



OWL ENGINEERING & EMC TEST LABS, INC.

CONSULTING COMMUNICATIONS ENGINEERS
EMC TEST LABORATORIES

8899 Hastings St. N.E., Minneapolis, MN 55449
(612) 785-4115 • Fax (612) 785-4631
1-800-797-1338

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO**

CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT

February 2, 1999

Copyright, 1999, Owl Engineering, Inc. Copying of this material by persons, firms or corporations for the purpose of appropriating it for use in competing applications is expressly prohibited. Permission is granted to the FCC or other interested parties to copy all or portions of this material for study purposes only.

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
Spryex Communications, Inc.
Miamitown, Ohio
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT**

TABLE OF CONTENTS

	Engineering Statement
	FCC Form 340
Figure E-1	Antenna Vertical Sketch Plan
Figure E-2	Site Location Map
Figure E-3	Contour Coverage Map
Figure E-4	Interference Study
Figure E-5	FAA Form
Figure E-6	Allocation Study
Figure E-7	Television Channel 6 Allocation Study
	Affidavit of Garrett G. Lysiak

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT
PAGE 1**

ENGINEERING STATEMENT

This Engineering Exhibit, of which this statement is a part, was prepared in accordance with the Rules and Regulations of the Federal Communications Commission and pursuant to the provisions of Section V-B of FCC Form 340 on behalf of Spryex Communications, Inc. (hereafter "Spryex") in support of an application for authority to construct a noncommercial FM broadcast facility operating on channel 205 (88.9 MHz) at, Miamitown, Ohio. The effective radiated power proposed is 0.4 kW in the horizontal and vertical plane, and the antenna center of radiation is 65 meters above average terrain.

Notification of the proposed tower construction location has been made to the FAA. A Form 854 has been prepared and submitted for tower registration. Engineering specifications for the major aspects of the proposed tower are included in Figure E-2.

PROPOSED TRANSMITTER AND STUDIO LOCATIONS

Spryex proposes to operate from a site uniquely described by the geographic coordinates:

(NAD 27)
39° 15' 45" North Latitude
84° 42' 06" West Longitude

(NAD 83)
39° 15' 45.2" North Latitude
84° 41' 05.8" West Longitude

Figure E-2 is a portion of the Shandon, Ohio 7.5 Minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. No FM or TV transmitters are located within 60 meters of the proposed antenna location. Since there are no other FM or TV facilities located nearby there is not expected to be any receiver induced intermodulation interference or other objectionable interference.

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT
PAGE 2**

Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of Section 73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period.

The main studio for the station will be located in the Miamitown area, at a site yet to be determined.

COVERAGE CONTOURS

The three-to-sixteen-kilometer average terrain elevations were derived from the Defense Mapping Agency 3-second topography database. However, the site elevation was determined from the U.S.G.S. 7.5 Minute 7.5 Minute topography quadrangle map.

The effective antenna radiation center height for each of the eight standard 45-degree spaced radials was used in conjunction with the F(50,50) metric curves of Figure 1 of Section 73.333 of the Rules to determine the distance to the 60 dBu coverage contour. The contour drawn from the data is depicted on the map in Figure E-3.

POPULATION AND AREA DATA

Based on the 1990 U.S. Census of Population, the number of persons enclosed by the proposed 60-dBu-coverage contour are 61,696 persons. The population count was made through the employment of a computer program containing a database including the geographic coordinates of the centroids of population groupings. The land area within the proposed 60-dBu-coverage contour is 440 square kilometers. This area was determined by a calibrated polar planimeter.

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT
PAGE 3**

ALLOCATION CONSIDERATIONS

A review of allotments and assignments on channel 205, on the three immediately upper adjacent, the three immediately lower adjacent channels, and on channels 258 and 259 (53 and 54 channels removed from channel 205), included as Engineering Exhibit E-6, showed that the proposed site would be in accordance with section 73.509 and 73.207 of the FCC Rules. A detailed interference analysis is included for the stations that do not meet the mileage spacing requirements of Section 73.207. In addition to FM considerations, WRTV-TV Channel 6 would be affected by the proposed operations. Engineering Exhibit E-7 shows a detailed interference analysis demonstrating compliance with FCC Rules Section 73.525. This exhibit shows that the proposed 59 dbu (50,10) contour and the 47 dbu (50,50) contour of WRTV-TV do not overlap.

ENVIRONMENTAL IMPACT STATEMENT

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

- 1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.
- 2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since an existing structure will be utilized and the antenna height proposed with this application does not require this form of lighting to be utilized.
- 3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for a single source. A search was made about the proposed site coordinates to locate any additional sources of RF radiation. No other sources were found.

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT
PAGE 4**

The power density at the base of the tower was calculated using the following formula from OST Bulletin Number 65, August, 1997:

$$S = ((0.64)(1.64)(ERP)(1000)(\text{milliwatts/watt})/(\pi(R)^2))$$

where: S = power density in milliwatts per square centimeter

ERP = effective radiated power in watts

R = distance to radiation source in centimeters

$\pi = 3.14$

Using this formula and the values shown below, a power density of 0.012 mW/cm² is found to exist at the base of the tower.

ERP = 0.8 watts

R = 4,800 cm.

The ANSI limit is 1.0 mW/cm² in this frequency range. It is evident that any person at the base of the tower would be well within the ANSI exposure limit. Manipulating the above referenced formula, the minimum distance from the antenna required to achieve ANSI guidelines would be 5.25 meters.

Access to RF circuitry will be restricted. Signs will be posted warning of the potential danger. When persons require access to the site, tower or antenna for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.



A handwritten signature in black ink that reads "Garrett G. Lysiak".

Garrett G. Lysiak, P.E.

February 2, 1999

SECTION V-B - FM BROADCAST ENGINEERING DATA

FOR COMMISSION USE ONLY

File No. _____

SSB Referral Date _____

Referred By _____

Name of Applicant

SPRYEX COMMUNICATIONS, INC

Call Letters (if issued)

Is this application being filed in response to an application
filing window?☐ Yes☒ No

If Yes, specify closing date: _____

Purpose of Application: (check appropriate boxes)

☒ Construct a new (main) facility☐ Construct a new auxiliary backup facility☐ Modify existing construction permit for main facility☐ Modify existing construction permit for auxiliary backup
facility☐ Modify licensed main facility☐ Modify licensed auxiliary backup facility

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

☐ Antenna supporting structure height☐ Effective radiated power☐ Antenna height above average terrain☐ Frequency☐ Antenna location☐ Class☐ Main Studio location per 47 C.F.R. Section 73.1125(b)(2)☐ One-Step processing☐ Directional Antenna☐ Other (summarize briefly)

File Number(s) _____

1. Allocation:

Channel No.	Principal community to be served:		
	County	City or Town	State
205	HAMILTON	MIAMITOWN	OH

Class (check only one box below)

☒ A ☐ B1 ☐ B ☐ C3☐ C2 ☐ C1 ☐ C

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.

3.7 KM SE OF NEW HAVEN, 0.37 KM N OF HWY 128

(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 and East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed. (The Commission requires coordinates based on NAD 27.)

Latitude	39°	15'	45"	Longitude	84°	42'	6"
----------	-----	-----	-----	-----------	-----	-----	----

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

3. Will the antenna be mounted on an antenna structure which has been registered with the Commission? ☐ Yes ☒ No

If Yes, provide the seven digit registration number and proceed to item 8.

4. Has the owner of the antenna structure filed an application for registration with the Commission? ☒ Yes ☐ No

If yes, provide the date FCC Form 854 was filed and proceed to item 8.

02-02-99

5. Applicant certifies that antenna structure meets 6.10 meter (20 feet) exception rule and therefore does not require registration. In other words, the overall height of the entire structure is not more than 6.10 meters (20 feet) above the ground or the antenna does not extend more than 6.10 meters (20 feet) above a man-made structure (structure built for a purpose other than mounting an antenna, i.e., building, water tank, silo, fire tower, etc.). ☐ Yes ☐ No

If yes, skip items 6 and 7.

6. Antenna structure will be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town or settlement where it is evident beyond all reasonable doubt that the structure is so shielded that it will not adversely affect safety in air navigation. ☐ Yes ☐ No

If yes, submit as an Exhibit a detailed explanation and/or diagram to support your claim and skip to item 8.

Exhibit No.

7. Antenna structure does not meet FAA notification criteria as defined under 47 C.F.R. Section 17.7 and therefore does not require registration. ☐ Yes ☐ No

8. 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.

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.

9. Does the application propose to correct previous site coordinates? ☐ Yes ☒ No

If Yes, list old coordinates.

Latitude		Longitude	
----------	--	-----------	--

10. 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.
E-5

Date FEBRUARY 2, 1999 Office where filed GREAT LAKES REGION

11. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

	Landing Area	Distance (km)	Bearing (degrees True)
(a)	MIAMITOWN (231)	3.3	194
(b)	CINCINNATI WEST (167)	6.3	265

Section V-B - FM BROADCAST ENGINEERING DATA (Page 3)

12. (a) Elevation: (to the nearest meter)

(1) Of the site above mean sea level;

235 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 [(a)(1) + (a)(2)].

295 meters

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

(1) Above ground;

48 meters (H)

48 meters (V)

(2) Above mean sea level [(a)(1) + (b)(1)]; and

283 meters (H)

283 meters (V)

(3) Above average terrain.

65 meters (H)

65 meters (V)

13. Attach as an Exhibit sketch(es) of the supporting structure, labeling all elevations required in Question 12 above, except item 12(b)(3). 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.
E-1

14. Effective Radiated Power:

(a) ERP in the horizontal plane

.400 kw (H*) .400 kw (V*)

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 elevation plot of radiated field.

Exhibit No.
DNA

 kw (H*) kw (V*)

*Polarization

15. 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.
DNA

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

☒ Yes ☐ No

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

Exhibit No.
DNA

17. 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 protected 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. Section 73.315(b), 73.316(d) and 73.318.)

Exhibit No.
SEE ENG

18. 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.
E-2

19. 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:
COMPUTER GENERATED MAP, MAPINFO AND USGS DATA

Exhibit No.
E-3

- (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 which the station is or will be licensed.

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

Area 440 sq. km. Population 61,696

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

Enter the following from Exhibit above:

Gain Area	_____	sq. km.
Loss Area	_____	sq. km.
Present Area	_____	sq. km.

Percent change (gain area plus loss area as divided by present area times 100%) _____

If 50% or more, this constitutes a major change. Indicate in question 2(c), Section I, accordingly. See 47 C.F.R. Section 73.3573(a)(1).)

Section V-B - FM BROADCAST ENGINEERING DATA (Page 5)

Exhibit No.
DNA

22. For an application involving an auxiliary backup facility only, attach as an Exhibit a map (*Sectional Aeronautical Chart or equivalent*) which 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. _____

23. 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: _____)

☒ Linearly interpolated 3-second database

☐ Other (summarize)

Are more than eight radials being used to calculate HAAT?

☐ Yes ☒ No

If Yes, specify how many radials are being used. Please note the radials must be evenly spaced and start with the 0 degree radial. _____

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)	If operating on Commercial Channel 3.16 mv/m contour (kilometers)
0	52	10.6	5.9
45	100	14.7	8.2
90	35	8.5	4.8
135	37	8.9	5.0
180	70	12.2	6.8
225	91	14.0	7.8
270	83	13.4	7.5
315	54	10.8	6.0

Allocation Studies

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

24. 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.

FCC 340 (Page 17)
July 1997

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

25. 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.

26. If the proposed operation is for a full service or Class D facility 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.
E - 4

- (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; and
- (h) The name of the map(s) used in the Exhibit(s).

27. 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.
SEE ENG

28. (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

- (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.

- (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.

1/ A showing that the proposed operation meets the minimum distance separation requirements of 47 C.F.R. Section 73.507. 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

- (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.

- (1) Protected and interfering contours, in all directions (360 degrees), 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.); and
- (5) The official title(s) of the map(s) used in the Exhibit(s).

29. 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.
E-7

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

☐ Yes ☒ No

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

Exhibit No.

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

- (a) Would a Commission grant of this application come within 47 C.F.R. Section 1.1307, such that it may have a significant environmental impact?

☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by 47 C.F.R. Section 1.1311.


Exhibit No.

- (b) If No, explain briefly why not.
SEE ENGINEERING STATEMENT

- (c) Pursuant to OST/OET Bulletin No. 65, the applicant must explain in an Exhibit what steps will be taken to limit the RF radiation exposure to the public and to persons authorized access to the tower site. In addition, where there are multiple contributors to radiofrequency radiation, you must certify that the established RF radiation exposure procedures will be coordinated with all stations.

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 and found it to be accurate and true to the best of my knowledge and belief.

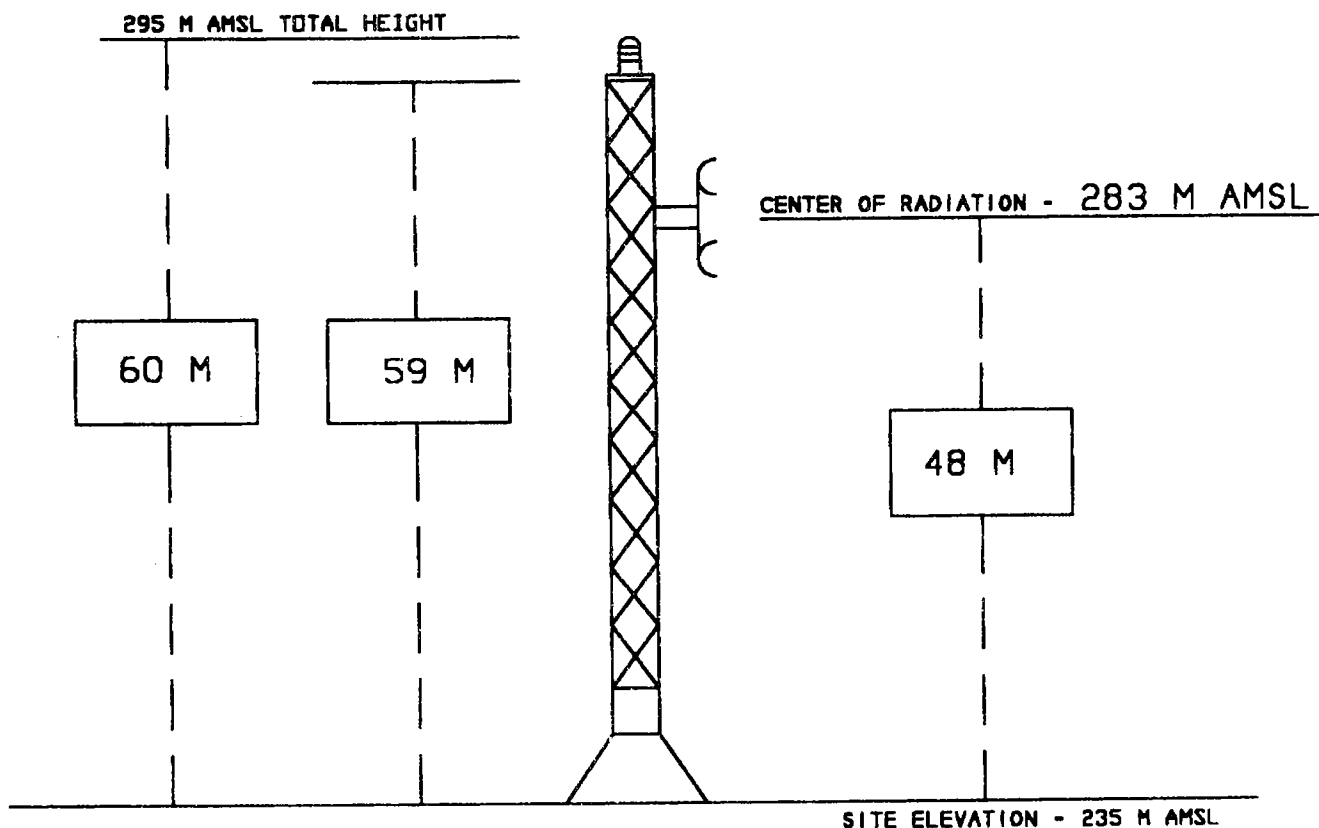
Name (Typed or Printed)	Relationship to Applicant (e.g., Consulting Engineer)
GARRETT G. LYSIAK, P.E.	CONSULTING ENGINEER
Signature 	Address (include ZIP Code) OWL ENGINEERING, INC. 8899 HASTINGS ST. MINNEAPOLIS, MN 55449
Date FEBRUARY 2, 1999	Telephone No. (include Area Code) (612) 785-4115



OWL ENGINEERING & EMC TEST LABS, INC.

CONSULTING COMMUNICATIONS ENGINEERS
EMC TEST LABORATORIES

8899 Hastings St. N.E., Minneapolis, MN 55449
(612) 785-4115 • Fax (612) 785-4631
1-800-797-1338



OWL ENGINEERING, INC.
ENGINEERING EXHIBIT E-1

MIAMITOWN, OHIO

CHANNEL 205 A

NOT TO SCALE

OWL ENGINEERING, INC
ENGINEERING EXHIBIT E-2



ROAD CLASSIFICATION

Heavy-duty _____ Light-duty _____
Medium-duty _____ Unimproved dirt _____

U.S. Route

State Route

(CINCINNATI WEST)
4022 II NE

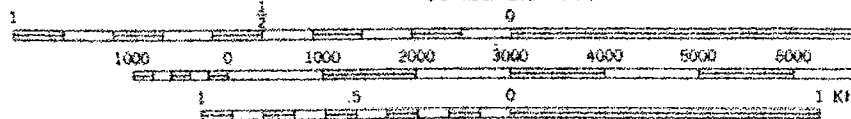
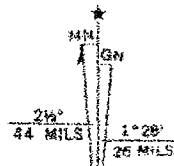
U.S. RESERVATION
DEPARTMENT OF ENERGY

39° 15' 45"
84° 42' 06"

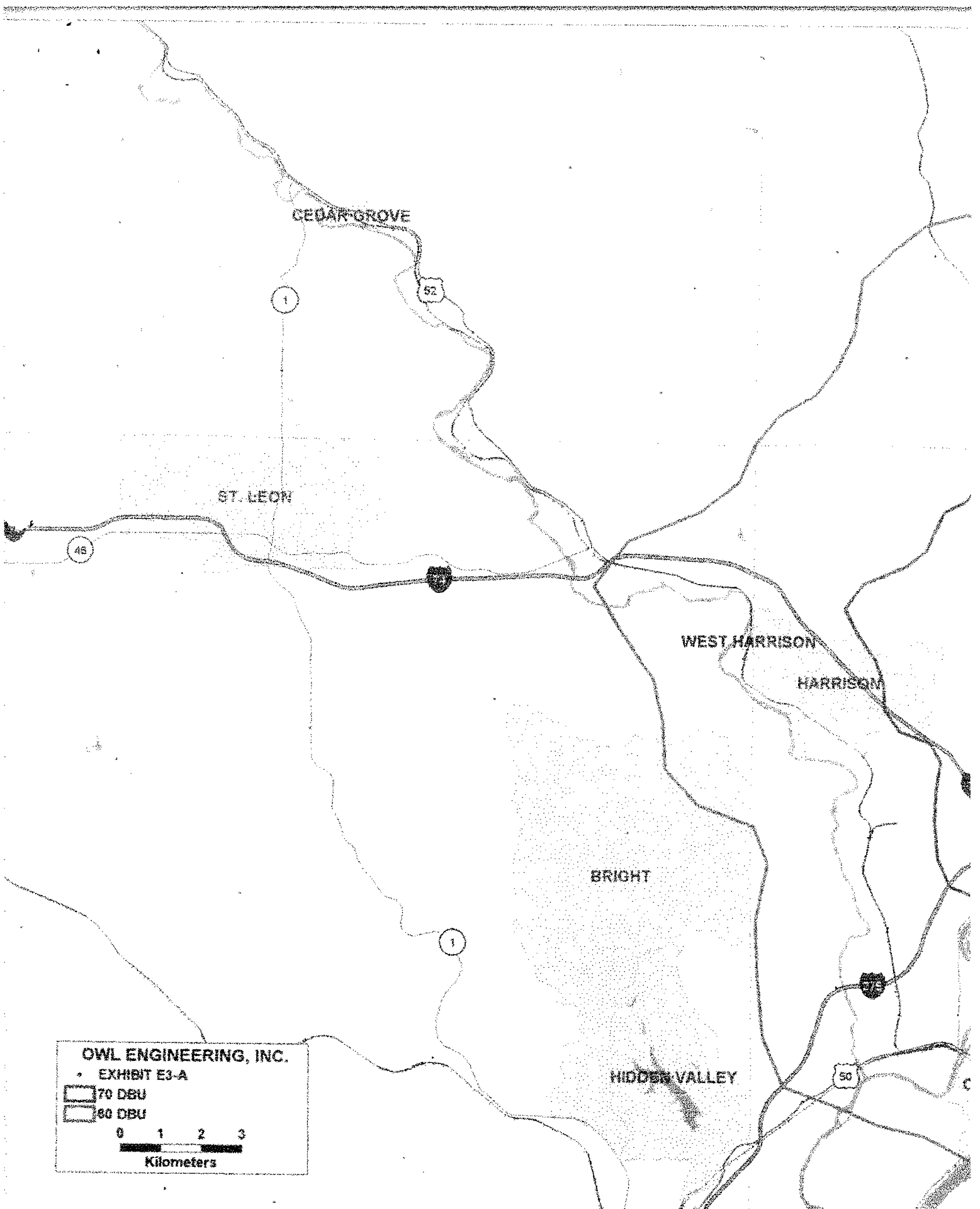
Survey

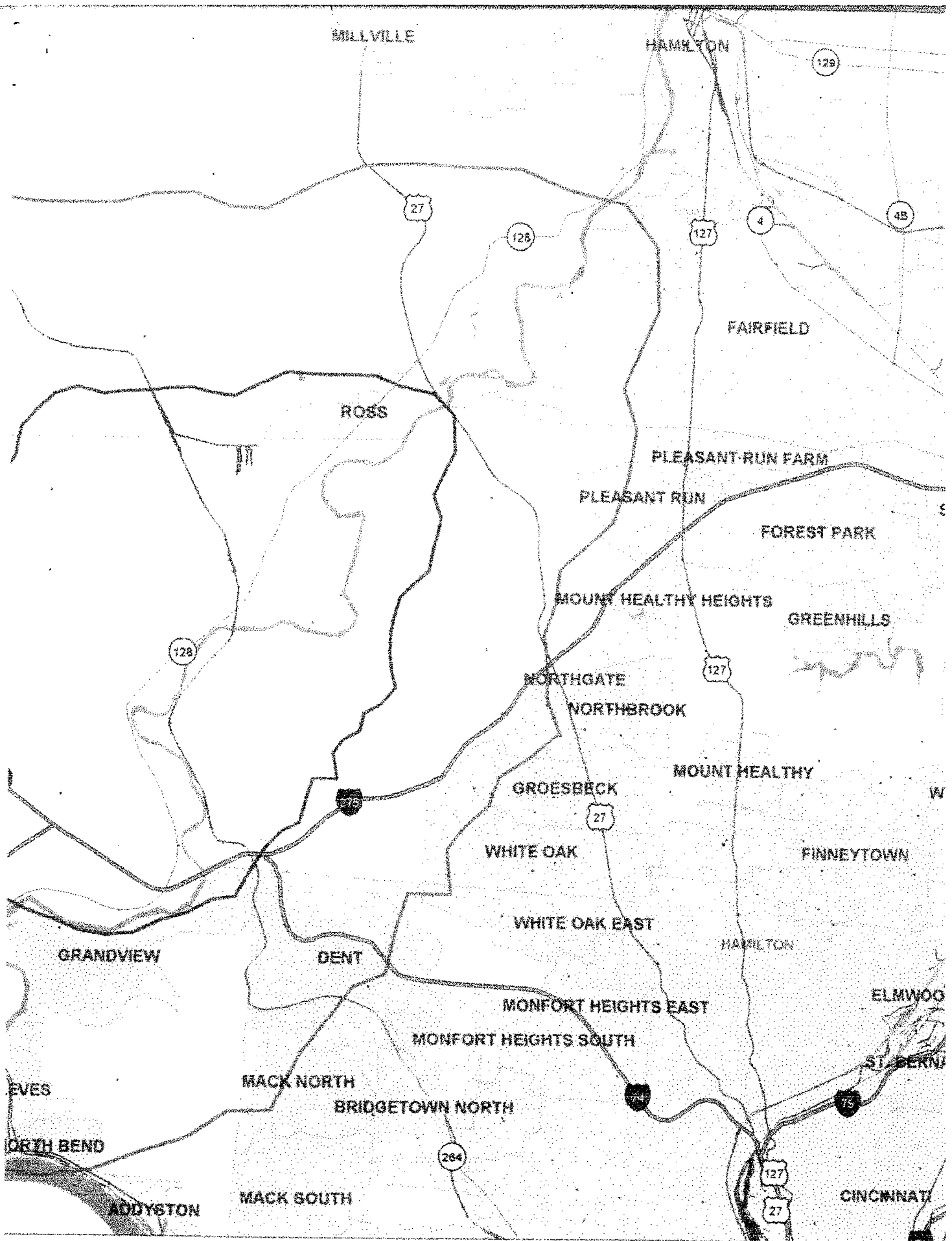
3

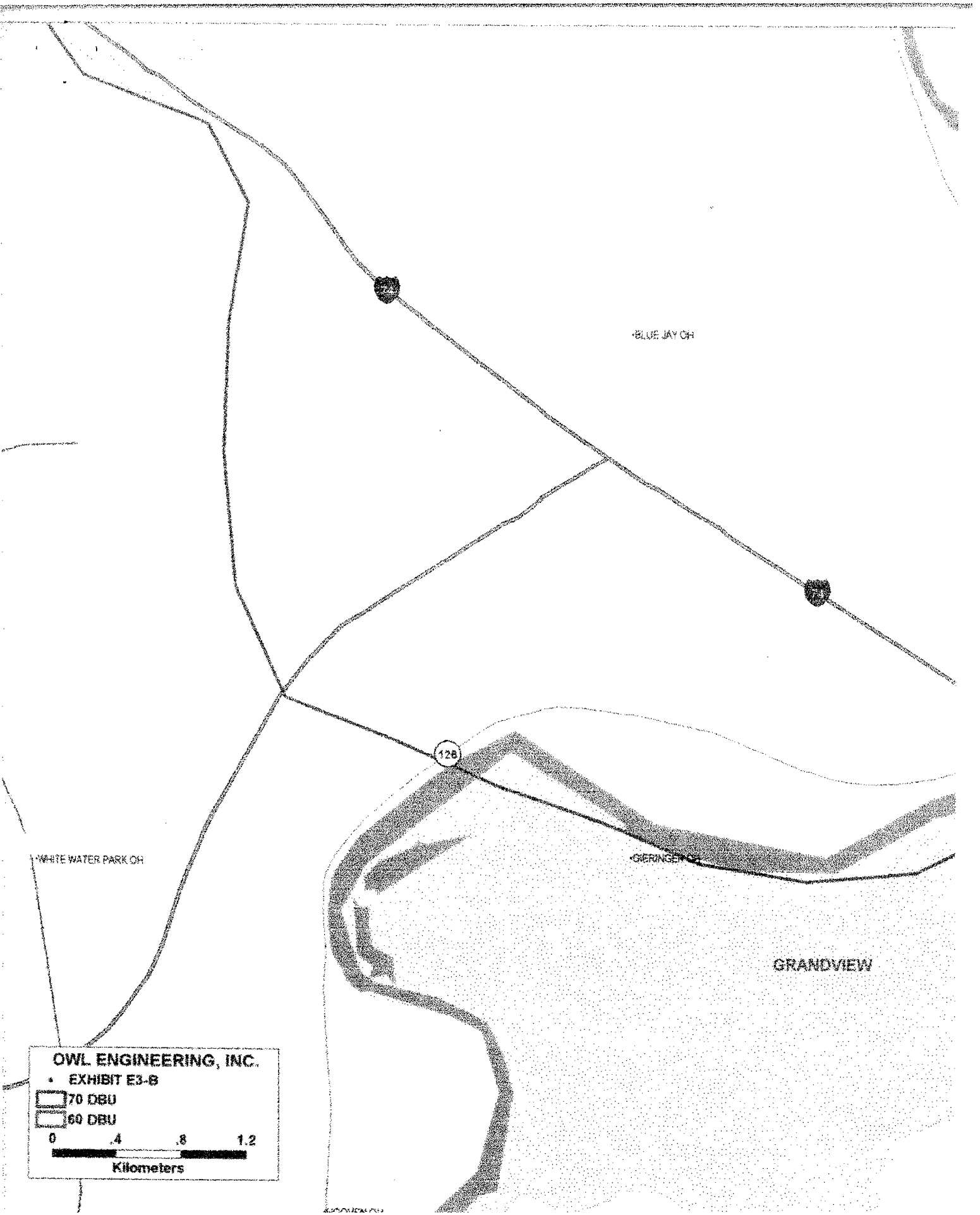
ordinate
of



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



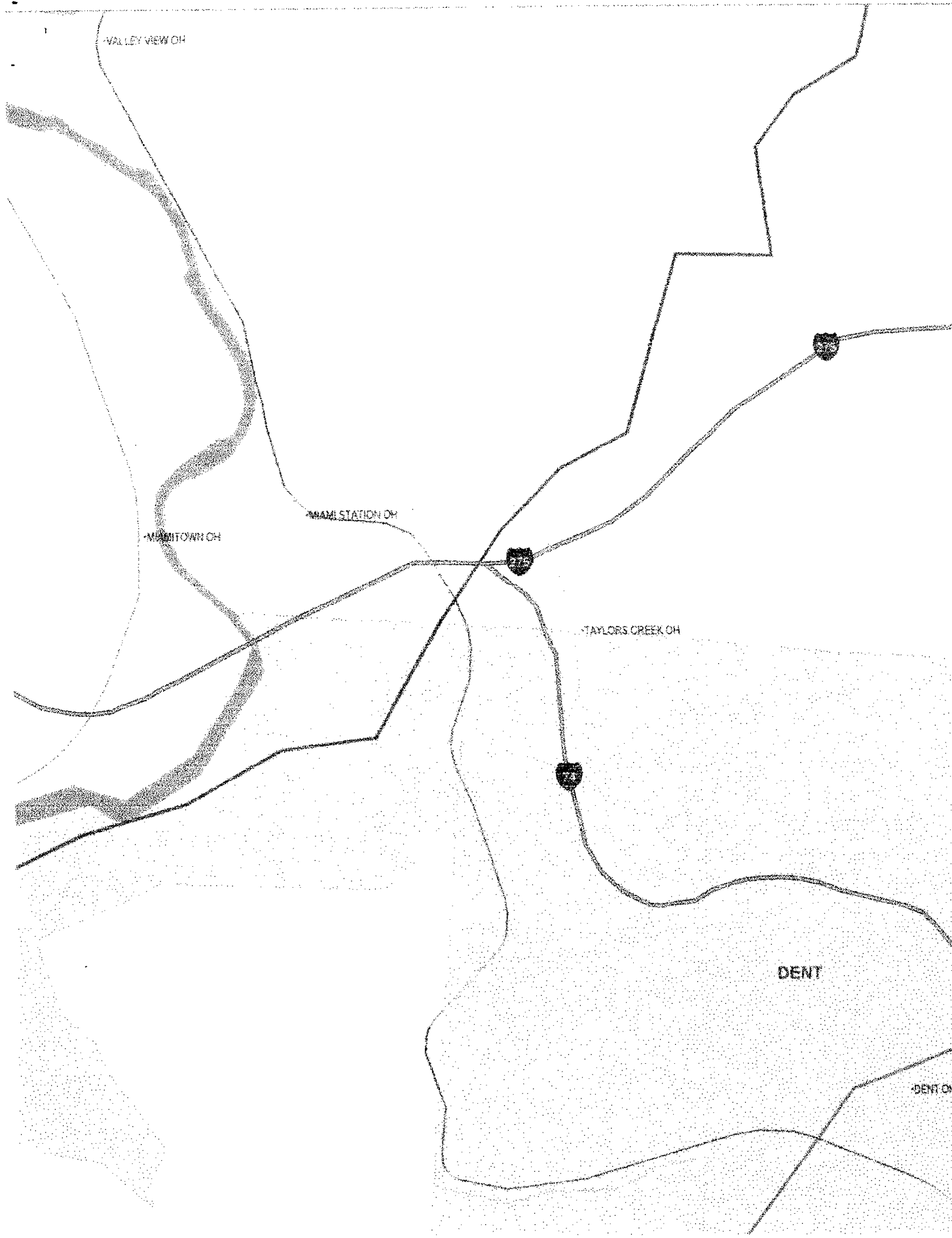


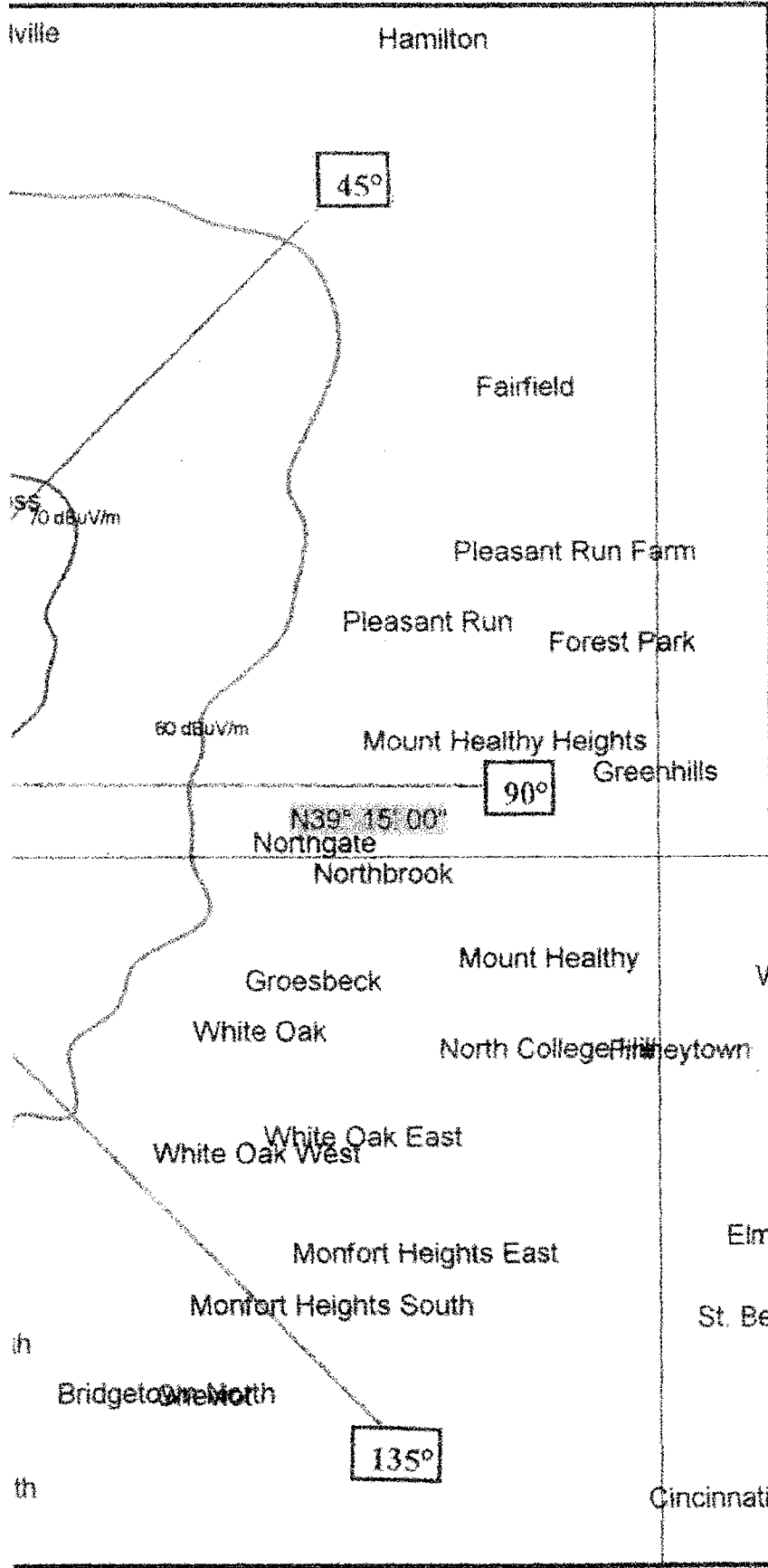


OWL ENGINEERING, INC.
• EXHIBIT E3-B

70 DBU
60 DBU

0 .4 .8 1.2
Kilometers





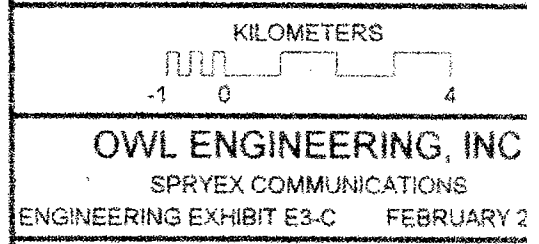
SIGNAL™: System3.map

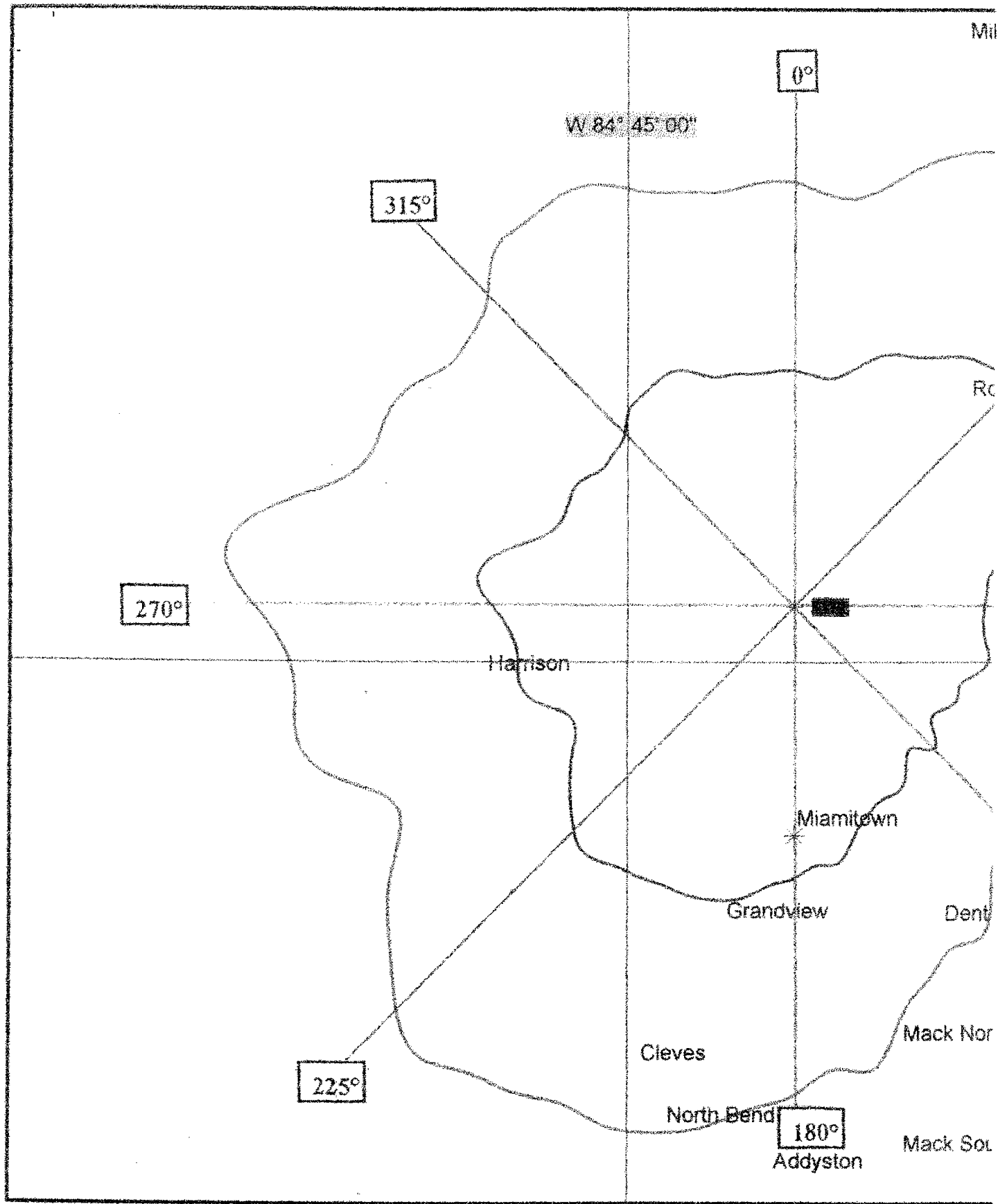
Prop. model: FCC-EDX
 Time: 50.0% Loc.: 50.0%
 Prediction Confidence Margin: 0.0dB
 Climate: Continental Temperate
 Groundcover: none
 Atmospheric Abs.: none
 K Factor: 1.333
 RX Antenna - Type: OMNI
 Height: 10.0 m AGL Gain: 0.00 dBd
 Field strength at remote

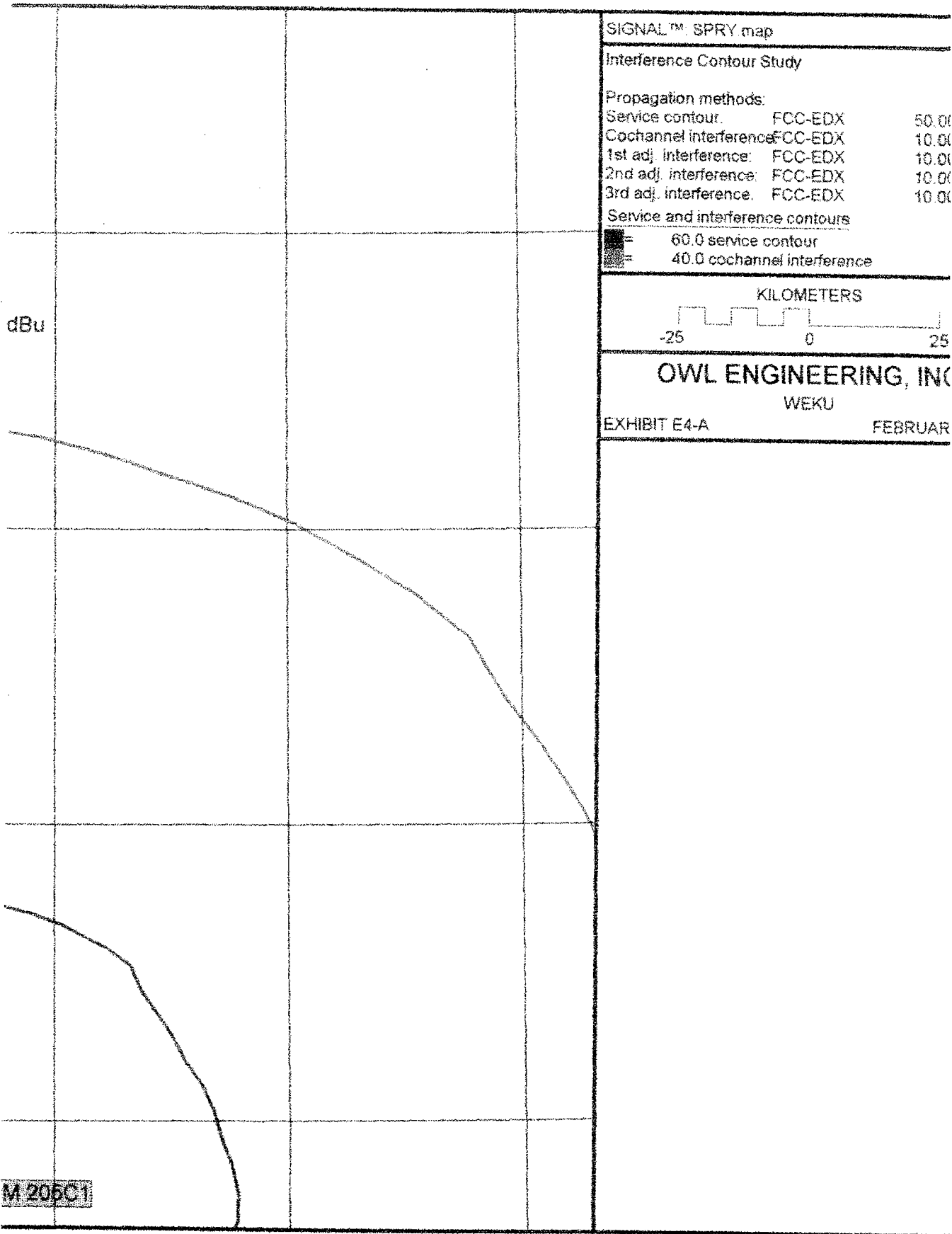
■ = 70.0 dBuV/m
 ■ = 60.0 dBuV/m

Min. receiver threshold level: -200.0 dBmW

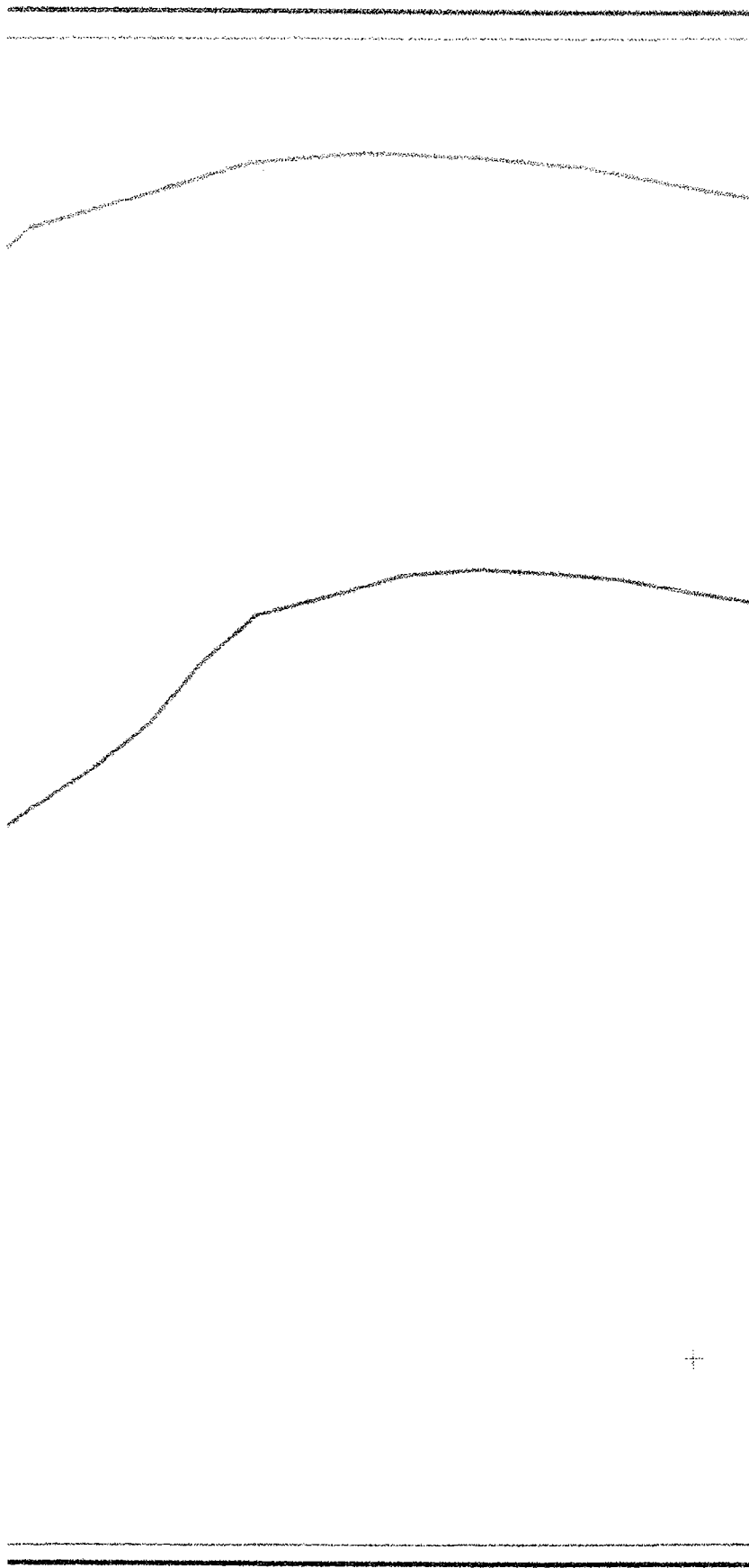
Site	Ant. Elev. AMSL (m)	ERPd (dBW)	Ant. Type/Orient.	Coordinate
NEW*	283.0	26.02	Omni-V	N39°15'45"
group: 1	88.9000	MHz		W84°42'06"













SIGNAL™: SPRY.map

Interference Contour Study

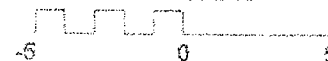
Propagation methods:

Service contour:	FCC-EDX	50.00
Cochannel interference:	FCC-EDX	10.00
1st adj. interference:	FCC-EDX	10.00
2nd adj. interference:	FCC-EDX	10.00
3rd adj. interference:	FCC-EDX	10.00

Service and interference contours

	=	60.0 service contour
	=	54.0 1st adjacent interference

KILOMETERS



OWL ENGINEERING, INC

WOBO

EXHIBIT E4-B

FEBRUAR

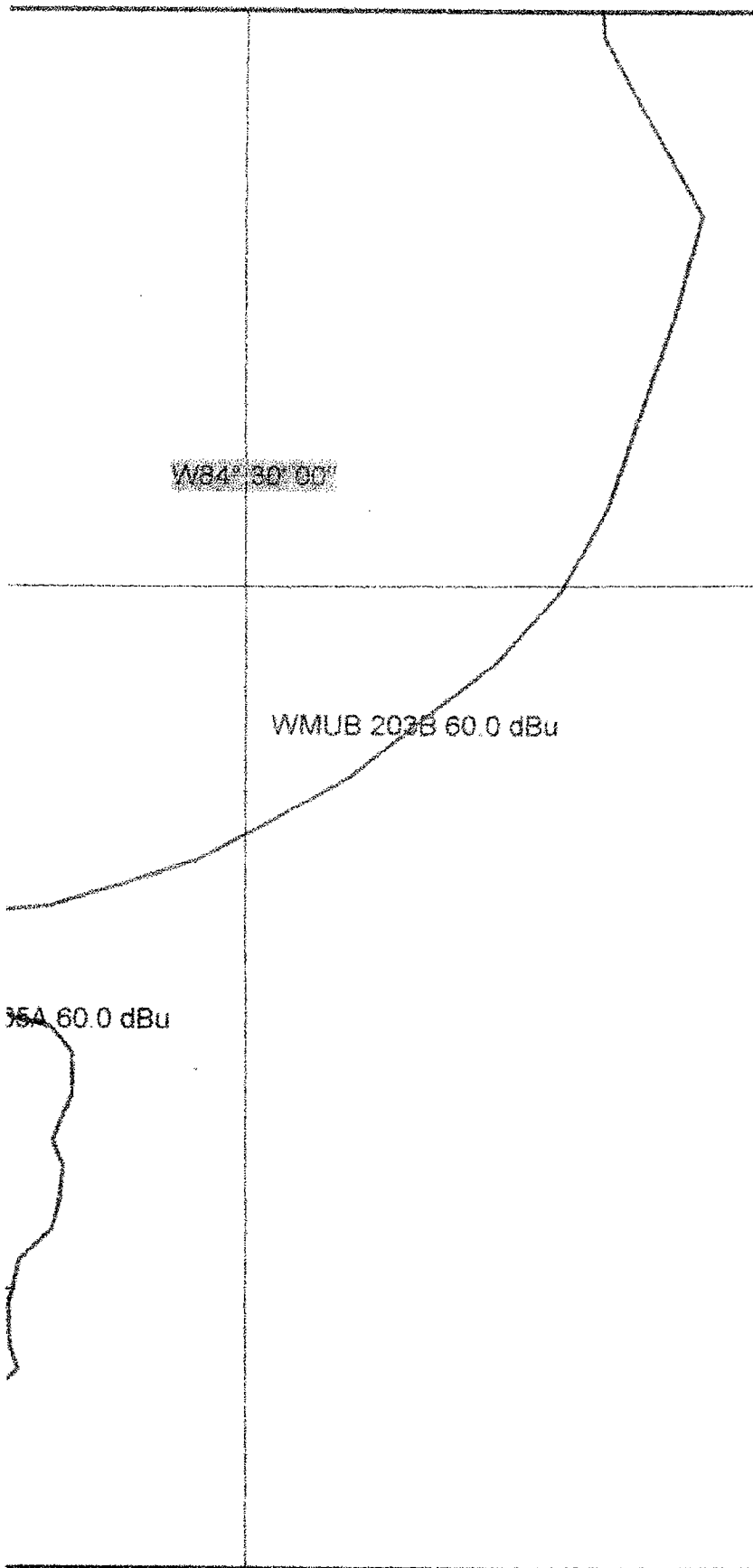
N39° 30' 00"

W84° 30' 00"

Proposed 205A 60.0 dBu

Proposed 205A 54.0 dBu

+ Proposed 205A





SIGNAL™: SPRY.map

Interference Contour Study

Propagation methods:

Service contour:	FCC-EDX	50.00'
Cochannel interference:	FCC-EDX	10.00'
1st adj. interference:	FCC-EDX	10.00'
2nd adj. interference:	FCC-EDX	10.00'
3rd adj. interference:	FCC-EDX	10.00'

Service and interference contours

	60.0 service contour
	80.0 2nd adjacent interference

KILOMETERS

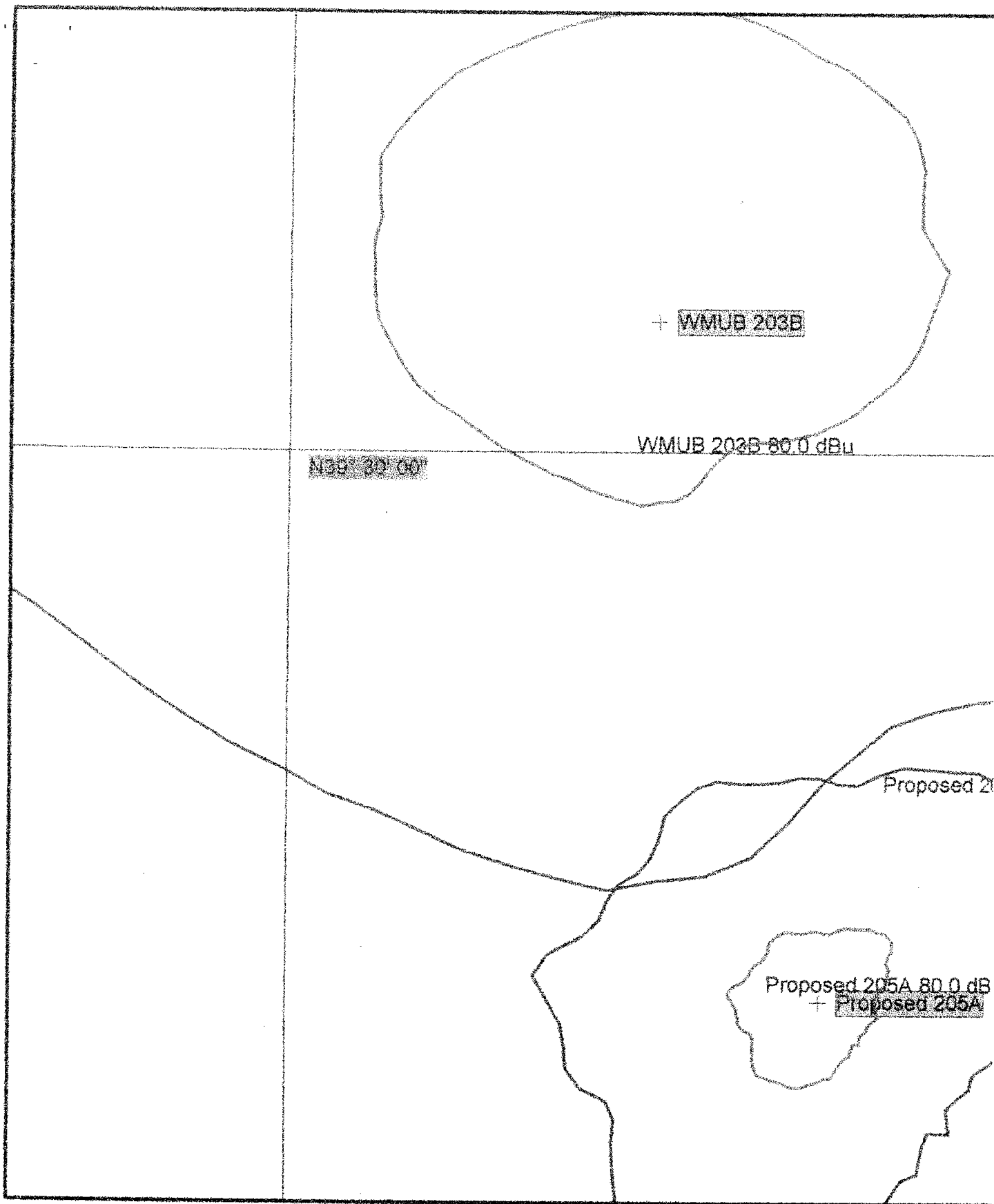


OWL ENGINEERING, INC

WMUB

EXHIBIT E4-C

FEBRUARY



30' 00"



SIGNAL™: SPRY.map

Interference Contour Study

Propagation methods:

Service contour:	FCC-EDX	50.00%
Cochannel interference:	FCC-EDX	10.00%
1st adj. interference:	FCC-EDX	10.00%
2nd adj. interference:	FCC-EDX	10.00%
3rd adj. interference:	FCC-EDX	10.00%

Service and interference contours

	60.0 service contour
	80.0 2nd adjacent interference

KILOMETERS

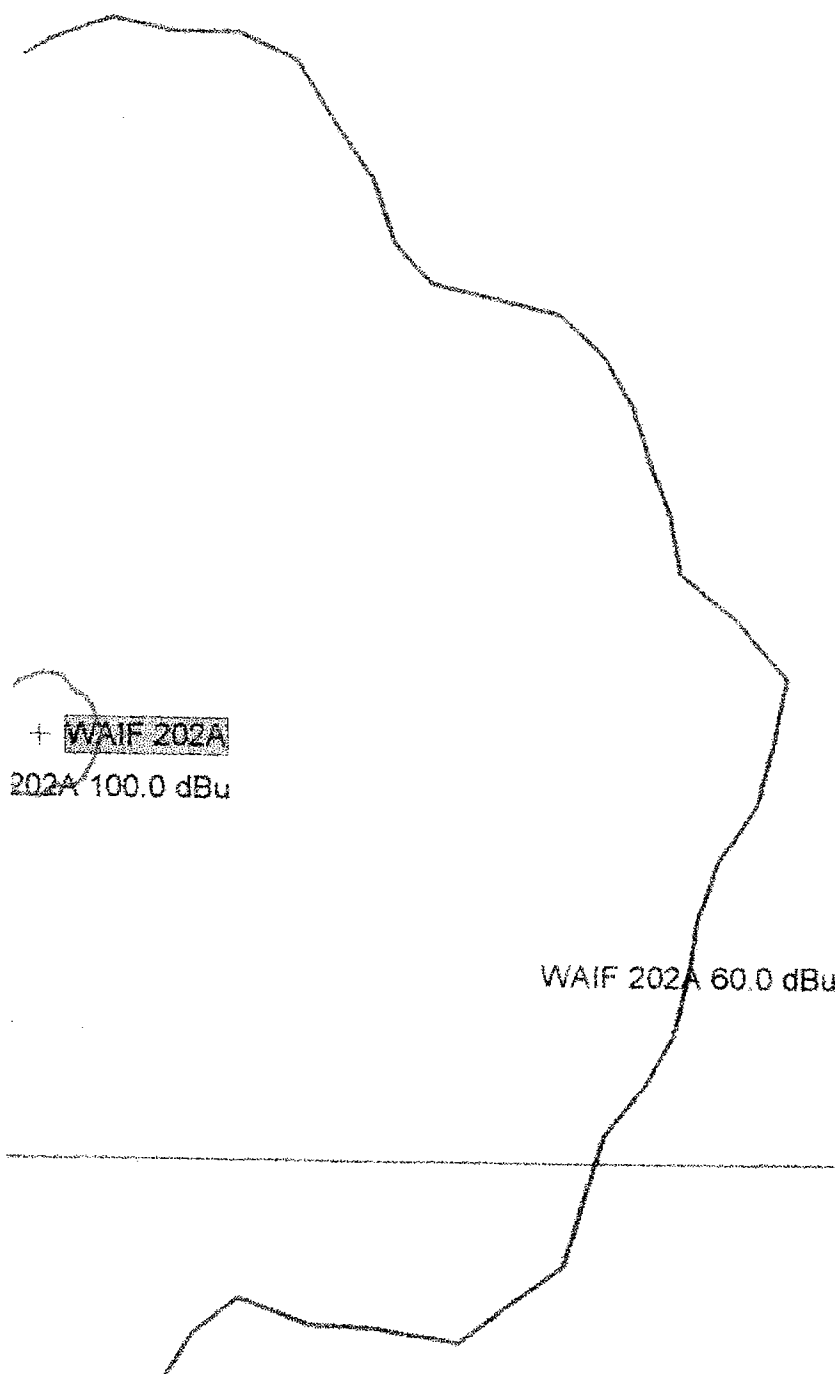


OWL ENGINEERING, INC

WAIF

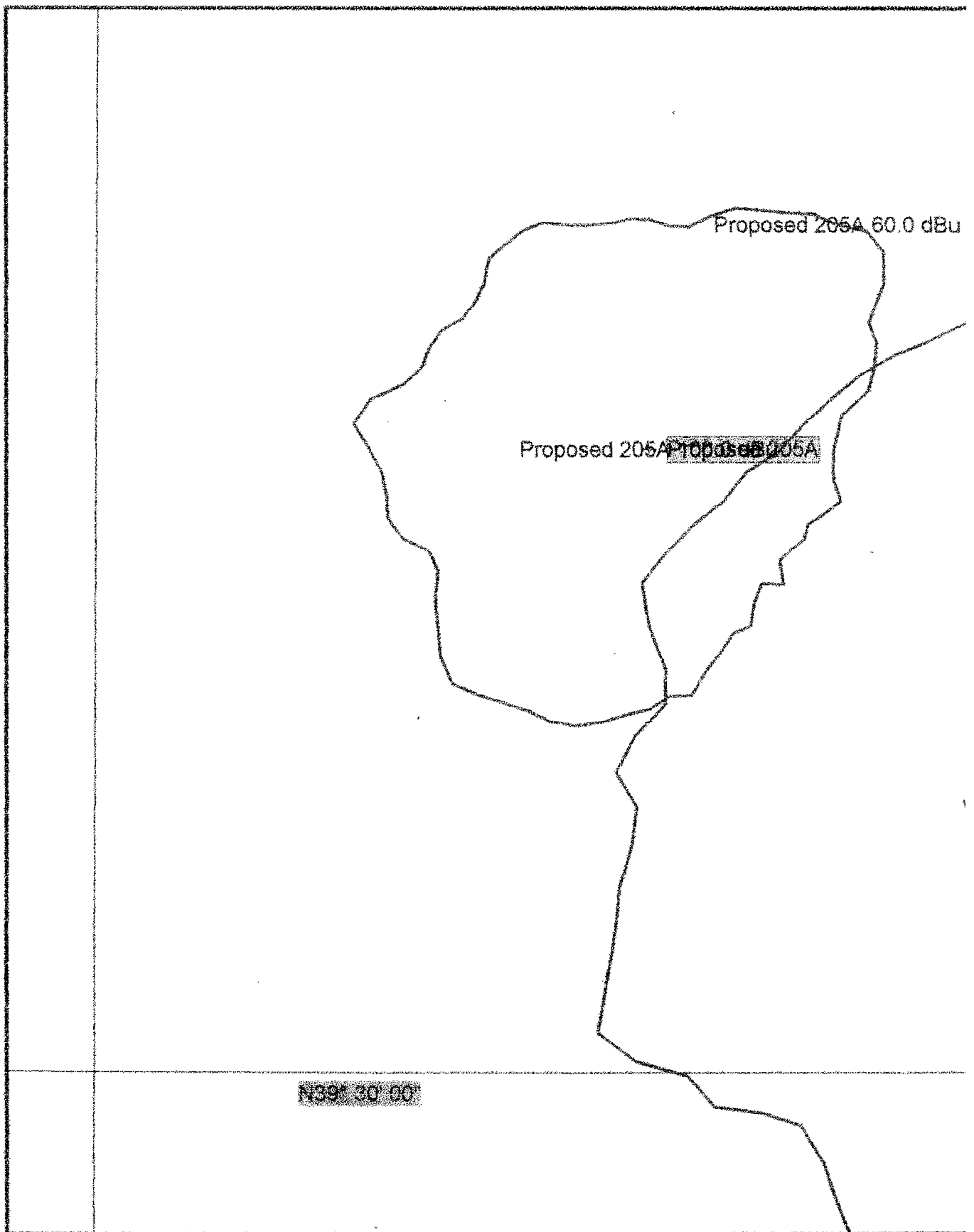
EXHIBIT E4-D

FEBRUARY 2



+ WAIF 202A
202A 100.0 dBu

WAIF 202A 60.0 dBu



ENGINEERING EXHIBIT E-5

Form Approved OMB NO. 2120-00

U.S. Department of Transportation Federal Aviation Administration		Notice of Proposed Construction or Alteration		Aeronautical Study Number
1. Nature of Proposal			2. Complete Description of Structure	
A. Type <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration *		B. Class <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (Duration: _____ months)		C. Work Schedule Dates Beginning: ____/____/____ End: ____/____/____
* If Alteration, provide previous FAA Aeronautical Study Number, if available.				
3A. Name, address, and telephone number of individual, company corporation, etc. proposing the construction or alteration. (Number, Street City, State, and Zip Code) SPRYEX COMMUNICATIONS, INC. 5114 PRINCETON-GLENDALE ROAD HAMILTON, OH 45011 (513) 887-0714 Area Code Telephone Number			Please describe, on a separate sheet of paper if necessary, the proposed construction or alteration. A. For proposals involving transmitting stations, include effective radiated power (ERP) and assigned frequency of all proposed or modified transmitters on the structure. (If not known, give frequency band and maximum ERP) B. For proposals involving overhead wire, transmission line, etc., include the size and the configuration of the wires and their supporting structures. C. For all proposals, include site orientation, dimensions, and construction materials of the proposed or altered structure. D. Optional— Describe the type of obstruction marking and lighting system desired for your structure. The FAA will recommend appropriate marking and lighting for the structure in accordance with the standards of Advisory Circular AC 70/7450-1. An FAA marking and lighting recommendation will reflect the minimum acceptable level of conspicuity necessary to warn pilots of the presence of an object. However, the FAA, under certain circumstances, will not object to the use of a system (such as a medium intensity flashing white light system or a dual lighting system) other than the recommended standard.	
3B. Name, address and telephone number of proponent's representative, if different than 3A. above. GARRETT G. LYSIAK Owl Engineering, Inc 8899 Hastings St. NE Minneapolis, MN 55449 (612) 785-4115 Area Code Telephone Number				
4. Location Of Structure			5. Height and Elevation (to nearest foot)	
A. Coordinates (to hundredths of seconds) Latitude 39 15 45.00 Longitude 084 42 06.00		B. Nearest City or Town and State Miamitown, OH (1) Distance to 48: 2 Miles (2) Direction to 48: 178 Deg.		C. Nearest public or military airport, heliport, flightpark, or seaplane base 231 MIAMITOWN (1) Distance from structure to nearest point of nearest runway: 1.7901 nm. (2) Direction from structure to airport: 194.66 Degrees
4D. Source of coordinate information for item 4A. above. <input checked="" type="checkbox"/> USGS 7.5' Quad Chart <input type="checkbox"/> Survey <input type="checkbox"/> Other: Specify _____ Indicate the reference datum of the coordinates, if known. <input checked="" type="checkbox"/> NAD 27 <input type="checkbox"/> NAD 83 <input type="checkbox"/> Other: Specify _____		4E. Describe, on a separate sheet of paper, the location of the site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a copy of a U.S. Geological Survey quadrangle map 7.5 minute series (or equivalent) showing the construction site. If available, attach a copy of a documented site survey with the surveyor's certification.		
FAILURE TO PROVIDE ALL REQUESTED INFORMATION MAY DELAY PROCESSING OF YOUR NOTICE Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. app. § 1501). Persons who knowingly and willfully violate the Notice requirements of Part 77 are subject to a civil penalty of \$1,000 per day until the notice is received, pursuant to Section 901(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. app. § 1471(a)), as well as the fine (monetary penalty) of not more than \$500 for the first offense and not more than \$2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. app. § 1472(a)).				
I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards as necessary.				
Date: 02/02/99		Typed or Printed Name and Title of Person Filing Notice: GARRETT G. LYSIAK/Consulting Engineer		Signature: <i>Garrett G. Lysiak</i>
FOR FAA USE ONLY		FAA will either return this form or issue a separate acknowledgement.		
The Proposal: <input type="checkbox"/> Does not require a notice to FAA. <input type="checkbox"/> Is not identified as an obstruction under any standard of FAR, Part 77, Subpart C, and would not be a hazard to navigation. <input type="checkbox"/> Is identified as an obstruction under the standards of FAR, Part 77, Subpart C, but would not be a hazard to navigation. <input type="checkbox"/> Should be obstruction marked <input type="checkbox"/> lighted per FAA Advisory Circular 70/7450-1, Chapter 1. <input type="checkbox"/> Obstruction marking and lighting are not necessary.		Supplemental Notice of Construction. FAA Form 7480-2, is required any time the project is abandoned, or <input type="checkbox"/> At least 48 hours before the start of construction. <input type="checkbox"/> Within five days after the construction reaches its greatest height. This determination expires on _____ unless (a) extended, revised or terminated by the issuing office. (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit is made to the FCC on or before the above expiration date. In such cases the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application. NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date. If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that agency.		
Remarks:				
NAD 83 Coordinates (Use these coordinates for any future correspondence with the FAA.)		Latitude: 39 15 45.00 Longitude: 084 42 06.00		

ENGINEERING EXHIBIT E-6
FOR APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT

CHANNEL SPACING STUDY

***** FM CHANNEL INTERFERENCE STUDY *****

Job title: SPRYEX COMMUNICATIONS
Proposed latitude: N 39 15 45.00
Proposed longitude: W 94 42 6.00
Proposed transmit antenna elevation(AMSL): 283.0 meters
Proposed maximum ERP: 0.4000 kW
Database file name: C:\FCCData\Fm990201
Protect maximum contours?: N

Proposed channel: 205A

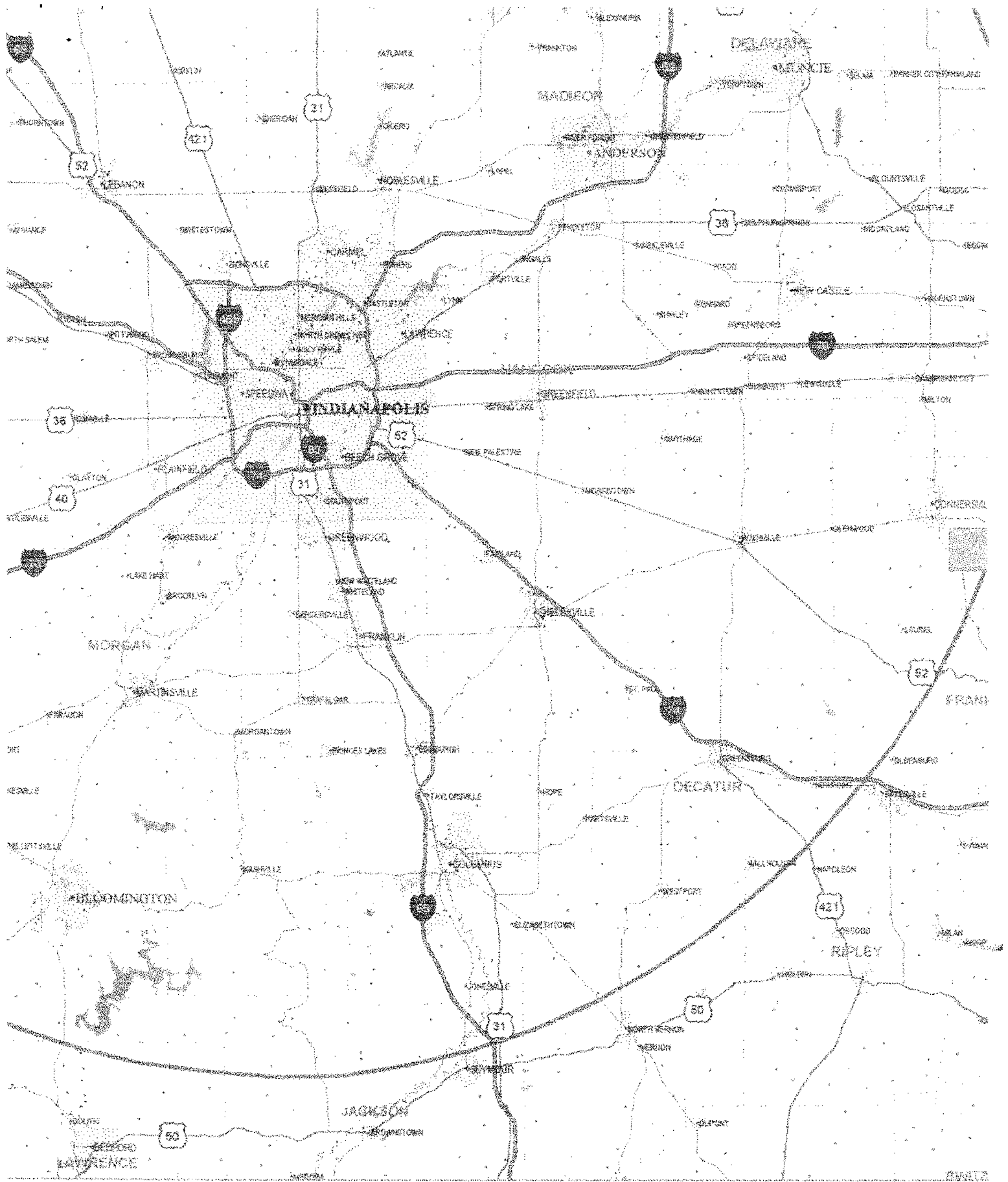
CH	Call	Record	City	ST	Status	Bear.	Dist.	Reqd. Dist.	Result
208A	WVXW	7686	West Union	OH	LIC	115.2	104.6	22.2	82.4
Prop F(50,10) 100 dBu 0.0 km + WVXW						F(50,50) 60 dBu	22.2 km =	22.2	
Prop F(50,50) 60 dBu 8.3 km + WVXW						F(50,10) 100 dBu	2.2 km =	10.4	
258C3	WAOL	7704	Ripley	OH	LIC	133.7	86.2	12.0	74.2
IF channel separation requirement = 12.0 km									
205A	WCSUFM	7728	Wilberforce	OH	LIC	54.4	87.2	67.3	19.9
Prop F(50,10) 40 dBu 47.1 km + WCSUFM						F(50,50) 60 dBu	15.2 km =	62.3	
Prop F(50,50) 60 dBu 13.6 km + WCSUFM						F(50,10) 40 dBu	53.7 km =	67.3	
206A	WUSO	7729	Springfield	OH	APP	45.3	106.9	28.5	78.5
Prop F(50,10) 54 dBu 21.8 km + WUSO						F(50,50) 60 dBu	6.7 km =	28.5	
Prop F(50,50) 60 dBu 14.5 km + WUSO						F(50,10) 54 dBu	9.6 km =	24.1	
206D	WUSO	7730	Springfield	OH	LIC	45.2	106.9	26.3	80.6
Prop F(50,10) 54 dBu 21.8 km + WUSO						F(50,50) 60 dBu	4.6 km =	26.3	
Prop F(50,50) 60 dBu 14.5 km + WUSO						F(50,10) 54 dBu	6.4 km =	20.9	
206A	NEW	7779	Urbana	OH	APP	42.1	118.5	39.5	79.0
Prop F(50,10) 54 dBu 21.3 km + NEW						F(50,50) 60 dBu	17.0 km =	38.4	
Prop F(50,50) 60 dBu 14.2 km + NEW						F(50,10) 54 dBu	25.3 km =	39.5	
205C1	WEKUFM	8347	Richmond	KY	LIC	167.9	157.0	156.1	0.9
Prop F(50,10) 40 dBu 38.9 km + WEKUFM						F(50,50) 60 dBu	57.7 km =	96.6	
Prop F(50,50) 60 dBu 11.3 km + WEKUFM						F(50,10) 40 dBu	144.8 km =	156.1	
202A	WAIF	8438	Cincinnati	OH	LIC	128.9	24.0	19.6	4.4
Prop F(50,10) 100 dBu 0.0 km + WAIF						F(50,50) 60 dBu	19.6 km =	19.6	
Prop F(50,50) 60 dBu 8.1 km + WAIF						F(50,10) 100 dBu	1.8 km =	9.9	
202A	WJVS	8439	Cincinnati	OH	LIC	83.1	25.0	8.8	16.1
Prop F(50,10) 100 dBu 0.0 km + WJVS						F(50,50) 60 dBu	6.5 km =	6.5	
Prop F(50,50) 60 dBu 8.8 km + WJVS						F(50,10) 100 dBu	0.0 km =	8.8	
203B	WMUB	8440	Oxford	OH	LIC	346.6	33.7	23.9	9.8
Prop F(50,10) 80 dBu 3.4 km + WMUB						F(50,50) 60 dBu	20.5 km =	23.9	
Prop F(50,50) 60 dBu 10.7 km + WMUB						F(50,10) 80 dBu	6.4 km =	17.1	
203B	WMUB	8441	Oxford	OH	LIC	346.6	33.7	28.5	5.1
Prop F(50,10) 80 dBu 3.4 km + WMUB						F(50,50) 60 dBu	25.2 km =	28.5	
Prop F(50,50) 60 dBu 10.7 km + WMUB						F(50,10) 80 dBu	8.0 km =	18.7	
204B	WOBO	8442	Batavia	OH	LIC	113.0	56.8	53.2	3.6
Prop F(50,10) 54 dBu 11.9 km + WOBO						F(50,50) 60 dBu	29.7 km =	41.6	
Prop F(50,50) 60 dBu 8.4 km + WOBO						F(50,10) 54 dBu	44.8 km =	53.2	
206A	WLMH	8443	Morrow	OH	LIC	78.6	49.6	19.6	30.0
Prop F(50,10) 54 dBu 13.4 km + WLMH						F(50,50) 60 dBu	6.1 km =	19.6	
Prop F(50,50) 60 dBu 9.6 km + WLMH						F(50,10) 54 dBu	8.8 km =	18.4	

ENGINEERING EXHIBIT E-6
FOR APPLICATION FOR FM CONSTRUCTION PERMIT
SPRYEX COMMUNICATIONS, INC.
MIAMITOWN, OHIO
CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT

CHANNEL SPACING STUDY (Continued)

CH	Call	Record	City	ST	Status	Bear.	Dist.	Reqd. Dist.	Result
207B1	WVXR	8444	Richmond	IN	LIC	353.2	67.8	23.9	43.9
	Prop F(50,10)	80 dBu	3.4 km + WVXR	F(50,50)	60 dBu	20.6	km =	23.9	
	Prop F(50,50)	60 dBu	10.7 km + WVXR	F(50,10)	80 dBu	6.4	km =	17.1	
207A	WMKV	8445	Reading	OH	LIC	100.6	23.7	11.1	12.6
	Prop F(50,10)	80 dBu	2.8 km + WMKV	F(50,50)	60 dBu	6.7	km =	9.5	
	Prop F(50,50)	60 dBu	8.9 km + WMKV	F(50,10)	80 dBu	2.2	km =	11.1	
208A	WHSS	8446	Hamilton	OH	LIC	18.7	19.7	11.9	7.9
	Prop F(50,10)	100 dBu	0.0 km + WHSS	F(50,50)	60 dBu	11.7	km =	11.7	
	Prop F(50,50)	60 dBu	11.9 km + WHSS	F(50,10)	100 dBu	0.0	km =	11.9	
208A	WDPS	8447	Dayton	OH	LIC	38.2	70.2	13.7	56.5
	Prop F(50,10)	100 dBu	0.0 km + WDPS	F(50,50)	60 dBu	12.2	km =	12.2	
	Prop F(50,50)	60 dBu	13.7 km + WDPS	F(50,10)	100 dBu	0.0	km =	13.7	
208B1	WQRP	8448	Dayton	OH	LIC	38.2	70.2	13.7	56.5
	Prop F(50,10)	100 dBu	0.0 km + WQRP	F(50,50)	60 dBu	12.2	km =	12.2	
	Prop F(50,50)	60 dBu	13.7 km + WQRP	F(50,10)	100 dBu	0.0	km =	13.7	
205A	WOEI	8538	Union City	IN	CP	355.4	103.6	86.4	17.1
	Prop F(50,10)	40 dBu	37.0 km + WOEI	F(50,50)	60 dBu	22.5	km =	59.5	
	Prop F(50,50)	60 dBu	10.8 km + WOEI	F(50,10)	40 dBu	75.6	km =	86.4	
202A	WSOH	9149	New Washington	IN	LIC	222.1	99.3	17.9	81.4
	Prop F(50,10)	100 dBu	0.0 km + WSOH	F(50,50)	60 dBu	17.9	km =	17.9	
	Prop F(50,50)	60 dBu	14.2 km + WSOH	F(50,10)	100 dBu	0.0	km =	14.2	
207B	WFPL	9152	Louisville	KY	LIC	225.0	140.3	59.2	81.1
	Prop F(50,10)	80 dBu	4.4 km + WFPL	F(50,50)	60 dBu	54.8	km =	59.2	
	Prop F(50,50)	60 dBu	13.8 km + WFPL	F(50,10)	80 dBu	21.6	km =	35.4	
206A	WAUZ	9214	Greensburg	IN	CP MOD	268.1	74.7	44.4	30.3
	Prop F(50,10)	54 dBu	19.7 km + WAUZ	F(50,50)	60 dBu	21.1	km =	40.8	
	Prop F(50,50)	60 dBu	13.2 km + WAUZ	F(50,10)	54 dBu	31.2	km =	44.4	
205B1	NEW	9909	Oolitic	IN	APP	258.5	156.9	91.6	65.3
	Prop F(50,10)	40 dBu	43.7 km + NEW	F(50,50)	60 dBu	19.8	km =	63.5	
	Prop F(50,50)	60 dBu	12.6 km + NEW	F(50,10)	40 dBu	79.0	km =	91.6	
204B	WICR	9947	Indianapolis	IN	LIC	299.4	146.9	77.3	69.6
	Prop F(50,10)	54 dBu	16.1 km + WICR	F(50,50)	60 dBu	44.4	km =	60.8	
	Prop F(50,50)	60 dBu	11.2 km + WICR	F(50,10)	54 dBu	66.1	km =	77.3	
6 TV	WSYX		COLUMBUS	OH	LIC	61.9	162.7	113.0	49.7
	Prop F(50,10)	59 dBu	12.4 km + WSYX	F(50,50)	47 dBu	100.6	km =	113.0	
6 TV	WRTV		INDIANAPOLIS	IN	LIC	299.4	146.9	116.1	30.8
	Prop F(50,10)	59 dBu	11.9 km + WRTV	F(50,50)	47 dBu	104.2	km =	116.1	

***** End of channel 205 study *****



ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
Spryex Communications, Inc.

CHANNEL 205 0.4 KW (H&V) 65 METERS HAAT
Miamitown, Ohio

AFFIDAVIT

RAMSEY COUNTY }
STATE OF MINNESOTA }

ss:

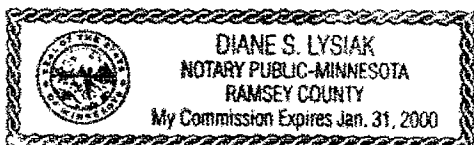
Garrett G. Lysiak, being first duly sworn, says that he is an employee of Owl Engineering, Inc., consulting communications engineers with offices in Blaine, Minnesota: that his qualifications as an expert in communications engineering are a matter of record with the Federal Communications Commission: that the foregoing exhibit was prepared by him and under his direction; and that the statements contained therein are true of his own personal knowledge except those stated to information and belief and, as to those statements, verily believes them to be true and correct.



A handwritten signature in cursive script that reads "Garrett G. Lysiak".

Garrett G. Lysiak, P.E.

Subscribed and sworn to before me this date February 2, 1999



A handwritten signature in cursive script that reads "Diane S. Lysiak".

Diane S. Lysiak
Notary Public

My commission expires January 31, 2000