

CITY OF LICENSE  
CALL LETTERS  
FACILITY ID  
PREPARED FOR  
VERSION  
JOB

Longview, WA  
KUKN-FM  
38378  
Washington Interstate Broadcasting, Inc.  
1.0  
115059

# **CONSOLIDATED**

# **ENGINEERING EXHIBIT**

FCC Form 301 - Section III-B - FM Engineering

**BROWN BROADCAST SERVICES**

INCORPORATED

Michael D. Brown

3740 S.W. Comus St. Portland, Oregon 97219-7418

503-245-6065

**ENGINEERING STATEMENT**  
**MINOR-CHANGE TO KUKN, LONGVIEW, WA**  
**Washington Interstate Broadcasting, Inc.**

The applicant hereby proposes a minor-change to licensed station KUKN. A move to an existing registered tower 150 meters from the licensed site, is proposed. The antenna height would also change.

The entire community of license, and main studio location, would continue to be covered by the 70dBu contour, as show by **Exhibit 28**.

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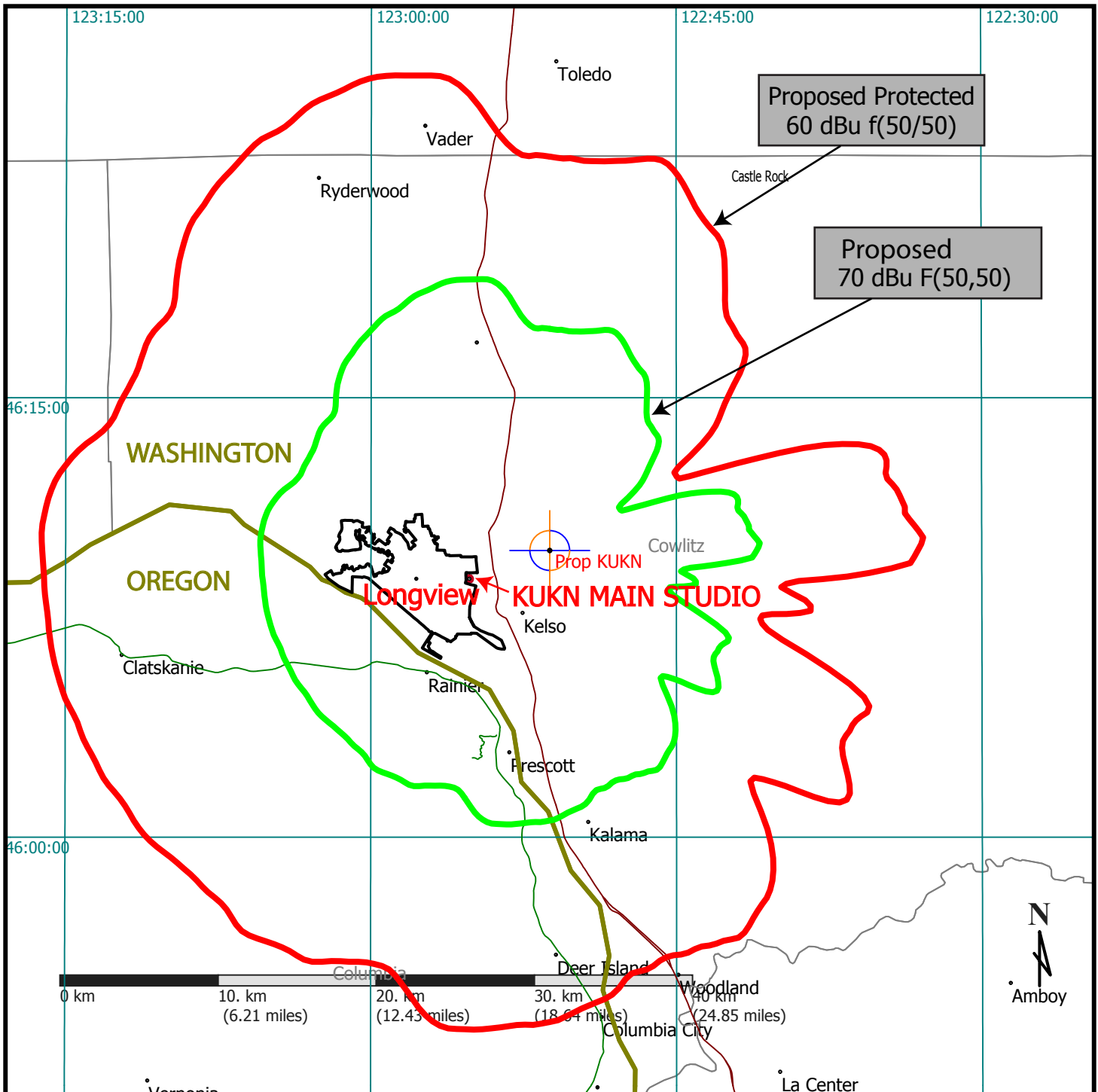
# EXHIBIT 28

## Community of License & Main Studio Coverage

Brown Broadcast Services, Inc.  
Job: KUKN.fmj  
Lat: N46:09:47 Lon: W122:51:13 NAD-27  
Scale: 1:360000  
Channel: 288 Class: A

rfInvestigator Version 3.8.13  
by rfSoftware, Inc.

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



# EXHIBIT 30

## INTERFERENCE PROTECTION

### SEPARATION REQUIREMENTS

This proposal meets all §73.207 spacing requirements with the stations shown below in black, and is short-spaced but meets the §73.215 spacing limitations for the four stations shown below in red.

ID	City	St	Chan	CL	Stat	Prefix	ARN	FID	Dist	Min 207	Clear 207	Clear 215
KUKN	LONGVIEW	WA	288	A	LIC	BLH	19941228KE	38378	0.15	115	-114.85	-91.85
KJET	RAYMOND	WA	289	C2	LIC	BLH	20080423AEJ	78160	92.08	106	-13.92	3.08
KRSK	MOLALLA	OR	286	C1	LIC	BLH	20040303ACH	68213	71.69	75	-3.31	2.69
KFBW	VANCOUVER	WA	290	C1	LIC	BMLH	20040204ACC	60640	71.69	75	-3.31	2.69
KDEP	GARIBALDI	OR	288	A	LIC	BMLH	20050906ACQ	78488	113.42	115	-1.58	21.42
STAT:RSV	GARIBALDI	OR	288	A	RSV	RM	10524	0	114.97	115	-0.03	22.97
KJET	RAYMOND	WA	289	C2	CP	BPH	20150422ABG	78160	108.87	106	2.87	19.87
KCGB-FM	HOOD RIVER	OR	288	A	LIC	BLH	20061030AAG	12434	120.88	115	5.88	28.88
KCMS	EDMONDS	WA	287	C1	LIC	BLH	20010212AAE	14505	163.77	133	30.77	52.77
KKBW	EATONVILLE	WA	285	C3	LIC	BLH	20020117AAM	3915	88.07	42	46.07	52.07
STAT:RSV	EATONVILLE	WA	285	C3	RSV	RM	9269	0	90.4	42	48.4	54.4
KRSE	YAKIMA	WA	289	C1	LIC	BMLH	20130327AIS	49876	181.97	133	48.97	70.97

### §73.215 CONTOUR PROTECTION

Protection to KJET (LIC), KRSK, KFBW, and KDEP is provided in compliance with §73.215, using contour protection. The chart below, which shows contour separation distances in the directions with the greatest potential for overlap, shows that there would be no contour overlap with any of these stations. **Exhibits 30a** and **30b** show further detail for KRSK and KFBW.

### BROWN BROADCAST SERVICES

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KUKN @Crown Castle Twr  
Contour Overlap Mode

REFERENCE 46 09 47.0 N. 122 51 13.0 W.	CH# 288A - 105.5 MHz, Pwr= 0.7 kW, HAAT= 256.3 M, Average Protected F(50-50)= 26.6 km 73.215 Omni -directional	COR= 436 M	DISPLAY DATES DATA 03-08-2016 SEARCH 03-20-2016
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CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
288A Longview Accepted by Canada	KUKN!	LIC NCN	WA	0.0 180.0	0.15 BLH19941228KE	46 09 52.0 122 51 13.0	0.700 262	84.9 451	30.5 Washington Interstate Broa	-109.6 -103.8	
290C1 Vancouver	KFBW	LIC NCX	WA	173.3 353.4	71.68 BMLH20040204ACC	45 31 21.0 122 44 45.0	22.500 470	7.7 561	69.9 Citicasters Licenses, Inc.	34.5	0.1
286C1 Molalla	KRSK	LIC NC	OR	173.3 353.4	71.68 BLH20040303ACH	45 31 21.0 122 44 45.0	22.500 470	7.7 561	69.9 Entercom License, Lic	34.5	0.1
288A Gari baldi downgrade; change of communi ty	AL1910	RSV-A	OR	227.8 47.0	114.96 RM10524	45 27 50.0 123 56 37.0	6.000 100	84.9 159	15.8	6.1	2.5
288A Gari baldi	KDEP	LIC NCX	OR	227.2 46.5	113.41 BMLH20050906ACQ	45 27 59.0 123 55 11.0	0.320 360	75.5 461	24.0 Alexandra Communications,	7.7	2.5
289C2 Raymond	KJET«	CP EX	WA	322.1 141.5	108.88 BPH20150422ABG	46 55 55.0 123 43 59.0	38.000 128	72.5 213	47.4 Jodesha Broadcasting, Inc.	106.0R	2.9M
288A Hood River	KCGB-FM«	LIC CX	OR	117.0 298.0	120.87 BLH20061030AAG	45 39 45.0 121 28 14.0	1.000 240	107.0 662	40.8 Bicoastal Media Licenses I	115.0R	5.9M
289C2 Raymond	KJET	LIC ZCX	WA	310.4 129.8	92.08 BLH20080423AEJ	46 41 44.0 123 46 17.0	13.500 290	57.3 378	34.3 Jodesha Broadcasting, Inc.	6.2	6.9
287C1 Edmonds	KCMS«	LIC CY	WA	20.0 200.6	163.77 BLH20010212AAE	47 32 40.0 122 06 26.0	54.000 385	105.9 511	72.0 Crista Ministries	133.0R	30.8M
285C3 Eatonville	KUBE«	LIC ZCX	WA	31.0 211.4	88.07 BLH20020117AAM	46 50 24.0 122 15 27.0	17.000 124	2.2 571	22.0 Citicasters Licenses, Inc.	42.0R	46.1M
285C3 Eatonville Accepted by Canada as Class B1 980901	AL5614«	RSV-A	N	33.5 214.0	90.39 RM9269	46 50 19.0 122 11 53.0	25.000 100	3.3 622	32.2	42.0R	48.4M
289C1 Yakima	KRSE«	LIC CX	WA	69.6 251.2	181.96 BMLH20130327AIS	46 42 41.7 120 37 22.1	100.000 172	91.2 760	61.2 Ingstad Radio Washington,	133.0R	49.0M

Terrain database is 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= - Zone 2, Co to 3rd  
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)  
« = Station meets FCC minimum distance spacing for its class.

Reference station has protected zone issue: Canada

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## **CANADA**

This application is in the Canadian border zone, but out of range to all Canadian allotments and assignments. This application makes no changes in Class or ERP, and moves further away from the border. No new Canadian concurrence should be required.

## **PROTECTED ZONES REPORT**

Protected zones report for KUKN on channel 288A 03-25-2016  
Lat. 46 09 47.0 Lng. 122 51 13.0, ERP= 0.7 kw, HAAT= 256.3 m  
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\*\*\* Station must coordinate with Canada. Distance to border = 234.6 km.  
Facility is okay with respect to AM station towers.

Closest AM Facility is KLOG, KELSO, WA, L, ND1 at 205.3° at a distance of 5.7 km  
Facility is okay with respect to FCC monitoring stations.

Closest FCC Monitoring Station is 311.3 km= Ferndale, WA  
Facility is okay toward West Virginia Quiet Zone. Distance to center = 3679.9 km  
Facility is okay toward Table Mountain. Distance to Center = 1581.6 km, Azimuth = 108.9  
Degrees True

## **BROWN BROADCAST SERVICES**

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# EXHIBIT 30a

## FMOver Analysis - Proposed KUKN Minor-Change vs. KFBW, Vancouver, WA

03-20-2016

Terrain Data: NGDC 30 SEC

FMOver Analysis

KUKN

KFBW BMLH20040204ACC

Channel = 288A  
Max ERP = 0.7 kW  
RCAMSL = 436 m  
N. Lat. 46 09 47.0  
W. Lng. 122 51 13.0  
Protected  
60 dBu

Channel = 290C1  
Max ERP = 22.5 kW  
RCAMSL = 561 m  
N. Lat. 45 31 21.0  
W. Lng. 122 44 45.0  
Interfering  
100 dBu

Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Actual (dBu)	I X (km)
128.0	000.7000	0201.5	023.8	010.4	022.5000	0490.6	057.5	68.82	
129.0	000.7000	0208.0	024.1	010.6	022.5000	0490.6	057.0	69.01	
130.0	000.7000	0210.0	024.2	010.4	022.5000	0490.6	056.5	69.16	
131.0	000.7000	0205.7	024.0	010.0	022.5000	0490.3	056.3	69.25	
132.0	000.7000	0194.9	023.4	009.3	022.5000	0489.8	056.3	69.25	
133.0	000.7000	0180.0	022.6	008.4	022.5000	0489.2	056.4	69.20	
134.0	000.7000	0164.6	021.7	007.4	022.5000	0488.5	056.6	69.10	
135.0	000.7000	0151.9	020.9	006.5	022.5000	0487.9	056.8	69.01	
136.0	000.7000	0142.9	020.3	005.8	022.5000	0487.5	056.9	68.96	
137.0	000.7000	0135.7	019.8	005.2	022.5000	0487.4	056.9	68.94	
138.0	000.7000	0130.6	019.4	004.7	022.5000	0487.4	056.9	68.94	
139.0	000.7000	0131.8	019.5	004.5	022.5000	0487.4	056.6	69.05	
140.0	000.7000	0141.8	020.2	004.8	022.5000	0487.4	055.9	69.32	
141.0	000.7000	0158.1	021.3	005.3	022.5000	0487.4	054.9	69.70	
142.0	000.7000	0175.4	022.4	005.8	022.5000	0487.5	053.8	70.08	
143.0	000.7000	0191.2	023.2	006.1	022.5000	0487.6	052.9	70.41	
144.0	000.7000	0205.0	024.0	006.3	022.5000	0487.7	052.1	70.72	
145.0	000.7000	0216.3	024.6	006.4	022.5000	0487.8	051.4	70.99	
146.0	000.7000	0225.7	025.1	006.5	022.5000	0487.8	050.7	71.24	
147.0	000.7000	0233.2	025.5	006.4	022.5000	0487.8	050.1	71.46	
148.0	000.7000	0239.1	025.8	006.2	022.5000	0487.6	049.6	71.64	
149.0	000.7000	0243.3	026.0	005.9	022.5000	0487.5	049.2	71.80	
150.0	000.7000	0248.2	026.2	005.6	022.5000	0487.4	048.7	71.97	
151.0	000.7000	0254.1	026.5	005.4	022.5000	0487.4	048.2	72.15	
152.0	000.7000	0260.1	026.8	005.1	022.5000	0487.4	047.7	72.33	
153.0	000.7000	0265.4	027.1	004.8	022.5000	0487.4	047.2	72.51	
154.0	000.7000	0267.4	027.2	004.4	022.5000	0487.4	046.9	72.63	
155.0	000.7000	0264.9	027.0	003.8	022.5000	0487.5	046.8	72.68	
156.0	000.7000	0262.5	026.9	003.2	022.5000	0487.6	046.7	72.73	
157.0	000.7000	0262.3	026.9	002.7	022.5000	0487.7	046.5	72.81	
158.0	000.7000	0260.7	026.8	002.1	022.5000	0487.8	046.3	72.86	
159.0	000.7000	0258.1	026.7	001.5	022.5000	0487.9	046.3	72.88	
160.0	000.7000	0257.8	026.7	001.0	022.5000	0488.0	046.1	72.95	
161.0	000.7000	0259.1	026.8	000.5	022.5000	0488.1	045.9	73.03	
162.0	000.7000	0258.7	026.8	359.9	022.5000	0488.1	045.8	73.08	
163.0	000.7000	0257.2	026.7	359.3	022.5000	0488.2	045.7	73.11	
164.0	000.7000	0257.5	026.7	358.8	022.5000	0488.2	045.5	73.16	
165.0	000.7000	0260.2	026.8	358.2	022.5000	0488.2	045.3	73.26	
166.0	000.7000	0264.9	027.0	357.7	022.5000	0488.3	045.0	73.38	
167.0	000.7000	0267.5	027.2	357.2	022.5000	0488.3	044.8	73.46	
168.0	000.7000	0267.8	027.2	356.6	022.5000	0488.4	044.7	73.50	
169.0	000.7000	0268.8	027.2	356.0	022.5000	0488.3	044.6	73.54	
170.0	000.7000	0275.0	027.5	355.4	022.5000	0488.0	044.2	73.67	
171.0	000.7000	0285.2	028.0	354.8	022.5000	0487.6	043.7	73.87	
172.0	000.7000	0292.7	028.4	354.2	022.5000	0487.0	043.3	74.00	
173.0	000.7000	0297.2	028.6	353.5	022.5000	0486.3	043.1	74.08	

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174.0	000.7000	0299.9	028.7	352.9	022.5000	0485.6	043.0	74.11
175.0	000.7000	0303.4	028.9	352.2	022.5000	0485.0	042.8	74.16
176.0	000.7000	0306.8	029.0	351.5	022.5000	0484.4	042.7	74.19
177.0	000.7000	0311.7	029.3	350.8	022.5000	0483.7	042.5	74.25
178.0	000.7000	0316.6	029.5	350.1	022.5000	0482.7	042.4	74.30
179.0	000.7000	0321.5	029.7	349.3	022.5000	0481.3	042.2	74.33
180.0	000.7000	0323.5	029.8	348.6	022.5000	0479.7	042.2	74.30
181.0	000.7000	0325.5	029.9	347.9	022.5000	0477.9	042.2	74.25
182.0	000.7000	0327.5	030.0	347.2	022.5000	0475.8	042.3	74.19
183.0	000.7000	0327.6	030.0	346.5	022.5000	0473.5	042.4	74.09
184.0	000.7000	0328.7	030.1	345.8	022.5000	0470.8	042.5	73.99
185.0	000.7000	0331.1	030.2	345.1	022.5000	0467.7	042.6	73.90
186.0	000.7000	0333.4	030.3	344.4	022.5000	0464.4	042.7	73.79
187.0	000.7000	0335.8	030.4	343.6	022.5000	0460.9	042.8	73.67
188.0	000.7000	0338.2	030.5	342.9	022.5000	0457.2	042.9	73.55
189.0	000.7000	0339.9	030.6	342.2	022.5000	0453.3	043.0	73.39
190.0	000.7000	0340.8	030.7	341.6	022.5000	0449.6	043.3	73.22
191.0	000.7000	0342.1	030.7	340.9	022.5000	0445.7	043.5	73.05
192.0	000.7000	0343.3	030.8	340.3	022.5000	0441.7	043.7	72.86
193.0	000.7000	0342.1	030.7	339.7	022.5000	0438.2	044.0	72.64
194.0	000.7000	0338.7	030.6	339.3	022.5000	0435.1	044.5	72.39
195.0	000.7000	0333.4	030.3	338.9	022.5000	0432.5	045.0	72.12
196.0	000.7000	0326.8	030.0	338.6	022.5000	0430.3	045.6	71.84
197.0	000.7000	0319.1	029.6	338.4	022.5000	0428.7	046.2	71.55
198.0	000.7000	0311.1	029.2	338.2	022.5000	0427.2	046.8	71.28
199.0	000.7000	0303.1	028.9	338.0	022.5000	0425.8	047.4	71.01
200.0	000.7000	0295.5	028.5	337.9	022.5000	0424.5	048.0	70.75
201.0	000.7000	0290.4	028.3	337.6	022.5000	0422.6	048.5	70.51
202.0	000.7000	0289.4	028.2	337.3	022.5000	0419.4	048.9	70.29
203.0	000.7000	0291.2	028.3	336.8	022.5000	0415.4	049.2	70.08
204.0	000.7000	0294.4	028.4	336.3	022.5000	0410.7	049.4	69.86
205.0	000.7000	0298.8	028.7	335.7	022.5000	0405.4	049.7	69.64
206.0	000.7000	0303.8	028.9	335.1	022.5000	0399.5	049.9	69.39
207.0	000.7000	0308.4	029.1	334.6	022.5000	0393.1	050.2	69.13
208.0	000.7000	0313.8	029.4	334.0	022.5000	0385.6	050.4	68.83
209.0	000.7000	0320.1	029.7	333.4	022.5000	0377.0	050.7	68.49
210.0	000.7000	0325.8	029.9	332.8	022.5000	0368.6	051.0	68.14
211.0	000.7000	0328.6	030.1	332.4	022.5000	0362.3	051.4	67.82
212.0	000.7000	0328.7	030.1	332.1	022.5000	0358.3	051.8	67.52
213.0	000.7000	0328.8	030.1	331.8	022.5000	0354.7	052.3	67.24
214.0	000.7000	0330.2	030.1	331.4	022.5000	0350.8	052.7	66.95
215.0	000.7000	0332.9	030.3	331.0	022.5000	0346.6	053.1	66.67
216.0	000.7000	0336.5	030.4	330.6	022.5000	0342.3	053.5	66.37
217.0	000.7000	0340.2	030.6	330.2	022.5000	0338.0	053.9	66.08

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03-20-2016 Terrain Data: NGDC 30 SEC FMOver Analysis

KFBW BMLH20040204ACC

KUKN

Channel = 290C1  
 Max ERP = 22.5 kW  
 RCAMSL = 561 m  
 N. Lat. 45 31 21.0  
 W. Lng. 122 44 45.0  
 Protected  
 60 dBu

Channel = 288A  
 Max ERP = 0.7 kW  
 RCAMSL = 436 m  
 N. Lat. 46 09 47.0  
 W. Lng. 122 51 13.0  
 Interfering  
 100 dBu

Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Actual (dBu)	I X (km)
308.0	022.5000	0444.8	067.0	236.0	000.7000	0352.7	053.8	51.54	
309.0	022.5000	0439.3	066.7	236.0	000.7000	0352.7	052.5	52.00	
310.0	022.5000	0433.3	066.3	236.0	000.7000	0352.7	051.3	52.47	
311.0	022.5000	0427.2	065.9	235.9	000.7000	0352.7	050.1	52.93	
312.0	022.5000	0421.5	065.5	235.8	000.7000	0352.6	048.9	53.39	
313.0	022.5000	0414.9	065.1	235.6	000.7000	0352.5	047.7	53.85	
314.0	022.5000	0406.3	064.6	235.3	000.7000	0352.3	046.5	54.32	
315.0	022.5000	0394.6	063.9	234.7	000.7000	0351.6	045.2	54.80	
316.0	022.5000	0381.7	063.1	233.9	000.7000	0350.2	044.0	55.26	
317.0	022.5000	0371.9	062.5	233.3	000.7000	0348.7	042.8	55.71	
318.0	022.5000	0367.3	062.2	233.0	000.7000	0348.1	041.7	56.17	
319.0	022.5000	0367.1	062.2	233.1	000.7000	0348.4	040.6	56.64	
320.0	022.5000	0366.6	062.1	233.2	000.7000	0348.5	039.6	57.13	
321.0	022.5000	0362.6	061.9	232.9	000.7000	0347.7	038.5	57.60	
322.0	022.5000	0353.7	061.3	232.0	000.7000	0345.2	037.4	58.02	
323.0	022.5000	0342.0	060.5	230.7	000.7000	0342.0	036.3	58.42	
324.0	022.5000	0329.6	059.6	229.3	000.7000	0339.4	035.3	58.82	
325.0	022.5000	0320.1	059.0	228.0	000.7000	0337.9	034.4	59.23	
326.0	022.5000	0315.1	058.6	227.2	000.7000	0337.3	033.4	59.69	
327.0	022.5000	0313.8	058.6	226.8	000.7000	0337.2	032.4	60.17	
328.0	022.5000	0317.0	058.8	226.8	000.7000	0337.2	031.3	60.70	
329.0	022.5000	0325.0	059.3	227.5	000.7000	0337.4	030.2	61.31	
330.0	022.5000	0335.6	060.0	228.4	000.7000	0338.4	029.1	62.01	
331.0	022.5000	0346.1	060.8	229.4	000.7000	0339.6	027.9	62.77	
332.0	022.5000	0357.6	061.5	230.6	000.7000	0341.6	026.7	63.59	
333.0	022.5000	0371.5	062.4	232.1	000.7000	0345.4	025.4	64.53	
334.0	022.5000	0385.7	063.3	233.6	000.7000	0349.6	024.2	65.52	
335.0	022.5000	0398.1	064.1	235.0	000.7000	0351.9	023.0	66.48	
336.0	022.5000	0408.3	064.7	236.0	000.7000	0352.7	021.8	67.42	
337.0	022.5000	0417.3	065.3	237.0	000.7000	0352.8	020.5	68.36	
338.0	022.5000	0425.5	065.8	237.9	000.7000	0352.6	019.3	69.32	
339.0	022.5000	0433.1	066.3	238.7	000.7000	0352.5	018.1	70.31	
340.0	022.5000	0439.9	066.7	239.5	000.7000	0353.0	016.9	71.32	
341.0	022.5000	0446.1	067.1	240.1	000.7000	0354.0	015.7	72.36	
342.0	022.5000	0452.0	067.5	240.7	000.7000	0355.3	014.4	73.67	
343.0	022.5000	0457.6	067.9	241.3	000.7000	0356.8	013.2	75.31	
344.0	022.5000	0462.7	068.3	241.8	000.7000	0358.0	011.9	77.09	
345.0	022.5000	0467.4	068.6	242.2	000.7000	0358.8	010.7	78.96	
346.0	022.5000	0471.7	068.9	242.3	000.7000	0359.0	009.5	80.89	
347.0	022.5000	0475.3	069.1	242.0	000.7000	0358.4	008.2	82.84	
348.0	022.5000	0478.1	069.4	241.0	000.7000	0355.9	007.0	84.86	
349.0	022.5000	0480.6	069.5	239.1	000.7000	0352.6	005.8	87.18	
350.0	022.5000	0482.6	069.7	235.5	000.7000	0352.5	004.6	89.88	
351.0	022.5000	0483.9	069.8	228.5	000.7000	0338.5	003.5	92.85	
352.0	022.5000	0484.8	069.8	214.4	000.7000	0331.0	002.5	96.32	
353.0	022.5000	0485.8	069.9	186.7	000.7000	0335.1	001.9	99.31	
354.0	022.5000	0486.8	070.0	148.7	000.7000	0242.2	001.9	98.85	
355.0	022.5000	0487.7	070.0	123.3	000.7000	0169.1	002.6	94.10	
356.0	022.5000	0488.3	070.1	110.9	000.7000	0086.6	003.7	84.95	
357.0	022.5000	0488.3	070.1	104.8	000.7000	0086.4	004.8	80.46	

# BROWN BROADCAST SERVICES INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

358.0	022.5000	0488.2	070.1	101.4	000.7000	0095.2	006.0	77.57
359.0	022.5000	0488.2	070.1	099.2	000.7000	0078.5	007.2	72.46
000.0	022.5000	0488.1	070.1	097.8	000.7000	0081.7	008.4	70.21
001.0	022.5000	0488.0	070.1	096.9	000.7000	0089.1	009.6	68.69
002.0	022.5000	0487.9	070.1	096.4	000.7000	0096.4	010.8	67.24
003.0	022.5000	0487.7	070.0	096.0	000.7000	0102.1	012.1	65.79
004.0	022.5000	0487.5	070.0	095.8	000.7000	0105.4	013.3	64.34
005.0	022.5000	0487.4	070.0	095.7	000.7000	0107.1	014.5	62.97
006.0	022.5000	0487.6	070.0	095.7	000.7000	0108.4	015.7	62.05
007.0	022.5000	0488.2	070.1	095.6	000.7000	0110.4	017.0	61.18
008.0	022.5000	0488.9	070.1	095.5	000.7000	0111.0	018.2	60.22
009.0	022.5000	0489.6	070.2	095.6	000.7000	0110.3	019.4	59.17
010.0	022.5000	0490.3	070.2	095.7	000.7000	0108.5	020.7	58.04
011.0	022.5000	0490.9	070.3	095.8	000.7000	0105.8	021.9	56.86
012.0	022.5000	0491.6	070.3	096.0	000.7000	0102.5	023.1	55.64
013.0	022.5000	0492.2	070.4	096.2	000.7000	0098.7	024.3	54.39
014.0	022.5000	0492.8	070.4	096.5	000.7000	0094.6	025.6	53.13
015.0	022.5000	0493.3	070.4	096.8	000.7000	0090.9	026.8	51.93
016.0	022.5000	0493.7	070.5	097.1	000.7000	0087.5	028.0	50.80
017.0	022.5000	0494.3	070.5	097.4	000.7000	0084.8	029.2	49.77
018.0	022.5000	0495.1	070.6	097.7	000.7000	0082.6	030.5	48.85
019.0	022.5000	0496.2	070.6	098.0	000.7000	0080.8	031.7	48.03
020.0	022.5000	0497.5	070.7	098.2	000.7000	0079.4	032.9	47.30
021.0	022.5000	0499.0	070.8	098.5	000.7000	0078.2	034.2	46.61
022.0	022.5000	0500.4	070.9	098.8	000.7000	0077.6	035.4	46.01
023.0	022.5000	0501.8	071.0	099.1	000.7000	0078.1	036.6	45.53
024.0	022.5000	0503.1	071.1	099.4	000.7000	0080.1	037.9	45.22
025.0	022.5000	0504.5	071.2	099.8	000.7000	0083.2	039.1	45.03
026.0	022.5000	0506.0	071.3	100.1	000.7000	0086.7	040.3	44.87
027.0	022.5000	0507.5	071.4	100.5	000.7000	0090.0	041.5	44.68
028.0	022.5000	0509.0	071.5	100.8	000.7000	0092.6	042.8	44.42
029.0	022.5000	0510.4	071.6	101.2	000.7000	0094.5	044.0	44.11
030.0	022.5000	0511.6	071.7	101.6	000.7000	0096.2	045.2	43.77
031.0	022.5000	0512.2	071.7	102.1	000.7000	0097.6	046.4	43.43
032.0	022.5000	0512.5	071.8	102.5	000.7000	0098.7	047.6	43.06
033.0	022.5000	0512.2	071.7	103.1	000.7000	0098.0	048.8	42.58
034.0	022.5000	0511.7	071.7	103.6	000.7000	0095.4	050.0	41.93
035.0	022.5000	0511.2	071.7	104.1	000.7000	0091.6	051.1	41.20
036.0	022.5000	0510.7	071.6	104.7	000.7000	0087.6	052.3	40.45
037.0	022.5000	0510.2	071.6	105.2	000.7000	0083.1	053.4	39.67

**BROWN BROADCAST SERVICES**  
INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

# EXHIBIT 30b

## FMOver Analysis - Proposed KUKN Minor-Change vs. KRSK, Molalla OR

03-20-2016

Terrain Data: NGDC 30 SEC

FMOver Analysis

KUKN

KRSK BLH20040303ACH

Channel = 288A  
Max ERP = 0.7 kW  
RCAMSL = 436 m  
N. Lat. 46 09 47.0  
W. Lng. 122 51 13.0  
Protected  
60 dBu

Channel = 286C1  
Max ERP = 22.5 kW  
RCAMSL = 561 m  
N. Lat. 45 31 21.0  
W. Lng. 122 44 45.0  
Interfering  
100 dBu

Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Actual (dBu)	I X (km)
128.0	000.7000	0201.5	023.8	010.4	022.5000	0490.6	057.5	68.82	
129.0	000.7000	0208.0	024.1	010.6	022.5000	0490.6	057.0	69.01	
130.0	000.7000	0210.0	024.2	010.4	022.5000	0490.6	056.5	69.16	
131.0	000.7000	0205.7	024.0	010.0	022.5000	0490.3	056.3	69.25	
132.0	000.7000	0194.9	023.4	009.3	022.5000	0489.8	056.3	69.25	
133.0	000.7000	0180.0	022.6	008.4	022.5000	0489.2	056.4	69.20	
134.0	000.7000	0164.6	021.7	007.4	022.5000	0488.5	056.6	69.10	
135.0	000.7000	0151.9	020.9	006.5	022.5000	0487.9	056.8	69.01	
136.0	000.7000	0142.9	020.3	005.8	022.5000	0487.5	056.9	68.96	
137.0	000.7000	0135.7	019.8	005.2	022.5000	0487.4	056.9	68.94	
138.0	000.7000	0130.6	019.4	004.7	022.5000	0487.4	056.9	68.94	
139.0	000.7000	0131.8	019.5	004.5	022.5000	0487.4	056.6	69.05	
140.0	000.7000	0141.8	020.2	004.8	022.5000	0487.4	055.9	69.32	
141.0	000.7000	0158.1	021.3	005.3	022.5000	0487.4	054.9	69.70	
142.0	000.7000	0175.4	022.4	005.8	022.5000	0487.5	053.8	70.08	
143.0	000.7000	0191.2	023.2	006.1	022.5000	0487.6	052.9	70.41	
144.0	000.7000	0205.0	024.0	006.3	022.5000	0487.7	052.1	70.72	
145.0	000.7000	0216.3	024.6	006.4	022.5000	0487.8	051.4	70.99	
146.0	000.7000	0225.7	025.1	006.5	022.5000	0487.8	050.7	71.24	
147.0	000.7000	0233.2	025.5	006.4	022.5000	0487.8	050.1	71.46	
148.0	000.7000	0239.1	025.8	006.2	022.5000	0487.6	049.6	71.64	
149.0	000.7000	0243.3	026.0	005.9	022.5000	0487.5	049.2	71.80	
150.0	000.7000	0248.2	026.2	005.6	022.5000	0487.4	048.7	71.97	
151.0	000.7000	0254.1	026.5	005.4	022.5000	0487.4	048.2	72.15	
152.0	000.7000	0260.1	026.8	005.1	022.5000	0487.4	047.7	72.33	
153.0	000.7000	0265.4	027.1	004.8	022.5000	0487.4	047.2	72.51	
154.0	000.7000	0267.4	027.2	004.4	022.5000	0487.4	046.9	72.63	
155.0	000.7000	0264.9	027.0	003.8	022.5000	0487.5	046.8	72.68	
156.0	000.7000	0262.5	026.9	003.2	022.5000	0487.6	046.7	72.73	
157.0	000.7000	0262.3	026.9	002.7	022.5000	0487.7	046.5	72.81	
158.0	000.7000	0260.7	026.8	002.1	022.5000	0487.8	046.3	72.86	
159.0	000.7000	0258.1	026.7	001.5	022.5000	0487.9	046.3	72.88	
160.0	000.7000	0257.8	026.7	001.0	022.5000	0488.0	046.1	72.95	
161.0	000.7000	0259.1	026.8	000.5	022.5000	0488.1	045.9	73.03	
162.0	000.7000	0258.7	026.8	359.9	022.5000	0488.1	045.8	73.08	
163.0	000.7000	0257.2	026.7	359.3	022.5000	0488.2	045.7	73.11	
164.0	000.7000	0257.5	026.7	358.8	022.5000	0488.2	045.5	73.16	
165.0	000.7000	0260.2	026.8	358.2	022.5000	0488.2	045.3	73.26	
166.0	000.7000	0264.9	027.0	357.7	022.5000	0488.3	045.0	73.38	
167.0	000.7000	0267.5	027.2	357.2	022.5000	0488.3	044.8	73.46	
168.0	000.7000	0267.8	027.2	356.6	022.5000	0488.4	044.7	73.50	
169.0	000.7000	0268.8	027.2	356.0	022.5000	0488.3	044.6	73.54	
170.0	000.7000	0275.0	027.5	355.4	022.5000	0488.0	044.2	73.67	
171.0	000.7000	0285.2	028.0	354.8	022.5000	0487.6	043.7	73.87	
172.0	000.7000	0292.7	028.4	354.2	022.5000	0487.0	043.3	74.00	
173.0	000.7000	0297.2	028.6	353.5	022.5000	0486.3	043.1	74.08	

**BROWN BROADCAST SERVICES**  
INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

174.0	000.7000	0299.9	028.7	352.9	022.5000	0485.6	043.0	74.11
175.0	000.7000	0303.4	028.9	352.2	022.5000	0485.0	042.8	74.16
176.0	000.7000	0306.8	029.0	351.5	022.5000	0484.4	042.7	74.19
177.0	000.7000	0311.7	029.3	350.8	022.5000	0483.7	042.5	74.25
178.0	000.7000	0316.6	029.5	350.1	022.5000	0482.7	042.4	74.30
179.0	000.7000	0321.5	029.7	349.3	022.5000	0481.3	042.2	74.33
180.0	000.7000	0323.5	029.8	348.6	022.5000	0479.7	042.2	74.30
181.0	000.7000	0325.5	029.9	347.9	022.5000	0477.9	042.2	74.25
182.0	000.7000	0327.5	030.0	347.2	022.5000	0475.8	042.3	74.19
183.0	000.7000	0327.6	030.0	346.5	022.5000	0473.5	042.4	74.09
184.0	000.7000	0328.7	030.1	345.8	022.5000	0470.8	042.5	73.99
185.0	000.7000	0331.1	030.2	345.1	022.5000	0467.7	042.6	73.90
186.0	000.7000	0333.4	030.3	344.4	022.5000	0464.4	042.7	73.79
187.0	000.7000	0335.8	030.4	343.6	022.5000	0460.9	042.8	73.67
188.0	000.7000	0338.2	030.5	342.9	022.5000	0457.2	042.9	73.55
189.0	000.7000	0339.9	030.6	342.2	022.5000	0453.3	043.0	73.39
190.0	000.7000	0340.8	030.7	341.6	022.5000	0449.6	043.3	73.22
191.0	000.7000	0342.1	030.7	340.9	022.5000	0445.7	043.5	73.05
192.0	000.7000	0343.3	030.8	340.3	022.5000	0441.7	043.7	72.86
193.0	000.7000	0342.1	030.7	339.7	022.5000	0438.2	044.0	72.64
194.0	000.7000	0338.7	030.6	339.3	022.5000	0435.1	044.5	72.39
195.0	000.7000	0333.4	030.3	338.9	022.5000	0432.5	045.0	72.12
196.0	000.7000	0326.8	030.0	338.6	022.5000	0430.3	045.6	71.84
197.0	000.7000	0319.1	029.6	338.4	022.5000	0428.7	046.2	71.55
198.0	000.7000	0311.1	029.2	338.2	022.5000	0427.2	046.8	71.28
199.0	000.7000	0303.1	028.9	338.0	022.5000	0425.8	047.4	71.01
200.0	000.7000	0295.5	028.5	337.9	022.5000	0424.5	048.0	70.75
201.0	000.7000	0290.4	028.3	337.6	022.5000	0422.6	048.5	70.51
202.0	000.7000	0289.4	028.2	337.3	022.5000	0419.4	048.9	70.29
203.0	000.7000	0291.2	028.3	336.8	022.5000	0415.4	049.2	70.08
204.0	000.7000	0294.4	028.4	336.3	022.5000	0410.7	049.4	69.86
205.0	000.7000	0298.8	028.7	335.7	022.5000	0405.4	049.7	69.64
206.0	000.7000	0303.8	028.9	335.1	022.5000	0399.5	049.9	69.39
207.0	000.7000	0308.4	029.1	334.6	022.5000	0393.1	050.2	69.13
208.0	000.7000	0313.8	029.4	334.0	022.5000	0385.6	050.4	68.83
209.0	000.7000	0320.1	029.7	333.4	022.5000	0377.0	050.7	68.49
210.0	000.7000	0325.8	029.9	332.8	022.5000	0368.6	051.0	68.14
211.0	000.7000	0328.6	030.1	332.4	022.5000	0362.3	051.4	67.82
212.0	000.7000	0328.7	030.1	332.1	022.5000	0358.3	051.8	67.52
213.0	000.7000	0328.8	030.1	331.8	022.5000	0354.7	052.3	67.24
214.0	000.7000	0330.2	030.1	331.4	022.5000	0350.8	052.7	66.95
215.0	000.7000	0332.9	030.3	331.0	022.5000	0346.6	053.1	66.67
216.0	000.7000	0336.5	030.4	330.6	022.5000	0342.3	053.5	66.37
217.0	000.7000	0340.2	030.6	330.2	022.5000	0338.0	053.9	66.08

**BROWN BROADCAST SERVICES**  
INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

03-20-2016 Terrain Data: NGDC 30 SEC FMOver Analysis

KRSK BLH20040303ACH

KUKN

Channel = 286C1  
 Max ERP = 22.5 kW  
 RCAMSL = 561 m  
 N. Lat. 45 31 21.0  
 W. Lng. 122 44 45.0  
 Protected  
 60 dBu

Channel = 288A  
 Max ERP = 0.7 kW  
 RCAMSL = 436 m  
 N. Lat. 46 09 47.0  
 W. Lng. 122 51 13.0  
 Interfering  
 100 dBu

Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Actual (dBu)	I X (km)
308.0	022.5000	0444.8	067.0	236.0	000.7000	0352.7	053.8	51.54	
309.0	022.5000	0439.3	066.7	236.0	000.7000	0352.7	052.5	52.00	
310.0	022.5000	0433.3	066.3	236.0	000.7000	0352.7	051.3	52.47	
311.0	022.5000	0427.2	065.9	235.9	000.7000	0352.7	050.1	52.93	
312.0	022.5000	0421.5	065.5	235.8	000.7000	0352.6	048.9	53.39	
313.0	022.5000	0414.9	065.1	235.6	000.7000	0352.5	047.7	53.85	
314.0	022.5000	0406.3	064.6	235.3	000.7000	0352.3	046.5	54.32	
315.0	022.5000	0394.6	063.9	234.7	000.7000	0351.6	045.2	54.80	
316.0	022.5000	0381.7	063.1	233.9	000.7000	0350.2	044.0	55.26	
317.0	022.5000	0371.9	062.5	233.3	000.7000	0348.7	042.8	55.71	
318.0	022.5000	0367.3	062.2	233.0	000.7000	0348.1	041.7	56.17	
319.0	022.5000	0367.1	062.2	233.1	000.7000	0348.4	040.6	56.64	
320.0	022.5000	0366.6	062.1	233.2	000.7000	0348.5	039.6	57.13	
321.0	022.5000	0362.6	061.9	232.9	000.7000	0347.7	038.5	57.60	
322.0	022.5000	0353.7	061.3	232.0	000.7000	0345.2	037.4	58.02	
323.0	022.5000	0342.0	060.5	230.7	000.7000	0342.0	036.3	58.42	
324.0	022.5000	0329.6	059.6	229.3	000.7000	0339.4	035.3	58.82	
325.0	022.5000	0320.1	059.0	228.0	000.7000	0337.9	034.4	59.23	
326.0	022.5000	0315.1	058.6	227.2	000.7000	0337.3	033.4	59.69	
327.0	022.5000	0313.8	058.6	226.8	000.7000	0337.2	032.4	60.17	
328.0	022.5000	0317.0	058.8	226.8	000.7000	0337.2	031.3	60.70	
329.0	022.5000	0325.0	059.3	227.5	000.7000	0337.4	030.2	61.31	
330.0	022.5000	0335.6	060.0	228.4	000.7000	0338.4	029.1	62.01	
331.0	022.5000	0346.1	060.8	229.4	000.7000	0339.6	027.9	62.77	
332.0	022.5000	0357.6	061.5	230.6	000.7000	0341.6	026.7	63.59	
333.0	022.5000	0371.5	062.4	232.1	000.7000	0345.4	025.4	64.53	
334.0	022.5000	0385.7	063.3	233.6	000.7000	0349.6	024.2	65.52	
335.0	022.5000	0398.1	064.1	235.0	000.7000	0351.9	023.0	66.48	
336.0	022.5000	0408.3	064.7	236.0	000.7000	0352.7	021.8	67.42	
337.0	022.5000	0417.3	065.3	237.0	000.7000	0352.8	020.5	68.36	
338.0	022.5000	0425.5	065.8	237.9	000.7000	0352.6	019.3	69.32	
339.0	022.5000	0433.1	066.3	238.7	000.7000	0352.5	018.1	70.31	
340.0	022.5000	0439.9	066.7	239.5	000.7000	0353.0	016.9	71.32	
341.0	022.5000	0446.1	067.1	240.1	000.7000	0354.0	015.7	72.36	
342.0	022.5000	0452.0	067.5	240.7	000.7000	0355.3	014.4	73.67	
343.0	022.5000	0457.6	067.9	241.3	000.7000	0356.8	013.2	75.31	
344.0	022.5000	0462.7	068.3	241.8	000.7000	0358.0	011.9	77.09	
345.0	022.5000	0467.4	068.6	242.2	000.7000	0358.8	010.7	78.96	
346.0	022.5000	0471.7	068.9	242.3	000.7000	0359.0	009.5	80.89	
347.0	022.5000	0475.3	069.1	242.0	000.7000	0358.4	008.2	82.84	
348.0	022.5000	0478.1	069.4	241.0	000.7000	0355.9	007.0	84.86	
349.0	022.5000	0480.6	069.5	239.1	000.7000	0352.6	005.8	87.18	
350.0	022.5000	0482.6	069.7	235.5	000.7000	0352.5	004.6	89.88	
351.0	022.5000	0483.9	069.8	228.5	000.7000	0338.5	003.5	92.85	
352.0	022.5000	0484.8	069.8	214.4	000.7000	0331.0	002.5	96.32	
353.0	022.5000	0485.8	069.9	186.7	000.7000	0335.1	001.9	99.31	
354.0	022.5000	0486.8	070.0	148.7	000.7000	0242.2	001.9	98.85	
355.0	022.5000	0487.7	070.0	123.3	000.7000	0169.1	002.6	94.10	
356.0	022.5000	0488.3	070.1	110.9	000.7000	0086.6	003.7	84.95	
357.0	022.5000	0488.3	070.1	104.8	000.7000	0086.4	004.8	80.46	

# BROWN BROADCAST SERVICES INCORPORATED

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Portland, Oregon 97219-7418

503-245-6065

358.0	022.5000	0488.2	070.1	101.4	000.7000	0095.2	006.0	77.57
359.0	022.5000	0488.2	070.1	099.2	000.7000	0078.5	007.2	72.46
000.0	022.5000	0488.1	070.1	097.8	000.7000	0081.7	008.4	70.21
001.0	022.5000	0488.0	070.1	096.9	000.7000	0089.1	009.6	68.69
002.0	022.5000	0487.9	070.1	096.4	000.7000	0096.4	010.8	67.24
003.0	022.5000	0487.7	070.0	096.0	000.7000	0102.1	012.1	65.79
004.0	022.5000	0487.5	070.0	095.8	000.7000	0105.4	013.3	64.34
005.0	022.5000	0487.4	070.0	095.7	000.7000	0107.1	014.5	62.97
006.0	022.5000	0487.6	070.0	095.7	000.7000	0108.4	015.7	62.05
007.0	022.5000	0488.2	070.1	095.6	000.7000	0110.4	017.0	61.18
008.0	022.5000	0488.9	070.1	095.5	000.7000	0111.0	018.2	60.22
009.0	022.5000	0489.6	070.2	095.6	000.7000	0110.3	019.4	59.17
010.0	022.5000	0490.3	070.2	095.7	000.7000	0108.5	020.7	58.04
011.0	022.5000	0490.9	070.3	095.8	000.7000	0105.8	021.9	56.86
012.0	022.5000	0491.6	070.3	096.0	000.7000	0102.5	023.1	55.64
013.0	022.5000	0492.2	070.4	096.2	000.7000	0098.7	024.3	54.39
014.0	022.5000	0492.8	070.4	096.5	000.7000	0094.6	025.6	53.13
015.0	022.5000	0493.3	070.4	096.8	000.7000	0090.9	026.8	51.93
016.0	022.5000	0493.7	070.5	097.1	000.7000	0087.5	028.0	50.80
017.0	022.5000	0494.3	070.5	097.4	000.7000	0084.8	029.2	49.77
018.0	022.5000	0495.1	070.6	097.7	000.7000	0082.6	030.5	48.85
019.0	022.5000	0496.2	070.6	098.0	000.7000	0080.8	031.7	48.03
020.0	022.5000	0497.5	070.7	098.2	000.7000	0079.4	032.9	47.30
021.0	022.5000	0499.0	070.8	098.5	000.7000	0078.2	034.2	46.61
022.0	022.5000	0500.4	070.9	098.8	000.7000	0077.6	035.4	46.01
023.0	022.5000	0501.8	071.0	099.1	000.7000	0078.1	036.6	45.53
024.0	022.5000	0503.1	071.1	099.4	000.7000	0080.1	037.9	45.22
025.0	022.5000	0504.5	071.2	099.8	000.7000	0083.2	039.1	45.03
026.0	022.5000	0506.0	071.3	100.1	000.7000	0086.7	040.3	44.87
027.0	022.5000	0507.5	071.4	100.5	000.7000	0090.0	041.5	44.68
028.0	022.5000	0509.0	071.5	100.8	000.7000	0092.6	042.8	44.42
029.0	022.5000	0510.4	071.6	101.2	000.7000	0094.5	044.0	44.11
030.0	022.5000	0511.6	071.7	101.6	000.7000	0096.2	045.2	43.77
031.0	022.5000	0512.2	071.7	102.1	000.7000	0097.6	046.4	43.43
032.0	022.5000	0512.5	071.8	102.5	000.7000	0098.7	047.6	43.06
033.0	022.5000	0512.2	071.7	103.1	000.7000	0098.0	048.8	42.58
034.0	022.5000	0511.7	071.7	103.6	000.7000	0095.4	050.0	41.93
035.0	022.5000	0511.2	071.7	104.1	000.7000	0091.6	051.1	41.20
036.0	022.5000	0510.7	071.6	104.7	000.7000	0087.6	052.3	40.45
037.0	022.5000	0510.2	071.6	105.2	000.7000	0083.1	053.4	39.67

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## **EXHIBIT 35**

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

The applicant proposes mounting a new antenna on an existing registered tower. A two bay Jampro JLPC-2 antenna is proposed. Calculations were made using FM Model for Windows, version 2.10, using the “Jampro Double V” setting. FM Model predicted a peak exposure of  $7.16\mu\text{W}/\text{cm}^2$ , at 20 meters from the tower. This represents 3.6% 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.

The applicant will ensure that public access to the tower is restricted by fencing, anti-climb devices, or other appropriate measures. The site will be 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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