

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
FM TRANSLATOR STATION W236DF
BRAINERD, MINNESOTA
CHANNEL 236 (95.1 MHZ) 0.25 KW (ND)

1. Application Purpose: It is proposed to relocate the W236DF transmitter site to an existing 152.1 meter tower (ASRN 1024184) and operate with a nondirectional maximum ERP of 250 Watts.

2. Fill-in Translator Coverage/Minor Change Compliance: W236DF is a fill-in FM translator for AM station KVBR on 1340 kHz at Brainerd, Minnesota (Facility ID 60496). Figure 1 is a map demonstrating that W236DF's proposed 60 dBu contour is entirely within a 25 mile circle from KVBR's licensed transmitter site as required for fill-in compliance. Figure 1 also demonstrates that the proposed operation complies with the FCC's minor change rules as W236DF's proposed 60 dBu contour overlaps the licensed W236DF 60 dBu contour.

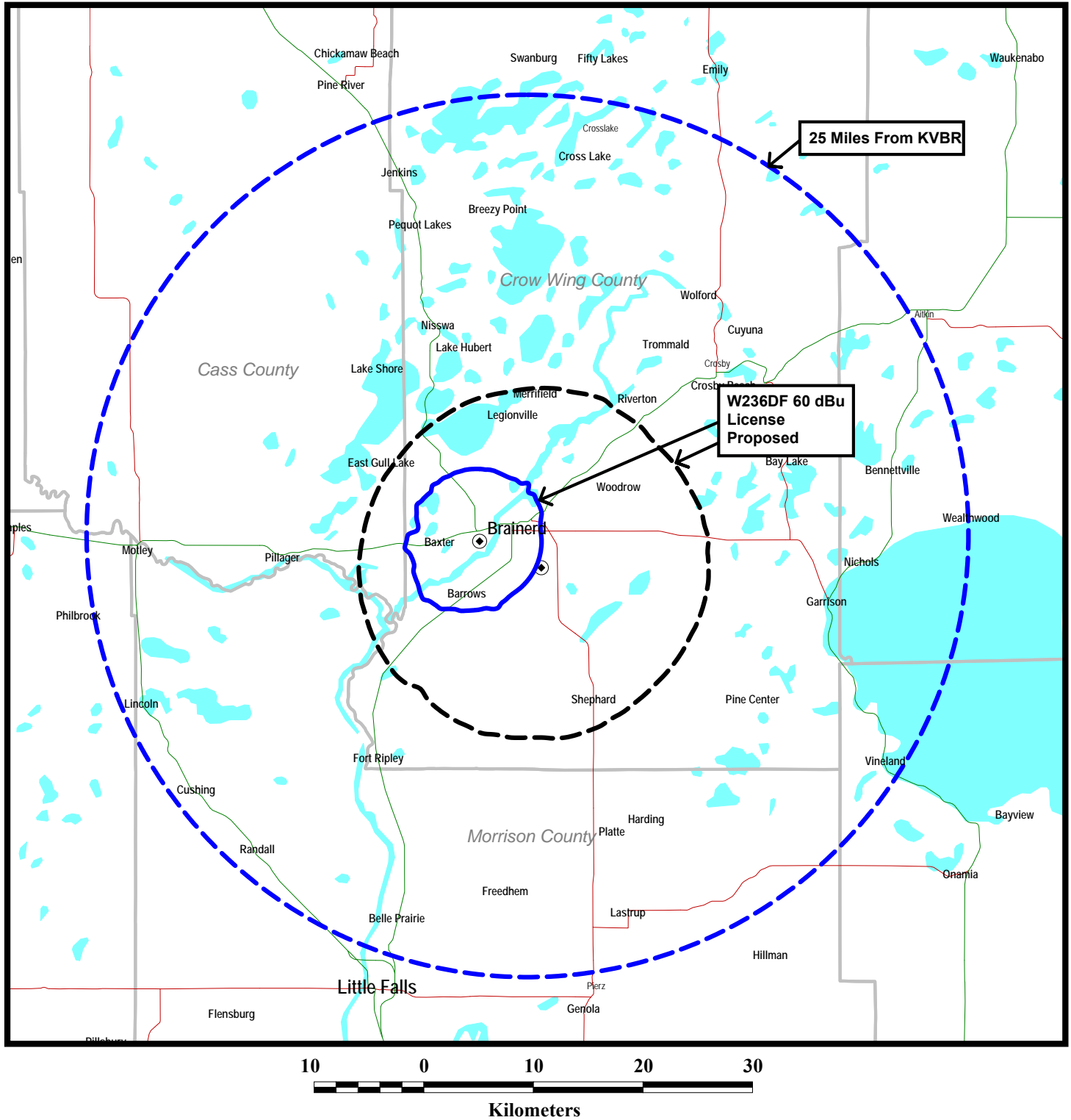
3. Section 74.1204 Compliance: Figure 2 is an allocation study for channel 236 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (165 meters) and ERP (0.25 Watts) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. As indicated on Figure 2, there are no stations of concern.

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed Bext model TFC2K, 2-bay full-wavelength spaced antenna will be located 138.7 meters above ground level. The total ERP is 0.5 kW (horizontal+vertical polarizations). A worst-case vertical plane relative field value of 1.0 is presumed for the antenna's downward radiation (for angles below 60 degrees downward). The calculated power density at a point 2 meters above ground level is 0.89 uW/cm^2 which is only 0.45% of the FCC's recommended limit of 200 uW/cm^2 for FM frequencies for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site is restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing,

reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



AM FILL-IN COMPLIANCE MAP

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du Treil, Lundin & Rackley, Inc. Sarasota, Florida

FM Contour Study LMS

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Channel: 236 **Coordinates:** 046-19-19 094-09-56 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 165 m **Considering Only Interference Caused**

Comment: Proposed W236DF

Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
K234CQ	234	FX	L2C	94.7	STAPLES	MN	US	C	46-23-42.9	62.11	14.63	47.48
142821	BLANK	BLFT-20151105A	D	NDI		0.25			094-57-56.1	277.85	CLEAR	
K234CQ 60.0 dBu desired distance: 13.5 km						Proposed 100.0 dBu undesired distance: 1.1 km						
KMXK	235	FM	L2C	94.9	COLD SPRING	MN	US	C	45-23-52.8	104.59	79.06	25.53
73146	BLANK	BLH-19900206K	C2	NDI		50	150		094-25-15.9	190.99	CLEAR	
KMXK 60.0 dBu desired distance: 53.9 km						Proposed 54.0 dBu undesired distance: 25.1 km						
W236DF	236	FX	L2C	95.1	BRAINERD	MN	US	C	46-20-37	6.14	74.75	-68.61
201194	BLANK	0000156874	D	NDI		0.101			094-14-20	293.19	SHORT	/1
W236DF 60.0 dBu desired distance: 21.0 km						Proposed 40.0 dBu undesired distance: 53.8 km						
W237EU	237	FX	L2C	95.3	ST. CLOUD	MN	US	C	45-33-36	84.71	41.27	43.44
201088	BLANK	BLFT-20190816A	D	NDI		0.25			094-08-21	178.61	CLEAR	
W237EU 60.0 dBu desired distance: 16.2 km						Proposed 54.0 dBu undesired distance: 25.1 km						
KBEK	238	FM	L2C	95.5	MORA	MN	US	C	45-44-32.8	88.58	42.31	46.27
31613	BLANK	BLH-19950522K	C3	NDI		25	100		093-22-48.8	136.46	CLEAR	
KBEK 60.0 dBu desired distance: 41.2 km						Proposed 100.0 dBu undesired distance: 1.1 km						
KKWS	290	FM	MOD	105.9	WADENA	MN	US	C	46-35-58.9	64.41	22	42.41
28650	BLANK	BMLH-20020411	C1	OT		100	171		094-54-05.1	298.99	CLEAR	

/1 Licensed W236DF operation.