

[Exhibit 13]

## **Non-Interference Compliance**

Regarding Facility id 154008

Channel 281

### **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 5 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 6 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 dB $\mu$  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 7 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.

Pages 8 and 9 of this exhibit are aerial photos 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 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>
169874	BLH19920211KA	WPZZ	64.9	64.9
63170	BLH19831117BF	WURV	85.6	83.3
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>64.9</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 **64.9 dBμ**, this makes the proposed translator's worst-case interfering contour **104.9 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **218.6 m** from the transmit antenna.

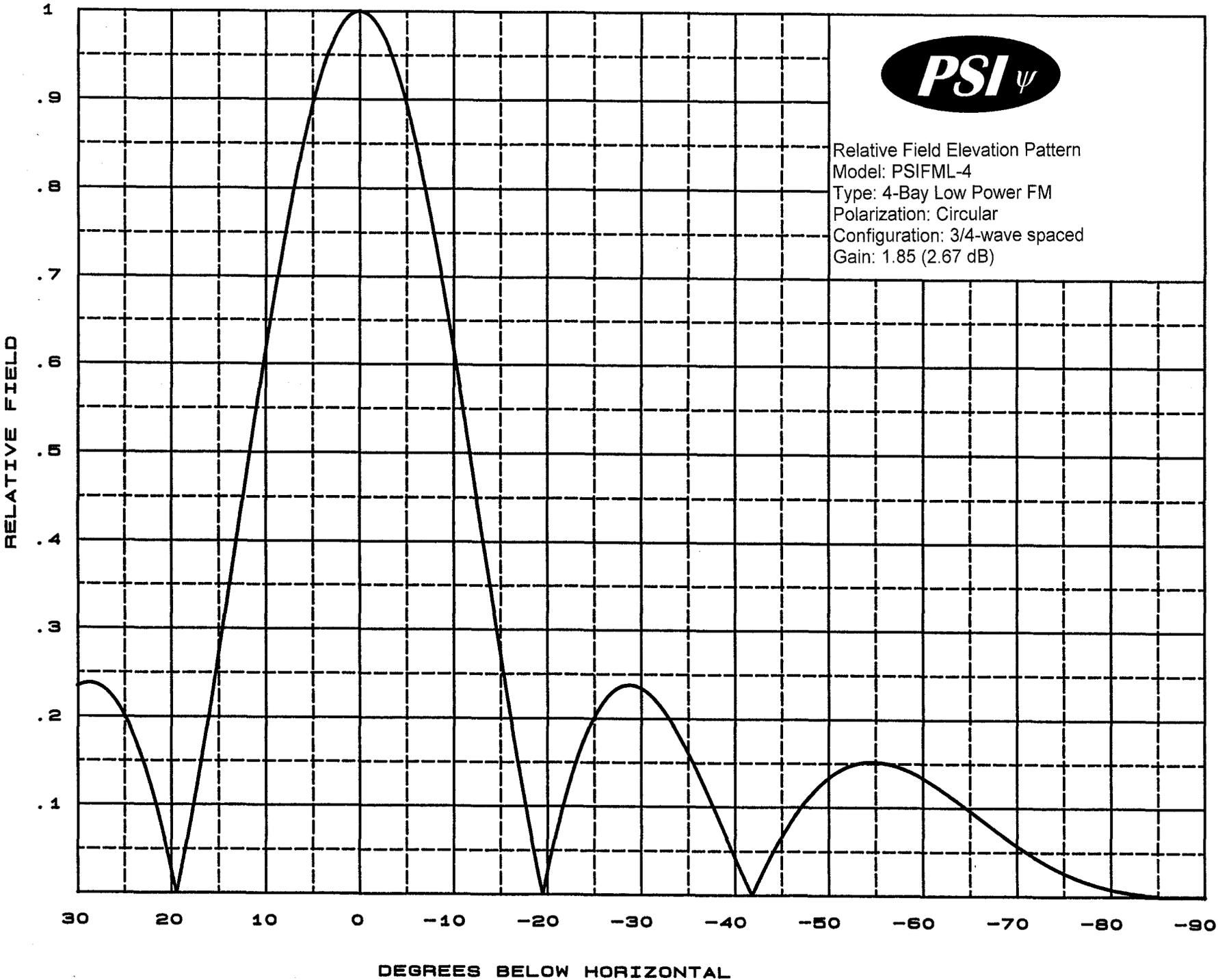
The maximum horizontal plane of the interfering contour was calculated for 120 radials and plotted on the pertinent portion of a USGS quadrangle (page 7 of this exhibit). However, the field strength of the proposed translator's antenna varies with angle of depression from horizontal. The antenna relative 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 **12.8 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:** PSI  
**Antenna Model:** FML-4 (.75)  
**CORAGL:** 40 m  
**Maximum ERP:** 0.03 kW  
**Interfering Contour:** 104.9 dBμ  
**Max Int. Contour Distance:** 218.6 m  
**Min Ground Clearance:** 12.8 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	.894	24.0	195.4	194.6	23.0
10	.617	11.4	134.8	132.8	16.6
15	.272	2.2	59.4	57.4	24.6
20	.027	0.0	5.9	5.5	38.0
25	.201	1.2	43.9	39.8	21.4
30	.234	1.6	51.1	44.3	14.4
35	.161	0.8	35.2	28.8	19.8
40	.043	0.1	9.4	7.2	34.0
45	.086	0.2	18.8	13.3	26.7
50	.133	0.5	29.1	18.7	17.7
55	.152	0.7	33.2	19.1	12.8
60	.133	0.5	29.1	14.5	14.8
65	.097	0.3	21.2	9.0	20.8
70	.057	0.1	12.5	4.3	28.3
75	.027	0.0	5.9	1.5	34.3
80	.008	0.0	1.7	0.3	38.3
85	.001	0.0	0.2	0.0	39.8
90	.001	0.0	0.2	0.0	39.8
Minimum Clearance above TGL:					<b>12.8 m</b>



Relative Field Elevation Pattern  
Model: PSIFML-4  
Type: 4-Bay Low Power FM  
Polarization: Circular  
Configuration: 3/4-wave spaced  
Gain: 1.85 (2.67 dB)





**Propagation Systems Inc.**  
 Elevation Pattern Tabulation  
 Antenna: PSIFML-4 Special  
 Bay spacing: 3/4 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.828	-50.0	0.133	-17.511	-10.0	0.617	-4.190
-89.0	0.001	-60.828	-49.0	0.124	-18.146	-9.0	0.682	-3.325
-88.0	0.001	-60.828	-48.0	0.112	-18.995	-8.0	0.743	-2.583
-87.0	0.001	-60.828	-47.0	0.099	-20.093	-7.0	0.799	-1.950
-86.0	0.001	-60.828	-46.0	0.083	-21.568	-6.0	0.850	-1.415
-85.0	0.001	-60.828	-45.0	0.066	-23.581	-5.0	0.894	-0.974
-84.0	0.002	-54.807	-44.0	0.047	-26.536	-4.0	0.931	-0.618
-83.0	0.003	-50.816	-43.0	0.027	-31.530	-3.0	0.961	-0.346
-82.0	0.004	-47.448	-42.0	0.004	-47.143	-2.0	0.982	-0.154
-81.0	0.006	-44.350	-41.0	0.018	-34.664	-1.0	0.996	-0.038
-80.0	0.008	-41.584	-40.0	0.043	-27.417	0.0	1.000	0.000
-79.0	0.011	-39.244	-39.0	0.067	-23.482	1.0	0.996	-0.038
-78.0	0.014	-37.021	-38.0	0.092	-20.770	2.0	0.983	-0.153
-77.0	0.018	-35.027	-37.0	0.116	-18.740	3.0	0.961	-0.345
-76.0	0.022	-33.164	-36.0	0.139	-17.134	4.0	0.931	-0.618
-75.0	0.027	-31.481	-35.0	0.161	-15.860	5.0	0.894	-0.972
-74.0	0.032	-29.946	-34.0	0.181	-14.829	6.0	0.850	-1.415
-73.0	0.037	-28.537	-33.0	0.199	-14.006	7.0	0.799	-1.948
-72.0	0.044	-27.203	-32.0	0.215	-13.370	8.0	0.743	-2.582
-71.0	0.050	-25.968	-31.0	0.226	-12.904	9.0	0.682	-3.325
-70.0	0.057	-24.841	-30.0	0.234	-12.607	10.0	0.617	-4.188
-69.0	0.065	-23.782	-29.0	0.238	-12.473	11.0	0.550	-5.193
-68.0	0.072	-22.802	-28.0	0.237	-12.517	12.0	0.481	-6.361
-67.0	0.080	-21.905	-27.0	0.230	-12.748	13.0	0.411	-7.728
-66.0	0.088	-21.078	-26.0	0.219	-13.200	14.0	0.341	-9.347
-65.0	0.097	-20.308	-25.0	0.201	-13.920	15.0	0.272	-11.305
-64.0	0.105	-19.614	-24.0	0.178	-14.983	16.0	0.205	-13.752
-63.0	0.112	-18.995	-23.0	0.149	-16.540	17.0	0.141	-16.993
-62.0	0.120	-18.427	-22.0	0.114	-18.867	18.0	0.081	-21.840
-61.0	0.127	-17.926	-21.0	0.073	-22.712	19.0	0.025	-32.147
-60.0	0.133	-17.491	-20.0	0.027	-31.431	20.0	0.027	-31.481
-59.0	0.139	-17.125	-19.0	0.025	-32.201	21.0	0.073	-22.730
-58.0	0.144	-16.827	-18.0	0.081	-21.840	22.0	0.114	-18.867
-57.0	0.148	-16.602	-17.0	0.141	-16.993	23.0	0.149	-16.540
-56.0	0.150	-16.452	-16.0	0.205	-13.752	24.0	0.178	-14.990
-55.0	0.152	-16.374	-15.0	0.272	-11.310	25.0	0.201	-13.920
-54.0	0.152	-16.391	-14.0	0.341	-9.351	26.0	0.219	-13.200
-53.0	0.150	-16.496	-13.0	0.411	-7.731	27.0	0.230	-12.748
-52.0	0.146	-16.709	-12.0	0.481	-6.364	28.0	0.237	-12.517
-51.0	0.141	-17.040	-11.0	0.550	-5.195	29.0	0.238	-12.473
						30.0	0.234	-12.607

file: FML 4-bay elevation tabulation

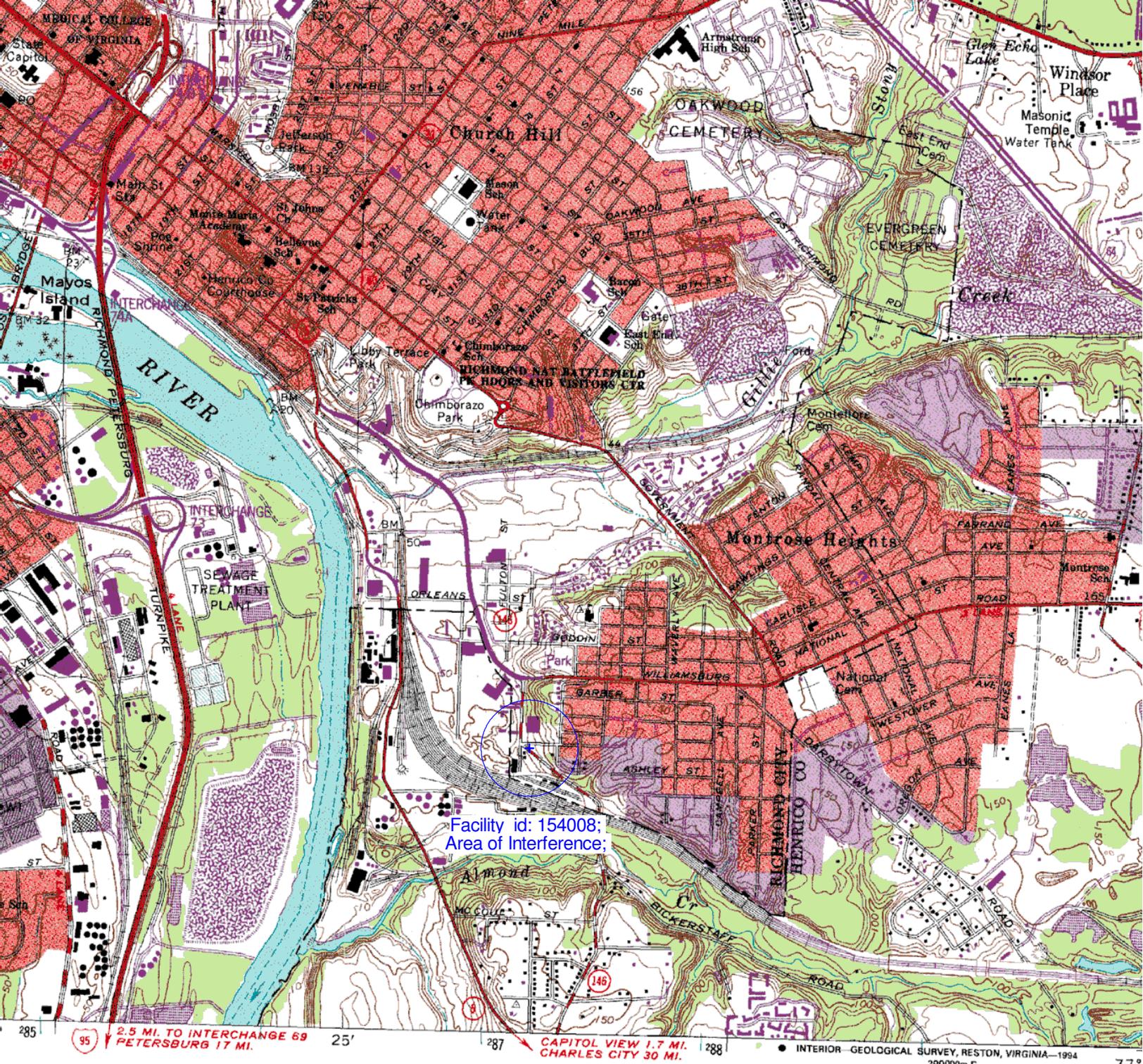
revision: A

Date: 1/28/08

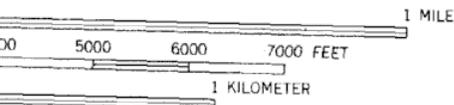
**Adjacent Channel Study  
For Station NEW, Facility\_id: 154008**

**Co-channel through third adjacent:**

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Overlap
1060609	37230	BXLH	20050512ACH	WURV	COX RADIO, INC.	B	RICHMOND	VA	LIC	11.5	300.2	279	2	15	1.8458
63170	37230	BLH	19831117BF	WURV	COX RADIO, INC.	B	RICHMOND	VA	LIC	20	325	279	2	15	1.8458
169874	321	BLH	19920211KA	WPZZ	RADIO ONE LICENSES, LLC	C1	CREWE	VA	LIC	100	399	284	3	61.4	0.4636
295215	37230	Null	Null	WURV	COX RADIO, INC.	B	RICHMOND	VA	USE	0	0	279	2	15	0
1437287	139555	BLFT	20110727AAG	W281AW	LIBERTY UNIVERSITY, INC.	D	PETERSBURG	VA	LIC	0.006	105	281	0	31.7	0
635734	143523	BNPFT	20030314BVG	NEW	THE RIVER EDUCATIONAL MEDIA, INC.	D	WILLIAMSBURG	VA	APP	0.002	58	279	2	66.9	0
295563	321	Null	Null	WPZZ	RADIO ONE LICENSES, LLC	C1	CREWE	VA	USE	0	0	284	3	75.8	0
565575	62205	BLH	20010522AAM	WGRX	TELEMEDIA BROADCASTING, INC.	A	FALMOUTH	VA	LIC	2.7	219	283	2	85.7	0
292257	30111	Null	Null	931124ME	JAMES H. WISNESKI	A	FALMOUTH	VA	USE	0	0	283	2	97.6	0
1006577	40755	BMLH	20040816AAN	WNVZ	ENTERCOM NORFOLK LICENSE, LLC	B	NORFOLK	VA	LIC	49	148	283	2	110.6	0
1194959	74212	BXMLH	20070809ABC	WPRS-FM	RADIO ONE LICENSES, LLC	B	WALDORF	MD	LIC	50	198	281	0	132.6	0
1194957	74212	BMLH	20070809ABE	WPRS-FM	RADIO ONE LICENSES, LLC	B	WALDORF	MD	LIC	20	295	281	0	132.6	0



Facility id: 154008;  
Area of Interference:



ROAD CLASSIFICATION

Heavy-duty	—————	Light-duty	—————
Medium-duty	—————	Unimproved dirt	-----
	Interstate Route		U. S. Route
	State Route		

ACCURACY STANDARDS  
 DO 80225 OR RESTON, VIRGINIA 22092,  
 CHARLOTTESVILLE, VIRGINIA 22903  
 POLS IS AVAILABLE ON REQUEST

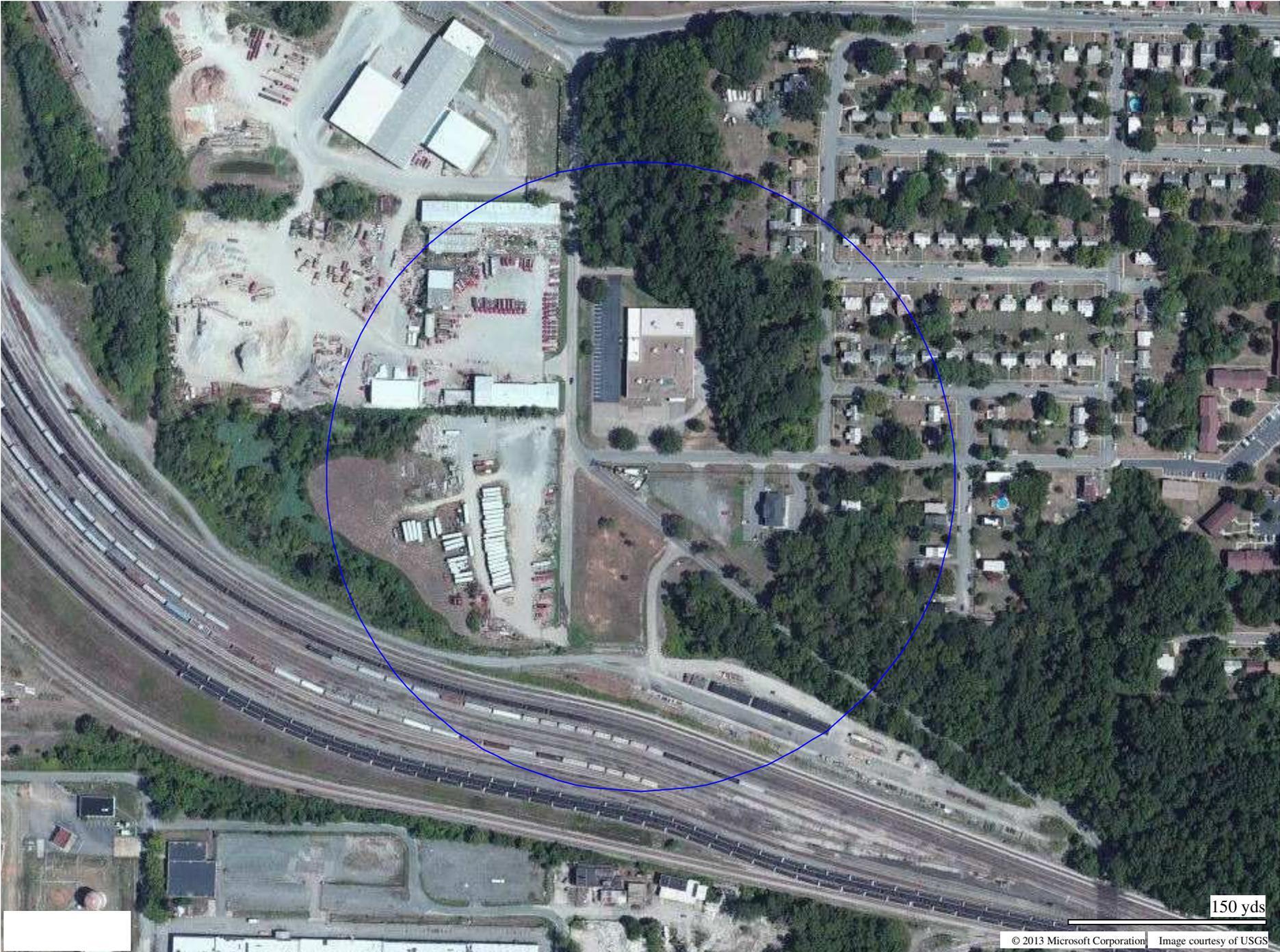
Revisions shown in purple compiled in cooperation with Commonwealth of Virginia agencies from aerial photographs taken 1989 and other sources. This information not field checked. Map edited 1994

Information shown in purple may not meet USGS content standards and may conflict with previously mapped contours

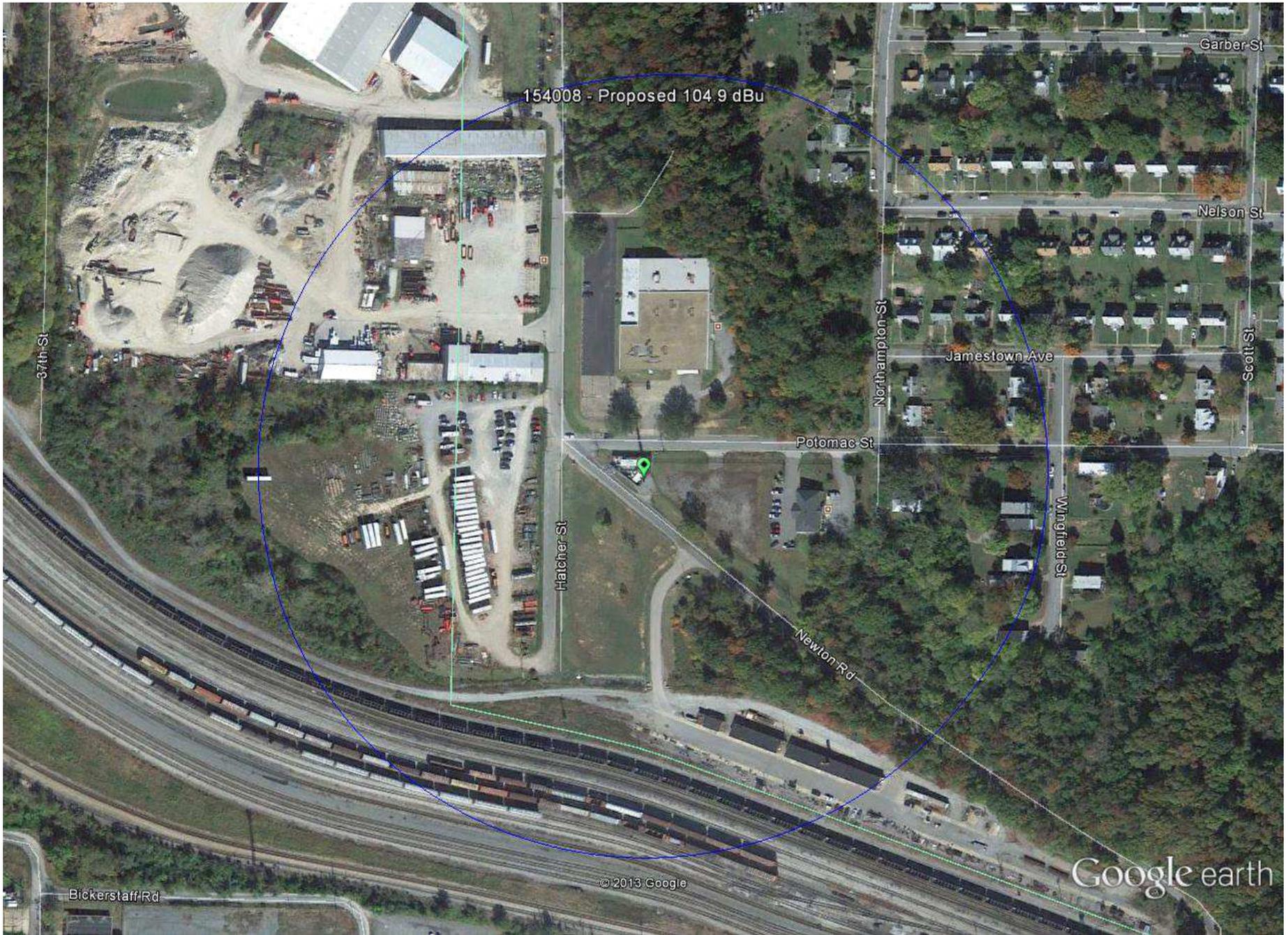
Purple tint indicates extension of urban areas

**RICHMOND, VA.**  
 37077-E4-TF-024

1964  
 REVISED 1994  
 DMA 5559 III SW—SERIES V834



150 yds



Google earth

feet  
meters

