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February 3, 2021

Via First Class Mail

Marlene H. Dortch, Secretary  
Federal Communications Commission  
Office of the Secretary  
45 L Street NE  
Washington, D.C. 20554

Re: **Request for Experimental Authorization and Waiver of  
47 C.F.R. § 74.1231(i)**

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Dear Ms. Dortch:

Universal Media Access - KSJO-FM, LLC (“UMA”), the licensee of full power FM radio station KSJO(FM), San Jose, CA (Facility ID 4117) and FM booster KSJO-FM1, Pleasanton, CA (Facility ID 203495), hereby requests, through counsel, experimental authorization pursuant to 47 C.F.R. § 5.203 and a waiver of 47 C.F.R. § 74.1231(i) in order to carry out the proposed experimental operations described below and in the attachment hereto.

UMA requests experimental authority to build and operate two new co-located on-channel FM boosters, and to originate limited programming on these boosters and existing KSJO-FM1 for ninety (90) days. Because 47 C.F.R. § 74.1231(i) prohibits FM boosters from originating programming, UMA also requests a waiver of this rule for the duration of the experimental authorization for purposes of conducting the experiment. Upon grant of the experimental authorization, UMA will promptly construct the required facilities. UMA requests that the ninety (90) day testing period commence when construction of the boosters has been completed. Upon expiration of the experimental authorization, the two new boosters will be dismantled, and the program origination will cease.

UMA intends to use the experimental authorization to conduct and evaluate the simultaneous broadcast on each booster of unique non-commercial programming targeted to discrete audiences located within the boosters’ limited-service areas.

Specifically, UMA intends to target the broadcasts to appeal to specific diverse audiences encompassed within the boosters' service areas without creating harmful interference to any broadcaster. UMA will utilize the services and ZoneCasting technology of GeoBroadcast Solutions LLC ("GeoBroadcast") to conduct this test, under the direction and control of UMA.

The Commission has previously granted three experimental authorizations to test this technology: most recently in 2016 for WIIL(FM), Union Grove, WI; in 2011 for WWOJ(FM) Avon Park, FL; and in 2010 for KDUT(FM), Randolph, UT. The present request is similar to those previously granted requests.

The proposed experimental operations are described in detail in the attached exhibit by Goldman Engineering Management. The proposed experimental operations comply with Section 5.203 of the Commission's rules. The authorized power of the stations will not exceed more than 5% of the maximum power specified.<sup>1</sup> Emissions outside the authorized bandwidth will be attenuated to the degree required.<sup>2</sup> The experimental broadcasts will not impact the minimum required schedule of programming for UMA's stations, which will continue to be met.<sup>3</sup> UMA will not transmit sponsored programs or commercial announcements on the experimental facilities.<sup>4</sup>

Grant of the experimental authority request herein will serve the public interest. The proposed experimental operations will enable UMA to explore how technology can be deployed by FM radio broadcasters to originate programming from FM boosters in order to geo-target content during a limited portion of the broadcast hour.<sup>5</sup> The Commission recently stated that "the use of FM booster stations to air geo-targeted content could potentially help FM broadcasters, including small and independent broadcast stations owned by women, minorities, and small businesses, to provide important and more locally relevant information and to better compete for advertising revenue in an increasingly dynamic media marketplace."<sup>6</sup> Grant of this request will advance understanding of the technical and commercial issues surrounding this matter, in furtherance of the Commission's policy objectives.

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<sup>1</sup> 47 C.F.R. § 5.203(c)(1).

<sup>2</sup> *Id.* at § 5.203(c)(2).

<sup>3</sup> *Id.* at § 5.203(c)(3).

<sup>4</sup> *Id.* at § 5.203(c)(4).

<sup>5</sup> *Amendment of Section 74.1231(i) of the Commission's Rules on FM Broadcast Booster Stations*, Notice of Proposed Rulemaking, MB Docket Nos. 20-401, 17-105, RM-11854 (rel. Dec. 1, 2020).

<sup>6</sup> *Id.* at ¶ 3.

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Should there be any questions concerning this request, please contact me at (202) 663-8195 or [miles.mason@pillsburylaw.com](mailto:miles.mason@pillsburylaw.com) or Bert Goldman at (214) 395-5067 or [bert@bgoldman.net](mailto:bert@bgoldman.net).

Sincerely,

/s/ Miles S. Mason

Miles S. Mason

*Counsel for Universal Media Access -  
KSJO-FM, LLC*

Attachment

Cc (via email):

Jim Bradshaw, [james.bradshaw@fcc.gov](mailto:james.bradshaw@fcc.gov)  
Rudy Bonacci, [rodolpho.bonacci@fcc.gov](mailto:rodolpho.bonacci@fcc.gov)

**Goldman Engineering Management  
Auburn, CA**

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DESCRIPTION OF PROPOSED EXPERIMENTAL OPERATION

By this application, Universal Media Access - KSJO-FM, LLC (“UMA”), licensee of KSJO(FM), San Jose, CA and KSJO-FM1, Pleasanton, CA, respectfully requests temporary experimental authorization (“Experimental Authorization”) pursuant to 47 C.F.R. § 5.203 to build and operate two new collocated on-channel boosters at two discreet locations (at different times) in order to garner additional data using the Geo Broadcast Solutions ZoneCasting™ FM booster system. This will be the fourth Experimental Authorization requested to test this technology and the second Experimental Authorization request using the same booster configuration. Preliminary data was collected in prior experimental operation in 2010 for KDUT(FM) in Randolph, UT<sup>1</sup>; in 2011 with FM on-channel boosters for WWOJ(FM), Avon Park, FL for tests in the Sebring, Florida area<sup>2</sup>; and in 2016 for WIIL(FM), Union Grove, WI for tests in the downtown Milwaukee area.<sup>3</sup>

The testing requested herein will use the same back-to-back booster configuration tested in Milwaukee for WIIL(FM), however, in this case it is requested to test the dual-booster, single-site scenario using a “TOW” (Tower on Wheels) setup at two different locations located less than 0.25km from each other, with each facilities’ coverage well within the 54dBu contour of KSJO(FM) and with various power levels and antenna orientations as described below. All requested configurations will be fully compliant with the Commission’s technical rules for FM boosters. UMA requests Experimental Authorization to operate the booster system for a period of 90 days. UMA will disassemble the two boosters upon expiration of the Experimental Authorization. The requested testing will include the currently licensed KSJO-FM1. Other than modification of the audio source material as described below, no technical modifications be made to the currently licensed KSJO-FM1 booster.

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<sup>1</sup> FCC File No. -20100309ACM (granted 3/29/2010 and extended 6/3/2010).

<sup>2</sup> FCC File No. -20110719ADK (granted 9/28/2011).

<sup>3</sup> FCC File No. -20150828ACB (granted 11/16/2015).

The ZoneCasting test system as proposed herein will operate as a unified, synchronized system within the protected (54dBu) contour of the Class B host station (KSJO(FM)) and will generate identical, synchronized programming between the main and all booster facilities (licensed and experimental) with the exception of certain short-term programming breaks where different programming may be broadcast by one or more of the ZoneCasting booster nodes. UMA requests a waiver of 47 C.F.R. § 74.1231(i) to allow this slightly different programming to be periodically broadcast.

### FACILITIES REQUESTED

Testing is requested at two different locations 0.23km of each other. No more than two of the proposed experimental booster nodes will be operational at any given time. The purpose of the different experimental locations is to determine what effect proximity to a roadway has on the transition area between the main signal and zoned areas on the subject roadway. In addition, different power levels (from 5 watts up to a maximum of 50 watts) and antenna orientation will be evaluated to garner additional information to use for future design criteria. The zoned area will also include existing KSJO-FM1, however, no modification to the KSJO-FM1 RF transmission is being requested.

A map showing the locations of each site is shown in Exhibit A. Exhibit A1 to A4 show typical planned coverage for each booster for each site. As shown in exhibits B1-B2, all will operate within the 54dBu contour of the Main facility, KSJO(FM), at all times and all will meet contour overlap requirements to other stations (terrain from NED 3 second terrain database). To prove non-interference, a non-directional antenna pattern for the experimental boosters is shown. The antenna being used in each case is a Kathrein Scala CL-FM log-periodic antenna with 45 degree rotation to provide signal in both the vertical and horizontal polarization. The typical Azimuth Patterns are attached as Exhibit C.

- |                                 |  |
|---------------------------------|--|
| 1. Booster Location 1:          | I-680, Sheridan Site 1   |
| Geographic Coordinates (NAD83): | 37°33' 50" N, 121° 54' 20.5" W   |
| Site AMSL Height                | 243.2m   |
| Channel:                        | 222 (92.3MHz)  |
| Effective Radiated Power:       | Not to exceed 50W (H+V)  |
| Antenna Type, Pattern:          | Kathrein BCA CL-FM/RM log-periodic   |
| Antenna Orientation:            | Booster 1 (NE) between 10° to 160°<br>Booster 2 (SW) between 165° 270° True      |
| Antenna Height :                |  |
| Above ground:                   | 9m   |
| Above mean sea level:           | 253m   |
|                                 |  |
| 2. Booster Location 2:          | I-680, Mission Pass Site 2   |
| Geographic Coordinates (NAD27): | 37°33' 54.7" N, 121° 54' 27.7" W   |
| Site AMSL Height                | 269.7m   |
| Channel:                        | 222 (92.3MHz)  |
| Effective Radiated Power:       | Not to exceed 50W (H+V)  |
| Antenna Type, Pattern:          | Kathrein BCA CL-FM/RM, log-periodic  |
| Antenna Orientation:            | Booster 1 (NE) between 10° to 160° True<br>Booster 2 (SW) between 165° 270° True |
| Antenna Height :                |  |
| Above ground:                   | 9m   |
| Above mean sea level:           | 278.7m   |

COVERAGE

All testing for the KSJO Experimental facility will be at one of two requested sites 0.23km from each other in an area called Mission Pass which is an unpopulated area between the San Jose area (covered by KSJO(FM)) and the Pleasanton/ Livermore area (covered by KSJO-FM1). Interstate 680 is the only main road which traverses the pass. The locations were selected for the experimental zone border because there is no coverage by either KSJO(FM) or KSJO-FM1 in the southern portion of the pass, and KSJO-FM1 just begins to become audible in the northern portion of the pass, so regardless of whether the boosters are operated in synchronous or zoned operation, there will be a significant improvement in the listening experience to KSJO(FM).

As shown in Exhibit A1 to A4, this is the typical orientation which will be used for testing at each of the two sites, as shown, there will be a northeast-oriented antenna at approximately 65 degrees T, and a southwest-oriented antenna at approximately 245 degrees T. This configuration will be tested at each of

the proposed sites, however, only with the two transmitters/ antennas per site (not more). Some testing at each site is requested with antennas pointed in different directions to test prediction of the transition zone.

#### ALLOCATION

As shown in Exhibit B1-B2, the 54dBu contours of all boosters will fall inside the 54dBu contour of KSJO, Channel 222B. With respect to interference to KKDV(FM), Walnut Creek, CA, the f50/10 40dBu interfering contours of all boosters will be well contained within the f50/10 54dBu contour of KSJO(FM), as shown in exhibit C. Further, even ignoring the significant short-spacing between KSJO(FM) and KKDV(FM), there will be no first adjacent interference even to the non-interference-limited coverage contour of KKDV(FM).

#### ENVIRONMENTAL CONSIDERATIONS

The two requested boosters will be mounted at approximately 9 meters AGL on a “TOW” (Tower on Wheels). The TOW will be parked immediately adjacent to existing towers at both requested test locations and will not exceed the height of the adjacent towers. Neither of the existing towers where the TOW will be located have Antenna Structure Registrations, therefore, it is not believed an ASR is necessary for use of the TOW and it is believed that the proposed operations are exempt from environmental processing under 47 C.F.R. § 1.1306.

UMA proposes to operate the boosters between 5 watts and 50 watts. Considering the worst-case operation at 50 watts, at 9m AGL, using the FCC online program “FM Model” for a 1-bay Type 1 (“Ring and Stub”), the predicted worst-case RF power density at 2m AGL with a 9m center of radiation is  $41\mu\text{W}/\text{cm}^2$  or approximately 20% of the maximum allowable public exposure (MPE) of  $200\mu\text{W}/\text{cm}^2$ .

CERTIFICATION

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direct supervision, and that they are true and correct to the best of his knowledge and belief.

A handwritten signature in cursive script, appearing to read "Bertram S. Goldman".

Bertram S. Goldman  
Goldman Engineering Management  
(214) 395-5067



EXHIBIT A- BOOSTER LOCATIONS



EXHIBIT A1- Typical Exp Booster Coverage, NE Oriented Antenna, Site 1

KSJO PROP Typical NE Booster Coverage, Site 1



EXHIBIT A2- Typical Exp Booster Coverage, SW Oriented Antenna, Site 1

KSJO PROP Typical SW Booster Coverage, Site 1

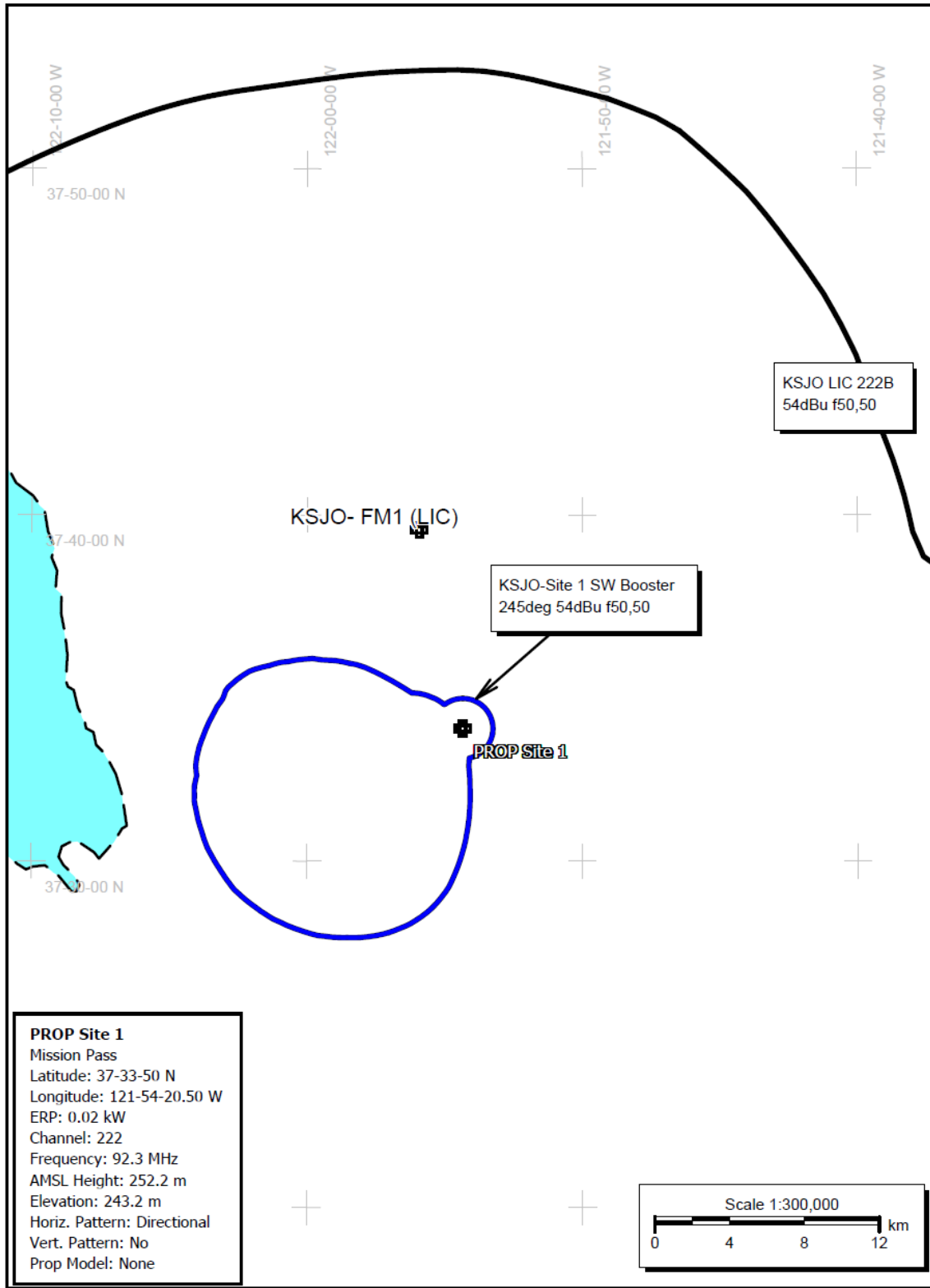
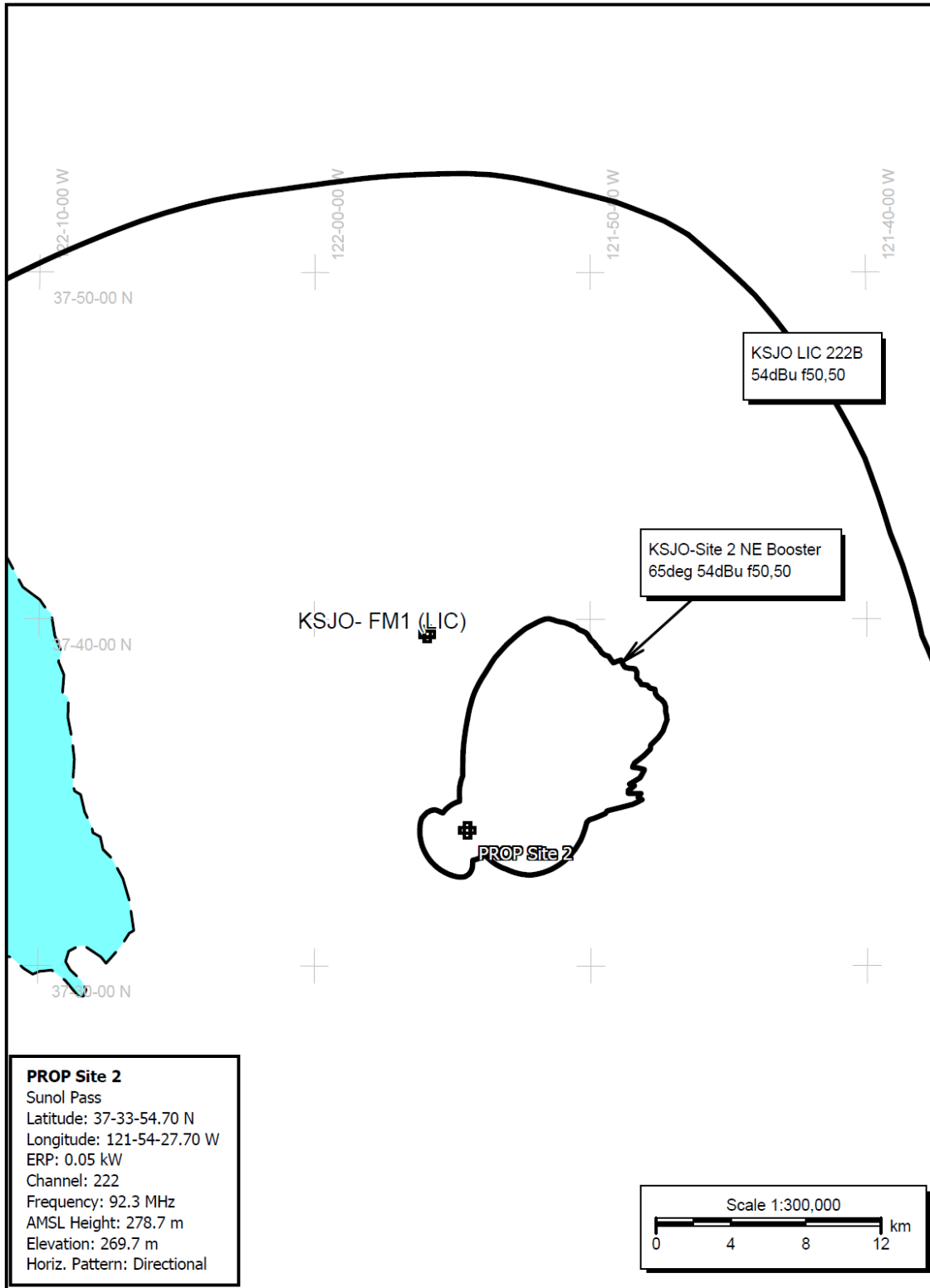


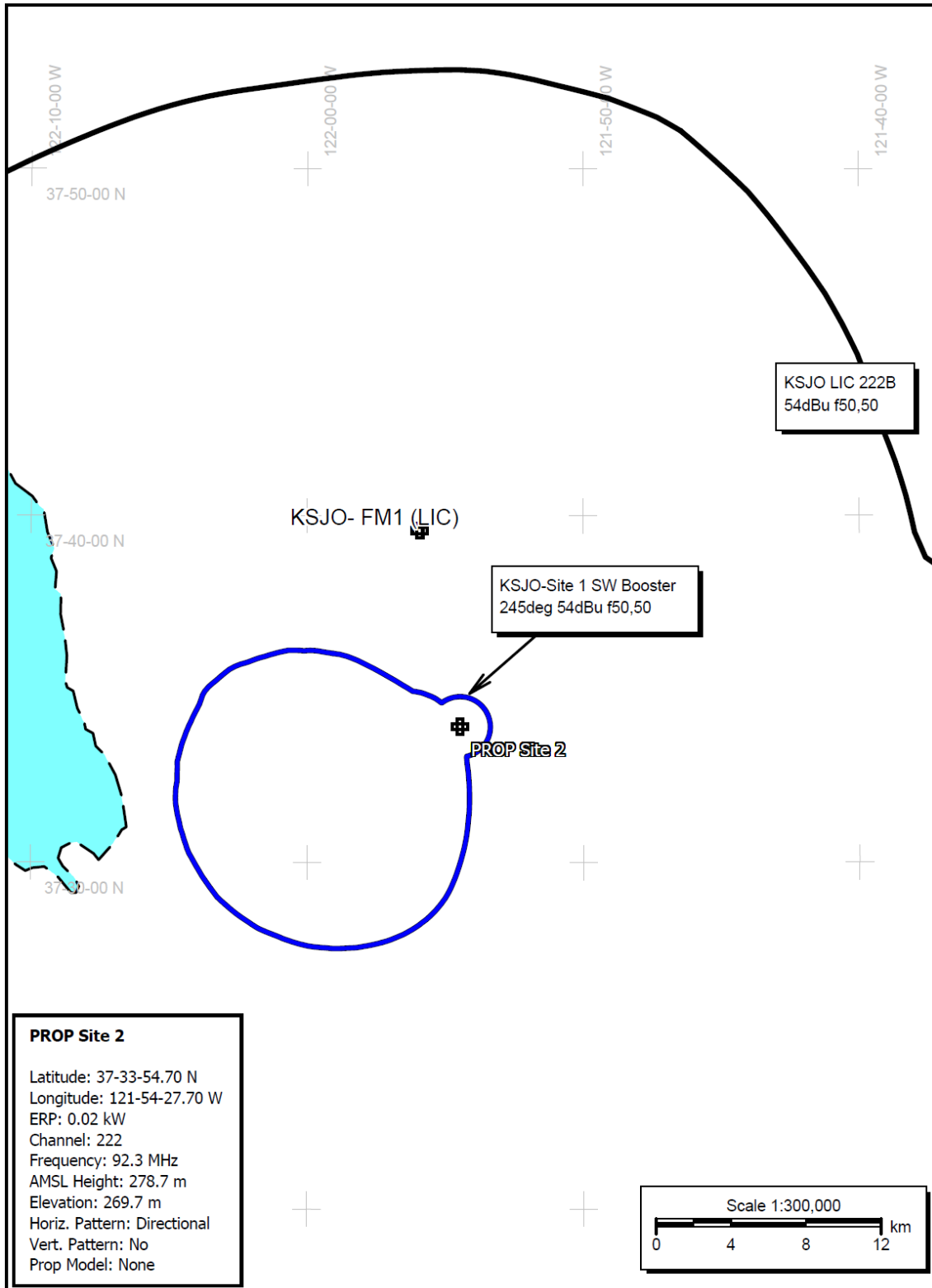
EXHIBIT A3- Typical Exp Booster Coverage, NE Oriented Antenna, Site 2

KSJO PROP Typical NE Booster Coverage, Site 2



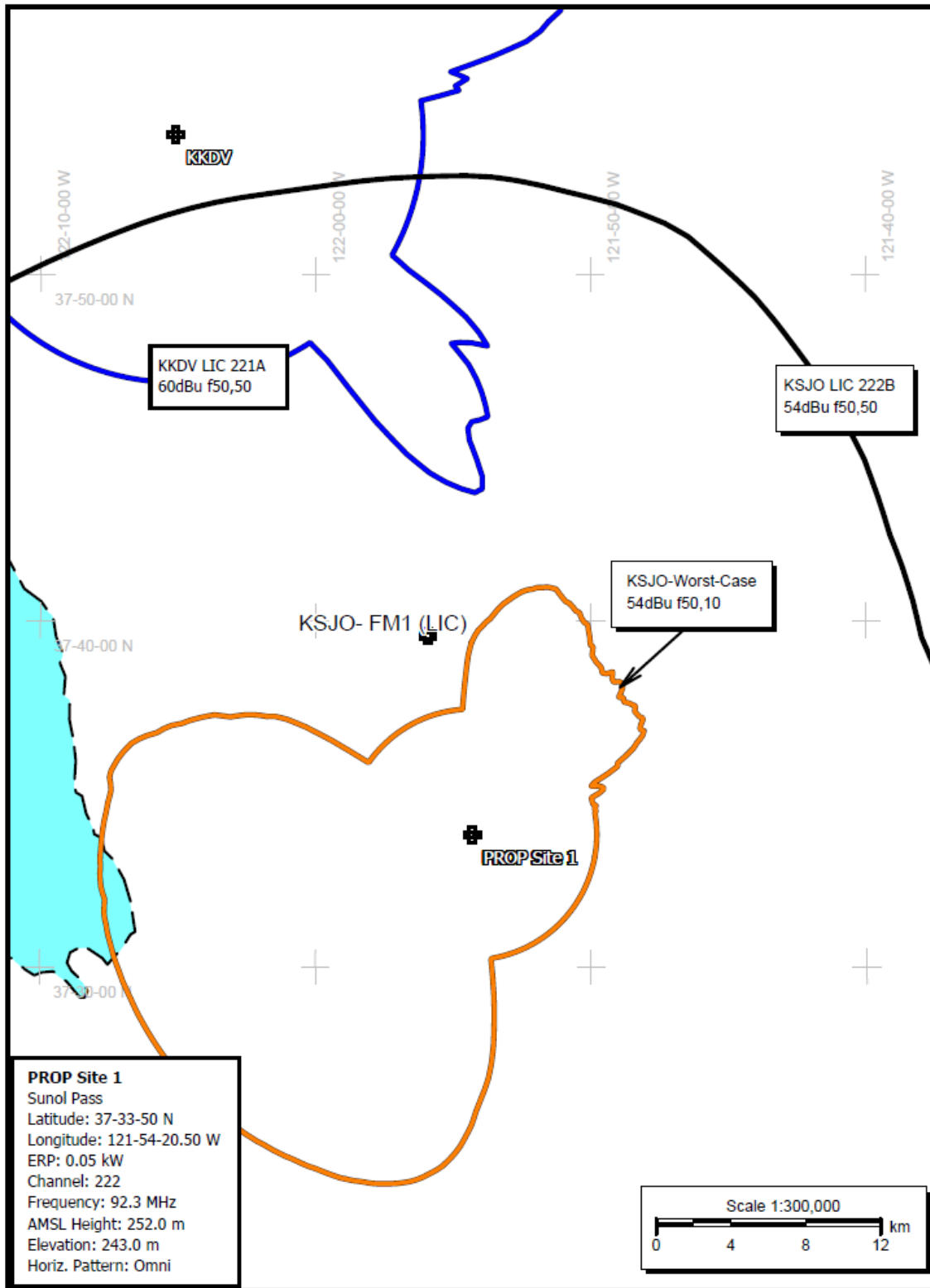
# EXHIBIT A4- Typical Exp Booster Coverage, SW Oriented Antenna, Site 2

## KSJO PROP Typical SW Booster Coverage, Site 2



# EXHIBIT B1- BOOSTER(S) SITE 1 54dBu INTERFERING CONTOUR

KSJO Worst-Case 360deg (ND) Interference to KKDV (221A)- SITE 1



# EXHIBIT B2- BOOSTER(S) SITE 1 54dBu INTERFERING CONTOUR

## KSJO Worst-Case 360deg (ND) Interference to KKDV (221A)- SITE 2

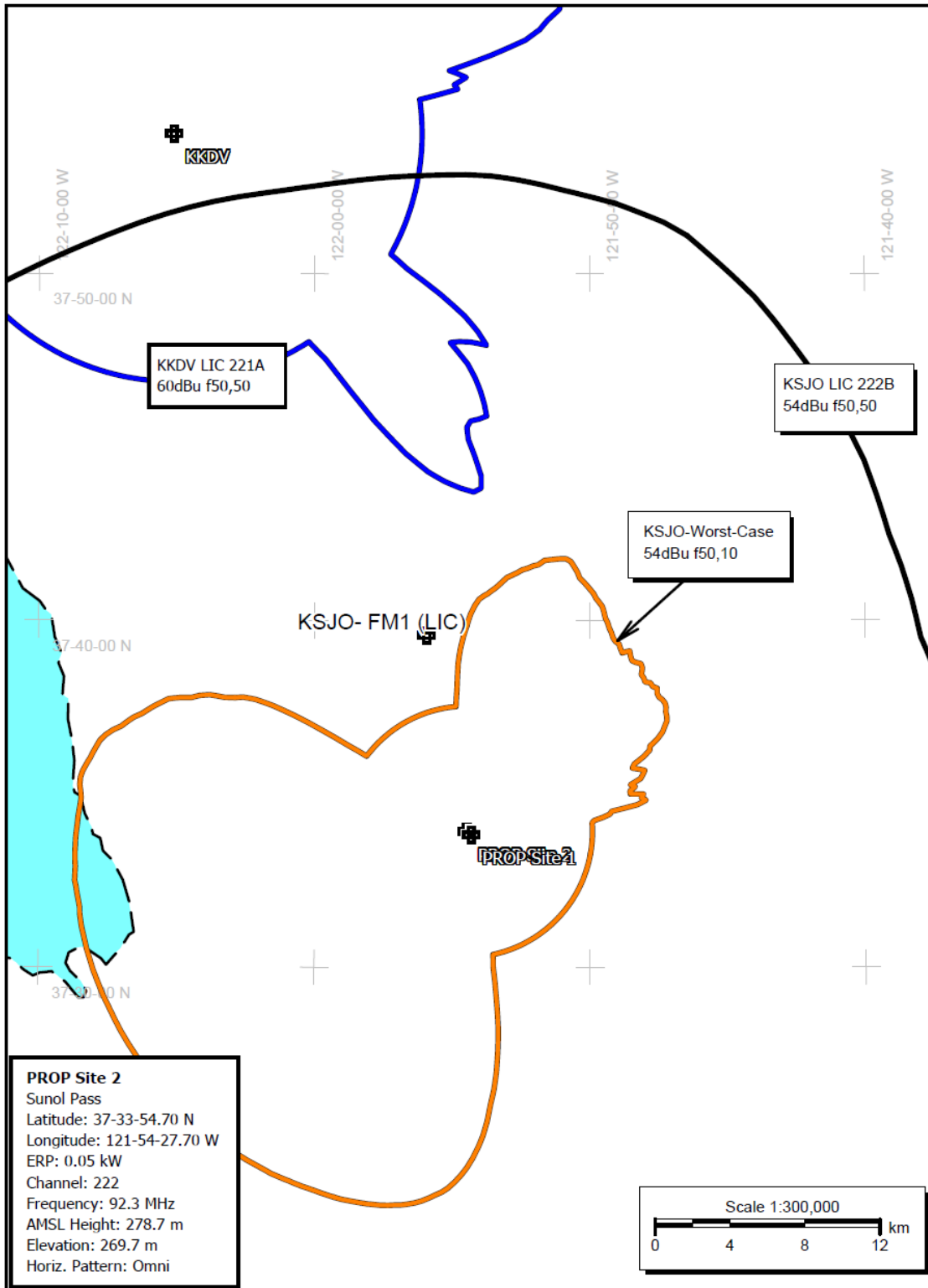
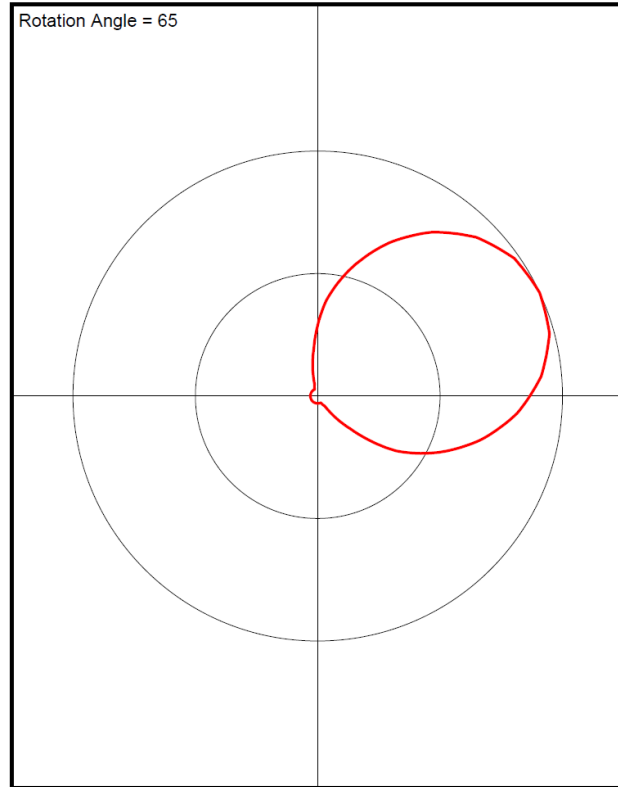


EXHIBIT C- Antenna Pattern, Northeast (65° Typical shown, additional azimuths 10° to 160° True for testing are requested).

KSJO NE Antenna Pattern  
 Post-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.29
5.0	0.39
10.0	0.467
15.0	0.544
20.0	0.617
25.0	0.69
30.0	0.7535
35.0	0.817
40.0	0.8665
45.0	0.916
50.0	0.948
55.0	0.98
60.0	0.99
65.0	1.0
70.0	0.99
75.0	0.98
80.0	0.948
85.0	0.916
90.0	0.8665
95.0	0.817
100.0	0.7535
105.0	0.69
110.0	0.617
115.0	0.544
120.0	0.467
125.0	0.39
130.0	0.29
135.0	0.19
140.0	0.12
145.0	0.05
150.0	0.04
155.0	0.03
160.0	0.03
165.0	0.03
170.0	0.03
175.0	0.03
180.0	0.03
185.0	0.03
190.0	0.03
195.0	0.03
200.0	0.03
205.0	0.03
210.0	0.03
215.0	0.03
220.0	0.03
225.0	0.03
230.0	0.03
235.0	0.03
240.0	0.03
245.0	0.03
250.0	0.03
255.0	0.03
260.0	0.03
265.0	0.03
270.0	0.03
275.0	0.03
280.0	0.03
285.0	0.03
290.0	0.03
295.0	0.03
300.0	0.03
305.0	0.03
310.0	0.03
315.0	0.03



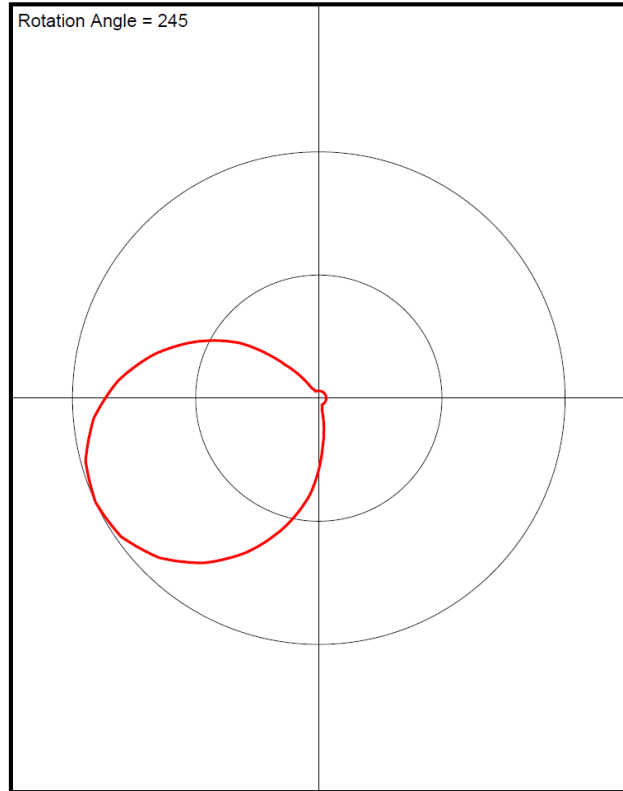
320.0	0.03
325.0	0.03
330.0	0.03
335.0	0.03
340.0	0.04
345.0	0.05
350.0	0.12
355.0	0.19



EXHIBIT C1- Antenna Pattern, Northeast (245° Typical shown, additional azimuths 165° to 270° True for testing are requested).

KSJO SW Antenna Pattern  
Post-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.03
5.0	0.03
10.0	0.03
15.0	0.03
20.0	0.03
25.0	0.03
30.0	0.03
35.0	0.03
40.0	0.03
45.0	0.03
50.0	0.03
55.0	0.03
60.0	0.03
65.0	0.03
70.0	0.03
75.0	0.03
80.0	0.03
85.0	0.03
90.0	0.03
95.0	0.03
100.0	0.03
105.0	0.03
110.0	0.03
115.0	0.03
120.0	0.03
125.0	0.03
130.0	0.03
135.0	0.03
140.0	0.03
145.0	0.03
150.0	0.03
155.0	0.03
160.0	0.04
165.0	0.05
170.0	0.12
175.0	0.19
180.0	0.29
185.0	0.39
190.0	0.467
195.0	0.544
200.0	0.617
205.0	0.69
210.0	0.7535
215.0	0.817
220.0	0.8665
225.0	0.916
230.0	0.948
235.0	0.98
240.0	0.99
245.0	1.0
250.0	0.99
255.0	0.98
260.0	0.948
265.0	0.916
270.0	0.8665
275.0	0.817
280.0	0.7535
285.0	0.69
290.0	0.617
295.0	0.544
300.0	0.467
305.0	0.39
310.0	0.29
315.0	0.19



320.0	0.12
325.0	0.05
330.0	0.04
335.0	0.03
340.0	0.03
345.0	0.03
350.0	0.03
355.0	0.03