

THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE
ERIK C. SWANSON, PE

THOMAS S. GORTON, PE

JAMES B. HATFIELD, PE
BENJAMIN F. DAWSON III, PE
CONSULTANTS

HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

TELEPHONE (206) 783-9151
FACSIMILE (206) 789-9834
E-MAIL hatdaw@hatdaw.com

MAURY L. HATFIELD, PE
(1942-2009)
PAUL W. LEONARD, PE
(1925-2011)

**Proposed Translator
Channel 248D at Juneau, AK
To Rebroadcast KJNO(AM) 630 kHz Juneau, AK
May 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 cochannel or adjacent-channel stations close enough to warrant the inclusion of detailed allocation study maps to demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

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.

The attached map of the 34 dBu F(50,10) contour demonstrates compliance with the US-Canada FM Agreement in that this contour does not overlap any Canadian territory.

Other Translators

FM translator K257CN currently rebroadcasts the programming of KJNO(AM) at Juneau, and operates from the same transmitter site as specified in this application for a new FM translator on Channel 248D. There will be more than 50% overlap of the two translators' 60 dBu contours, and therefore the proposed translator and K257CN would be considered to serve "substantially the same area". Alaska Broadcast communications commits to changing the input for K257CN to

another station, no later than the commencement of operations with the translator facility specified herein.

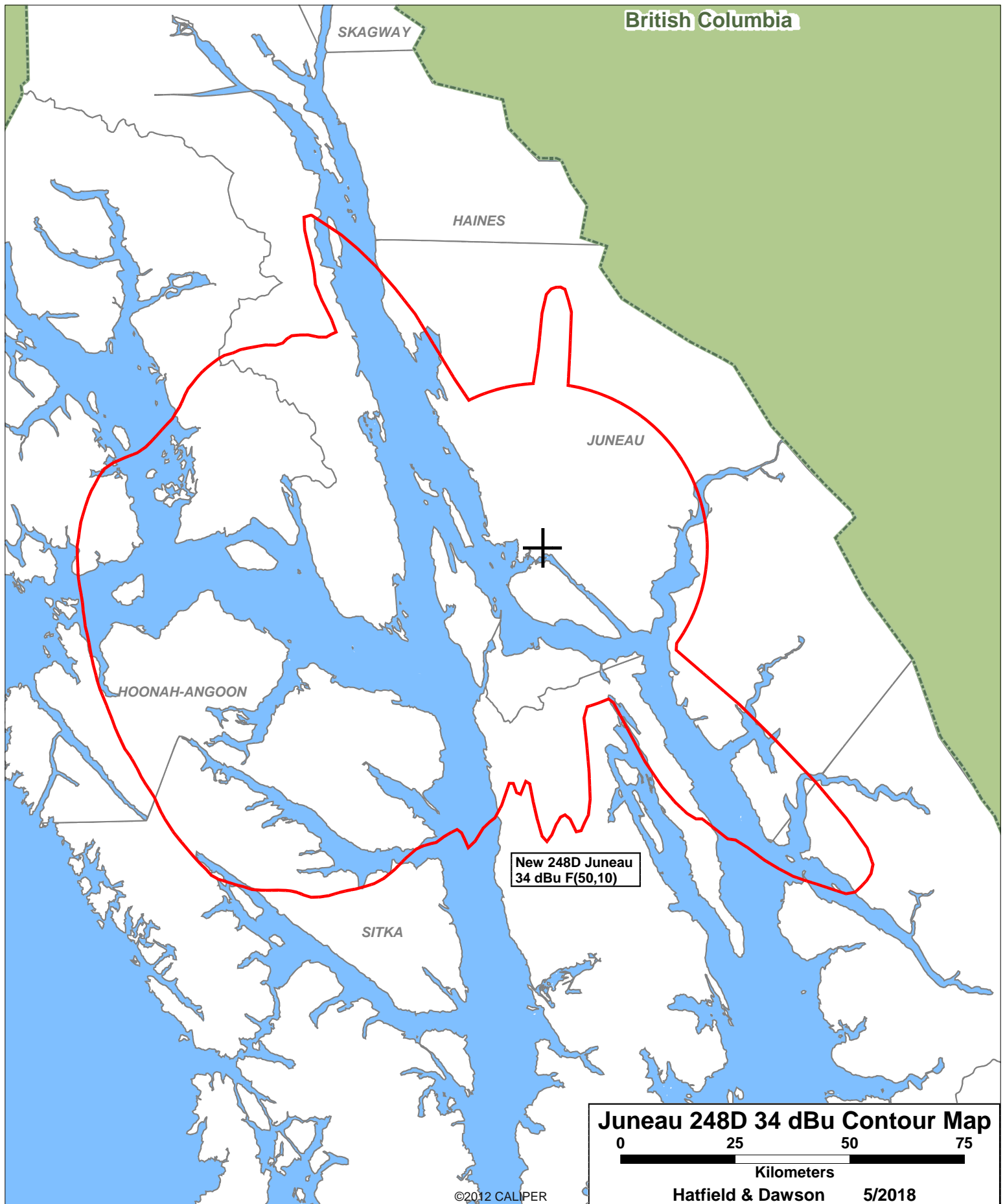
(It should be noted that K257CN was not moved into Juneau under a Mattoon waiver, nor under at “250 mile modification”, and thus is free to be changed to another station as its input.)

=====

SEARCH PARAMETERS	FM Database Date: 180504
Channel: 248A 97.5 MHz	Page 1
Latitude: 58 22 11	
Longitude: 134 33 8	
Safety Zone: 50 km	
Job Title: JUNEAU 248	

Call	City	Channel	ERP(kW)	Latitude	Bearing	Dist	Req
Status	St	FCC File No.	Freq. HAAT(m)	Longitude	deg-True	(km)	(km)
NEW-T	JUNEAU	248D	0.250	58-19-47	133.3	6.50	0
APP	AK BNPFT-80125ACN	97.5	0.0	134-28-17		0.00	TRANS

===== END OF FM SPACING STUDY FOR CHANNEL 248 =====



Facilities Proposed

The proposed operation will be on Channel 248D (97.5 MHz) with an effective radiated power of 250 watts. Operation is proposed with an antenna mounted on an existing tower on Heintzelman Ridge, with FCC Antenna Structure Registration Number 1220012, duplexed with FM translator K257CN.

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.

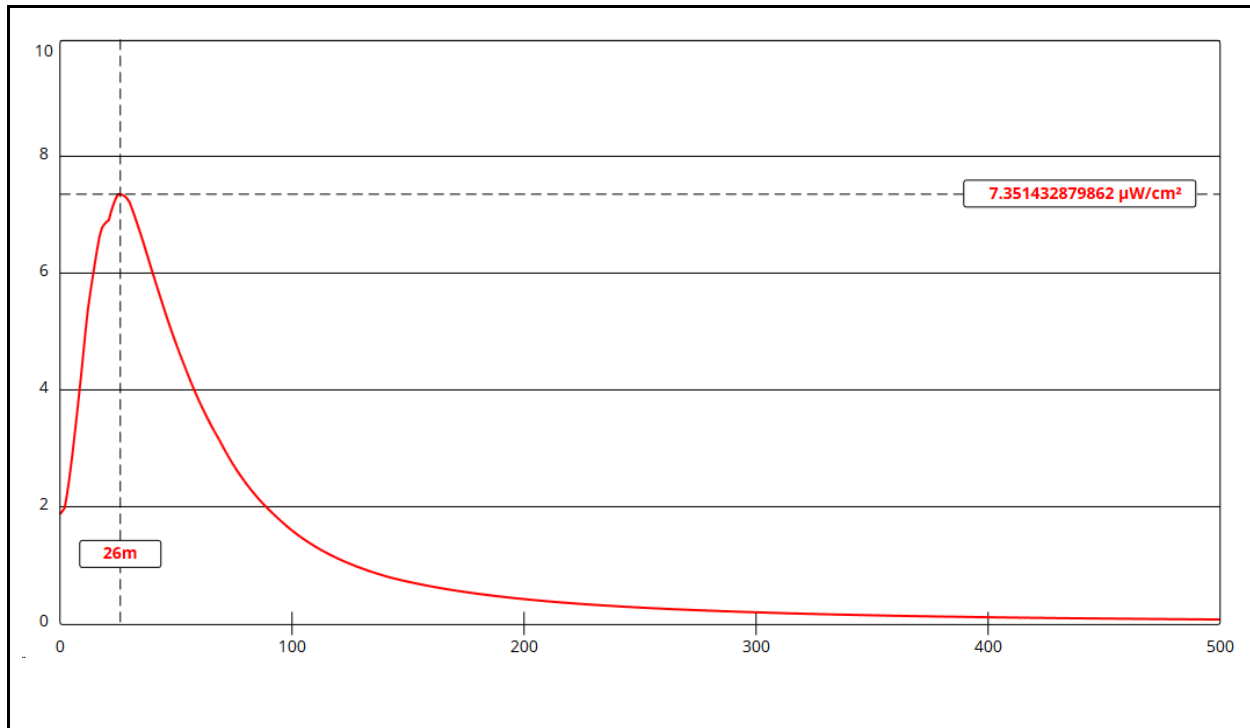
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

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 BKG77-1 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 26 meters from the base of the antenna support structure. At this point the power density is calculated to be 7.4 $\mu W/cm^2$, which is 3.7% of 200 $\mu W/cm^2$ (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

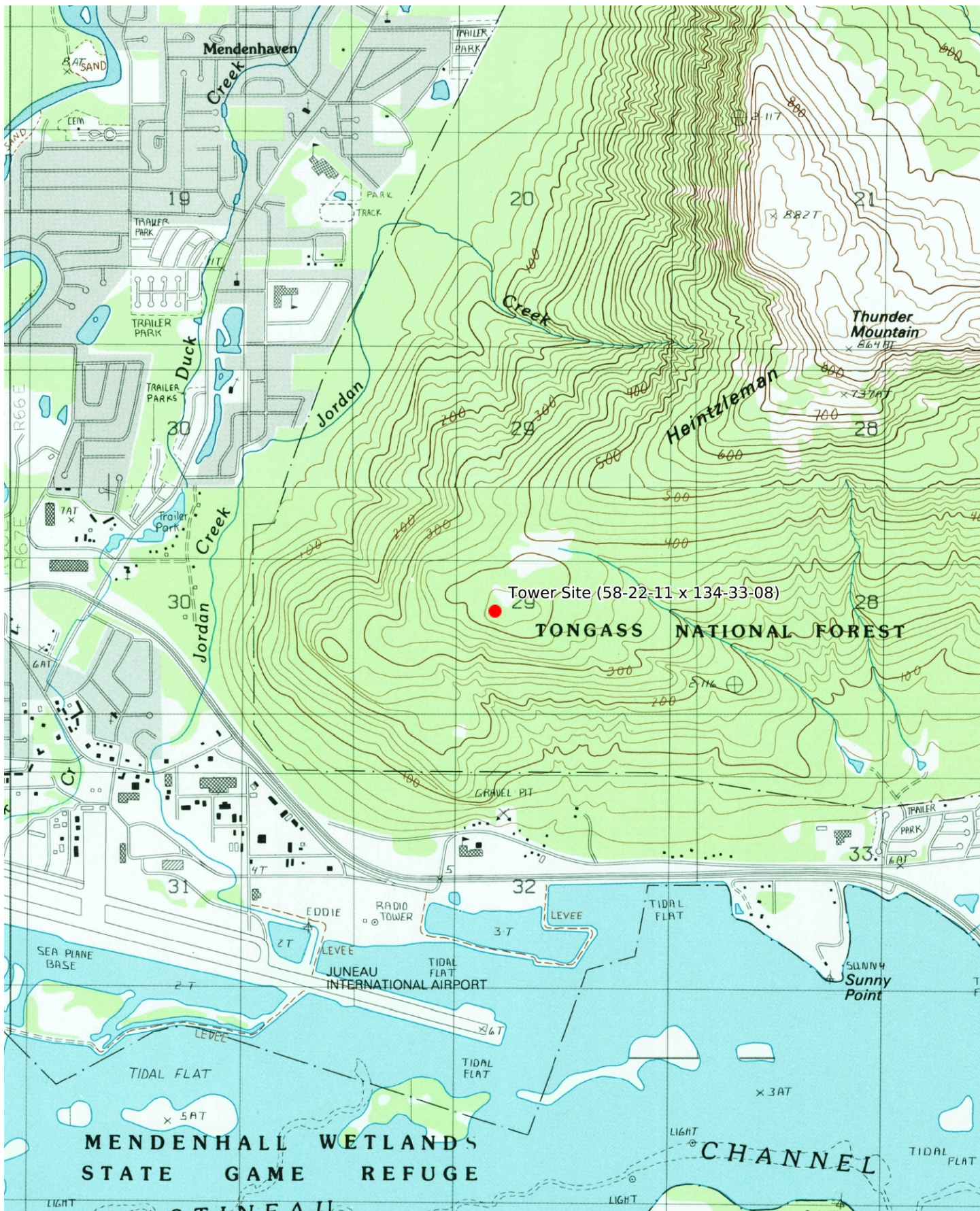
Juneau 248D

Antenna Type: Nicom BKG77-1 (Type 2)
No. of Elements: 1
Element Spacing: 1.0 wavelength

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

Antenna Height: 27 meters AGL

Maximum Calculated Power Density is 7.4 $\mu\text{W}/\text{cm}^2$ at 26 meters from the antenna structure.



Mercator Projection
NAD27 Conus
USNG Zone 8VNK
CalTopo

