

TECHNICAL STATEMENT
K214DN SUN CITY, AZ, CH. 214D
CEDAR COVE BROADCASTING, INC.
MINOR CHANGE APPLICATION
AUGUST 2021

This Technical Statement is in support of a minor change application being filed on behalf of Cedar Cove Broadcasting, Inc. (“CCB”) in regards to its FM translator, K214DN Cave Creek, Arizona, facility ID 93405.

CCB is proposing to remain at its existing tower site known as Shaw Butte located at N. 33°- 35’- 39.2”, W. 112°- 05’- 10.5”, NAD 83, but on an adjacently located support tower. Increase its maximum Effective Radiated Power to 250 Watts (0.25 kilowatts) and modify its directional pattern with its existing BEXT model LOG-R antenna system. The antenna will be mounted at the 17 meter level on a 24 meter overall tower, with a Center of Radiation at 662 Meters Above Mean Sea Level. It also will become a “fill-in” translator for KAIZ Avondale, AZ, facility ID 2749. K214DN seeks to change its current city of license, Cave Creek, AZ to Sun City, AZ to more accurately reflect its modified coverage area.

Figure 1 shows a detailed channel interference study conducted from the proposed site for K214DN. It shows that the proposed operation of K214DN on channel 214D, will not cause any prohibited outgoing interference to any licensed or proposed FM services with the exception of KFLR-FM Phoenix, Arizona on channel 212C, facility ID 20638.

The proposed operation of K214DN on 214D is also located within the protected 60 dBμ contour of 2nd adjacent channel KFLR-FM on channel 212C. Figure 2 show the predicted F(50-50) field strength of KFLR-FM at the proposed K214DN transmitter site

is 86.1 dB μ . Therefore, the respective predicted interfering contour F(50-10) generated by the proposed K214DN on channel 214D is an additional 40 DB μ or 126.1 dB μ .

Figure 3 shows the predicted coverage area for the worse case 126.1 dB μ interference contour F(50-10) and shows that there is no population in the area of interference. Figure 4 is vertical pattern and interference study conducted against KFLR-FM. It shows that the worse case 126.1 dB μ interference will not reach the ground at any point due to the vertical pattern of the Bext Log-R antenna system. Figure 5 is a 7.5 minute USGS map showing the area around the tower site and a 30 meter radius. The applicant, Cedar Cove Broadcasting, 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 nearby the proposed existing tower site, which is a privately owned with private gated access located at a remote mountain tower site known as "Shaw Butte". The transmitter building is uninhabited and does not have indoor plumbing. Should any unforeseen actual interference be caused, the licensee will immediately cease broadcasting with K214DN until such interference can be eliminated.

Figure 6 is the tabulation and polar plot of the directional antenna system being proposed.

Figure 7 is a "fill-in" map showing that the proposed 60 dB μ contour of K214DN will be completely contained within the licensed 60 dB μ contour of the primary station to be rebroadcast, KAIZ(FM) Avondale, AZ, facility ID 2749.

It was concluded that the new proposed operation of K214DN Sun City, Arizona on channel 214D will not cause any harmful interference to any existing stations and/or

any existing or proposed LPFM stations and TV channel 6 stations and will be in full compliance with the commission's rules.

FIGURE 1 - DETAILED CHANNEL INTERFERENCE STUDY

K214DN SUN CITY, AZ, CH. 214D

REFERENCE
33 35 39.20 N.
112 05 10.50 W.CH# 214D - 90.7 MHz, Pwr= 0.25 kW DA, HAAT= 252.0 M, COR= 662 M
Average Protected F(50-50)= 20.75 km
Standard DirectionalDISPLAY DATES
DATA 08-25-21
SEARCH 08-25-21

CH CITY	CALL	TYPE STATE	ANT AZ	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
214D Cave Creek	K214DN	LIC DCN AZ	180.0 360.0	0.00 BLFT20190424ABF	33 35 39.10 112 05 10.50	0.075	655	---Reference---	Cedar Cove Broadcasting, I		
212C Phoenix	KFLR-FM *	LIC DCN AZ	175.7 355.7	28.95 BLED20070912ABQ	33 20 02.10 112 03 46.50	100.000 483	12.6 852	86.9	-1.8	-58.6*	Family Life Broadcasting,
215C Prescott	KLVH	LIC _CN AZ	358.6 178.6	121.30 BLED19941212KD	34 41 15.10 112 07 04.60	58.000 772	129.4 2360	87.5	-22.9*	13.4	Educational Media Foundati
214A Apache Junction	KVIT	LIC _CN AZ	105.3 285.6	57.26 BLED20110211ABB	33 27 27.10 111 29 30.40	2.000 18	67.4 649	12.0	-17.3*	0.1	East Valley Institute of T
216D Guadalupe	K216FO	LIC _CN AZ	175.6 355.6	15.94 BLFT20140415AAV	33 27 03.20 112 04 22.50	0.075 133	0.6 500	10.5	-2.2*	4.3	World Radio Network, Inc.
214A San Lucy	KOHH	LIC _CN AZ	220.2 39.9	91.42 BLED20141030ABA	32 57 52.10 112 43 10.50	6.000 -13	68.3 244	15.8	0.3	6.8	Tohono O'odham Nation
268C Phoenix	KALV-FM	LIC _CN AZ	175.9 355.9	29.25 BLH6108	33 19 52.10 112 03 48.50	100.000 530	127.8 889	53.8	28.5R	0.8M	Audacy License, LLC
214D Casa Grande	K214FG	LIC _CN AZ	153.6 333.9	94.05 BLFT20181026AAT	32 50 04.00 111 38 17.00	0.240	43.5 537	12.4	34.6	31.4	Educational Media Foundati
216D Wickenburg	K216GP	LIC _CN AZ	304.1 123.7	74.10 BLFT20170710AAD	33 57 56.10 112 45 04.60	0.250	1.1 684	8.6	51.9	63.7	Educational Media Foundati
213C Tucson	KUAT-FM	LIC _CN AZ	135.3 316.1	183.05 BLED201111205AJW	32 24 55.40 110 42 54.20	12.000 1113	111.4 2661	76.4	57.5	87.3	Arizona Board Of Regents F
216C2 Elroy	KVNG	LIC DCN AZ	146.6 326.9	116.27 BLED201311118AOS	32 43 07.20 111 24 02.40	0.740 827	1.2 1386	40.0	100.0	72.3	Calvary Chapel Of Casa Gra
217D Groom Creek	K217FX	LIC _CN AZ	342.3 162.1	95.64 BLFT201311125AZN	34 24 53.10 112 24 16.60	0.010 687	0.2 2441	15.0	78.6	79.9	CSN International
215C Safford	VA9006	VAC _N AZ	110.3 291.6	236.49	32 50 00.23 109 42 59.30	100.000 600	141.8 1596	95.9	83.0	123.7	
213D Prescott	K213FF	LIC _VN AZ	346.3 166.1	113.65 BLFT20151221CJH	34 35 20.10 112 22 54.60	0.023	5.7 1836	3.9	91.7	83.0	Advance Ministries Db New
211A Globe	VA0003	VAC _N AZ	100.0 280.7	122.87	33 23 44.21 110 47 07.39	6.000 100	3.4 1363	35.7	107.6	85.2	
211A Prescott	KJZP	LIC DCN AZ	337.6 157.4	107.65 BMLED20171004ABQ	34 29 25.10 112 32 02.60	0.027 486	0.1 2174	5.4	90.0	100.8	En Familia, Inc.
214C3 Show Low	KNAA	LIC _CN AZ	74.9 256.1	208.31 BLED20021121AAL	34 03 42.20 109 54 24.40	3.000 249	105.7 2375	41.9	91.0	127.7	Arizona Board Of Regents F
06 -- Prescott	K06AE-D«	LI D_N AZ	358.7 178.6	121.27 BLDTV-20111114AAT	34 41 14.00 112 07 02.51	0.500	4.5 2347	21.0	25.6R	95.7M	
214C Mexicali	XHMOEFM	USE _ BN	252.2 70.4	330.69	32 38 30.21 115 27 02.96	100.000 600	197.3 608	92.0	110.6	170.2	
06 -- Sentinel	K06QW-D«	CP DHN AZ	232.3 51.7	132.55 0000153422	32 51 38.50 113 12 32.51	3.000	8.6 220	11.3	19.9R	112.7M	
214C Caborca	AL8342	VAC _ SO	181.3 1.3	331.12	30 37 00.39 112 10 02.39	100.000 600	197.5 885	92.0	113.9	180.7	
215B San Francisquito	AL8651	VAC _ SO	185.8 5.7	223.76	31 35 30.30 112 19 32.47	50.000 150	85.5 740	65.0	118.1	118.6	
214B Ciudad Morelos	AL6501	VAC _ BN	248.2 66.7	278.71	32 38 00.19 114 51 02.85	50.000 150	137.1 192	65.0	118.7	127.2	
214A Kingman	KJZK	LIC _CN AZ	316.0 135.0	231.71 BMLED20171004ABP	35 04 53.00 113 51 16.80	0.030 1091	86.0 2561	27.5	125.5	144.3	En Familia, Inc.
216C2 San Carlos	KYAY	LIC DCN AZ	90.3 271.2	158.50 BLED20120810AAQ	33 34 30.10 110 22 44.30	1.900 515	0.5 2029	23.1	146.0	128.2	San Carlos Apache Tribe

Terrain database is NGDC 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: Mexico

* No actual interference will be caused to KFLR-FM since the worst case 126.1 DBU interference contour will not cover any population. See the Technical Statement for more information.

K214DN

BLFT20170130AAJ
Latitude: 33-35-39 N
Longitude: 112-05-11 W
ERP: 0.25 kW
Channel: 214
Frequency: 90.7 MHz
AMSL Height: 662.0 m
Elevation: 645.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

KFLR-FM

BLED20070912ABQ
Latitude: 33-20-02 N
Longitude: 112-03-44 W
ERP: 100.00 kW
Channel: 212
Frequency: 90.3 MHz
AMSL Height: 852.0 m
Elevation: 805.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

**FIGURE 2 - KFLR-FM PREDICTED 86.1 DBU
CONTOUR AT THE K214DN SITE**

KFLR-FM 86.1 DBU AT K214DN SITE

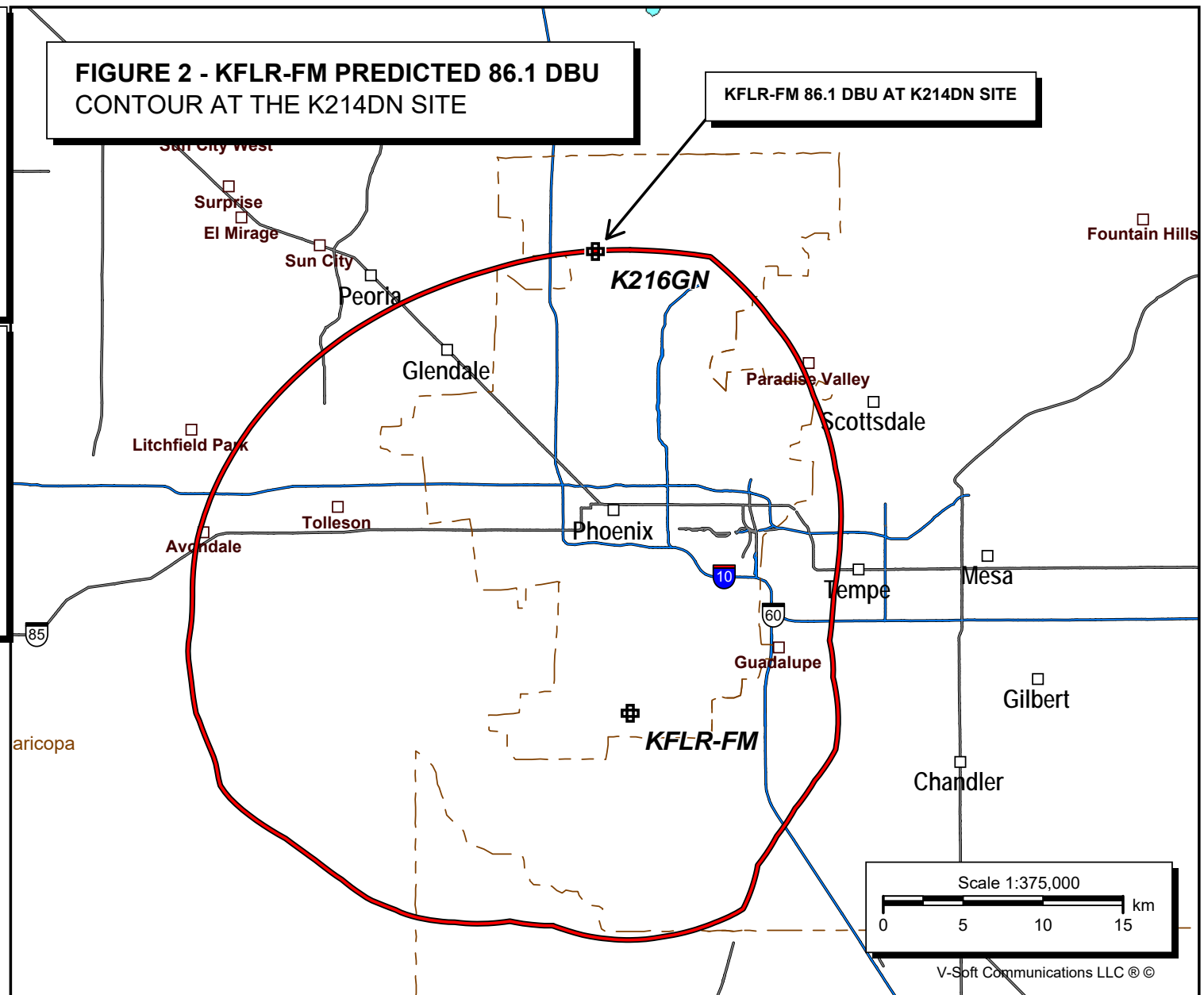


FIGURE 3 - PREDICTED 126.1 DBU CONTOUR
K214DN SUN CITY, AZ, CH. 214D

Coverage Study - NGDC 30 SEC
08-26-2021

K214DN CH214 D , 0.25 kW, 252.0m HAAT, 662.0m COR AMSL
Service Contour = 126 dBu.

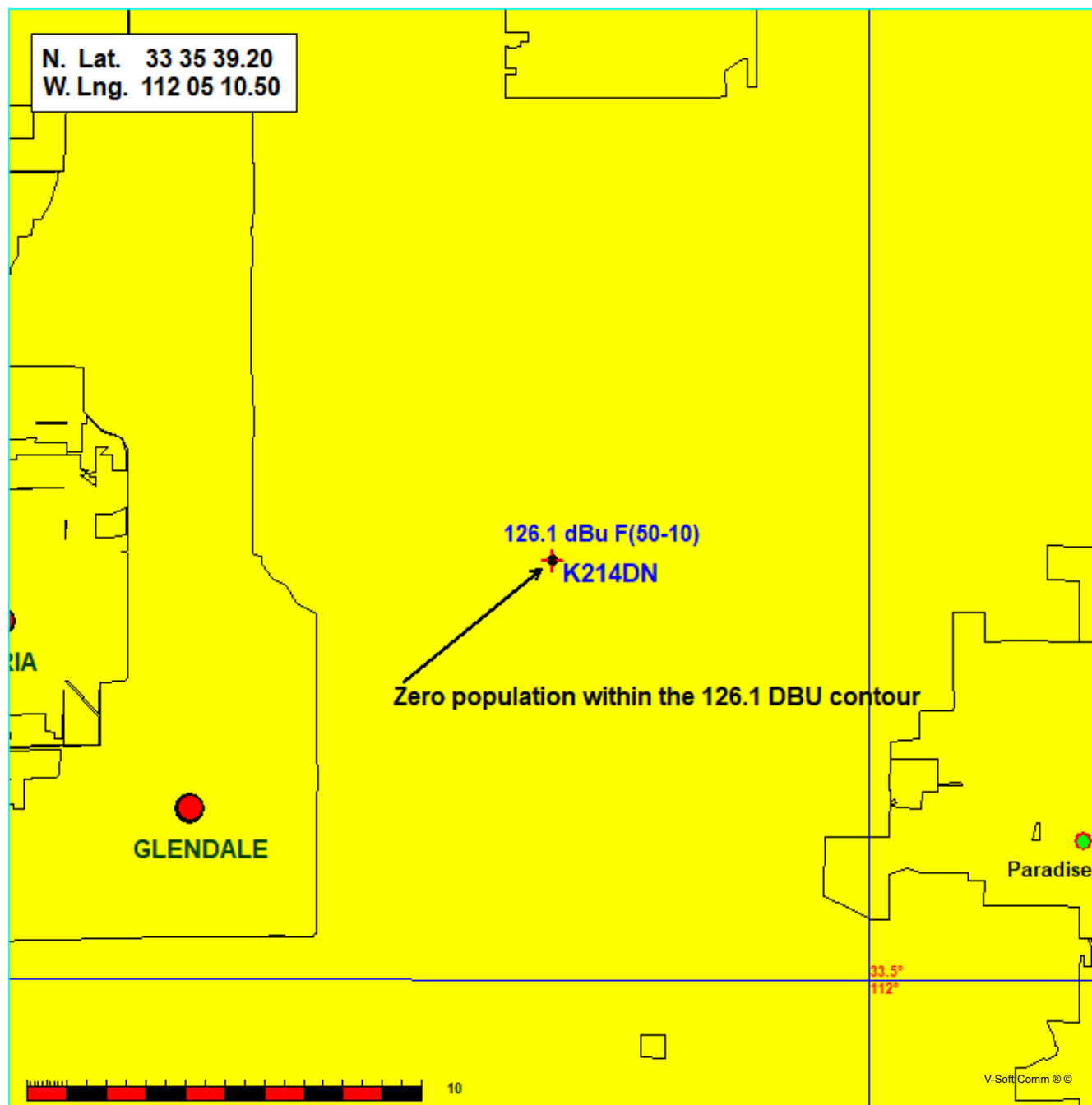


FIGURE 4 - VERTICAL PATTERN STUDY

K214DN Sun City, AZ, Showing Protection to KFLR-FM , Channel: 212
 Geographic Coordinates: N. 333539.20 W. 1120510.50
 74.1204(d) Study - Using NGDC 30 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 214
 Translator or LPFM Antenna Height AG = 17 meters
 K214DN Antenna Azimuth Model = Vertical Model Name = BEXT LOG-R

Protected Station's Contour = 86.08527 dBu
 Translator's or LPFM's full Interference contour 126.08527

Review Azimuth = 0 Degrees True
 Horizontal Relative Field at Review Azimuth = 0.480
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.058 kW
 Distance between stations = 29.0 km
 Protected Station= KFLR-FM, 100 kW, 852 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	0.48	0.1200	038.1353	038.1353	017.000
05.00	0.982	0.48	0.1158	037.4603	037.3178	013.735
10.00	0.952	0.48	0.1088	036.3162	035.7645	010.694
15.00	0.915	0.48	0.1004	034.8824	033.6938	007.972
20.00	0.866	0.48	0.0900	033.0252	031.0335	005.705
25.00	0.796	0.48	0.0760	030.3557	027.5116	004.171
30.00	0.718	0.48	0.0619	027.3926	023.7227	003.304
35.00	0.628	0.48	0.0474	023.9604	019.6272	003.257
40.00	0.528	0.48	0.0335	020.1469	015.4334	004.050
45.00	0.423	0.48	0.0215	016.1427	011.4146	005.585
50.00	0.329	0.48	0.0130	012.5580	008.0721	007.380
55.00	0.247	0.48	0.0073	009.4080	005.3962	009.293
60.00	0.19	0.48	0.0043	007.2457	003.6229	010.725
65.00	0.142	0.48	0.0024	005.4038	002.2837	012.103
70.00	0.134	0.48	0.0022	005.1101	001.7478	012.198
75.00	0.135	0.48	0.0022	005.1483	001.3325	012.027
80.00	0.142	0.48	0.0024	005.4038	000.9384	011.678
85.00	0.15	0.48	0.0027	005.7203	000.4986	011.301
90.00	0.157	0.48	0.0030	005.9987	000.0000	011.001

FIGURE 5 - USGS 7.5 MINUTE MAP SHOWING AREA AROUND SITE

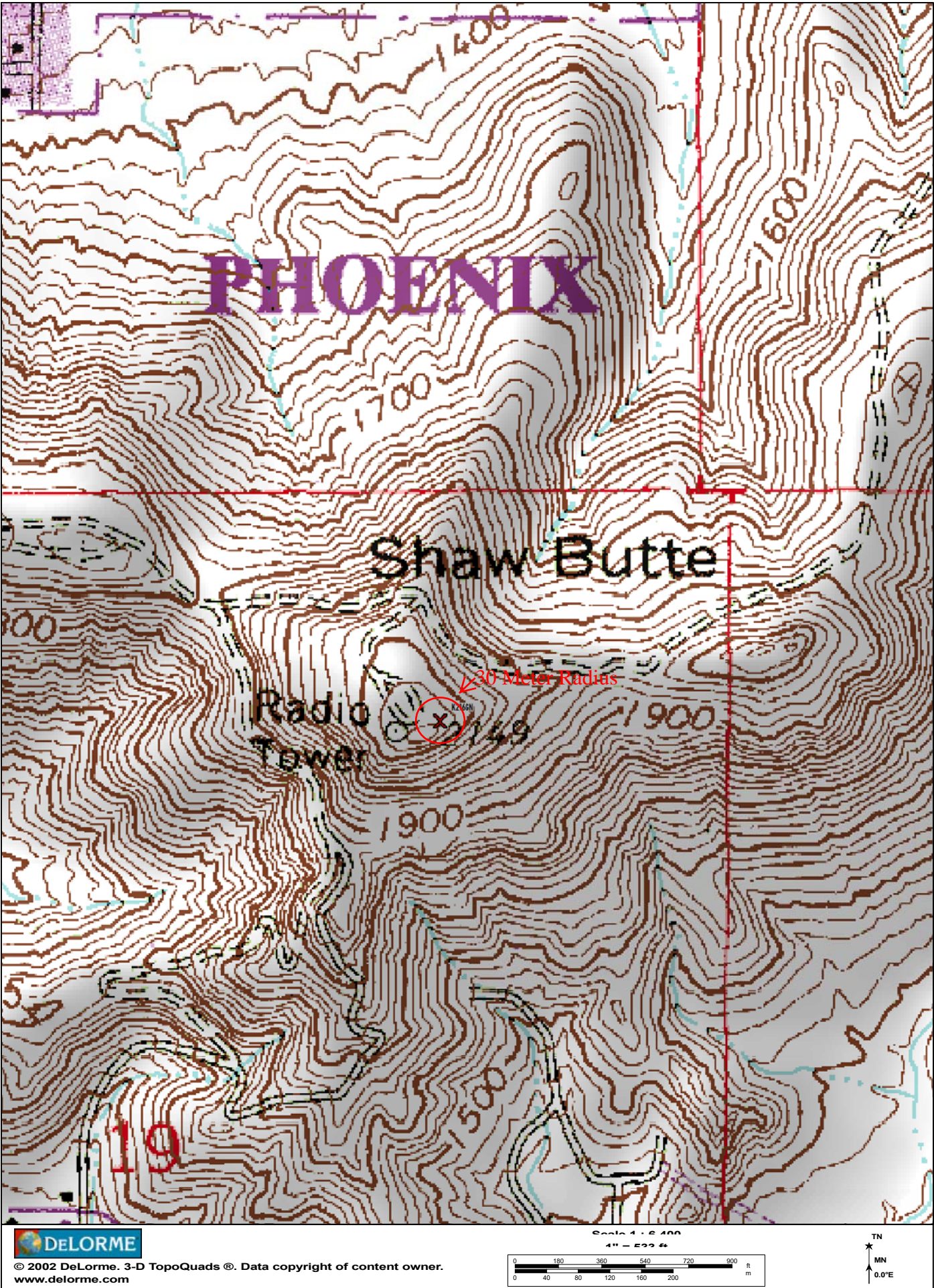


FIGURE 6 - DIRECTIONAL ANTENNA DATA

K214DN

08-26-2021

RMS(V)= .685

Graph is Relative Field

Azi	Field	dBk	kw
000	0.480	-12.396	0.058
010	0.440	-13.152	0.048
020	0.415	-13.660	0.043
030	0.400	-13.979	0.040
040	0.385	-14.311	0.037
050	0.380	-14.425	0.036
060	0.365	-14.775	0.033
070	0.365	-14.775	0.033
080	0.365	-14.775	0.033
090	0.370	-14.657	0.034
100	0.375	-14.540	0.035
110	0.380	-14.425	0.036
120	0.385	-14.311	0.037
130	0.400	-13.979	0.040
140	0.415	-13.660	0.043
150	0.440	-13.152	0.048
160	0.480	-12.396	0.058
170	0.545	-11.293	0.074
180	0.630	-10.034	0.099
190	0.725	-08.814	0.131
200	0.820	-07.744	0.168
210	0.890	-07.033	0.198
220	0.950	-06.466	0.226
230	0.990	-06.108	0.245
240	1.000	-06.021	0.250
250	1.000	-06.021	0.250
260	1.000	-06.021	0.250
270	1.000	-06.021	0.250
280	1.000	-06.021	0.250
290	0.990	-06.108	0.245
300	0.950	-06.466	0.226
310	0.890	-07.033	0.198
320	0.820	-07.744	0.168
330	0.725	-08.814	0.131
340	0.630	-10.034	0.099
350	0.545	-11.293	0.074

BEXT LOG-FR ANTENNA
oriented at 260
degrees

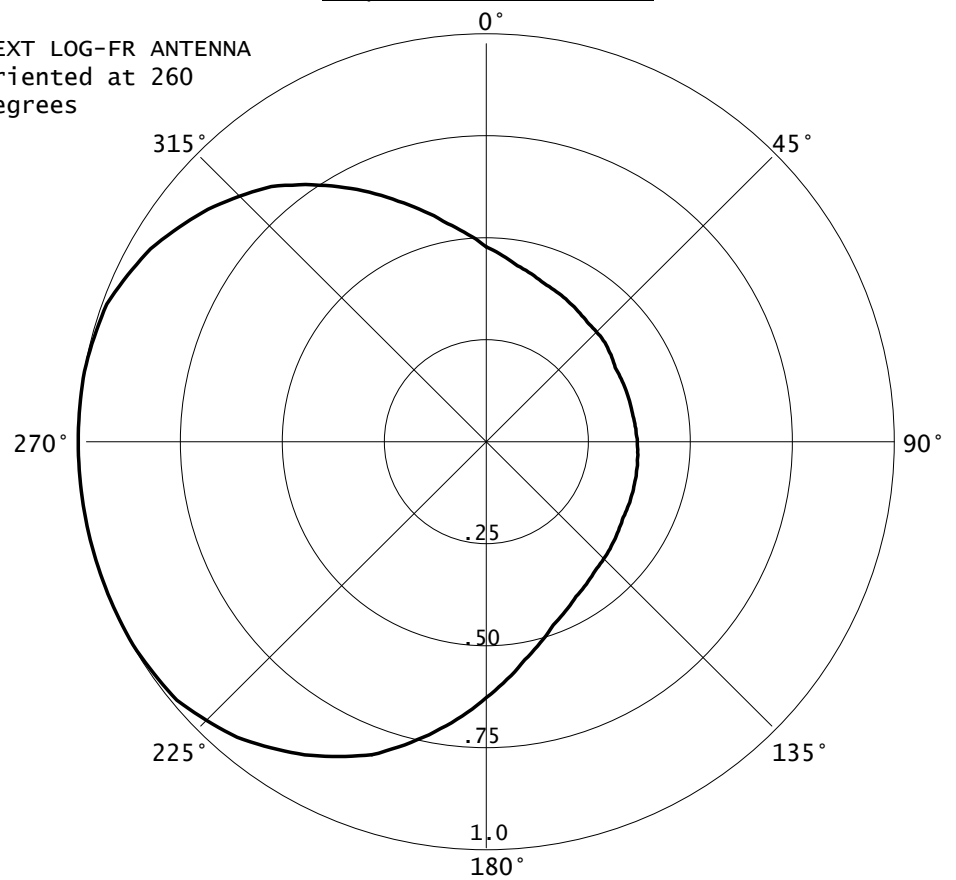


FIGURE 7 - FILL-IN MAP WITH KAIZ
K214DN SUN CITY, AZ, CH. 214D

Coverage Study - NGDC 30 SEC
08-26-2021

