

**Engineering Statement  
In Support of an  
Application for a Construction Permit  
WWIZ(FM), Mercer, Pennsylvania**

**WWIZ Engineering Narrative**

**July, 2004**

**General**

As broadcast technical consultants doing business as Reynolds Technical Associates, we have been authorized by Cumulus Licensing LLC (herein referred to as “Cumulus” as well as “The Applicant”), licensee of WWIZ, Mercer, Pennsylvania, to conduct engineering studies and prepare the engineering portion of an application for a construction permit. The instant application seeks to increase the ERP of WWIZ from 3 kW to 6 kW and to correct the coordinates currently on file with the FCC.

**The Proposed Site**

Exhibit E, Figure 1 is a channel spacing study for the corrected tower site, listing the facilities considered and the pre-existing short spacing to WRTS in Erie, Pennsylvania.

Exhibit E, Figure 2 is a channel spacing study for the current (incorrect) licensed coordinates for WWIZ.

Exhibit E, Figure 3 shows the average terrain and the service contour data for the corrected site. Exhibit E, Figure 4 is the service contour map displaying the FCC F(50,50) 70 and 60 dBu contours of WWIZ. Exhibit E, Figure 5 is a vertical sketch of the proposed WWIZ supporting structure with the applicable elevations. This application is for an existing unregistered tower with an overall AGL of 51 meters.

The distance to the blanketing contour is calculated to be 0.965 kilometer.

**Human Exposure**  
**(No Exhibits)**

The proposed FM facility was evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with FCC guidelines for maximum permissible exposure.

Using FCC RF Worksheet #1A, the uncontrolled exposure on the ground is 189.5  $\mu\text{W}/\text{cm}^2$ , which is less than the minimum of 200  $\mu\text{W}/\text{cm}^2$  accepted by the Commission. Hence, no human exposure issues are created as a result of the instant application.

An agreement is in effect, that if anyone is required to climb the tower, all facilities on the tower will reduce power or cease operation, so as to prevent hazardous exposure to radio frequency radiation.

**Environmental Impact**  
**(No Exhibits)**

A grant of the proposed construction would not constitute a major action as defined in the Commission's Rules and Regulations.

During operation, the facility will produce no chemical or significant thermal pollution, and no ionizing radiation will be generated. Areas of high intensity radiofrequency fields will be confined to the immediate area of the transmitting antenna, above the ground and away from any human and wildlife population.

The area is not officially designated as a wilderness area or wildlife preserve and is not pending consideration. The area has no significant value in American history, architecture, archaeology, or culture, which is listed in the Register of Historic Places, and it is not eligible for listing. It is not recognized either nationally or locally for special scenic or recreational value.

## **Conclusion**

This statement/application has been prepared for The Applicant by utilizing the latest available information, cross-checked with the Federal Communications Commission and other sources. Therefore, it is submitted that the proposed is in compliance with the Commission's Rules and Regulations and other sources. Therefore, it is submitted that the engineering data compiled and demonstrated herein for the proposed is in compliance with Commission's Rules and Regulations at the time of this application's filing date. We welcome the opportunity to discuss with the staff of the Federal Communications Commission the engineering data contained in this application. Should any questions arise concerning the information, please contact us.

The following pages are exhibits prepared and assembled in support of the proposed.

Reynolds Technical Associates  
12585 Old Highway 280 East, Suite 102  
Chelsea, Alabama 35043  
(205) 618-2020

**Statement of the Consultants**

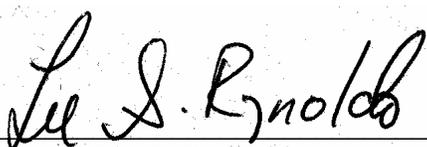
The instant engineering statement was prepared for Cumulus Licensing LLC (“The Applicant”) and supports an application for a construction permit for WWIZ(FM), Mercer, Pennsylvania. It was developed by Reynolds Technical Associates (“RTA”) and may not be used for purposes other than submission to the Commission by The Applicant.

It may not be reproduced in its entirety, or in part, by anyone (other than from the Commission) without the written consent of RTA.

It is prepared for The Applicant under contractual agreement, and its certification by RTA is used accordingly. If The Applicant fails in its contractual obligation, RTA reserves the right to withdraw its certification.

The information in this application is compiled from the most recent Commission and outside data. RTA is not responsible for errors resulting from incorrect data or unpublished rule and procedure changes.

For Strickland and Reynolds:

  
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Lee S. Reynolds

July 16<sup>th</sup>, 2004

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**Engineering Statement  
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**WWIZ(FM) Corrected Site Channel Spacing Study**

REFERENCE		DISPLAY DATES
41 12 16 N	CLASS = A	DATA 07-13-04
80 21 49 W	Current Spacings	SEARCH 07-16-04
----- Channel 280 - 103.9 MHz -----		

Call	Channel	Location	Dist	Azi	FCC	Margin
<b>Community of Mercer</b>			<b>PA</b>	<b>9.4</b>	<b>280.3</b>	
Reference Coordinates:						
North Latitude: 41-13-35						
West Longitude: 80-14-15						
<b>WWIZ</b>	<b>LIC 280A</b>	<b>Mercer</b>	<b>PA</b>	<b>0.5</b>	<b>112.8</b>	<b>115.0 -114.5</b>
Of no concern:						
Coordinates previously used by WWIZ						
<b>R---</b>	<b>ADD 280C1</b>	<b>Woodstock</b>	<b>ON</b>	<b>213.4</b>	<b>351.1</b>	<b>243.0 -29.6</b>
<b>ALLO</b>	<b>280C1</b>	<b>Woodstock</b>	<b>ON</b>	<b>213.6</b>	<b>351.3</b>	<b>243.0 -29.4</b>
<b>R---</b>	<b>DEL 280C1</b>	<b>Woodstock</b>	<b>ON</b>	<b>213.6</b>	<b>351.3</b>	<b>243.0 -29.4</b>
Of concern:						
Protection afforded in accordance with 1992 US/Canada Treaty						
<b>WRTS</b>	<b>LIC 279B</b>	<b>Erie</b>	<b>PA</b>	<b>104.4</b>	<b>19.4</b>	<b>113.0 -8.6</b>
Of concern:						
Upgrade to 6 kW agreed to by licensee of WRTS						
WOGF	LIC-N 282B	East Liverpool	OH	68.7	184.0	69.0 -0.3
WOGF.C	CP -Z 282B	East Liverpool	OH	68.7	184.0	69.0 -0.3
RDEL	DEL 282B	East Liverpool	OH	68.7	184.0	69.0 -0.3
WQAL	LIC 281B	Cleveland	OH	115.3	280.2	113.0 2.3
WQAL.C	CP 281B	Cleveland	OH	116.3	278.0	113.0 3.3
RADD	ADD 282B	Moon Township	PA	76.6	182.9	69.0 7.6
WNCD	LIC 227B	Youngstown	OH	27.6	240.1	15.0 12.6
WLMI	LIC 280A	Kane	PA	139.2	68.1	115.0 24.2
WXXO	LIC-N 283A	Cambridge Springs	PA	57.8	16.6	31.0 26.8
WOGH.C	CP 278B	Burgettstown	PA	98.1	192.8	69.0 29.1
WOGH	LIC 278B	Burgettstown	PA	98.2	192.8	69.0 29.2
WLSW	LIC 280A	Scottdale	PA	150.3	151.4	115.0 35.3
WCRFFM	LIC 277B	Cleveland	OH	108.9	275.8	69.0 39.9
WPXZFM	LIC 281A	Punxsutawney	PA	117.6	103.0	72.0 45.6

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**WWIZ(FM) Licensed Site Channel Spacing Study**

REFERENCE		DISPLAY DATES
41 12 10 N	CLASS = A	DATA 07-13-04
80 21 30 W	Current Spacings	SEARCH 07-16-04
----- Channel 280 - 103.9 MHz -----		

Call	Channel	Location	Dist	Azi	FCC	Margin
<b>WWIZ</b>	<b>LIC 280A</b>	<b>Mercer</b>	<b>PA 0.0</b>	<b>0.0</b>	<b>115.0</b>	<b>-115.0</b>
Of no concern: Coordinates previously used by WWIZ						
<b>R---</b>	<b>ADD 280C1</b>	<b>Woodstock</b>	<b>ON 213.7</b>	<b>351.0</b>	<b>243.0</b>	<b>-29.3</b>
<b>ALLO</b>	<b>280C1</b>	<b>Woodstock</b>	<b>ON 213.9</b>	<b>351.2</b>	<b>243.0</b>	<b>-29.1</b>
<b>R---</b>	<b>DEL 280C1</b>	<b>Woodstock</b>	<b>ON 213.9</b>	<b>351.2</b>	<b>243.0</b>	<b>-29.1</b>
Of concern: Protection afforded in accordance with 1992 US/Canada Treaty						
<b>WRTS</b>	<b>LIC 279B</b>	<b>Erie</b>	<b>PA 104.4</b>	<b>19.1</b>	<b>113.0</b>	<b>-8.6</b>
Of concern: Upgrade to 6 kW agreed to by licensee of WRTS						
WOGF	LIC-N 282B	East Liverpool	OH 68.6	184.4	69.0	-0.4
WOGF.C	CP -Z 282B	East Liverpool	OH 68.6	184.4	69.0	-0.4
RDEL	DEL 282B	East Liverpool	OH 68.6	184.4	69.0	-0.4
WQAL	LIC 281B	Cleveland	OH 115.7	280.2	113.0	2.7
WQAL.C	CP 281B	Cleveland	OH 116.8	278.0	113.0	3.8
RADD	ADD 282B	Moon Township	PA 76.4	183.2	69.0	7.4
WNCD	LIC 227B	Youngstown	OH 27.9	240.9	15.0	12.9
WLMI	LIC 280A	Kane	PA 138.9	68.0	115.0	23.9
WXXO	LIC-N 283A	Cambridge Springs	PA 57.8	16.1	31.0	26.8
WOGH.C	CP 278B	Burgettstown	PA 98.1	193.1	69.0	29.0
WOGH	LIC 278B	Burgettstown	PA 98.1	193.1	69.0	29.1
WLSW	LIC 280A	Scottdale	PA 150.0	151.5	115.0	35.0
WCRFFM	LIC 277B	Cleveland	OH 109.4	275.9	69.0	40.4
WPXZFM	LIC 281A	Punxsutawney	PA 117.1	102.9	72.0	45.1

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**WWIZ Corrected Site Terrain/Contour Study**

**Reference Coordinates:**

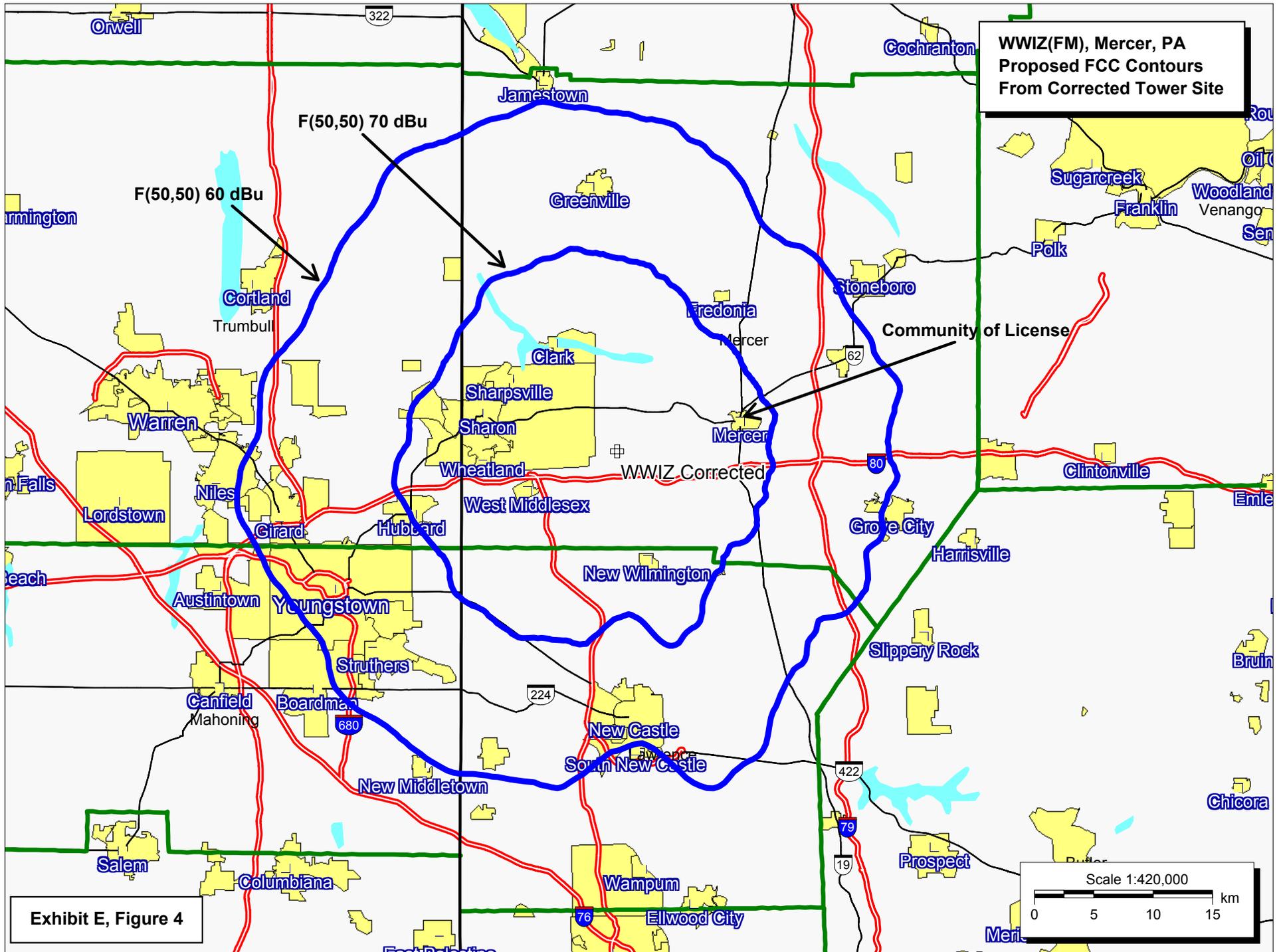
**North Latitude: 41-12-16**

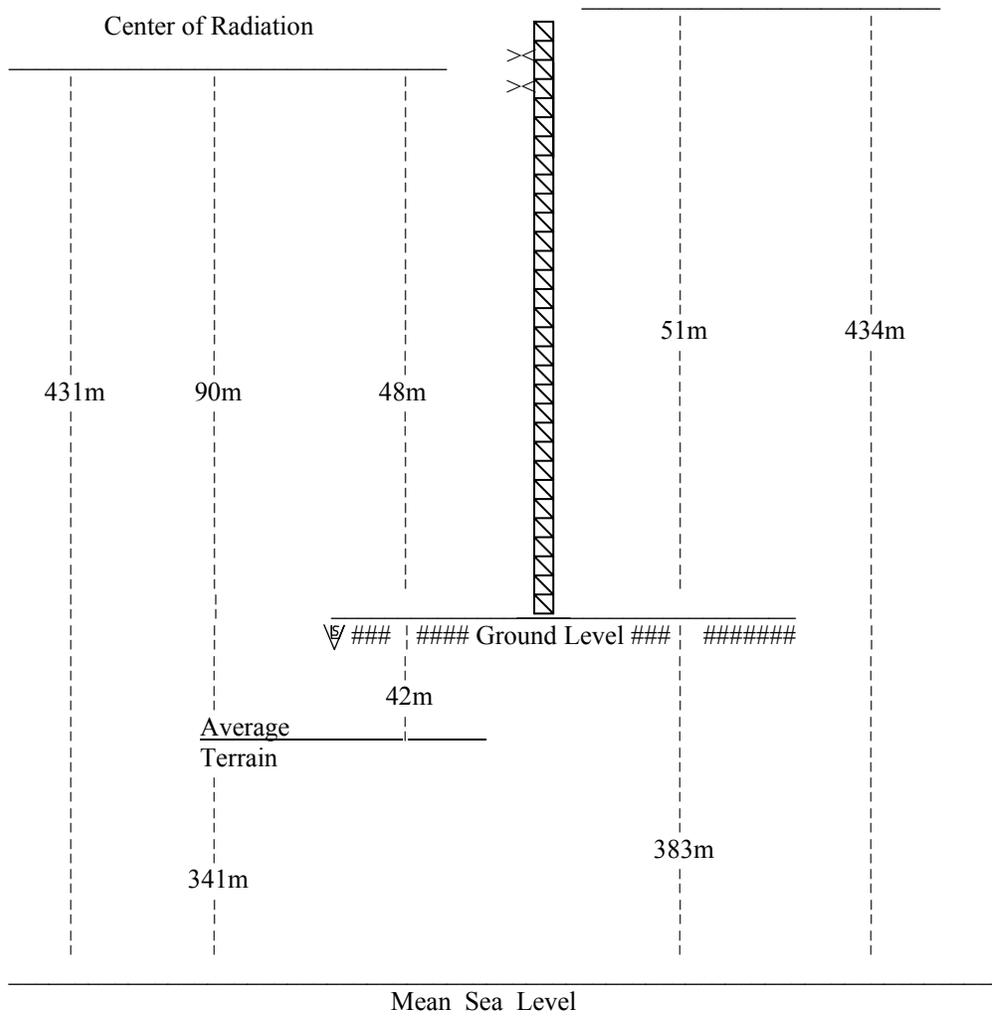
**West Longitude: 80-21-49**

Azimuth °T.	ERP = 6.0 Ave. Elev. 3 to 16 km Meters AMSL	FM - 2-6 Tables Effective Antenna Height Meters AAT	ERP (dBk)	F(50-50) Distance to 70 dBu Contour km	F(50-50) Distance to 60 dBu Contour km
0.0	329.9	101.1	7.782	16.2	28.5
5.0	333.0	98.0	7.782	16.0	28.0
10.0	334.3	96.7	7.782	15.8	27.8
15.0	341.6	89.4	7.782	15.1	26.8
20.0	347.4	83.6	7.782	14.6	26.0
25.0	354.5	76.5	7.782	14.0	24.9
30.0	365.5	65.5	7.782	13.0	23.3
35.0	371.1	59.9	7.782	12.6	22.5
40.0	369.7	61.3	7.782	12.6	22.7
45.0	364.9	66.1	7.782	13.0	23.4
50.0	365.7	65.3	7.782	13.0	23.2
55.0	367.6	63.4	7.782	12.8	23.0
60.0	368.4	62.6	7.782	12.8	22.8
65.0	365.7	65.3	7.782	13.0	23.2
70.0	366.1	64.9	7.782	13.0	23.2
75.0	359.9	71.1	7.782	13.5	24.2
80.0	361.8	69.2	7.782	13.3	23.9
85.0	367.4	63.6	7.782	12.9	23.0
90.0	368.3	62.7	7.782	12.8	22.8
95.0	363.0	68.0	7.782	13.2	23.7
100.0	366.9	64.1	7.782	12.9	23.1
105.0	366.8	64.2	7.782	12.9	23.1
110.0	367.8	63.2	7.782	12.8	22.9
115.0	365.9	65.1	7.782	13.0	23.2
120.0	361.6	69.4	7.782	13.3	23.9
125.0	363.4	67.6	7.782	13.2	23.6
130.0	372.8	58.2	7.782	12.4	22.1
135.0	369.5	61.5	7.782	12.6	22.7
140.0	363.5	67.5	7.782	13.2	23.6
145.0	358.2	72.8	7.782	13.7	24.4
150.0	348.3	82.7	7.782	14.5	25.9
155.0	331.7	99.3	7.782	16.1	28.2

Continued on the next page

ERP = 6.0		FM - 2-6 Tables		F(50-50)	F(50-50)
Azimuth	Ave. Elev.	Effective	ERP	Distance to	Distance to
°T.	3 to 16 km	Antenna Height	(dBk)	70 dBu Contour	60 dBu Contour
	Meters AMSL	Meters AAT		km	km
160.0	327.8	103.2	7.782	16.5	28.7
165.0	322.9	108.1	7.782	16.9	29.3
170.0	342.2	88.8	7.782	15.1	26.7
175.0	356.5	74.5	7.782	13.8	24.6
180.0	353.2	77.8	7.782	14.0	25.2
185.0	341.6	89.4	7.782	15.1	26.8
190.0	327.5	103.5	7.782	16.5	28.8
195.0	327.7	103.3	7.782	16.5	28.8
200.0	324.2	106.8	7.782	16.8	29.2
205.0	318.2	112.8	7.782	17.3	29.9
210.0	314.0	117.0	7.782	17.7	30.4
215.0	314.9	116.1	7.782	17.6	30.3
220.0	316.1	114.9	7.782	17.5	30.2
225.0	310.5	120.5	7.782	17.9	30.8
230.0	309.2	121.8	7.782	18.0	30.9
235.0	319.0	112.0	7.782	17.2	29.8
240.0	319.7	111.3	7.782	17.2	29.7
245.0	315.6	115.4	7.782	17.5	30.2
250.0	308.9	122.1	7.782	18.0	30.9
255.0	305.1	125.9	7.782	18.3	31.3
260.0	297.7	133.3	7.782	18.9	32.2
265.0	299.6	131.4	7.782	18.7	32.0
270.0	309.4	121.6	7.782	18.0	30.9
275.0	315.6	115.4	7.782	17.5	30.2
280.0	313.9	117.1	7.782	17.7	30.4
285.0	318.7	112.3	7.782	17.3	29.9
290.0	327.9	103.1	7.782	16.5	28.7
295.0	329.5	101.5	7.782	16.3	28.5
300.0	330.2	100.8	7.782	16.2	28.4
305.0	326.7	104.3	7.782	16.5	28.8
310.0	325.2	105.8	7.782	16.7	29.1
315.0	324.5	106.5	7.782	16.8	29.2
320.0	314.5	116.5	7.782	17.6	30.3
325.0	312.5	118.5	7.782	17.8	30.6
330.0	318.3	112.7	7.782	17.3	29.9
335.0	319.9	111.1	7.782	17.2	29.7
340.0	319.4	111.6	7.782	17.2	29.8
345.0	318.6	112.4	7.782	17.3	29.9
350.0	320.5	110.5	7.782	17.2	29.6
355.0	325.8	105.2	7.782	16.6	29.0





Proposed Location - 41° 12' 16" N. Lat. 80° 21' 49" W. Long. [NAD 27]

NOT DRAWN TO SCALE

Proposed antenna - 2 element.