

CITY OF LICENSE  
CALL LETTERS  
FACILITY ID  
PREPARED FOR  
VERSION  
JOB

West Haven, OR  
K296FT  
158590  
Metro East Community Media  
1.1  
119008

# **CONSOLIDATED**

# **ENGINEERING EXHIBIT**

FCC Form 349 - Section III-a - Engineering

**BROWN BROADCAST SERVICES**  
INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

**ENGINEERING STATEMENT  
APPLICATION FOR A MINOR MODIFICATION OF  
K296FT, WEST HAVEN, OR  
Metro East Community Media**

**SUMMARY**

The applicant seeks a minor modification of licensed translator K296FT, to increase ERP, change to a directional antenna, and make a slight correction to the antenna height. The location will not change. This facility will provide fill-in service to KQAC-HD3, Portland, OR.

The directional pattern is based on data supplied by the manufacturer, rotated 350 degrees clockwise (or 10dg CCW). Since this antenna is not an “off-the-shelf” FCC standard pattern, the values supplied in Section III-A-10 reflect the actual resultant pattern after rotation.

**Exhibit 10** shows that the proposed 60dBu contour is completely contained within the KQAC contour.

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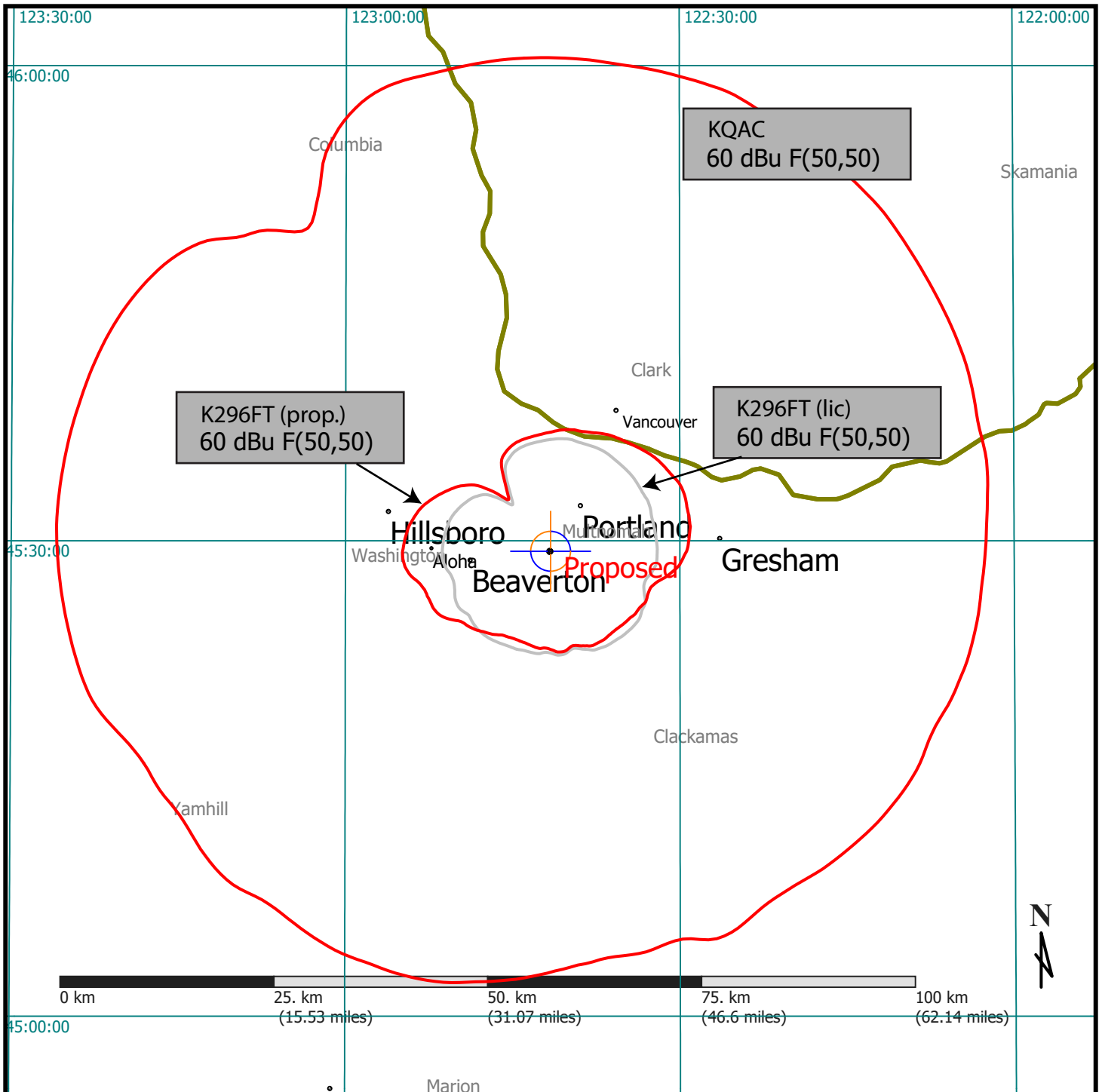
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**Exhibit 10**  
**K296FT Prop. Mod.**  
**vs Primary Station KQAC-HD3**  
**(showing fill-in status)**  
**vs Licensed K296FT**

Brown Broadcast Services, Inc.  
Job: K296FT Feb 2019.fmj  
Master Database: 2019\_Feb\_24.fmd  
Lat: N45:29:21 Lon: W122:41:36 NAD-27  
Scale: 1:666666  
Channel: 296 Class: DX

rfInvestigator Version 3.8.16  
by rfSoftware, Inc.  
Date: 2/28/2019 9:38:09 PM  
Key:

City Grade  
Protected  
Co-Channel  
1st Adj  
2nd/3rd Adj



# EXHIBIT 13

## OVERLAP REQUIREMENTS

This application meets all requirements of 47 CFR §74.1204 regarding interference protection to other stations and authorizations.

K296FT 99W Metroeast Community Media											
REFERENCE		CH# 296D - 107.1 MHz,		Pwr= 0.099 kW DA,		HAAT= 267.7 M,		COR= 354 M		DI SPLAY DATES	
45 29 20.0 N.		Average Protected F(50-50)= 16.9 km		Standard Directional						DATA 02-21-19	
122 41 40.0 W.										SEARCH 02-28-19	
CH CITY	CALL	TYPE STATE	ANT	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)	
294C Lake Oswego	KLTH	LIC C OR		315.2 135.2	4.26 BLH20100416AA0	45 30 58.0 122 43 59.0	100.000 502	12.6 594	86.8 Citi casters Li censes, Inc.	-83.1*	
298C0 Banks	KXJM	LIC C OR		315.3 135.3	4.27 BLH20091013ABB	45 30 58.4 122 43 58.8	71.000 502	11.4 594	83.4 Citi casters Li censes, Inc.	-79.6*	
296D West Haven	K296FT!	LIC C OR		0.0 0.0	0.00 BLFT20080116AAA	45 29 20.0 122 41 40.0	0.028 270		---Reference---	Metroeast Community Media	
296C1 Sweet Home	KLTV	LIC NC OR		175.4 355.5	112.17 BLED20151029AHG	44 28 59.0 122 34 54.0	10.000 725	152.0 1249	65.9 Educational Media Foundati	6.0	
296C3 Castle Rock	KRQT	LIC NCX WA		341.9 161.7	99.41 BLH20081216AAF	46 20 18.0 123 05 45.0	0.800 523	97.3 809	35.3 Bi coastal Medi a Li censes I	18.1	
296D Longview	KRQT-FM1	LIC DC WA		345.5 165.4	74.21 BLFTB20001018ACF	46 08 06.0 122 56 06.0	2.000	23.8 21	7.1 Bi coastal Medi a Li censes I	21.9	
296D Parkdale	K296G0	LIC C OR		87.4 268.1	85.64 BLFT20170103ABM	45 31 09.0 121 35 46.0	0.140 -316	20.4 546	6.1 Radi o Ti erra	27.1	

Terrain database is USGS 03 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 3<sup>rd</sup>  
adjacent.  
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. Protection to these stations is achieved using the  
"ratio" method.

As shown by **Exhibit 13a** there are no co-channel contour-overlap issues. There are no first-adjacent stations within range. With a proposed ERP of under 100 watts, there are no I.F. spacing requirements.

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Contour protection to 2<sup>nd</sup> adjacent stations KLTH, Lake Oswego, OR and KXJM, Banks, OR is provided using the ratio method. The F(50/50) contour of KLTH is 113.2dBu at the proposed translator site. For KXJM, the contour is 111.7dBu. Using the appropriate U/D ratio of 40dB, the corresponding “worst-case” interfering contour of the proposed translator is therefore 151.7dBu. At 99 watts ERP, this contour would extend to a distance of 1 meter from the antenna. The antenna is proposed to be at 44 meters above the ground, therefore no interference will occur in populated areas.

This translator is in the Canadian zone. The proposed 34 dBu F(50,10) contour does not extend onto Canadian soil.

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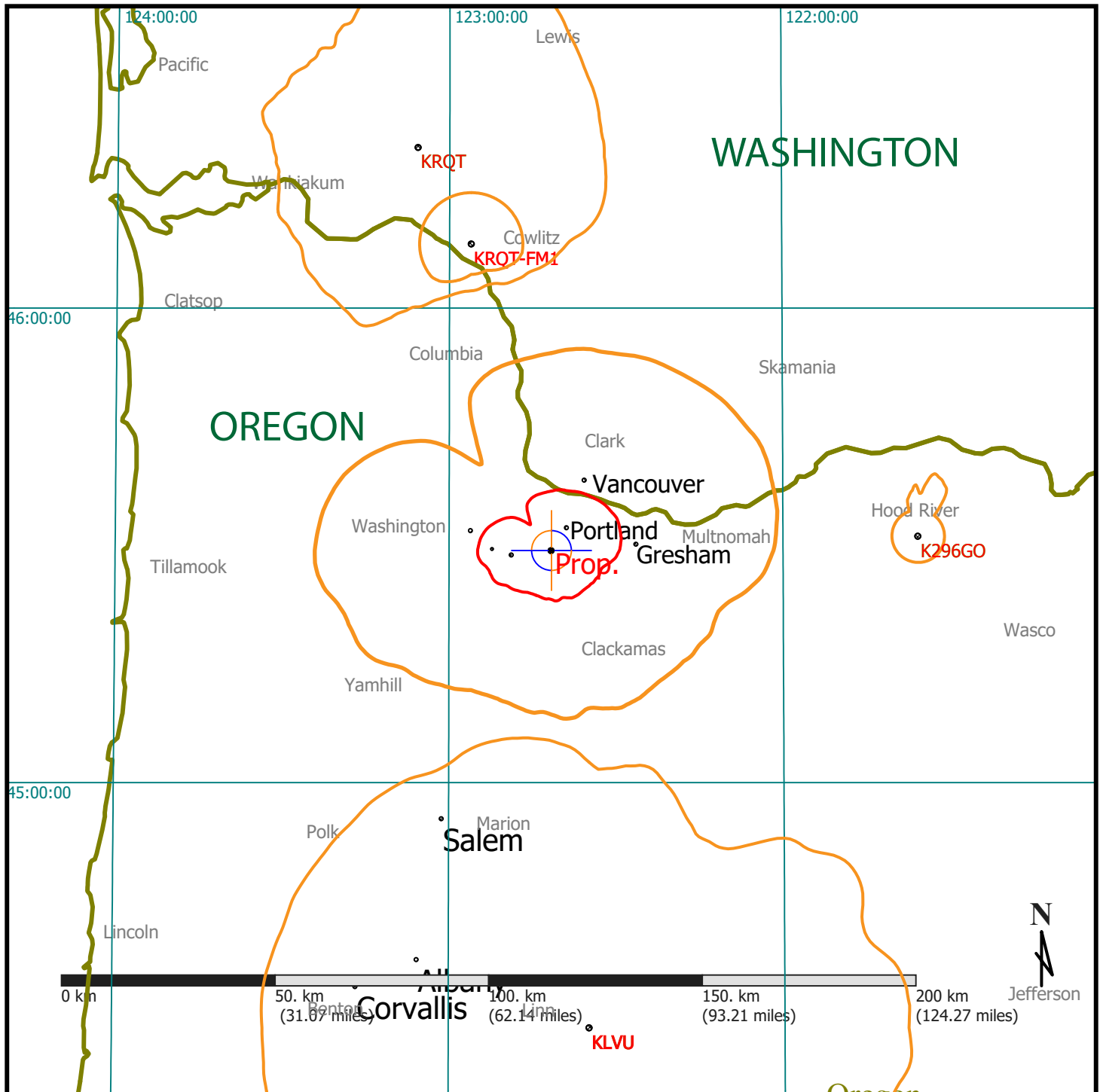
# Exhibit 13a

## Co-Channel Contour Protection

Brown Broadcast Services, Inc.  
Job: K296FT Feb 2019.fmj  
Master Database: 2019\_Feb\_24.fmd  
Lat: N45:29:21 Lon: W122:41:36 NAD-27  
Scale: 1:1333333  
Channel: 296 Class: DX

**PROPOSED**  
**Interfering: 40dBu F(50,10)**  
**AFFECTED**  
**Protected: 60dBu F(50,50)**

rfInvestigator Version 3.8.16  
by rfSoftware, Inc.  
Date: 2/28/2019 10:25:56 PM



## **EXHIBIT 17**

### **ENVIRONMENTAL PROTECTION ACT / NIER ANALYSIS**

The applicant proposes an antenna on an existing 189 meter registered tower. The proposed center of radiation is 44m AGL. A one-bay Bext TFC2k-D circularly-polarized antenna is proposed. Calculations were made using FM Model for Windows, version 2.10, using the "worst-case" ring-stub/EPA dipole setting. FM Model predicted a peak exposure of  $2.25\mu\text{W}/\text{cm}^2$ , at 111.4 meters from the tower. This represents 1.1% of the Maximum Permissible Exposure (MPE) of  $200\mu\text{W}/\text{cm}^2$  for uncontrolled environments. 47 CFR §1.1307(b)(3) exempts applicants from preparing an Environmental Assessment when the predicted exposure levels would be less than 5% of the FCC limits.

Public access to the tower is restricted by fencing and locked access doors. The site is posted with appropriate RF exposure warning signs. If tower climbing by authorized personnel becomes necessary, transmitter power will be reduced or operation will cease, as necessary, so as to not exceed the RF exposure limits.

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