

## **Non-Interference Compliance**

Regarding Facility id 146700

Channel 240

### **Description of Exhibit 12 Contents**

This exhibit demonstrates that the proposed facility complies with contour overlap and interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 74.1204.

**Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 C.F.R. § 74.1203.**

Page 2 of this exhibit is an explanation of the method used to demonstrate compliance with contour overlap and interference provisions based on 47 C.F.R. § 74.1204(d), which states:

*[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.*

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern.

Page 4 includes a plot and a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 5 of this exhibit contains the tabulated data from the interference analysis, which shows all stations whose protected contours come within 50 km of the 34 dBμ F(50,10) contour of the proposed translator. These tabulated values were calculated using data from the FCC's CDBS files and 30 arc second terrain data. The column labeled "Adj" shows the number of channels difference between the entry and the proposed translator. The column labeled "Dist" shows the distance in km. The column labeled "Overlap" shows the area of contour overlap in square kilometers.

Page 6 of this exhibit is a portion of a USGS 1:24,000 scale 7.5 minute quadrangle at full scale with the calculated area of interference overlaid. The sheet includes the quadrangle name and measurement scale at the bottom-left corner (note: "Mt" refers to meters). The area of interference was calculated using the free space equation and 120 radials.

Page 7 of this exhibit is a high resolution aerial photo of the vicinity surrounding the proposed translator's tower site provided by the U.S. Geological Survey's National Aerial Photography Program. It has been included to provide clarification of the nature of the buildings in the vicinity.

### Compliance with 47 C.F.R. § 74.1204(d)

All authorized second and third adjacent stations with which the proposed translator has contour overlap are tabulated below. Column four show the station's signal level at the proposed translator's tower site, and column five gives the minimum value within the entire standard interfering contour of the proposed translator (100 dBμ for most classes, 94 for class B, 97 for class B1). The minimum second or third adjacent F(50,50) contour within the proposed translator's standard interfering contour was used to calculate the proposed translator's actual "worst-case" interfering contour.

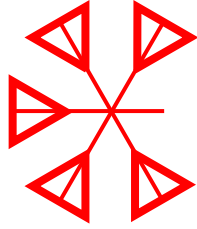
Application_id	File Number	Callsign	Contour at Tower	Min. Contour
137759	BMLH19891211KC	KGLI	101.2	99.5
96025	BLH19861216KB	KGLI	151.2	105.7
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>99.5</b>

FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 74.1204(d), an applicant may use the undesired-to-desired signal ratio method." The undesired-to-desired ratio for second and third adjacent stations required by § 74.1204(a) is 40 dB. Since the minimum protected contour strength within the proposed translator's standard interference contour is **99.5 dBμ**, this makes the proposed translator's worst-case interfering contour **139.5 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **10.6 m** from the transmit antenna.

The maximum horizontal plane of the interfering contour was calculated for 120 radials and plotted on the pertinent portion of a USGS quadrangle (page 6 of this exhibit). However, the field strength of the proposed translator's antenna varies with angle of depression from horizontal. The antenna relative fields are tabulated on the following page at 5 degree increments, starting at 5 degrees below horizontal. Antenna relative field strength data was provided and certified by the manufacturer of the proposed antenna. Using a free-space calculation that neglects any loss due to reflection, the vertical ground clearance of the proposed translator's interference contour has been tabulated. As shown on the following page, the area of interference clears the tower ground level (TGL) by **48.7 m** at the lowest point. The applicant has taken into account USGS quadrangles and relevant aerial photography in stating that no structures, except possibly tower support structures, puncture the area of interference. Hence, in accordance with 47 C.F.R. § 74.1204(d) and the clarification provided by the FCC in the decision *Re: Living Way Ministries* (FCC 02-244), a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.

<b>Antenna Manufacturer:</b>	<b>TEL</b>
<b>Antenna Model:</b>	<b>ANT90D</b>
<b>CORAGL:</b>	<b>53 m</b>
<b>Maximum ERP:</b>	<b>0.205 kW</b>
<b>Interfering Contour:</b>	<b>139.5 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>10.6 m</b>
<b>Min Ground Clearance:</b>	<b>48.7 m</b>

Depression Angle Below Horizontal	Antenna Relative Field	ERP (watts)	Distance to Interfering Contour from Antenna (m)	Horizontal Distance of Interfering Contour from Tower (m)	Vertical Clearance of Interfering Contour above TGL (m)
5	.824	139.2	8.8	8.7	52.2
10	.813	135.5	8.6	8.5	51.5
15	.795	129.6	8.5	8.2	50.8
20	.772	122.2	8.2	7.7	50.2
25	.743	113.2	7.9	7.2	49.7
30	.708	102.8	7.5	6.5	49.2
35	.668	91.5	7.1	5.8	48.9
40	.623	79.6	6.6	5.1	48.7
45	.572	67.1	6.1	4.3	48.7
50	.517	54.8	5.5	3.5	48.8
55	.458	43.0	4.9	2.8	49.0
60	.396	32.1	4.2	2.1	49.4
65	.332	22.6	3.5	1.5	49.8
70	.266	14.5	2.8	1.0	50.3
75	.198	8.0	2.1	0.5	51.0
80	.131	3.5	1.4	0.2	51.6
85	.065	0.9	0.7	0.1	52.3
90	.000	0.0	0.0	0.0	53.0
Minimum Clearance above TGL:					<b>48.7 m</b>



# TELEWAVE, INC.



660 GIGUERE COURT, SAN JOSE, CALIFORNIA 95133  
408-929-4400 800-331-3396 FAX 408-929-4080

## Telewave ANT90D @ 3/8 spacing

Elevation	Relative	Elevation	Relative
Azimuth	Voltage	Azimuth	Voltage
0	0.829	185	0.610
5	0.824	190	0.600
10	0.813	195	0.584
15	0.795	200	0.564
20	0.772	205	0.539
25	0.743	210	0.511
30	0.708	215	0.481
35	0.668	220	0.450
40	0.623	225	0.417
45	0.572	230	0.382
50	0.517	235	0.346
55	0.458	240	0.307
60	0.396	245	0.265
65	0.332	250	0.220
70	0.266	255	0.171
75	0.198	260	0.117
80	0.131	265	0.061
85	0.065	270	0.000
90	0.000	275	0.064
95	0.063	280	0.130
100	0.122	285	0.198
105	0.179	290	0.267
110	0.231	295	0.335
115	0.279	300	0.403
120	0.324	305	0.468
125	0.364	310	0.530
130	0.400	315	0.588
135	0.434	320	0.640
140	0.465	325	0.687
145	0.493	330	0.727
150	0.520	335	0.761
155	0.545	340	0.788
160	0.568	345	0.808
165	0.586	350	0.822
170	0.601	355	0.829
175	0.610		
180	0.613		

# **Adjacent Channel Study** **For Station K240DE, Facility\_id: 146700**

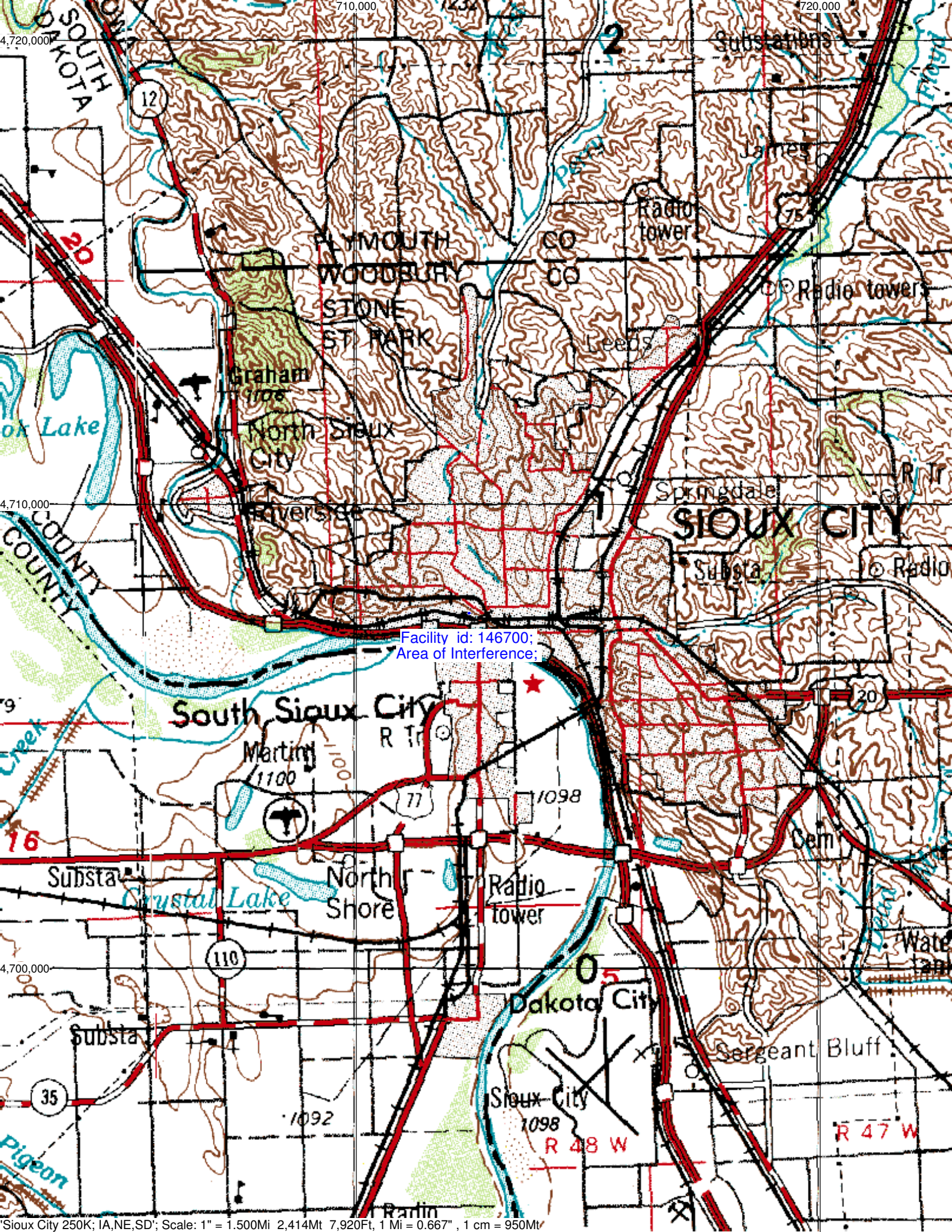
## **Co-channel through third adjacent:**

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Overlap
96025	8771	BLH	19861216KB	KGLI	RADIOWORKS, INC	C1	SIOUX CITY	IA	LIC	6	405	238	2	0	1.2233
137759	8771	BMLH	19891211KC	KGLI	RADIOWORKS, INC	C1	SIOUX CITY	IA	LIC	100	646	238	2	9.4	1.2233
675734	140368	BNPFT	20030828AJX	K242BE	COMMUNITY BROADCASTING, INC.	D	NORFOLK	NE	CP	0.25	572	242	2	97.8	0
667477	49776	BMLED	20030304AAH	KNWC-FM	NORTHWESTERN COLLEGE	C	SIOUX FALLS	SD	LIC	100	918	243	3	114.3	0
1177005	49776	BSTA	20070316AAE	KNWC-FM	NORTHWESTERN COLLEGE	C	SIOUX FALLS	SD	APP	6.2	846	243	3	114.3	0
1061140	49776	BXLED	20050602ACK	KNWC-FM	NORTHWESTERN COLLEGE	C	SIOUX FALLS	SD	LIC	26	525	243	3	114.6	0
42698	49776	BLH	19820518AL	KNWC-FM	NORTHWESTERN COLLEGE	C	SIOUX FALLS	SD	LIC	16.5	525	243	3	114.6	0
1130080	71411	BLH	20060531ANS	KQBW	CLEAR CHANNEL BROADCASTING LICENSES, INC	C0	OMAHA	NE	LIC	82	674	241	1	135.7	0
116216	71411	BLH	19880729KC	KQBW	WEBSTER COMMUNICATIONS CO.	C	OMAHA	NE	LIC	44	410	241	1	143.2	0
1168918	29725	BPH	20061103AAF	KILR-FM	JACOBSON BROADCASTING COMPANY, INC.	C2	ESTHERVILLE	IA	APP	50	578	240	0	150.8	0

## **Intermediate Frequencies (53 and 54 channels difference):**

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
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Facility id: 146700;  
Area of Interference;



