

**TECHNICAL STATEMENT
RE: MINOR MODIFICATION OF
A LICENSED FM AUXILIARY STATION
KOMP 5.0 kW ERP 551 M HAAT 92.3 MHz
LAS VEGAS, NEVADA**

INTRODUCTION

This statement has been prepared on behalf of Lotus Broadcasting Corp. (the “Applicant”), licensee of FM broadcast station KOMP in Las Vegas, Nevada, Facility ID No. 38451, to supply technical information in support of a construction permit (CP) application to make certain minor changes to KOMP’s existing back-up facility.¹ Specifically, the Applicant seeks to replace the station’s nondirectional auxiliary antenna with one that is directional such that the station may increase power. The new antenna will also be shared as a back-up for co-owned station KXPT, Facility ID No. 38450, which will likewise file a separate application to replace its existing auxiliary antenna.² The technical parameters for the proposed power increase and replacement antenna are described in detail below.

The aforementioned CP application is eligible for processing under the normal procedures for seeking authority to operate an auxiliary antenna.³ All calculations, elevations, contours and other technical data provided herein have been determined in accordance with the technical standards of the Federal Communications Commission (FCC), unless specifically stated otherwise.

BROADCAST AUXILIARY FACILITY

As stated above, the Applicant intends to replace KOMP’s existing auxiliary antenna and increase effective radiated power (ERP). The antenna supporting structure is a nonregistered tower and the radiation center height of the new side-mounted antenna will be

¹ KOMP’s current auxiliary antenna is licensed to operate on Channel 222 (92.3 MHz) with 1.8 kW ERP at 550 m HAAT using a single-channel nondirectional antenna. See FCC File No. BXLH-20120224ABK.

² KXPT is licensed to similarly operate a separate nondirectional antenna auxiliary on Channel 246 (97.1 MHz). See FCC File No. BXLH-20120224ABM.

³ See 47 CFR § 73.1675 Auxiliary Antennas.



21 meters above ground level (AGL) or 1342 meters above mean sea level (AMSL). The resulting height above average terrain (HAAT) will be 551 meters.⁴ These elevations are indicated in the antenna sketch of [Figure 1](#), which also includes the TOWAIR determination results confirming that the tower does not require registration. The type of antenna to be employed is a circularly polarized directional with a maximum ERP of 5.0 kW. A plot of the envelope pattern is shown in [Figure 2](#). Antenna directivity has been specifically proposed to avoid any extension of the main facility's 1.0 mV/m (60 dBu) field strength contour as depicted in [Figure 3](#) and thus this proposal complies with the coverage limits in 47 C.F.R. Section 73.1675(a).⁵

ENVIRONMENTAL EFFECT

The proposed replacement antenna will be collocated on an existing broadcast tower. A side mounted antenna, such as the one specified here, does not generally fall within the criteria outlined in 47 CFR § 1.1307(a) for facilities requiring additional environmental processing. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), the Applicant intends to operate the new auxiliary antenna in full compliance with the limits for maximum permissible exposure (MPE). The CP application specifies the following technical parameters:

Frequency:	92.3 MHz (FM Channel 222)
ERP:	5.0 kW H-pol, 5.0 kW V-pol
Antenna Description:	Opposed "U" dipole
Number of elements:	6
Spacing between elements:	0.5 Wavelength
Polarization:	Circular
Radiation center height:	21 meters AGL
Location coordinates:	35-56-43.9 NL, 115-02-33.9 WL (NAD83)
Site elevation:	1321 meters AMSL
Overall tower height:	55 meters AGL

The Applicant plans to utilize a 6-bay opposed "U" dipole antenna with half wavelength spacing, which is an EPA Type-3 radiator. An FM Model study was performed for this proposal and the calculated results indicate maximum exposure at points 2 meters above ground

⁴ No change in the average terrain calculation is specified.

⁵ KOMP's licensed main facility is currently authorized to operate non-directionally with 25 kW ERP at 1124 meters HAAT. See FCC File No. BLH-19960913KB. The transmitter site coordinates for the main facility are 35-57-56.8 N, 115-30-06.0 W.



(approximate human head height) will not be greater than $10 \mu\text{W}/\text{cm}^2$. This exposure level is 5 percent of the MPE limit for uncontrolled environments and 1 percent of the limit for controlled areas.⁶ A copy of the FM Model plot is provided in [Figure 4](#).

KOMP's back-up facility is located at the Black Mtn. Arden Peak Communications Site. This mountaintop site is administered by the Bureau of Land Management and it is not open or accessible to the general public. As shown in the aerial photo below, it is completely isolated from any populated areas and there is only one road that provides access to the site, which is private and controlled by multiple gates. As shown in the photo of the first and last gates, there are RF warning signs affixed to both gates and they are generally kept closed and locked. The last gate is also equipped with a restricted access sign.



The entire perimeter of the site is controlled with chain link fencing topped with barbed wire. Examples of the various access controls and warning signs are shown in the remaining photos. In fact, there is one that shows there are “restricted access” and “RF safety” signs visibly displayed on the locked entrance gate. Within the controlled site area, additional signage, fencing and other suitable barriers are utilized to alert site-users of the potential for

⁶ The maximum permissible exposure (MPE) limits applicable to FM frequencies, as set forth in 47 CFR § 1.1310 for uncontrolled and controlled situations, are $200 \mu\text{W}/\text{cm}^2$ and $1,000 \mu\text{W}/\text{cm}^2$ respectively.



exposure in excess of the MPE limits. The Applicant acknowledges that persons authorized to access the site should be protected from excessive exposure to RF fields in accordance with the methods recommended in OET-65.⁷ Accordingly, the Applicant will coordinate with other site-users prior to performing work at elevations above ground level or in controlled areas where the MPE limits may be exceeded. The Applicant will also take such preventative steps to protect workers as reducing power or shutting down its facilities.

Given that the specified site is a controlled environment and the ground-level exposure contribution from KOMP is calculated to be not more than 5 percent of the MPE limits, this proposal has been found to comply with the criteria in 47 CFR § 1.1307(a) and (b) and thus further environmental processing is not required in accordance with 47 CFR § 1.1306.



Respectfully submitted,

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Attachments:

- Figure 1 – Antenna Sketch
- Figure 2 – Envelope Pattern
- Figure 3 – Auxiliary & Main Contours
- Figure 4 – FM Model Plot

⁷ FCC Office of Engineering and Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01 (1997) (OET-65).

TOWAIR

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 35-56-43.9 north
Longitude 115-02-33.9 west

Measurements (Meters)

Overall Structure Height (AGL) 55
Support Structure Height (AGL) 55
Site Elevation (AMSL) 1321

Structure Type

LTOWER - Lattice Tower

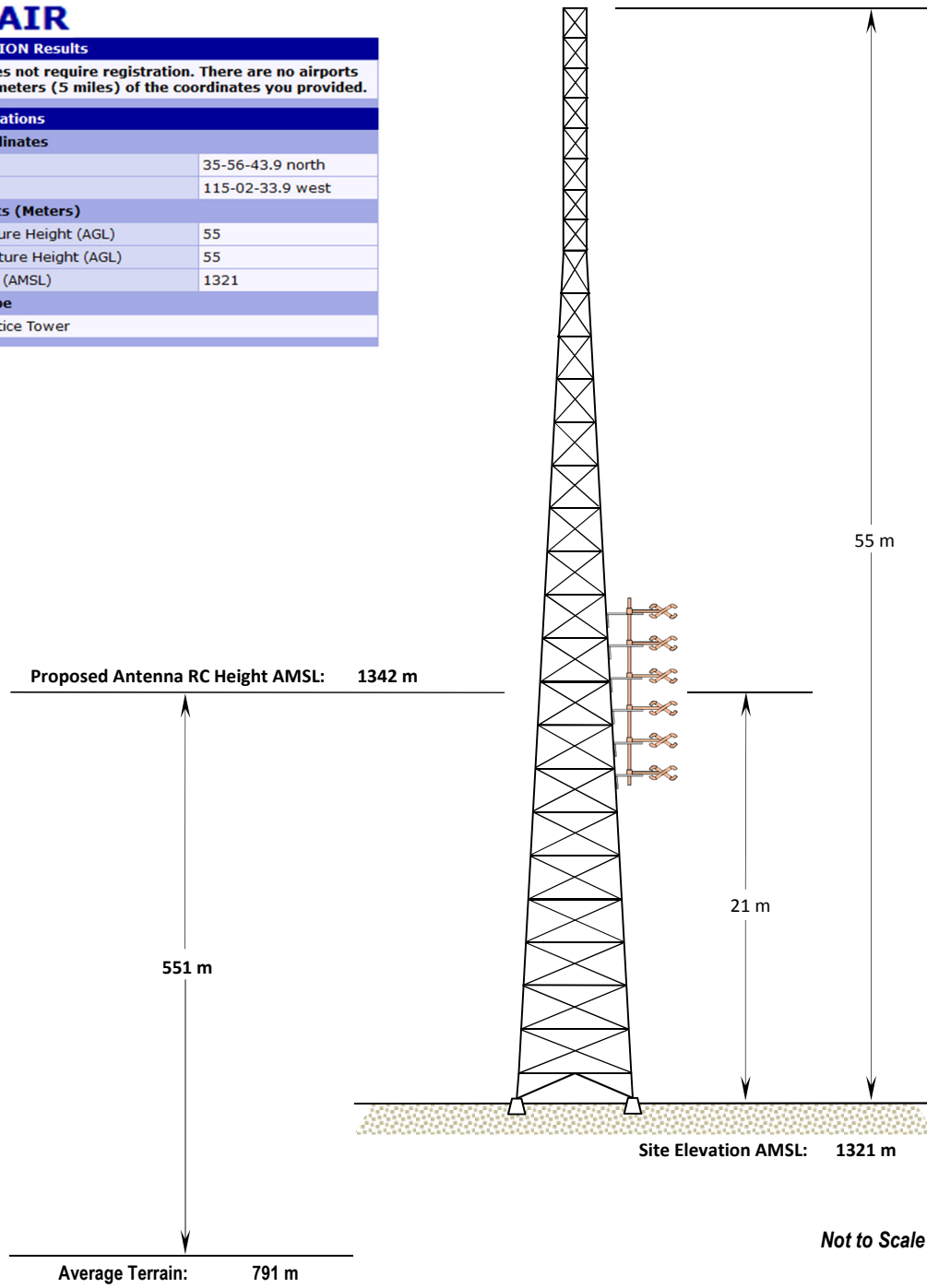
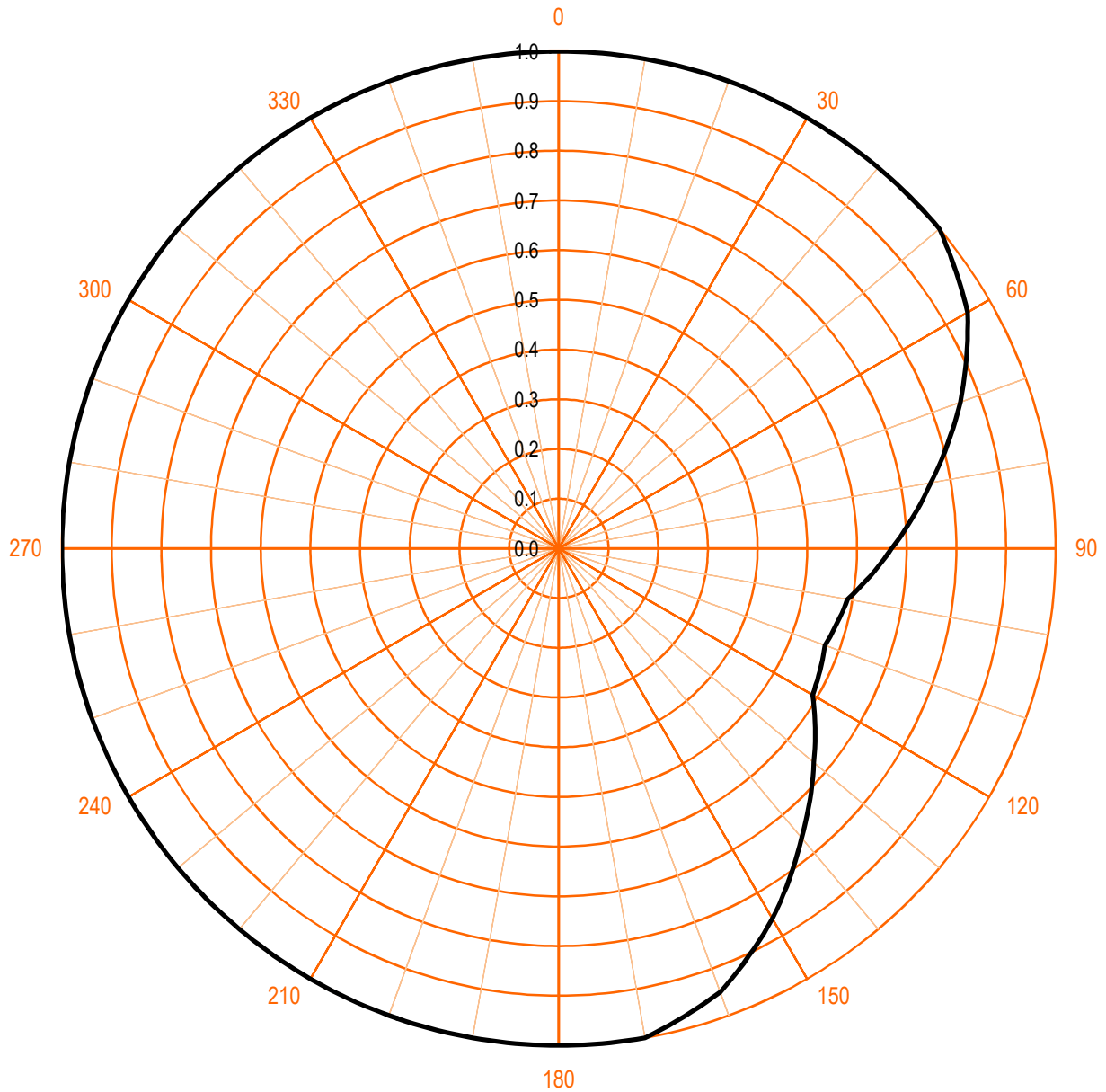


FIGURE 1
ANTENNA SKETCH
AUXILIARY DIRECTIONAL ANTENNA
KOMP 92.3 MHz 5.0 kW-DA 551M HAAT
LAS VEGAS, NEVADA

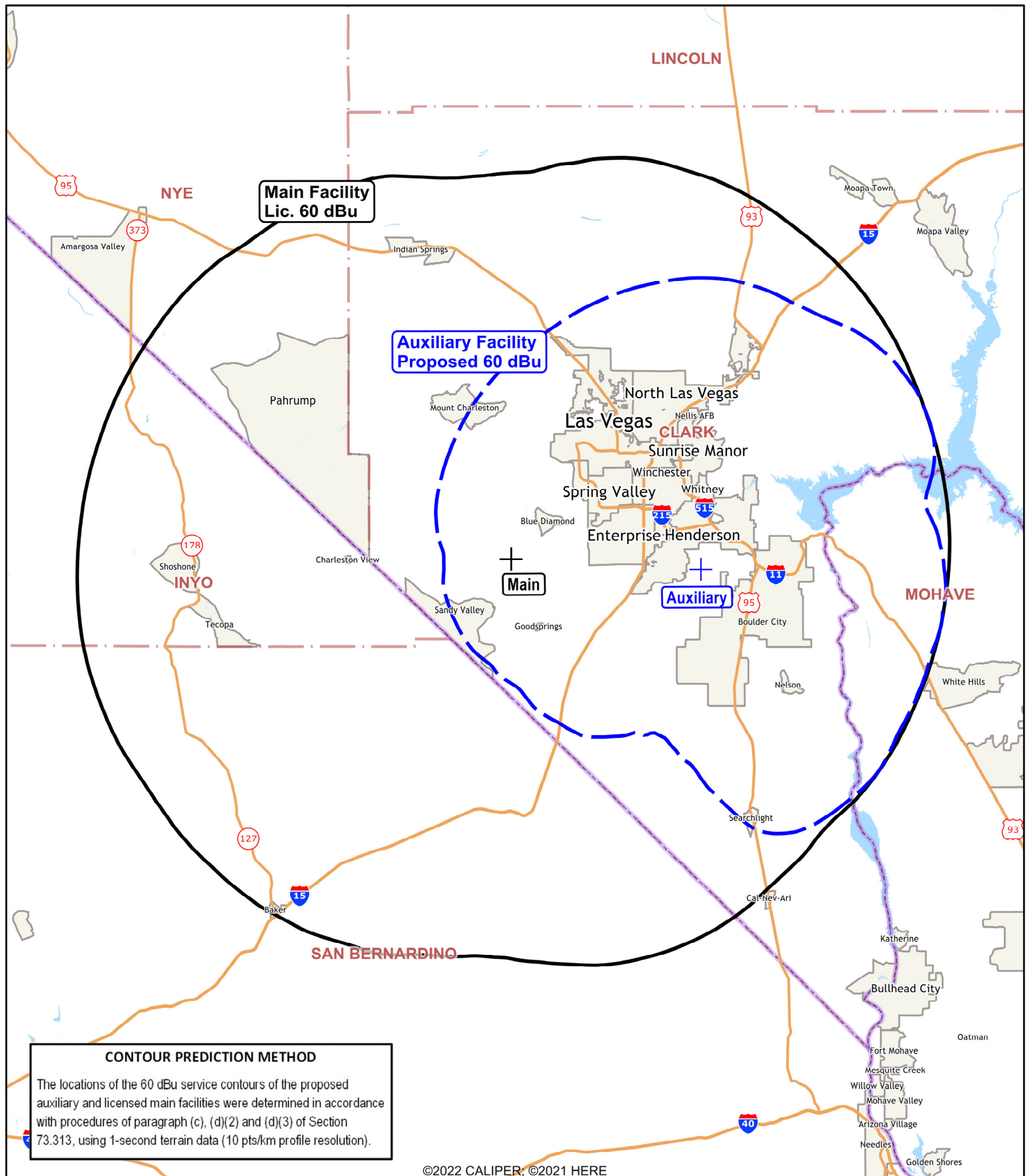
February 2023

FIGURE 2
ENVELOPE PATTERN PLOT
KOMP (AUX) 5 KW-MAX 551 M HAAT
LAS VEGAS, NV



Directional Antenna Relative Field Values, No Rotation

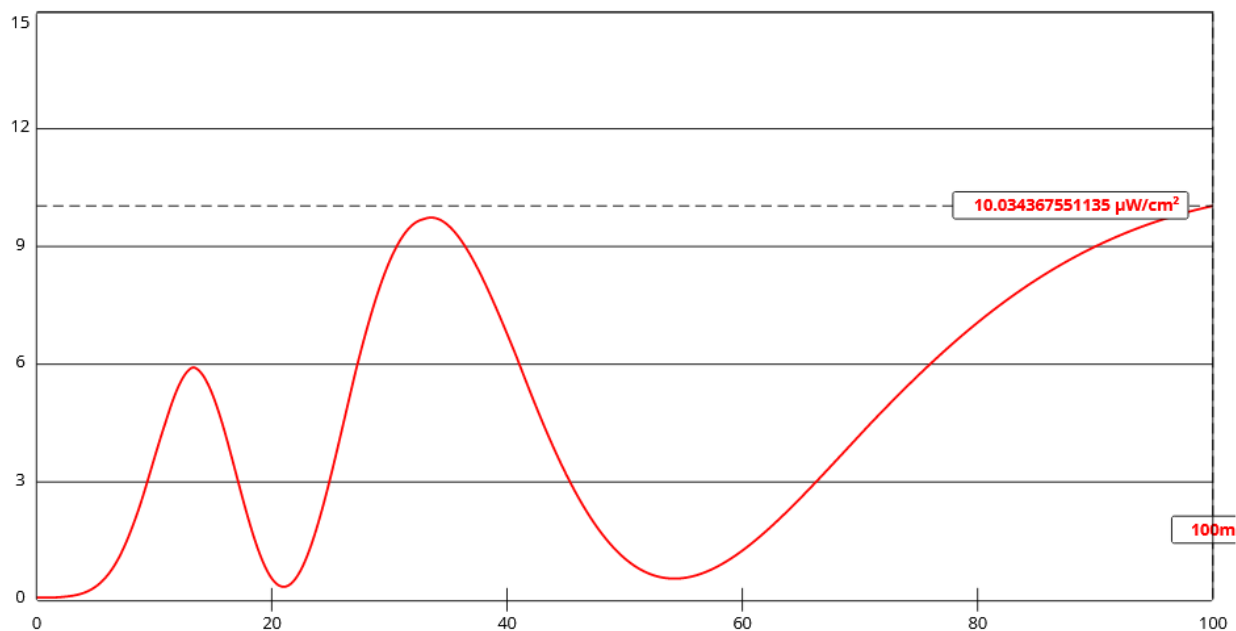
Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	1.0	90	0.67	180	1.0	270	1.0
10	1.0	100	0.59	190	1.0	280	1.0
20	1.0	110	0.57	200	1.0	290	1.0
30	1.0	120	0.59	210	1.0	300	1.0
40	1.0	130	0.67	220	1.0	310	1.0
50	1.0	140	0.76	230	1.0	320	1.0
60	0.95	150	0.86	240	1.0	330	1.0
70	0.86	160	0.95	250	1.0	340	1.0
80	0.76	170	1.0	260	1.0	350	1.0



FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data published in 1985 by the EPA.

KOMP – Auxiliary Antenna



View Tabular Results +

Channel Selection	Channel 222 (92.3 MHz) ▾		
Antenna Type +	EPA Type 3: Opposed U Dipole ▾		
Height (m)	<input type="text" value="21"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="5000"/>	ERP-V (W)	<input type="text" value="5000"/>
Num of Elements	<input type="text" value="6"/>	λ	<input type="text" value="0.5"/>
Num of Points	<input type="text" value="500"/>	<input type="button" value="Apply"/>	

FIGURE 4