

FEDERAL COMMUNICATIONS COMMISSION

CLASS OF STATION FM

VFA

The following application is submitted for action by the Chief, Broadcast Bureau.

ST	FILE NUMBER	CALL	APPLICANT AND LOCATION	NATURE OF APPLICATION
IN	BPED -900215MC N/M	NEW 91.1MHZ	SOUTHWEST ALLEN COUNTY SCHOOLS LAFAYETTE TOWNSHIP IN	CP FOR A NEW FM EDUC STATION: ON FREQ 91.1 MHZ, ERP: 1.0 KW H&V; HAAT: 65 METERS H&V; 40 58 58 85 17 42 PETITION FOR RECONSIDERATION FILED 3/5/91.

LICENSE EXPIRATION DATE _____

CHIEF, LICENSE DIVISION

RECOMMENDATION: GRANT() CONSTRUCTION DATES, START _____ END _____
CONTESTED () UNCONTESTED ()

APPROVED _____

FOR CHIEF, BROADCAST BUREAU

F.C.C.-WASHINGTON, D.C.

FCC 340

Approved by OMB
3060-0034
Expires 4/30/92

APPLICATION FOR CONSTRUCTION PERMIT FOR
NONCOMMERCIAL EDUCATIONAL BROADCAST STATION
(Carefully read instructions before filing form) Return only form to FCC

See Page 23 for information
regarding public burden estimate

Code 30 PN
3-26-90

FCC MAIL ROOM
RECEIVED BY
FEB 15 10 45 AM '90

For Commission Use Only
File No. BPE D - 900215MC

Section I - GENERAL INFORMATION

1. Name of Applicant
SOUTHWEST ALLEN COUNTY SCHOOLS

Street Address or P.O. Box
4510 HOMESTEAD ROAD

City FORT WAYNE	State IN	ZIP Code 46804
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Telephone No. (Include Area Code)
(219) 436-6000

Send notices and communications to the following person at the address below:

Name
**MR. ROBERT S. WARNER
HOMESTEAD HIGH SCHOOL**

Street Address or P.O. Box
4310 HOMESTEAD ROAD

City FORT WAYNE	State IN	ZIP Code 46804
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Telephone No. (Include Area Code)
(219) 436-6010

2. This application is for: AM FM TV

(a) Channel No. or Frequency
91.1 MHZ, CHANNEL 216A

(b) Principal Community	City	State
	LAFAYETTE TOWNSHIP	IN

(c) Check one of the following boxes:

- Application for NEW station
- MAJOR change in licensed facilities; call sign: _____
- MINOR change in licensed facilities; call sign: _____
- MAJOR modification of construction permit; call sign: _____
- File No. of construction permit: _____
- MINOR modification of construction permit; call sign: _____
- File No. of construction permit: _____
- AMENDMENT to pending application; application file number: _____

RECEIVED
FEB 15 1990
FM EXAMINERS
AUGUST SERVICES
FEB 15 2 20 PM '90

NOTE: It is not necessary to use this form to amend a previously filed application. Should you do so, however, please submit only Section I and those other portions of the form that contain the amended information.

3. Is this application mutually exclusive with a renewal application? Yes No

If Yes, state:	Call letters	Community of License	
	---	City N/A	State N/A

91.1MHZ
BPE D - 900215MC NEW
LAFAYETTE TOWNSHIP IN
SOUTHWEST ALLEN COUNTY SCHOOLS

dated 3-26-90

Section II - LEGAL QUALIFICATIONS

Name of Applicant

SOUTHWEST ALLEN COUNTY SCHOOLS

1. Applicant is: *(check one box below)*

- (a) governmental or public educational agency, board or institution
- (b) private nonprofit educational institution
- (c) Other *(specify)*

2. For applicants 1(c) only, describe in an Exhibit the nature and educational purposes of the applicant.

Exhibit No.
N/A

3. For applicants 1(c) applying for a new noncommercial educational television station only, describe in an Exhibit how the applicant's officers, directors and members of its governing board are broadly representative of the educational, cultural and civic segments of the principal community to be served.

Exhibit No.
N/A

4. Describe in an Exhibit how the proposed station will be used, in accordance with 47 C.F.R. Section 73.503 or Section 73.621, for the advancement of an educational program.

Exhibit No.
1

5. Is there any provision contained in any by-laws, articles of incorporation, partnership agreement, charter, statute or other document which would restrict the applicant in advancing an educational program or complying with any Commission rule, policy or provision of the Communications Act of 1934, as amended?

Yes No

If Yes, provide particulars in an Exhibit.

Exhibit No.
N/A

CITIZENSHIP AND OTHER STATUTORY REQUIREMENTS

6. (a) Is the applicant in violation of the provisions of Section 310 of the Communications Act of 1934, as amended, relating to interests of aliens and foreign governments? (See Instruction B to Section II.)

Yes No

(b) Will any funds, credits or other financial assistance for the construction, purchase or operation of the station(s) be provided by aliens, foreign entities, domestic entities controlled by aliens, or their agents?

Yes No

If the answer to (b) above is Yes, attach an Exhibit giving full disclosure concerning this assistance.

Exhibit No.
N/A

7. (a) Has an adverse finding been made or an adverse final action taken by any court or administrative body as to the applicant or any party to this application in a civil or criminal proceeding brought under the provisions of any law related to the following:

Any felony; broadcast related antitrust or unfair competition; criminal fraud or fraud before another governmental unit; or discrimination?

Yes No

(b) Is there now pending in any court or administrative body any proceeding involving any of the matters referred to in (a) above?

Yes No

If the answer to (a) and/or (b) above is Yes, attach an Exhibit giving full disclosure concerning persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), a statement of the facts upon which the proceeding is or was based or the nature of the offense alleged or committed, and a description of the current status or disposition of the matter.

Exhibit No.
N/A

PARTIES TO APPLICATION

8. Complete the following Table with respect to all parties to this application:

(NOTE: If the applicant considers that to furnish complete information would pose an unreasonable burden, it may request that the Commission waive the strict terms of this requirement with appropriate justification.)

INSTRUCTIONS: If applicant is a corporation or an unincorporated association with 50 or fewer stockholders, stock subscribers, holders of membership certificate or other ownership interest, fill out all columns, giving the information requested as to all officers, directors and members of governing board. In addition, give the information as to all persons or entities who are the beneficial or record owners of or have the right to vote capital stock, membership or ownership interests or are subscribers to such interests. If the applicant has more than 50 stockholders, stock subscribers or holders of membership certificates or other ownership interests, furnish the information as to officers, directors, members of governing board, and all persons or entities who are the beneficial or record owners of or have the right to vote 1% or more of the capital stock, membership or ownership interests. If applicant is a governmental or public educational agency, board or institution, fill out columns (a), (b), and (c) as to all members of the governing board and chief executive officers.

Name and Residence Address(es)	Office Held	Director or Member of Governing Board		% of: Ownership (O) or Voting Stock (VS) or Membership (M)
		YES	NO	
(a)	(b)	(c)		(d)
HENRY FISCHER 4618 GRAY OWL PLACE FORT WAYNE, IN 46804	PRESIDENT	X		20% (M)
ROGER MYERS 11814 CLOVERDALE ROAD FORT WAYNE, IN 46809	VICE PRESIDENT	X		20% (M)
JOHN POPP 12316 ABOITE CENTER ROAD FORT WAYNE, IN 46804	SECRETARY	X		20% (M)
DR. ALAN GILBERT 13701 SQUAW CREEK DRIVE FORT WAYNE, IN 46804		X		20% (M)
BECKY WOLFORD 12611 FEIGHTNER ROAD ROANOKE, IN 46783		X		20% (M)

Section II - LEGAL QUALIFICATIONS (Page 3)

9. Does the applicant or any party to this application have, or have they had, any interest in:

(a) a broadcast station, or pending broadcast station application before the Commission?

Yes No

(b) a broadcast application which has been dismissed with prejudice by the Commission?

Yes No

(c) a broadcast application which has been denied by the Commission?

Yes No

(d) a broadcast station, the license of which has been revoked?

Yes No

(e) a broadcast application in any pending or concluded Commission proceeding which left unresolved character issues against the applicant?

Yes No

If the answer to any of the questions in (a)-(e) above is Yes, state in an Exhibit the following information:

Exhibit No.
N/A

- (1) Name of party having interest;
- (2) Nature of interest or connection, giving dates;
- (3) Call letters of stations or file number of application or docket; and
- (4) Location.

Southwest Allen County Schools
FCC Form 340
February, 1990

Exhibit 1

Advancement of An Educational Program

The station will broadcast music, news, weather, sports and information related to the Southwest Allen County Public School System. The station will also be used to broadcast programming directly related to courses taught at the public schools in the Allen County area. The proposed station will additionally function as an outreach program from the Southwest Allen County Schools to the citizens of the communities which they serve.

SECTION III - FINANCIAL QUALIFICATIONS

Note: If this application is for a change in an operating facility, DO NOT fill out this Section.

1. Is this application contingent upon receipt of a grant from the National Telecommunications and Information Administration? Yes No
2. Is this application contingent upon receipt of a grant from a charitable organization, the approval of the budget of a school or university, or an appropriation from a state, county, municipality or other political subdivision? Yes No

NOTE: If either Questions 1 or 2 is answered "Yes," your application cannot be granted until all of the necessary funds are committed or appropriated. In the case of grants from the National Telecommunications and Information Administration, no further action on your part is required. If you rely on funds from a source specified in Question 2, you must advise the F.C.C. when the funds are committed or appropriated. This should be accomplished by letter amendment to your application, in triplicate, signed in the same manner as the original application, and clearly identifying the application to be amended.

3. The applicant certifies, except as noted above, that sufficient net liquid assets are on hand or that sufficient funds are available from committed sources to construct and operate the requested facilities for three months without additional funds. Yes No

SECTION IV - PROGRAM SERVICE STATEMENT

Attach as an Exhibit, a brief description, in narrative form, of the planned programming service relating to the issues of public concern facing the proposed service area.

Exhibit No.
2

NOTE: No program service statement need be filed where the proposed station's programming would be wholly "instructional" as that type of programming is defined in the instructions to this Section.

Southwest Allen County Schools
FCC Form 340
February, 1990

Exhibit 2

Planned Programming Service

The station will offer programming time for Public Service Announcements pertaining to the public schools and the communities they serve. We will also allow ample time for residents of the area and members of the school community to address issues of public concern. The station will focus on issues and problems specifically related to education but will also explore areas of public concern not presently covered by other media.

Section V-B - FM BROADCAST ENGINEERING DATA

FOR COMMISSION USE ONLY

File No. _____

ASB Referral Date _____

Referred by _____

Name of Applicant

SOUTHWEST ALLEN COUNTY SCHOOLS

Call letters (if issued)

NOT ISSUED

Is this application being filed in response to a window? Yes No

If Yes, specify closing date: **NOT APPLICABLE**

Purpose of Application: (check appropriate boxes)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Construct a new (main) facility | <input type="checkbox"/> Construct a new auxiliary facility |
| <input type="checkbox"/> Modify existing construction permit for main facility | <input type="checkbox"/> Modify existing construction permit for auxiliary facility |
| <input type="checkbox"/> Modify licensed main facility | <input type="checkbox"/> Modify licensed auxiliary facility |

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

- | | |
|---|--|
| <input type="checkbox"/> Antenna supporting-structure height | <input type="checkbox"/> Effective radiated power |
| <input type="checkbox"/> Antenna height above average terrain | <input type="checkbox"/> Frequency |
| <input type="checkbox"/> Antenna location | <input type="checkbox"/> Class |
| <input type="checkbox"/> Main Studio location | <input type="checkbox"/> Other (Summarize briefly) |

File Number(s) N/A

1. Allocation:

Channel No.	Principal community to be served:		
	City	County	State
216	LAFAYETTE TOWNSHIP	ALLEN	IN

- Class (check only one box below)
- A B1 B C3
- C2 C1 C D

2. Exact location of antenna.

(a) Specify address, city, county and state. If no address, specify distance and bearing relative to the nearest town or landmark.
100 METERS NORTH OF KRESS ROAD AND 470 METERS NORTHWEST OF THE JUNCTION OF KRESS ROAD AND HUNTINGTON ROAD IN LAFAYETTE TOWNSHIP, ALLEN COUNTY, INDIANA.

(b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude	40°	58'	58"	Longitude	85°	17'	42"
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3. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? Yes No

If Yes, give call letter(s) or file number(s) or both.

NOT APPLICABLE

If proposal involves a change in height of an existing structure, specify existing height above ground level including antenna, all other appurtenances, and lighting, if any.

NOT APPLICABLE

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates? Yes No
 If Yes, list old coordinates. NOT APPLICABLE

Latitude ° ' "	Longitude ° ' "
---	---

5. Has the FAA been notified of the proposed construction? Yes No
 If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. N/A

Date FEBRUARY 9, 1990 Office where filed GREAT LAKES REGIONAL OFFICE

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway. **NONE**

	Distance (km)	Bearing (degrees True)
(a) _____	_____	_____
(b) _____	_____	_____

7. (a) Elevation: *(to the nearest meter)*

- (1) of site above mean sea level; 250 meters
- (2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and 60 meters
- (3) of the top of supporting structure above mean sea level [(aX1) + (aX2)] 310 meters

(b) Height of radiation center: *(to the nearest meter)* H = Horizontal; V = Vertical

- (1) above ground 57 meters (H)
- 57 meters (V)
- (2) above mean sea level [(aX1) + (bX1)] 307 meters (H)
- 307 meters (V)
- (3) above average terrain 65 meters (H)
- 65 meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(bX3). If mounted on an AM directional-array element, specify heights and orientations of all array towers, as well as location of FM radiator.

Exhibit No. FIGURE 1

9. Effective Radiated Power:

(a) ERP in the horizontal plane (MAXIMUM ON ANY BEARING) 1.0 kw (H*) 1.0 kw (V*)

(b) Is beam tilt proposed? Yes No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

Exhibit No. N/A

N/A kw (H*) N/A kw (V*)

*Polarization

10. Is a directional antenna proposed?

Yes No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including plot(s) and tabulations of horizontally and vertically polarized radiated components in terms of relative field.

Exhibit No.
ENG.

11. Will the main studio be located within the 70 dBu or 3.16 mV/m contour?

Yes No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125.

Exhibit No.
N/A

12. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast (except citizens band or amateur) radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference?

Yes No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. (See 47 C.F.R. Sections 73.315(b), 73.316(d) and 73.318.)

Exhibit No.
ENG.

13. 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 D for Section V. Further, the map must 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.
FIGURE 3

14. 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.
FIGURE 2

CHICAGO SECTIONAL AERONAUTICAL CHART

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

(b) the 1 mV/m predicted contour and, for noncommercial educational applicants applying on a commercial channel, the 3.16 mV/m contour; and

(c) the legal boundaries of the principal community to be served. **SEE FIGURE 2A, A PORTION OF THE INDIANA MCD U.S. CENSUS MAP.**

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

Area 457.7 sq. km. Population 49,737 PERSONS.

16. Attach as an Exhibit a map (Sectional Aeronautical charts where obtainable) showing the present and proposed 1 mV/m (60 dbu) contours.

Exhibit No.
FIGURE 2

Enter the following from Exhibit above: Gain Area 457.7 sq. ~~KM~~ KM. Loss Area ----- sq. mi.

Percent change (gain area plus loss area as percentage of present area) 100 %.

If 50% or more this constitutes a major change. Indicate in question 2(c), Section I, accordingly.

Exhibit No.
N/A

17. 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:

(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. See 47 C.F.R. Section 73.1675. (File No.: N/A)

18. 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: DATAWORLD TERP COMPUTER PROGRAM)

Other (briefly summarize)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances to the 1 mV/m contour (kilometers)	RADIATED POWER (DBK)
0	54.3	7.4	-10.5
45	77.4	12.9	-3.8
90	69.9	15.2	0.0
135	63.2	14.5	0.0
180	63.2	14.5	0.0
225	72.2	13.6	-2.3
270	61.7	8.6	-9.0
315	56.6	5.9	-15.0

Allocation Studies

(See Subpart C of 47 C.F.R. Part 73)

19. Is the proposed antenna location within 320 kilometers (199 miles) of the common border between the United States and Mexico? Yes No

If Yes, attach as an Exhibit a showing of compliance with all provisions of the Agreement between the United States of America and the United Mexican States concerning Frequency Modulation Broadcasting in the 88 to 108 MHz band.

Exhibit No.
N/A

20. Is the proposed antenna location within 320 kilometers of the common border between the United States and Canada?

Yes No

If Yes, attach as an Exhibit a showing of compliance with all provisions of the Working Agreement for Allocation of FM Broadcasting Stations on Channels 201-300 under The Canada-United States FM Agreement of 1947.

Exhibit No.
N/A

21. If the proposed operation is for a channel in the range from channel 201 through 220 (88.1 through 91.9 MHz), or if this proposed operation is for a class D station in the range from Channel 221 through 300 (92.1 through 107.9 MHz), attach as an Exhibit a complete allocation study to establish the lack of prohibited overlap of contours with other U.S. stations. The allocation study should include the following:

Exhibit No.
ENG.

- (a) The normally protected interference-free and the interfering contours for the proposed operation along all azimuths.
- (b) Complete normally protected interference-free contours of all other proposals and existing stations to which objectionable interference would be caused.
- (c) Interfering contours over pertinent arcs of all other proposals and existing stations from which objectionable interference would be received.
- (d) Normally protected and interfering contours over pertinent arcs, of all other proposals and existing stations, which require study to show the absence of objectionable interference.
- (e) Plot of the transmitter location of each station or proposal requiring investigation, with identifying call letters, file numbers and operating or proposed facilities.
- (f) When necessary to show more detail, an additional allocation study will be attached utilizing a map with a larger scale to clearly show interference or absence thereof.
- (g) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire Exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (h) The name of the map(s) used in the Exhibit(s).

22. With regard to any stations separated by 53 or 54 channels (10.6 or 10.8 MHz) attach as an Exhibit information required in 1/ *(separation requirements involving intermediate frequency (i.f.) interference)*.

Exhibit No.
ENG.

23.(a) Is the proposed operation on Channel 218, 219, or 220?

Yes No

(b) If the answer to (a) is yes, does the proposed operation satisfy the requirements of 47 C.F.R. Section 73.207?

Yes No/N/A

(c) If the answer to (b) is yes, attach as an Exhibit information required in 1/ regarding separation requirements with respect to stations on Channels 221, 222 and 223.

Exhibit No.
N/A

(d) If the answer to (b) is no, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.

Exhibit No.
N/A

1/ A showing that the proposed operation meets the minimum distance separation requirements. Include existing stations, proposed stations, and cities which appear in the Table of Allotments; the location and geographic coordinates of each antenna, proposed antenna or reference point, as appropriate; and distance to each from proposed antenna location.

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 6)

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.
N/A

- (1) Protected and interfering contours, in all directions (360°), for the proposed operation.
- (2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as transmitter location.
- (3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
- (4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (5) The official title(s) of the map(s) used in the exhibits(s).

24. Is the proposed station for a channel in the range from Channel 201 to 220 (88.1 through 91.9 MHz) and the proposed antenna location within the distance to an affected TV Channel 6 station(s) as defined in 47 C.F.R. Section 73.525?

Yes No

If Yes, attach as an Exhibit either a TV Channel 6 agreement letter dated and signed by both parties or a map and an engineering statement with calculations demonstrating compliance with 47 C.F.R. Section 73.525 for each affected TV Channel 6 station.

Exhibit No.
ENG.

25. Is the proposed station for a channel in the range from Channel 221 to 300 (92.1-107.9 MHz)?

Yes No

If Yes, attach as an Exhibit information required in 1/. (Except for Class D (secondary) proposals.)

Exhibit No.
N/A

26. 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

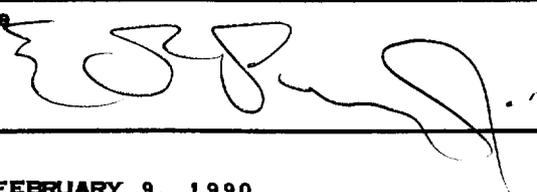
If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

Exhibit No.
N/A

If No, explain briefly why not. **PROPOSED TOWER WILL NOT BE LIGHTED OR PAINTED. NON-IONIZING RADIATION MEETS GUIDELINES IN OST BULLETIN NUMBER 65.**

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) EDWARD F. PERRY, JR.	Relationship to Applicant (e.g., Consulting Engineer) TECHNICAL CONSULTANT
Signature 	Address (Include ZIP Code) POST OFFICE BOX AA DUXBURY, MASSACHUSETTS 02331
Date FEBRUARY 9, 1990	Telephone No. (Include Area Code) (617) 585-9200



ENGINEERING EXHIBIT

1. INTRODUCTION

Educational FM Associates prepared this Engineering Exhibit to support an application by the Southwest Allen County Schools requesting a Construction Permit for a new non-commercial FM broadcast station to operate on FM Channel 216A at Lafayette Township, Indiana. As illustrated herein, the proposed facilities are in full compliance with all applicable FCC allocation rules and policies and material contained in this Exhibit is fully responsive to Section V-B of FCC Form 340. For the sake of clarity, figures and tables contained herein are referenced as such rather than as separate exhibits.

2. FACILITIES REQUESTED

The proposed station will operate on FM Channel 216A, 91.1 MHz, using a directional antenna to protect against interference from co-channel station WGCS at Goshen, Indiana. The station will operate with a maximum effective radiated power of 1.0 kilowatt for both horizontal and vertical polarization from an antenna radiation center located 65 meters above average terrain.

3. *SITE INFORMATION*

The proposed FM antenna will be side mounted on a 60 meter guyed tower to be located 100 meters North of Kress Road and 470 meters Northwest of the junction of Kress Road and Huntington Road, Lafayette Township in Allen County, Indiana. Figure 3 shows the proposed site on a portion of the Zanesville, Indiana 7.5 Minute USGS Quadrangle Map with original margin markings.

4. *DETERMINATION OF ANTENNA HEIGHT ABOVE AVERAGE TERRAIN*

Height of the terrain surrounding the proposed transmitter site was determined through the use of the Dataworld TERP terrain elevation retrieval computer program. This program uses the NGDC 30 second database which has been approved by the Commission for HAAT calculations in FM applications. Ground elevation at the base of the proposed antenna support structure was read directly from the topographic map contained herein as Figure 3.

5. *ALLOCATION STUDY*

Distance between facilities was calculated using a computer program which duplicates the calculations specified in Section 73.208(b) of the Commission's Rules. Distance to contours was calculated using the Commission's F(50,50) and F(50-10) FM curves as appropriate. Contours for the proposed facilities with respect to other FM stations were based on the effective radiated power given in Table 3 at the HAAT specified herein. Spacing to

commercial channels was based on the requirements of Section 73.207 of the Rules. Table 1 illustrates the distance to all pertinent facilities and demonstrates complete compliance with all allocation rules.

Table 1
Detailed Allocation Study

<u>Channel</u>	<u>Station</u>	<u>Location</u>	<u>Distance in Kilometers</u>	
			<u>Actual</u>	<u>Required</u>
215B	App.	Galesburg, MI	146.5	115
216A	WEDN	Indianapolis, IN	145.1	115
216A	WPCJ	Pittsford, MI	121.5	115
216B1	WGCS	Goshen, IN	78.4	78.2
218A	WJHS	Columbia City, IN	26.5	25.7
269A	WEZV	Fort Wayne, IN	21.5	10

Note: Required separations shown are based on contours produced by the proposed station at the power specified in Table 3 and at the HAAT given in Paragraph 18, Section V-B, FCC Form 340 and on the following technical assumptions for the other stations involved.

For WEDN, WPCJ, WEZV, and the Channel 215B Galesburg, MI application: Class A to A or Class A to B spacing per Section 73.207. This represents "worst case" assumptions.

For WJHS: +4.2 dbk erp at a "worst case" HAAT of 79 meters. WJHS 60 dbu = 20.9 km. Proposed 80 dbu = 4.8 km. maximum on any bearing.

For WGCS: +8.7 dbk erp at 18 m. HAAT on the direct bearing toward the proposed site. 40 dbu = 72.4 km. Please refer to Table 2 for full information regarding the location of the proposed 60 dbu contour on bearings toward WGCS.

Table 2
Location of Proposed 60 dbu Contour

<u>Bearing(T)</u>	<u>Power in dbk</u>	<u>HAAT (m.)</u>	<u>60 dbu (km.)</u>
270	-9.0	61.7	8.6
280	-10.5	61.0	7.9

Table 2 (Continued)
Location of Proposed 60 dbu Contour

<u>Bearing(T)</u>	<u>Power in dbk</u>	<u>HAAT (m.)</u>	<u>60 dbu (km.)</u>
290	-12.0	60.0	7.2
300	-13.5	59.1	6.4
310	-15.0	58.5	6.0
315	-15.0	57.9	5.9
320	-15.0	57.3	5.9
325	-15.0	56.6	5.9
330	-15.0	56.7	5.9
340	-13.5	56.1	6.3
350	-12.0	55.2	6.9
000	-10.5	54.3	7.4
010	-9.0	59.4	8.4
020	-7.5	64.6	10.0

Note: The Dataworld TERP terrain program was used to determine HAAT for the standard eight bearings and the direct 325 degree true bearing toward WGCS.

As demonstrated in Table 1, this proposal complies with the requirements of Section 73.509 of the Commission's Rules.

6. TELEVISION CHANNEL 6 INTERFERENCE STUDY

Channel 6 television station WRTV-TV in Indianapolis, Indiana is the only television station which requires consideration under Section 73.525 of the Commission's Rules. WRTV-TV is located 142.7 kilometers from the proposed FM site and operates with an erp of +20.0 dbk at a "worst case HAAT of 564 meters producing a 47 dbu Grade B contour which extends a maximum of 126 kilometers on any bearing. Figure 2 in Section 73.525 of the Rules prescribes an undesired-to-desired FM-to-Channel 6 field ratio of 28.0 db to avoid interference at the Grade B contour of a Channel 6 television station from an FM station

operating on Channel 216. The basic interference contour in question here is therefore, the FM 75.0 dbu contour. However, to account for receiving antenna directivity, the Rules provide for a 6 db adjustment in the FM interference contour across an arc 110 degrees either side of the direct line between the FM site and that of the affected Channel 6 television station. The adjusted Channel 6 interference signal is therefore the 81.0 dbu contour. Based on a maximum mixed polarity power ($P = H + V/40$) of 1.025 kilowatts at a "worst case" HAAT of 72.2 meters, the proposed 81.0 dbu contour extends a maximum of 4.7 kilometers on any bearing. This results in a safety factor of more than ten kilometers with respect to WRTV-TV separating contours which, if they were to overlap, would result in theoretical Channel 6 interference. Since more than adequate Channel 6 protection is demonstrated here mathematically, it is unnecessary to submit maps showing the actual location of contours.

7. DIRECTIONAL ANTENNA INFORMATION

The directional antenna proposed will be a three-bay circularly polarized unit manufactured by Shively Laboratories, Inc. The directional antenna pattern proposed here is similar to one already manufactured by Shively for another station. Table 3 shows the proposed field and power for every 10 degrees of horizontal azimuth for both horizontal and vertical polarization. Figures 4 and 5 illustrate the directional field and power

patterns proposed. Figure 6 is a plot of the vertical radiation characteristics of the proposed antenna. The patterns shown comply with the provisions of the Commission's Rules in that the maximum-to-minimum power ratio of the antenna does not exceed 15 db nor does the proposed power change by more than 2.0 db across any ten degrees of horizontal azimuth. The proposed antenna will be custom fabricated for the applicant by the manufacturer. As a result, all of the electrical specifications such as maximum and rms gain for both horizontal and vertical polarization are not currently available. However, pursuant to accepted practice, these electrical parameters will be determined by the manufacturer prior to the time the antenna is actually installed. All required technical information will be submitted as part of an application for a new station license on FCC Form 302.

8. COMPLIANCE WITH FCC NON-IONIZING RADIATION GUIDELINES

The proposed antenna will be side-mounted on the tower at a point where the antenna radiation center will be 57 meters above ground level. The proposed station will operate with a maximum combined power for both horizontal and vertical polarization of 2.00 kilowatts. OST Bulletin Number 65, published in October, 1985 by the Federal Communications Commission Office of Science and Technology entitled "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation"

specifies several ways in which compliance with the FCC Guidelines can be tested. Here, Table 1 in Appendix B to the Bulletin indicates that the antenna radiation center for a 2.00 kilowatt FM station could be within approximately 13 meters from the nearest area where prolonged human exposure to radio frequency fields would be expected to occur. In the instant case it is clear that no violation of the guidelines would occur with respect to persons on the ground. A person climbing the tower might violate the guidelines. Hence access to the tower itself will be restricted and signs will be erected at the base of the tower warning of potentially dangerous radio frequency fields in the immediate area of the FM antenna. No maintenance will be performed on the tower or antenna system while r.f. power is being supplied to the antenna from the transmitter. The proposed facilities therefore comply with the Commission's Non-Ionizing Radiation Guidelines.

9. *AREA AND POPULATION*

The population and area to be served by the proposed 60 dbu contour was calculated using the corrected 1980 U.S. Census figures and assuming a uniform distribution of population within minor civil divisions. This study indicates that the proposed facilities will serve a 60 dbu population of 49,737 persons and a total of 457.7 square kilometers will be included within the proposed 60 dbu contour.

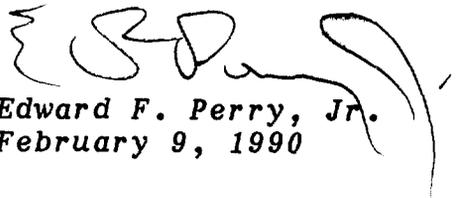
10. **BLANKETING INTERFERENCE**

Should blanketing interference problems occur, the applicant will abide by the Commission's Rules in resolving interference complaints and will accept full responsibility for eliminating any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application.

11. **CONCLUSION**

The facilities proposed herein by the Southwest Allen County Schools comply fully with all applicable FCC Rules and Allocation Policies.

Respectfully submitted,
EDUCATIONAL FM ASSOCIATES



Edward F. Perry, Jr.
February 9, 1990

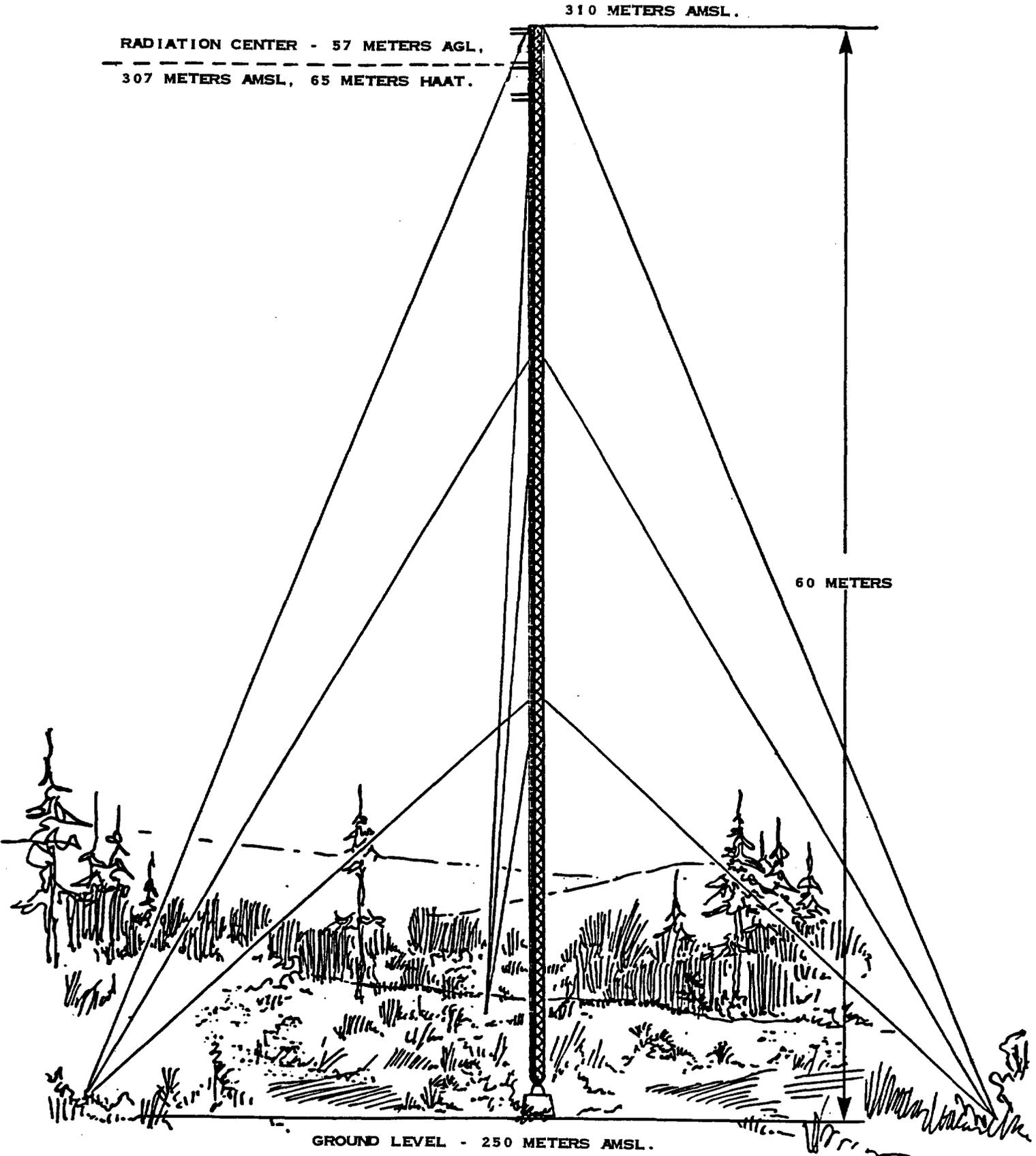


Figure 1. Sketch of Proposed Antenna System.

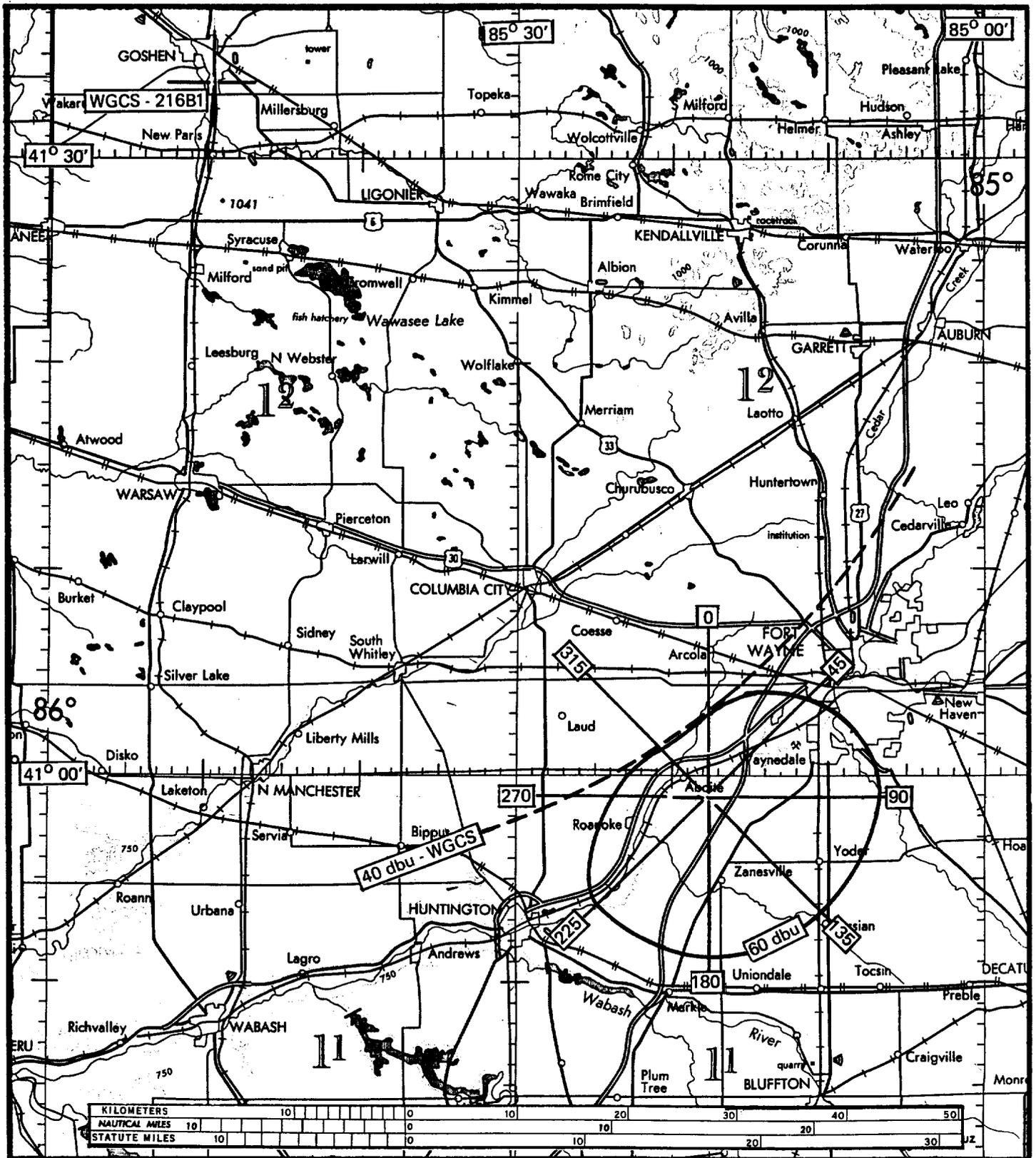


Figure 2. Detailed Allocation Study and 60 dbu Contour.

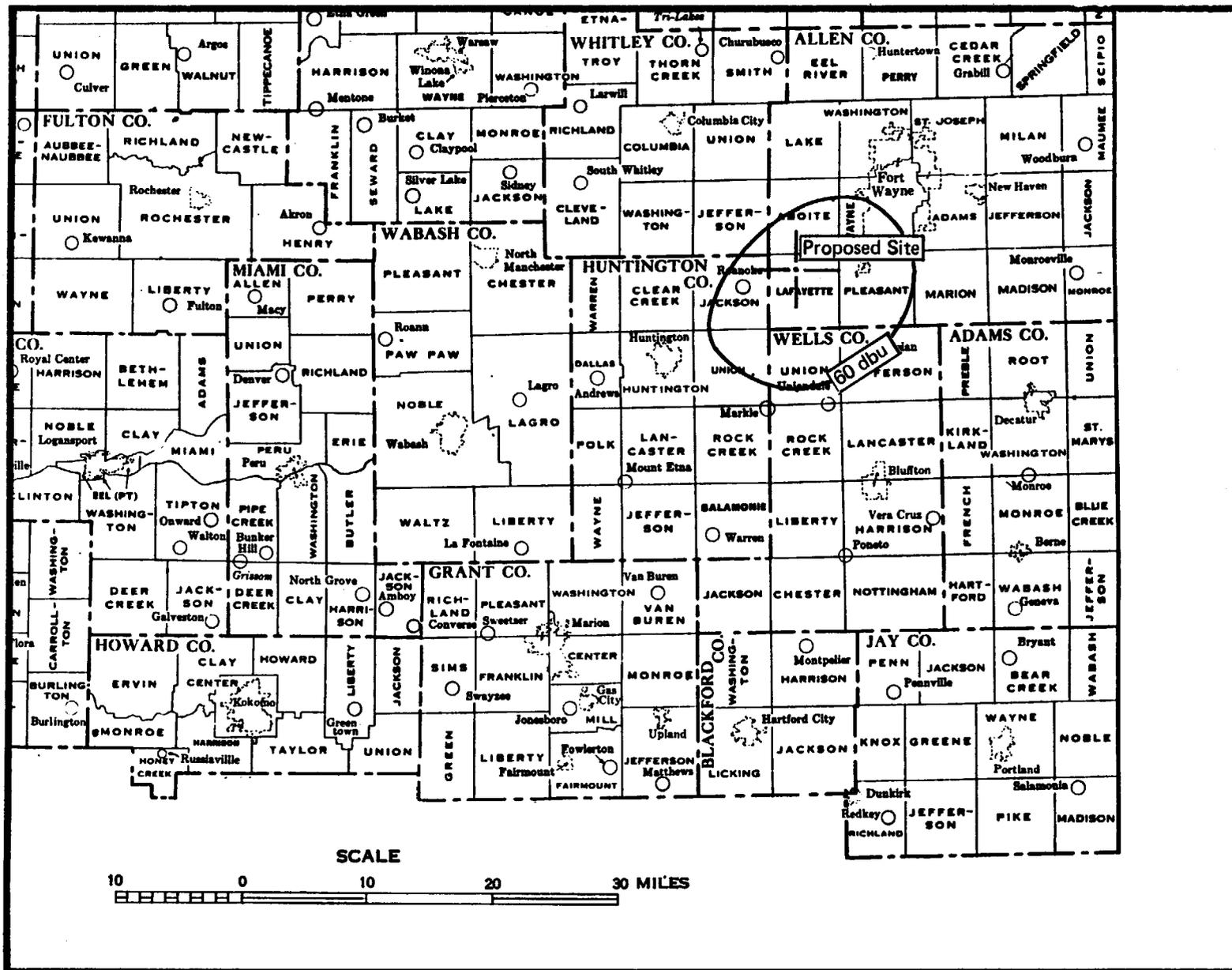


Figure 2A. Location of Proposed Site and 60 dbu Contour on a U.S. Census Map.