15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No. 2

16. Attach as an Exhibit *(name the source)* a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. 3

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 0.18 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 2.59 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 2820 sq. km. Population 47627 (1986)

18. For an application involving an auxiliary facility only, attach as an Exhibit a map *(Sectional Aeronautical Chart or equivalent)* that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. dna

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data *(to be calculated in accordance with 47 C.F.R. Section 73.313)*

Source of terrain data: *(check only one box below)*

[*] Linearly interpolated 30-second database [ ] 7.5 minute topographic map

(Source: Radiosoft)

[ ] Other *(briefly summarize)*

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To the 3.16 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
218 *	112	16.4	28.3
0	230	24.1	39.3
45	186	21.8	36.0
90	177	21.2	35.1
135	173	20.9	34.6
180	135	18.1	31.0
225	80	13.9	24.7
270	-92	8.6	15.3
315	4	8.6	15.3

*Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT.

20. Environmental Statement *(See 47 C.F.R. Section 1.1301 et seq.)*

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? ☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311. Exhibit No. ENG

If No, explain briefly why not.

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name *(Typed or Printed)*	Relationship to Applicant *(e.g., Consulting Engineer)*
Gary P. Savoie	Consulting Engineer
Signature	Address *(Include ZIP Code)* 50 Park Ave. Claremont NH 03743
Date September 20, 1991	Telephone No. *(Include Area Code)* (603) 542/6784

Table of Contents

FM Channel 229A

Family Broadcasting, Inc. d/b/a Harvest Broadcasting, Inc.

Hague, New York

September, 1991

Exhibit E - Text

Figure 1 - Vertical Tower Sketch

Figure 2 - Figure 2 is an exact reproduction of an entire 7 $^{1}/_{2}$' USGS topographic map showing the proposed transmitting location. The original copy of this application for a construction permit contains a full size reproduction of said map; the other FCC filings copies are reductions of the Figure 2b map as obtained by Xerox duplicating machine.

Figure 3 - Figure 3 is an exact reproduction of the composite of two(2) 250 thousandth USGS topographic maps (Lake Champlain and Glens Falls) showing the proposed FM service contours for Channel 229A. The original copy of this application for a construction permit contains a full size reproduction of said map; the other FCC filings copies are reductions of the Figure 3 map as obtained by Xerox duplicating machine.

Mirkwood Engineering Service
50 Park Avenue
Claremont, New Hampshire 03743
(603) 542-6784

Engineering Exhibit
Supporting the Application
for
Construction Permit
at
Hague, New York

September 20, 1991

Family Broadcasting, Inc. d/b/a Harvest Broadcasting, Inc.

Engineering Statement

I Abstract

This engineering statement has been prepared on behalf of Family Broadcasting, Inc. d/b/a Harvest Broadcasting, Inc. in support of its application for Construction Permit for a new Class A FM broadcast station at Hague, New York. The station will employ facilities of 4.80 kilowatts (kw) effective radiated power (ERP) at 112 meters antenna height above average terrain (HAAT). The proposed facilities are the equivalent of the maximum permissible Class A FM broadcast station facilities, 6 kw ERP at 100 meters antenna HAAT. This equivalence to maximum Class A facilities was determined in accordance with Section 73.211 of the Federal Communications Commission (FCC) Rules.

Channel 229A is allocated for use at Hague, New York, in the table of FM Allotments, Section 73.202(b) of the FCC Rules. The Channel 229A transmitter site proposed herein is located in FM Zone II of the United States at geographic coordinates North Latitude 43° 49'55" West Longitude 73°24'28" and meets all pertinent spacing requirements of the FCC Rules and international agreements governing FM broadcasting toward all pertinent known existing and pending co-channel and adjacent channel stations and allotments.

II Further Response to Section V-B of FCC Form 301

All sections answered completely on the enclosed copy of this form will not be addressed herein.

Section 3

The antenna supporting structure proposed for use herein is owned by the Fort Ticonderoga Park. The transmitting antenna of WANC, owned by WAMC, is presently located on the structure. The existing structure consists of a 24 meter guyed tower. The overall height of the structure, including all appurtenances, is 25 meters above ground level.

It is proposed herein to attach a Shively 2-bay, one-half wave spaced, circularly polarized Channel 229A FM transmitting antenna, Model 6813, to the structure occupied by WANC, at a center of radiation height above ground of 18 meters. The overall height of the structure will not be changed.

Section 5

FAA notification is not required for this proposed construction.

Section 11

The proposed site meets all of the pertinent requirements of Section 73.315 of the FCC Rules with respect to transmitter location and provides the required city grade (70dBu) coverage of Hague, New York.

Section 14

As of the date of this exhibit, there is one (1) known authorized FM transmitter within 60 meters of the proposed transmitting antenna.

Co-located on the existing antenna supporting structure proposed herein for use, is WANC, operating on FM Channel 280A, at an ERP of 1.6 kw. No adverse effects to WANC is expected from the co-location of the Channel 229A transmitting antenna.

In accordance with Section 73.318 of the FCC Rules, the area blanketed by this

proposal was calculated. The blanketed area is defined as the area within the proposed transmitting facilities 115 dBu contour, predicted using the maximum proposed ERP of 4.8 kw and the formula of Section 73.318(a) of the FCC Rules, and consists of the area within 0.86 kilometers of the proposed site.

Blanketing interference is not expected for this proposed facility since it is located in an unpopulated area and there are few residences within 0.86 kilometers of the proposed transmitting location. However, should complaints arise in the Blanketing Interference Contour and should complaints be due to blanketing interference caused by this proposed station, the applicant will satisfy them for a period of one year without cost to the compleintent.

As stated, the proposed station will assume full financial responsibility for rectifying all of the complaints within the one (1) year period: however, this does not include malfunctioning or mistuned receivers, improperly installed antenna systems or the use of high gain antennas. Antenna booster amplifiers and non-RF devices, such as tape recorders and Hi-Fi amplifiers, are also exempt from this protection. The proposed station will cooperate with complaintants by providing technical assistance in determining the cause of the problems and providing advice on corrective measures.

There is a cable head-end facility within the Blanketing Contour.

The following existing FM Broadcast stations are located within 10 kilometers of the proposed transmitting facility.

Call	Location	Frequency	Distance from Proposed Site in Kilometers
WANC	Ticoderoga, NY	103.9	0.00

Calculations indicate that no receiver induced intermodulation interference would result from simultaneous operation of the proposed facility and the FM station listed above.

Section 20

The proposed facility is not to be in an officially designated wilderness area. The facility is not to be in an official wildlife preserve.

The facility will be in or adjacent to sites, districts, 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 listing.

The proposed facility is not located in a flood plain. Construction of the proposed facility will not involve any change in the surrounding surface features (**this is an existing tower**).

The antenna tower is not required to be equipped with high intensity white lighting.

Evaluating Compliance with FCC-Specified Guidelines for
Human Exposure to Radiofrequency Radiation

ANSI guidelines state that for the worst case, a two (2) bay antenna being fed with 10.000 watts of power (both horizontal and vertical power), the minimum distance from the center of radiation to ground shall not be less than 18,3 meters; best case circumstances would allow a center of radiation minimum of 5,3 meters above ground.

Utilizing the prediction formula recommended by ANSI, the predicted maximum radio frequency energy in the E field at the tower base will be:

$$S=(0,64)(1,64)(9600)(1000\text{milliwatts/watts})/\pi(1800\text{cm})^2$$
$$+$$
$$S=(0,64)(1,64)(3200)(1000\text{milliwatts/watts})/\pi(2300\text{cm})^2$$

where: S=power density
0,64=EPA recommended ground reflection multiplier
1,64=gain of half wave dipole relative to an isotropic radiator
9600=combined H+V ERP of proposed construction
3200=combined H+V ERP of WANC
1800 cm=distance to the center of radiation from ground for proposed construction

2300 cm=distance to the center of radiation from ground for WANC

Proposed Construction= 0.989 mW/cm^2
WANC=0.202 mW/cm^2

This represents 119 % of the total percentage allowed under the ANSI guidelines. However, the proposed construction should far exceed the ANSI standards, since, although the facility operates with 9600 watts H + V, at a center of radiation 18,0 meters above ground, the applicant proposes the use of a half wave spaced antenna; to reduce downward radiation; more specifically, a Shively 6813. Shively Laboratories has consistently demonstrated its ability to build 2-bay, half-wave spaced antenna, that reduce the downward radiation by factors of 50% to 75%.

There are no other terrain features or buildings of similar height in the main beam of the proposed antenna that would be affected by this proposal.

With regards to steps that shall be taken to limit the RF radiation exposure to persons authorized to climb the tower, the applicant proposes that all transmitting devices will be equipped with facilities via which radiated power may be reduced to an exposure level safe for tower personnel and that such facilities will be readily accessible to said personnel and that timely requests of permission for such reduction of power shall not be unreasonably withheld.

III Methods Employed

All computations and data contained herein or on which this exhibit has been based are in exact accordance with the pertinent requirements of the FCC Rules and standard of good engineering practice, unless otherwise specifically so stated.

Gary P. Savoie

September 20, 1991

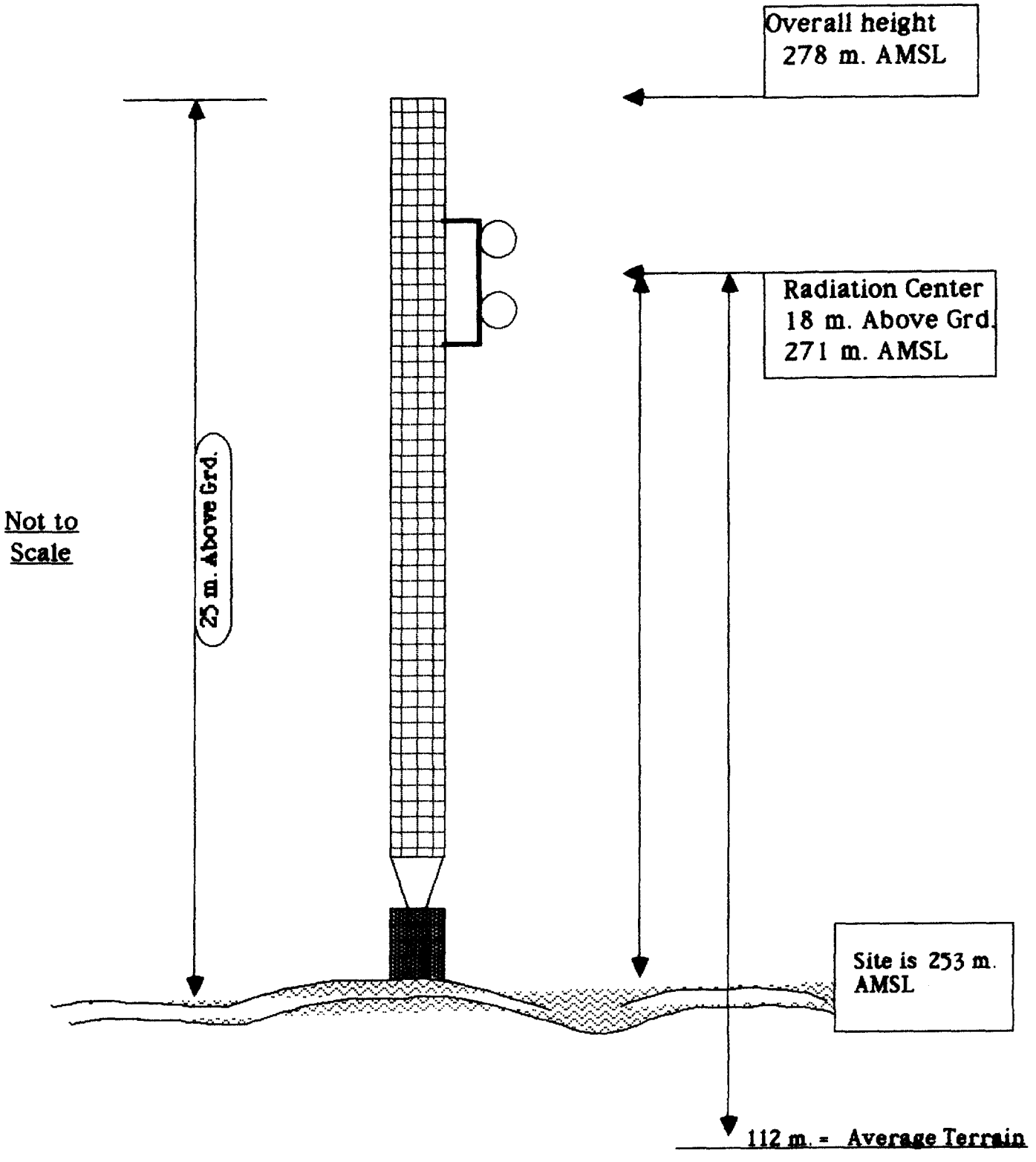

Exhibit 1

Channel 229A Hague, New York
43°49'55" North Lat. 73°24'28" West Long.

Attachment A

DOCUMENT OFF-LINE

This page has been substituted for one of the following:

X o An oversize page or document (such as a map) which was too large to be scanned into the RIPS system.

o Microfilm, microform, certain photographs or videotape.

o Other materials which, for one reason or another, could not be scanned into the RIPS system.

The actual document, page(s) or materials may be reviewed by contacting an Information Technician. Please note the applicable docket or rulemaking number, document type and any other relevant information about the document in order to ensure speedy retrieval by the Information Technician.

4 MAPS ATTACHED