TECHNICAL STATEMENT
K293DA SEDONA, ARIZONA, CH. 293D
TABBACK BROADCASTING CO., INC.
MINOR MODIFICATION OF LICENSE
APRIL 2022

This Technical Statement is made in support of a minor modification of FM translator station, K293DA at Sedona, Arizona, facility ID 202336, license # 0000168319. K293DA seeks to relocate to an adjacent existing tower site, FCC registration number 1003531, and remain a "fill-in" translator for KAZK(AM) Sedona, Arizona, facility ID 64494. K293DA seeks to make some minor technical changes to relocate the proposed transmitter site from the adajacent 11 meter tall monopole currently used for a remote pickup antenna at the KAZM(AM) transmitter site, to the formerly utilized Tower # 2 of the KAZM(AM) night directional array. KAZM(AM) was recently granted a Construction Permit ("CP"), BP-20211208AAB, which basically modified KAZM(AM) to specify a non-directional operation during the daytime and night operation. Thus, eliminating KAZM(AM)'s former directional antenna operation. A license application to cover that CP is now pending with the Commission, BL-20220412AAD. Thus, the former night directional tower #2 which has a separate ASR from the non-directional tower #1 now utilized by KAZM(AM) has been grounded and is proposed to be utilized by K293DA. An increase its ERP to 0.17 kilowatts (170 watts) Effective Radiated Power, with an antenna height to 1334 meters AMSL. The following will show that the new proposed operation of K293DA will meet all the Commissions technical requirements for an FM translator station.

The new proposed operation of K293DA is proposing the use of a Nicom model BKG-88/2L 2 bay, directional antenna system with dual polarization and three quarter wavelength spacing (0.75) between the two bays. The antenna will be mounted on an existing registered tower, # 1003531. The tower has an overall height of 57.0 meters above the ground. The antenna will be mounted with a Center of Radiation of 53.8 meters above the ground, and 1334 meters Above Mean Sea Level. The coordinates of this tower are located at N 34° 51' 39.0", W 111° 49' 13.0", NAD 83.

Figure 1 is a detailed interference study conducted on channel 293D with these new proposed facilities. It shows that the new operation of K293DA will not cause any interference to any existing or proposed FM stations on any of the pertinent same channel or adjacent channels to channel 293 with the exception of second adjacent channel station, KFSZ(AM) Munds Park, Arizona, facility ID 164209, operating on channel 291C2.

The proposed operation of K293DA on 293D is located within the protected 60 dBμ contour of 2nd adjacent channel of KFSZ(FM). Figure 2 shows the predicted F(50-50) field strength of KFSZ(FM) at the proposed K293DA transmitter site is 72.2 dBμ. Therefore, the respective predicted interfering contour F(50-10) generated by the proposed K293DA on channel 293D is an additional 40 dBμ or 112.2 dBμ.

Figure 3 shows the coverage area for the worse case 112.2 dBμ interference contour F(50-10) and shows that there is no population in the area of interference.

Figure 4 is a Vertical Pattern study for the proposed K293DA. It documents the proposed operation of K293DA with the proposed Nicom BKG88/2L with three quarter wavelength spacing vertical pattern and the distances to the 112.2 dBμ contour.

The applicant, Tabback Broadcasting Co., Inc.., respectfully requests a waiver of C.F.R. 74.1204(d) of the Commission's rules based on the fact that there is no population within the area of predicted interference. There are no homes immediately nearby the proposed existing tower site which is a 20 acre privately owned open field utilized by the relatively large former two tower directional tower array. Should any unforeseen actual interference be caused, the licensee will immediately cease broadcasting with K293DA until such interference can be eliminated.

Figure 5 is a more detailed contour overlap study with a pending application for K296GN Prescott Valley, AZ, facility ID 156453, file number 0000135242, proposing operation on channel 283D.

Figure 6 is the proposed directional antenna data for K293DA.

Figure 7 shows the present and proposed 60 dBμ contours of K293DA. It documents that the two facilities will overlap as required.

The proposed operation of K293DA Sedona, Arizona will remain a “Fill-In” operation for KAZK(AM) Sedona, Arizona. Figure 8 shows that the proposed 60 dBμ contour for the proposed K293DA and the currently licensed daytime 2.0 mv/m contour for KAZM(AM). The proposed 60 dBμ contour will not extend beyond the 2 mv/m daytime contour of KAZM(AM) at any point.

It was determined that the new proposed operation of K293DA Sedona, Arizona on channel 293D, will satisfy all the required commission rules and regulations for an FM translator station.

FIGURE 1 - DETAILED CHANNEL INTERFERENCE STUDY, CH. 293D
K293DA Sedona, AZ, ch. 293D

REFERENCE CH# 293D - 106.5 MHz, Pwr= 0.17 kW DA, HAAT= -142.1 M, COR= 1334 M DISPLAY DATES
34 51 39.00 N. Average Protected F(50-50)= 6.44 km DATA 04-23-22
111 49 13.00 W. Standard Directional SEARCH 04-23-22

CH CALL / CITY	TYPE ANT / STATE	AZI / <--	DIST / FILE #	LAT / LNG	PWR(kW) / HAAT(M)	INT(km) / COR(M)	PRO(km) / LICENSEE	*IN* (Overlap in km)	*OUT*
293C1 DKLFZ Leupp	VAC ___ AZ	36.4 216.8	104.56	35 37 00.00 111 08 02.51	100.000 299	176.8 1741	74.9 From CDBS	-78.2*	7.9
291C2 KFSZ * Munds Park	LIC _CN AZ	67.1 247.3	30.86 BLH20080219BFC	34 58 06.10 111 30 31.50	4.300 468	4.1 2646	56.7 Southwest Media, Inc.	20.4	-26.7*
293D K293DA Sedona	LIC _CN AZ	50.0 230.0	0.05 0000168319	34 51 40.10 111 49 11.40	0.001	1363	---Reference--- Tabback Broadcasting Co.,		
294C2 KPPV Prescott Valley	LIC _CN AZ	237.9 57.5	77.25 BLH19930204KB	34 29 25.10 112 32 02.60	3.700 493	76.8 2181	50.8 Prescott Valley Broadcasti	-8.6	13.5
294C2 KPPV Prescott Valley	RUL ___ AZ	237.9 57.5	77.25	34 29 25.10 112 32 02.60	50.000 150	74.8 1836	48.9	-6.5	13.8
293D K296GN Prescott Valley	APP DVN AZ	234.7 54.6	33.33 0000135242	34 41 14.80 112 07 03.70	0.099	18.4 2363	2.1 Itm, LLC	5.2	0.3
240C0 KKLD Cottonwood	LIC NCN AZ	234.6 54.5	33.40 BMLH20100428AEO	34 41 12.10 112 07 04.60	21.000 799	85.6 2388	30.7 Yavapai Broadcasting Corpo	24.5R	8.9M
294D KPPV-FM2 Prescott Valley	LIC DVN AZ	236.9 56.7	32.58 BLFTB20120525AAF	34 42 02.30 112 07 07.00	0.100	5.2 2389	2.8 Prescott Valley Broadcasti	17.7	17.0
295C2 KPPV Prescott Valley	RUL ___ AZ	237.9 57.5	77.25	34 29 25.10 112 32 02.60	50.000 150	5.1 1836	48.9	62.5	23.2
295C2 R17780 Prescott Valley	RSV-R ___ AZ	237.9 57.5	77.25	34 29 25.08 112 32 02.61	50.000 150	5.1 1836	48.9 From CDBS	62.5	23.2
296D K296GN Prescott Valley	LIC DVN AZ	234.7 54.6	33.32 BLFT20150612AAD	34 41 15.10 112 07 03.60	0.250	0.0 2363	4.1 Itm, LLC	23.5	28.7
295C2 KPPV Prescott Valley	CP _CN AZ	237.9 57.5	77.26 0000124846	34 29 24.20 112 32 02.00	4.000 483	3.9 2174	51.1 Prescott Valley Broadcasti	63.6	24.2
292C2 KOMR Sun City	LIC _CN AZ	211.1 30.7	117.13 BLH19961025KC	33 57 21.10 112 28 36.60	23.000 221	64.9 1098	42.2 Univision Radio Stations G	42.5	56.8
295A R23032 Star Valley	RUL ___ AZ	142.7 323.0	87.94	34 13 47.10 111 14 25.50	6.000 100	2.6 1591	25.7	75.9	59.8
294C0 KNKI Pinetop	RSV-A ___ AZ	115.9 297.1	207.96	34 01 36.17 109 47 37.35	100.000 450	139.3 2776	93.5 From CDBS	61.3	104.7
294D K294AN Payson	LIC DVN AZ	137.8 318.1	85.73 BLFT19950920TA	34 17 17.10 111 11 34.40	0.012 306	13.5 1952	9.5 Family Life Broadcasting,	63.1	66.1
291D K291AL Prescott	LIC _CN AZ	237.9 57.5	77.25 BLFT20070402KSB	34 29 24.10 112 32 01.60	0.010 483	0.2 2175	12.3 Arizona Board Of Regents F	67.3	64.2
294C1 KNKI Pinetop	LIC _CN AZ	107.7 288.9	215.94 BLH20100426AAU	34 15 06.10 109 35 08.30	65.000 357	124.1 2600	83.5 Wsk Family Credit Shelter	85.5	122.7
290C2 KHOT-FM Paradise Valley	LIC ZCN AZ	177.8 357.8	141.31 BLH19981216KB	33 35 16.10 111 45 40.50	36.000 176	2.5 688	24.6 Univision Radio Stations G	129.9	101.3
293A AL8990 Salome	RSV-A ___ AZ	234.5 53.5	203.64	33 47 04.10 113 36 45.75	6.000 100	90.5 709	31.1 From CDBS	103.3	141.3
294C3 AL9806 Buckeye	___ AZ	200.5 20.1	185.87	33 17 23.16 112 31 14.57	25.000 100	66.9 412	44.6 From CDBS	108.7	130.3
296C3 KVVA-FM Apache Junction	LIC _CN AZ	173.4 353.5	158.03 BLH20130315ABB	33 26 44.10 111 37 21.40	17.000 124	3.8 651	37.6 Entravision Holdings, LLC	145.0	118.8
296C2 KVVA-FM Sun Lakes	CP NCN AZ	187.6 7.5	170.91 BPH20190723AAO	33 20 00.20 112 03 51.50	2.050 508	2.9 880	49.1 Entravision Holdings, LLC	158.5	121.4
290D KHOT-FM1 Glendale	LIC DEN AZ	188.5 8.4	158.11 BLFTB20030318AHA	33 27 03.20 112 04 22.50	7.000	3.0 490	30.8 Univision Radio Stations G	145.6	126.0

Terrain database is GLOBE 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= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
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.
« = Station meets FCC minimum distance spacing for its class.
Reference station has protected zone issue: AM tower
*No acutual interference will be caused to KFSZ since the 112.2 dBu contour will not cover any population.

K293DA Sedona, AZ
0000168319
Latitude: 34-51-39 N
Longitude: 111-49-13 W
ERP: 0.17 kW
Channel: 293
Frequency: 106.5 MHz
AMSL Height: 1334.0 m
Elevation: 1354.0 m
Horiz. Pattern: Directional

KFSZ Munds Park, AZ
BLH20080219BFC
Latitude: 34-58-06.10 N
Longitude: 111-30-31.50 W
ERP: 4.30 kW
Channel: 291
Frequency: 106.1 MHz
AMSL Height: 2646.0 m
Elevation: 2576.0 m
Horiz. Pattern: Omni

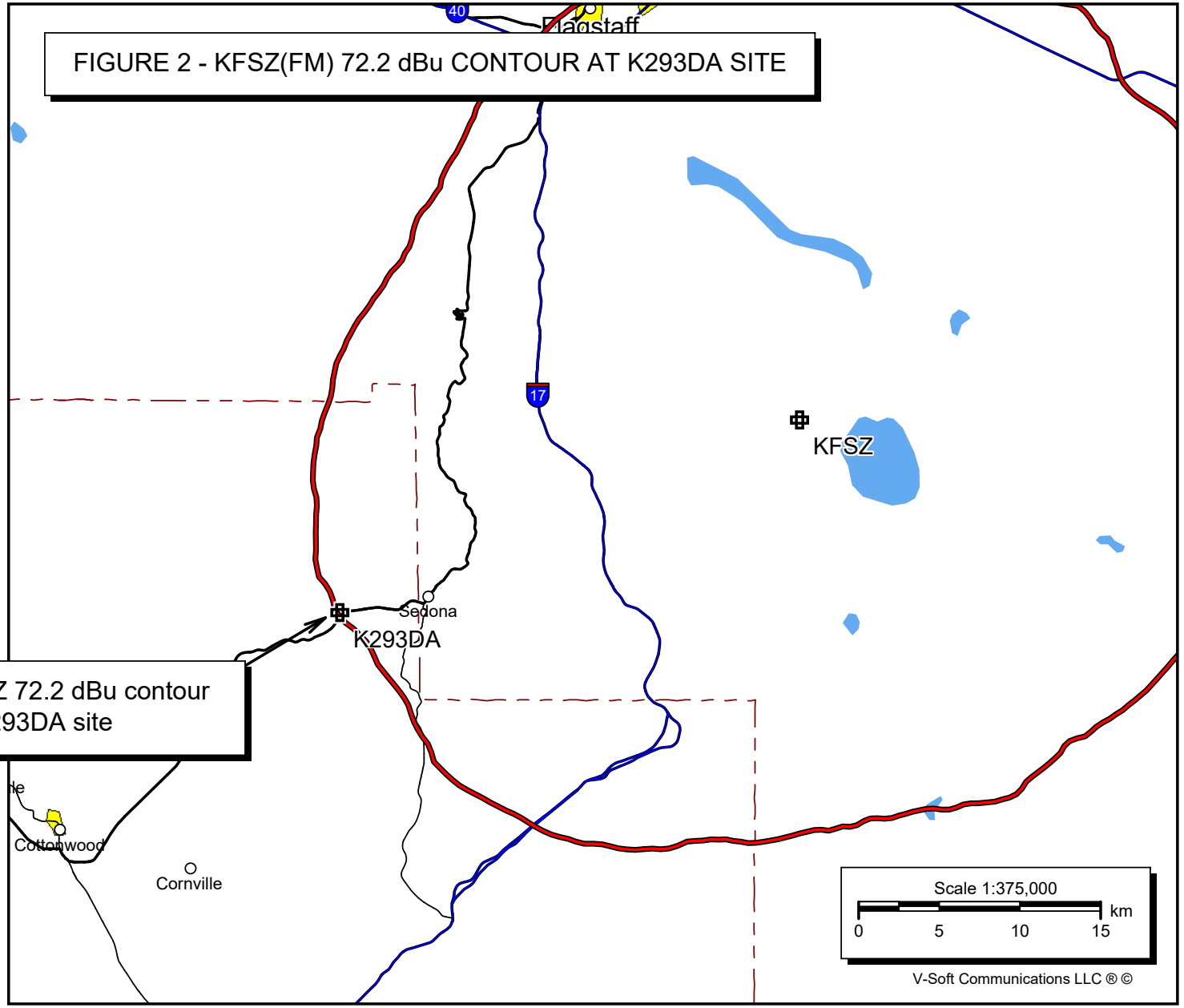

FIGURE 3 - PREDICTED 112.2 DBU CONTOUR
K293DA Sedona, AZ, ch. 293D

Coverage Study - GLOBE 30 Sec
04-23-2022

K293DA CH293 D , 0.17 kW, -142.1m HAAT, 1334.0m COR AMSL
Interference Contour = 112.2 dBu. Population = 0

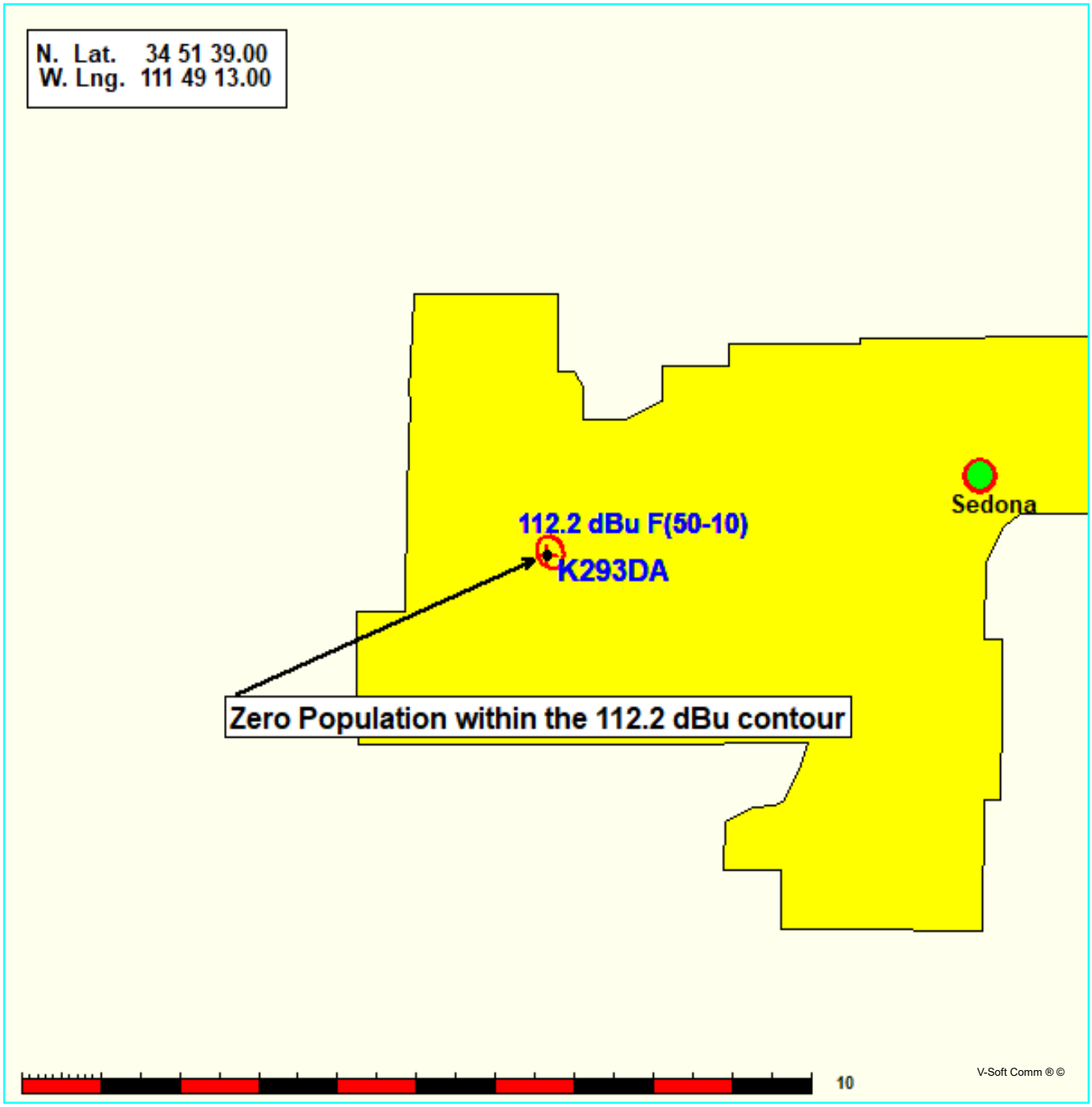

FIGURE 4 - VERTICAL PATTERN STUDY

K293DA Sedona, AZ, Showing Protection to KFSZ   , Channel: 291
Geographic Coordinates: N. 34 51 39.00 W. 111 49 13.00
74.1204(d) Study - Using GLOBE 30 Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.17 kW, Channel: 293
Translator or LPFM Antenna Height AG = 53.8 meters
K293DA Antenna Azimuth Model =   Vertical Model Name = BKG88 2 bay 0.75 spacing

Protected Station's Contour = 72.17453 dBu
Translator's or LPFM's full Interference contour 112.17453

Review Azimuth = 0 Degrees True
Horizontal Relative Field at Review Azimuth = 0.966
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.159 kW
Distance between stations = 30.8 km
Protected Station= KFSZ, 4.3 kW, 2646 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	0.97	0.1642	223.8652	223.8652	053.800
05.00	0.98	0.97	0.1577	219.3879	218.5530	034.679
10.00	0.95	0.97	0.1482	212.6719	209.4409	016.870
15.00	0.895	0.97	0.1315	200.3593	193.5322	001.943
20.00	0.82	0.97	0.1104	183.5694	172.4988	-008.984
25.00	0.735	0.97	0.0887	164.5409	149.1247	-015.738
30.00	0.645	0.97	0.0683	144.3930	125.0480	-018.397
35.00	0.563	0.97	0.0520	125.9242	103.1510	-018.427
40.00	0.47	0.97	0.0363	105.2166	080.6006	-013.832
45.00	0.36	0.97	0.0213	080.5915	056.9868	-003.187
50.00	0.25	0.97	0.0103	055.9663	035.9744	010.927
55.00	0.155	0.97	0.0039	034.6991	019.9026	025.376
60.00	0.085	0.97	0.0012	019.0285	009.5143	037.321
65.00	0.045	0.97	0.0003	010.0739	004.2574	044.670
70.00	0.02	0.97	0.0001	004.4773	001.5313	049.593
75.00	0.01	0.97	0.0000	002.2387	000.5794	051.638
80.00	0.01	0.97	0.0000	002.2387	000.3887	051.595
85.00	0.01	0.97	0.0000	002.2387	000.1951	051.570
90.00	0.01	0.97	0.0000	002.2387	000.0000	051.561

FIGURE 5 - CONTOUR STUDY WITH K296GN (ch. 293A) app.
K293DA Sedona, AZ, ch. 293D

FMCommander Single Allocation Study - 04-23-2022 - GLOBE 30 Sec
K293DA's Overlaps (In= 5.17 km, Out= 0.34 km)

K293DA CH 293 D DA
Lat= 34 51 39.00, Lng= 111 49 13.00
0.17 kW -142.1 m HAAT, 1334 m COR
Prot.= 60 dBu, Intef.= 40 dBu

K296GN CH 293 D DA 0000135242
Lat= 34 41 14.80, Lng= 112 07 03.70
0.099 kW 0 m HAAT, 2363 m COR
Prot.= 60 dBu, Intef.= 40 dBu

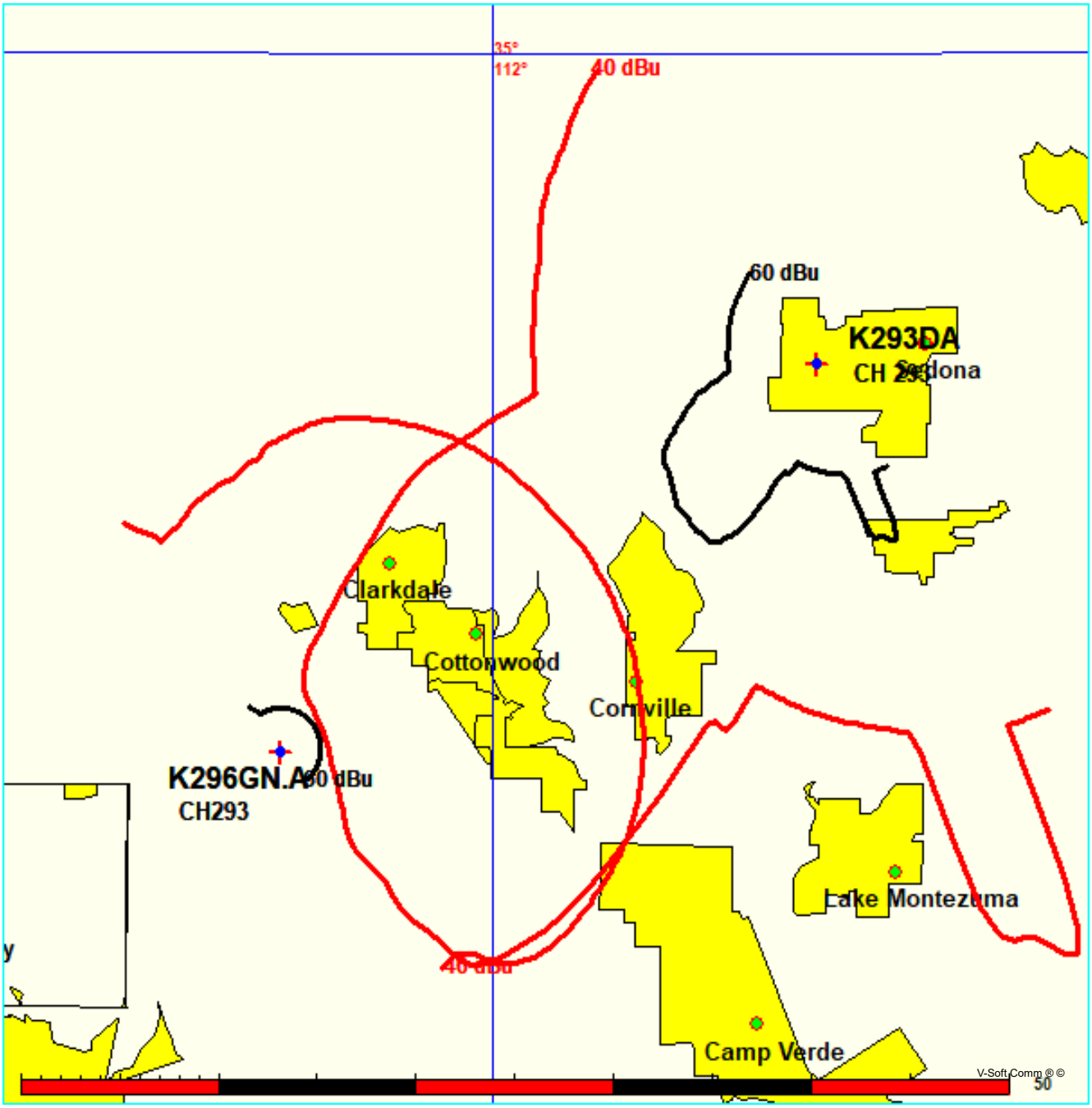

FIGURE 6 - DIRECTIONAL ANTENNA DATA

K293DA 04-23-2022 RMS(V)= .811

Azi	Field	dBk	kW
000	0.966	-07.996	0.159
010	1.000	-07.696	0.170
020	0.984	-07.836	0.165
030	0.976	-07.907	0.162
040	0.976	-07.907	0.162
050	0.966	-07.996	0.159
060	0.966	-07.996	0.159
070	0.966	-07.996	0.159
080	0.966	-07.996	0.159
090	0.966	-07.996	0.159
100	0.976	-07.907	0.162
110	0.976	-07.907	0.162
120	0.984	-07.836	0.165
130	1.000	-07.696	0.170
140	0.982	-07.853	0.164
150	0.927	-08.354	0.146
160	0.852	-09.087	0.123
170	0.762	-10.056	0.099
180	0.692	-10.893	0.081
190	0.627	-11.750	0.067
200	0.581	-12.412	0.057
210	0.536	-13.112	0.049
220	0.504	-13.647	0.043
230	0.493	-13.839	0.041
240	0.493	-13.839	0.041
250	0.493	-13.839	0.041
260	0.493	-13.839	0.041
270	0.493	-13.839	0.041
280	0.507	-13.595	0.044
290	0.536	-13.112	0.049
300	0.596	-12.191	0.060
310	0.643	-11.531	0.070
320	0.728	-10.453	0.090
330	0.826	-09.356	0.116
340	0.908	-08.534	0.140
350	0.947	-08.169	0.152

NICOM BKG88/2L
Directional

Graph is Relative Field

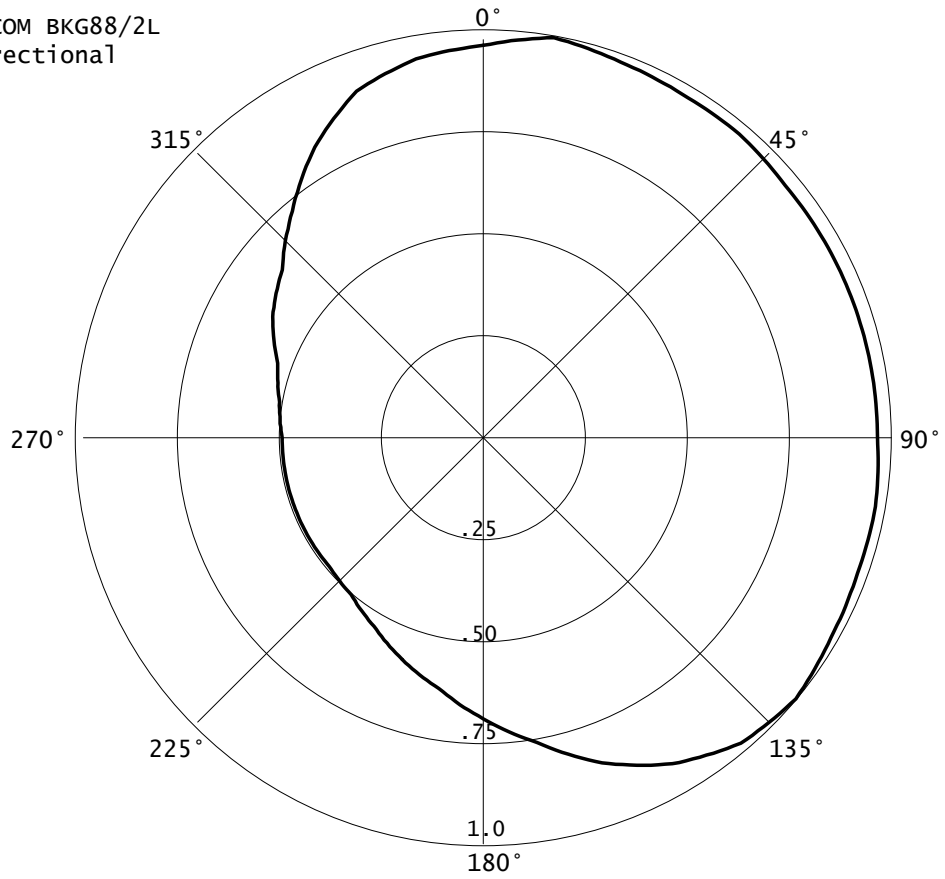

FIGURE 7 - PRESENT AND PROPOSED 60 DBU
K293DA Sedona, AZ, ch. 293D

Coverage Study - GLOBE 30 Sec
04-23-2022

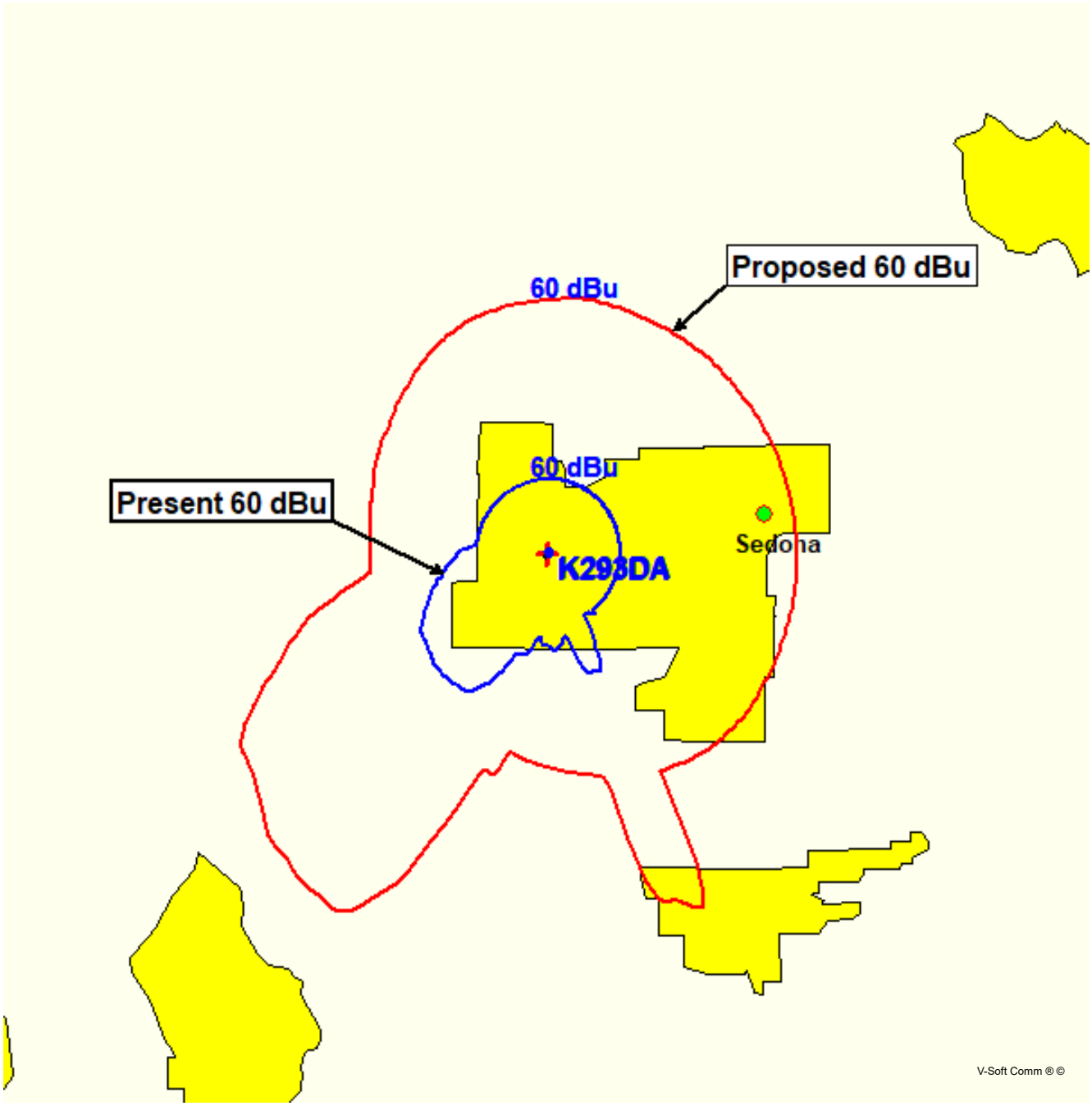

FIGURE 8 - FILL-IN MAP WITH KAZM(AM)
K293DA Sedona, AZ, ch. 293D

Coverage Study - GLOBE 30 Sec
04-23-2022

K293DA CH293 D , 0.17 kW, -142.1m HAAT, 1334.0m COR AMSL
Service Contour = 60 dBu.