

[Exhibit 13]

## **Non-Interference Compliance**

Regarding Facility id 36259

Channel 295

### **Description of Exhibit 13 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 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 an aerial photo of the vicinity surrounding the proposed translator's tower site.

**Note: The tallest building within the zone of predicted interference is 15ft (4.6m) in height. This proposal provides 111.2m (364.8ft) ground clearance so 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.**

## 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.

<b>Application_id</b>	<b>File Number</b>	<b>Callsign</b>	<b>Contour at Tower</b>	<b>Min. Contour</b>
1209237	BLH20071003AAO	KMJK	71	71
996254	BMLH20040802BEU	WDAF-FM	77.1	76.5

Minimum F(50,50) Contour of Adjacent Station within  
Proposed Translator's Standard Interfering Contour **71**

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 **71 dBμ**, this makes the proposed translator's worst-case interfering contour **111 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **312.6 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 **111.2 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.

**Note: The tallest building within the zone of predicted interference is 15ft (4.6m) in height. This proposal provides 111.2m (364.8ft) ground clearance so 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.**

**Antenna Manufacturer:** NIC  
**Antenna Model:** BKG77  
**CORAGL:** 250 m  
**Maximum ERP:** 0.25 kW  
**Interfering Contour:** 111 dBμ  
**Max Int. Contour Distance:** 312.6 m  
**Min Ground Clearance:** 111.2 m

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	.999	249.5	312.3	311.1	222.8
10	.982	241.1	307.0	302.3	196.7
15	.954	227.5	298.2	288.0	172.8
20	.918	210.7	287.0	269.6	151.9
25	.871	189.7	272.3	246.8	134.9
30	.818	167.3	255.7	221.4	122.2
35	.758	143.6	236.9	194.1	114.1
40	.691	119.4	216.0	165.5	111.2
45	.616	94.9	192.6	136.2	113.8
50	.538	72.4	168.2	108.1	121.2
55	.465	54.1	145.4	83.4	130.9
60	.391	38.2	122.2	61.1	144.2
65	.313	24.5	97.8	41.3	161.3
70	.239	14.3	74.7	25.6	179.8
75	.176	7.7	55.0	14.2	196.9
80	.128	4.1	40.0	6.9	210.6
85	.103	2.7	32.2	2.8	217.9
90	.105	2.8	32.8	0.0	217.2
Minimum Clearance above TGL:					<b>111.2 m</b>



BKO77

<b>Vertical</b>	-66	0.297	54	0.479	174	0.468
<b>Values</b>	-63	0.345	57	0.436	177	0.479
-180	0.487	-60	0.391	60	0.391	
-177	0.478	-57	0.436	63	0.345	
-174	0.467	-54	0.479	66	0.297	
-171	0.460	-51	0.523	69	0.253	
-168	0.454	-48	0.568	72	0.211	
-165	0.447	-45	0.616	75	0.176	
-162	0.439	-42	0.661	78	0.145	
-159	0.429	-39	0.706	81	0.120	
-156	0.419	-36	0.745	84	0.105	
-153	0.402	-33	0.783	87	0.100	
-150	0.385	-30	0.818	90	0.105	
-147	0.369	-27	0.852	93	0.118	
-144	0.359	-24	0.881	96	0.134	
-141	0.350	-21	0.910	99	0.151	
-138	0.338	-18	0.934	102	0.168	
-135	0.326	-15	0.954	105	0.185	
-132	0.314	-12	0.972	108	0.202	
-129	0.303	-9	0.987	111	0.219	
-126	0.290	-6	0.999	114	0.236	
-123	0.278	-3	0.999	117	0.252	
-120	0.265	0	1.000	120	0.265	
-117	0.251	3	0.999	123	0.278	
-114	0.236	6	0.999	126	0.290	
-111	0.218	9	0.987	129	0.304	
-108	0.202	12	0.972	132	0.314	
-105	0.185	15	0.954	135	0.327	
-102	0.168	18	0.934	138	0.338	
-99	0.151	21	0.910	141	0.350	
-96	0.134	24	0.881	144	0.360	
-93	0.118	27	0.852	147	0.370	
-90	0.105	30	0.818	150	0.386	
-87	0.100	33	0.783	153	0.403	
-84	0.105	36	0.745	156	0.420	
-81	0.120	39	0.706	159	0.430	
-78	0.145	42	0.661	162	0.440	
-75	0.176	45	0.616	165	0.448	
-72	0.211	48	0.568	168	0.455	
-69	0.253	51	0.523	171	0.461	

Better than SWR

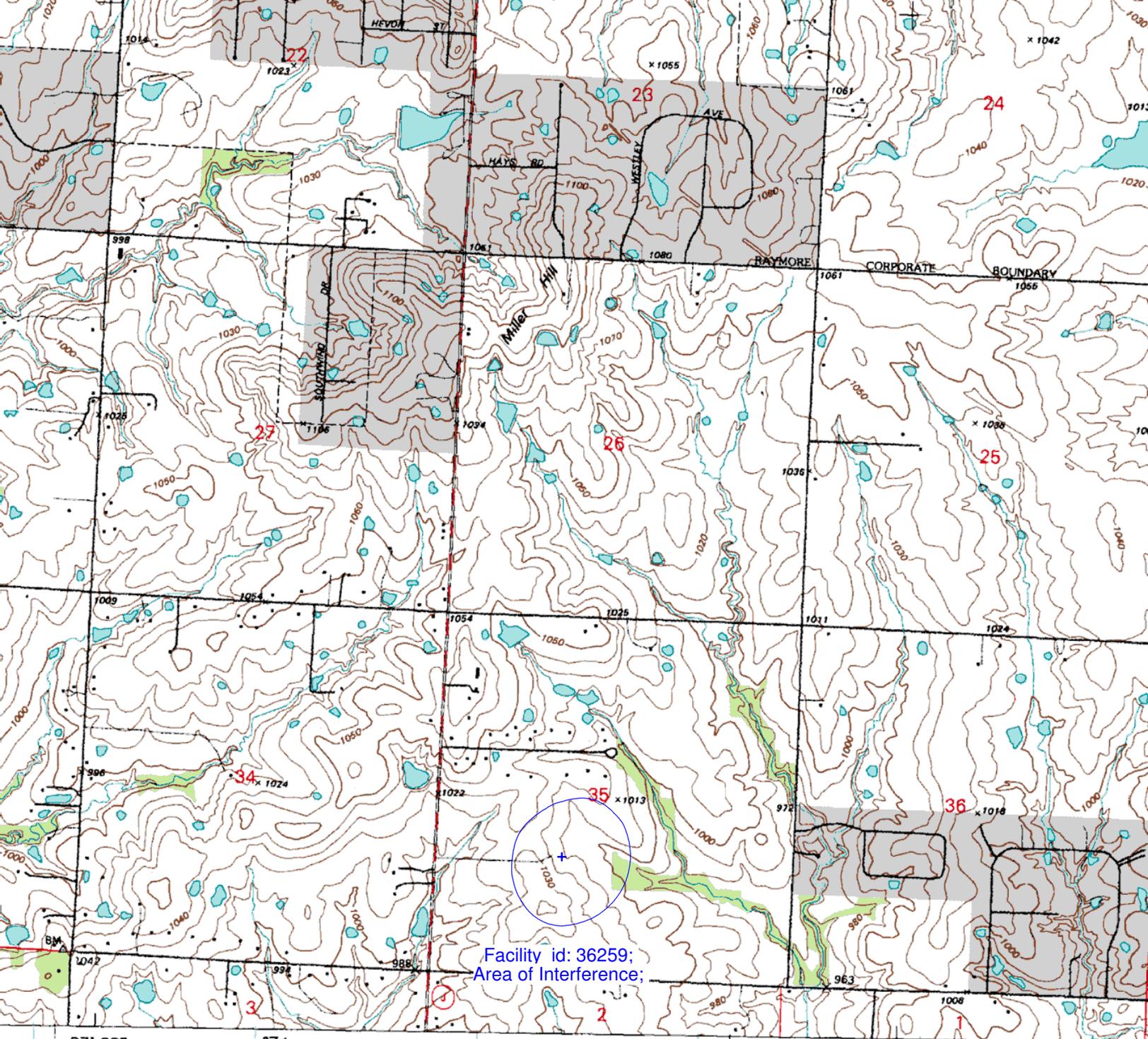
**Adjacent Channel Study  
For Station K295CH, Facility\_id: 36259**

**Co-channel through third adjacent:**

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Char	Adj	Dist	Overlap
996254	8609	BMLH-20040802BEU	WDAF-FM	ENTERCOM LICENSE, LLC	C1	LIBERTY	MO	LIC	100	565	293	2	35.4	1.0858
1209237	33713	BLH-20071003AAO	KMJK	CMP HOUSTON-KC, LLC	C1	NORTH KANSAS (	MO	LIC	100	538.6	297	2	47.5	1.0858
1206037	144031	BLFT-20070919ACO	K294BE	CATHOLIC RADIO NETWORK, INC	D	SAINT JOSEPH	MO	LIC	0.08	347	294	1	120.4	0
1010243	67334	BMLH-20040913ABR	KTPK	ALPHA MEDIA LICENSEE LLC	C	TOPEKA	KS	LIC	100	687	295	0	131.8	0
150710	9929	BLH-19900727KA	KTXY	ZIMMER RADIO OF MID-MISSOURI	C	JEFFERSON CITY	MO	LIC	96	609	295	0	169	0
1289352	64435	BLH-20090204ABQ	KJML	AMERICAN MEDIA INVESTMENTS	C3	COLUMBUS	KS	LIC	11.5	420	296	1	171.1	0

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

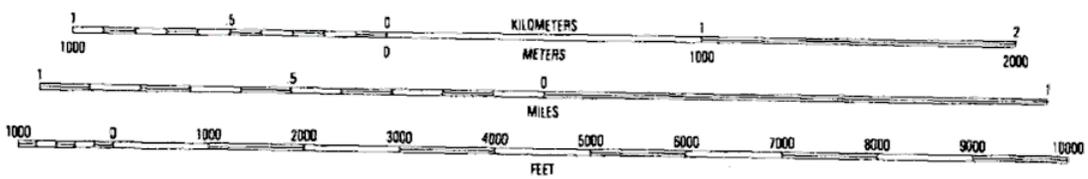
App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
668330	3429	BMLED-20030926AQ	KLRQ	EDUCATIONAL MEDIA FOUNDAT	C0	CLINTON	MO	LIC	100	560	241	54	86.4	61.4
1733666	139583	BLFT-20160816AAG	K241AR	UNIVERSITY OF KANSAS	D	LAWRENCE	KS	LIC	0.25	463	241	54	75.6	65.6



Facility id: 36259;  
 Area of Interference;

27' 30" 374 375 376 25' 00" R 32 W

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET  
 NATIONAL GEODETIC VERTICAL DATUM OF 1929



FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
 AND DIVISION OF GEOLOGY AND LAND SURVEY  
 MISSOURI DEPARTMENT OF NATURAL RESOURCES, ROLLA, MISSOURI 65401  
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

1	2	3	1 Grandview
4		5	2 Lees Sumr
6	7	8	3 Lake Jacor
			4 Belton
			5 Pleasant H
			6 West Line
			7 Peculiar
			8 Harrisonv

ADJOINING 7.5' QUADRANGLE NAMES

