

Fine Arts Radio  
Athens, Ohio  
Comprehensive Technical Exhibit  
C.P. Modification

Translator W247AP was originally built to relay noncommercial station WMRT, Marietta, Ohio. The translator antenna was mounted on the side of a self-supporting tower owned by the County of Athens. This tower was originally used just for sheriff communications, but in the past several years several other services were added, including local fire and other emergency communications.

In 2009, the County requested that Fine Arts find another location for this translator because of security concerns. A site was located on the east side of Athens, in the Hocking River valley. This site was less than ideal because there was insufficient signal strength from station WMRT for reliable rebroadcast. In the meantime, Fine Arts attempted to find an alternative site that was high enough for reliable reception of WMRT, not subject to blanketing interference (from local Class B educational station WOUB), nor subject to electrical interference from power transmission lines, and not too expensive.

In the interim, the Commission approved the use of pre-existing translators for the relay of AM stations as fill-in translators. Fine Arts was contacted by the ownership of local AM station WATH about the purchase of W247AP as a fill-in translator for that station.

Agreement having been reached for the sale of the translator to WATH, Inc., Fine Arts requested an STA to take the station silent, pending conversion of the translator to a fill-in translator for the AM station. That STA request (File No. BLSTA-20110328AAC ) was granted on May 18, 2011. The Commission granted the application to transfer the license on June 2, 2011 (File No. BALFT-20110330ACT).

WATH is a daytime station operating on 970 KHZ. with a 1,000 watts. WATH has a night time authorization of 26 watts, which, of course, receives no protection from skywave interference. Hence this night time signal is unable to provide more than limited coverage of the city of Athens.

The proposal is to locate the translator on an existing tower owned by WATH and used for co-owned WXTQ. Since this tower is a little over a mile from the WATH AM tower, this meets the requirement that the translator 60 dbu contour remain within the daytime 2 mv/m contour of the AM station. The translator will be programmed directly from the WATH studio by equalized telephone line. From this location, the translator will place a 60 dbu or better signal over the city of Athens.

We propose, therefore, to modify the original construction permit to specify the WXTQ tower as the antenna site for the translator. A single bay circularly-polarized antenna will be mounted at the 70 foot level on this 112 foot tower, or 21 meters above ground. This will increase the center of radiation for the translator antenna from 210 meters AMSL specified in the current construction permit to 337 meters AMSL. Using the standard 12 radials, the AHAAT of the translator will then be 94 meters.

**Environmental:** The facilities proposed here will operate with a circularly polarized antenna and an effective radiated power of 13 watts in the horizontal and vertical directions, or 26 watts combined. The antenna will be 21 meters or 70 feet above ground. While this antenna will be mounted on the same tower as Class A FM station WXTQ, since the combined power level of 26 watts is less than 100 watts this proposal is excluded from environmental processing under the current FCC standards regarding human exposure to non-ionizing radiation. Nor does it have to be considered in conjunction with other co-located facilities on this tower.

The translator will be under common ownership with the licensee of WXTQ, after consummation of the previously approved sale. **WATH, Inc.** will continue their existing policies to reduce or cease operation of the facilities mounted on this tower whenever workers are climbing the tower towards levels where the total power density levels would be in excess of the permitted level for controlled exposure.

**Frequency Change.** From this new site, the highest of the 12 standard radials is 210°, 117.5 meters antenna height above average terrain. The maximum ERP as specified under Section 74.1235 (b) (1) is 13 watts where the radial AHAAT is between 116 and 140 meters. We note that this radial is also the highest radial when antenna heights are plotted for all 360 radials.

This site is within 320 KM of the Canadian border. Rounded to the nearest kilometer, the 34 dbu contour does not exceed 32 KM. on any of the 12 standard radials. The maximum height above average terrain on any radial is at 210 degrees, 117.5 meters. Hence the maximum distance to the 34 dbu 50/10 contour is 31.875 km at 210 degrees.

**Table I**  
 Fine Arts Radio Translator  
 39-21-18 North, 82-05-32 West, Athens, Ohio  
 (WXTQ Tower)  
 13 watts H & V at 337 meters AMSL; 94 m. AHAAT

Bearing	AHAAT	60 dbu	40 dbu (50/10)	34 dbu (50/10)
0.0°	110.1 meters	6.5 KM	21.7 KM	38.8 KM
30.0°	79.0 meters	5.5	18.0	25.7
60.0°	91.7 meters	6.0	19.6	27.9
90.0°	94.2 meters	6.0	19.9	28.3
120.0°	99.8 meters	6.2	20.6	29.2
150.0°	75.8 meters	5.4	17.6	25.2
180.0°	69.3 meters	5.1	16.7	24.1
210.0°	117.5 meters	6.8	22.5	31.8
240.0°	96.2 meters	6.1	20.1	28.6
270.0°	88.1 meters	5.8	19.1	27.3
300.0°	102.6 meters	6.3	20.9	29.6
330.0°	105.0 meters	6.4	21.2	30.0

W247AP, on 97.3 MHZ., is only 15 KM from WLCI-LP, 97.5, Nelsonville, Ohio. When the translator was originally built, there were no specific protection requirements in Section 74.1204 for low power FM stations. Subsequently, that section was modified to establish specific contour protections for first adjacent low power stations. Under this new requirement, the translator would be limited to about 5 watts ERP in order to protect WLCI-LP.

Therefore, we propose a further modification to change the operating frequency from 97.3, Ch. 247; to 97.1, Ch. 246. This remains a minor change. This will also require a change in the call sign of the translator station. Table II shows the distances and bearings to existing stations from the WXTQ tower for a modified translator on 97.1 MHZ:

**Table II**–Translator on Ch. 246/97.1

Frequency/Channel	Class	Station	Location	Distance/ Bearing
96.7/ 244	B-1	WKOV-FM	Wellston, Ohio	56.9 KM./ 230°
96.7/ 244 (C.P.)	B-1	WKOV-FM	Fazeysburg, Oh.	74.9 KM/ 354°
96.9/ 245	A	WVVV	Williamstown, WV	51.1 KM/ 92°
97.1/ 246	A	WBVB	Coal Grove, Ohio	110.2 KM/ 200°
97.1/ 246	B	WBNS-FM	Columbus, Ohio	105.5 KM/ 310°
97.1/ 246	FX	W246BH	Middleport, Ohio	33.2 KM/ 173°
97.3/ 247	B	WKWK	Wheeling, WV	144.9 KM/ 55°
97.5/ 248	B	WQBE	Charleston, WV	110.0 KM/ 163°
97.5/ 238	LP	WLCI-LP	Nelsonville, Ohio	15.1 KM/ 310°
97.7/ 249	A	WCJO	Jackson, Ohio	56.7 KM/ 230°
107.7/299	A	WSEO	Nelsonville, Ohio	16 KM/ 307°

**Allocation Study:** Only three existing facilities are close enough to warrant further study. On the co-channel of 97.1, there is an existing translator (W246BH) at Middleport, Ohio, 33.2 KM south of this site. To the NW, there is Class B FM station WBNS-FM, Columbus, 105.5 KM. Co-channel Class A WBVB, Coal Grove, is too distant to be at issue here. On the lower first adjacent channel 245, Class A station WVVV, Williamstown is 51.1 KM east of this site. The other first adjacent station, WKWK, 97.3 MHz., Wheeling, is too distant to be at issue. The tables and maps following this discussion demonstrate that this proposal meets all of the protection requirements of Section 74.1204 for W246BH, WBNS-FM, and WVVV.

**W246BH.** Section 74.1204 requires mutual protection between the two translators. The 40 dbu 50:10 interfering contour cannot overlap the protected 60 dbu contour of either translator. As Map 1 and Tables III and IV demonstrate, there is no overlap between the 60 dbu contour of W246BH and the 40 dbu interfering contour of the translator proposed here. Nor does the 40 dbu interfering contour of W246BH overlap the 60 dbu contour of the proposed translator described herein.

**WBNS-FM.** Section 74.1204 provides that the 34 dbu 50:10 interfering contour of a translator shall not intersect the protected 54 dbu contour of a Class B station. Map 2 and Tables V and VI demonstrate that the two contours do not overlap, they are separated by about 7 km at the closest approach.

**WVVV.** Section 74.1204 also provides that the 60 dbu contour of a first adjacent Class A station shall receive protection against the 54 dbu contour of a first-adjacent translator. As Map 3 demonstrates, there is wide separation between these two contours.

**Second and Third Adjacent stations:** The protected contour of existing stations are protected against a translator signal contour that is more than 40 db greater than this protected contour. For Class A stations, this is the 100 dbu translator contour, Class B-1, 97 dbu, and Class B stations, 94 dbu. Here, the 94 dbu contour is only a ½ kilometer from the tower at the maximum height of average terrain.

None of the second and third adjacent stations place a protected contour anywhere near the site proposed here, and therefore need not receive further consideration. WLCI-LP, now a second-adjacent station on 97.5, receives no protection under the rules.

**WSEO.** No intermediate frequency protections are provided for by Section 74.1204. We note, however, that this station is greater than 10 km away from this site, which is the minimum separation specified between two Class A stations separated by 10.6 or 10.8 MHz.

**Channel 6.** Section 74.1205 only applies to applications for reserved band channels, Channel 201 through 220. The instant application proposes operation on Channel 246.



## Maps and Tables

On the following series of maps, the proposed translator contours are identified as “W246\*\*,” reflecting that the change in operating frequency requires a concomitant change in callsign.

**Map 1** is a portion of the Columbus, Ohio USGS 1:250,000 series topographic map. This demonstrates that 40 dbu 50:10 contour of the proposed facilities for the Fine Arts translator does not overlap the existing 60 dbu 50:50 contour of co-channel W246BH at Middleport, Ohio. Nor does the existing 40 dbu 50:10 contour of W246BH overlap the proposed 60 dbu contour of the modification proposed here.

**Tables III and Table IV** are tabulations of the protected and interfering contours along the pertinent radials for the respective translators.

**Map 2** is a portion of the Columbus 1:250,000 series USGS topographic. It demonstrates that there is no overlap of the protected 54 dbu contour of co-channel WBNS Columbus and the interfering 34 dbu 50:10 contour of the translator as modified. The two contours are separated by a minimum of 7 km along the direct bearing of 310 degrees towards Columbus.

**Table V** is a tabulation of the distances to the 50:10 34 dbu contour of the translator proposal towards WBNS along the pertinent arc. **Table VI** is a tabulation of the distances to the 54 dbu contour of Class B WBNS towards Athens, Ohio.

**Map 3** is a portion of the Clarksburg 1:250,000 series USGS topographic map. WVVV is a Class A station on Ch. 245, the lower first adjacent channel. Section 74.1204 specifies that the 50:10 interfering contour is 6 dbu lower than the protected 60 dbu contour of a Class A station, or 54 dbu. Map 3 demonstrate that there is no overlap between these two contours.

**Table III**  
Towards W246BH. Middleport, Ohio  
33.22 KM, 173°

Bearing	AHAAT	60 dbu	40 dbu (50/10)
158.0°	72.5 meters	5.2 KM	17.1 KM
161.0°	74.0 meters	5.3	17.3
164.0°	75.9 meters	5.4	17.5
167.0°	76.4 meters	5.4	17.6
170.0°	75.3 meters	5.4	17.5
<b>173.0°</b>	<b>70.7 meters</b>	<b>5.2</b>	<b>16.9</b>
176.0°	69.3 meters	5.1	16.7
179.0°	69.0 meters	5.1	16.6
182.0°	72.1 meters	5.2	17.1
185.0°	78.9 meters	5.5	18.0
188.0°	86.8 meters	5.8	19.0

**Table IV**  
From W262BH Middleport, Ohio, Towards Athens  
13 Watts at 327 Meters AMSL  
33.22 KM at 353.0°

Bearing	AHAAT	60 dbu	40 dbu (50/10)
338.0	80.3 meters	5.5 KM	18.1 KM
341.0°	80.4 meters	5.5	18.2
344.0°	79.0 meters	5.5	18.0
347.0°	79.9 meters	5.5	18.1
350.0°	80.7 meters	5.5	18.2
<b>353.0°</b>	<b>77.8 meters</b>	<b>5.4</b>	<b>17.8</b>
358.0°	74.7 meters	5.4	17.4
2.0°	84.0 meters	5.7	18.6
5.0°	88.2 meters	5.8	19.2
8.0°	92.4 meters	5.9	19.7

The 40 dbu contour of W246BH at 353° (17.8 KM) does not overlap the 60 dbu contour (5.2 KM) at 173°, a margin of 10.22 KM. The 40 dbu contour at 173° (16.9 km) does not overlap the 60 dbu contour (5.4 KM) of W246BH, a margin of 10.92 KM.

**Table V**  
From Fine Arts Translator  
Towards WBNS-FM, (97.1 MHZ) Columbus, Ohio  
105.47 KM at 310°

Bearing	AHAAT	34 DBU
295.0°	95.5 meters	29.6 KM
300.0°	102.6 meters	29.6
301.0°	101.7 meters	29.5
302.0°	100.6 meters	29.3
303.0°	100.9 meters	29.4
304.0°	103.3 meters	29.7
305.0°	107.3 meters	30.3
306.0°	111.3 meters	30.9
307.0°	113.4 meters	31.3
308.0°	113.0 meters	31.2
309.0°	111.8 meters	31.0
<b>310.0°</b>	<b>111.8 meters</b>	<b>31.0</b>
311.0°	113.0 meters	30.9
312.0°	114.4 meters	31.4
313.0°	114.5 meters	31.4
314.0°	112.4 meters	31.1
315.0°	108.3 meters	29.9
316.0°	104.2 meters	29.6
317.0°	102.3 meters	29.7
318.0°	103.4 meters	30.1
319.0°	105.5 meters	30.2
320.0°	106.7 meters	30.0
325.0°	104.8 meters	30.1

**Table VI**

From WBNS-FM towards Athens, Fine Arts site  
20.5 Kw. At 484 Meters AMSL  
105.7 KM at 130°

Bearing	AHAAT	54 dbu
115.0°	259.2 meters	67.0 KM
120.0°	261.6 meters	67.2
121.0°	261.8 meters	67.2
122.0°	262.1 meters	67.2
123.0°	262.3 meters	67.2
124.0°	262.6 meters	67.2
125.0°	262.8 meters	67.3
126.0°	263.1 meters	67.3
127.0°	263.3 meters	67.3
128.0°	263.5 meters	67.3
129.0°	263.8 meters	67.3
<b>130.0°</b>	<b>264.3 meters</b>	<b>67.4</b>
131.0°	264.9 meters	67.4
132.0°	265.7 meters	67.5
133.0°	266.5 meters	67.6
134.0°	267.3 meters	67.6
135.0°	268.0 meters	67.7
136.0°	268.6 meters	67.7
137.0°	269.1 meters	67.8
138.0°	269.5 meters	67.8
139.0°	269.8 meters	67.8
140.0°	270.1 meters	67.9
145.0°	270.9 meters	67.9





**60 dbu W246\*\***

**W246\*\***

**40 dbu W246 BH**

**40 dbu W246\*\***

**60 dbu W246BH**

**W246BH**

**Fine Arts Radio  
Map 1**

436  
435  
15'

434

433

432

MARIETTA 32 MI.  
PARKERSBURG 31 MI.



**WBNS-FM 54 dbu**

**34 dbu W246\*\***

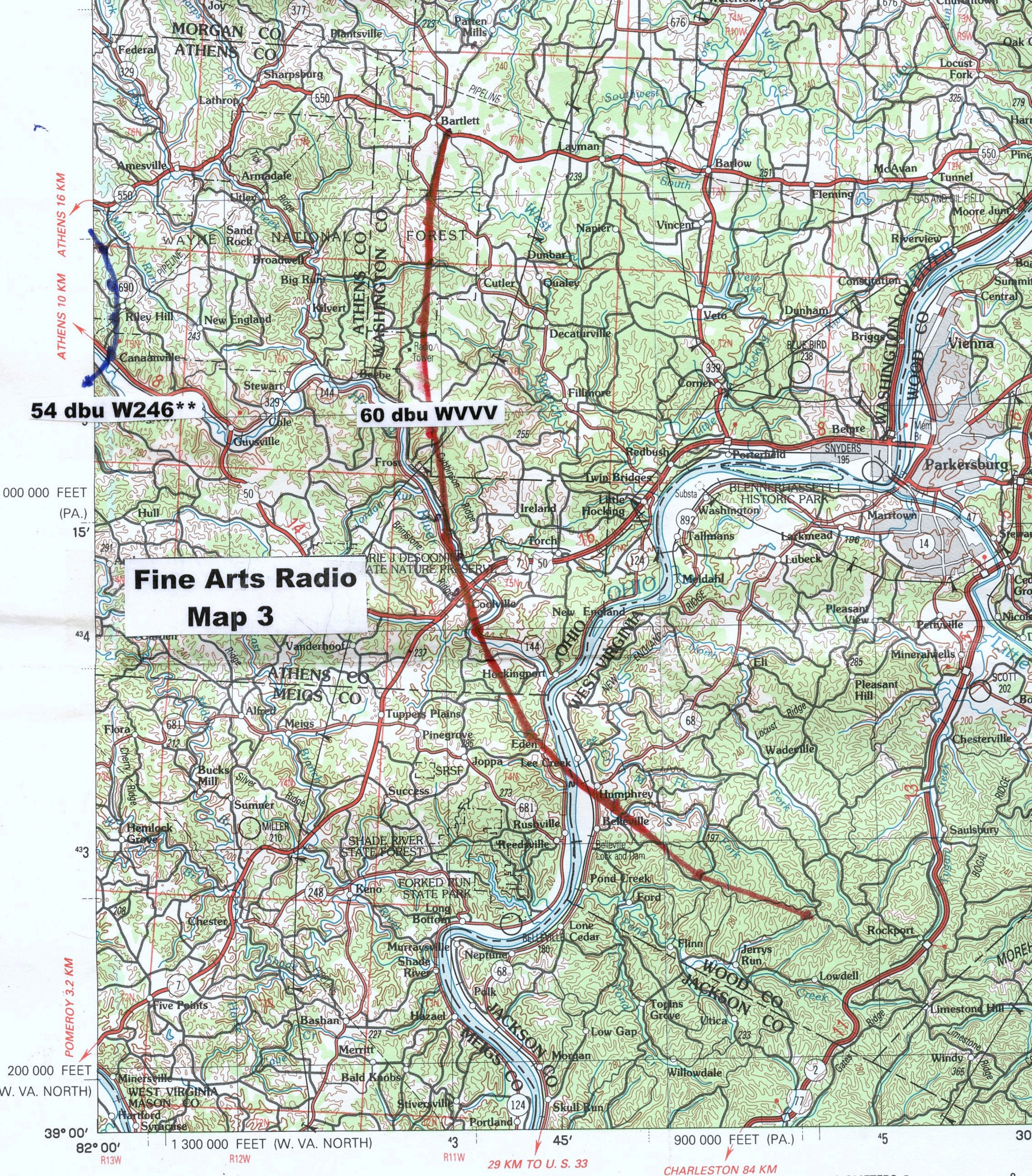
# Fine Arts Radio

## Map 2

**60 dbu W246\*\***

**W246\***





54 dbu W246\*\*

60 dbu WVVV

**Fine Arts Radio  
Map 3**

000 000 FEET  
(PA.)  
15'

200 000 FEET  
(W. VA. NORTH)

39° 00'  
82° 00'

1 300 000 FEET (W. VA. NORTH)

43

45'

900 000 FEET (PA.)

45

30

29 KM TO U. S. 33

CHARLESTON 84 KM

