

August 2021
FM Translator K236CI
Medford, Oregon Channel 236D
Allocation Study

The instant application proposes modification of the licensed K236CI facility, to operate from the licensed tower, but with corrected coordinates, at an increased height and using a different model of antenna in order to duplex with K227AA.

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. The attached allocation study maps 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.

KBOY-FM 239C1 Medford

The proposed translator transmitter site is located within the 60 dBu protected contour of third-adjacent channel station KBOY-FM. The following calculation, performed using the *Living Way* methodology, demonstrates interference protection to that station.

Protected Station	Distance & Bearing to Proposal	Station ERP and HAAT on that azimuth	Station Field Strength at Proposal	Corresponding Translator Interfering Contour	Distance to Translator Interfering Contour
KBOY-FM 239C1	30.62 km 124 deg True	60 kW 434 meters	81.4 dBu F(50,50)	121.4 dBu	63 meters Free Space

The 121.4 dBu contour from the proposed facility extends just 63 meters from the antenna. There is no population within this contour, which encompasses only towers and transmitter site buildings. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KBOY-FM.

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SEARCH PARAMETERS FM Database Date: 20210830

Channel: 236A 95.1 MHz Page 1

Latitude: 42 17 54.0 (NAD83)

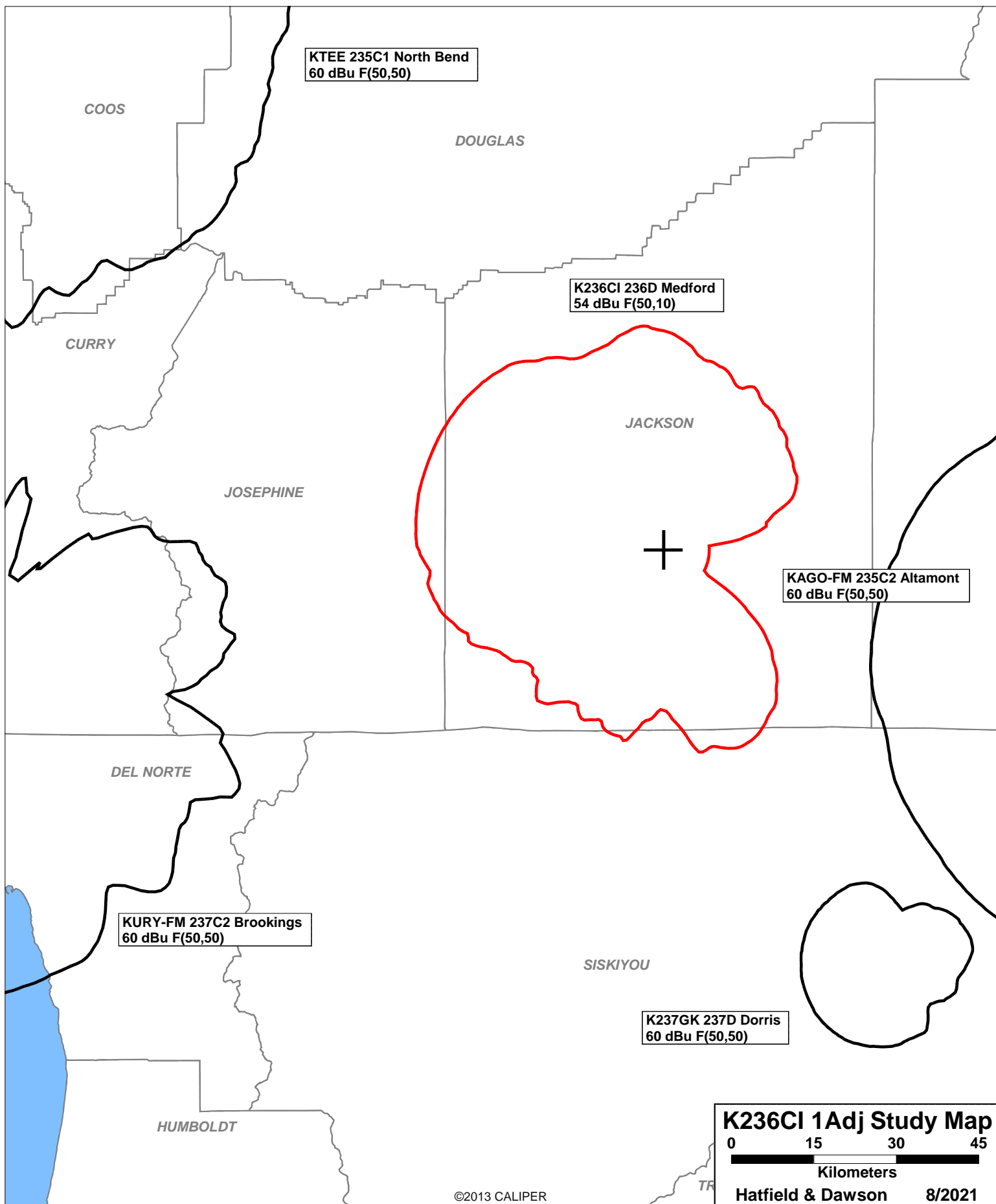
Longitude: 122 44 57.0

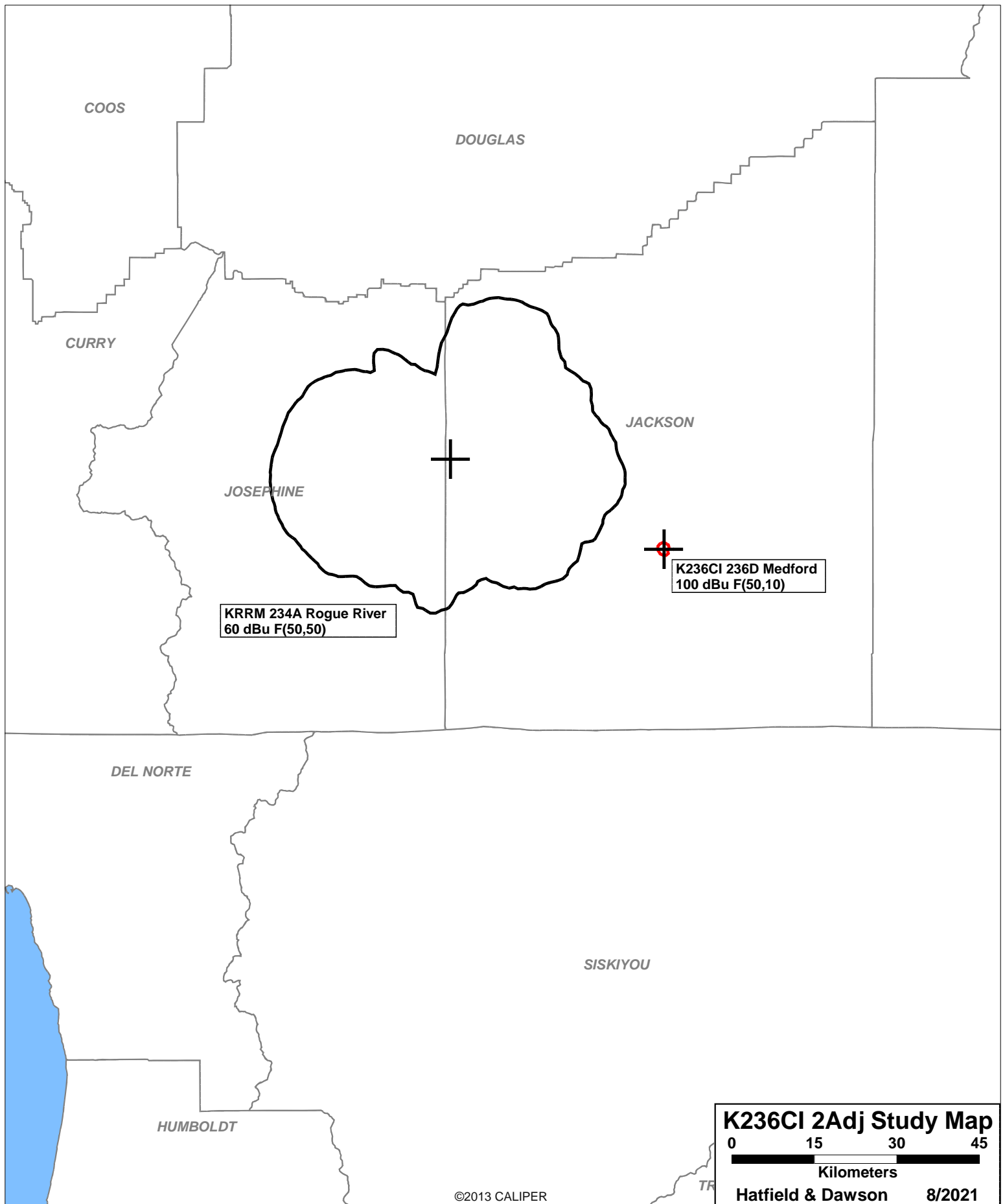
Safety Zone: 50 km

Job Title: K236CI MEDFORD

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KRRM	ROGUE RIVER	234A	0.130	42 26 43.4	293.2	41.83	31	
LIC	OR BLH-19941027KC	94.7	623.0	123 13 0.1	SS	10.83	CLEAR	
KTEE	NORTH BEND	235C1	89.000	43 12 17.4	309.0	162.26	133	
LIC	OR BLH-20010525ABX	94.9	191.0	124 18 11.4	SS	29.26	CLEAR	
KAGO-FM	ALTAMONT	235C2	1.800	42 5 49.5	103.3	94.77	106	
LIC	OR BLH-20170607AAB	94.9	653.0	121 38 2.9		-11.23	SHORT	
K236CI	MEDFORD	236D	0.115	42 17 54.4	349.5	0.01	0	
LIC	OR BMLFT-20190225AA	95.1	0.0	122 44 57.1		0.00	TRANS	
K237GK	DORRIS	237D	0.010	41 37 47.5	149.9	85.75	0	
LIC	CA BLFT-20170509AAY	95.3	0.0	122 13 54.0		0.00	TRANS	
KURY-FM	BROOKINGS	237C2	8.700	42 7 22.3	261.8	129.55	106	
LIC	OR BLH-19940124KA	95.3	355.0	124 18 0.3		23.55	CLEAR	
KBOY-FM	MEDFORD	239C1	60.000	42 27 10.4	304.3	30.62	75	
LIC	OR BLH-20051128AOF	95.7	299.0	123 3 25.1		-44.38	SHORT	
K290BX	PINEHURST	290D	0.010	DA 42 3 52.4	139.4	34.22	0	
LIC	OR BLFT-20160531ADO	105.9	0.0	122 28 46.0		0.00	TRANS	
K290AF	ROGUE RIVER	290D	0.080	DA 42 26 43.4	293.2	41.83	0	
LIC	OR BLFT-19980305TE	105.9	0.0	123 13 0.1		0.00	TRANS	

===== END OF FM SPACING STUDY FOR CHANNEL 236 =====





**August 2021
FM Translator K236CI
Medford, Oregon Channel 236D
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 236D (95.1 MHz) with an effective radiated power of 110 watts. Operation is proposed with an antenna to be mounted on an existing tower on Baldy Mountain, in a combined operation with K227AA.

The proposed antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	42-17-54.0 north
Longitude	122-44-57.0 west
Measurements (Meters)	
Overall Structure Height (AGL)	52
Support Structure Height (AGL)	52
Site Elevation (AMSL)	1159
Structure Type	
GTOWER - Guyed Structure Used for Communication Purposes	

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation of K236CI will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

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.

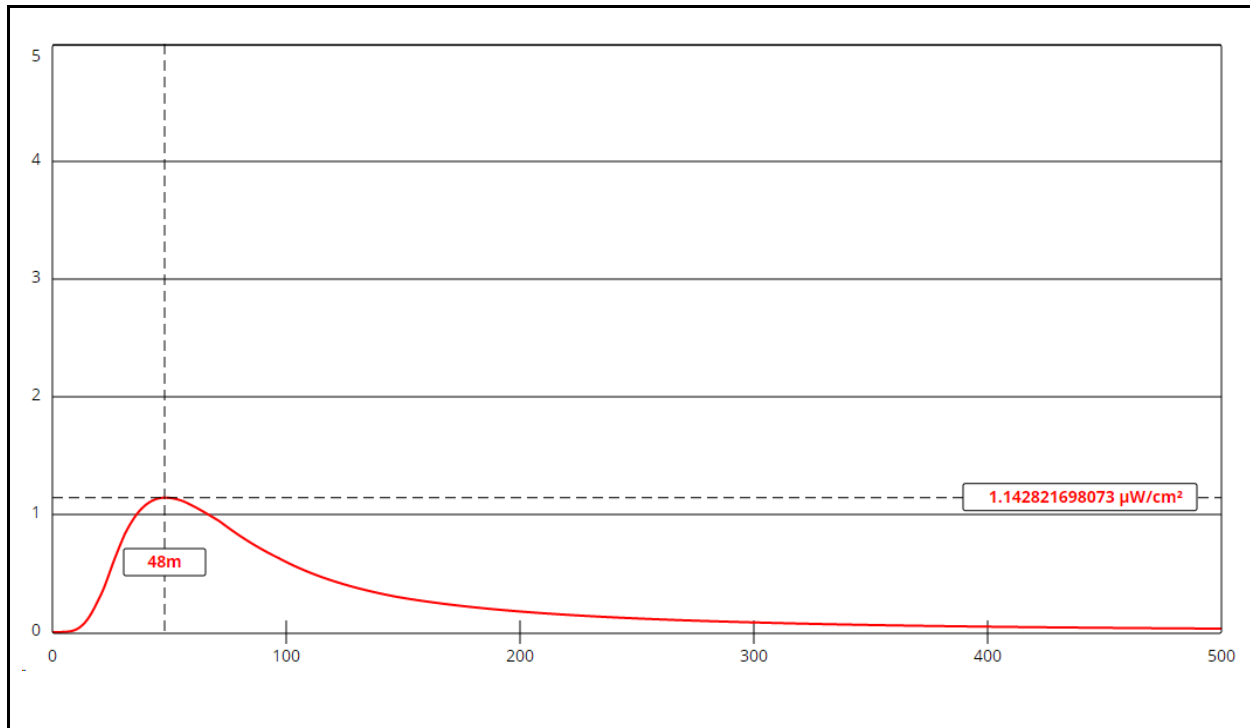
D is the distance in meters from the center of radiation to the calculation point.

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 appropriate element pattern the Shively 6832-2-SS antenna proposed for use. The highest calculated ground level power density occurs at a distance of 48 meters from the base of the antenna support structure. At this point the power density is calculated to be 1.1 $\mu W/cm^2$, which is 0.6% 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 of K236CI 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 applicants 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 radiation in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMModel

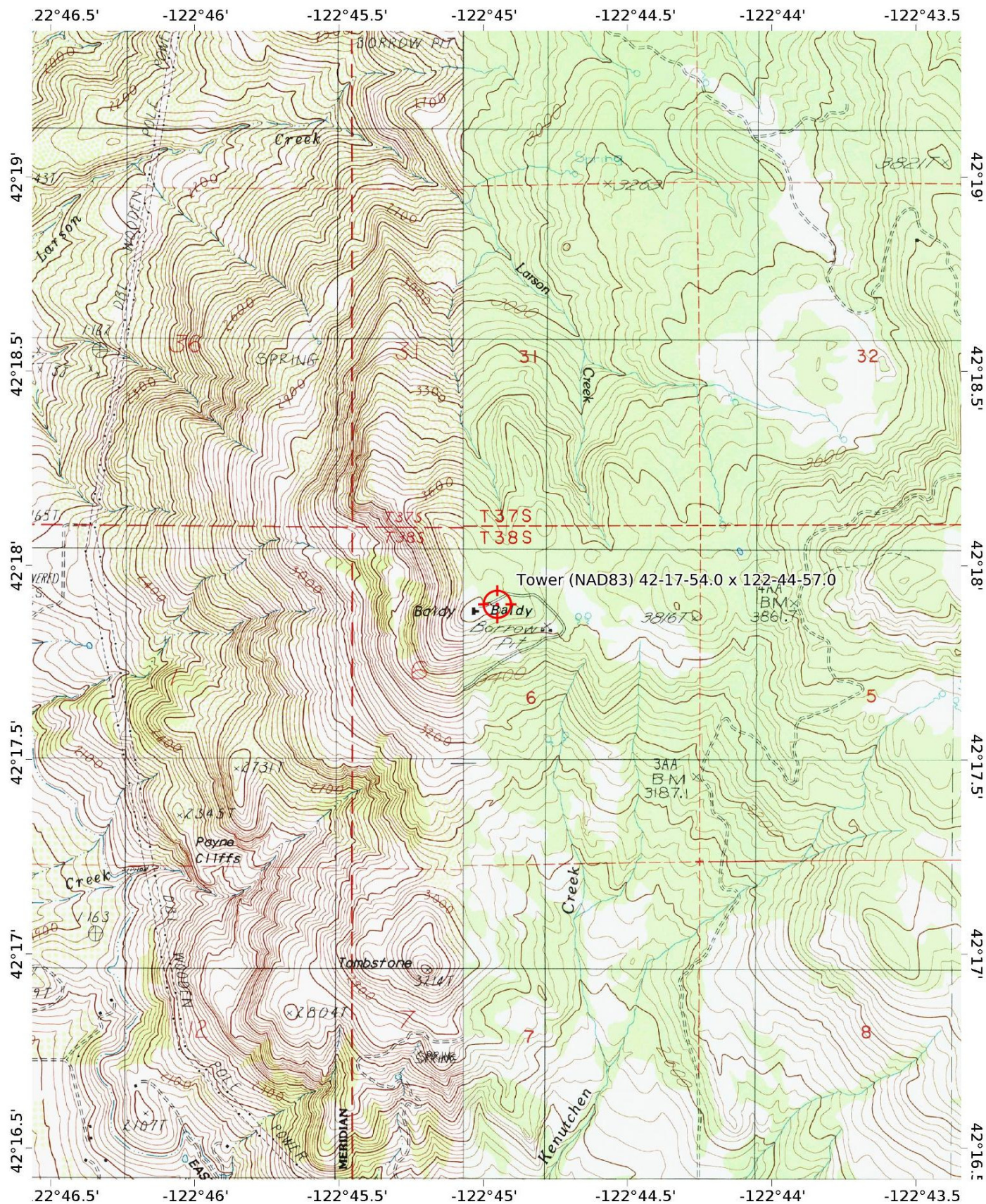
K236CI Medford

Antenna Type: Shively 6832-2-SS
No. of Elements: 2
Element Spacing: 0.5 wavelength

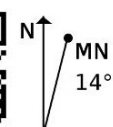
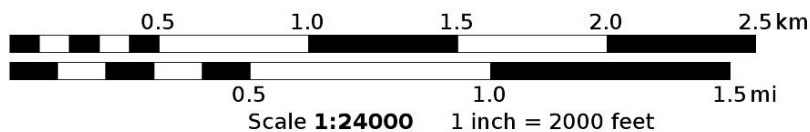
Distance: 500 meters
Horizontal ERP: 0.110 kW
Vertical ERP: 0.110 kW

Antenna Height: 28 meters AGL

Maximum Calculated Power Density is 1.1 $\mu\text{W}/\text{cm}^2$ at 48 meters from the antenna structure.



Mercator Projection
 WGS84
 USNG Zone 10TEM



Hatfield & Dawson Consulting Engineers

