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**Proposed Translator  
Channel 252D at Havre, MT  
To Rebroadcast KOJM(AM) 610 kHz Havre, MT  
March 2018**

**Allocation Study**

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. There are no stations close enough to require detailed allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204. A cochannel study map is included, however, to demonstrate that the 34 dBu F(50,10) contour does not overlap any Canadian territory.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

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SEARCH PARAMETERS                                     FM Database Date: 180316
Channel: 252A      98.3 MHz                               Page 1
Latitude: 48 34 50
Longitude: 109 39 1
Safety Zone: 50 km
Job Title: HAVRE 252
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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
	CYPRESS HILLS SK -		251A 98.1	0.000 0.0	49-39-25 109-30-45	4.7	120.13 22.13	98 CLEAR
	MEDICINE HAT AB RM-		252A 98.3	0.000 0.0	50-02-46 110-37-08	337.1	177.56 26.56	151 CLEAR
	MEDICINE HAT AB RM-		252A 98.3	0.000 0.0	50-04-36 110-47-40	333.9	186.02 35.02	151 CLEAR
	MEDICINE HAT AB -		252A 98.3	0.000 0.0	50-04-36 110-47-40	333.9	186.02 35.02	151 CLEAR
NEW-T APP	HAVRE MT BNPFT-80125ACD		252D 98.3	0.250 0.0	48-34-50 109-39-01	0.0	0.00 0.00	0 TRANS

===== END OF FM SPACING STUDY FOR CHANNEL 252 =====

US-Canada Border

New 252D Havre  
34 dBu F(50,10)

LIBERTY

JOPLIN

RUDYARD

GILDEORD

KREMLIN

HILL

HAVRE  
SADDLE BUTTE

CHINOOK

HARLEM

FORT BELKNAP AG

BLAINE

BOX ELDER

ROCKY BOY WEST

AZURE

SANGREY

ROCKY BOY'S AGENCY

ST. PIERRE

BIG SANDY

LOMA

CHOUTEAU

FORT BENTON

CARTER

HIGHWOOD

GERALDINE

CASCADE

HAYS

PHILLIPS

Havre 252D Cochannel Study Map

0 20 40 60

Kilometers

Hatfield & Dawson

3/2018

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## Facilities Proposed

The proposed operation will be on Channel 252D (98.3 MHz) with an effective radiated power of 250 watts. Operation is proposed with a 4-element circularly-polarized omni-directional half-wave-spaced antenna. The antenna will be side-mounted on an existing tower located at the KOJM studio.

The proposed antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

An auxiliary antenna for KPQX(FM) currently occupies this tower space (see FCC File No. BLH-19950623KA). The KPQX auxiliary antenna will be replaced with a broadband antenna, to be used on a frequency-agile basis, i.e. without a combiner. The FM translator will become the primary user of the antenna system. When needed as an emergency backup by KPQX, operation of the FM translator will be temporarily curtailed.

## RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

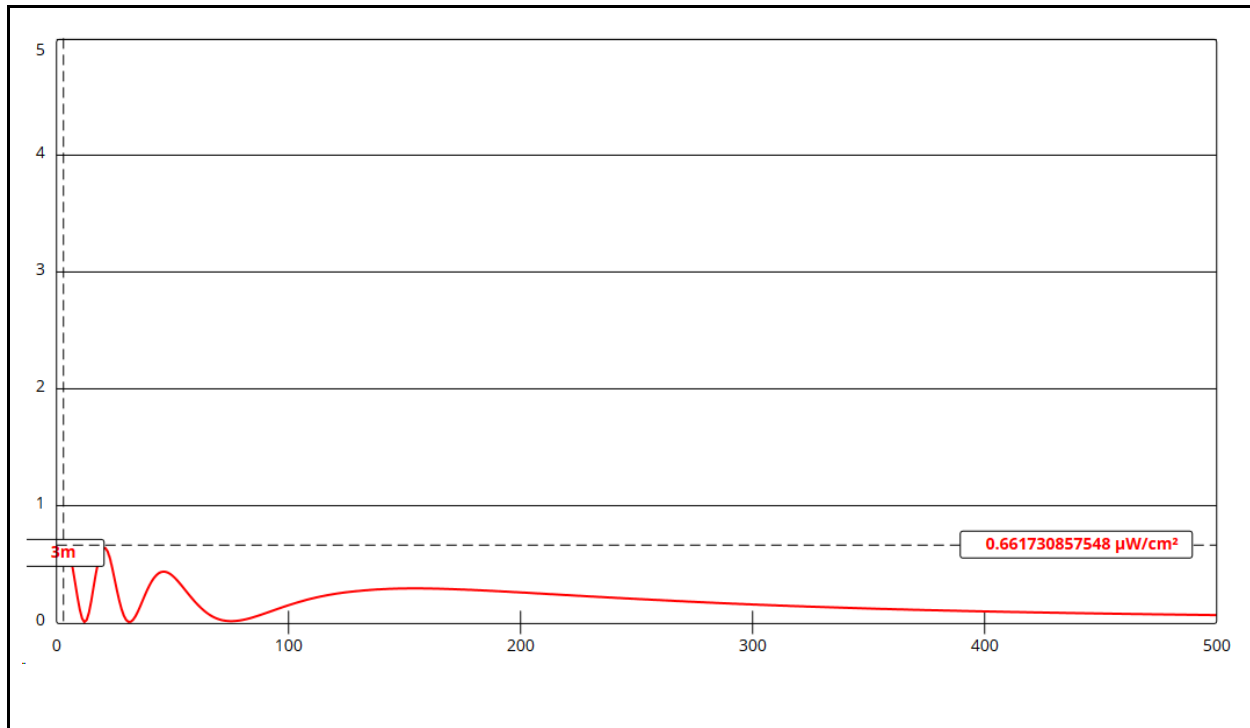
*D* is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 2 element pattern, which is the element pattern for the Nicom BKG77-4 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 3 meters from the base of the antenna support structure. At this point the power density is calculated to be  $0.7 \mu\text{W}/\text{cm}^2$ , which is 0.4% of  $200 \mu\text{W}/\text{cm}^2$  (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.



## Ground-Level RF Exposure

OET FMModel

### Havre 252D

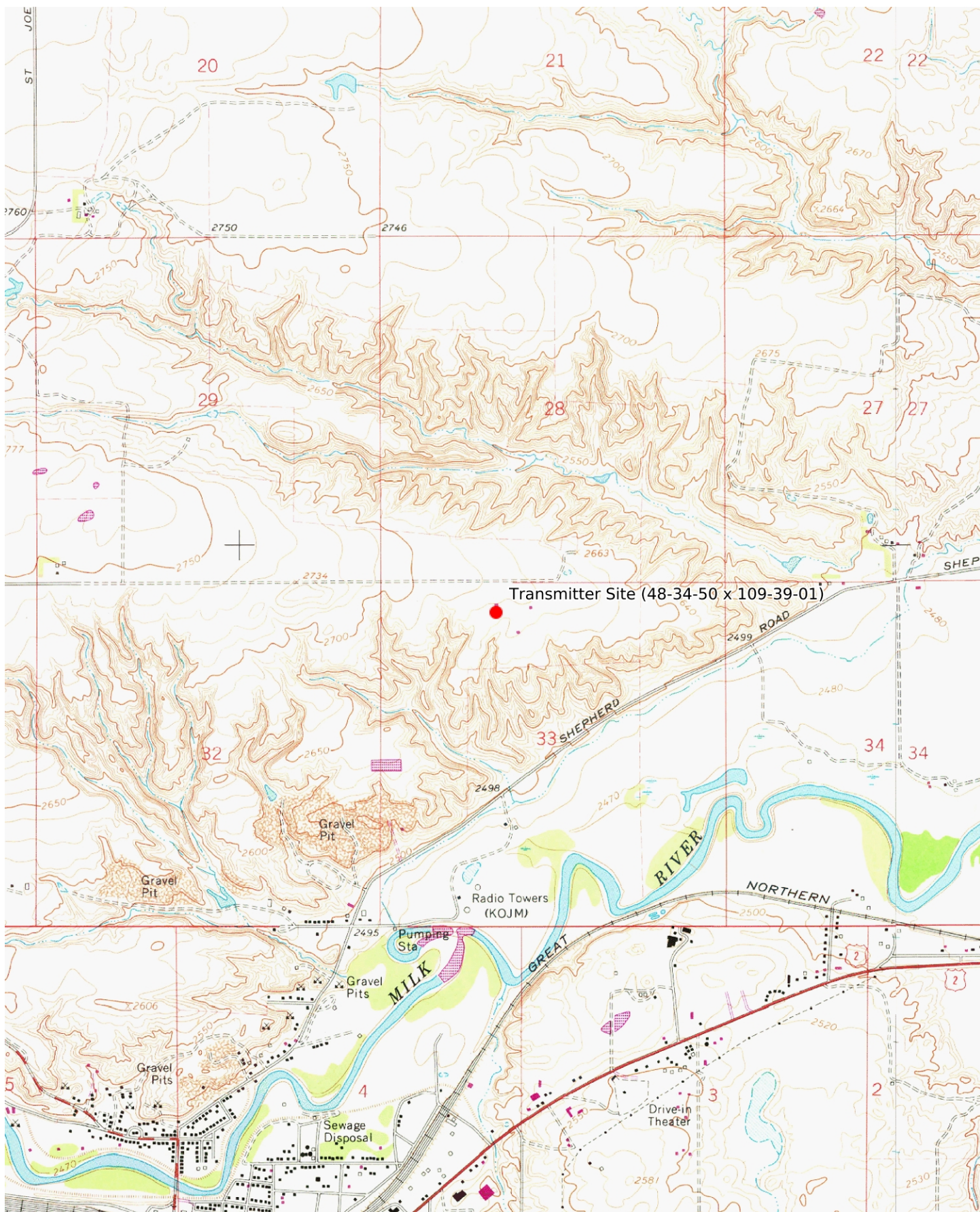
Antenna Type: Nicom BKG77-4 (Type 2)  
 No. of Elements: 4  
 Element Spacing: 0.85 wavelength

Distance: 500 meters  
 Horizontal ERP: 250 W  
 Vertical ERP: 250 W

Antenna Height: 25 meters AGL

Maximum Calculated Power Density is 0.7  $\mu\text{W}/\text{cm}^2$  at 3 meters from the antenna structure.





Mercator Projection  
NAD27 Conus  
USNG 12UWU-12UXU  
CalTopo.com

0.5 1.0 1.5 2.0 2.5 km  
0.5 1.0 1.5 mi  
Scale 1:24000 1 inch = 2000 feet

