

October 3, 2008

Ms. Renee J. Jenkins  
Director, Administration Department  
Secretary to the Commission  
Docketing Division  
The Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, OH 43215-3793

**Letter of Notification  
138 kV Transmission Line Tap  
To The Avon Substation Project  
Case No. 08-1150-EL-BLN**

Dear Ms. Jenkins:

In accordance with Rule 4906-11-01 American Transmission Systems, Inc. ("ATSI"), a subsidiary of FirstEnergy Corp., transmits one (1) original and eleven (11) copies of the enclosed Letter of Notification. In this project, ATSI is proposing to construct a new 138 kV transmission line to supply a new transformer being installed at the existing Avon 345 kV Transmission Substation. The new 138 kV tap will connect the Avon 138 kV and 345 kV Substations via the existing buswork to the new transformer. The project is located at the Avon Substation in the city of Avon Lake, Lorain County, Ohio.

Please be advised of the following:

a) Name and address of the applicant:

American Transmission Systems, Incorporated  
76 South Main Street  
Akron, Ohio 44308

b) Name of proposed facilities:

138 kV Transmission Line Tap to the Avon Substation.

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.

Technician TM Date Processed 10/6/08

Ms. Renee J. Jenkins/ Docketing

October 3, 2008

c) Location of proposed facilities:

The project is located at the Avon Substation in the city of Avon Lake, Lorain County, Ohio.

d) Description of proposed facilities:

In this project, ATSI is proposing construct a new 138 kV transmission line to supply a new transformer being installed at the existing Avon 345 kV Transmission Substation.

e) Applicant's representative:

Scott Humphrys, Associate Distribution Specialist  
Energy Delivery Technical Services  
FirstEnergy Service Company  
76 South Main Street  
Akron, OH 44308-1890

After docketing this filing, please return one time-stamped copy of the Letter of Notification for our records to us in the enclosed envelope. We have provided a copy of this Letter of Notification by certified mail, with return receipt requested, to officials of the political subdivisions immediately affected by the proposed project as listed in the attached Exhibit 1. Copies of the transmittal letters addressed to the local government representatives of the city of Avon Lake, Lorain County are enclosed for your file.

Should the Ohio Power Siting Board desire further information or discussion of this submittal, please contact me at (330) 384-2526.

Sincerely,



Scott Humphrys  
Associate Distribution Specialist  
Energy Delivery Technical Services  
FirstEnergy Service Company

Attachments

The Honorable Betty C. Blair  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

October 3, 2008

PUCO

**Letter of Notification  
138 kV Transmission Line Tap  
To The Avon Substation Project  
Case No. 08-1150-EL-BLN**

Dear Commissioner Blair,

In the above captioned project, American Transmission Systems, Inc. ("ATSI"), a subsidiary of FirstEnergy Corp., is proposing to construct a new 138 kV transmission line to supply a new transformer being installed at the existing Avon 345 kV Transmission Substation. The new 138 kV tap will connect the Avon 138 kV and 345 kV Substations via the existing buswork to the new transformer.

The Project area is located approximately 900 feet south of the Lake Road and Avondale Avenue intersection in the city of Avon Lake, Lorain County, Ohio. The Project will be built on land that already is used by the applicants for existing transmission and distribution facilities. As such, there should be little or no incremental land-use impact for the affected communities.

In accordance with the provisions of Ohio Administrative Code ("OAC") Rule 4906-1-01, this project falls within the Ohio Power Siting Board's requirements for a Letter of Notification ("LON"). Therefore, in compliance with OAC 4906-11-01 of the OPSB's Rules and Regulations, we have prepared and filed the attached LON with the OPSB for their review and approval. The LON contains a description of the project, and is provided for your information.

I will be happy to answer your questions concerning this matter. You can contact me at (330) 384-2526.

Sincerely,



Scott Humphrys  
Associate Distribution Specialist  
Energy Delivery Technical Services  
FirstEnergy Service Company

Attachment

**EXHIBIT 1**  
**138 kV Transmission Lines**  
**To The Avon Substation Project**  
**Case No. 08- -EL-BLN**

**Lorain County**

The Honorable Betty C. Blair  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. James R. Cordes  
Lorain County Administrator  
226 Middle Avenue  
Elyria, OH 44035

The Honorable Ted Kalo  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. Kenneth P. Carney  
Lorain County Engineer  
274 Hadaway St.  
Elyria, OH 44035

The Honorable Lori A. Kokoski  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. William J. Ulik  
Director, Lorain County Community  
Development  
226 Middle Avenue  
Elyria, OH 44035

**Avon Lake**

The Honorable Karl Zuber  
Mayor, City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

Mr. Gary Fell  
Director, Avon Lake Planning  
Commission  
150 Avon Belden Road  
Avon Lake, OH 44012

The Honorable Gregory J. Zilka  
Council President, City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

Mr. Wade Mertz  
Avon Lake City Engineer  
150 Avon Belden Road  
Avon Lake, OH 44012

Ms. Barbara Dopp  
Council Clerk, City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

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**AMERICAN TRANSMISSION SYSTEMS, INCORPORATED  
A SUBSIDIARY OF FIRSTENERGY CORP.**

**LETTER OF NOTIFICATION**

**138 kV TRANSMISSION LINE  
TAP TO THE  
AVON SUBSTATION PROJECT**

**OPSB CASE NO. 08-1150-EL-BLN**

**October 3, 2008**

**American Transmission Systems, Incorporated  
76 South Main Street  
Akron, Ohio 44308**

**LETTER OF NOTIFICATION  
138 kV TRANSMISSION LINE  
TAP TO THE  
AVON SUBSTATION PROJECT**

The following information is being provided in accordance with the procedures delineated in Ohio Administrative Code Section 4906-11-01: Letter of Notification Requirements of the Rules and Regulations of the Ohio Power Siting Board.

**4906-11-01 (A): Need Statement**

**4906-11-01 (A) (1) a: Name and Reference Number**

**Name of Project:** 138 kV Transmission Line Tap to the Avon Substation Project

**2008 LTFR Reference:** This project is not identified in the FirstEnergy Corp. 2008 Long-Term Forecast Report (LTFR).

**4906-11-01 (A) (1) b: Brief Description of Project**

In the 138 kV Transmission Line Tap to the Avon Substation Project, American Transmission Systems, Incorporated (ATSI), a FirstEnergy Corp. subsidiary, is proposing to construct a new 138 kV transmission line to supply a new transformer being installed at the existing Avon 345 kV Transmission Substation. The transmission line will be approximately 630 feet long and is proposed to be located south of the intersection of Avondale Avenue and Lake Road in the City of Avon Lake in Lorain County, Ohio.

The general location of the Project is shown in Exhibit No. 1, which is a partial copy of the United States Geologic Survey, Lorain County, Ohio Quad, Map ID 41082-D1. The general layout of the Project is shown in Exhibit No. 2. In this Project, the proposed transmission line consists of an approximately 630 foot long, single circuit, 138 kV transmission line. It will be connected to the existing 138 kV substation bus located inside the existing Avon 138 kV

Transmission Substation, and the new 345 kV to 138 kV transformer being installed within and along the east side of the existing Avon 345 kV Transmission Substation. The transmission line will be supported on one existing steel lattice structure. The portion of the substation bus being connected to is supported on steel towers and therefore has the appearance of a transmission line. During construction, between the 138 kV and 345 kV substations, two (2) temporary clearance poles will be put in place to ensure that the transmission line that crosses over Avondale Avenue does not come in to contact with the road or other conductors. Once the transmission line is connected, the poles will be removed. The transmission line will be located above the Avon 138 kV and 345 kV Transmission Substations on Cleveland Electric Illuminating Company owned property. This Letter of Notification covers the entire scope of installing the transmission lines, but does not cover installation of the substation equipment.

**4906-11-01 (A) (1) c: Why the Project Meets the Requirements for a Letter of Notification**

The project meets the requirements for a Letter of Notification because the project is within the types of project defined by Item (1) (a) of the Application Requirement Matrix for Electric Power Transmission Lines in Appendix A of 4906-1-01 of the Ohio Administrative Code. Which states:

- (1) Rerouting or extension or new construction of single or multiple circuit electric power transmission line(s) as follows:*  
*(c) Line(s) one hundred twenty-five kiloVolts and above but less than three hundred kilovolts, and not greater than two miles in length.*

The proposed project involves constructing a new 138 kV transmission line to supply a new transformer being installed at the existing Avon 345 kV Transmission Substation.

**4906-11-01 (A) (2): Need for the Project**

The proposed Project is needed to eliminate a projected transmission system overload and to reduce transformer loadings.

**4906-11-01 (A) (3): Location Relative to Existing or Proposed Lines**

The location of the Project relative to existing or proposed transmission lines is shown in the FirstEnergy System Facilities map, included as the last page of Chapter 3 of the confidential portion of the FirstEnergy Corp. 2008 Long-Term Forecast Report submitted to the PUCO in case no. 08-504-EL-FOR under rules 4901:5-5:04 (C) of the Ohio Administrative Code. The map is incorporated by reference only. The map shows ATSI's 345 kV and 138 kV transmission lines including the Avon 345 kV and 138 kV Substations. The project area is located approximately 7 ¼ inches (11 by 17 inch printed version) from the left edge of the map box and 7 ¼ inches from the bottom of the map box. The general location of the Project is shown on Exhibit No. 1.

**4906-11-01 (A) (4): Alternatives Considered**

One alternative considered was to upgrade cooling on existing transformers in the Avon Substation. This upgrade was rejected because it provides only a marginal increase in transformer capacity. Another alternative considered was to add a transformer at the Carlisle Substation. However, this would not mitigate the transformer overload issues.

**4906-11-01 (A) (5): Construction Schedule**

Construction on the project is expected to begin as early as January 1, 2009. The project is expected to be completed by May 1, 2009.



#### **4906-11-01 (A) (6): Area Map**

Exhibit No. 1 depicts the general location of the project site. This map is a partial copy of the United States Geologic Survey, Lorain County, Ohio Quad, Map ID 41082-D1. To locate and view the project site from Columbus, Ohio, take Interstate 71 north from Columbus approximately 95 miles north to exit 204 at State Route 83. Take State Route 83 north approximately 40 miles north to its end at Lake Road, (US Route 6). Turn left (west) on Lake Road and travel approximately 2 miles and turn left on Avondale Avenue. The project area is located approximately ¼ mile south of the intersection of Lake Road and Avondale Avenue.

#### **4906-11-01 (B): Technical Features of the Project**

##### **4906-11-01 (B) (1): Operating Characteristics**

The proposed project is a transmission line that will be designed for and operate at 138 kV. The transmission line and the structures will have the following characteristics:

**Structure:**

Voltage:	138 kV
Conductor:	3500 kcmil SAC
Static wire:	3 #6 Alumoweld
Insulators:	138 kV Polymer Horizontal Post

##### **4906-11-01 (B) (2) (a): Calculated Electric and Magnetic Fields**

The proposed project will build a new 138kV line on existing structures, and will not significantly change the electric and magnetic field ('EMF') strengths in the project area. The following table itemizes the line loading of the existing transmission line, modeled on an assumed 150' right-of-way. The normal line loading represents FirstEnergy's peak system load for the transmission lines. The emergency line loading represents the maximum line loading under contingency operation. The winter rating is based on the continuous maximum conductor ratings (MCR) of the circuits for an ambient temperature of zero degrees centigrade (32 deg. F), wind speed of 1.3 miles

per hour, and a circuit design operating temperature of 100 degrees centigrade (212 deg. F).

Line Name	Normal Loading Amps	Emergency Loading Amps	Winter Rating Amps
Q-92-AV-T 138 kV Transmission Line	1,326	1,872	3,207

EMF CALCULATIONS	Electric Field kV/meter (BS-J/BS-I)	Magnet Field mGauss (BS-J/BS-I)
<b>Normal Loading</b>		
Under Lowest Conductors	0.4	31.8
At Right-of-Way Edges	0.74	18.63
<b>Emergency Loading</b>		
Under Lowest Conductors	0.4	44.9
At Right-of-Way Edges	0.74	23.17
<b>Winter Rating</b>		
Under Lowest Conductors	0.4	76.91
At Right-of-Way Edges	0.74	39.69

#### **4906-11-01 (B) (2) (b): EMF Discussion**

##### **Background Information**

Electric and magnetic fields (EMFs) are naturally occurring in the environment and can be found in the Earth's interior and in the human body. EMFs are generated essentially anywhere where there is a flow of electricity, including electrical appliances and power equipment. Electric fields are associated with the voltage of the source; magnetic fields are associated with the flow of current in a wire. The strength of these fields decreases rapidly with distance from the source. EMFs associated with electricity use are not disruptive to cells like x-rays or ultraviolet rays from the sun. These fields are too weak to break molecules or chemical bonds. Although scientists have been studying to determine whether EMFs are associated with adverse health effects, at this time there is no basis to conclude that EMFs cause adverse health effects. Extensive research has been conducted over the past two decades. A number of independent scientific panels have reviewed this

research and have stated that there is no basis to conclude that EMFs cause adverse health effects nor has it been shown that levels in everyday life are harmful.

#### Recent Developments

As a part of the National Energy Policy Act of 1992, the Electric and Magnetic Fields Research and Public Information Dissemination (EMF RAPID) program was initiated within the five-year effort under the National EMF Research Program. The culmination of this five-year effort resulted in a final RAPID Working Group report, which was released for public review in August 1998. The Director of the National Institutes of Environmental Health Sciences (NIEHS) then prepared a final report to Congress after receiving public comments.

The NIEHS' Director's final report, released to Congress on May 4, 1999, concluded that extremely low frequency electric and magnetic fields (ELF-EMF) exposure cannot be recognized at this time as entirely safe because weak scientific evidence that exposure may pose a leukemia hazard. The Director further stated that the conclusion of this report is insufficient to warrant aggressive regulatory concern. ATSI will monitor continuing EMF studies.

#### 4906-11-01 (B) (3): Estimated Costs

The following are the estimated capital costs by FERC Accounts for the proposed project:

Account	Cost
350 Land Rights	\$ 0
356 Overhead Conductors and Devices	\$130,000
Removal	\$ 0
Right-of-way	\$ 0
Total Cash Required	\$ 130,000

## **4906-11-01 C: Socioeconomic Data**

### **4906-11-01 (C) (1): Land Use**

The existing land use at the area of the proposed transmission line project is utility. Based on the U.S. Bureau of Census estimates, the 2000 population of the city of Avon Lake was 18,145, and the 2000 population of Lorain County was 284,664.

### **4906-11-01 (C) (2): Agricultural Land**

The existing structures will be located on an existing transmission line right-of-way that is currently not used for agricultural purposes. Agricultural land will not be adversely impacted by the proposed project.

### **4906-11-01 (C) (3): Archaeological or Cultural Resources**

The existing transmission line structures are located in an existing transmission line corridor. Given the nature of the project, and its close proximity to existing similar construction, it is unlikely that any archaeological or cultural resources would be disturbed by the limited nature of attaching the new conductor.

As part of ATSI's investigation of the project site, a search of the Ohio Historic Preservation Office (OHPO) National Register of Historic Places on-line database was conducted and did not identify the existence of any historic sites within the project area. Properties in the OHPO database include all Ohio listings on the National Register of Historic Places as well as districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

**4906-11-01 (C) (4) (a): Documentation of Letter of Notification**

**Transmittal**

This Letter of Notification is being provided concurrently to:

**Lorain County**

The Honorable Betty C. Blair  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. James R. Cordes  
Lorain County Administrator  
226 Middle Avenue  
Elyria, OH 44035

The Honorable Ted Kalo  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. Kenneth P. Carney, P.E., P.S.  
Lorain County Engineer  
274 Hadaway St.  
Elyria, OH 44035

The Honorable Lori A. Kokoski  
Lorain County Commissioner  
226 Middle Avenue  
Elyria, OH 44035

Mr. William J. Ulik, Director,  
Lorain County Community Development  
226 Middle Avenue  
Elyria, OH 44035

**Avon Lake**

The Honorable Karl Zuber  
Mayor, City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

Mr. Gary Fell  
Director, Avon Lake Planning  
Commission  
150 Avon Belden Road  
Avon Lake, OH 44012

The Honorable Gregory J. Zilka  
Council President,  
City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

Mr. Wade Mertz  
Avon Lake City Engineer  
150 Avon Belden Road  
Avon Lake, OH 44012

Ms. Barbara Dopp  
Council Clerk,  
City of Avon Lake  
150 Avon Belden Road  
Avon Lake, OH 44012

Copies of the transmittal letters to these officials have been included with the transmittal letter submitting this Letter of Notification to the Ohio Power Siting Board.

**4906-11-01 (C) (4) (b): Public Information Program**

The local area manager with the Cleveland Electric Illuminating Company is available to provide information and respond to questions on this project.

**4906-11-01 (C) (5): Current or Pending Litigation**

There is no known current or pending litigation involving this project.

**4906-11-01 (C) (6): Local, State, and Federal Requirements**

There are no known local, state, or federal requirements that must be met prior to commencement of construction on the proposed transmission line project.

**4906-11-01 (D): Environmental Data**

**4906-11-01 (D) (1): Endangered, Threatened, and Rare Species Investigation**

As part of our investigation, a written request was made to the Ohio Department of Natural Resources (ODNR) on August 19, 2008 to research the presence of any endangered, threatened, or rare species within the project area. The ODNR's response of August 21, 2008, attached as Exhibit No. 3 indicated that there are no rare or endangered species within one half mile of the identified project area.

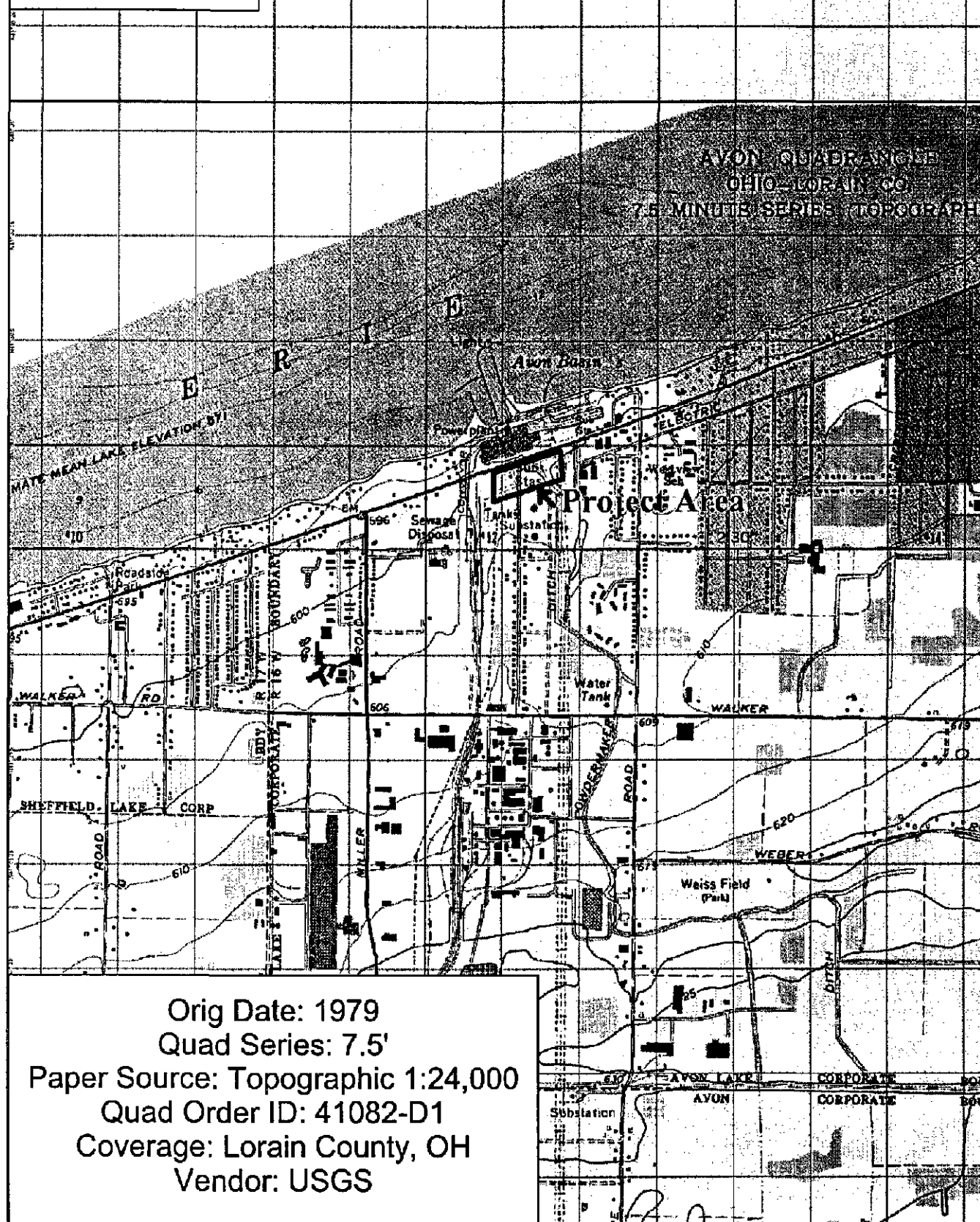
**4906-11-01 (D) (2): Areas of Ecological Concern**

The project is located in an established transmission line right-of-way. Construction access is expected to largely follow the existing access routes in the existing right of way as well as via public roads. Visual observations of the project area did not indicate any areas of ecological concern near the project.

**4906-11-01 (D) (3): Additional Information**

Construction and operation of the proposed project will be in accordance with the requirements specified in the latest revision of the NESC as adopted by the PUCO and will meet all applicable safety standards established by OSHA.

## EXHIBIT 1

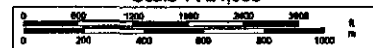


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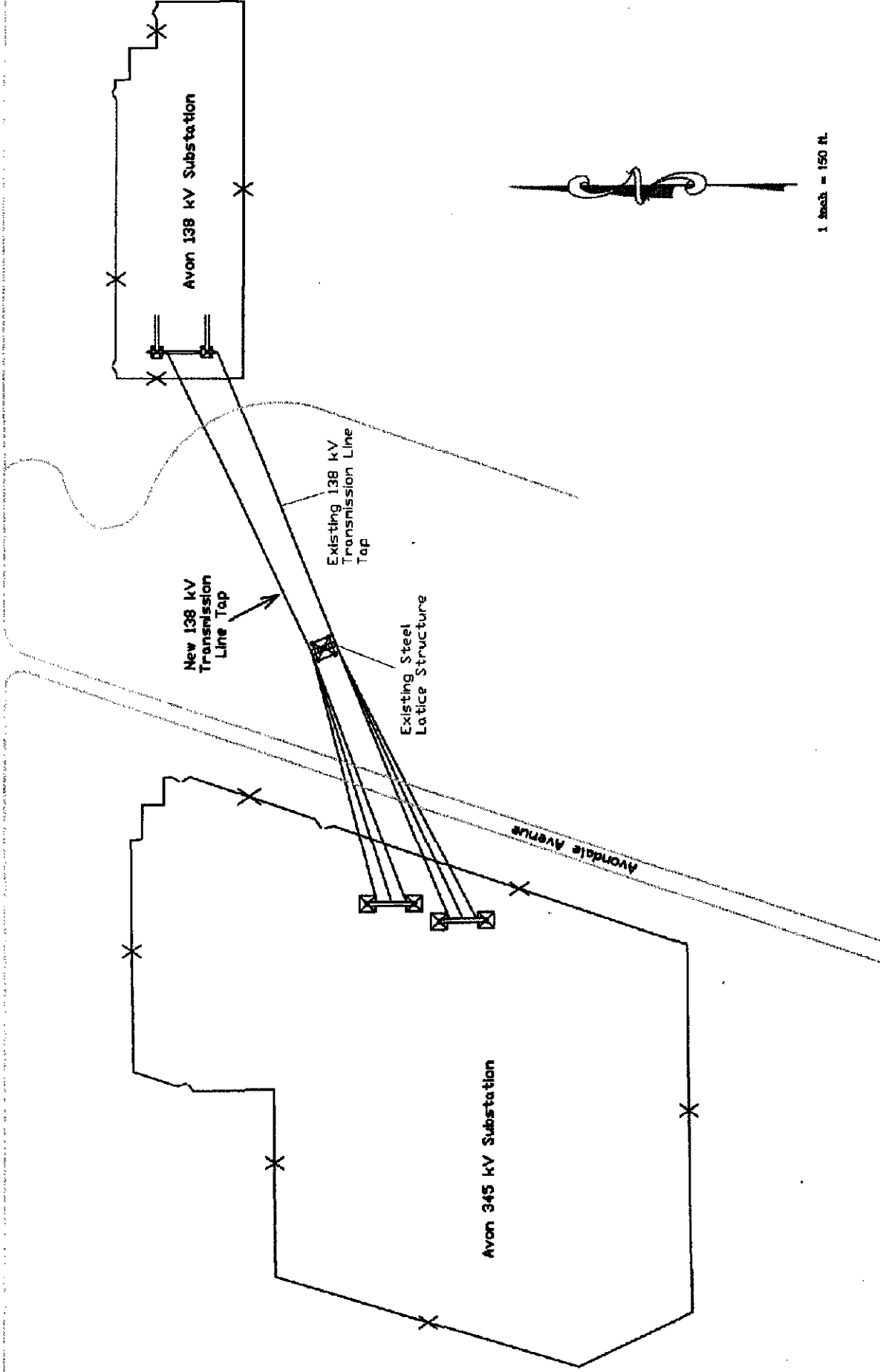
[www.delorme.com](http://www.delorme.com)

Scale 1 : 24,000


$$1^{\circ} = 2,000.0 \text{ ft}$$

### **Data Zoom 14-0**

Lake Road



138 kV Transmission Line Tap to the Avon 345 kV Substation

**FirstEnergy.**  
ATSI

EXHIBIT 2





## Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

**Division of Natural Areas and Preserves**

*Steven D. Maurer, Chief*

2045 Morse Rd., Bldg. F-1

Columbus, OH 43229-6693

Phone: (614) 265-6453; Fax: (614) 267-3096

August 21, 2008

Scott Humphrys  
FirstEnergy  
76 S. Main St.  
Akron, OH 44308

Dear Mr. Humphrys:

I have reviewed our Natural Heritage maps and files for the 138 kV Transmission Line Tap to the Avondale Substation project area, including a one mile radius, in Avon Lake, Lorain County, and on the Avon Quad. We have no records for rare or endangered species or other significant natural features within the project area. However, we have one record within the one mile radius of the project site. The location for the Lake Sturgeon (*Acipenser fulvescens*), endangered, is shown in red on the attached map.

There are no state nature preserves or scenic rivers at the project site. We are also unaware of any unique ecological sites, geologic features, animal assemblages, state parks, state forests or state wildlife areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Debbie Woischke".

Debbie Woischke, Ecological Analyst  
Natural Heritage Program



Avon Quad,  
Lorain Co.

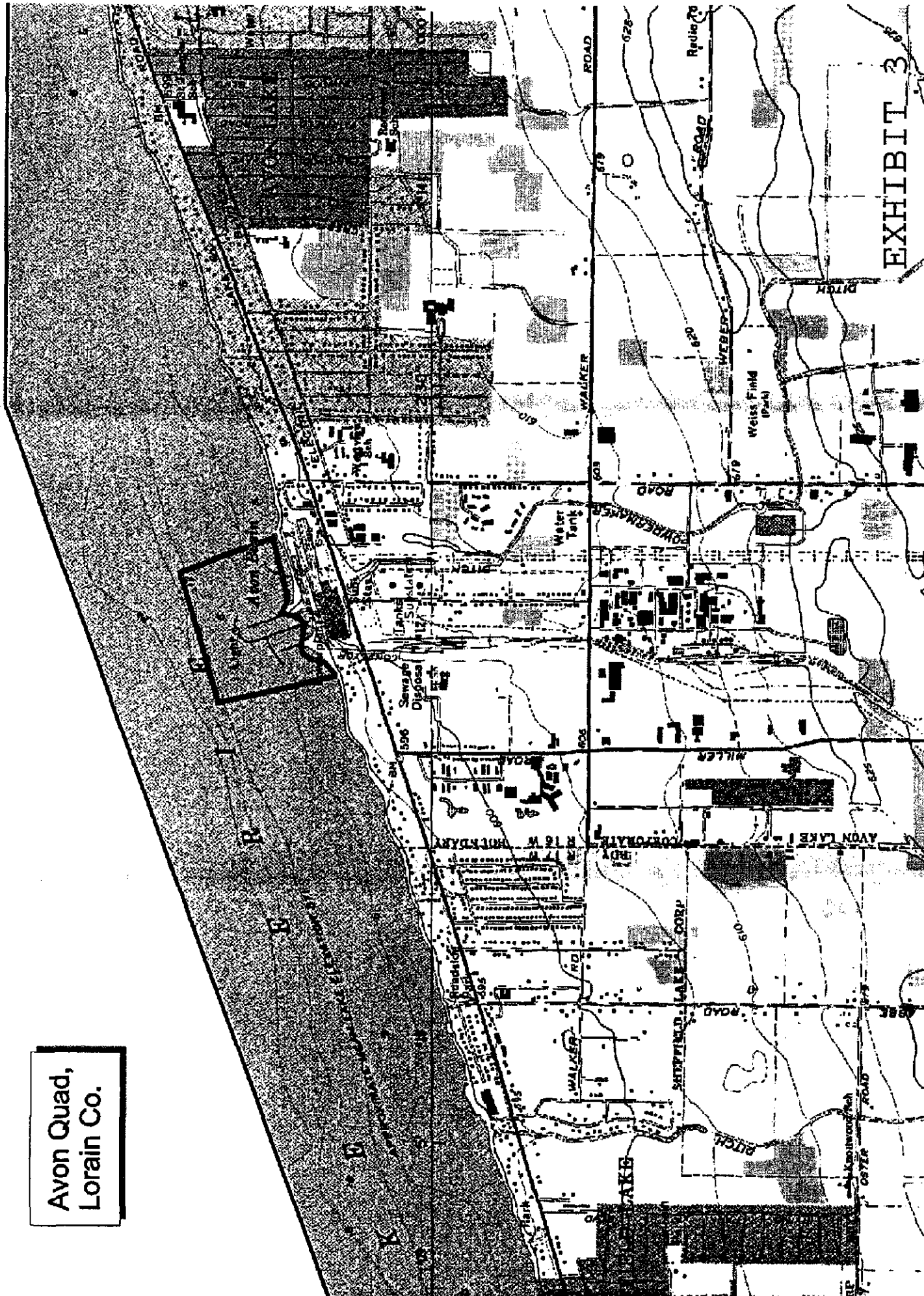


EXHIBIT 3