

EXHIBIT 1

TECHNICAL CERTIFICATIONS & EXHIBITS

Minor Modification of K219KU, Nehalem, OR
Cascade Educational Broadcast Service

OVERVIEW

The applicant proposes a minor modification to licensed translator K219KU, Nehalem, OR, moving it to a location within the city of Nehalem.

DETAILS

As shown herein, this proposal complies with all overlap requirements to all other broadcast facilities, and qualifies as a minor change. There are no TV6 or 2nd-adjacent waiver issues.

§74.1235 ERP COMPLIANCE

Distance to Contour Report

Field Strength: 60.00 dBuV/m F(50,50)

Primary Terrain: FCC 30 Second US Database

Azimuth (deg)	Distance (km)	HAAT (m)	Max ERP (W)	Prop. ERP (W)
0.0	5.90	-368.7	250	120
30.0	5.90	-89.1	250	120
60.0	5.90	-150.7	250	120
90.0	5.90	-213.7	250	120
120.0	5.90	-310.2	250	120
150.0	5.90	-278.8	250	120
180.0	5.90	-149.0	250	120
210.0	5.90	10.8	250	120
240.0	5.90	12.9	250	120
270.0	5.90	12.0	250	120
300.0	5.90	-22.1	250	120
330.0	5.90	-138.7	250	120

Average HAAT for radials shown: -140.4 m

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PROTECTED ZONES

The translator's 34 dBu F(50-10) contour does not touch Canada.

Facility is okay with respect to AM station towers.

Closest AM Facility is KTIL, NETARTS, OR, L, DAN at 176.6° at a distance of 29.0 km
Facility is okay with respect to FCC monitoring stations.

METHODOLOGY

All contour calculations were made using the methods and procedures described in 47 CFR §73.313(c). Contours were plotted and areas were calculated using linear interpolation in one-degree increments. FMOver calculations were done using V-Soft FM Commander software, using “HAAT method 0 (zero)”, 51 data points per radial, and the FCC-modified version of the NGDC 30 second terrain database.

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EXHIBIT 1B

TECHNICAL CERTIFICATIONS

INTERFERENCE PROTECTION

This proposal meets the contour overlap requirements with respect to all other broadcast facilities.

<div> <div>K219KU PROP MOD</div> <div>Cascade Educational Broadcast</div> <div>CH# 219D - 91.7 MHz, Pwr= 0.12 kw, HAAT= -140.4 M, COR= 13 M</div> <div>Average Protected F(50-50)= 5.9 km</div> <div>Omni-directional</div> </div> <div> <div>REFERENCE</div> <div>45 43 03.0 N.</div> <div>123 53 38.0 W.</div> </div> <div> <div>DISPLAY DATES</div> <div>DATA 07-28-22</div> <div>SEARCH 08-01-22</div> </div>											
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)	
219D Nehalem	K219KU!	LIC	DCN OR	189.5 9.5	4.90 BLFT20060525ACI	45 40 26.40 123 54 15.50	0.028 160	296	---Reference---	Cascade Educational Broadc	
218C0 Portland	KOPB-FM	LIC	CN OR	103.3 284.1	91.77 BLED20030213AAI	45 31 20.40 122 44 49.40	73.000 470	122.7 561	82.8	Oregon Public Broadcasting	
220C2 Astoria	KMUN	LIC	CN OR	0.5 180.5	60.60 BLED20030707AAM	46 15 45.30 123 53 13.50	7.200 332	76.1 376	51.2	Tillicum Foundation	
216A Tillamook	KTMK	LIC	CN OR	184.3 4.3	28.01 BLED20050728AMH	45 27 58.40 123 55 15.50	0.140 356	0.8 453	20.8	Oregon Public Broadcasting	
272C3 Seaside	KCRX-FM	LIC	CN OR	352.5 172.5	26.38 BLH20170920AAQ	45 57 10.10 123 56 18.40	10.500 122	0.0 265	0.0	11.5R	14.9M
222C Portland	KGON	LIC	CN OR	104.8 285.7	96.61 BLH19900820KF	45 29 19.40 122 41 44.30	100.000 386	11.5 480	79.3	Audacy License, LLC	

Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= west Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

Incoming contour overlap is ignored.

"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

« = Station meets FCC minimum distance spacing for its class.

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EXHIBIT 1C

TECHNICAL CERTIFICATIONS

CONTOUR PROTECTION vs KOPB

K219KU PROP MOD
Cascade Educational Broadcast

FMCommander Single Allocation Study - 08-02-2022 - FCC NGDC 30 Sec
K219KU's Overlaps (In= -36.86 km, Out= 0.55 km)

K219KU CH 219 D
Lat= 45 43 03.00, Lng= 123 53 38.00
0.12 kW -140.4 m HAAT, 13 m COR
Prot.= 60 dBu, Intef.= 88 dBu

KOPB-FM CH 218 C0 BLED20030213AAI
Lat= 45 31 20.40, Lng= 122 44 49.40
73.0 kW 470 m HAAT, 561 m COR
Prot.= 60 dBu, Intef.= 54 dBu

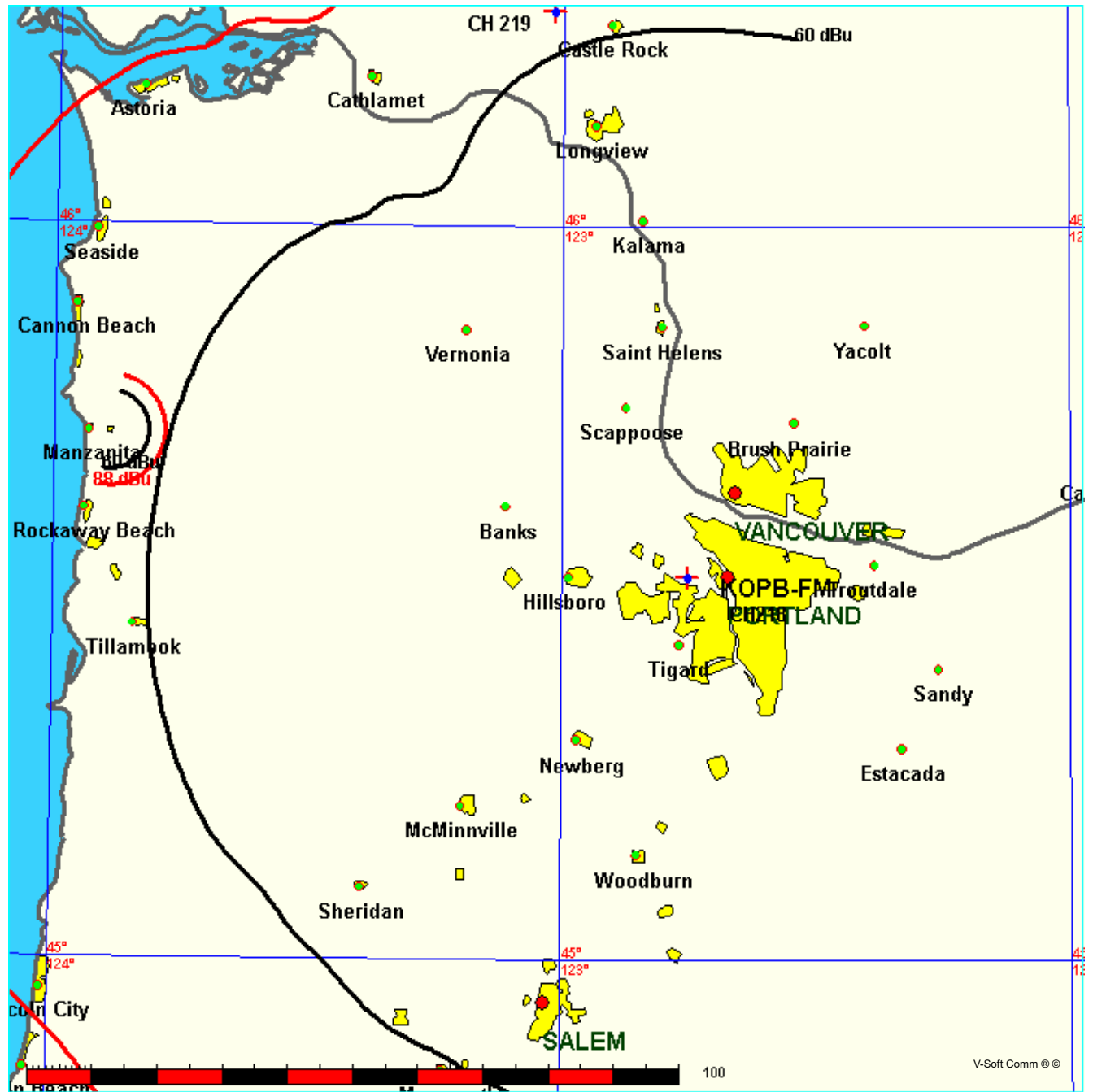


EXHIBIT 1D
TECHNICAL CERTIFICATIONS
CONTOUR PROTECTION vs KMUN

K219KU PROP MOD
Cascade Educational Broadcast

FMCommander Single Allocation Study - 08-02-2022 - FCC NGDC 30 Sec
K219KU's Overlaps (In= -21.31 km, Out= 0.97 km)

K219KU CH 219 D
Lat= 45 43 03.00, Lng= 123 53 38.00
0.12 kW -140.4 m HAAT, 13 m COR
Prot.= 60 dBu, Intef.= 54 dBu

KMUN CH 220 C2 BLED20030707AAM
Lat= 46 15 45.30, Lng= 123 53 13.50
7.2 kW 332 m HAAT, 376 m COR
Prot.= 60 dBu, Intef.= 54 dBu

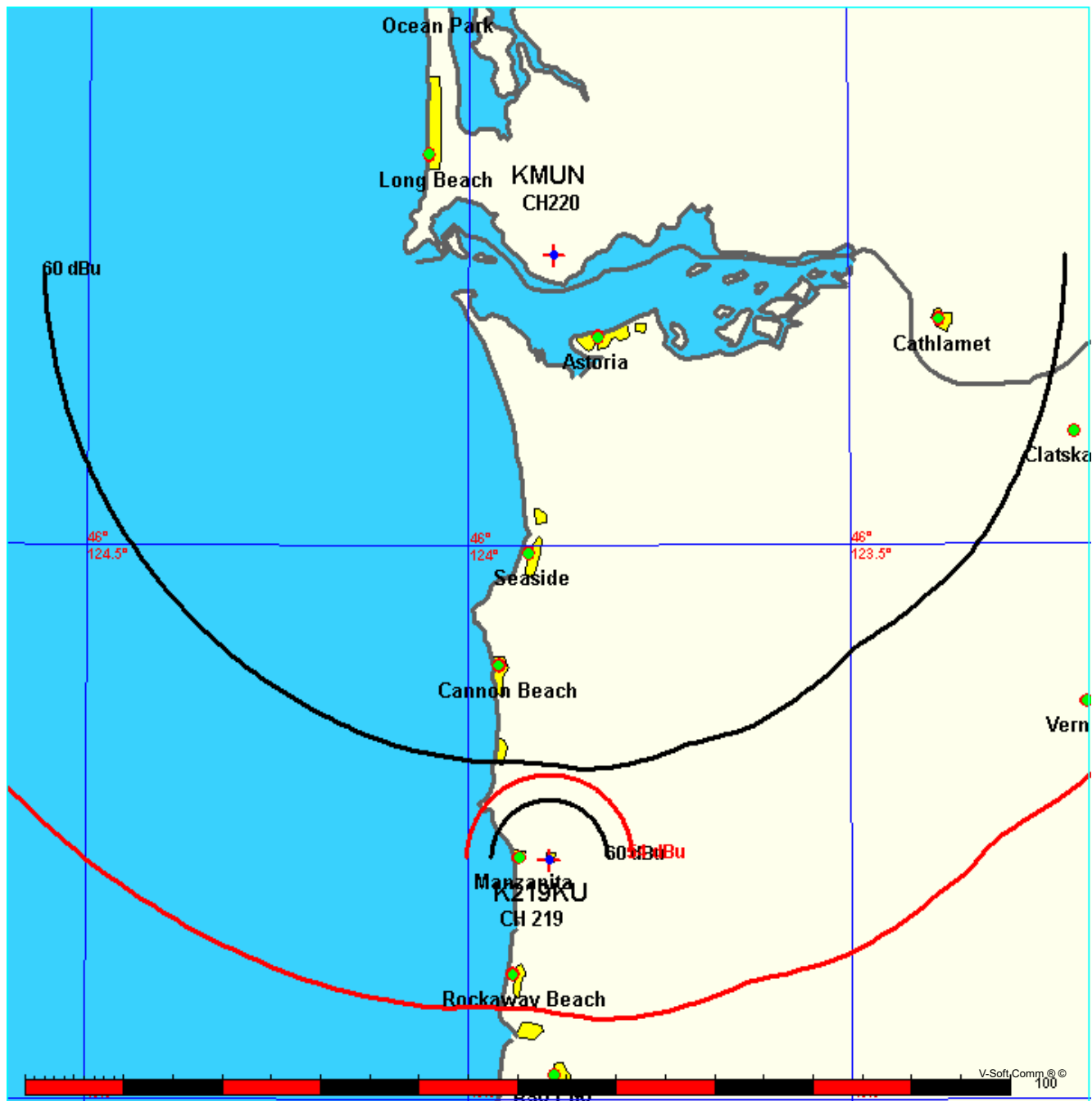


EXHIBIT 1E

TECHNICAL CERTIFICATIONS

ENVIRONMENTAL EFFECTS

This proposal would not have a significant environmental impact, under 47 CFR §1.1307(b). The applicant proposes mounting a 1-bay Bext TFC1k ring-stub "Type 1" antenna on a roof-mounted pipe. The proposed antenna center is 9m AGL, and 7.5m above the uppermost floor of nearby buildings. FM Model predicted a peak exposure of $138.5\mu\text{W}/\text{cm}^2$ at 1.5m horizontally from the pole. This represents 69% of the Maximum Permissible Exposure (MPE) of $200\mu\text{W}/\text{cm}^2$ for uncontrolled environments.

No other sources of RF exposure were found in the area. Persons cannot get closer than 7.5m below the antenna without a bucket lift or other specialized equipment. RF warning signs will be posted at appropriate locations. When authorized work at or near the antenna becomes necessary, the licensee will reduce power or cease operations so that persons are not subjected to RF exposures in excess of the FCC guidelines.

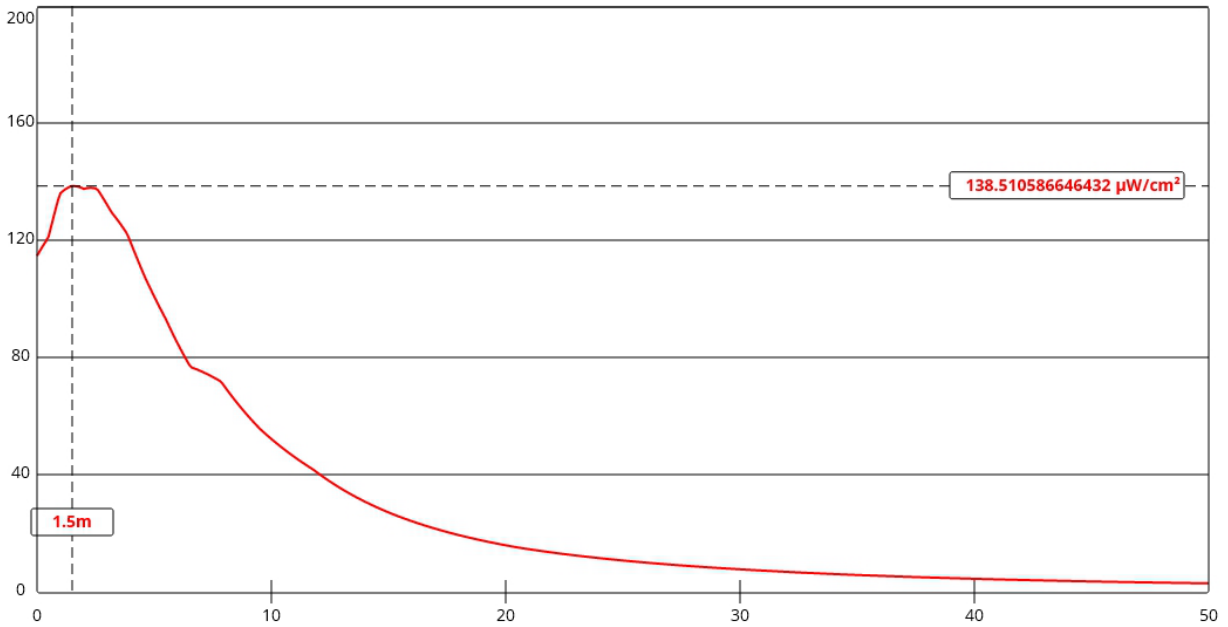
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Channel Selection	Channel 220 (91.9 MHz) ▼		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	<input type="text" value="7.5"/>	Distance (m)	<input type="text" value="50"/>
ERP-H (W)	<input type="text" value="120"/>	ERP-V (W)	<input type="text" value="100"/>
Num of Elements	<input type="text" value="1"/>	λ	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>	<input type="button" value="Apply"/>	

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