

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of CHRISTIAN BROADCASTING, INC., licensee of FM translator station K202CB, Channel 202D in Palmer, Alaska, in support of its Application for Construction Permit to specify a new transmitter site. In addition, the station is being displaced by an adjacent-channel full-service station authorization and, as a result, requests a new operating frequency.

Due to the recent grant of a power increase authorization to KRUA(FM), Channel 201A in Anchorage, Alaska (LMS-0000087737), significant interference to and from licensed K202CB is predicted to occur. In Exhibit B, we have plotted the predicted 60 dBu service contour of the KRUA construction permit and the licensed 54 dBu adjacent-channel interference contour from the presently licensed K202CB facility. As shown, significant overlap of the contours will exist. Therefore, K202CB is being displaced. A search of the FM reserved band spectrum in Palmer reveals that Channel 214D (90.7 MHz) is available for use for K202CB and operation on this new channel is requested herein.

It is proposed to mount a 1-bay circularly polarized antenna on the tower of KJLP(FM), the station for which K202CB is a fill-in translator. The antenna will be mounted in the aperture of KJLP and KJLP will be diplexed into the new antenna. The antenna radiation center will be located at the 11-meter level of the existing 29-meter tower. The proposed effective radiated power will be 250 watts. As a result, these operating parameters mirror those of KJLP, and the contours of KJLP and proposed K202CB will be identical. The K202CB service contour cannot (and does not) extend beyond that of its main station, KJLP, which means that this facility meets the requirements of a fill-in translator.

EXHIBIT A

Exhibit C-1 is a map upon which the new predicted 60 dBu service contour is plotted. In Exhibit C-2, we have plotted the licensed and proposed service contours of translator K202CB. As shown, there is significant overlap between the two contours, meaning that this change in transmitting location can be considered a minor change.

The proposed facility meets the FCC's contour protection requirements to all facilities except to two second-adjacent-channel FM stations, as shown in Exhibit D. As a result, a waiver of the Commission's interference rules with respect to these two stations is requested and believed to be justified based on the rationale described in Exhibit D.

A power density calculation appears as Exhibit E, and the proposed antenna's elevation pattern is provided in Exhibit F.

Since no change in the overall height or location of the existing KJLP tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, due to the diminutive height of the tower and its proximity to the nearest airport runways, FCC antenna structure registration is not required. This conclusion is supported by the Commission's TOWAIR software.

I declare under penalty of perjury that the foregoing statements and the attached exhibits are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is stylized and written in a cursive-like font.

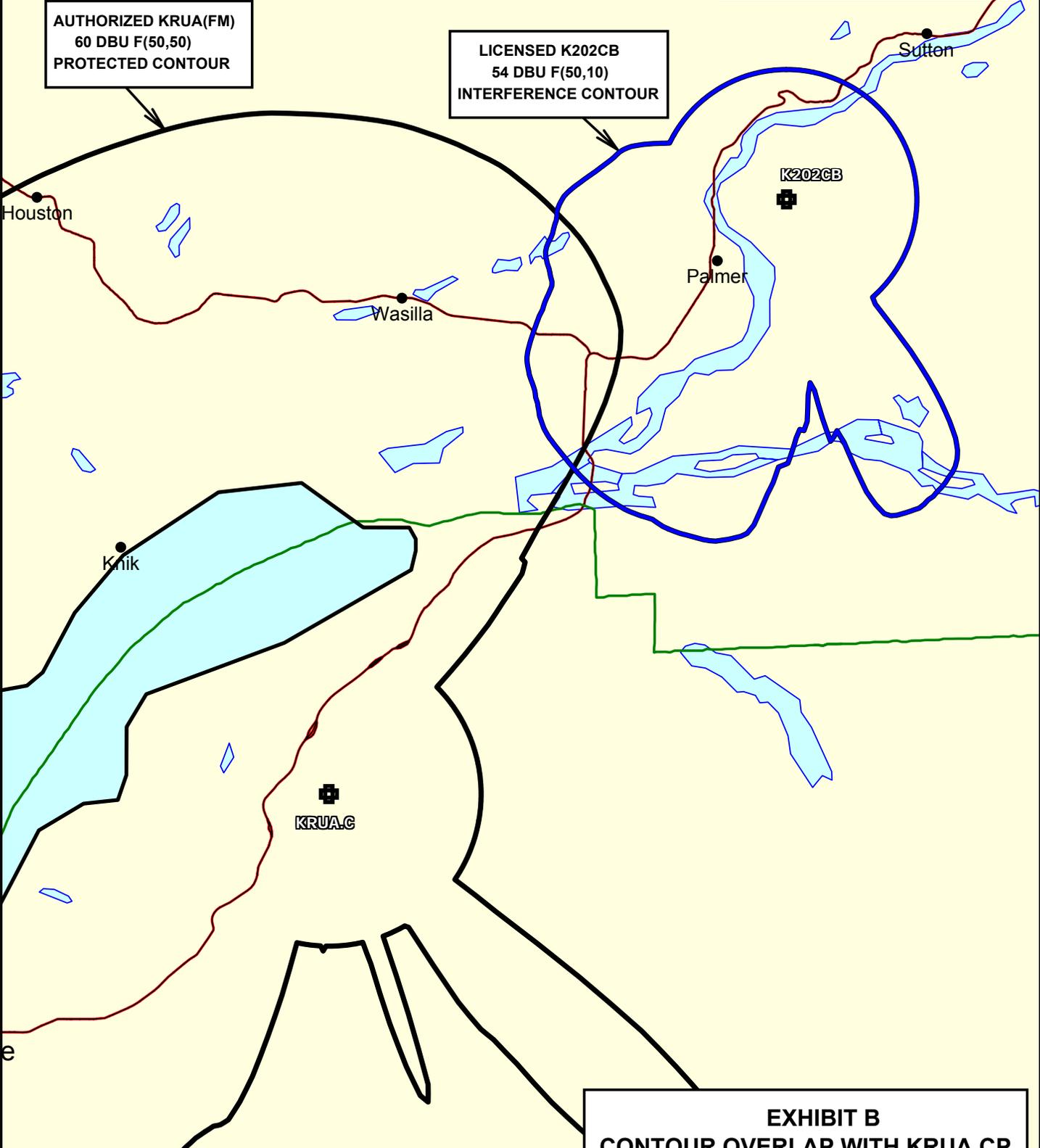
July 21, 2020

KEVIN T. FISHER



**AUTHORIZED KRUAFM
60 DBU F(50,50)
PROTECTED CONTOUR**

**LICENSED K202CB
54 DBU F(50,10)
INTERFERENCE CONTOUR**



**EXHIBIT B
CONTOUR OVERLAP WITH KRUAFM CP
LICENSED K202CB
CHANNEL 202D - PALMER, ALASKA**

CONTOUR POPULATION
2018 U.S. CENSUS ESTIMATE
36,052 (11,409 HOUSEHOLDS)



PROPOSED K202CB
60 DBU F(50,50)
PROTECTED CONTOUR

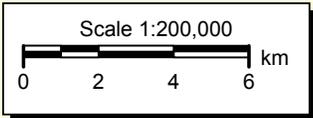
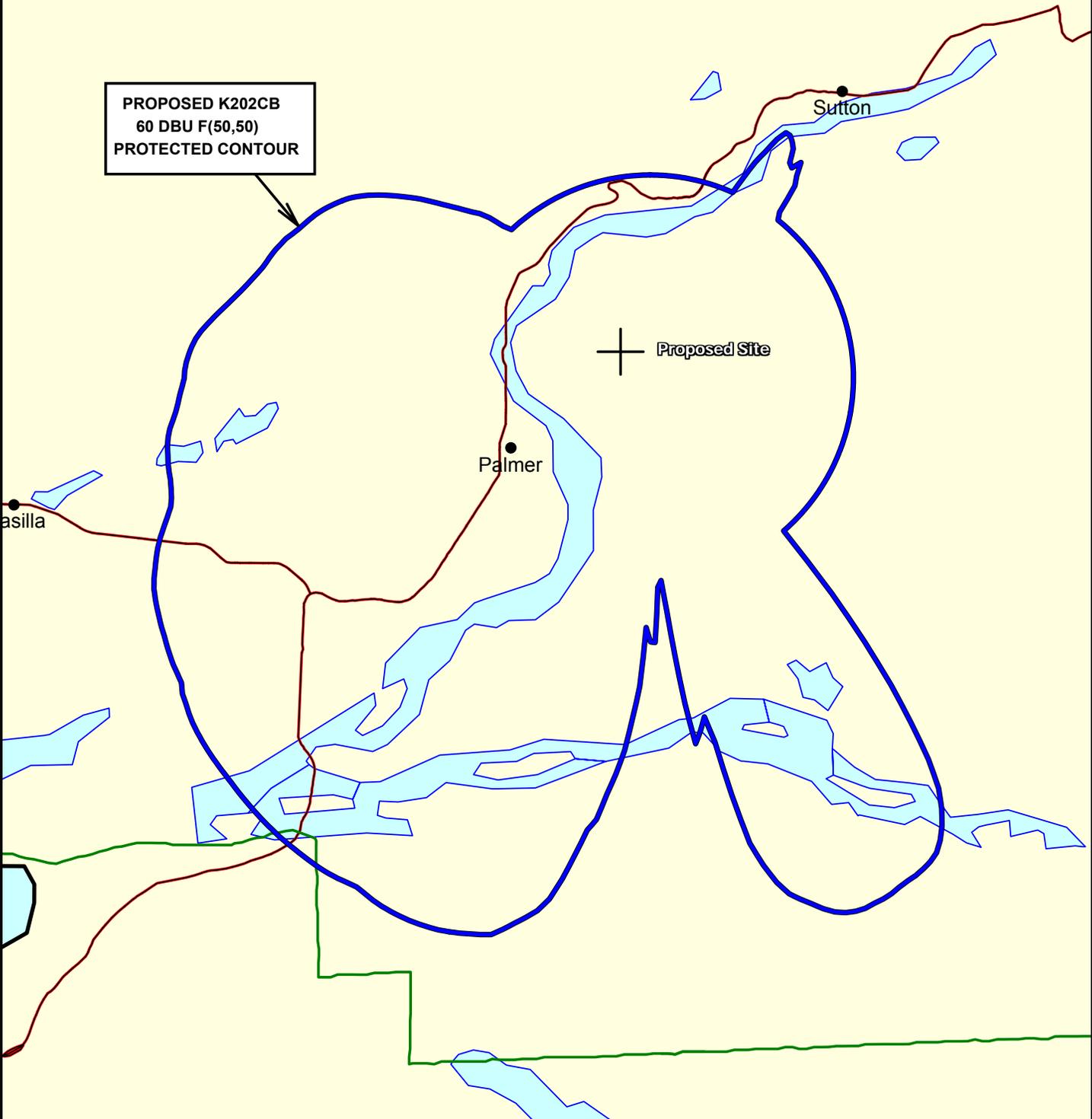


EXHIBIT C-1
PREDICTED SERVICE CONTOUR
PROPOSED TRANSLATOR K202CB
CHANNEL 214D - PALMER, ALASKA



**PROPOSED K202CB
60 DBU F(50,50)
PROTECTED CONTOUR**

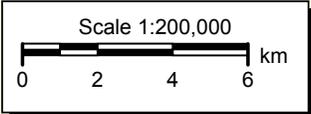
Proposed Site
+
K202CB

Palmer

Sutton

Asilla

**LICENSED K202CB
60 DBU F(50,50)
PROTECTED CONTOUR**



**EXHIBIT C-2
CONTOUR OVERLAP SHOWING
PROPOSED TRANSLATOR K202CB
CHANNEL 214D - PALMER, ALASKA**

CONTOUR PROTECTION STUDY AND
REQUEST FOR WAIVER OF SECOND-ADJACENT-CHANNEL SPACING RULE
PROPOSED TRANSLATOR K202CB
CHANNEL 214D – PALMER, ALASKA

The K202CB facility described herein meets the Commission's contour protection requirements to all co-channel and adjacent-channel full-power, low-power and translator stations (authorized and proposed), except in two instances, as shown in Exhibit D-2.

The proposed site is located 66.5 kilometers from that of KNBA(FM), Channel 212C1 in Anchorage, Alaska, and 65.5 kilometers from that of KSKA(FM), Channel 216C1 in Anchorage. Since the proposed K202CB site on Channel 214D is located within the predicted 60 dBu service contours of both stations, a waiver of the Commission's spacing rules with regard to KNBA and KSKA is respectfully requested and believed to be justified for the reasons stated below.

In supporting our waiver request, we utilized the Longley-Rice coverage methodology in order to determine the signal strength of KNBA and KSKA at the proposed site. In doing so, we employed a very fine-grain analysis, using a cell size of 500 meters and an increment spacing of 100 meters along with the Alaska 3-meter terrain database. It is important to note that the Commission allows the use of Longley-Rice analyses very sparingly. In the case of K202CB, a search of the reserved band in the Palmer, Alaska area reveals no other possible channel to which K202CB can be moved. In addition, the Longley-Rice analysis is being used to reduce the interference contour of proposed K202CB by showing a more accurate depiction of the KNAB and KSKA receive signals in the vicinity of the proposed K202CB transmitter site.

In Exhibit D-3, we have plotted the proposed K202CB site in relation to the 92.9 dBu Longley-Rice-based coverage of both KNAB and KSKA. In Exhibit D-4, we provide from that study tabulations of

EXHIBIT D-1

the signal strength for both of these stations at the proposed K202CB site. For the sake of calculation, we will assume that KNAB and KSKA provide a 92.9 dBu signal level at the proposed K202CB site.

Based on the 40 dB desired-to-undesired ratio applied to second-adjacent-channel situations such as this, the proposed translator's 132.9 dBu interference contour with respect to KNAB and KSKA extends only 25 meters from the antenna.

Finally, we have conducted an analysis within 25 meters of the proposed site and find there to be no residences or businesses within the interference zone. Therefore, operation of the proposed translator does not cause any predicted interference to anyone living in the area surrounding the transmitter site. A map showing the area within the 25-meter interference contour is provided in Exhibit D-5.

As a result, a waiver of the FCC's 2nd-adjacent-channel spacing Rule with regard to KNAB(FM) and to KSKA(FM) is respectfully requested and believed to be justified.

PROPOSED K202CB
 CHANNEL 214D - PALMER, ALASKA

REFERENCE CH# 214D - 90.7 MHz, Pwr= 0.25 kW, HAAT= -64.0 M, COR= 276 M DISPLAY DATES
 61 37 16.1 N. Average Protected F(50-50)= 7.09 km DATA 07-12-20
 149 01 24.0 W. Omni-directional SEARCH 07-13-20

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*
212C1 Anchorage	KNBA	LIC AK	---	244.3 63.5	50.42 BLED19961025KF	61 25 20.0 149 52 28.0	100.000 195	8.8 229	66.5 Koahnic Broadcast Corporat	19.9	-17.2*
216C1 Anchorage	KSKA	LIC AK	---	244.3 63.5	50.42 BLED19980108KB	61 25 20.0 149 52 28.0	100.000 188	8.6 218	65.5 Alaska Public Telecom., In	20.1	-16.2*
213C3 Glennallen	KXGA	LIC AK	---	68.8 251.3	159.39 BLED19970813KD	62 06 29.2 146 10 32.8	3.200 229	97.6 941	66.0 Terminal Radio, Inc.	40.1	61.2
06--- Anchorage	KNIK-LP	LI AK	DHN	214.1 33.5	66.49 BLTVL-19990914AAI	61 07 32.0 149 42 57.8	0.920	8.0 449	7.0	15.1R	51.4M

Terrain database is USGS 03 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.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

 > 92.9 dBuV/m



Palmer

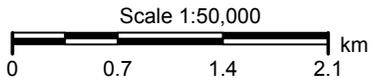


EXHIBIT D-3
KNAB AND KSKA SIGNAL STRENGTH
AT PROPOSED K202CB SITE
CHANNEL 214D - PALMER, ALASKA

LONGLEY-RICE SIGNAL STRENGTH ANALYSIS OF KNAB AND KSKA
AT PROPOSED K202CB TRANSMITTER SITE

Point Information Report

Latitude: 61-37-18.01 N
Longitude: 149-01-16.05 W

Call Letters: **KNBA**
File Number: BLED-19961025KF
Latitude: 61-25-21.98 N
Longitude: 149-52-20 W
ERP: 100.00 kW
Channel: 212
Frequency: 90.3 MHz
AMSL Height: 229.0 m
Elevation: 35.0 m
HAAT: 195.0 m
Horiz. Antenna Pattern: Omni
Vert. Elevation Pattern: No

Signal Strength: 92.934 dBuV/m
Elevation: 266.363 m

Distance From Transmitter: 50.426 km
Azimuth From Transmitter: 63.55 degrees

Call Letters: **KSKA**
File Number: BLED19980108KB
Latitude: 61-25-21.98 N
Longitude: 149-52-20 W
ERP: 100.00 kW
Channel: 216
Frequency: 91.1 MHz
AMSL Height: 218.0 m
Elevation: 35.0 m
HAAT: 188.0 m
Horiz. Antenna Pattern: Omni
Vert. Elevation Pattern: No

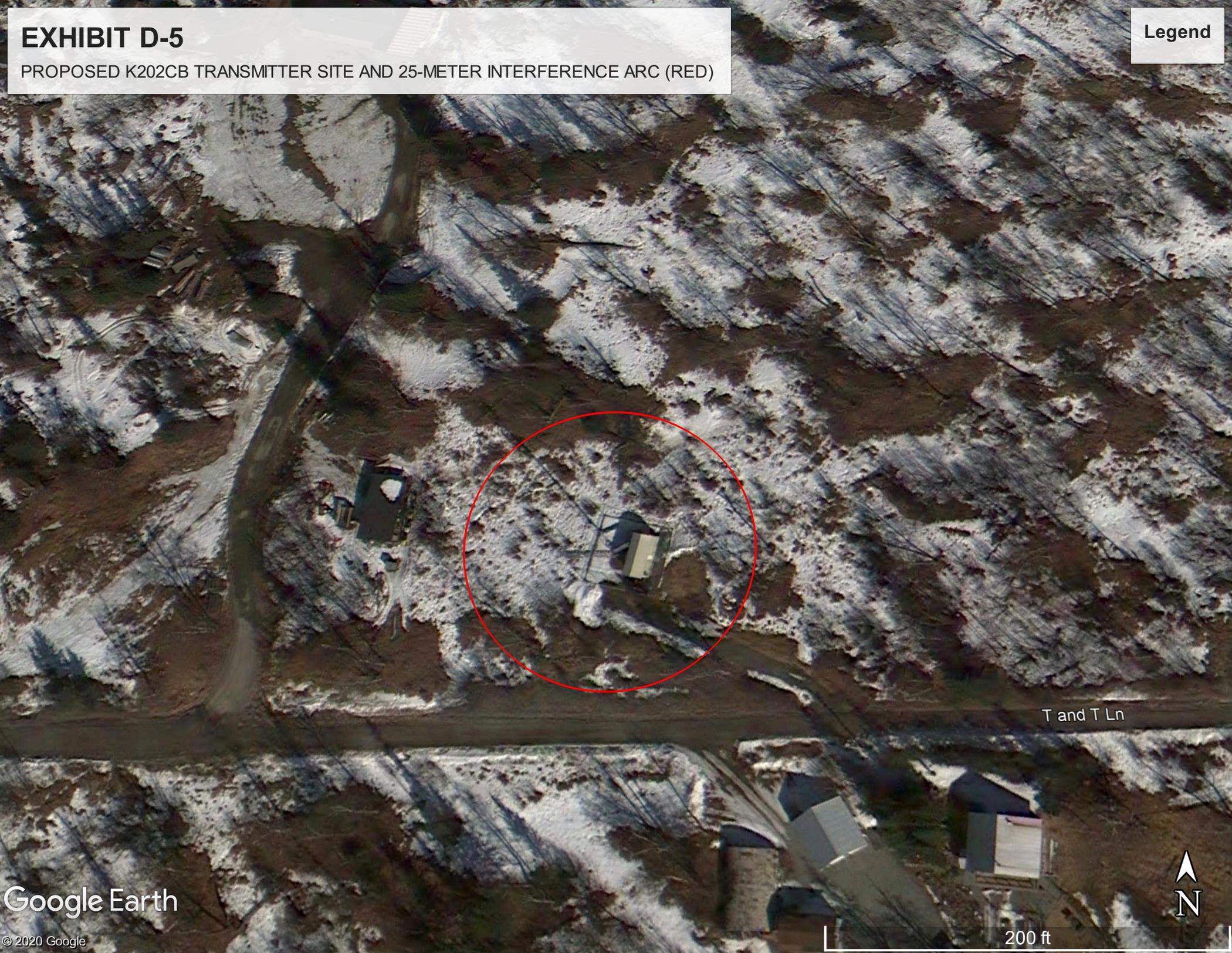
Signal Strength: 92.936 dBuV/m
Elevation: 266.363 m

Distance From Transmitter: 50.426 km
Azimuth From Transmitter: 63.55 degrees

EXHIBIT D-5

PROPOSED K202CB TRANSMITTER SITE AND 25-METER INTERFERENCE ARC (RED)

Legend



T and T Ln



POWER DENSITY CALCULATION
PROPOSED FM TRANSLATOR K202CB
CHANNEL 214D – PALMER, ALASKA

Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 250 watts (H,V), an antenna radiation center 11 meters above ground level and assuming a vertical relative field value of 40 percent at the steeper elevation angles for the proposed antenna, a maximum power density value two meters above ground of 0.033 mW/cm^2 is calculated to occur near the base of the antenna supporting structure. Since this RF value is only 16.5 percent of the 0.20 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the FM band, a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing electromagnetic radiation.

American Amplifier Technologies, LLC
IV-BB 1-Bay Elevation Pattern

