

APPLICATION FOR CONSTRUCTION PERMIT

FM TRANSLATOR STATION K277BX
PAYSON, ARIZONA
103.3 MHz / 0.250 kW ERP

FARRELL ENTERPRISES LLC

JULY, 2015

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Farrell Enterprises LLC** ("Farrell"), licensee of FM translator station K277BX at Payson, Arizona, and are in support of their application for construction permit to modify that facility.¹ This application seeks to modify the current facility, which is operational pursuant to the provisions of automatic program test authority.

The original short-form engineering proposal for K277BZ was filed in the 2003 translator window. Following the grant of the initial long-form application, the construction permit was assigned to Farrell. Farrell submitted a modification of the construction permit to move it to its current location under FCC File No. BMPFT-20131226ABA. The facility was constructed pursuant to the terms of that construction permit, and a license application filed by the licensee under FCC File No. BLFT-20140603ACN.

Special condition number three on the 2013 construction permit required the completion of a partial proof of performance on AM station KMOG at Payson, Arizona.² Farrell seeks to move the translator from the KMOG site to a different site in the vicinity. The proposed site location would utilize a water tank as the supporting structure for the antenna. The proposed translator antenna would then be mounted to a short steel support above the top of the water tank. The facility would operate with an effective radiated power of 250 Watts at a center of radiation of 1614.0 meters AMSL. No change in the channel of operation or primary station is proposed under this application, and a non-directional antenna would continue to be utilized.

¹ The Facility ID for K277BX at Payson, Arizona is 144556.

² The Facility ID for KMOG at Payson, Arizona is 21218.

JEREMY RUCK & ASSOCIATES, INC.

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The proposed location is 1.5 kilometers from the current authorized location, which is at the KMOG array. This distance is 7.12 wavelengths, and since KMOG is directional, this falls within the distance requirements of Section 1.30002(b) of the Commission's Rules. However, the overall height of the tank, including the antenna support structure, is 40 feet or 12.2 meters above ground level. This translates into an electrical height of 20.8 degrees at 1420 kHz. As a result, the proposed antenna falls outside the criteria for impact to KMOG.

Exhibit E-1 illustrates the proposed and authorized 60 dBu service contours for K277BX. This map demonstrates that there is a substantial area over which these two contours overlap. The proposed relocation of K277BX would therefore be considered a minor change to the existing facility.

The proposed facility would continue to function as a fill-in translator for AM station KMOG, which is also licensed to Farrell. Exhibit E-2 illustrates the proposed 60 dBu service contour of the translator, along with the 2 mV/m daytime contour of KMOG, and a twenty-five mile radius centered on the KMOG transmitter site. As this map demonstrates, the 60 dBu contour would be wholly contained within both of the KMOG constructs.

The proposed facility would comply with the provisions of Section 74.1204 of the Commission's Rules. Exhibit E-3 is a tabular interference study for K277BX at the new location and technical parameters. This study, combined with its graphical depiction in the contour map in Exhibit E-4, demonstrate that the contour overlap provisions of Section 74.1204 would be met with regard to all relevant facilities.

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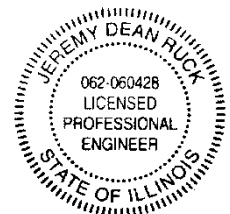
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The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed antenna would be added to an existing water tank structure. The addition of the low profile antenna to this structure would not increase the existing environmental impact already present.

Additionally, the proposed facility would not result in a radiofrequency radiation exposure hazard to persons at the site. Under a worst-case analysis pursuant to the equations in Appendix A of *OET Bulletin 65*, the calculated power density at two meters above ground is $181.2 \mu\text{W}/\text{cm}^2$. This value is less than the upper limit permitted under the uncontrolled environment condition.

Farrell certifies that it will coordinate with all other users of the site, including those performing maintenance on the water tank or adjacent structures, to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2015

Jeremy D. Ruck, PE
July 9, 2015

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7.9.2015

K277BX.X

BMPFT20131226ABA
Latitude: 34-15-13 N
Longitude: 111-18-39 W
ERP: 0.25 kW
Channel: 277
Frequency: 103.3 MHz
AMSL Height: 1614.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K277BX.C

BMPFT20131226ABA
Latitude: 34-16-00 N
Longitude: 111-18-54 W
ERP: 0.25 kW
Channel: 277
Frequency: 103.3 MHz
AMSL Height: 1603.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

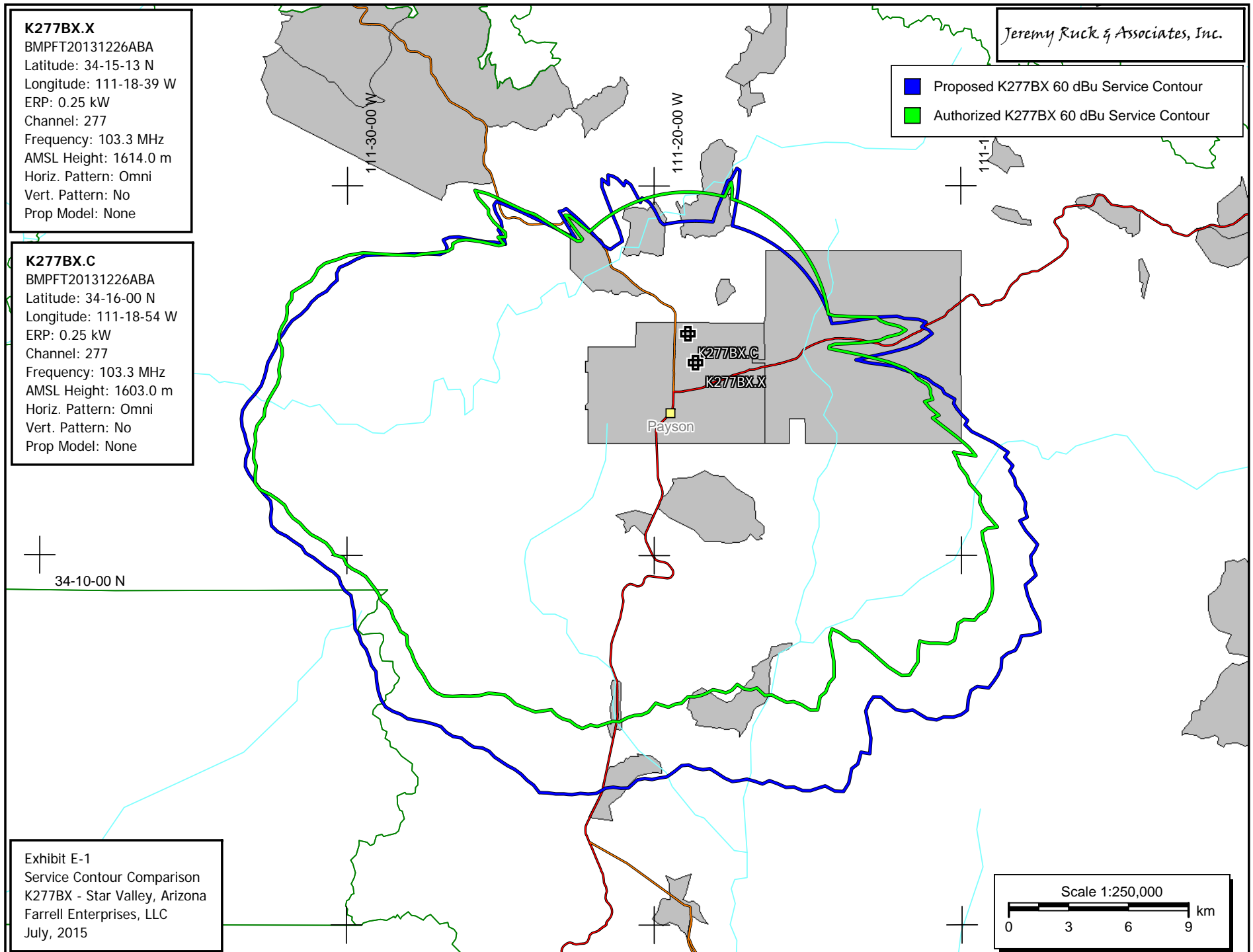
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- Proposed K277BX 60 dBu Service Contour
- Authorized K277BX 60 dBu Service Contour

34-10-00 N

Exhibit E-1
Service Contour Comparison
K277BX - Star Valley, Arizona
Farrell Enterprises, LLC
July, 2015

Scale 1:250,000
0 3 6 9 km



K277BX.X

BMPFT20131226ABA
Latitude: 34-15-13 N
Longitude: 111-18-39 W
ERP: 0.25 kW
Channel: 277
Frequency: 103.3 MHz
AMSL Height: 1614.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Proposed K277BX
60 dBu Service Contour

Jeremy Ruck & Associates, Inc.

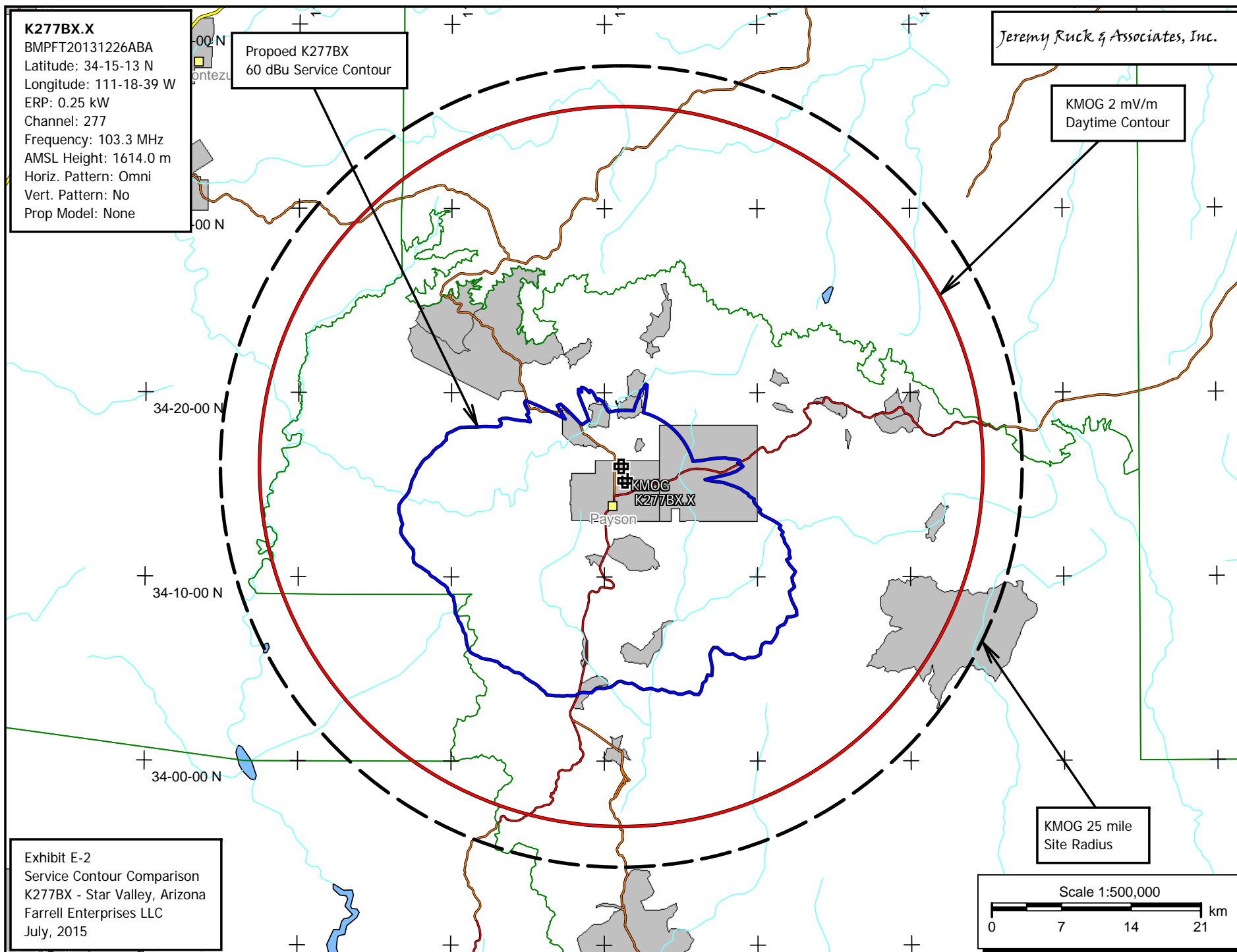
KMOG 2 mV/m
Daytime Contour

KMOG 25 mile
Site Radius

Exhibit E-2
Service Contour Comparison
K277BX - Star Valley, Arizona
Farrell Enterprises LLC
July, 2015

Scale 1:500,000

0 7 14 21 km



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Consulting Engineers - Canton, Illinois

Exhibit E-3 - Tabular Interference Study
K277BX - Star Valley, Arizona
CH# 277D - 103.3 MHz, Pwr= 0.25 kW, HAAT= 133.3 M, COR= 1614 M
Average Protected F(50-50)= 14.84 km
Omni-directional

DISPLAY DATES
DATA 07-09-15
SEARCH 07-09-15

REFERENCE
34 15 13.0 N.
111 18 39.0 W.

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
277D Star Valley	K277BX	CP _C_ AZ		345.2 165.2	1.50 BMPFT20131226ABA	34 16 00.0 111 18 54.0	0.250 1603	59.2	19.0 Farrell Enterprises LLC	-65.4*	-43.4*
278C Glendale	KLNZ	LIC _CY AZ		238.2 57.5	138.26 BMLH19980406KB	33 35 33.0 112 34 49.0	62.000 740	137.1 1269	92.3 Entravision Holdings, LLC	-20.9	12.6
276C1 Florence	KCDX	LIC NCN AZ		157.6 337.9	114.70 BLH19990702KE	33 17 55.0 110 50 28.0	2.700 932	95.0 2280	64.2 Desert West Air Ranchers C	-2.9	17.2
275C Sedona	KQST	LIC _C_ AZ		347.3 167.1	81.45 BLH20060307BHN	34 58 05.0 111 30 29.0	100.000 451	11.0 2629	76.6 Yavapai Broadcasting Corpo	60.4	3.7
276C Florence	KCDX	CP DCX AZ		168.8 349.0	167.10 BPH20130422ADM	32 46 44.0 110 57 46.0	42.000 614	123.4 1712	83.8 Desert West Air Ranchers C	21.2	51.0
277D Cottonwood	K277AR	LIC DC_ AZ		303.3 122.9	88.16 BLFT20070402KSG	34 41 12.0 112 07 00.0	0.010 791	39.9 2367	6.7 Arizona Board Of Regents F	35.5	31.5

Terrain database is NED 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 3rd adjacent.
All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C, H, V, E), Beamtilt (Y, N, X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
Reference station has protected zone issue: Mexico- AM tower

K277BX.X

BMPFT20131226ABA

Latitude: 34-15-13 N

Longitude: 111-18-39 W

ERP: 0.25 kW

Channel: 277

Frequency: 103.3 MHz

AMSL Height: 1614.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

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- 60 dBu F(50,50) Service Contour
- 40 dBu F(50,10) Interference Contour
- 54 dBu F(50,10) Interference Contour
- 100 dBu F(50,10) Interference Contour

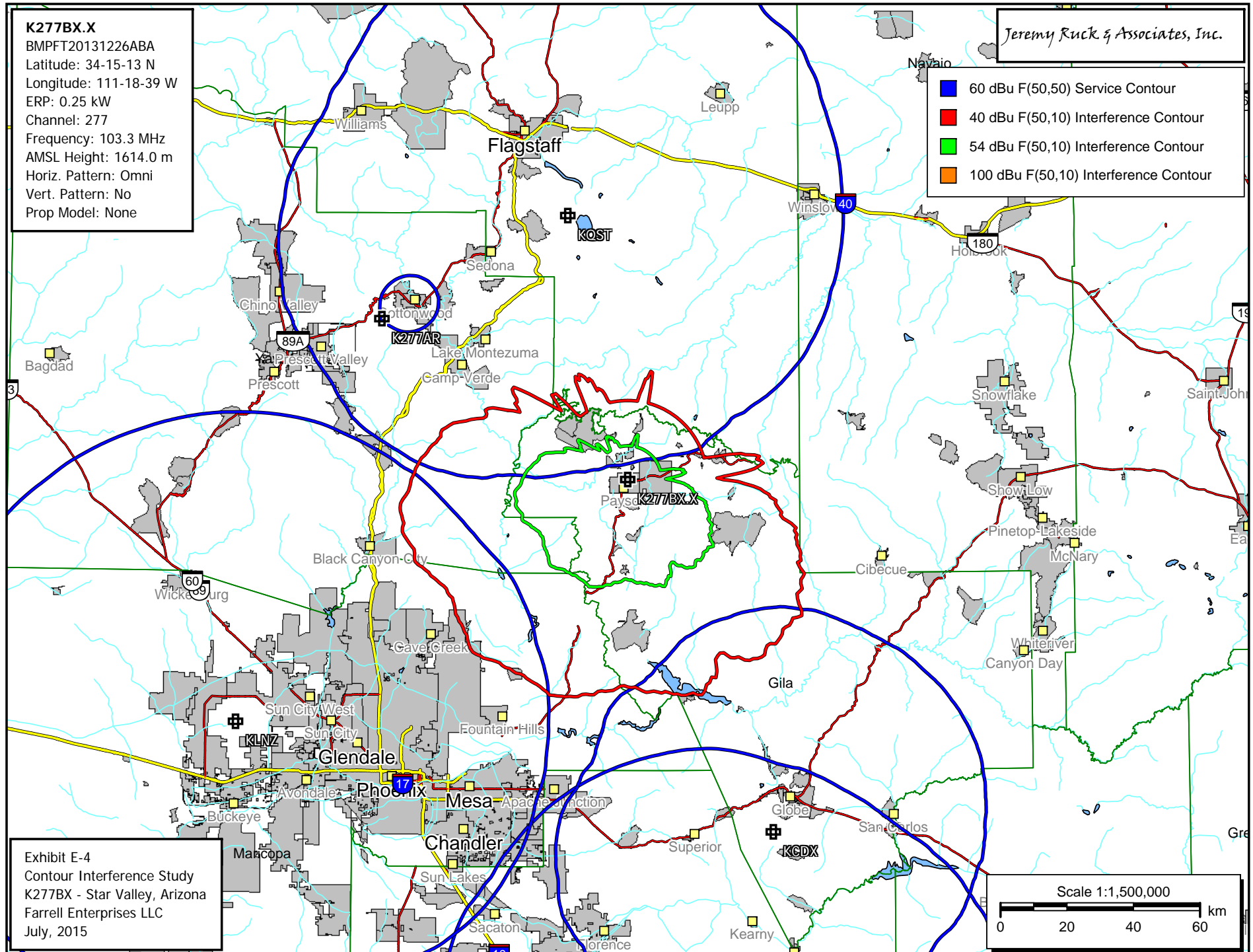


Exhibit E-4

Contour Interference Study

K277BX - Star Valley, Arizona

Farrell Enterprises LLC

July, 2015