

FM ENGINEERING DATA		Name of applicant Rochester Area Educational Television Assn., Inc., Rochester, N.Y.		FOR COMMISSION USE ONLY File No.	
1. Purpose of authorization applied for: <input type="checkbox"/> Construct a new station <input checked="" type="checkbox"/> Make changes in authorized radio station If this is not for a new station, summarize briefly the nature of the changes proposed. <div style="text-align: center;">Change transmitter location, transmitter, antenna, antenna height above average terrain and effective radiated power; change location of main studio and remote control point.</div>					
2. Facilities requested			7a. Antenna structure		
Frequency 91.5 MHz Channel 218		Transmitter power output 14.65 kw		Is the proposed construction in the immediate vicinity or does it serve to modify the construction of any standard broadcast station, FM broadcast station, television broadcast station, or other class of radio station? If "Yes", attach as Exhibit No. E-1 complete engineering data thereon. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Also see Exhibit No. E-2	
3. Proposed transmitter location			Submit as Exhibit No. E-2 a vertical plan sketch for the proposed total structure (including supporting building if any) giving heights above ground in feet for all significant features.		
State New York	County Monroe	City Brighton			
Street Address (or other identification) Pinnacle Hill			Overall height in feet above ground. (Without obstruction lighting) 343'		Overall height in feet above mean sea level. (Without obstruction lighting) 1023'
Remote control point location			Overall height in feet above ground. (With obstruction lighting) 346'		Overall height in feet above mean sea level. (With obstruction lighting) 1026'
State New York	City or town Rochester				
Street Address (or other identification) 280 State Street			Height of antenna radiation center in feet above mean sea level. 888'		
4. Proposed location of main studio			Geographical Coordinates of Antenna (To nearest second)		
State New York	County Monroe		North Latitude ° West Longitude ° 43° 03' 07" 77° 35' 02"		
City or town Rochester		Street Address 280 State Street			
Other studios proposed -----			b. Antenna data		
Make Gates		Type No. or description FMS-5		No. of sections 5	
Effective free space field intensity at one mile in mv/m for one kilowatt antenna input power 226 mv/m H 226 mv/m V		Antenna field gain 1.64 H 1.64 V		Antenna power gain 2.7 H 2.7 V	
5. Transmitter			Is horizontal polarization proposed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Make Gates			If "No", attach as Exhibit No. _____ complete engineering data on the antenna and the effective radiated power proposed. (Circular polarization)		
Type No. FM-20H3		Rated Power 20 kw			
(If the above transmitter has not been accepted for licensing by the F.C.C., attach as Exhibit No. --- a complete showing of transmitter details. Showing should include schematic diagram and full details of frequency control. If changes are to be made in licensed transmitter include schematic diagram and give full details of change.)			Is directional antenna proposed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
			If "Yes", attach as Exhibit No. _____ complete engineering data thereon.		
6. Transmission line proposed to supply power to the antenna from the transmitter			8. Attach as Exhibit No. E-3 a map(s) (topographic where obtainable, such as U.S. Geological Survey quadrangles) for the area within 15 miles of the proposed transmitter location and shown drawn thereon the transmitter and main studio locations accurately plotted.		
Make Andrew Heliac	Type No. HJ8-50B	Description Coaxial			
Size (nominal transverse dimension) in inches 3"	Length in feet 275'	Rated efficiency in percent for this length 91%			
			9. Attach as Exhibit No. --- a sufficient number of aerial photographs taken in clear weather at appropriate altitudes and angles to show the nature of the surrounding terrain in the vicinity of the proposed transmitter site. The photographs must be marked so as to show compass directions. Photographs taken in eight different directions from an elevated position on the ground will be acceptable in lieu of the aerial photographs if the area can be clearly shown. Give date photographs were taken. See Exhibit No. E-1		

NOTE: The information requested below in paragraphs 10, 11, 12, 13 and 14, need only be completed by those stations proposing to use transmitters with power ratings in excess of 10 watts.

10. Proposed operation

Transmitter power output in kilowatts

14.65 kw

Power dissipation within transmission line in kilowatts

1.32 kw

Antenna input power in kilowatts

13.33 kw

Effective radiated power in kilowatts

36 kw

11. Modulation monitor

Make

No change

Type No.

12. Frequency monitor

Make

No change

Type No.

13a. On the topographic map required by Paragraph 8, show drawn thereon the following data:

(1) Transmitter location and call letters of all known radio stations (except amateur) and the location of established commercial and government receiving stations within 2 miles of the proposed transmitter location;
See Exhibit Nos. E-1 and E-2

(2) Character of the area within 2 miles of proposed transmitter location, suitably designated as to residential, business, industrial, and rural nature;

See Exhibit No. E-1
(3) At least eight radials each extending to a distance of ten or more miles from the proposed transmitter location.

See Exhibit No. E-3

b. Attach as Exhibit No. profile graphs for the radials in.

(a) (3) above. Each graph shall show the elevation of the antenna radiation center. Identify each graph by its bearing from the proposed transmitter location. Direction true north shall be zero azimuth and angles measured clockwise. Show source of topographical data on each. Show scale of miles.

See Exhibit No. E-1

14. From the profile graphs in 13(b), for the eight mile distance between two and ten miles from the proposed transmitter location, and in accordance with the procedure prescribed in the FM Technical Standards, supply the following tabulation of data: (If proposed location is adjacent to the sea coast or the Great Lakes omit from this tabulation all radials which lie over water substantially the entire distance between two miles from the proposed transmitter location and the predicted 50 microvolt per meter contour.)

Predicted 3.16

Radial bearing (degrees true)	Average elevation of radial (2-10 mi.) in feet above mean sea level	Height in feet of antenna radiation center above average elevation of radial (2-10 mi.)	Free-space field intensity in millivolts per meter at one mile	Predicted distance in miles to the 1 mv/m contour	Predicted distance in miles to the 50 uv/m contour
0	352	536	20 mi.	32.5	77
45	369	519	19.5	32	76
90	459	429	18	29	75
135	513	375	17	27.5	74
180	614	274	15	24	71
225	544	344	16	27	73
270	558	330	16	26	72
315	447	441	18	30	76

Antenna height above average terrain

404 feet

(Average of above listed heights)

See Exhibit No. E-4

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Date March 21, 1974

Signature Cyril M. Braum Cyril M. Braum
(check appropriate box below)

- ☐ Technical Director ☐ Chief Operator
☒ Registered Professional Engineer
☒ Consulting Engineer

ENGINEERING STATEMENT

The proposed location for WXXI-FM is at the site of the FM permittee's educational television station WXXI, Channel 21, and the same tower would be used. This tower also supports the antennas of other stations, as shown by Exhibit No. E-2. Adjacent to this site is the tower of television station WOKR, Channel 13, whose coordinates are $43^{\circ} 08' 07''$, $77^{\circ} 35' 03''$. The area surrounding this site is generally residential.

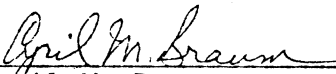
The terrain information used in this application is the same as that previously submitted to the Commission by WXXI, as in television applications BMPET-398 and BMPET-406 filed in 1966. Accordingly, photographs and terrain profiles are not submitted herewith. Since no change is proposed in the height of the antenna structure, Section V-G of Form 340 concerning aeronautical matters is unnecessary and has been omitted.

Station WCNV-FM, Channel 217, 91.3 MHz, 18.6 kw, Syracuse, New York, is 80.0 miles away in the direction 100° true. The WXXI-FM proposed antenna height above average terrain at 100° , interpolated linearly between the 90° and 135° radials, is 417'. The WCNV-FM antenna height above average terrain at 280° , also interpolated linearly, is 876'. Based on the procedure specified by Section 1.573 of the Commission's Rules, no objectionable interference will result to either station.

Station WIRQ, Channel 215, 90.9 MHz, 10 watts, Rochester, is 5.63 miles away in the direction 352° true. The WXXI-FM proposed

antenna height above average terrain at 352° is 520', interpolated linearly. Again, no objectionable interference is predicted. (Because of the extremely short distance to the 100 mv/m contour of WIRQ, it was determined by the free-space field.)

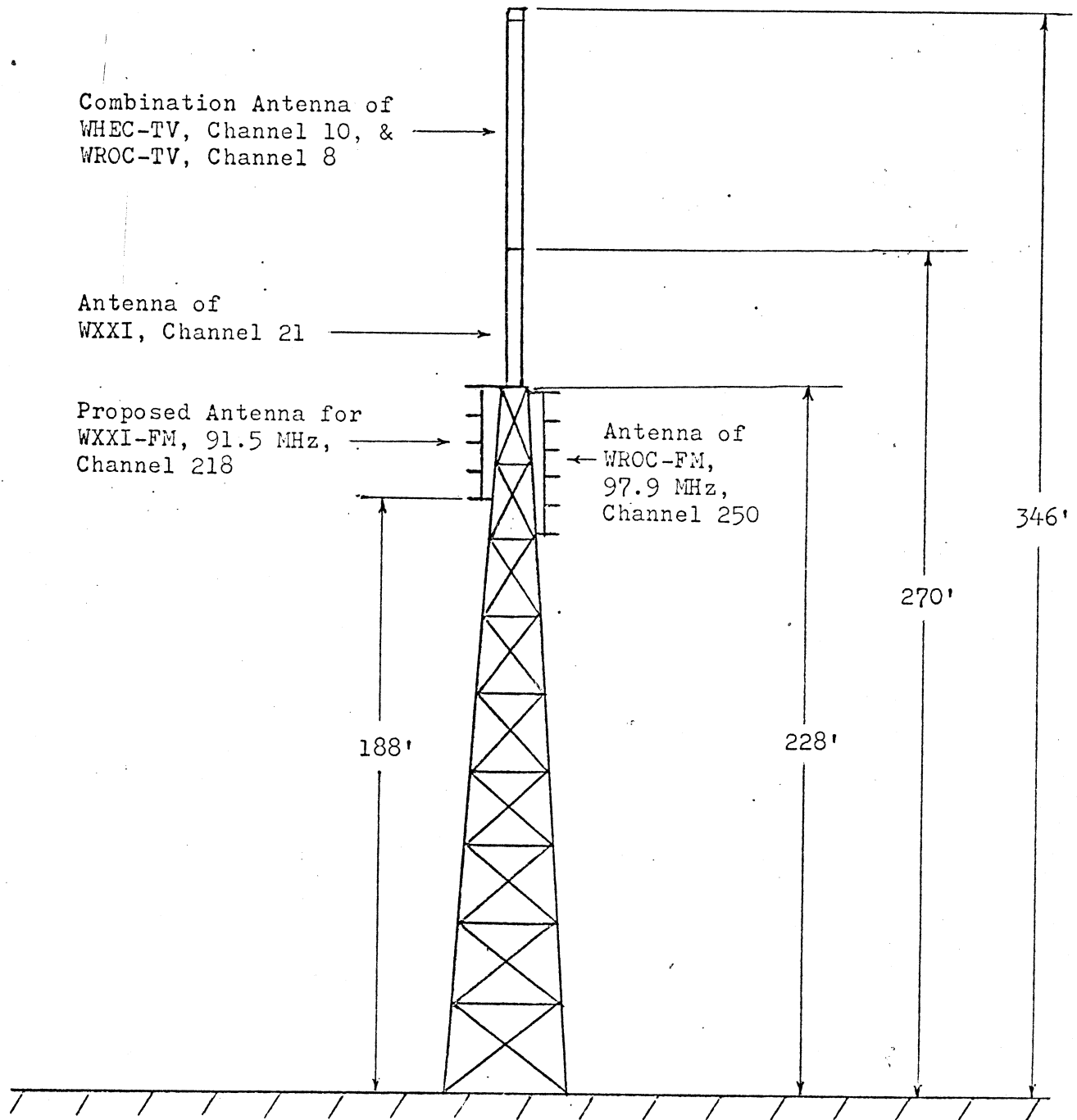
Channel 219, 91.7 MHz, is assigned but unused at St. Catherines, Ontario, 84 miles at 272° true from the proposed site of WXXI-FM. The Canadian assignment has been made on the basis of 50 kw effective radiated power with an antenna height of 500' above average terrain (or equivalent) in the direction of Rochester. The WXXI-FM proposed antenna height above average terrain at 272° true is 335'. The WXXI-FM proposal of 36 kw at 335' in that direction is, therefore, considerably weaker than the Canadian assignment. Also, since St. Catherines is only 10 miles from the U. S. border in the direction of Rochester, any interference that might occur would not be in Canada but, instead, would be well within the United States. Further, while Section 1.573 does not apply in this case, should this procedure be followed there would be no interference within the 1 mv/m contours of either station. Accordingly, it would appear that Canadian approval of the WXXI-FM proposal can be expected.


Cyril M. Braum
Registered Professional Engineer
D.C. Regis. No. 1185, Md. No. 4420

March 21, 1974

PROPOSED ANTENNA FOR WXXI-FM

ROCHESTER, NEW YORK



Ground elevation:	680	feet	above	mean	sea	level
Overall structure height:	1026	"	"	"	"	"
Antenna radiation center:	888	"	"	"	"	"

This is a detailed black and white map of the Rochester, New York area. The map shows a grid of streets, including major thoroughfares like the New York State Thruway (I-190) and various local roads. Key landmarks and locations are labeled, including Braddock Point Lighthouse, Manitou Beach, Braddock Heights, Grand View Heights, Crescent Beach, Rochester Harbor Lighthouse, Forest Lawn, Oklahoma Beach, Point Pleasant, Glenhaven Skyport, Radio towers, and several cemeteries. The map also shows the boundaries of Monroe County and the city of Rochester. A compass rose is visible in the upper right corner, indicating cardinal directions. The map is oriented with North at the top.

CONTOUR INTERVAL 100 FEET
WITH SUPPLEMENTARY CONTOURS AT 50 FOOT INTERVALS