

**K226CJ**  
**Whitefish, MT**  
Proposed Permitted Translator Facility

**Application Overview:**

The Applicant proposes a minor modification to BNPFT-20130826AAU using the following parameters:

**Tech Box:**

Channel:	228
Antenna Coordinates:	N48-30-22, W114-20-49 (NAD 27)
ASRN:	N/A
Tower Site Base AMSL:	2078 m
Overall Tower Height AGL:	36 m
COR AGL:	17 m
ERP:	0.25 kW
Directional Antenna (off the shelf):	Scala CA2-CP (180 deg)

**Primary Station and Translator Protected Contour Relationship:**

Exhibit 1 demonstrates that the proposed fill-in translator facility's protected contour is completely encompassed by the protected contour of the primary station being rebroadcast.

### **Interference Study (Adjacent Stations):**

Exhibit 2 is a contour overlap study demonstrating that the proposed antenna site provides requisite contour protection towards all applications, authorizations, and permits pursuant to Section 74.1204 with the exception of the following:

- K230BJ (BLFT-20140828AAA) on its second adjacent channel

Section 74.1204(a) states that “an application for an FM translator station will not be accepted for filing if the proposed operation would involve overlap of predicted field strength contours with any other station, including commercial and noncommercial educational FM stations, FM translators and Class D (secondary) noncommercial educational FM stations.” However, Section 74.1204(d) states, “the provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or other such factors as may be applicable.” Using the undesired-to-desired ratio method regarding interference to a second or third adjacent frequency, interference is predicted to occur where the translator’s undesired signal exceeds the protection station’s desired signal by more than 40 dB. The free space formula was used to determine the signal strength of the proposed facility, in dBu, at the antenna site of the adjacent station(s).

The signal strength of K230BJ at the proposed site is calculated to be 80.7 dBu. As such, the interfering contour of the proposed facility is its F(50,10) 120.7 dBu contour which extends a maximum distance of 98.7 meters from the proposed tower.

Exhibit 2A includes a satellite view of the proposed translator site. There are no structures or public roads (other than the site access road to the tower and neighboring towers at the site) within the interference contour predicted to be created by the translator. Therefore, due to the absence of “potential listeners” within the interference contour, no interference is expected to occur.

**Antenna Located BELOW directional antenna:**

The applicant notes that this facility shall be mounted on the same tower as non-directional stations KSPL(FM) and K258AP Kalispell. It will also be located beneath the directional facilities of KUKL(FM) Kalispell, MT. As such, it will have no impact on the azimuth pattern of KUKL(FM).

**Downward Radiation Study (FM Model):**

The proposed FM Facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (OET Bulletin 65, Second Edition 97-01, August, 1997). The Commission’s FM Model Power Density Prediction program was employed to determine the Field. Using the Phelps-Dodge "Worst Case" Ring Stub antenna with 1 sections and 1 wavelength spacing, and the AGL height and ERP proposed in this, the highest predicted power density 2 meters above ground is less than 22.3% of the Uncontrolled Standard with a Power Density of 44.6 microwatts per square centimeter 4 meters from the base of the tower.

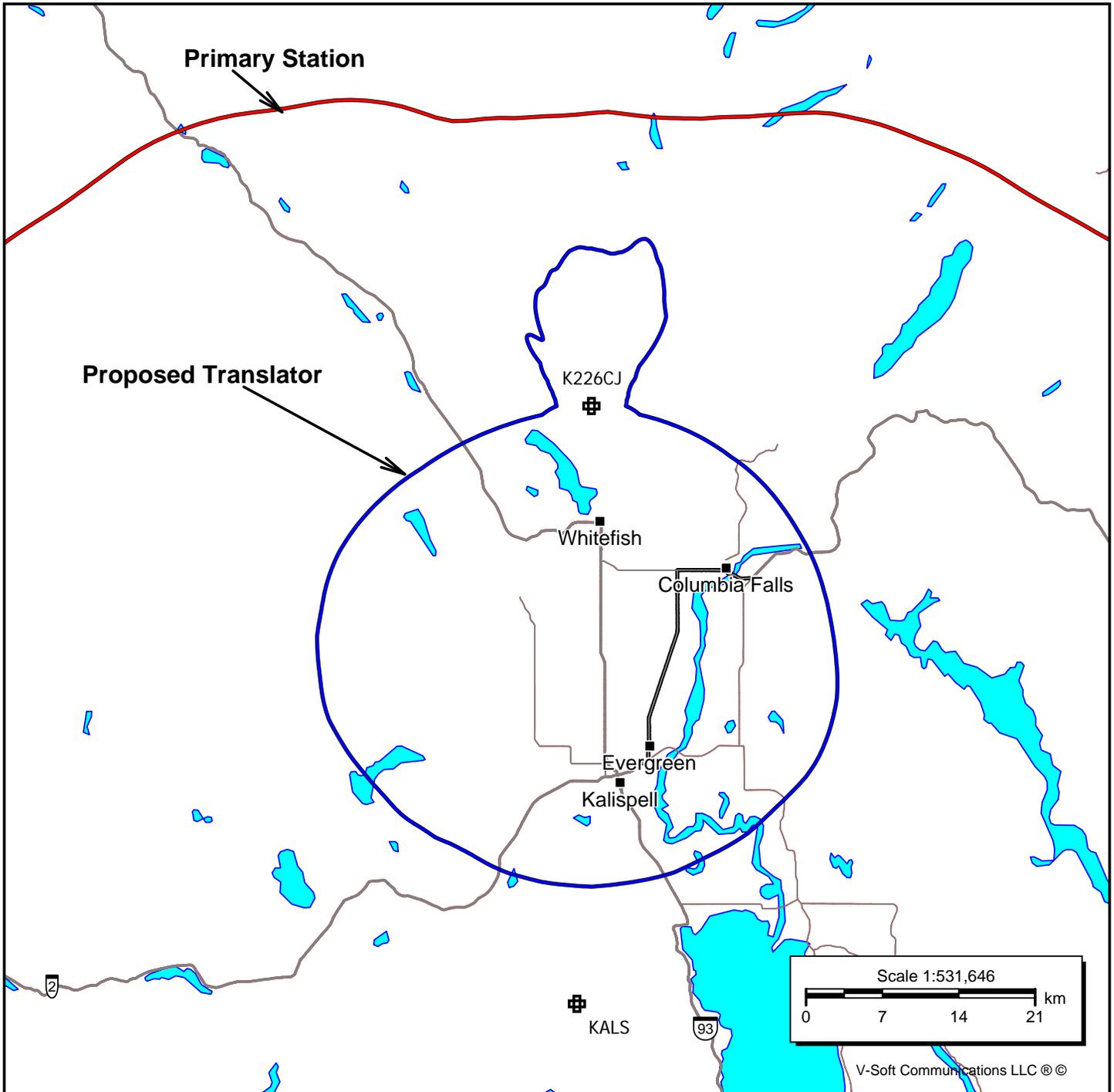
Even though the site will fully comply with the Uncontrolled Site Standards, access to the transmitting site will be restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency radiation will not exceed the FCC guidelines.

**Existing Tower:**

The proposed facility is exempt from environmental processing because the facility is not located at a location specified in Section 1.1307(a)(1)-(8) of the Commission's Rules and since the tower in question already exists.

# **Exhibit 1**

**Primary Station Protected Contour  
vs.  
Proposed Translator Protected Contour**



V-Soft Communications LLC ©

**K226CJ**

Proposed  
Channel: 228D  
Frequency: 93.5 MHz  
Latitude: 48-30-22 N  
Longitude: 114-20-49 W  
COR AGL Height: 17.0 m  
COR AMSL Height: 2095.0 m  
Base Elevation: 2078.0 m  
COR HAAT: 761.5 m  
ERP: 0.25 kW  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

**KALS**

BMLED20150130AKN  
Channel: 246C  
Frequency: 97.1 MHz  
Latitude: 48-00-48 N  
Longitude: 114-21-55 W  
COR AGL Height: 27.0 m  
COR AMSL Height: 2065.0 m  
Base Elevation: 2038.0 m  
COR HAAT: 758.0 m  
ERP: 26.50 kW  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

# **Exhibit 2**

## **Section 74.1204 Interference Tabulations**

K226CJ on Channel 228  
 Section 74.1204 Contour Overlap Study

REFERENCE CH# 228D - 93.5 MHz, Pwr= 0.25 kW DA, HAAT= 761.5 M, COR= 2095 M DISPLAY DATES  
 48 30 22.0 N. DATA 10-24-15  
 114 20 49.0 W. Average Protected F(50-50)= 36.97 km SEARCH 11-15-15  
 Standard Directional

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
227C Missoula	KGGL	LIC_CN	MT	170.7 350.9	165.99 BLH19950426KA	47 01 57.0 113 59 31.0	43.000 777	139.4 2338	95.9 Ccr-missoula Iv, Lic	-16.8	5.5
226D Whitfish	<del>K226CJ</del>	CP_DV_	MT	0.0 0.0	0.00 BNPFT20130826AAU	48 30 22.0 114 20 49.0	0.035 762	0.1 2095	4.7 KalisPELL Christian Radio	-14.5*	-7.3*
226D Whitfish	<del>K226CJ</del>	APP_DV_	MT	0.0 0.0	0.00 BNPFT20030314BUL	48 30 22.0 114 20 49.0	0.035 762	0.1 2095	4.7 KalisPELL Christian Radio	-14.5*	-7.3*
230D Whitfish	K230BJ	LIC_DC_	MT	289.6 109.5	1.85 BLFT20140828AAA	48 30 42.0 114 22 14.0	0.010	0.2 1981	11.5 Edgewater Broadcasting, In	-2.2*	-10.1*
228A Eureka	KZXT	LIC_C_	MT	311.7 131.2	66.27 BLH20091204AAI	48 54 00.7 115 01 20.7	2.000 -210	45.4 943	12.0 Anderson Radio Broadcastin	13.9	24.6
230D Ronan	K230BC	LIC_DH_	MT	175.8 355.9	81.66 BLFT20121221ACS	47 46 25.0 114 16 04.0	0.250 587	0.2 1608	12.1 Anderson Radio Broadcastin	37.7	59.9

Terrain database is NGDC 30 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= , 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), Beam tilt(Y,N,X)  
 "\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

# **Exhibit 2A**

## **Interfering Contour Satellite Map**

# K226CJ vs K230BJ

## Legend

-  K226CJ (228)
-  K226CJ (228) Proposed F(50,10) 120.7 dBu Interfering Contour
-  K230BJ (230) Licensed F(50,50) 80.7 dBu Protected Contour

 K226CJ (228)

