

See Pathfinder Communications Corporation (WCUZ-FM),
3FCC Rcd 4146, 4147 n.3 (1988).

D. Cumberland Gap - Hypothetical Site:

In order to establish that the rule making site is not the only site that will provide a compliant city grade service to Cumberland Gap with Ch. 256A, this engineering exhibit is submitting calculations from a second Hypothetical Site. The Hypothetical Site (36-38-58 / 83-29-38) is within Area C (see Figure 1) and, therefore, fully complies with the required separations to other FM facilities. It is located approximately 2.7 miles (4.3 km) from the petitioners submitted rule making site.

The allowable area map (Figure 1) clearly illustrates that along the direct radial through the city (N-250-E) the theoretical F(50,50) 70 dBu contour extends 3.6 miles (5.8 km) beyond the western limits of Cumberland Gap.

Figure 3 is a enlarged copy of a 7.5' topographic map which shows the boundaries of Cumberland Gap and three radial bearings (N-249/250/251-E) that extend through the city from the Hypothetical Site. The map also shows the location of 21 points at which the effects of terrain shadowing were computed. These points were spaced symmetrically at 0.1 mile intervals.

Figure 3-A is a plot of the terrain elevations along the N-250-E radial using 4/3s earth curvature. The plot clearly shows that line of sight to Cumberland Gap is prevented by a 1570' elevation on the north-eastern edge of the town. The break in line of sight extends 150 feet to 270 feet above the elevations within Cumberland Gap. The city starts at 9.87 miles from the Hypothetical Site and continues for approximately 0.65 miles. The terrain along the two adjacent radials is very similar to that

shown in Figure 3-A.

Figure 3-B is a summary of the computed field strengths as determined by the method known as "Tech Note 101". The summary indicates that the computed signal level at these 21 locations vary from 61.15 dBu to 88.27 dBu. Of the 21 points, 5 points have signal values less than 70 dBu and 16 points have signal values which exceed 70 dBu. **Consequently, 76.2 percent of the locations exceed the minimum city grade value.**

The computed signal values are based upon an antenna center of radiation of 2057 feet AMSL. Using the eight standard cardinal radials this height will result in an HAAT of 328 feet or 100 meters. An ERP of 6 kW was assumed. The above HAAT will require a tower which is less than 500 feet. After reviewing the aeronautical considerations in the area no objections from the FAA are anticipated.

E. Technical Criteria Used In This Evaluation:

Terrain profile data was extracted from NGDC 30 Second Digitized Terrain Data Base provided out of Boulder, Colorado. At least seventy-two bearings (every 5 degrees) were used to obtain the proposed coverage data. The standard eight bearings (every 45 degrees) were used to obtain the proposed HAAT.

The predicted F(50,50) service contours were computed using a mathematical model adapted for computer use of the data shown in Figure 1 of Section 73.333. This is the Commission's computer program TV FM FS REPORT RS-76-01, dated January 1976.

The Tech Note 101 computations are from a computer program (named "OPTICS") that was initially developed in

1974 for Mullaney Engineering by Dr. Jerry K. Raines, P.E. Over the past 20 years, that program has been accepted by the Commission in numerous different proceedings in which it was necessary to predict the field strength over irregular terrain. The working papers describing the formulas used in that computer program have been filed several times with the Commission. Over the past two years, that computer program has been used at least six different times to establish compliant coverage in the city of license or at the main studio of an FM station. The detailed printouts showing the interim results of calculations from the computer program for Cumberland Gap have not been submitted herein but are available upon the request of the staff.

III. SUMMARY:

Eaton P. Govan, III and Berton B. Cagle, Jr., herein request reconsideration of the action taken in MM Docket 94-116 which denied the allotment of Ch. 256A at Cumberland Gap, TN, as a substitute for the existing allotment of Ch. 257A at Jefferson City, TN, while also denying the substitution (upgrade) of Ch. 257C2 for 257C3 at Elizabethton, TN. The Report & Order selected the counterproposal in this proceeding which requested the allotment of Ch. 256A at Jonesville, VA.

The R&O found that the allotment of Ch. 256A at Cumberland Gap would violate Section 73.315(b) in that there was a major terrain obstruction in the line of sight path between the proposed antenna site and Cumberland Gap. However, as shown herein through an alternative propagation analysis, it is possible to provide compliant city grade coverage to Cumberland Gap, TN, from the petitioners proposed RM reference point and from a Hypothetical Site 2.7 miles away

Petition for Reconsideration

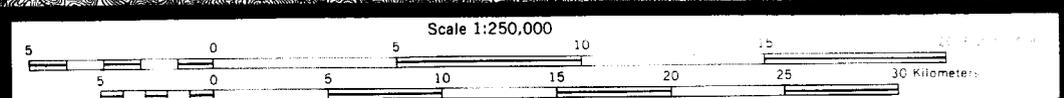
MM Docket 94-116 - Cumberland Gap, TN

MULLANEY ENGINEERING, INC.

from the RM Site. The petitioners believe that there are many other locations that will similarly provide compliant city grade coverage.

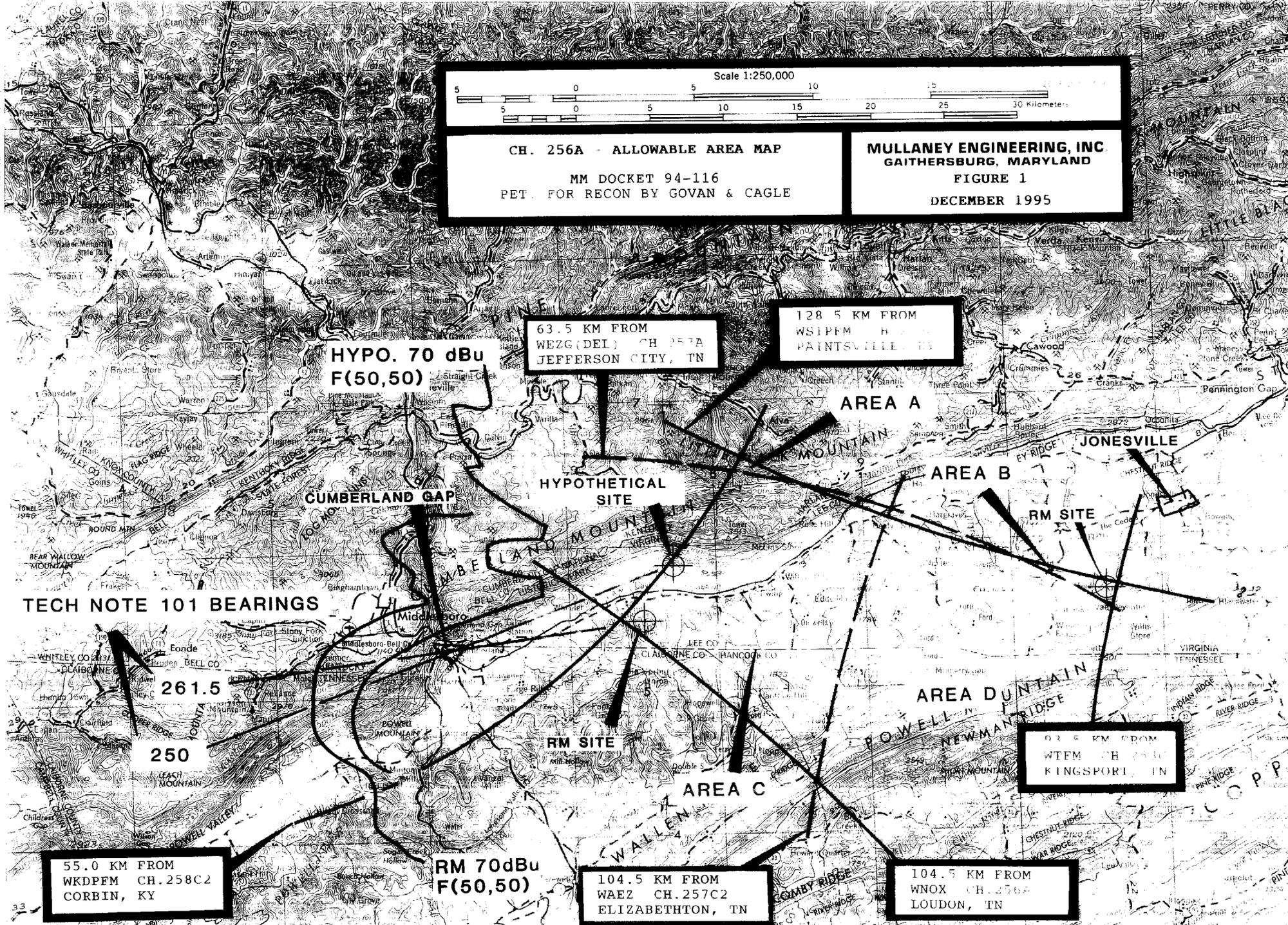
December 12, 1995.


John J. Mullaney



CH. 256A - ALLOWABLE AREA MAP
 MM DOCKET 94-116
 PET. FOR RECON BY GOVAN & CAGLE

MULLANEY ENGINEERING, INC.
 GAITHERSBURG, MARYLAND
 FIGURE 1
 DECEMBER 1995



HYPO. 70 dBu
 F(50,50)

63.5 KM FROM
 WEZG (DEL) CH 257A
 JEFFERSON CITY, TN

128.5 KM FROM
 WSIPM H
 PAINTSVILLE, TN

AREA A

AREA B

HYPOTHETICAL
 SITE

RM SITE

TECH NOTE 101 BEARINGS

261.5

250

RM SITE

AREA C

AREA D

103.5 KM FROM
 WTEM CH 250
 KINGSPORT, TN

55.0 KM FROM
 WKDPFM CH. 258C2
 CORBIN, KY

RM 70dBu
 F(50,50)

104.5 KM FROM
 WAEZ CH. 257C2
 ELIZABETHTON, TN

104.5 KM FROM
 WNOX CH. 256A
 LOUDON, TN

RM8507	256 A	FR	POLARIZATION	ERP (KW)	HAAT	RCAMSL
Cumberland Gap TN	US	ADD		HOR PLN	BM TILT	(METER)
36.3656	83.3100 (D.MSS)		HORIZONTAL	6.000	0.000	100.0
Eaton P. Govan III & Berton B. Casle			VERTICAL	0.000	0.000	0.0

THE FOLLOWING CONTOURS ARE CALCULATED USING:
 ERP= 6.000 (KW) 7.8 (DBK) HAAT= 100.0 (METERS)

CALCULATED HAAT FROM TOPO DATA BASE

INTERFERING	DOMESTIC	AZIMUTH	HAAT	HAAT	CONTOURS (KM)
	DBU KM	DEGREES	(METERS)	(FEET)	70 DBU 60 DBU
CO CHANNEL (40.0)	86.7	0.0	11.4	37.5	8.9 15.8
1ST ADJACENT (54.0)	43.7	45.0	-90.0	-295.3	8.9 15.8
2ND ADJACENT (80.0)	9.1	90.0	137.0	449.4	19.1 32.6
3RD ADJACENT (100.0)	2.8	135.0	144.1	472.7	19.6 33.4
		180.0	181.0	593.7	21.9 37.3
		225.0	195.0	639.7	22.6 38.4
PROTECTED (60.0)	28.3	270.0	133.0	436.5	18.9 32.1
		315.0	88.5	290.4	15.1 26.7
CITY GRADE (70.0)	16.2	AVERAGE	100.0	328.1	16.2 28.3

AZIMUTH	LAT	LONG	ERP (KW)	HAAT	I-CON	F-CON	IR	IC	REZLT
FROM TO CALL STS	FILE NUMBER	CITY	ST C	(D.MSS)	REL CHN	HORZ VERT	(M)	A F5010 F5050	DIST RSEP RSEP IR IC
								(KM) (KM)	(KM) (KM) (KM) (KM)
99.0 279.8 WTFM LIC	BLH950213KA	Kingsport TN	A	36.2554	82.0815	3RD 253C	74.0B74.0B	683E	125.2 95.
145.2 325.9 WSPAFM LIC	BLH931123KC	Spartanbu SC	A	35.1012	82.1727	1ST 255C	100.H100.V	582	194.9 165.
25.6 206.0 WSIPFM LIC	BLH891031KC	Paintsvil KY	A	37.4745	82.4804	1ST 255C1	94.H 94.V	183	145.6 133.
217.2 36.7 WNOX LIC	BLH931216KE	Loudon TN	A	35.4710	84.1724	CO 256A	6.H 6.V	100	115.4 115. C
85.8 266.0	ADD RM8567	Jonesvill VA	A	36.3808	83.1004	CO 256A	H V		31.3 115. MX
COMMENTCounterproposal					**DOCKET**94-116	**			
0.0 0.0	ADD RM8507	Cumberlan TN	A	36.3656	83.3100	CO 256A	H V		0.0 115. -
COMMENTFrom 257A Jefferson City					**DOCKET**94-116	**			
101.0 281.8 WAEZ LIC	BLH950608KB	Elizabeth TN	A	36.2407	82.1212	1ST 257C3	3.8H 3.8V	2420	120.0 89.
99.0 279.8 WAEZ DEL	RM8507	Elizabeth TN	A	36.2553	82.0816	1ST 257C3	H V		125.2 89.
104.5 285.2 WAEZ ADD	RM8507	Elizabeth TN	A	36.2030	82.1400	1ST 257C2	H V		119.0 106.
COMMENTPRM-Site Restricted 2.2 km (1.3 mi) West					**DOCKET**94-116	**			
185.6 5.6 WEZG DEL	RM8507	Jefferson TN	A	36.0428	83.3456	1ST 257A	H V		60.3 72. -
					DOCKET94-116	**			
185.6 5.6 WEZG LIC	BLH931026KA	Jefferson TN	A	36.0428	83.3456	1ST 257A	0.94H0.94V	1990	60.3 72. -
312.6 132.3 WKDPFM LIC	BLH891226KE	Corbin KY	A	36.5714	83.5841	2ND 258C2	25.0H25.0V	216	55.7 55. C

CHANNEL STUDY FROM RM SITE
 MM DOCKET 94-116
 PET. FOR RECON BY GOVAN & CAGLE

MULLANEY ENGINEERING, INC.
 GAITHERSBURG, MARYLAND
 FIGURE 1-A
 DECEMBER 1995

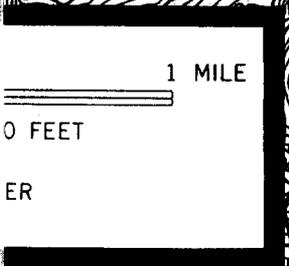
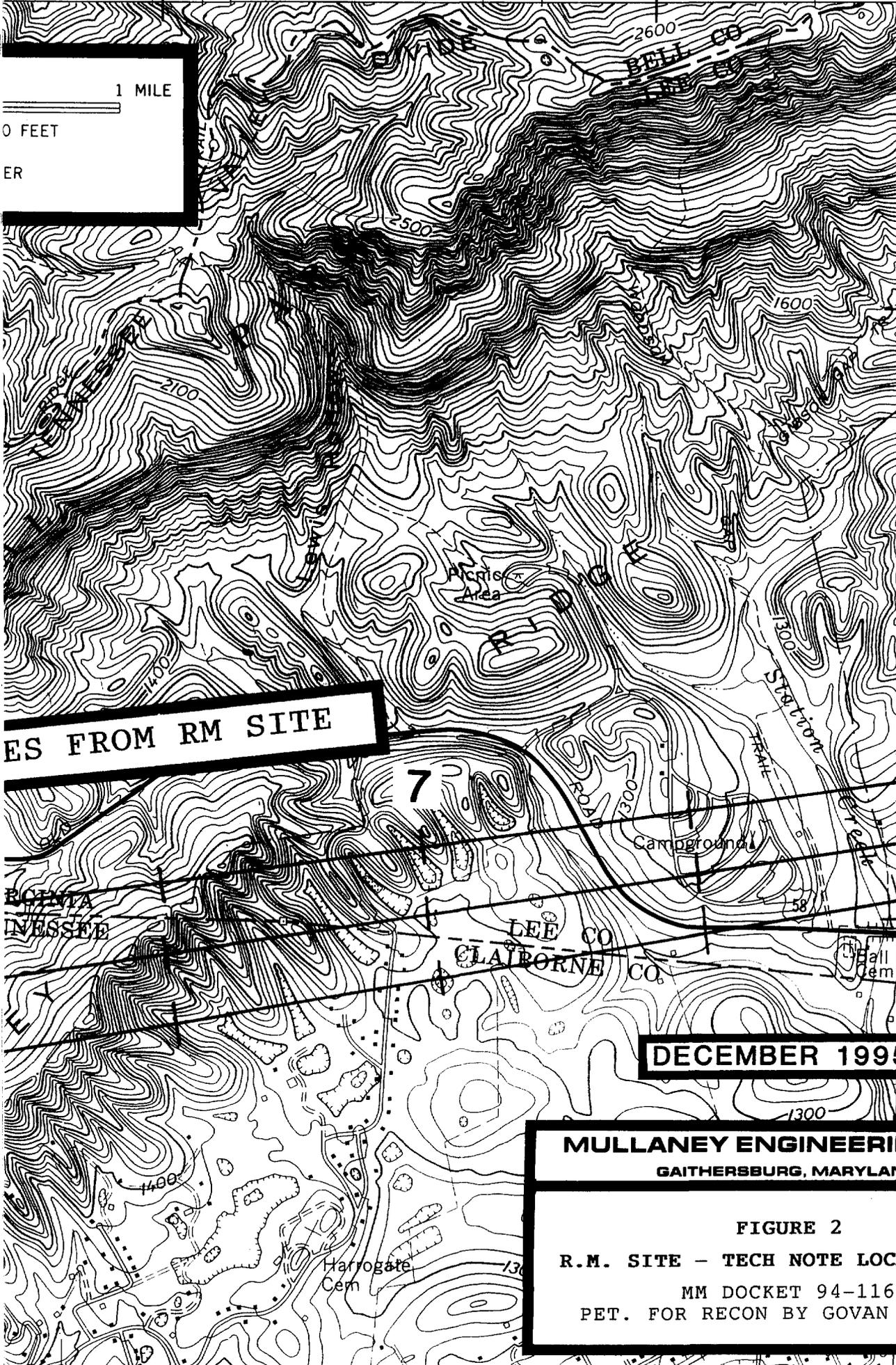
000 FEET (TENN.)

264

265

83° 37' 30"

36° 37'



4056
820 000
(TENN.)

4055

ES FROM RM SITE

GIBSON STATION 1.9 MI.
JONESVILLE 3.4 MI.

DECEMBER 1995

4053

MULLANEY ENGINEERING, INC.
 GAITHERSBURG, MARYLAND

FIGURE 2
R.M. SITE - TECH NOTE LOCATION MAP
 MM DOCKET 94-116
 PET. FOR RECON BY GOVAN & CAGLE

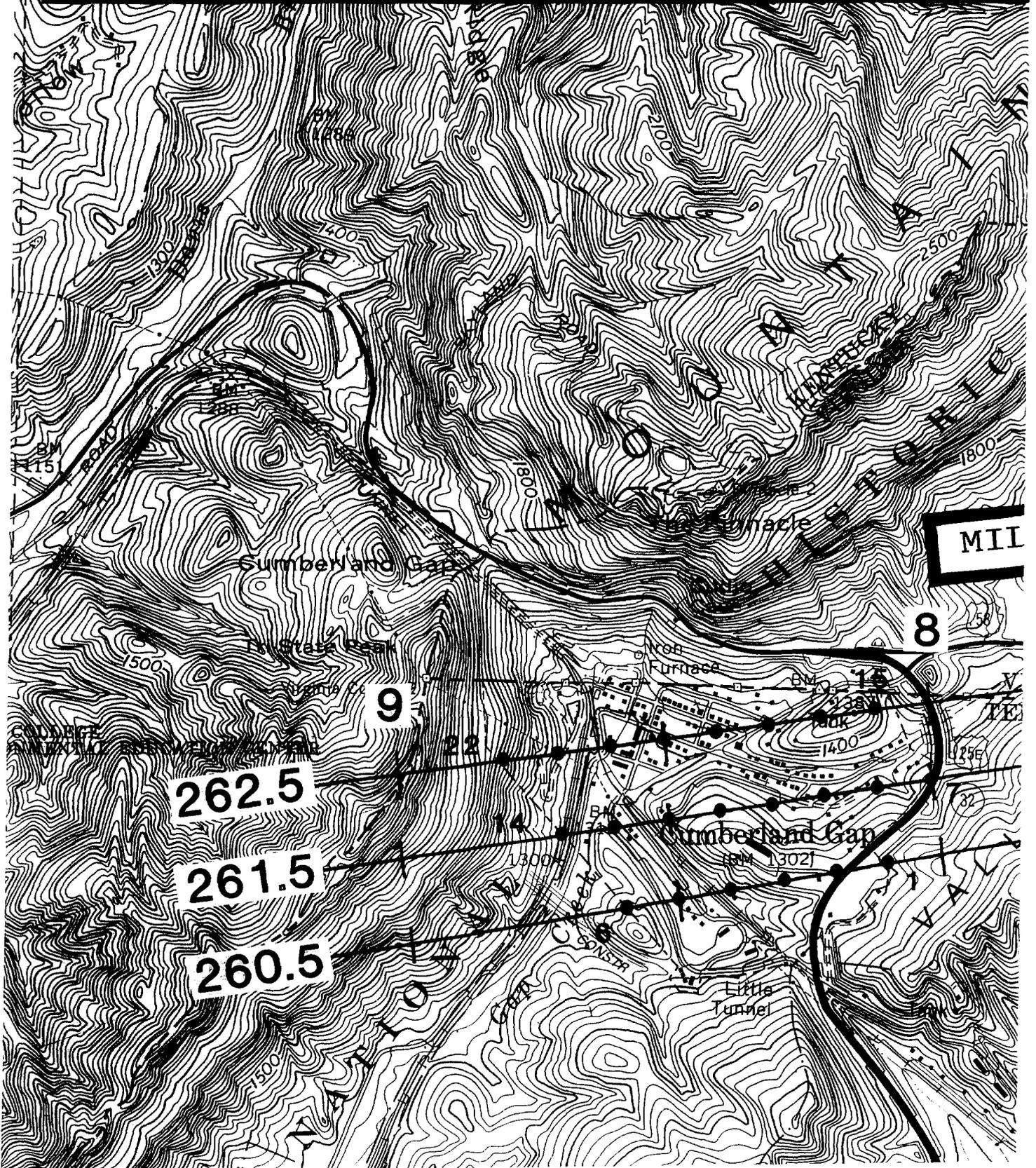
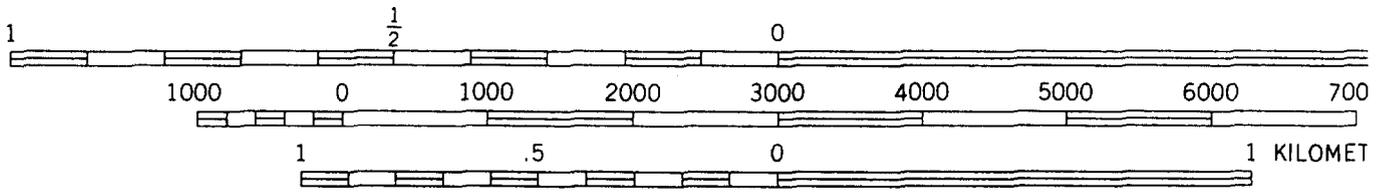
4257 II NW
ESBORO NORTH)

261

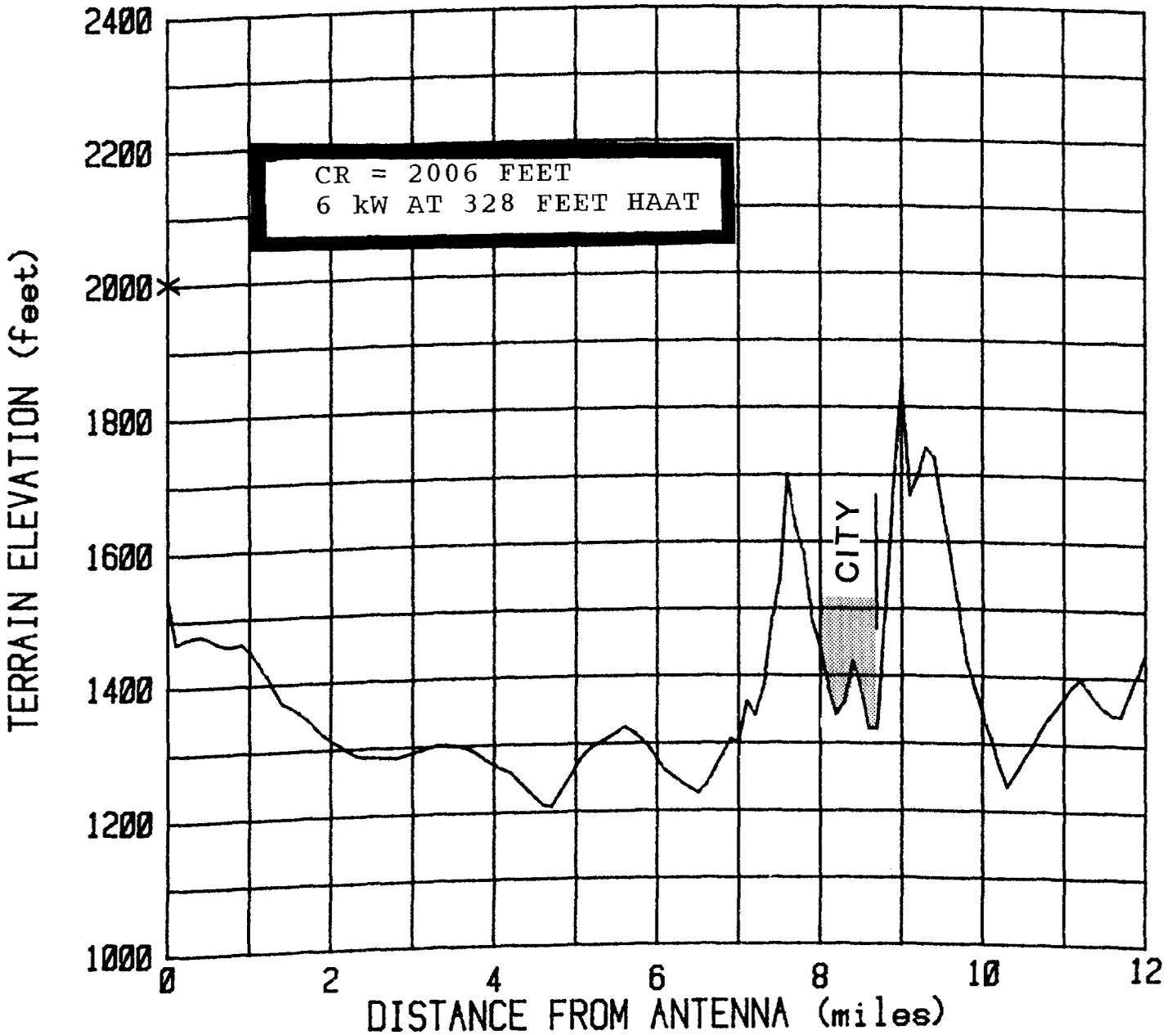
40'

262

2 69C



RADIAL N 261.5 E



WEZG - CUMB. GAP, TN - RM SITE

R.M. SITE - TERRAIN PLOT N-261.5-E

MM DOCKET 94-116
PET. FOR RECON BY GOVAN & CAGLE

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GAITHERSBURG, MARYLAND

FIGURE 2-A
DECEMBER 1995

COMPUTED SIGNAL LEVELS
TECH NOTE 101 CALCULATION METHOD
RM SITE

<u>POINT</u>	<u>BEARING</u>	<u>DISTANCE (MILES)</u>	<u>dBu</u>
01	260.5	8.1	76.88
02	260.5	8.2	78.89
03	260.5	8.3	76.98
04	260.5	8.4	71.60
05	260.5	8.5	66.38
06	260.5	8.6	73.66
07	261.5	8.0	72.90
08	261.5	8.1	78.39
09	261.5	8.2	72.89
10	261.5	8.3	49.72
11	261.5	8.4	71.51
12	261.5	8.5	67.71
13	261.5	8.6	72.33
14	261.5	8.7	69.37
15	262.5	8.1	81.09
16	262.5	8.2	97.89
17	262.5	8.3	65.34
18	262.5	8.4	66.46
19	262.5	8.5	72.68
20	262.5	8.6	70.84
21	262.5	8.7	79.69
22	262.5	8.8	93.39

22 POINTS ANALYZED
16 POINTS EXCEED MINIMUM
72.7%

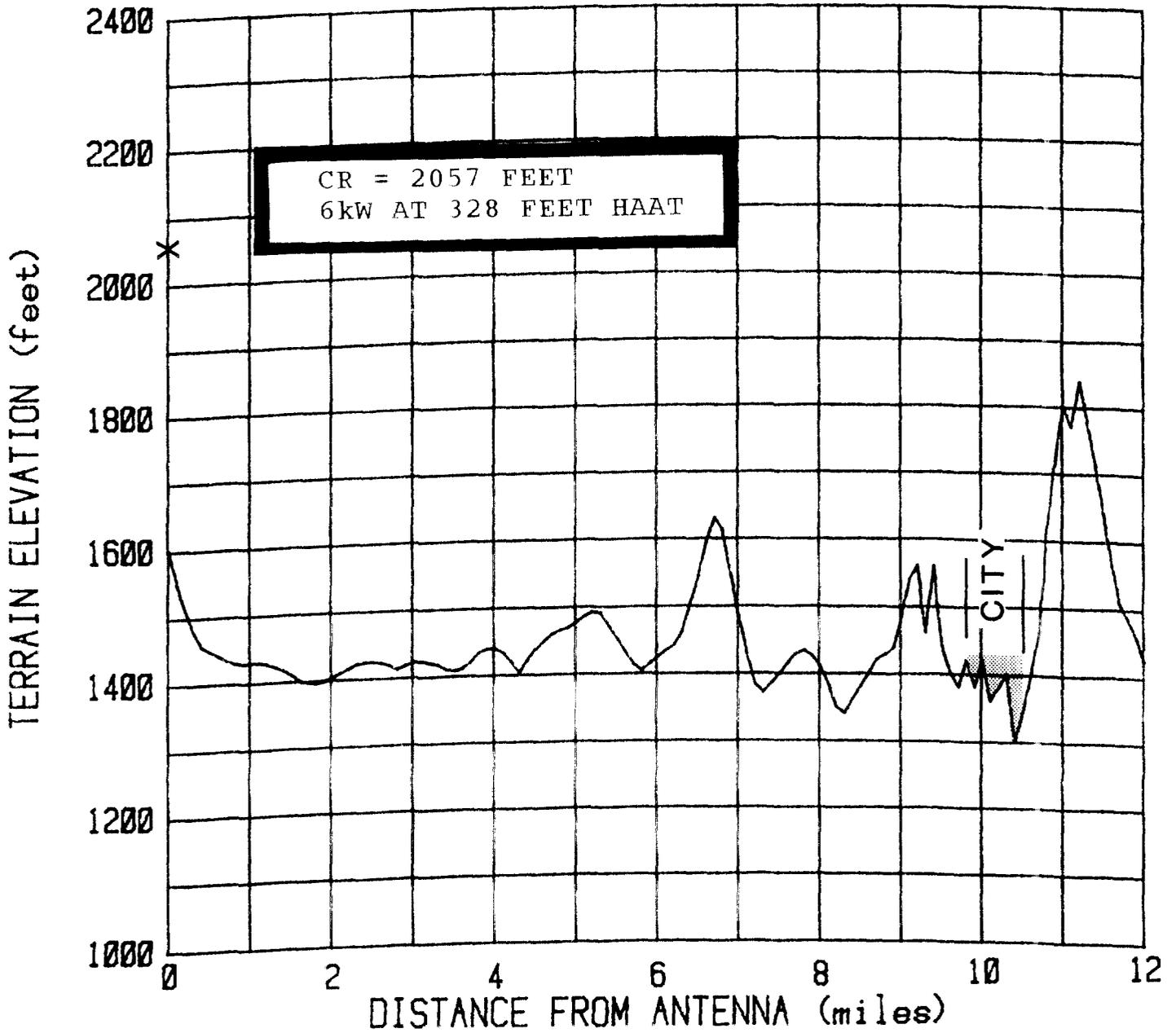
R.M. SITE - SUMMARY OF TECH NOTE LEVELS

MM DOCKET 94-116
PET. FOR RECON BY GOVAN & CAGLE

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 2-B
DECEMBER 1995

RADIAL N 250. E



WEZG - CUMB. GAP, TN - HYPO SITE

HYPO SITE - TERRAIN PLOT N-250-E

MM DOCKET 94-116
PET. FOR RECON BY GOVAN & CAGLE

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-A
DECEMBER 1995

COMPUTED SIGNAL LEVELS

TECH NOTE 101 CALCULATION METHOD

HYPO SITE

<u>POINT</u>	<u>BEARING</u>	<u>DISTANCE (MILES)</u>	<u>dBu</u>
01	249.0	9.9	73.04
02	249.0	10.0	75.35
03	249.0	10.1	74.06
04	249.0	10.2	69.70
05	249.0	10.3	62.81
06	249.0	10.4	77.89
07	249.0	10.5	80.41
08	250.0	9.8	74.40
09	250.0	9.9	78.95
10	250.0	10.0	83.63
11	250.0	10.1	73.98
12	250.0	10.2	78.63
13	250.0	10.3	85.08
14	250.0	10.4	68.77
15	250.0	10.5	81.44
16	251.0	10.1	73.51
17	251.0	10.2	69.17
18	251.0	10.3	71.32
19	251.0	10.4	61.15
20	251.0	10.5	77.89
21	251.0	10.6	88.27

21 POINTS ANALYZED
16 POINTS EXCEED MINIMUM
76.2%

HYPO SITE - SUMMARY OF TECH NOTE LEVELS

MM DOCKET 94-116
PET. FOR RECON BY GOVAN & CAGLE

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-B
DECEMBER 1995

CERTIFICATE OF SERVICE

I, Yvonne Corbett, a secretary in the law offices of Rosenman & Colin LLP, do hereby certify that on this 15th day of December, 1995, I have caused to be mailed, or hand-delivered, a copy of the foregoing "**PETITION FOR RECONSIDERATION**" to the following:

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Policy and Rules Division
Mass Media Bureau
Federal Communications Commission
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Ms. Pamela Blumenthal*
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Mayor, Town of Cumberland Gap
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Cumberland Gap, TN 37724

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Mayor, Town of Jonesville
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Jonesville, VA 24263

Hon. Gary W. Holiway
County Executive
P. O. Box 710
Dandridge, TN 37725

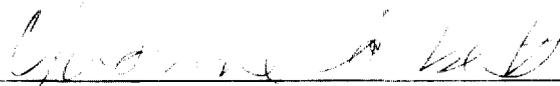
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***BY HAND**