

[Exhibit 12]

## **Non-Interference Compliance**

Regarding FCC File Number: BNPFT-20030317EJK

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

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

Page 2 of this exhibit is an explanation of the tabulated data, which is included as evidence on page 5 of this exhibit.

Pages 3 and 4 of this exhibit contain an explanation of the method used to demonstrate compliance with contour overlap and interference protection provisions based on 47 CFR 74.1204(d), which states:

*"an 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."*

In addition, page 4 includes a tabulation of the second and third adjacent stations which this application is required to protect and the field strengths of those stations in the vicinity of the proposed translator. The field strengths given were based on contours predicted using FCC contour algorithms and 3 arc second terrain data.

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

Page 5 of this exhibit is the tabulated data from the interference analysis, which shows all stations that this application had to consider for contour protection. These tabulated values were generated using high resolution 3 arc second terrain data for the best possible accuracy.

Page 6 of this exhibit is a portion of a USGS 1:24,000 scale 7.5 min quadrangle at full scale with the calculated area of interference overlayed. 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 a free-space calculation (see FCC 98-117, Appendix A, pg. 41 for reference to the equation used).

## Explanation of Frequency Finder Results

The interference analysis for this application was performed using the "Frequency Finder" module in RadioSoft's Comstudy, version 2.2.

Frequency Finder analyzes data taken directly from the FCC's FM database and looks for prohibited overlap with contours of adjacent stations and prohibited proximity to stations 53 or 54 channels from the proposed station (IF) using 3 arc second terrain data and the FCC's contour algorithms. The results tabulated are the stations returned from that analysis. (Note: Because Comstudy was looking at the FCC's FM database, it took into account the proposed translator when doing the analysis and returned it in the tabulated results. For the sake of simplicity, that record has been deleted from all tabulated results.)

The first several columns of the table are self-explanatory. They give various data on the stations in question. The column labeled "Clr" gives the proposed translator's "clearance" with respect to the tabulated station, either in dB or km. The values listed with no units are given in km and are for stations located on an IF to the proposed site's channel.

**A negative value in the "Clr" column does NOT necessarily represent prohibited contour overlap, as explained below.**

A negative value listed in the "Clr" column would indicate either overlap of interference and protected contours or prohibited proximity to an IF station except in the following situations:

- Since the proposed station's Effective Radiated Power (ERP) is 75 watts, a negative value in km (no units listed in the table) does not represent a violation of the CFR, according to 47 CFR 1204(g), which states that "FM translator stations and booster stations operating with less than 100 watts ERP will be treated as class D stations and will not be subject to intermediate frequency separation requirements."

- A second or third adjacent LP100 station cannot represent a violation of the CFR, as 47 CFR 74.1204(a)(4) requires protection of only co-channel and first adjacent LP100 stations.

- 47 CFR 74.1204(a) requires only the protection of "AUTHORIZED commercial or noncommercial educational FM broadcast stations, FM translators, ..." Any entry with a status listed as "RSV," "USE" or "APP" does not represent an authorized station and therefore is not protected under 47 CFR 74.1204. The one exception is the case of LP100 applications. The note to 47 CFR 74.1204(a)(4) states that "LPFM applications and permits that have not yet been licensed must be considered as operating with the maximum permitted facilities." Therefore, any first adjacent or co-channel LP100 station, no matter the status, is protected.

- Entries highlighted in red are those stations where there is overlap of predicted contours and lack of population has been demonstrated within the area of interference.

## Compliance with 47 CFR 74.1204(d)

The proposed translator's Maximum Effective Radiated Power (ERP) is 0.075kW at 177 meters above ground level. According to 47 CFR, 74.1204(a), the desired to undesired ratio between 2nd/3rd adjacent stations is 40dB, making the proposed translator's interfering contour 106.7dBu F(50,10). (See the next page for more discussion on the determination of the signal strength of the proposed translator's area of interference.)

Using a free-space calculation (equation referenced in FCC 98-117, Appendix A, pg. 41), the proposed translator's F(50,10) interference contour was calculated and the maximum horizontal plane was 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 below 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 (equation referenced in FCC 98-117, Appendix A, pg. 41), the vertical ground clearance of the proposed application's F(50,10) interference contour at each angle has been tabulated. As shown below, the area of interference clears the ground by 30.8 meters 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 proposed area of interference. Hence, in accordance with 47 CFR 74.1204(d) and the clarification provided by the FCC in the decision Re: Living Way Ministries (FCC 02-244), there is a lack of population within the proposed area of interference and therefore this application is in full compliance with 47 CFR 74.1204.

**Antenna Manufacturer:** SWR

**Maximum ERP:** 75 watts

**Antenna Model Number:** FM1

**CORAGL:** 177 m

**F(50,10) Contour:** 106.7 dBu

Depression Angle (from COR)	Antenna Relative Field	ERP (watts)	Distance to F(50,10) Interfering Contour from Antenna (m)	Horizontal Distance of F(50,10) Interfering Contour from Tower (m)	Vert. Clearance of F(50,10) Interfering Contour above TGL (m)
5	0.997	74.55	280.0	279.0	152.6
10	0.986	72.91	277.0	272.7	128.9
15	0.969	70.42	272.2	262.9	106.6
20	0.946	67.12	265.7	249.7	86.1
25	0.916	62.93	257.3	233.2	68.3
30	0.879	57.95	246.9	213.8	53.6
35	0.837	52.54	235.1	192.6	42.2
40	0.789	46.69	221.6	169.8	34.5
45	0.736	40.63	206.7	146.2	30.8
50	0.679	34.58	190.7	122.6	30.9
55	0.616	28.46	173.0	99.2	35.3
60	0.55	22.69	154.5	77.2	43.2
65	0.48	17.28	134.8	57.0	54.8
70	0.408	12.48	114.6	39.2	69.3
75	0.333	8.32	93.5	24.2	86.7
80	0.256	4.92	71.9	12.5	106.2
85	0.178	2.38	50.0	4.4	127.2
90	0.1	0.75	28.1	0.0	148.9

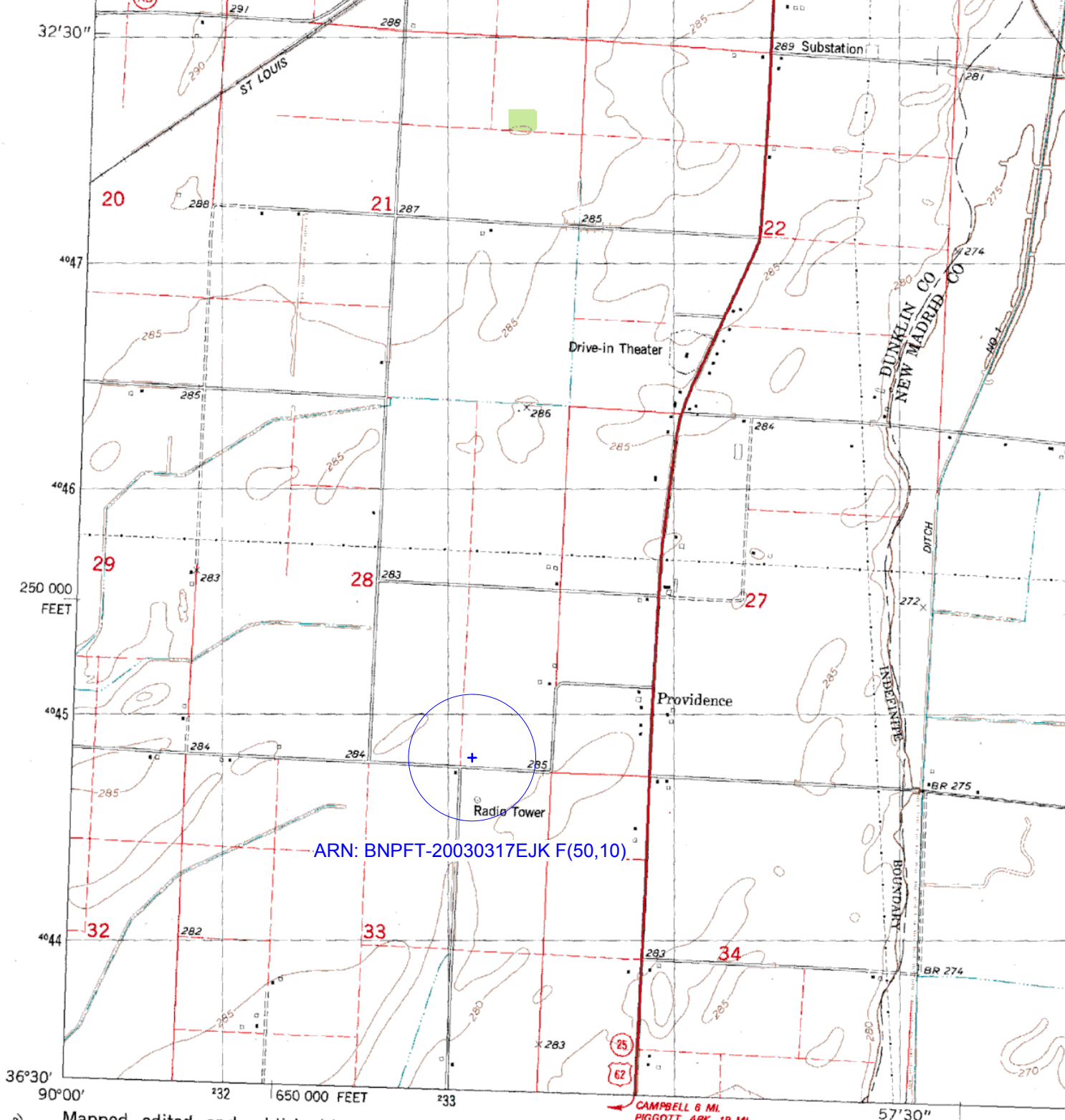
Minimum F(50,10) Clearance above TGL **30.8 m**

The F(50,50) signal strength of all relevant second and third adjacent stations have been examined, and are tabulated below. Column three shows the station's signal level at the proposed translator's tower site, and column four gives the minimum value within the entire proposed translator's standard F(50,10) contour (100 dBu for most classes, 94 dBu for class B's, 97 dBu for class B1's). For signal levels too great to determine, 999 was entered. The minimum F(50,50) contour within the proposed translator's standard F(50,10) contour was used to calculate the proposed translator's interference contour, thereby assuring a minimum undesired-to-desired ratio of 40dB for all relevant adjacent stations, as required in 47 CFR, 74.1204(a).

FCC File Number	Call Sign	F(50,50) Contour at Tower	Min. F(50,50) Contour
BLH19960111BP	KXOQ	67.4dBu	66.7dBu
Minimum F(50,50) Protected Contour of Adjacent Station Within Proposed Application's Standard F(50,10) Contour:			<b>66.7dBu</b>

## Frequency Finder Results

Callsign	State	City	Channel	ERP_w	Licensee	ARN	Class	Status	Distance_km	Clr	Facility_id
	MO	GIDEON	280	0			A	APP	14.42	-18.33 dB	96140
KXOQ	MO	KENNETT	282	6000	P.M. BROADCASTING, INC	BLH19960111BP	A	LIC	19.22	-8.14 dB	18044
KLUE	MO	POPLAR BLUFF	278	50000	BENJAMIN STRATEMEYER	BLH19960417KA	C2	LIC	48.55	0.08 dB	15942
KPOC-FM	AR	POCAHONTAS	280	5100	COMBINED MEDIA GROUP, INC.	BMLH19940428KA	A	LIC	91.31	10.05 dB	59407
KCJF	AR	EARLE	280	12500	CATHERINE JOANNA FLINN	BMPH20021119ABI	C3	APP	134.76	17.82 dB	78214
KXOQ	MO	KENNETT	282	0	P.M. BROADCASTING, INC		A	USE	21.59	21.69 dB	18044
WTNV	TN	JACKSON	281	100000	CAPSTAR TX LIMITED PARTNERSHIP	BLH19960321KC	C1	LIC	141.23	22.19 dB	14743
KCJF	AR	EARLE	280	25000	CATHERINE JOANNA FLINN	BPH19951019MF	C3	CP	153.48	22.27 dB	78214
KMHM	MO	LUTESVILLE	281	2500	HAROLD L. LAWDER	BLH19960926KC	A	LIC	96.02	23.18 dB	26174
WFGE	KY	MURRAY	279	100000	FOREVER COMMUNICATIONS INC	BLH19870724KA	C1	LIC	147.74	23.99 dB	73269
WXAN	IL	AVA	280	2900	HAROLD L. LAWDER	BLH19960916KA	A	LIC	155.71	25.35 dB	26173
	MO	ARCADIA	280	0		RM9182	A	APP	131.6	26.56 dB	0
WRVR-FM	TN	MEMPHIS	283	100000	ENTERCOM MEMPHIS LICENSE, LLC	BLH20000706ADN	C1	LIC	151.44	28.23 dB	34375
KCJF	AR	EARLE	280	0	CATHERINE JOANNA FLINN		C3	USE	152.01	29.98 dB	78214
	AR	POCAHONTAS	281	0			A	USE	85.7	29.53 dB	96088
WXAN	IL	AVA	280	0	HAROLD L. LAWDER		A	USE	155.71	30.73 dB	26173
KDMC-LP	MO	CAPE GIRARDEAU	279	100	SOUTHEAST MISSOURI STATE UNIVERSITY BOARD OF REGENTS	BNPL20010119ADO	LP100	CP	97.22	30.52 dB	132020
KMHM	MO	LUTESVILLE	281	0	HAROLD L. LAWDER		A	USE	89.18	30.66 dB	26174
NEW	AR	BLYTHEVILLE	277	250	EDUCATIONAL MEDIA FOUNDATION	BNPFT20030317ELS	D	APP	66.23	32.36 dB	148689
KWOZ	AR	MOUNTAIN VIEW	277	100000	MOUNTAIN VIEW BROADCASTING CORP	BLH19871110KB	C	LIC	195.82	33.03 dB	46336
WTNV	TN	JACKSON	281	10000	CAPSTAR TX LIMITED PARTNERSHIP	BPH19950509IB	C1	CP	141.23	34.28 dB	14743
WRBO	MS	COMO	278	100000	MEMPHIS III LIMITED PARTNERSHIP	BLH19980617KC	C1	LIC	183.42	35.15 dB	7075
NEW	KY	PADUCAH	281	250	EDGEWATER BROADCASTING INC.	BNPFT20030317DNX	D	APP	132.13	36.02 dB	152224
KLUE	MO	POPLAR BLUFF	278	0	BENJAMIN STRATEMEYER		C2	USE	46.21	37.74 dB	15942
NEW	MO	CHARLESTON	282	250	EDGEWATER BROADCASTING INC.	BNPFT20030317DUY	D	APP	77.21	37.31 dB	152446
KLOU	MO	ST. LOUIS	277	100000	CITICASTERS LICENSES, L.P.	BLH6439	C1	LIC	225.57	39.48 dB	9626



ARN: BNPFT-20030317EJK F(50,10)

Mapped, edited, and published by the Geological Survey

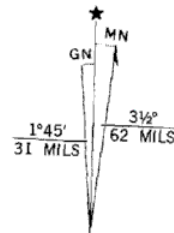
Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1974. Field checked 1976. Map edited 1978

Projection and 10,000-foot grid ticks: Missouri coordinate system, east zone (transverse Mercator)  
1000-meter Universal Transverse Mercator grid, zone 16  
1927 North American datum

Red tint indicates areas in which only landmark buildings are shown

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked



UTM GRID AND 1978 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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