

OVERLAP REQUIREMENTS  
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Rubber City Radio Group, Inc.  
Akron, OH

Attached is an allocation study showing the interfering contours for the proposed modified W228EL facilities in relation to the protected contours for all FM broadcast and FM translator stations operating on channels 225 through 231 which require protection consideration.<sup>1</sup>

As shown in this figure, the proposed modified W228EL operating facilities provide the contour protection required by Section 74.1204(a) of the FCC Rules to all other stations requiring protection consideration except second adjacent channel station WZAK(FM) - Cleveland, Ohio, which operates on Channel 226B, and third adjacent channel station WHBC-FM - Canton, Ohio, which operates on Channel 231B. As is documented below in more detail, however, the proposed facilities are not likely to result in any actual interference to WZAK or WHBC-FM. Thus, based on this lack of interference, Section 74.1204(d) of the FCC Rules permits the attached application to be granted in spite of this prohibited contour overlap.

Section 74.1204(a) of the FCC Rules prohibits any overlap between the proposed 94 dBu contour and the 54 dBu protected contours for both WZAK and WHBC-FM. Compliance with this requirement, however, is obviously not possible from this site, since the proposed site is located within the 54 dBu protected contours for both WZAK and WHBC-FM.

Attached is a map exhibit depicting the predicted 94 dBu contour for the proposed facilities. As shown in this figure, the proposed 94dBu contour extends 1900 meters at

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<sup>1</sup>This study doesn't include W228EM - Massillon, Ohio, whose construction permit was cancelled after not being constructed prior to its November 19 expiration.

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its furthest point from the proposed site. This figure also shows that there are buildings and public highways located within this distance of the proposed site. As a result, it was necessary to undertake a more detailed analysis to document that there is no population that is predicted to receive interference within this area of prohibited overlap.

As part of this detailed analysis, it was determined that the predicted WZAK signal strength at the proposed site is 74.7 dBu, while the predicted WHBC-FM signal strength at the proposed site is 72 dBu.<sup>2</sup> Based on the 40 dB undesired to desired (“U/D”) signal strength ratio specified for second and third adjacent channel stations in Section 74.1204(a)(3) of the FCC Rules, a signal level exceeding 114.7 dBu would be required to cause predicted interference to WZAK and a signal level exceeding 112 dBu would be required to cause predicted interference to WHBC-FM. The vertical radiation pattern data for the proposed antenna was utilized in conjunction with free space propagation prediction techniques to calculate the distance to the 112 dBu contour<sup>3</sup> for the proposed facilities at depression angles ranging from 0° down through 90°. The results of these calculations are tabulated in an attached table and depicted in an attached figure, which shows a side view of the predicted 112 dBu contour for this proposed antenna system. As shown in this figure, the predicted 112 dBu contour for these proposed operating facilities never reaches ground level, with its closest approach being 34.6 meters (114 feet) at a depression angle of 40°. Since, as shown in the attached detail map, there are

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<sup>2</sup>These signal strength calculations were made using the F(50,50) curves from Section 73.333 of the FCC Rules and terrain data extracted from the NGDC 30 second terrain database.

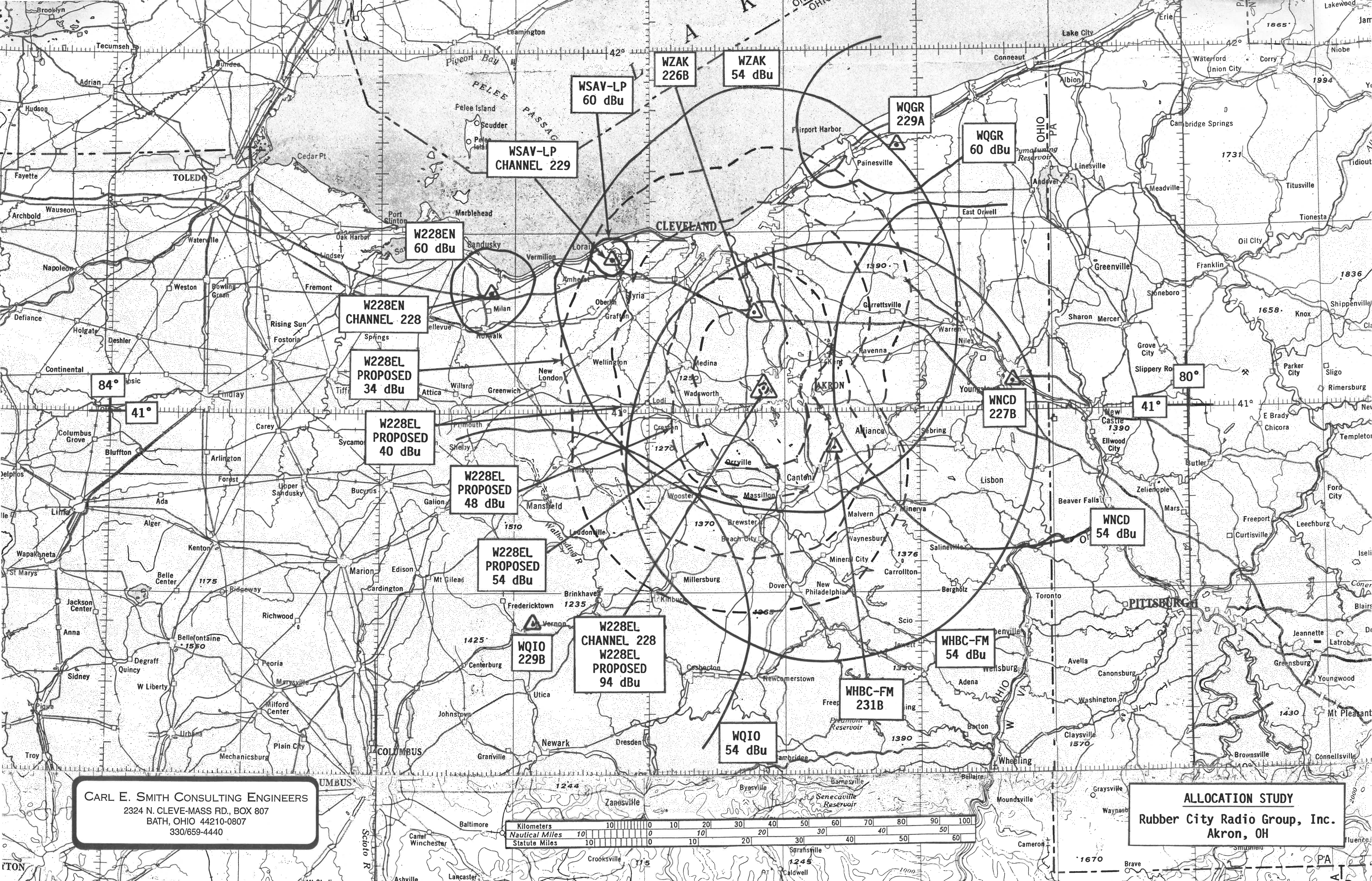
<sup>3</sup>The area where the predicted signal strength exceeds 114.7 dBu will be totally contained within the area where the predicted signal strength exceeds 112 dBu.

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no tall buildings or other publicly accessible tall structures located near the proposed site, it is obvious that there is no population within the area where this overlap would result in interference being predicted to either WZAK or WHBC-FM. Thus, pursuant to Section 74.1204(d) of the FCC Rules, the attached application can be granted in spite of this prohibited contour overlap, due to the total lack of population within the area of predicted interference. If it is deemed to be necessary, a waiver of Section 74.1204(a) of the FCC Rules is respectfully requested with regard to this situation.

Attached is an FM spacing study which demonstrates that the proposed facilities will comply with the intermediate frequency separation requirements outlined in Section 73.207 of the FCC Rules with regard to all existing or proposed stations operating on FM Channels 281 and 282.

The proposed transmitter site lies within 320 kilometers of the common border between the United States and Canada. At its farthest point, the proposed 34 dBu contour will extend 75.2 kilometers from the proposed site and as can be seen in the attached allocation map, at no point does it cross the Canadian border. Since at no point does it cross the Canadian border, the proposed facilities will fully comply with Section 4.4 of the 1997 amendment to the Working Arrangement for Allotment and Assignment of FM Broadcasting Channels 201-300 Under the Canadian-U.S.A FM Broadcasting Agreement of 1947.



WSAV-LP  
60 dBu

WZAK  
226B

WZAK  
54 dBu

WQGR  
229A

WQGR  
60 dBu

W228EN  
60 dBu

W228EN  
CHANNEL 228

W228EL  
PROPOSED  
34 dBu

W228EL  
PROPOSED  
40 dBu

W228EL  
PROPOSED  
48 dBu

W228EL  
PROPOSED  
54 dBu

W228EL  
CHANNEL 228  
W228EL  
PROPOSED  
94 dBu

WQIO  
229B

WQIO  
54 dBu

WHBC-FM  
231B

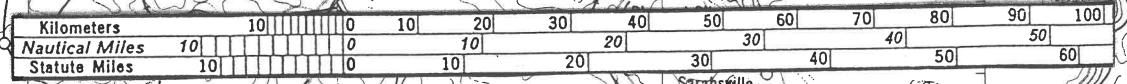
WHBC-FM  
54 dBu

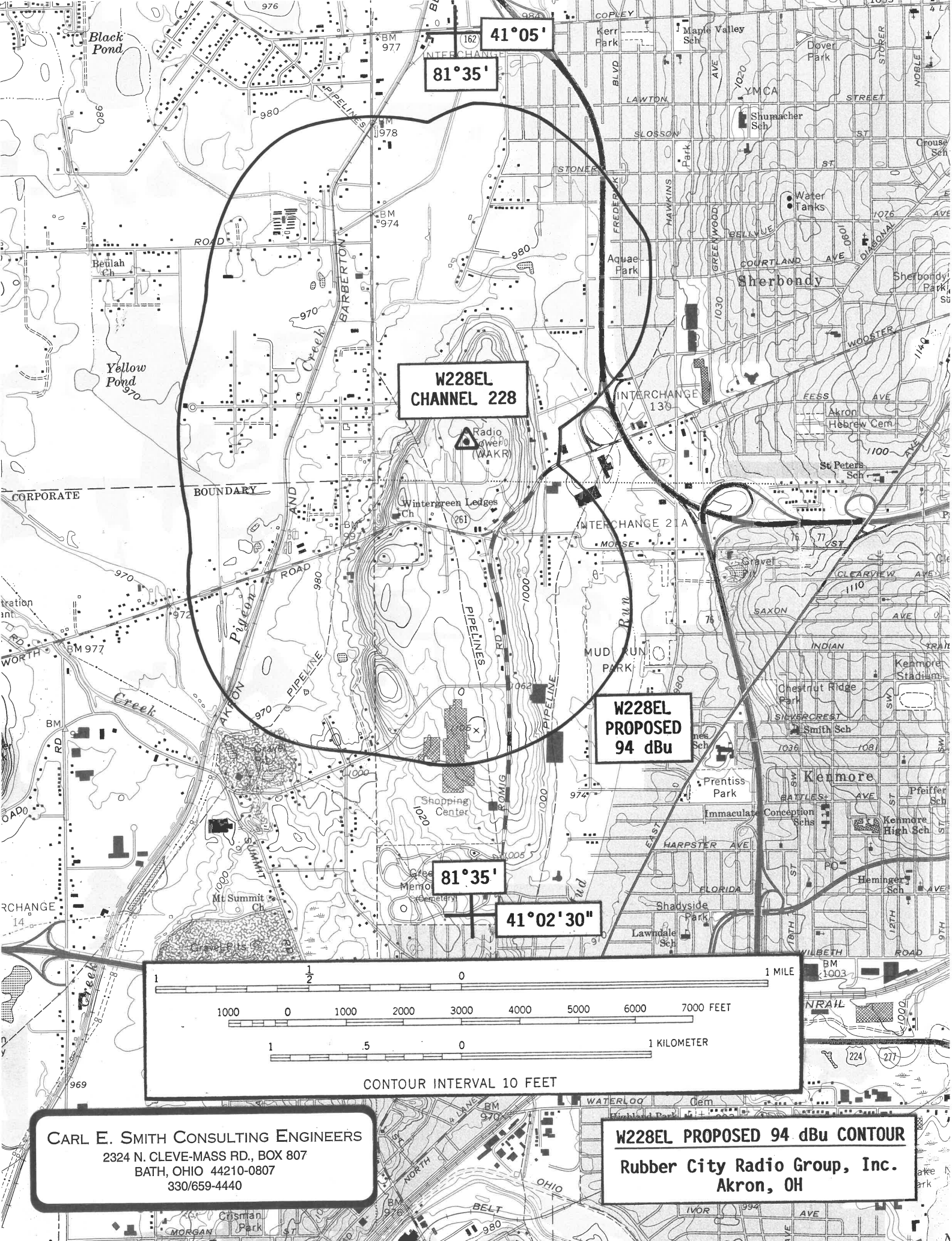
WNCD  
54 dBu

WNCD  
227B

CARL E. SMITH CONSULTING ENGINEERS  
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BATH, OHIO 44210-0807  
330/659-4440

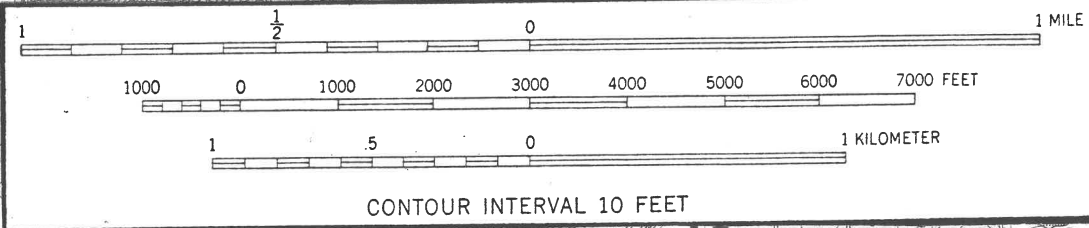
ALLOCATION STUDY  
Rubber City Radio Group, Inc.  
Akron, OH





**W228EL  
CHANNEL 228**

**W228EL  
PROPOSED  
94 dBu**



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**W228EL PROPOSED 94 dBu CONTOUR**  
**Rubber City Radio Group, Inc.**  
**Akron, OH**

PROPOSED 112 DBU CONTOUR  
Rubber City Radio Group, Inc.  
Akron, OH

| <u>Depression<br/>Angle<br/>(Degrees)</u> | <u>Relative<br/>Field</u> | <u>ERP<br/>(dBk)</u> | <u>112 dBu<br/>Contour*<br/>(Meters)</u> |
|-------------------------------------------|---------------------------|----------------------|------------------------------------------|
| 0                                         | 1.000                     | -6.02                | 278.6                                    |
| 5                                         | 0.990                     | -6.11                | 275.7                                    |
| 10                                        | 0.979                     | -6.20                | 272.9                                    |
| 15                                        | 0.952                     | -6.45                | 265.2                                    |
| 20                                        | 0.920                     | -6.74                | 256.4                                    |
| 25                                        | 0.877                     | -7.16                | 244.3                                    |
| 30                                        | 0.829                     | -7.65                | 230.9                                    |
| 35                                        | 0.772                     | -8.27                | 215.0                                    |
| 40                                        | 0.715                     | -8.93                | 199.3                                    |
| 45                                        | 0.647                     | -9.80                | 180.3                                    |
| 50                                        | 0.570                     | -10.90               | 158.9                                    |
| 55                                        | 0.487                     | -12.27               | 135.7                                    |
| 60                                        | 0.388                     | -14.24               | 108.1                                    |
| 65                                        | 0.292                     | -16.71               | 81.4                                     |
| 70                                        | 0.187                     | -20.58               | 52.1                                     |
| 75                                        | 0.095                     | -26.47               | 26.5                                     |
| 80                                        | 0.045                     | -32.96               | 12.5                                     |
| 85                                        | 0.032                     | -35.92               | 8.9                                      |
| 90                                        | 0.030                     | -36.48               | 8.4                                      |

Horizontal ERP = 250 Watts = -6.02dBk

\* - Contour distance calculated using free space calculation techniques.

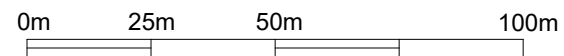
ANTENNA CENTER  
OF RADIATION

PROPOSED  
112.0 dBu CONTOUR

GROUND  
LEVEL

163.1 m

34.6 m



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PROPOSED 112.0 dBu CONTOUR  
RUBBER CITY RADIO GROUP, INC.  
AKRON, OH

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AKRON, OH

STUDY COORDINATES: 41/03/53 81/34/58

| STATION<br>----- | LOCATION<br>----- | CHANNEL<br>----- | CLASS<br>----- | SPACING<br>(km)<br>----- | REQUI RED<br>SPACI NG*<br>(km)<br>----- | NOTES<br>----- |
|------------------|-------------------|------------------|----------------|--------------------------|-----------------------------------------|----------------|
| WOAL             | CLEVELAND, OH     | 281              | B              | 33.41                    | 15.0                                    |                |
| WOGI             | MOON TOWNSHIP, PA | 282              | B              | 111.46                   | 15.0                                    | 1              |

\* Required Spacing Per Section 73.207 of The FCC Rules

Notes:

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1 - Applied For Under Section 73.215 | 7 - Pending Application          |
| 2 - Construction Permit              | 8 - Petition For Reconsideration |
| 3 - Channel Deletion Proposed        | 9 - Proposed Rulemaking          |
| 4 - Move From This Channel Ordered   | 10 - Rulemaking Petition         |
| 5 - Move to This Channel Ordered     | 11 - Short-Spaced                |
| 6 - One Step Reference Site          | 12 - Vacant Allotment            |