

[Exhibit 13]

## **Non-Interference Compliance**

Regarding Facility id 151732

Channel 224

### **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.

Pages 4 through 6 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 7 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 8 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 9 of this exhibit is an aerial photo of the vicinity surrounding the proposed translator's tower site.

## 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 dB $\mu$  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>
278334	BLH19981210KC	WKRO-FM	62.5	62.4
590308	BLH20011221AAP	WWKA	91.6	91.4

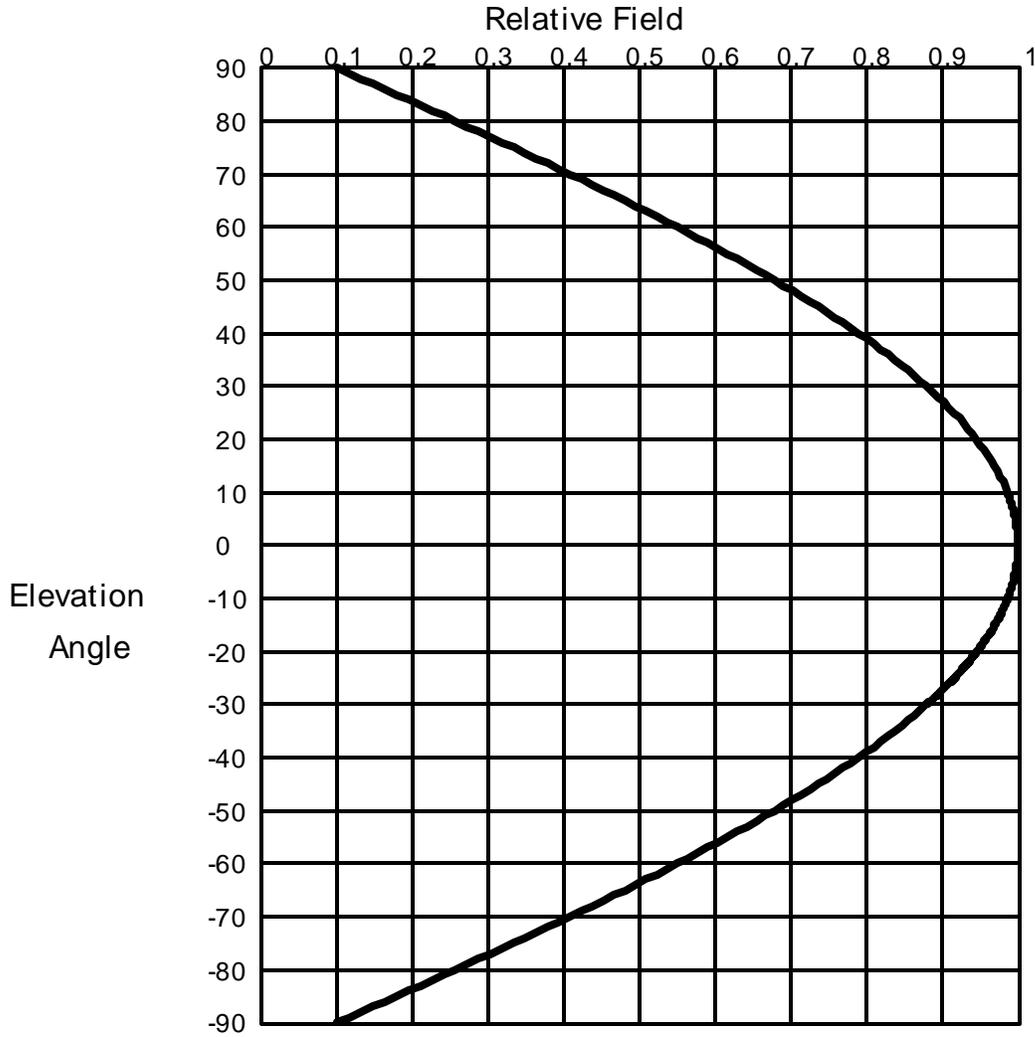
Minimum F(50,50) Contour of Adjacent Station within  
Proposed Translator's Standard Interfering Contour **62.4**

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 **62.4 dB $\mu$** , this makes the proposed translator's worst-case interfering contour **102.4 dB $\mu$** . By the free-space equation, this contour is calculated to extend a maximum of **168.3 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 8 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 **58.4 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.

**Antenna Manufacturer:** SWR  
**Antenna Model:** FM1  
**CORAGL:** 146 m  
**Maximum ERP:** 0.01 kW  
**Interfering Contour:** 102.4 dB $\mu$   
**Max Int. Contour Distance:** 168.3 m  
**Min Ground Clearance:** 58.4 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	.997	9.9	167.8	167.1	131.4
10	.986	9.7	165.9	163.4	117.2
15	.969	9.4	163.1	157.5	103.8
20	.946	8.9	159.2	149.6	91.6
25	.916	8.4	154.1	139.7	80.9
30	.879	7.7	147.9	128.1	72.0
35	.837	7.0	140.8	115.4	65.2
40	.789	6.2	132.8	101.7	60.7
45	.736	5.4	123.8	87.6	58.4
50	.679	4.6	114.3	73.4	58.5
55	.616	3.8	103.7	59.5	61.1
60	.550	3.0	92.5	46.3	65.9
65	.480	2.3	80.8	34.1	72.8
70	.408	1.7	68.7	23.5	81.5
75	.333	1.1	56.0	14.5	91.9
80	.256	0.7	43.1	7.5	103.6
85	.178	0.3	30.0	2.6	116.2
90	.100	0.1	16.8	0.0	129.2
Minimum Clearance above TGL:					<b>58.4 m</b>



## Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability Inc.

CLIENT: *General*

Date: 11/10/03

ANTENNA TYPE: FM1/1

FREQUENCY: 98.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/ -0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/ -0.539 dBd

Null Fill(s)(%) : 0, 0, 0

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.999 (-0.012)	-4.4	.997 (-0.023)	-12.0	.98 (-0.173 )
3.0	.999 (-0.011)	-4.6	.997 (-0.025)	-12.2	.98 (-0.178 )
2.8	.999 (-0.009)	-4.8	.997 (-0.027)	-12.4	.979 (-0.184 )
2.6	.999 (-0.008)	-5.0	.997 (-0.03)	-12.6	.978 (-0.19 )
2.4	.999 (-0.007)	-5.2	.996 (-0.032)	-12.8	.978 (-0.196 )
2.2	.999 (-0.006)	-5.4	.996 (-0.035)	-13.0	.977 (-0.203 )
2.0	.999 (-0.005)	-5.6	.996 (-0.037)	-13.2	.976 (-0.209 )
1.8	1.00 (-0.004)	-5.8	.995 (-0.04)	-13.4	.975 (-0.215 )
1.6	1.00 (-0.003)	-6.0	.995 (-0.043)	-13.6	.975 (-0.222 )
1.4	1.00 (-0.002)	-6.2	.995 (-0.046)	-13.8	.974 (-0.229 )
1.2	1.00 (-0.002)	-6.4	.994 (-0.049)	-14.0	.973 (-0.235 )
1.0	1.00 (-0.001)	-6.6	.994 (-0.052)	-14.2	.973 (-0.242 )
.8	1.00 (-0.001)	-6.8	.994 (-0.055)	-14.4	.972 (-0.249 )
.6	1.00 (0)	-7.0	.993 (-0.058)	-14.6	.971 (-0.256 )
.4	1.00 (0)	-7.2	.993 (-0.062)	-14.8	.97 (-0.263 )
.2	1.00 (0)	-7.4	.993 (-0.065)	-15.0	.969 (-0.271 )
.0	1.00 (0)	-7.6	.992 (-0.069)	-15.2	.969 (-0.278 )
-.2	1.00 (0)	-7.8	.992 (-0.073)	-15.4	.968 (-0.285 )
-.4	1.00 (0)	-8.0	.991 (-0.076)	-15.6	.967 (-0.293 )
-.6	1.00 (0)	-8.2	.991 (-0.08)	-15.8	.966 (-0.3 )
-.8	1.00 (-0.001)	-8.4	.99 (-0.084)	-16.0	.965 (-0.308 )
-1.0	1.00 (-0.001)	-8.6	.99 (-0.088)	-16.2	.964 (-0.316 )
-1.2	1.00 (-0.002)	-8.8	.989 (-0.093)	-16.4	.963 (-0.324 )
-1.4	1.00 (-0.002)	-9.0	.989 (-0.097)	-16.6	.962 (-0.332 )
-1.6	1.00 (-0.003)	-9.2	.988 (-0.101)	-16.8	.962 (-0.34 )
-1.8	1.00 (-0.004)	-9.4	.988 (-0.106)	-17.0	.961 (-0.348 )
-2.0	.999 (-0.005)	-9.6	.987 (-0.11)	-17.2	.96 (-0.357 )
-2.2	.999 (-0.006)	-9.8	.987 (-0.115)	-17.4	.959 (-0.365 )
-2.4	.999 (-0.007)	-10.0	.986 (-0.12)	-17.6	.958 (-0.374 )
-2.6	.999 (-0.008)	-10.2	.986 (-0.124)	-17.8	.957 (-0.383 )
-2.8	.999 (-0.009)	-10.4	.985 (-0.129)	-18.0	.956 (-0.391 )
-3.0	.999 (-0.011)	-10.6	.985 (-0.134)	-18.2	.955 (-0.4 )
-3.2	.999 (-0.012)	-10.8	.984 (-0.14)	-18.4	.954 (-0.409 )
-3.4	.998 (-0.014)	-11.0	.983 (-0.145)	-18.6	.953 (-0.418 )
-3.6	.998 (-0.015)	-11.2	.983 (-0.15)	-18.8	.952 (-0.427 )
-3.8	.998 (-0.017)	-11.4	.982 (-0.156)	-19.0	.951 (-0.437 )
-4.0	.998 (-0.019)	-11.6	.982 (-0.161)	-19.2	.95 (-0.446 )
-4.2	.998 (-0.021)	-11.8	.981 (-0.167)	-19.4	.949 (-0.456 )

**Systems With Reliability Inc.**

Page 1 of 2

CLIENT: *General*

Date: 11/10/03

ANTENNA TYPE: FM1/1

FREQUENCY: 98.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/ -0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/ -0.539 dBd

Null Fill(s)(%) : 0, 0, 0

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.948 (-0.465)	-27.2	.90 (-0.911)	-54.0	.629 (-4.027)
-19.8	.947 (-0.475)	-27.4	.899 (-0.924)	-55.0	.616 (-4.205)
-20.0	.946 (-0.485)	-27.6	.898 (-0.939)	-56.0	.603 (-4.39)
-20.2	.945 (-0.495)	-27.8	.896 (-0.953)	-57.0	.59 (-4.58)
-20.4	.944 (-0.505)	-28.0	.895 (-0.967)	-58.0	.577 (-4.778)
-20.6	.942 (-0.515)	-28.2	.893 (-0.981)	-59.0	.564 (-4.982)
-20.8	.941 (-0.525)	-28.4	.892 (-0.996)	-60.0	.55 (-5.193)
-21.0	.94 (-0.535)	-28.6	.89 (-1.01)	-61.0	.536 (-5.411)
-21.2	.939 (-0.546)	-28.8	.889 (-1.025)	-62.0	.523 (-5.638)
-21.4	.938 (-0.556)	-29.0	.887 (-1.04)	-63.0	.509 (-5.873)
-21.6	.937 (-0.567)	-29.2	.886 (-1.055)	-64.0	.495 (-6.116)
-21.8	.936 (-0.578)	-29.4	.884 (-1.07)	-65.0	.48 (-6.369)
-22.0	.934 (-0.589)	-29.6	.883 (-1.085)	-66.0	.466 (-6.631)
-22.2	.933 (-0.6)	-29.8	.881 (-1.101)	-67.0	.452 (-6.904)
-22.4	.932 (-0.611)	-30.0	.879 (-1.116)	-68.0	.437 (-7.187)
-22.6	.931 (-0.622)	-31.0	.871 (-1.195)	-69.0	.423 (-7.483)
-22.8	.93 (-0.633)	-32.0	.863 (-1.277)	-70.0	.408 (-7.791)
-23.0	.928 (-0.645)	-33.0	.855 (-1.363)	-71.0	.393 (-8.112)
-23.2	.927 (-0.656)	-34.0	.846 (-1.451)	-72.0	.378 (-8.448)
-23.4	.926 (-0.668)	-35.0	.837 (-1.543)	-73.0	.363 (-8.799)
-23.6	.925 (-0.68)	-36.0	.828 (-1.638)	-74.0	.348 (-9.167)
-23.8	.923 (-0.692)	-37.0	.819 (-1.737)	-75.0	.333 (-9.553)
-24.0	.922 (-0.704)	-38.0	.809 (-1.839)	-76.0	.318 (-9.959)
-24.2	.921 (-0.716)	-39.0	.799 (-1.944)	-77.0	.302 (-10.387)
-24.4	.92 (-0.728)	-40.0	.789 (-2.054)	-78.0	.287 (-10.839)
-24.6	.918 (-0.74)	-41.0	.779 (-2.167)	-79.0	.272 (-11.317)
-24.8	.917 (-0.753)	-42.0	.769 (-2.283)	-80.0	.256 (-11.826)
-25.0	.916 (-0.765)	-43.0	.758 (-2.404)	-81.0	.241 (-12.367)
-25.2	.914 (-0.778)	-44.0	.747 (-2.529)	-82.0	.225 (-12.946)
-25.4	.913 (-0.791)	-45.0	.736 (-2.658)	-83.0	.21 (-13.569)
-25.6	.912 (-0.803)	-46.0	.725 (-2.791)	-84.0	.194 (-14.241)
-25.8	.91 (-0.816)	-47.0	.714 (-2.928)	-85.0	.178 (-14.97)
-26.0	.909 (-0.83)	-48.0	.702 (-3.071)	-86.0	.163 (-15.768)
-26.2	.908 (-0.843)	-49.0	.69 (-3.217)	-87.0	.147 (-16.648)
-26.4	.906 (-0.856)	-50.0	.679 (-3.369)	-88.0	.131 (-17.627)
-26.6	.905 (-0.87)	-51.0	.666 (-3.525)	-89.0	.116 (-18.733)
-26.8	.903 (-0.883)	-52.0	.654 (-3.687)	-90.0	.10 (-20)
-27.0	.902 (-0.897)	-53.0	.642 (-3.854)	90.0	.00 (-50)

**Systems With Reliability Inc.**

Page 2 of 2

CLIENT: *General*

Date: 11/10/03

ANTENNA TYPE: FM1/1

FREQUENCY: 98.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/ -0.539 dBd

Beam Tilt (Deg.) : 0

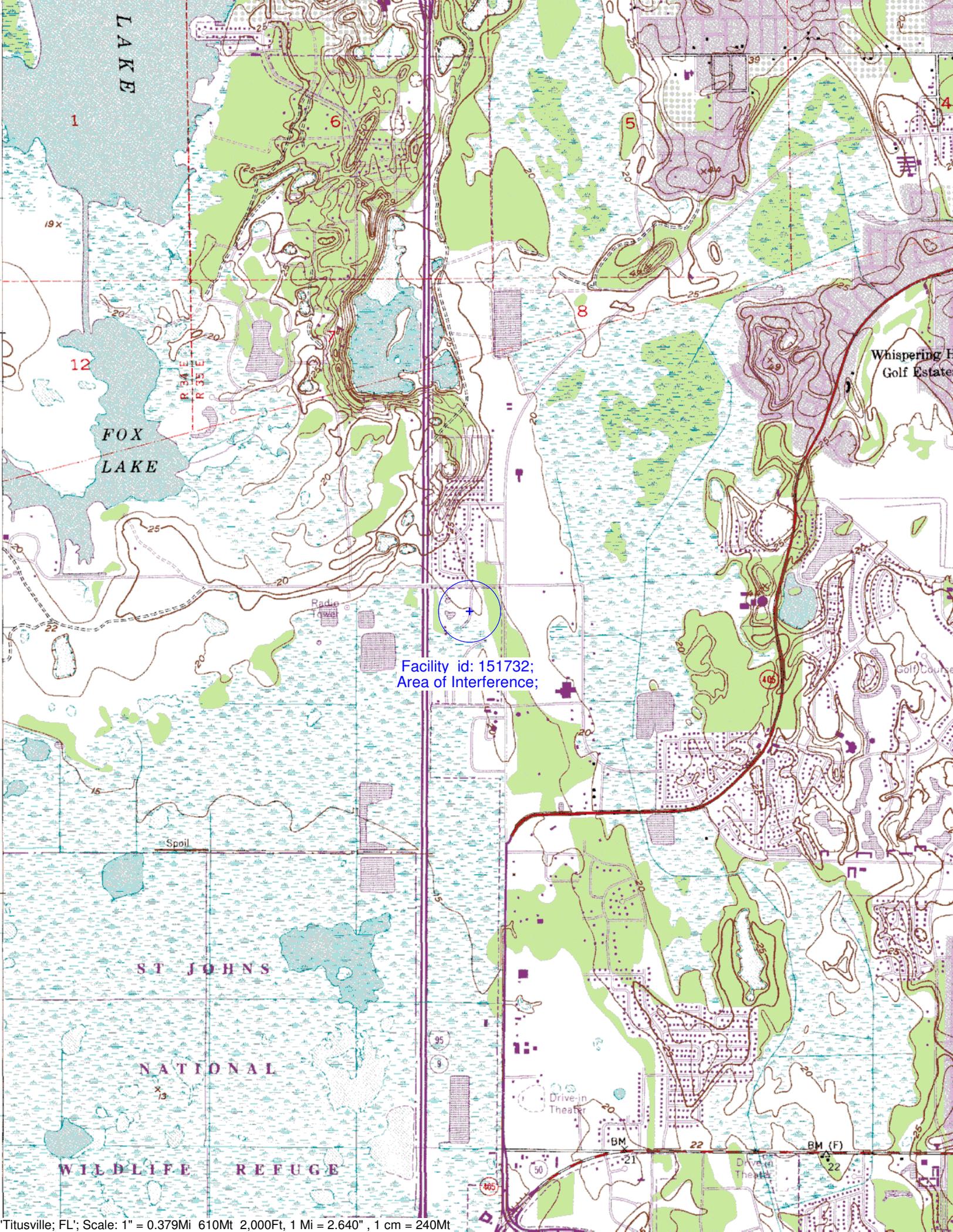
DIRECTIVITY(Horiz): 0.883/ -0.539 dBd

Null Fill(s)(%) : 0, 0, 0

**Adjacent Channel Study  
For Station NEW, Facility\_id: 151732**

**Co-channel through third adjacent:**

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Chan	Adj	Dist	Overlap
590308	48716	BLH-20011221AAP	WWKA	COX RADIO, INC.	C	ORLANDO	FL	LIC	99	463	222	2	20.1	0.1545
278334	5464	BLH-19981210KC	WKRO-FM	SOUTHERN STONE COMMUNICATIONS OF FLORIDA	C3	EDGEWATER	FL	LIC	15	133	226	2	34.6	0.1545
635713	143502	BNPFT-20030313BKS	NEW	HISPANIC BROADCAST SYSTEM, INC.	D	ORLANDO	FL	APP	0.25	50	226	2	47.3	0
650084	156791	BNPFT-20030317LXM	NEW	CARL TUTERA	D	ORLANDO	FL	APP	0.25	56	226	2	50.2	0
223358	9872	BLFT-19960409TA	W227AF	CENTRAL EDUCATIONAL BROADCASTING, INC.	D	MELBOURNE	FL	LIC	0.055	62	227	3	51.7	0
648019	146555	BNPFT-20030314AFF	NEW	BLACK MEDIA WORKS, INC.	D	EATONVILLE	FL	APP	0.15	44	226	2	54.5	0
636116	143886	BNPFT-20030312BDB	NEW	CORNERSTONE COMMUNITY RADIO, INC.	D	ORLANDO	FL	APP	0.25	53	227	3	58.5	0
651008	157576	BNPFT-20030317LZX	NEW	CAGUAS EDUCATIONAL TV, INC.	D	KISSIMMEE	FL	APP	0.12	58	226	2	61.1	0
1537273	5464	BMPH-20130122AFU	WKRO-FM	SOUTHERN STONE COMMUNICATIONS OF FLORIDA	C3	PORT ORANGE	FL	CP MOD	24.5	55	226	2	65	0
649653	156373	BNPFT-20030317HFT	NEW	JUAN ALBERTO AYALA	D	VINELAND	FL	APP	0.25	112	226	2	65.6	0
632871	141300	BNPFT-20030317ADD	NEW	BIBLE BROADCASTING NETWORK, INC.	D	WINTER GARDEN	FL	APP	0.019	120	226	2	67.3	0
1504622	5464	BSTA-20120622AAW	WKRO-FM	SOUTHERN STONE COMMUNICATIONS OF FLORIDA	C3	PORT ORANGE	FL	APP	0.65	104	226	2	75.7	0
650026	156734	BNPFT-20030317LZP	NEW	CARL TUTERA	D	ORMOND BEACH	FL	APP	0.05	28	227	3	82	0
634276	142410	BNPFT-20030312ARG	NEW	CENTRAL FLORIDA EDUCATIONAL FOUNDATION,	D	CLERMONT	CO	APP	0.009	140	226	2	87.4	0
584959	3058	BLH-20011022AAS	WMFQ	ASTERISK COMMUNICATIONS, INC	C2	OCALA	FL	LIC	50	167.9	225	1	133	0
1420435	29732	BLH-20110317ABC	WFLZ-FM	CITICASTERS LICENSES, INC.	C	TAMPA	FL	LIC	97	491	227	3	162.4	0



LAKE

1

6

5

4

19x

12

R 34 E  
R 35 E

8

Whispering Hills  
Golf Estate

FOX  
LAKE

Facility id: 151732;  
Area of Interference;

Radio  
Tower

Spoil

ST JOHNS

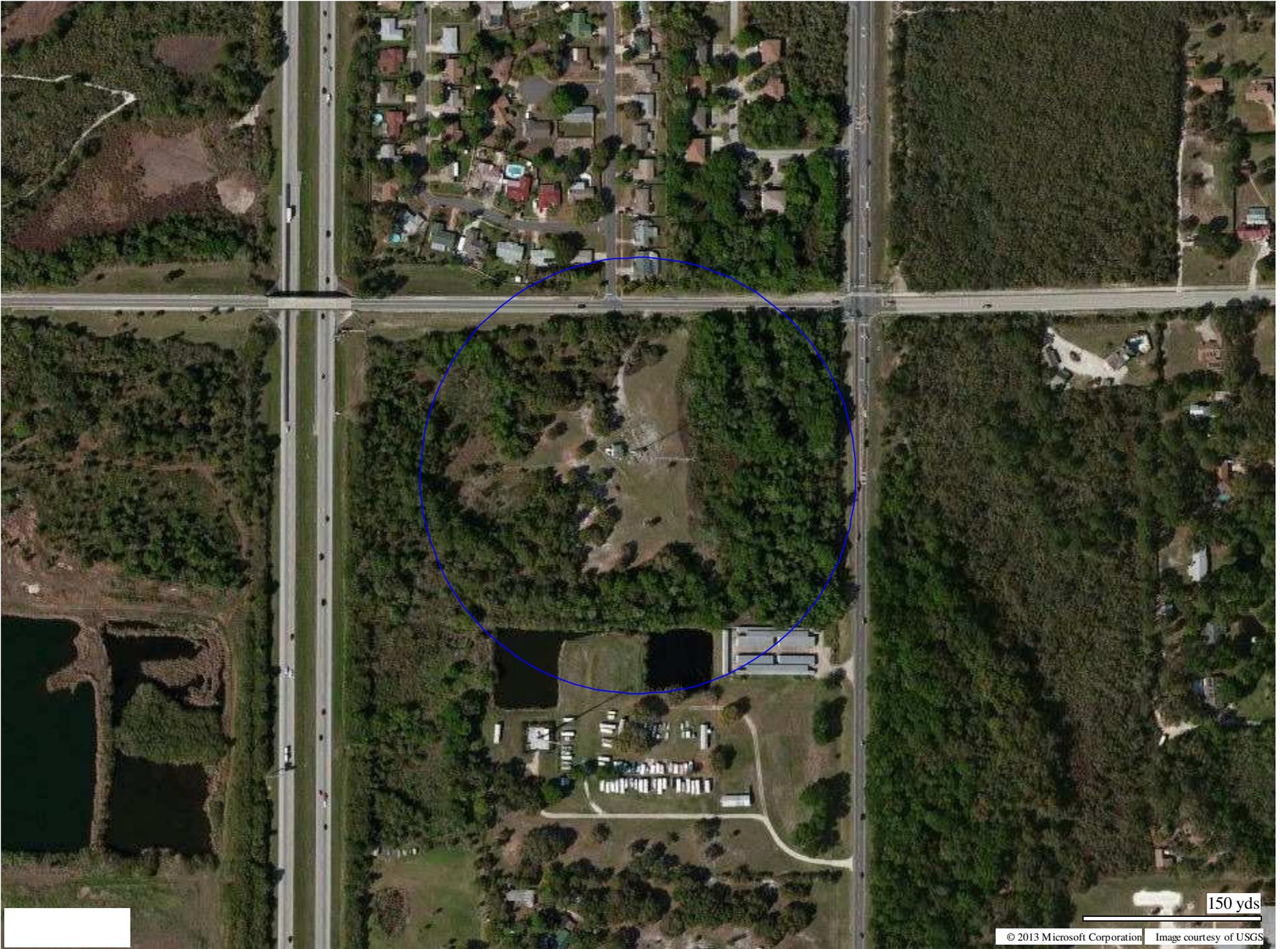
NATIONAL

WILDLIFE REFUGE

Drive-in  
Theater

BM

BM (F)



150 yds