 46 00 27.00, Lng= 112 26 32.99

19.2 kW 591.3 m HAAT, 2566.3 m COR

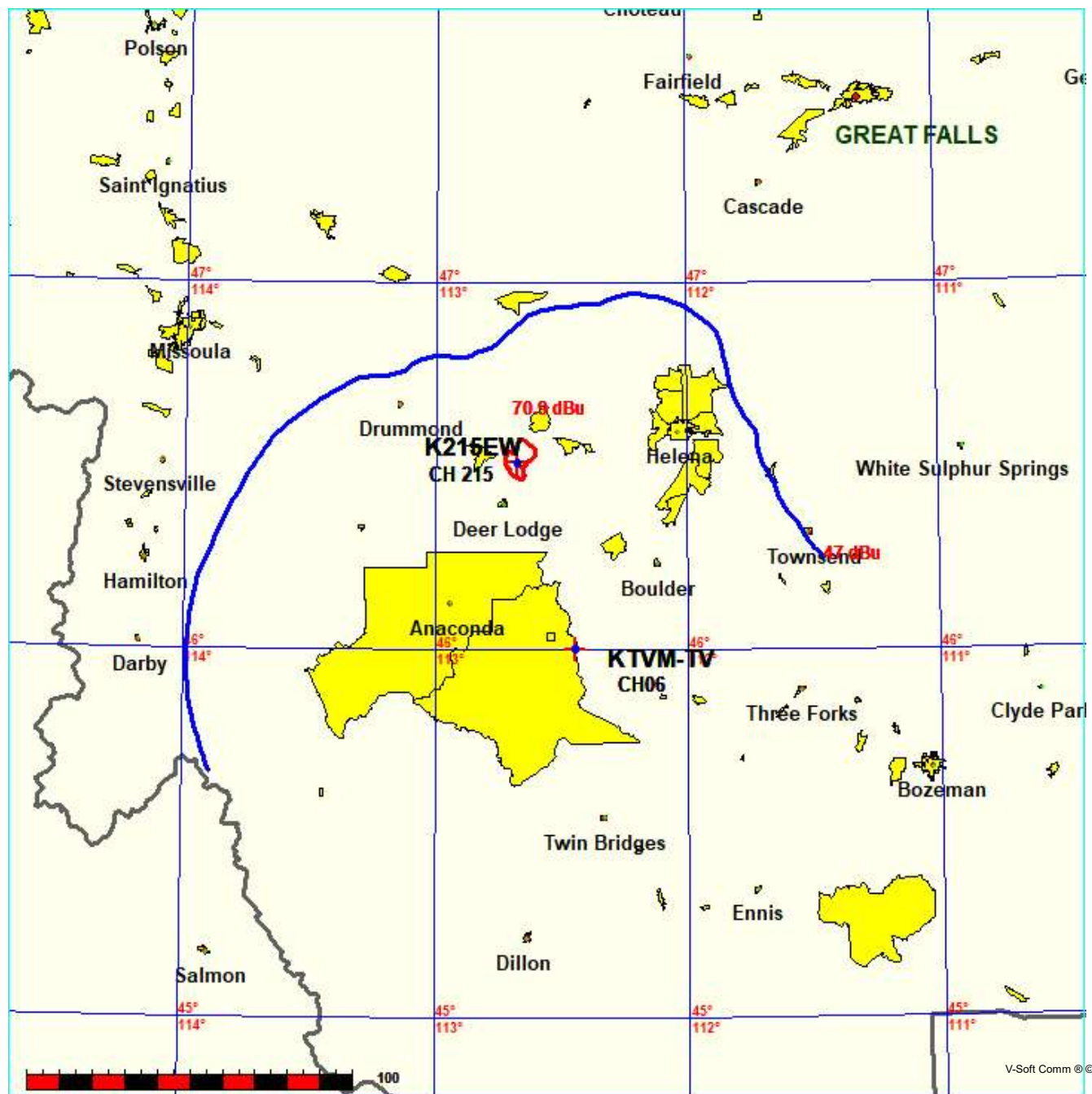


FIGURE 3 - OVERLAP WITH KTVM-TV, CH. 6
K215EW DEER LODGE, MT, CH. 220D

FMCommander Single Allocation Study - 01-25-2023 - GLOBE 30 Sec

K215EW's Overlaps 95.37 Req km, -36.41 Mar km)

K215EW CH 220 D DA

Lat= 46 30 47.70, Lng= 112 40 22.60

0.035 kW 228.1 m HAAT, 1814 m COR

Intef. = 83.8 dBu Prot. = 47 dBu

KTVM-TV CH 06 2C BLCDT-20100629AVB

Lat= 46 00 27.00, Lng= 112 26 32.99

19.2 kW 591.3 m HAAT, 2566.3 m COR

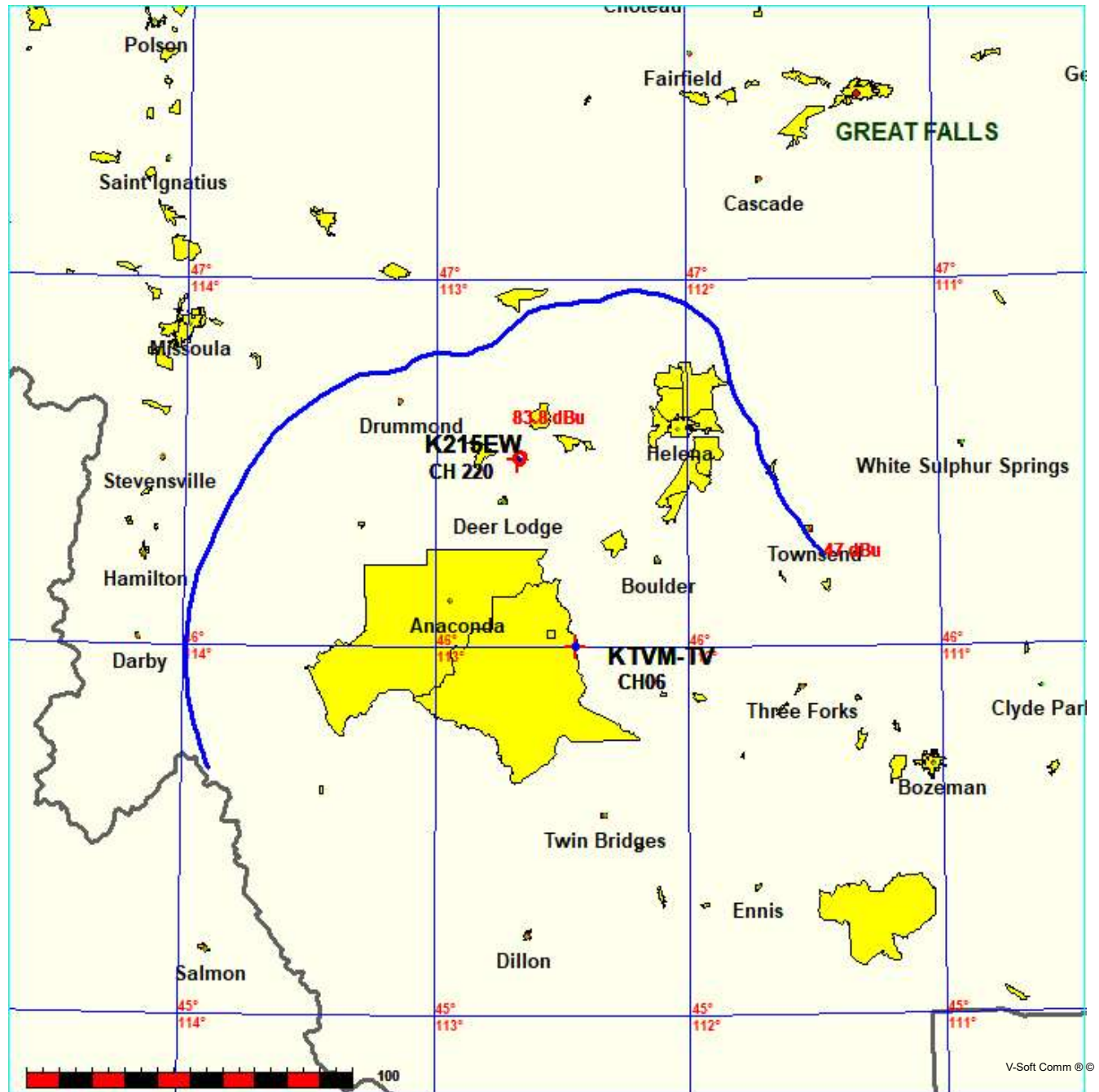


FIGURE 4 - PREDICTED 83.8 DBU CONTOUR
K215EW DEER LODGE, MT, CH. 220D

Coverage Study - GLOBE 30 Sec
01-25-2023

K215EW CH215 D , 0.035 kW, 228.1m HAAT, 1814.0m COR AMSL
Service Contour = 84 dBu. Population =

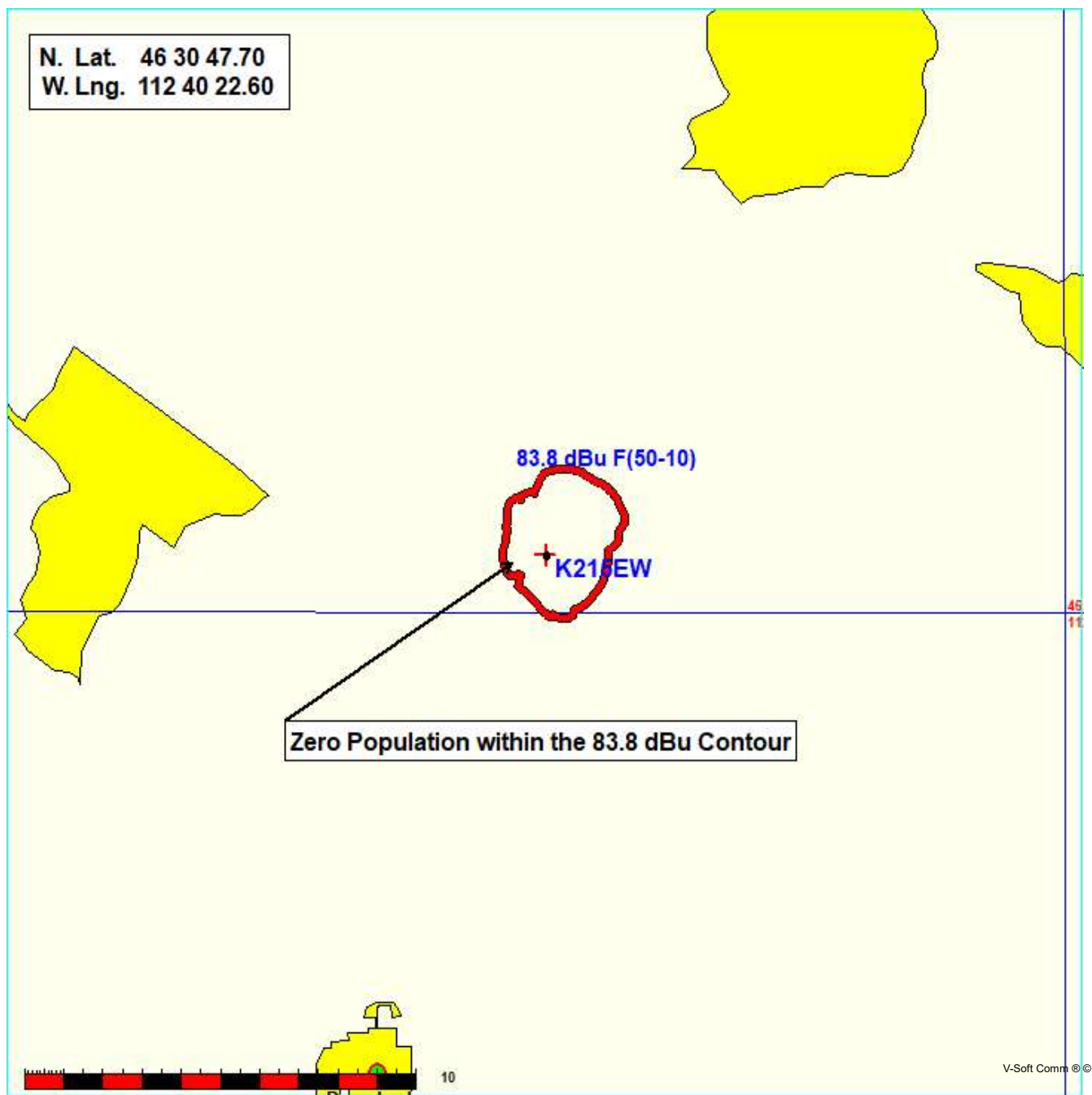


FIGURE 5 - KTVM-TV LETTER

TV-6 Memo and Agreement

This memo of August 20, 2008, acknowledges that Hi-Line Radio Fellowship, Inc., is applying for to modify non-commercial/educational FM translator K213CB at Deer Lodge, Montana, to broadcast on channel 215 (90.9 MHz), with a maximum power of 35 Watts Effective Radiated Power., from its current location at the Pauley Mountain Communications site located at NL46 30 48 / WL 112 40 20, with a Radiation Center 1,1814 Meters Above Mean Sea Level.

The proposed signal will overlap the 47 dBu contour of KTVM-TV6, Butte, Montana, and is, therefore subject to the provisions of 47 CFR, Section 74.1205.


No interference to viewers of KTVM-TV is anticipated.

However, in signing this Memo, Hi-Line Radio Fellowship, Inc., hereby states that in the event that any interference does occur to KTVM-TV6 viewers, that Hi-Line will remedy any such interference, at its own expense and inconvenience, to the satisfaction of KTVM-TV6.

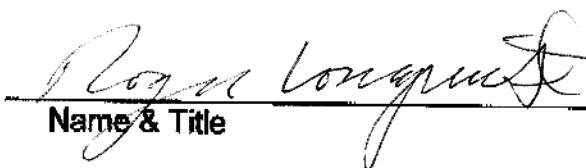
In the event that Hi-Line's efforts to remedy interference are not successful, it will suspend operation of its facility until operation can resume without interference to KTVM-TV's viewers.

With regard for the promises made above by Hi-Line Radio Fellowship, Inc., the licensee of KTVM-TV6, Bluestone License Holdings, Inc., has no objections to the proposed application of Hi-Line Radio Fellowship, Inc., for the facility described above.

Bluestone License Holdings, Inc.

 Monte Williams Director of Engineering
Name & Title

Hi-Line Radio Fellowship, Inc.

 Roger Lonnquist - Network Manager
Name & Title

Roger Lonnquist (406) 442-2655 / FAX (800) 877-6460

FIGURE 6 Directional Antenna data

K215EW Deer Lodge, MT

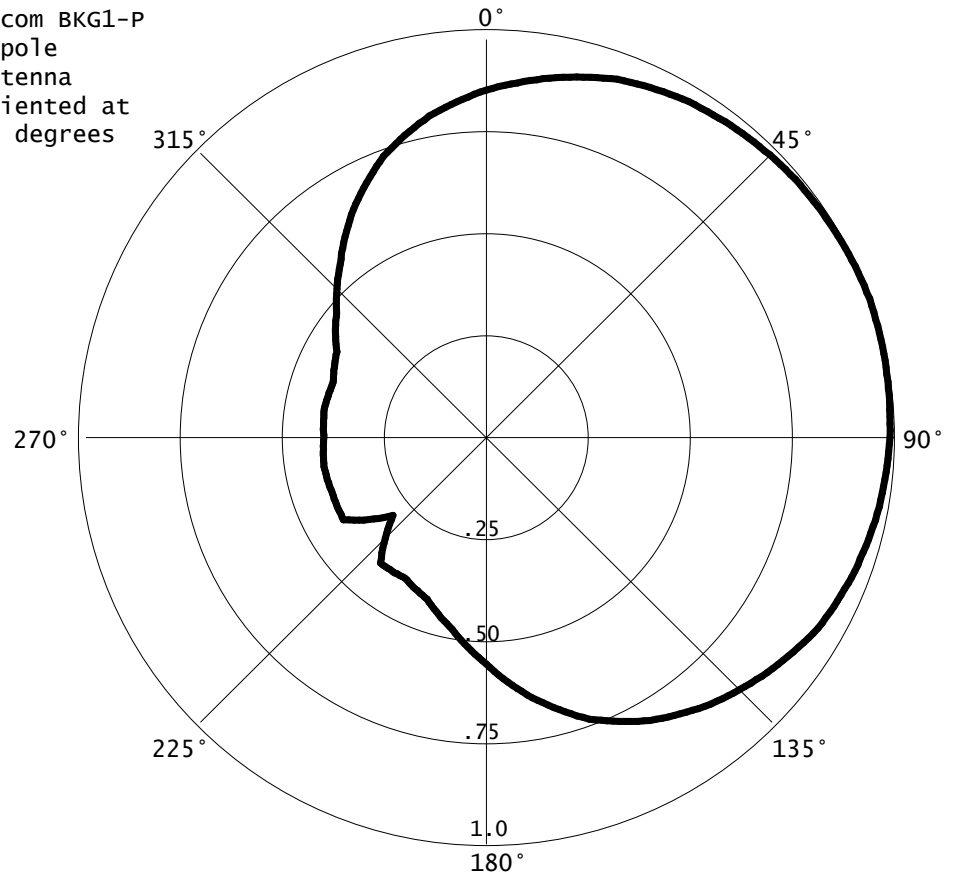
01-25-2023

RMS(V)= .737

Graph is Relative Field

Azi	Field	dBk	kw
000	0.856	-15.910	0.026
010	0.899	-15.484	0.028
020	0.939	-15.106	0.031
030	0.963	-14.887	0.032
040	0.978	-14.753	0.033
050	0.989	-14.655	0.034
060	0.995	-14.603	0.035
070	1.000	-14.559	0.035
080	0.995	-14.603	0.035
090	0.989	-14.655	0.034
100	0.978	-14.753	0.033
110	0.961	-14.905	0.032
120	0.939	-15.106	0.031
130	0.899	-15.484	0.028
140	0.856	-15.910	0.026
150	0.804	-16.454	0.023
160	0.737	-17.210	0.019
170	0.650	-18.301	0.015
180	0.557	-19.642	0.011
190	0.479	-20.953	0.008
200	0.423	-22.033	0.006
210	0.399	-22.540	0.006
220	0.403	-22.453	0.006
230	0.298	-25.075	0.003
240	0.404	-22.432	0.006
250	0.401	-22.496	0.006
260	0.404	-22.432	0.006
270	0.398	-22.562	0.006
280	0.403	-22.453	0.006
290	0.399	-22.540	0.006
300	0.423	-22.033	0.006
310	0.479	-20.953	0.008
320	0.557	-19.642	0.011
330	0.650	-18.301	0.015
340	0.737	-17.210	0.019
350	0.804	-16.454	0.023

Nicom BKG1-P
Dipole
Antenna
oriented at
70 degrees



N. Lat. = 463047.7 W. Lng. = 1124022.6
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - NGDC 30 SEC

FIGURE 7 - TERP CALCULATIONS						Max ERP Allowed (in watts)	
Azi.	AV EL	HAAT	dBk	60-F5	40-F1	Under 74.1235(b)(2)	Proposed ERP
000	1527.6	286.4	-15.91	12.49	41.63	28	26
030	1597.4	216.6	-14.89	11.52	38.41	50	35
060	1604.7	209.3	-14.60	11.51	38.31	62	35
090	1781.6	32.4	-14.66	4.42	14.10	250	34
120	1845.7	-31.7	-15.11	4.16	13.31	250	31
150	1777.8	36.2	-16.45	4.22	13.42	250	23
180	1501.1	312.9	-19.64	10.55	35.24	23	11
210	1397.3	416.7	-22.54	10.00	35.08	15.5	6
240	1477.0	337.0	-22.43	9.19	30.98	23	6
270	1417.2	396.8	-22.56	9.78	33.96	15.5	6
300	1457.9	356.1	-22.03	9.69	32.81	19	6
330	1640.8	173.2	-18.30	8.47	28.33	75	15

Ave El= 1585.51 M HAAT= 228.49 M AMSL= 1814.0