MULLANEY ENGINEERING, INC.

DECLARATION

I, John J. Mullaney, declare and state that I am a graduate electrical engineer with a B.E.E. and my qualifications are known to the Federal Communications Commission, and that I am an engineer in the firm of Mullaney Engineering, Inc., and that firm has been retained by Frank B. DuRoss to prepare an application for a new FM station.

All facts contained herein are true of my own knowledge except where stated to be on information or belief, and as to those facts, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

John J. Mullaney

John J. Mullaney

Executed on the 7th day of May 1992.

ENGINEERING EXHIBIT EE:

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT
(516 FEET)

NARRATIVE STATEMENT:

I. GENERAL:

This engineering statement has been prepared on behalf of Frank B. DuRoss. The purpose of this statement is to request a Construction Permit to build a new FM broadcast facility on Channel 250A at Whitesboro, New York, which will operate with an ERP of 2.5 KW and an HAAT of 157.2 Meters (516 Feet).

The application is filed in response to a Public Notice for a window which closes on 5/14/91.

The application is not a major environmental action, as defined by Section 1.1307 of the Commission's Rules. The proposed facility is in full compliance with the FCC / ANSI Radiation Guidelines.

Answers to questions contained in F.C.C. Form 301, Section V-B, are incorporated in the following paragraphs and figures.

II. ENGINEERING DISCUSSION:

A. Proposed Location:

The applicant proposes to locate the tower atop Smith Hill approximately 7.5 kilometers northeast of Utica, NY. Figure 1 is a Topographic map showing the proposed site. The geographic coordinates are:

Latitude: 43° 08′ 37"
Longitude: 75° 10′ 31"

The city of license, Whitesboro, New York, is located approximately 10 kilometers west-southwest of the proposed site. The Eastern Regional Office of the FAA was notified of this proposal on May 7, 1992. Figure 1-A is an Aeronautical map showing the proposed site.

B. Antenna System and Tower:

A dual polarized 3-bay reduced spacing FM antenna will be side mounted near the top of a new tower with an overall height of 46.9 Meters (154 Feet) AGL (includes lightning rod). Figure 3 is a sketch of the proposed tower. The reduced spacing antenna has a non-directional power gain of approximately 1.01 H/V. Figure 5 is a plot of the proposed vertical radiation pattern.

The antenna will be fed by 45.7 Meters (150 Feet) of 1-1/4" coaxial cable, with a rated efficiency of 90.8 percent for this length.

C. Transmitter:

The applicant plans to install a type accepted 3.5 KW FM transmitter. The transmitter will be operated at 2.73 KW which is within its rated power.

D. Effective Radiated Power:

Giving consideration for the maximum antenna gain, transmitter power and line loss, the maximum Effective Radiated Power is 2.5 KW for the Horizontal and 2.5 KW for the Vertical Component.

A Class-A FM station is restricted to a maximum of 6 KW (ERP) up to a maximum Height Above Average Terrain (HAAT) of 100 Meters. This proposal will operate with an HAAT that exceeds the maximum and consequently must reduce its ERP in order to obtain equivalent coverage within the 1.0 mV/M contour. The closest part of the Canadian Border is 139.9 kilometers.

Current F.C.C. policy permits stations that are beyond 322 kilometers from the Mexican or Canadian Borders to use the F(50,50) curves to determine what reduced power at their HAAT will provide the equivalent maximum 1.0 mV/M coverage allowed. Although the station is within 322 kilometers of the Canadian Border it was coordinated as a Class B1 and, therefore, the equivalent interference curves have also been used.

Using the curve, it was determined that 2.5 KW at an HAAT of 157.2 Meters is equivalent to the maximum normally allowed.

E. Auxiliary Power:

The applicant proposes to install two Auxiliary Power Generators (one at their proposed studio site and one at their proposed FM transmitter site) to supply electrical power during local outages.

F. Channel Allocation:

Figure 4 is a channel allocation study from the proposed site. This application is in full compliance with Section 73.207(a). The allotment was accepted by Canada as a Class B1 permitting full 6 KW operation. It should be noted that the proposed separation of 114.52 KM to a proposed new allotment on Ch. 250A at Jewett, NY, is within the 0.5 KM tolerance permitted by the rules.

G. Terrain Profile Data & Coverage:

Terrain profile data was extracted from NGDC 30 Second Digitized Terrain Data Base provided out of Boulder, Colorado. Twenty-four bearings (every 15 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 service contours, as shown in Figure 2 of the attached report, 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.

Figure 2-A is a tabulation of the distances to the 70 dBu (3.16 mV/M - City Grade) & 60 dBu (1.0 mV/M - Primary) contours in Metric Units (Meters/Kilometers).

H. Terrain Profile to City of License:

The N-255-E radial is the direct path to the City of License. From the proposed site the 3.16 mV/M City Grade Contour will completely encompass the City of License without major terrain obstruction.

I. **Coverage Area and Population:**

The area contained within the 60 dbu (1.0 mV/m) contour is 2,541 square kilometers and has been computed mathematically.

The population within this contour is 262,412 persons and was obtained through a computerized analysis of the census designated places population data contained in the 1990 Census.

J. **FM Blanketing Contour:**

The applicant recognizes its obligation to resolve related interference complaints for a one year period within its 115 dBu "FM Blanketing Contour" as required by Section 73.318 of the FCC Rules.

The radius around the base of the tower in which Blanketing interference is possible is fairly small (see Figure 2-A) and is in a sparsely populated area. Given the height of the tower proposed, no problems are anticipated.

K. **Other Services in Area:**

There are NO known AM Broadcast Stations within 3.2 kilometers of the proposed site. There are no known transmission facilities within 60 meters (197 feet) of the proposed antenna.

There are seven known FM and five known TV transmitters within 10 kilometers (6.2 miles) of the proposed site, however, based on the type of transmitter proposed, and the frequency & power involved no intermodulation interference problems with existing transmitting facilities is expected. The applicant recognizes the potential of a Receiver Induced Third Order Intermod

involving its operation on 97.9 MHz and that of WOUR on 96.9 MHz & WRCK on 107.3 MHz. The potential intermod occurs on 106.3 MHz operated by WMCR located 41.4 KM away in Oneida. In the unlikely event some problems would occur, the applicant will investigate and correct such cases in accordance with the Commission's Rules.

L. Environmental Assessment Statement:

The applicant believes its proposal will not significantly affect the environment since it does not meet any of the criteria specified in Section 1.1307 of the rules. It should be noted that the immediate area around the proposed site already has nine other towers of similar or taller height and, therefore, this proposal is consistent with the area. Specifically the proposed facility:

1. Will NOT be located in an officially designated wilderness area.
2. Will NOT be located in an officially designated wildlife preserve.
3. Will NOT affect districts, sites, buildings, structures or objects, significant in American history, architecture, archeology or culture, that are listed in the National Register of Historic Places or are eligible for such listing.
4. Will NOT be located in a floodplain.
5. Will NOT result in construction that will involve a significant change in the surface features (eg. wetland fill, deforestation or water diversion).
6. Will NOT involve the use of high intensity white lights on a structure located in a residential neighborhood, as defined by the applicable zoning laws.

7. Will NOT involve the exposure of workers or the general public to levels of radiofrequency radiation in excess of the "Radio Frequency Protection Guide" recommended by ANSI (C95-1-1982).

   The following is a more detailed discussion of this protection standard:

   a. **National Environmental Policy Act of 1969:**

      In 1969, Congress enacted the National Environmental Policy Act (NEPA), which requires the FCC to evaluate the potential environmental significance of the facilities it regulates and authorizes. Human exposure to Radio Frequency (RF) radiation has been identified as an issue the FCC must consider.

      Beginning with the filing of applications after January 1, 1986, broadcast stations will be required to "certify compliance" with FCC prescribed guidelines on human exposure to RF radiation. The FCC is using as its processing guidelines, the American National Standards Institute's (ANSI) RF radiation protection guides (ANSI C95.1-1982). These exposure limits are expressed in terms of milli-watts per square centimeter.

These exposure limits are time averaged over any six minute period and vary depending upon the frequency involved:

Frequency Range (MHz)			**Power Density (mW/sq.cm)**	
0.3	to	3	100	AM
3	to	30	$900/(Freq^2)$	
30	**to**	**300**	**1.0**	**VHF TV & FM**
300	to	1,500	Freq/300	UHF TV
1500	to	100,000	5.0	

(same as ANSI standard)

The applicant recognizes that compliance with the above criteria at sites involving multiple AM, FM and/or TV facilities is based upon the contributions of all such facilities. **However, as will be shown, this proposal contributes less than 1 percent of the ANSI standard and, therefore, is categorically excluded from consideration.**

FM BROADCAST STATIONS

For FM Broadcast Stations the following formula is used:

$$D = \frac{SQRT(\ F^2 * [\ HERP + VERP\ ]\ )}{1.667 * SQRT(PD) * 3.2808}$$

Where:

D = the closest distance in meters that a human should come to an operating antenna (to obtain feet multiply by 3.2808)
F = typical relative field factor in downward direction (F = 1 is worst case main lobe)
HERP = Horizontal ERP in watts (above a dipole)
VERP = Vertical ERP in watts (above a dipole)
PD = highest Power Density in milli-watts/cm^2
SQRT = Square Root
Freq = Frequency in mega-cycles/sec. (mHz)

The vertical radiation pattern of the FM antenna specified in this application is very narrow (see Figure 5) and, therefore, the power density as seen by an observer on the ground near the base of the tower will be less than 10 percent of the total ERP or 0.5 KW.

The application of the above equation (assuming maximum ERP), in our case, for a frequency of 97.9 MHz and a Power Density of 1.0 milli-watts results in a minimum distance of 13 meters (43 feet) from the antenna. Inasmuch as the lowest element on the proposed antenna will be approximately 36.6 meters (120 feet) above ground level, it is self-evident that no hazard from radiation will exist to persons at ground level. At approximately 2 meters above the ground and assuming maximum downward radiation the proposed FM facility contributes 0.117 of the ANSI standard. The tower will be surrounded by a locked fence to limit access.

In an effort to minimize downward radiation and the resulting contribution to the electromagnetic environment, the applicant has selected an antenna with a reduced spacing between bays. This will suppress the proposed

radiation straight up & down the tower. Figure 5 fully supports the assumption that the proposed vertical form factor will be less than F=0.28 for a depression angle of 30 to 90 degrees. Utilizing this form factor, at 2 meters above the ground the facility will contribute 0.0092 of the ANSI standard or less than 1 percent of the standard. **Consequently, the facility is categorically excluded from consideration.**

Workers employed to climb the tower or work in a potential over-exposure location will not be permitted to enter the work area until cleared by the station manager or other responsible person. Appropriate warning signs will be posted to insure safety. In addition, the applicant will establish and enforce work rules and safety procedures applicable in a potential over-exposure area. The rules will establish how close a worker can get to the antenna when it is operating at normal power and specify the power reduction required in order to make other locations safe. It is recognized that maintenance or installation work on or near the antenna will require the station to completely shutdown or switch temporarily to an auxiliary antenna or an auxiliary transmitter site. All employees, contract and other persons having access to areas of potential exposure will be required to sign a site management guide indicating they are aware of and will comply with all safety rules. In the instance of a multiple use site, a single site access policy incorporating the above philosophy will be

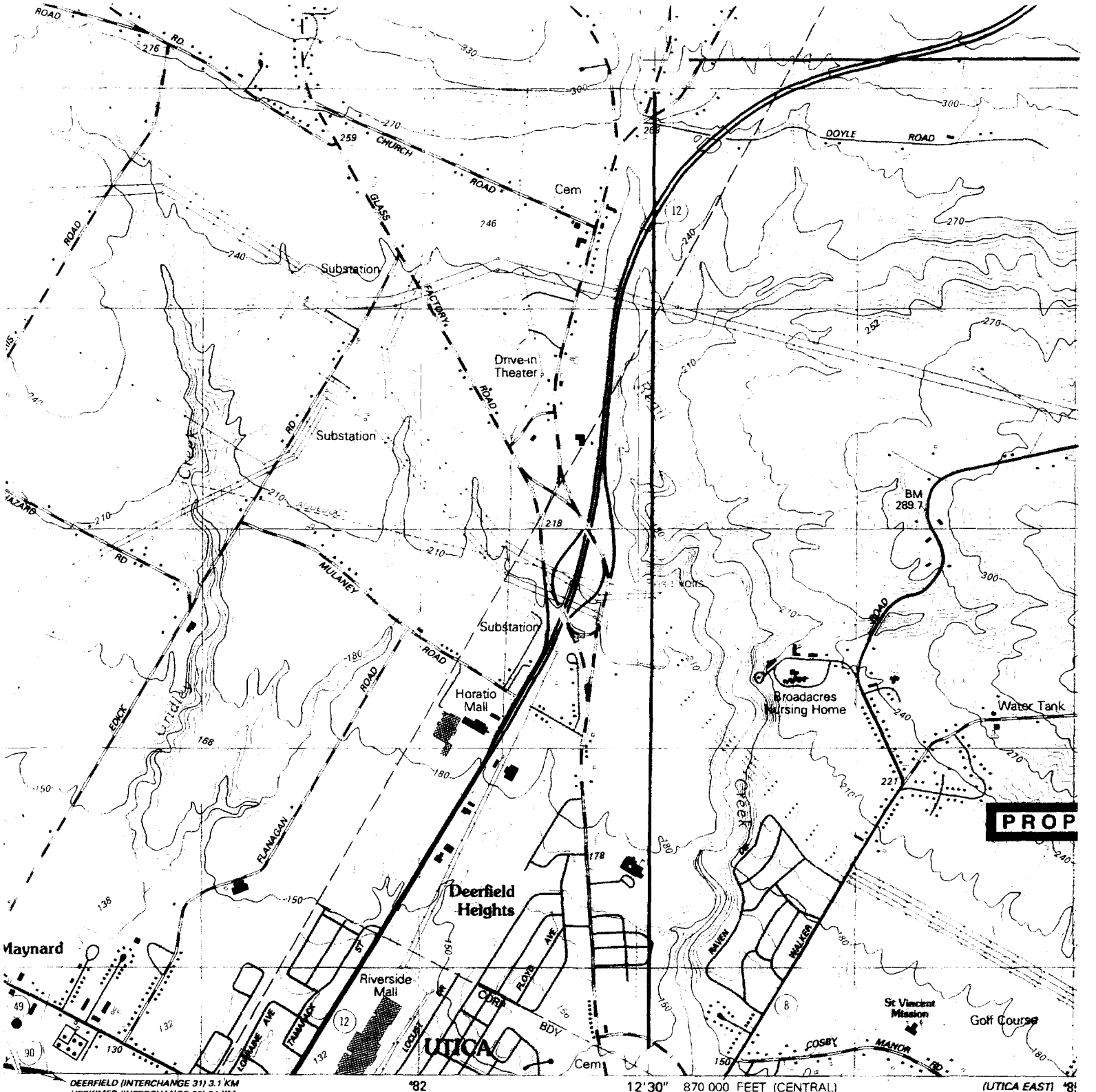
established. All procedures will be reviewed & updated as necessary on a yearly basis or earlier if circumstances warrant.

III. SUMMARY:

Frank B. DuRoss proposes to construct a new FM facility on Channel 250A at Whitesboro, New York. This engineering proposal is in full compliance with the Commission's Rules.

May 7, 1992.

John J. Mullaney



DEERFIELD (INTERCHANGE 31) 3.1 KM
HERKIMER (INTERCHANGE 30) 24 KM

*82

12'30" 870 000 FEET (CENTRAL)
NEW HARTFORD 9 KM

(UTICA EAST) *8
5970 II SW

y the United States Geological Survey
ion with New York Department of Transportation

GS and NOS/NOAA

hotogrammetric methods from aerial photographs
Field checked 1974. Map edited 1983
ap dated 1955

1000-meter grid, zone 18: Universal
rcator
id ticks based on New York coordinate
l and east zones
nerican Datum
e predicted North American Datum 1983
ection lines 3 meters south and
t as shown by dashed corner ticks

d lines indicate selected fence and field lines where
le on aerial photographs. This information is unchecked

ates areas in which only landmark buildings are shown

MN GN
13°
231 MILS
0°08'
2 MILS

UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 00

1 .5 0 KILOMETERS
1000 0 METERS
1 .5 0 MILES
1000 0 1000 2000 3000 4000 5000 FEET

CONTOUR INTERVAL 6
NATIONAL GEODETIC VERTICAL
CONTROL ELEVATIONS SHOWN TO THE
OTHER ELEVATIONS SHOWN TO THE

THIS MAP COMPLIES WITH NATIONAL MA
FOR SALE BY U. S. GEOLOGICAL SURVE
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND S

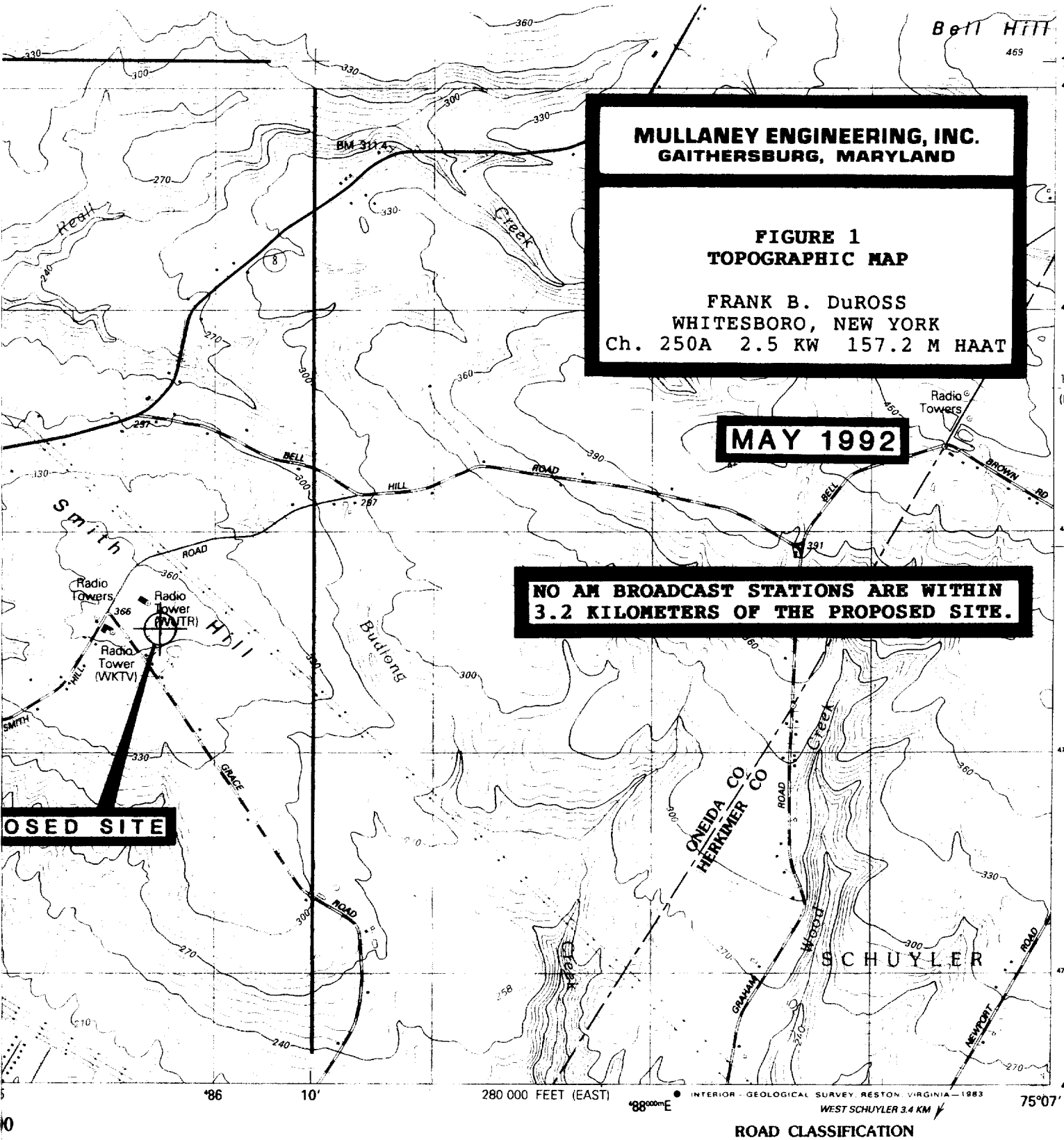
MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 1
TOPOGRAPHIC MAP

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT

MAY 1992

NO AM BROADCAST STATIONS ARE WITHIN 3.2 KILOMETERS OF THE PROPOSED SITE.



ROAD CLASSIFICATION

Primary highway, hard surface ..... Light-duty road, hard or improved surface ..

Secondary highway, hard surface ..... Unimproved road ..

Interstate Route U. S. Route State Route

0 1 2
1000 2000

1
6000 7000 8000 9000 10 000

METERS
DATUM OF 1929
NEAREST 0.1 METER
NEAREST METER

ACCURACY STANDARDS
, RESTON, VIRGINIA 22092
MBOLS IS AVAILABLE ON REQUEST

NEW YORK

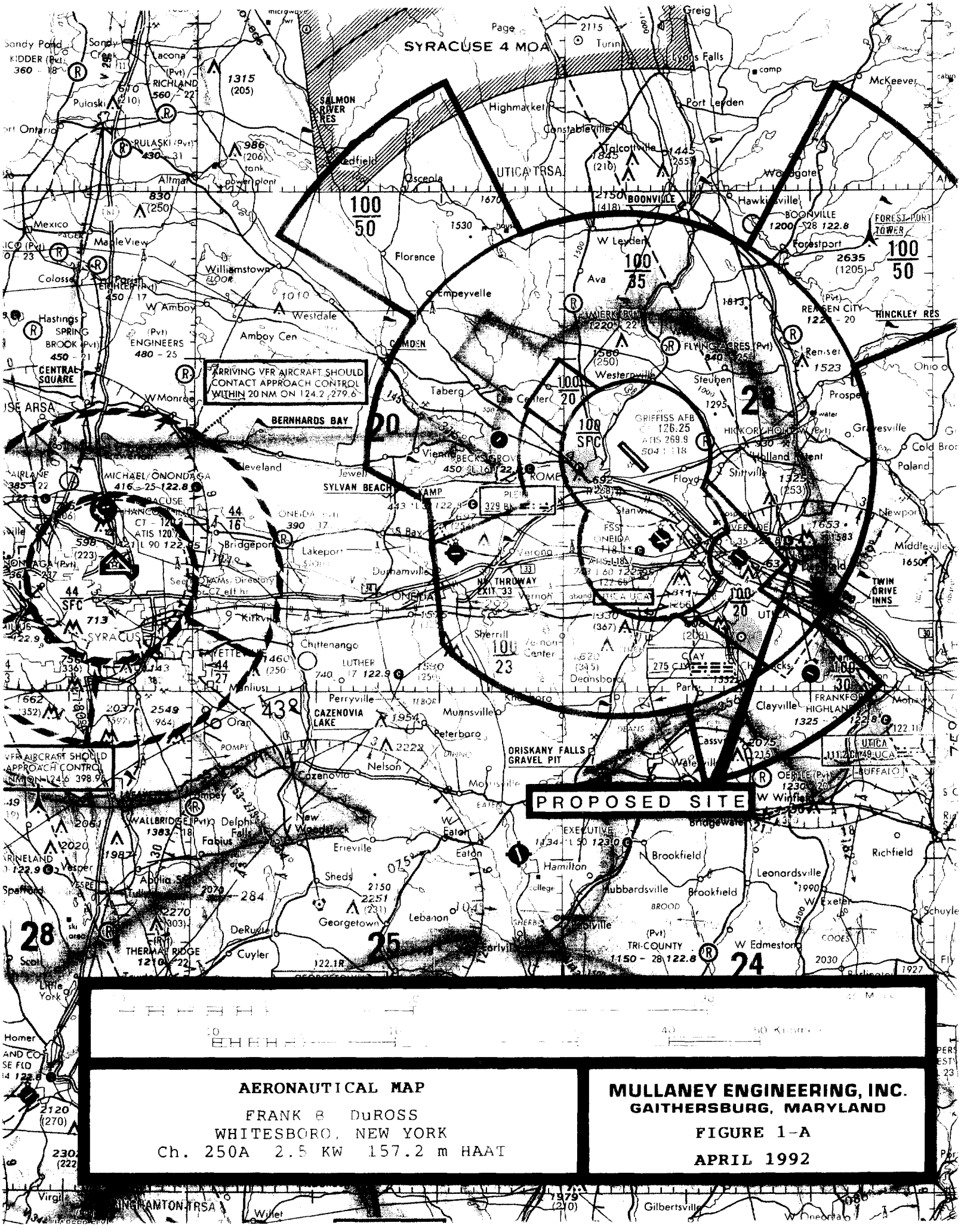
QUADRANGLE LOCATION

CONTOURS AND ELEVATIONS IN METERS

SOUTH TRENTON, N. Y.
43075-B2-TM-024

1983

DMA 5970 II NW – SERIES V821



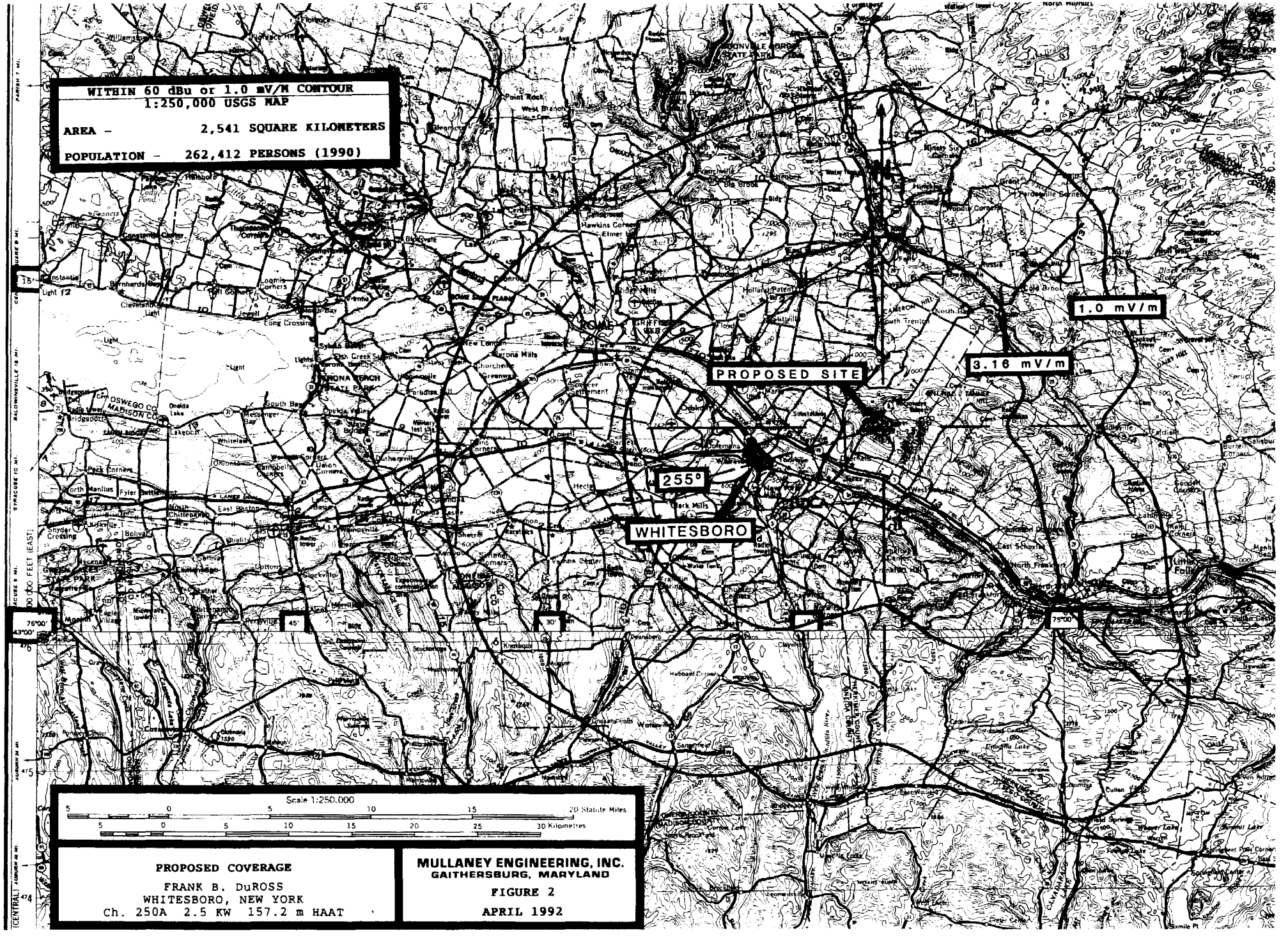
AERONAUTICAL MAP

FRANK B DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 m HAAT

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 1-A

APRIL 1992



PROPOSED COVERAGE

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 m HAAT

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 2

APRIL 1992

FM COVERAGE
****

FRANK B. DuROSS

CHANNEL NO. 250 A **FREQUENCY 97.9 MHZ**

CENTER OF RADIATION 402.6 METERS AMSL

COORDINATES: 43-08-37 / 75-10-31

BEARING DEGREES		3-16 KM AVERAGE	C.R. HAAT	E.R.P. (KW)	DISTANCE TO CONTOURS (KM) 115.0	70.0	60.0
0.	*	266.4	136.2	2.5	0.6	15.0	26.6
15.		284.0	118.6	2.5	0.6	14.0	25.1
30.		287.8	114.8	2.5	0.6	13.8	24.8
45.	*	294.8	107.8	2.5	0.6	13.4	24.1
60.		324.4	78.2	2.5	0.6	11.4	20.6
75.		322.9	79.7	2.5	0.6	11.6	20.8
90.	*	346.8	55.8	2.5	0.6	9.8	17.4
105.		311.9	90.7	2.5	0.6	12.2	22.2
120.		273.8	128.8	2.5	0.6	14.6	25.9
135.	*	185.0	217.6	2.5	0.6	19.3	33.2
150.		154.5	248.1	2.5	0.6	20.6	35.2
165.		224.9	177.7	2.5	0.6	17.5	29.9
180.	*	283.9	118.7	2.5	0.6	14.0	25.1
195.		259.2	143.4	2.5	0.6	15.4	27.2
210.		205.6	197.0	2.5	0.6	18.3	31.5
225.	*	185.1	217.5	2.5	0.6	19.3	33.2
240.		148.5	254.1	2.5	0.6	20.8	35.7
CITY 255.		153.7	248.9	2.5	0.6	20.6	35.4
270.	*	159.0	243.6	2.5	0.6	20.4	35.1
285.		181.7	220.9	2.5	0.6	19.5	33.5
300.		214.8	187.8	2.5	0.6	18.0	30.7
315.	*	242.1	160.5	2.5	0.6	16.6	28.6
330.		261.8	140.8	2.5	0.6	15.3	27.0
345.		271.9	130.7	2.5	0.6	14.6	26.1
AVERAGE (8)	*	**245.4**	**157.2 Meters**				

AREA IN SQUARE KILOMETERS **1.22 838. 2541.**

115.0 DBU BLANKET CONTOUR IS COMPUTED VIA SECTION 73.318

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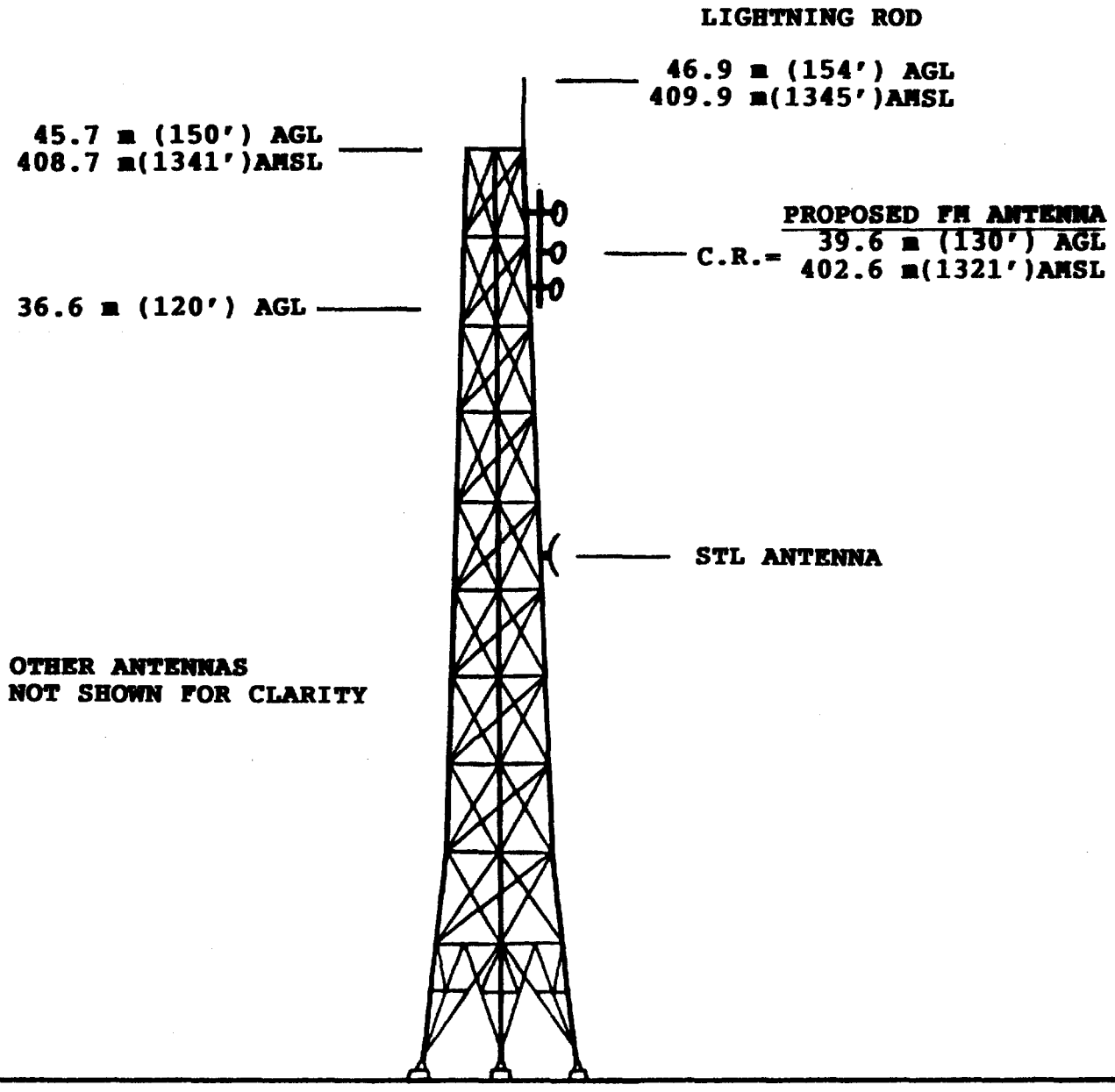
FIGURE 2-A
PROPOSED CONTOURS
(METRIC UNITS)

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT

PAINTING & LIGHTING IN ACCORDANCE WITH F.A.A. SPECIFICATIONS.

NOT TO SCALE OR SHAPE

N. LAT.: 43° 08′ 37″
W. LON.: 75° 10′ 31″



363.0 m(1191′) AMSL

MAY 1992

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GAITHERSBURG, MARYLAND

FIGURE 3
VERTICAL TOWER SKETCH

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT

********** FM CHANNEL STUDY NO. 1 - MULLANEY ENGINEERING, INC. GAITHERSBURG, MARYLAND - 6-MAY-92 11:25:20 **********
********** LAST UPDATE: 920409 **********

NEW	250 A	FM	POLARIZATION	ERP (KW) HOR PLN	ERP (KW) DN TILT	HAAT (METER)	RCAMSL (METER)
WHITESBORO NY US							
43.0837 75.1031 (D.MMSS)			HORIZONTAL	2.500	0.000	157.2	402.6
			VERTICAL	2.500	0.000	157.2	402.6

****
THE CANADIAN BORDER IS 139.9 KM ON A BEARING OF 303.0 DEG. TRUE
(COORDINATED AS A CLASS B1)
****

AZIMUTH FROM	TO	CALL	STS	FILE NUMBER	CITY	ST C	LAT (D.MMSS)	LONG	REL	CHN	ERP (KW) HORZ	ERP (KW) VERT	HAAT (M)	D A	I-CON F5010 (KM)	P-CON F5050 (KM)	DIST (KM)	IR RSEP (KM)	IC RSEP (KM)	RESLT IR IC
329.4	148.9	WCIZ	CP	BNPH901017IB	Watertown	NY A	43.5723	75.5045	2ND	248C1	100.H	100.V	87				105.3	75.		
102.0	282.7	WKOLFM	LIC	BLH881104KA	Amsterdam	NY A	42.5905	74.1049	1ST	249A	0.79H	0.79V	190				83.0	72.		
98.0	278.7	WKOLFM	CP	BPH910109IA	Amsterdam	NY A	43.0211	74.1034	1ST	249A	2.1H	2.1V	118				82.2	72.		
195.8	15.3	WWSH	LIC	BLH860512KG	Hazleton	PA A	41.0455	75.5655	CO	250B	19.5H	17.5V	222D				237.8	178.		
141.7	322.3		ADD		Jewett	NY A	42.1956	74.1845	CO	250A	H	V	0				114.5	115.		s
COMMENTSite Restricted 6.9KM North																				
255.8	75.7		VAC		Whitesbor	NY A	43.0719	75.1731	CO	250A	H	V	0				9.8	115.		-
WINDOW CLOSE 05/14/92 **COMMENTProposed to Canada as B1 on 910226-ACCEPTED **DOCKET**90-610 **																				
270.6	88.9	WPXYFM	LIC	BLH5637	Rochester	NY A	43.0808	77.3502	CO	250B	50.H	50.V	122				196.0	178.		
270.6	88.9	WPXYFM	CP	BPH870330IP	Rochester	NY A	43.0807	77.3502	CO	250B	50.H	50.V	122				196.0	178.		
350.9	170.5		VAC		Ottawa-Hu	ON C	45.2430	75.4130	CO	250A	H	V	0				255.0	180.		
208.1	27.5	WWWK	APP	BPH911002ID	Binghamto	NY A	42.0334	75.5706	1ST	251B	13.0H	13.0V	294D				136.2	113.		
208.1	27.5	WWWK	LIC	BLH2952	Binghamto	NY A	42.0334	75.5706	1ST	251B	10.0H	10.0V	293				136.2	113.		

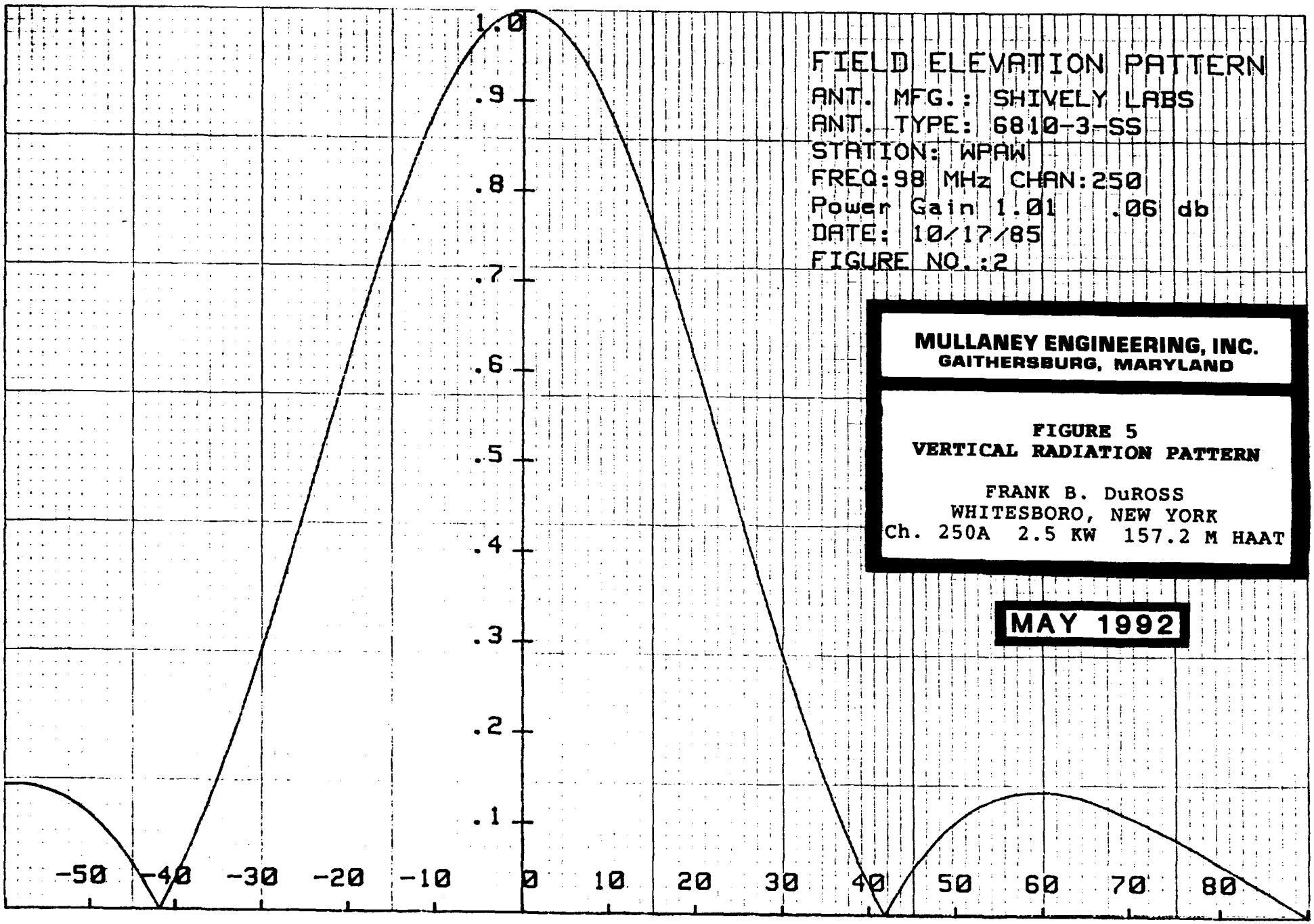
****

s : WITHIN 0.5 KILOMETER TOLERANCE PERMITTED BY RULES

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 4
CHANNEL ALLOCATION STUDY

FRANK B. DuROSS
WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT



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GAITHERSBURG, MARYLAND

FIGURE 5
VERTICAL RADIATION PATTERN

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WHITESBORO, NEW YORK
Ch. 250A 2.5 KW 157.2 M HAAT

MAY 1992