

FILE

OHIO POWER SITING BOARD

Geauga County 138 kV Transmission )  
Line Supply Project Applicants American )  
Transmission Systems, Incorporated and )  
the Cleveland Electric Illuminating )  
Company )

OPSB Case No. 07-0171-EL-BTX

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**Response to Interrogatory No. 16 of Staff's First Set of Interrogatories Directed to Applicants**

| <u>FE No.</u> | <u>OPSB Staff No.</u> | <u>Data Request Text</u>                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | 16                    | State whether a combination of the Maple Highlands Bike Trail right-of-way and utilization of an abandoned railroad corridor through the City of Chardon considered in the route selection process. If so, provide a detailed explanation as to why this route was rejected. Include any legal constraints that may prevent acquisition of easements. |

**RESPONSE**

A "combination of the Maple Highlands Bike Trail right-of-way and utilization of an abandoned railroad corridor through the City of Chardon" was not considered in the route selection process described in the Application; although segments of this "combination" route were evaluated as part of the route selection study process described in the Application. Subsequent to receipt of service of OPSB Staff's First Set of Interrogatories on March 25, 2008, the Applicants applied their route selection process to the "combination route" described in OPSB Staff No. 16. The results of this study are described in the attached report.

As reflected in the attached report, a route following the Maple Highlands Trail and an abandoned railroad corridor through the City of Chardon ("combination route") described in OPSB Staff No. 16 ranks 209<sup>th</sup> out of 894 total routes evaluated by the Applicants. In contrast, the Applicants' "preferred" and "alternate" routes rank in the route selection process were 15 and 1 respectively. The factual reasons for this comparatively poor ranking of the "combination route" are described in the attached report – and the Applicants' position is that these factual reasons (separately and collectively) are sufficient justification for dropping the "combination route" described in OPSB Staff No 16 from further consideration in this proceeding.

Further, there are legal constraints that will prevent the construction and operation of the proposed Project on the combination route. Applicants believe, based upon a review of applicable law, that the Park District and other persons could make a convincing legal argument that Applicants would not be authorized to take or obtain the necessary property rights for construction or operation of the Project on the combination route.

Prepared By: Ted Krauss, FirstEnergy,  
James Nicholas, URS Corp., and  
Legal Counsel

Response Date: May 19, 2008 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 5/19/2008

Respectfully submitted,



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American Transmission Systems, Inc.

The Cleveland Electric Illuminating Company

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Response to Interrogatory No. 16 of Staff's First Set of Interrogatories Directed to Applicants by American Transmission Systems, Incorporated and The Cleveland Electric Illuminating Company was served upon the following persons by mailing a copy, postage prepaid, on May 19, 2008, addressed to:

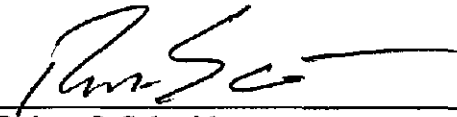
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\_\_\_\_\_  
Robert J. Schmidt

May 16, 2008  
FirstEnergy Corporation  
76 South Main Street  
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Attention: Mr. Ted Krauss

Re: OPSB Case No. 07-0171-EL-BTX  
Geauga County 138 kV Transmission Line Supply Project,  
Application of Route Selection Study Methodology to "Combination of Maple  
Highlands Trail and Abandoned Railroad through the City of Chardon" Route as  
described in OPSB Staff Interrogatory No. 16.

Dear Mr. Krauss:

On March 26, 2008, the Ohio Power Siting Board (OPSB) staff provided American Transmission Systems, Inc. (ATSI) and the Cleveland Electric Illuminating Company (CEI) (Applicants) with a set of discovery requests associated with the Geauga County 138 kV Transmission Line Supply Project Application to the OPSB for a Certificate of Environmental Compatibility and Public Need (Application) (OPSB Case Number 07-0171-EL-BTX). One of these requests, Number 16, provided as follows:

*State whether a combination of the Maple Highlands Bike Trail right-of-way and utilization of an abandoned railroad corridor through the City of Chardon was considered in the route selection process. If so, provide a detailed explanation as to why this route was rejected. Include any legal constraints that may prevent acquisition of easements.*

The specific route suggested in the OPSB interrogatory, which involves utilizing a corridor routed through a linear public park, the Geauga County Park District's Maple Highlands Trail<sup>1</sup>, and through the City of Chardon, was not evaluated in the Route Selection Study described in the Application; although segments of this route were

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<sup>1</sup> The Geauga Park District, which owns and controls the property under the trail, designates the trail as the "Maple Highlands Trail" (see <http://www.geaugaparkdistrict.org/parks/maplehighlands.shtml>) For clarity, all references to the trail in this letter report shall be to the Park District's term – Maple Highlands Trail – and this reference shall be deemed to include and mean the "Maple Highlands Bike Trail" described in OPSB Staff Interrogatory No. 16. Also for convenience, the route described in OPSB Staff Interrogatory No. 16 shall be referred to herein as the "Combination Route."

considered as part of the 893 routes evaluated in the Route Selection Study completed by URS and ATSI, and included in the Application as Appendix 03-1.

This letter report summarizes the findings of URS' application of the Route Selection Study methodology described in the Application to the Combination Route described in OPSB Staff Interrogatory No. 16.

Figure 1 of this letter report provides an overview of the Combination Route in relation to the Preferred and Alternate Routes submitted in the Application. Figures 2 through 12 of this letter report show the preliminary conceptual alignment of the Combination Route and the identified constraints.

### **Methods**

URS applied the Route Selection Study methodology described in the Application to the Combination Route described in OPSB Staff Interrogatory No. 16. For convenience in comparing the study results for the Combination Route against the routes that are described in the Application, the Combination Route was added to and compared against the 893 routes considered in the Application's Route Selection Study; including the same constraint categories, weighting, and methodology described in Section 2.0, 3.0, and 4.0 of the Application's Route Selection Study.

URS and staff of the Applicants conducted a windshield and pedestrian review of the Combination Route on April 15, 2008. This review was similar to the limited windshield reconnaissance conducted in the study area and along several of the higher ranked routes in the overall Route Selection Study. However, the review of the Combination Route was more comprehensive than those along the other routes because it included pedestrian reconnaissance of the entire portion along the Maple Highlands Trail. Specific details such as the preferred side of the linear park, potential access paths, engineering constraints, and pole placement were additional to those considered in the review of the initial 893 routes. Selected photographs taken during the reconnaissance are included in Attachment 3 to this letter report. URS, Applicants, and OPSB Staff conducted a

pedestrian review of route on April 30, 2008.<sup>2</sup> Staff of the Applicants conducted an additional pedestrian review of the Maple Highlands Trail portion of the route on May 11, 2008.

### **Quantitative Results**

Table 1 of this letter report provides the quantitative results of the addition of the Combination Route to the overall Route Selection Study. The Combination Route received a total score of 3.67 and ranked 209th out of the 894 total routes. The Combination Route had the maximum values of residences between 100 and 1,000 feet, the maximum value of linear feet of sensitive land uses crossed (due to a large portion of the route being located in a public park) and the maximum value of Ohio Historical Inventory Structures located within 1,000 feet. The Combination Route was not in the top 25% in the ecological, cultural, or land use categories. The Combination Route received the best engineering score, however further review of the Combination Route indicated several engineering challenges specific to this route that are not reflected in the engineering score because this route is substantially different than all other routes considered. Unlike any of the other potential routes described in the Route Selection Study (routes that largely follow natural land contours), a large portion of the Combination Route follows man-made land use features that are a former railroad grade that has been converted to a paved trail in a public park. Installing the transmission line poles at appropriate distance from the paved trail and three covered bridges, selecting pole locations to avoid blocking drainage ditches, placing poles in the sides of the elevated former rail grade and along cuts for the railroad grade are some of the engineering challenges to be overcome.

Table 2 provides a comparison of the Combination Route with the Preferred and Alternate Routes submitted in the Application. The values for the Preferred and Alternate Routes are based on desktop and detailed field reconnaissance. Quantification of

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<sup>2</sup> Representatives of the Geauga Park District, City of Chardon, media and interveners were present for this review.

constraints associated with the Combination Route is limited to desktop review or publicly available information and the restricted pedestrian reconnaissance of the route. A wetland delineation was not conducted along the Combination Route.

In general, there appear to be few, if any, advantages of the Combination Route over the submitted Preferred and Alternate Routes. Routing through residential development in the City of Chardon, both along a section of the former railroad and the portion of the Maple Highland Trail located within the City's boundary and utilizing the Maple Highland Trail, a linear public park currently used for recreation, that is located through environmentally sensitive areas, appear to be the major constraints associated with the Combination Route.

### **Qualitative Analysis**

Quantitative desktop analysis of a set of routes by itself is not considered adequate to select the final Preferred and Alternate Routes for a project. The quantitative portion of a route selection study is typically used to narrow the field of candidates and assess which routes are most likely the best candidates for meeting the needs of a project while limiting impacts to sensitive environmental, land use, and cultural constraints. Qualitative review of a route is also necessary to evaluate aspects that cannot be fully included in the desktop analysis due to lack of publicly available data or the inability to properly quantify circumstances. URS utilized the pedestrian and windshield reconnaissance as well as knowledge of the surrounding vicinity to perform a qualitative assessment of the Combination Route described in this letter report.

The western portion of the Combination Route is within the municipal boundary of the City of Chardon. Buried and aboveground utilities, potential traffic congestion, higher density residential, commercial, and industrial development, zoning and land use restrictions, safety and FirstEnergy-specific utility line clearance requirements, and likelihood of future development are some of the difficulties associated with construction of an electric transmission line in an urban setting. Municipal areas are generally avoided when other feasible candidate routes are available.

Figure 13 provides the zoning map (dated April 8, 2006) for the City of Chardon. This map demonstrates that the Combination Route segments along the abandoned railroad corridor cross land zoned for industrial use just south of Pinegrove Substation. Commercially-zoned areas are crossed to the south in the vicinity of Center Street (State Route 44), Water Street (U.S. 6), and Park Avenue. Construction at the northern end through the major commercial area of the City of Chardon, while technically possible, may be difficult due to space limitations between buildings. A current distribution line passes above two buildings, however it is not ATSI's typical practice to install a transmission line above a structure or to permit any structure to be located within the right-of-way of a transmission line. Thus, the proposed preliminary routing would call for the Combination Route to shift to the west to avoid these structures but would be within 50 feet of at least two buildings. Installation of steel poles would likely be necessary in parts of this area due to engineering constraints associated with the existing buildings and other land use obstructions. A relatively low quality stream is also paralleled through much of the commercial area.

A cemetery zoned "special" is located on the south side of Park Street, approximately 150 feet east of the Combination Route. A golf course (also zoned "special") and an associated residential community (zoned as Planned Unit Development in 2006) are located to the west of South Street (State Route 44) and south and west of the Combination Route. Based on the pedestrian reconnaissance and data available from the Geauga County Auditor, the residences within the golf course community have been constructed in the last few years. Areas zoned for low density residential use also are located on the west side of South Street (State Route 44) and north of the Combination Route.

The Combination Route follows the Maple Highlands Trail through the remaining portions of the City of Chardon crossed to the east of South Street (State Route 44). A small commercially-zoned area is located at the southeast corner of the intersection of the Maple Highlands Trail and South Street (State Route 44), and a church is adjacent to the northeast corner of the intersection of the Maple Highlands Trail and South Street.

Remaining adjacent areas are zoned for low density residences, high density residences, and planned unit development. Several residential condominiums were observed within the planned unit development area. These residences have been constructed within the last few years.

The section of the Maple Highlands Trail reviewed for the Combination Route has been constructed within the last two to three years. The Maple Highlands Trail is a linear public park established along an abandoned railroad corridor in a wooded and natural area. It is owned by and maintained by the Geauga County Park District. The Geauga County Park District's mission is: "[To] preserve, conserve and protect the natural features of Geauga County and to provide the opportunity for people to enjoy and appreciate those resources." Based on the pedestrian reconnaissance, the Maple Highlands Trail is a high quality recreational facility, is used by bikers, runners and walkers and is likely enjoyed by nature enthusiasts. Trail markers indicate that it has also been incorporated into a portion of the Buckeye Trail, a 1,444 mile long recreational hiking trail that winds around the State of Ohio.

The quality of the Maple Highlands Trail as a linear public park and recreational facility would be degraded significantly by the construction of an electric transmission line due to necessary clearing and installation of wood and possibly some steel poles necessary to support a transmission line along the affected portions of the Combination Route. The necessary removal of vegetation to construct and operate the transmission line would be inconsistent with the Geauga County Park District's Mission to ". . . preserve, conserve and protect the natural features of Geauga County. . ." Portions of the Maple Highlands Trail would need to be temporarily closed during construction of a transmission line along the route. This would break the contiguous nature of both the Maple Highlands Trail and the Buckeye Trail during the duration of construction.

The Maple Highlands Trail has been constructed for foot traffic and non-motorized vehicles, and the plaque on the covered bridge at the crossing of Claridon Road indicates that it was designed for only a 0.5 ton loading. It is likely that the heavy equipment

required to construct an electric transmission line on the route would significantly disturb the current pavement and grading of the recreational facility. The portions of the paved trail utilized for access and construction would likely need to be rebuilt. Additional impacts include the introduction of new man-made visual elements (poles, guying, wires, concrete footers, run-off controls, permanent access roads and similar features) into a natural area that currently is used widely by the public and that also does not currently have existing above-ground utility elements within the immediate view-shed.

Limited access points and the slope of the former railroad increase the difficulty of constructing and electric transmission line along the Maple Highlands Trail. Covered bridges over two roads and the West Branch of the Cuyahoga River have been constructed as part of the Maple Highlands Trail. The elevated nature of the road crossings and the bridge structures prevent direct access to the corridor from several roads along the route. The bridges are also obstructions that make it necessary to offset the transmission line to provide the necessary electrical clearance. Permanent access ramps therefore would be necessary in a few areas to allow heavy construction equipment to climb the slope of the former railroad grade for construction and future maintenance of the transmission line.

The side slopes of the former railroad grade, along both elevated and cut sections of the railroad grade, as well drainage ditches along the Maple Highland Trail also cause difficulty in pole placement. These side slopes are man-made features that are unique to this corridor. Concrete footers may be required to sufficiently support some of the poles. Soil erosion around the poles and runoff into nearby streams and wetlands is potentially a long term issue to carefully consider in the engineering process. Slope failures of the existing side slopes were observed in several areas along the Maple Highlands Trail during the field reconnaissance and it is reasonable to anticipate that these types of slope failures will continue to occur. Installation of the transmission line would need to be engineering to minimize the potential to accelerate these types of slope failures.

It is interesting to contrast the current construction requirements for the Combination Route with the construction requirements described in the OPSB Certificate for the former proposed Rachel project, OPSB Case Number 95-600-EL-BTX. In that case, Centerior Energy proposed installing steel poles on reinforced concrete foundations that would be located approximately 14 to 18 feet east or north of portions of the railroad grade that are within the Combination Route. Condition 1 of the OPSB's Opinion, Order and Certificate in that case required ". . . The portion of the route that follows the abandoned Baltimore and Ohio Railroad will utilize only the top of the railroad embankment for structure location and construction access. . . ."

The contrast arises out of the fact that, since surrender of the OPSB certificate for the Rachel Line, the Geauga Park District has acquired the railroad ROW, and has converted it to the Maple Highlands Trail public park. Among other improvements, the Park District has paved a significant portion of the Maple Highlands Trail, and constructed three covered bridges, on the top of the former railroad embankment. Thus, it would not be possible for the Applicants to install the proposed transmission line on the top of the railroad embankment in compliance with a condition similar to the Rachel certificate condition without relocating or removing portions of the paved trail and the covered bridges.

Still another consideration is the Ohio Department of Transportation's "ODOT Design Guidance for Independent Bicycle Facilities," which indicates that the minimum lateral clearance between the edge of a bicycle path and the outer edge of an obstruction, such as the side of a utility pole, or the side of a concrete foundation, should be a minimum of three feet. A review of other industry-standard bicycle path design recommendations indicates that the preference would be to provide five feet or more of separation between the edge of a bicycle path and the outer edge of an obstruction.

A preliminary assessment of necessary construction and future maintenance access paths and potential pole placement locations is included on Figures 2 through 12. Preference was given to locating the new poles as close as possible to the top of the former railroad

grade – subject to the limitations described in the preceding paragraphs. Table 3<sup>3</sup> provides notes on potential distances the poles could be installed off the edge of the pavement.

For the section of Combination Route along the Maple Highlands Trail, several trees suitable for Indiana Bat habitat, as well as potentially high quality wetlands, were observed during the pedestrian reconnaissance of the Maple Highlands Trail. The ecological quality of some of these areas appears to be at least as good as similar cross-country ecologically sensitive areas of the Preferred Route. The additional clearing beyond the cleared width of the paved trail corridor required to construct and operate the proposed 138 kV electric transmission line would result in cutting of Indiana Bat habitat and conversion of wooded wetlands to lower quality emergent wetlands. Further, the West Branch of the Cuyahoga River is crossed by the Combination Route and appears to be of a significantly higher quality than any stream crossed by the Preferred or Alternate Route. Significantly, the Cuyahoga River crossing would appear to be more suitable, as compared to streams that are crossed by the Preferred or Alternate Routes, as a location for foraging bats. Additionally, installing the transmission line adjacent to the covered bridge crossing the West Branch of the Cuyahoga River may require installing three poles within wetlands adjacent to the river.

Preliminary discussions between the Applicants and the Geauga County Park District indicate that the Park District would strongly oppose construction of an electric transmission line along the Maple Highlands Trail. Other legal obstacles associated with private owners and their retained rights to land adjacent to the Combination Route are considered likely.

Still other impacts associated with the Combination Route would include:

- Consideration that poles installed along the elevated railroad grade would be visually more noticeable (both within and outside of the Combination Route) than

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<sup>3</sup> Table 3 was prepared by the staff of the Applicant.

the visual impacts of poles located along the Preferred or Alternate routes. These heightened visual impacts are due to the added height of the railroad grade.

- Locating the Stacy Substation at the existing Ruth Substation site is technically feasible, but spacing would be a very tight fit for the new facilities.<sup>4</sup>
- The most notable visual change of installing the Stacy Substation at the Ruth Substation site is likely that many of the existing trees between the Ruth Substation and the residence located directly south of the substation, a residence that currently is largely obscured from view, will be removed.
- Installing the transmission line on the south side of the covered bridge crossing of Claridon Road, will require installing the transmission line between the covered bridge and a nearby residence. There appears to be in the range of 80 feet between these structures, which would be a tight but technically acceptable fit for the necessary 60 foot wide right-of-way of the transmission line.

### **Conclusions**

Based on the quantitative and qualitative evaluation, a potential route for the transmission line along the Combination Route compares extremely poorly against the Preferred and Alternate routes. Specifically, the Combination Route ranks 209 out of 894 possible candidates (in contrast, the Preferred and Alternate routes rank 15<sup>th</sup> and 1<sup>st</sup> respectively), and going forward with this route does not appear to be a defensible position. Specifically, based on the facts described in this letter report, going forward with further consideration of the Combination Route would expose the Applicants to charges of unjust and arbitrary decision-making with regard to siting new electric transmission facilities.

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<sup>4</sup> The question of whether siting the Project along the Combination Route is consistent with and satisfies operation and expansion of the electric grid is beyond the scope of this report, and is not addressed herein.

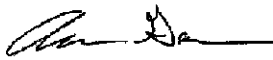
FirstEnergy Corporation  
May 16, 2008  
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Facts that would justify this approach have not been identified. The qualitative assessment of the route corroborates the quantitative analysis.

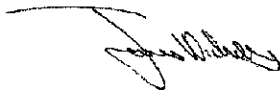
If you have any questions or comments regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

URS



Aaron Geckle  
Environmental Planner



James Nicholas, Ph.D.  
Principal

14946398  
attachments

## **ATTACHMENT 1**

### **TABLES**

**Table 1**  
**Maple Highlands Bike Trail and Railroad Route Quantitative Analysis**

| RAW CONSTRAINT DATA |                                                                                  |     |
|---------------------|----------------------------------------------------------------------------------|-----|
| ECOLOGICAL          | Area of Woodlots within 60-ft ROW (acres)                                        | 32  |
|                     | Area of OWI Wetlands within 60-ft ROW (acres)                                    | 6.7 |
|                     | Stream Crossings                                                                 | 7   |
|                     | Federal or State Endangered or Threatened Species Areas Crossed                  | 0   |
|                     | Federal or State Endangered or Threatened Species Areas within 100 ft            | 0   |
|                     | Federal or State Protected Species Areas Crossed                                 | 0   |
|                     | Federal or State Protected Species within 100 ft                                 | 0   |
|                     | Federal or State Endangered or Threatened Species Areas between 100 and 1,000 ft | 0   |
|                     | Federal or State Protected Species Areas within 1,000 ft                         | 0   |
| CULTURAL            | National Register of Historic Places within 1,000 ft                             | 0   |
|                     | Known Archaeology Sites within 100 ft                                            | 0   |
|                     | Ohio Historical Inventory Historic Structures within 1,000 ft                    | 0   |
|                     | Cemeteries within 100 ft                                                         | 0   |
| LAND USE            | Residences within 30 ft                                                          | 0   |
|                     | Residences between 30 and 100 ft                                                 | 9   |
|                     | Residences between 100 and 1,000 ft                                              | 0   |
|                     | Properties Crossed by Centerline                                                 | 34  |
|                     | Institutional Land Uses within 1,000 ft                                          | 1   |
|                     | Linear Feet of Other Sensitive Land Uses Crossed                                 | 0   |
|                     | Other Sensitive Land Uses within 1,000 ft                                        | 6   |
| ENGINEERING         | Route Length (mi)                                                                | 7.6 |
|                     | Centerline Road Crossings                                                        | 12  |
|                     | Centerline Railroad Crossings                                                    | 0   |
|                     | Turn Angles Greater than 0 and Less than 20 Degrees                              | 34  |
|                     | Turn Angles Greater than 20 Degrees                                              | 8   |
|                     | Length Requiring Distribution Relocation or Overbuild                            | 0   |

| SCORES                         |                      |      |
|--------------------------------|----------------------|------|
| WEIGHTED<br>CATEGORY<br>SCORES | Ecological Score     | 2.00 |
|                                | Ecological Rank      | 511  |
|                                | Cultural Total Score | 0.25 |
|                                | Cultural Rank        | 284  |
|                                | Land Use Score       | 1.29 |
|                                | Land Use Rank        | 254  |
|                                | Engineering Score    | 0.13 |
|                                | Engineering Rank     | 1    |

**TOTAL SCORE      3.67**  
**TOTAL RANK        209**

 Maximum value in category

**Table 2**  
**Comparison of Preferred, Alternate, and Bike Path/Railroad Routes**

|                                                                       | Submitted Preferred | Submitted Alternate                                    | Bike Path/Railroad Route                     |
|-----------------------------------------------------------------------|---------------------|--------------------------------------------------------|----------------------------------------------|
| <b>Length (miles)</b>                                                 | 14.7                | 12.1                                                   | 7.6                                          |
| <b>Social Impacts</b>                                                 |                     |                                                        |                                              |
| Number of Townships Crossed                                           | 4                   | 3                                                      | 2                                            |
| Municipalities Crossed                                                | None                | None                                                   | City of Chardon                              |
| Private Residences within 1000 feet                                   | 84                  | 299                                                    | 590                                          |
| Private Residences within 100 feet                                    | 5                   | 43                                                     | 8                                            |
| Number of Properties Crossed                                          | 85                  | 182                                                    | 34                                           |
| Number of Roads Crossed                                               | 16                  | 16                                                     | 12                                           |
| Sensitive Land Uses Crossed                                           | None                | Geauga County Park District Property (760 linear feet) | Geauga County Bike Path (33,400 linear feet) |
| <b>Ecological Impacts</b>                                             |                     |                                                        |                                              |
| Acres of OWI Wetlands within 1000 feet                                | 493                 | 175                                                    | 304                                          |
| Linear Feet of Delineated Wetland Crossed                             | 13,712              | 2,662                                                  | 17,500*                                      |
| Approximate Acres of Forest to be cleared within 60-foot Right-of-Way | 63                  | 15                                                     | 32                                           |
| Number of Threatened and Endangered species within 1000 feet          | 0                   | 0                                                      | 0                                            |
| Number of Streams Crossed                                             | 60                  | 26                                                     | 7                                            |
| Anticipated Number of Poles in Wetlands                               | 3                   | 0                                                      | 16*                                          |
| <b>Cultural Impacts</b>                                               |                     |                                                        |                                              |
| National Register of Historic Places within 1,000 ft                  | 0                   | 0                                                      | 0                                            |
| Known Archaeology Sites within 100 ft                                 | 0                   | 0                                                      | 0                                            |
| Ohio Historical Inventory Historic Structures within 1,000 ft         | 0                   | 0                                                      | 77                                           |
| Cemeteries within 100 ft                                              | 0                   | 0                                                      | 0                                            |
| <b>Engineering Constraints</b>                                        |                     |                                                        |                                              |
| Centerline Road Crossings                                             | 13                  | 21                                                     | 12                                           |
| Centerline Railroad Crossings                                         | 0                   | 0                                                      | 0                                            |
| Turn Angles Greater than 20 Degrees                                   | 26                  | 11                                                     | 8                                            |
| Turn Angles Greater than 0 and Less than 20 Degrees                   | 17                  | 11                                                     | 34                                           |
| Length Requiring Distribution Relocation or Overbuild (linear feet)   | 1,000               | 47,800                                                 | 0                                            |

\* Estimated based on Rachel 138 kV Electric Transmission Line Project wetland determination (16,700 linear feet crossed) (Darnes & Moore, 1995) and Ohio Wetland Inventory data (800 linear feet crossed) for portion of route not included in 1995 Rachel Preferred Route.

**TABLE 3**  
**APPROXIMATE LOCATIONS OF POLES RELATIVE TO MAPLE HIGHLANDS TRAIL PAVEMENT**

| FIGURE  | POLE NUMBER | STRAIGHT OR CURVED SECTION | OBSERVED OFFSET FROM EDGE OF PAVEMENT (Feet) | ADJUSTED OFFSET FROM EDGE OF PAVEMENT (Feet) | DIRECTION | COMMENTS                     |
|---------|-------------|----------------------------|----------------------------------------------|----------------------------------------------|-----------|------------------------------|
| 12      | Stacy Sub.  | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                              |
| 12      | 1           | Straight                   | 12                                           | 12                                           | East      |                              |
| 12      | 1A          | Not Applicable             | 12                                           | 12                                           | West      |                              |
| 12      | 2           | Straight                   | 12                                           | 12                                           | East      |                              |
| 12      | 3           | Straight                   | 10                                           | 10                                           | East      | In slope                     |
| 12      | 4           | Straight                   | 10                                           | 10                                           | East      | In slope                     |
| 12      | 5           | Straight                   | 8                                            | 10                                           | East      | In slope with guy in wetland |
| 12      | 6           | Curved                     | 12                                           | 12                                           | East      |                              |
| 12      | 7           | Curved                     | 12                                           | 12                                           | East      | In slope                     |
| 12      | 8           | Straight                   | 12                                           | 12                                           | West      |                              |
| 12      | 9           | Straight                   | 10                                           | 10                                           | West      |                              |
| 12      | 10          | Straight                   | 8                                            | 8                                            | West      |                              |
| 11 & 12 | 11          | Straight                   | 4                                            | 6                                            | West      |                              |
| 11      | 12          | Curved                     | 10                                           | 10                                           | West      |                              |
| 11      | 13          | Curved                     | 5                                            | 6                                            | West      |                              |
| 11      | 14          | Curved                     | 12                                           | 12                                           | West      |                              |
| 11      | 15          | Curved                     | 4                                            | 6                                            | West      |                              |
| 11      | 16          | Straight                   | 4                                            | 8                                            | East      | In slope                     |
| 11      | 17          | Straight                   | 10                                           | 10                                           | East      |                              |
| 11      | 18          | Straight                   | 4                                            | 8                                            | East      | In slope                     |
| 11      | 19          | Straight                   | 4                                            | 10                                           | East      |                              |
| 11      | 20          | Straight                   | 4                                            | 12                                           | East      |                              |
| 10      | 21          | Straight                   | 15                                           | 15                                           | East      | In slope                     |
| 10      | 22          | Straight                   | 4                                            | 12                                           | East      | In slope                     |
| 10      | 23          | Straight                   | 4                                            | 8                                            | East      |                              |
| 10      | 24          | Straight                   | 4                                            | 8                                            | East      |                              |
| 10      | 25          | Straight                   | 4                                            | 8                                            | East      |                              |
| 10      | 26          | Straight                   | 4                                            | 12                                           | East      |                              |
| 10      | 27          | Curved                     | 15                                           | 15                                           | East      | In slope                     |
| 10      | 28          | Curved                     | 4                                            | 6                                            | East      | In slope                     |
| 10      | 29          | Curved                     | 10                                           | 10                                           | North     | In slope                     |
| 10      | 30          | Straight                   | 10                                           | 10                                           | North     | In slope                     |
| 9 & 10  | 31          | Straight                   | 4                                            | 8                                            | North     | In slope                     |
| 9       | 32          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 9       | 33          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 9       | 34          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 9       | 35          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 9       | 36          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 9       | 37          | Straight                   | 4                                            | 8                                            | North     |                              |
| 9       | 38          | Straight                   | 10                                           | 10                                           | North     |                              |
| 9       | 39          | Straight                   | 10                                           | 10                                           | North     |                              |
| 9       | 40          | Straight                   | 6                                            | 10                                           | North     |                              |
| 9       | 41          | Straight                   | 10                                           | 10                                           | North     |                              |
| 9       | 42          | Straight                   | 10                                           | 10                                           | North     |                              |
| 8       | 43          | Straight                   | 4                                            | 10                                           | North     |                              |
| 8       | 44          | Curved                     | 4                                            | 6                                            | North     |                              |
| 8       | 45          | Curved                     | 4                                            | 6                                            | North     |                              |
| 8       | 46          | Curved                     | 6                                            | 6                                            | North     |                              |
| 8       | 47          | Curved                     | 6                                            | 6                                            | North     |                              |
| 8       | 48          | Curved                     | 4                                            | 6                                            | South     |                              |
| 8       | 49          | Curved                     | 10                                           | 10                                           | South     |                              |
| 8       | 50          | Curved                     | 4                                            | 6                                            | South     | In slope, guy in wetland     |
| 8       | 51          | Curved                     | 4                                            | 6                                            | South     | In slope, guy in wetland     |
| 8       | 52          | Curved                     | 4                                            | 6                                            | South     | In slope, guy in wetland     |
| 8       | 53          | Curved                     | 4                                            | 6                                            | South     |                              |
| 7       | 54          | Curved                     | 33                                           | 33                                           | South     |                              |
| 7       | 55          | Straight                   | 33                                           | 33                                           | South     |                              |
| 7       | 56          | Straight                   | 35                                           | 35                                           | South     |                              |
| 7       | 57          | Straight                   | 35                                           | 35                                           | South     |                              |
| 7       | 58          | Straight                   | 4                                            | 8                                            | North     |                              |
| 7       | 59          | Straight                   | 10                                           | 10                                           | North     |                              |
| 7       | 60          | Straight                   | 10                                           | 10                                           | North     | In slope                     |
| 7       | 61          | Straight                   | 10                                           | 10                                           | North     | In slope                     |
| 7       | 62          | Straight                   | 10                                           | 10                                           | North     | In slope                     |
| 7       | 63          | Straight                   | 4                                            | 8                                            | North     | In slope                     |
| 7       | 64          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 7       | 65          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 7       | 66          | Straight                   | 4                                            | 6                                            | North     | In slope                     |
| 6 & 7   | 67          | Straight                   | 4                                            | 8                                            | North     | In slope                     |

**TABLE 3**  
**APPROXIMATE LOCATIONS OF POLES RELATIVE TO MAPLE HIGHLANDS TRAIL PAVEMENT**

| FIGURE | POLE NUMBER | STRAIGHT OR CURVED SECTION | OBSERVED OFFSET FROM EDGE OF PAVEMENT (Feet) | ADJUSTED OFFSET FROM EDGE OF PAVEMENT (Feet) | DIRECTION | COMMENTS       |
|--------|-------------|----------------------------|----------------------------------------------|----------------------------------------------|-----------|----------------|
| 6      | 68          | Straight                   | 10                                           | 10                                           | North     | In slope       |
| 6      | 69          | Straight                   | 4                                            | 8                                            | North     |                |
| 6      | 70          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 6      | 71          | Straight                   | 4                                            | 8                                            | North     | In slope       |
| 6      | 71B         | Curved                     | 10                                           | 10                                           | North     | In slope       |
| 6      | 72          | Straight                   | 4                                            | 8                                            | South     |                |
| 6      | 73          | Straight                   | 8                                            | 8                                            | South     |                |
| 6      | 74          | Straight                   | 10                                           | 10                                           | South     |                |
| 6      | 75          | Straight                   | 4                                            | 8                                            | South     |                |
| 6      | 76          | Straight                   | 4                                            | 8                                            | South     |                |
| 6      | 77          | Straight                   | 10                                           | 10                                           | South     | In slope       |
| 6      | 78          | Straight                   | 10                                           | 10                                           | North     | Guy in wetland |
| 5      | 79          | Straight                   | 4                                            | 8                                            | North     |                |
| 5      | 80          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 81          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 82          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 83          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 84          | Straight                   | 8                                            | 8                                            | North     | In slope       |
| 5      | 85          | Straight                   | 8                                            | 8                                            | North     | In steep slope |
| 5      | 86          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 5      | 87          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 88          | Straight                   | 4                                            | 6                                            | North     |                |
| 5      | 89          | Straight                   | 4                                            | 6                                            | North     |                |
| 4      | 90          | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 91          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 4      | 92          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 4      | 93          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 4      | 94          | Straight                   | 4                                            | 6                                            | North     | In slope       |
| 4      | 95          | Curved                     | 10                                           | 10                                           | South     | In slope       |
| 4      | 96          | Curved                     | 4                                            | 6                                            | South     |                |
| 4      | 97          | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 98          | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 99          | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 100         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 101         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 102         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 4      | 103         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 104         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 105         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 106         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 107         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 108         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 109         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 110         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 111         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 3      | 112         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 2 & 3  | 113         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 2      | 114         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 2      | 115         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 2      | 116         | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |
| 2      | Pinegrove   | Not Applicable             | Not Applicable                               | Not Applicable                               |           |                |

**Notes:**

1. Three foot minimum clearance, five foot preferred from edge of pavement to edge of pole.
2. Assumes three foot diameter poles.
3. Approximate location and details based on visual observations of 5-11-08.
4. Dimensions from edge of pavement to centerline of pole.

## **ATTACHMENT 2**

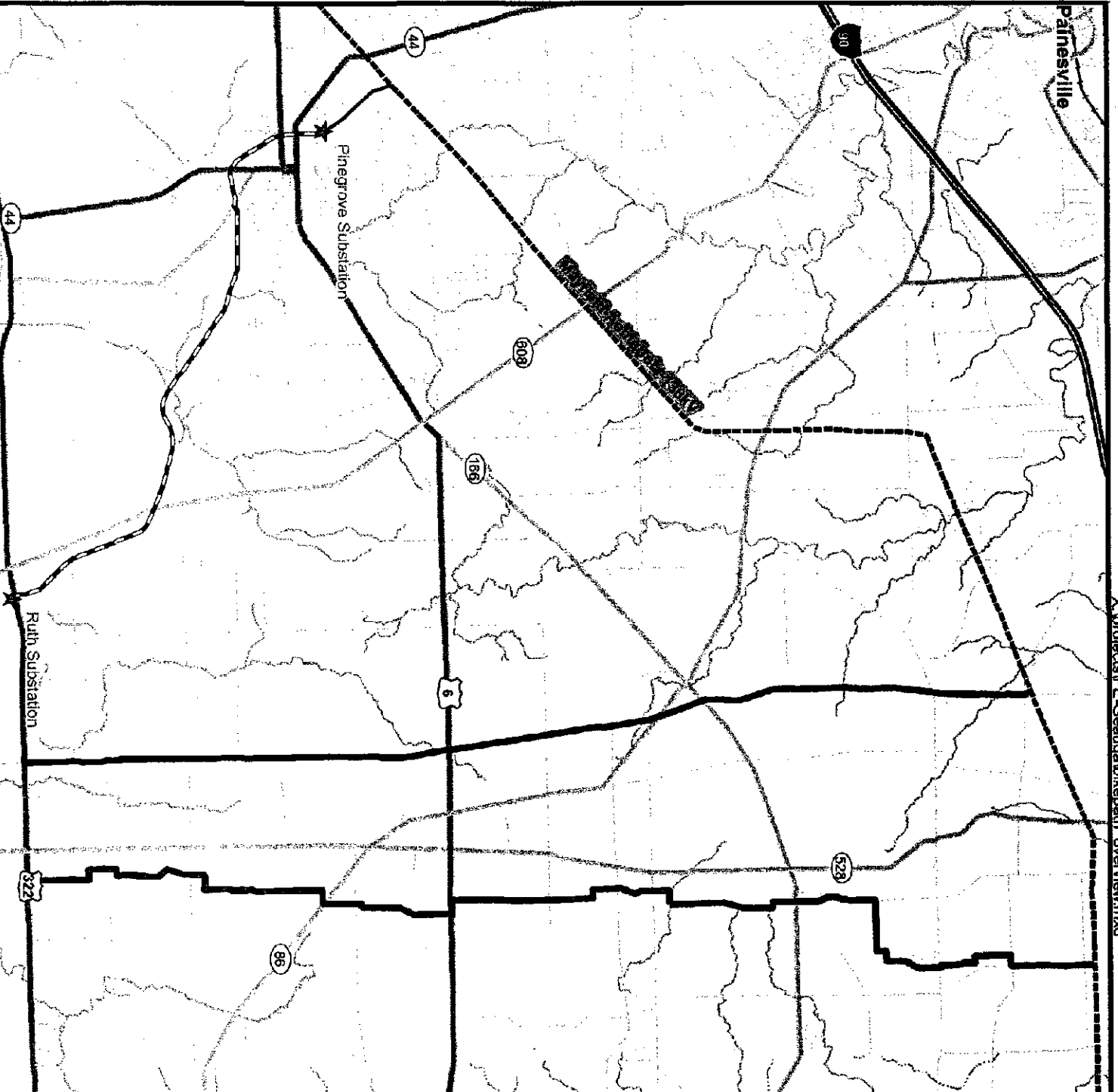
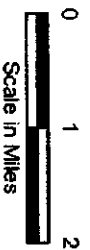
### **FIGURES**

Palmsville



LEGEND:

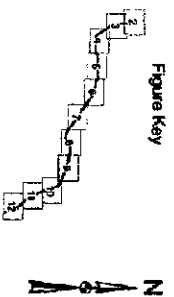
-  Route Along Maple Highlands Trail and Abandoned Railroad
-  Existing Transmission Loop
-  Preferred Route
-  Alternate Route



**FirstEnergy**

Geeuga County 138 kV  
Electric Transmission Line

FIGURE 1  
MAPLE HIGHLANDS TRAIL  
AND ABANDONED RAILROAD  
OPTION OVERVIEW



**LEGEND:**

- Approximate New Pole Location
- Likely Gating
- Preliminary Route
- Preliminary Access Path
- Approximate Site Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- Golf Course
- School
- Church
- Residence

ODNR Designated Species Location

OWI Designated Area

Geauga County Park District Property

Parcel Boundary

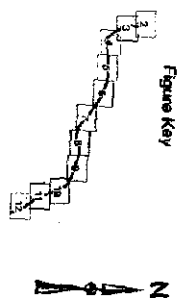
Photo Location



BASE MAP SOURCE:  
Geauga County Auditor  
2006 Aerial Photography

**FirstEnergy**  
Geauga County 138 kV  
Electric Transmission Line

**FIGURE 2**  
**PRELIMINARY ROUTE WITH**  
**CONSTRAINTS AND ACCESS PLAN**



**LEGEND:**

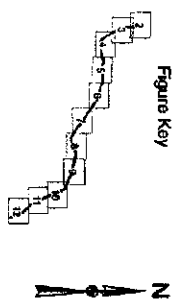
- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- △ Ohio Historic Inventory Structure
- NHP Site
- △ Golf Course
- ⚓ School
- ⛔ Church
- Residence
- OONR Designated Species Location
- OWI Designated Area
- Geauga County Park District Property
- Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Gauga County Auditor  
2005 Aerial Photography

**FirstEnergy**  
Gauga County 138 kV  
Electric Transmission Line

**FIGURE 3**  
**PRELIMINARY ROUTE WITH**  
**CONSTRAINTS AND ACCESS PLAN**



LEGEND:

- Approximate New Pole Location
- Likely Gyring
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence
- CDNR Designated Species Location
- CDNR Designated Area
- ▨ Georgia County Park District Property
- ▭ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

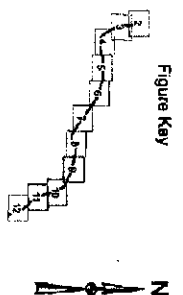
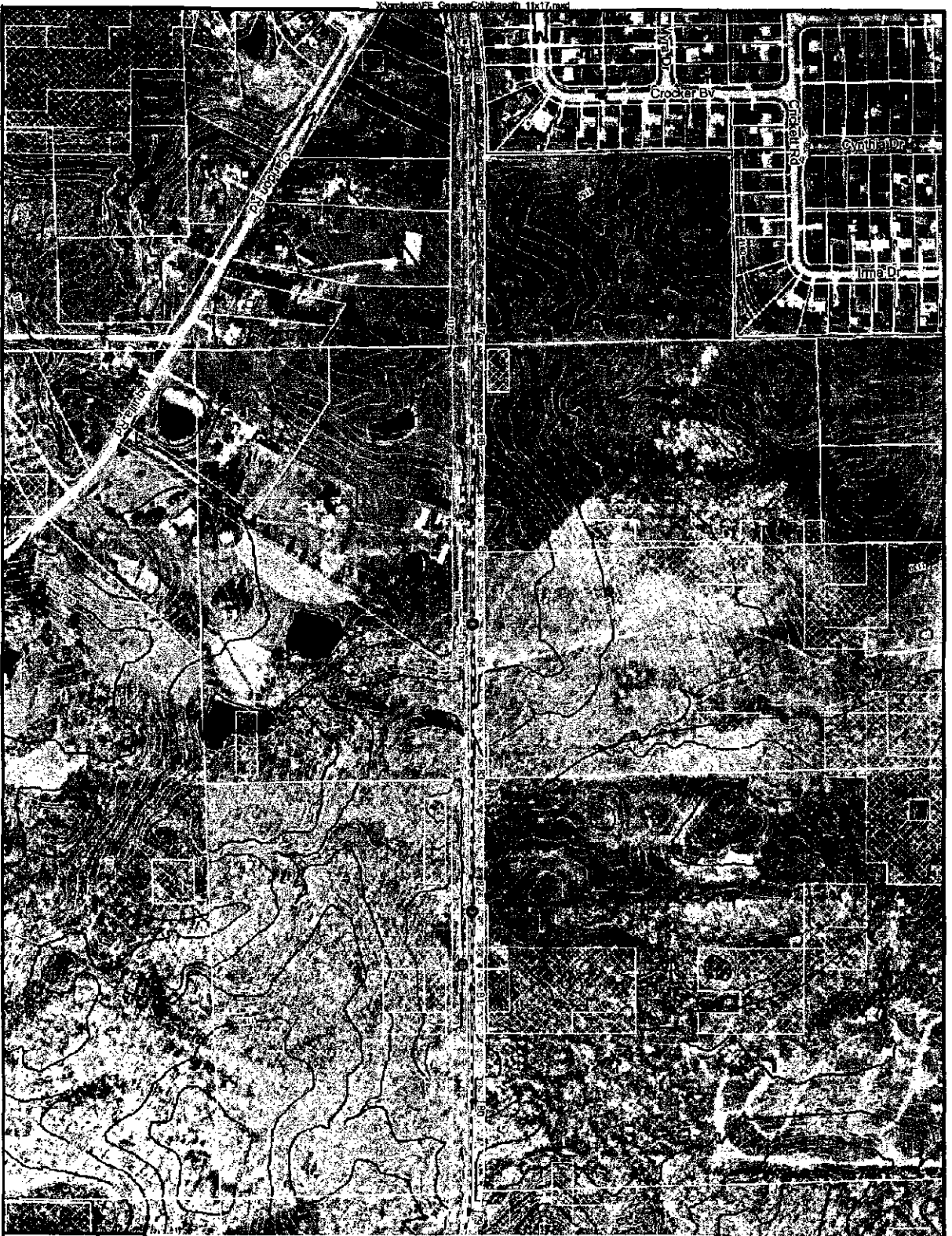
**FirstEnergy**

Georgia County 138 kV  
Electric Transmission Line

FIGURE 4  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 14243328

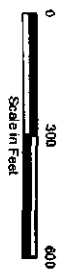
**DRS**



**LEGEND:**

- Approximate New Pole Location
- Likely Gating
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence

- ODNR Designated Species Location
- ODNR Designated Area
- Georgia County Park District Property
- Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

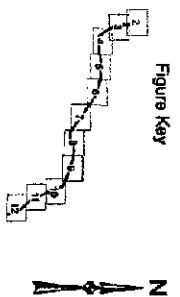
**FirstEnergy**

Georgia County 138 KV  
Electric Transmission Line

FIGURE 5  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

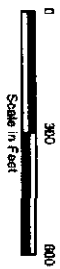
JOB NO. 14243328

**URS**



LEGEND:

- Approximate New Pole Location
- Likely Gating
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ⌵ Golf Course
- ⌵ School
- ⌵ Church
- Residence
- CNR Designated Species Location
- OWI Designated Area
- ▨ Ga. County Park District Property
- ▭ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

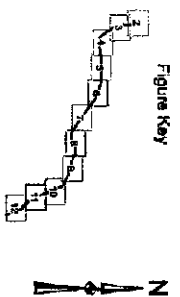
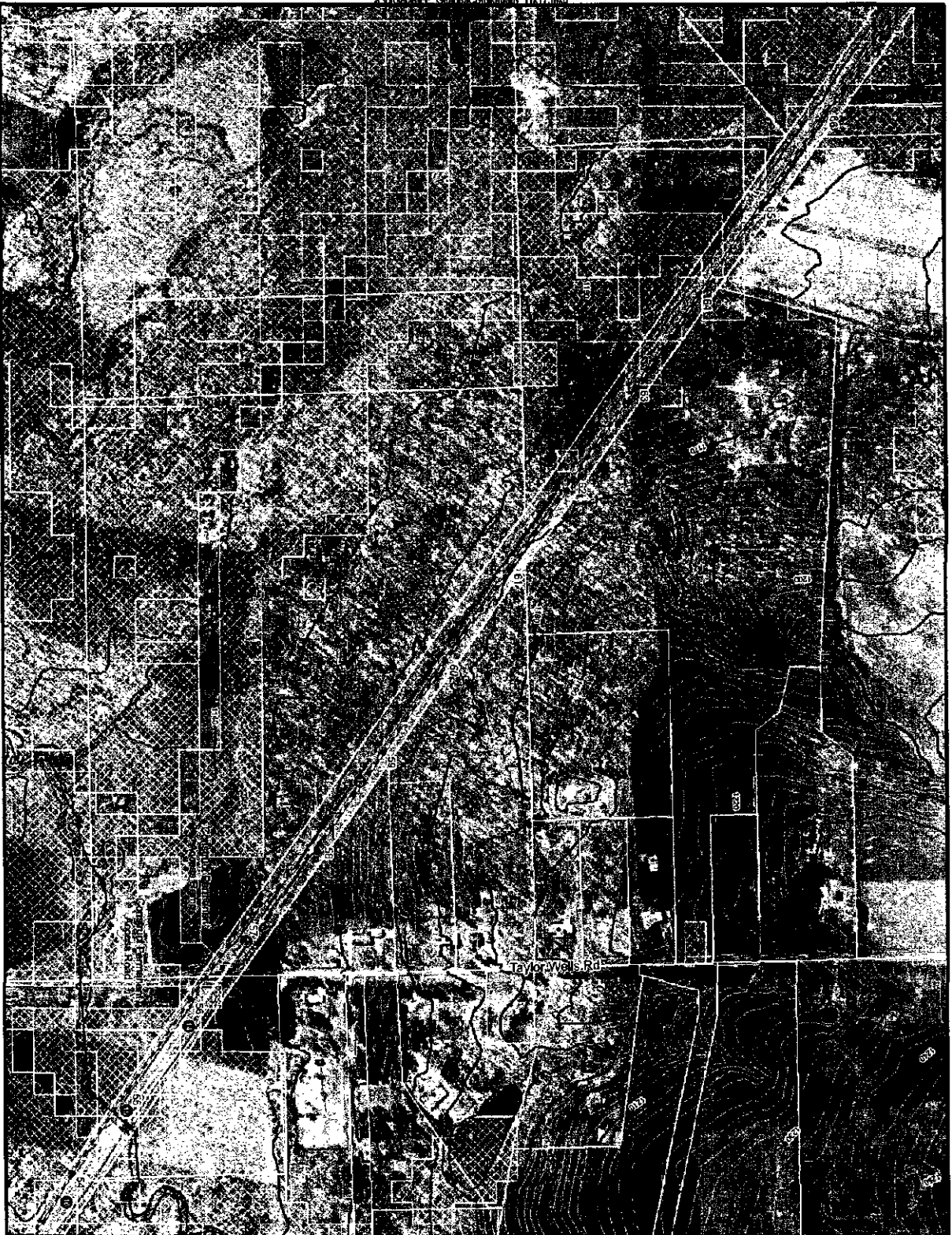
**FrisEnergy**

Georgia County 138 kV  
Electric Transmission Line

FIGURE 6  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 14345338

**URS**



LEGEND:

- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NCHRP Site
- + Golf Course
- ⌚ School
- ⌚ Church
- Residence
- ODNR Designated Species Location
- OWM Designated Area
- Geauga County Park District Property
- Parcel Boundary
- Photo Location

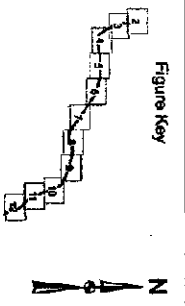
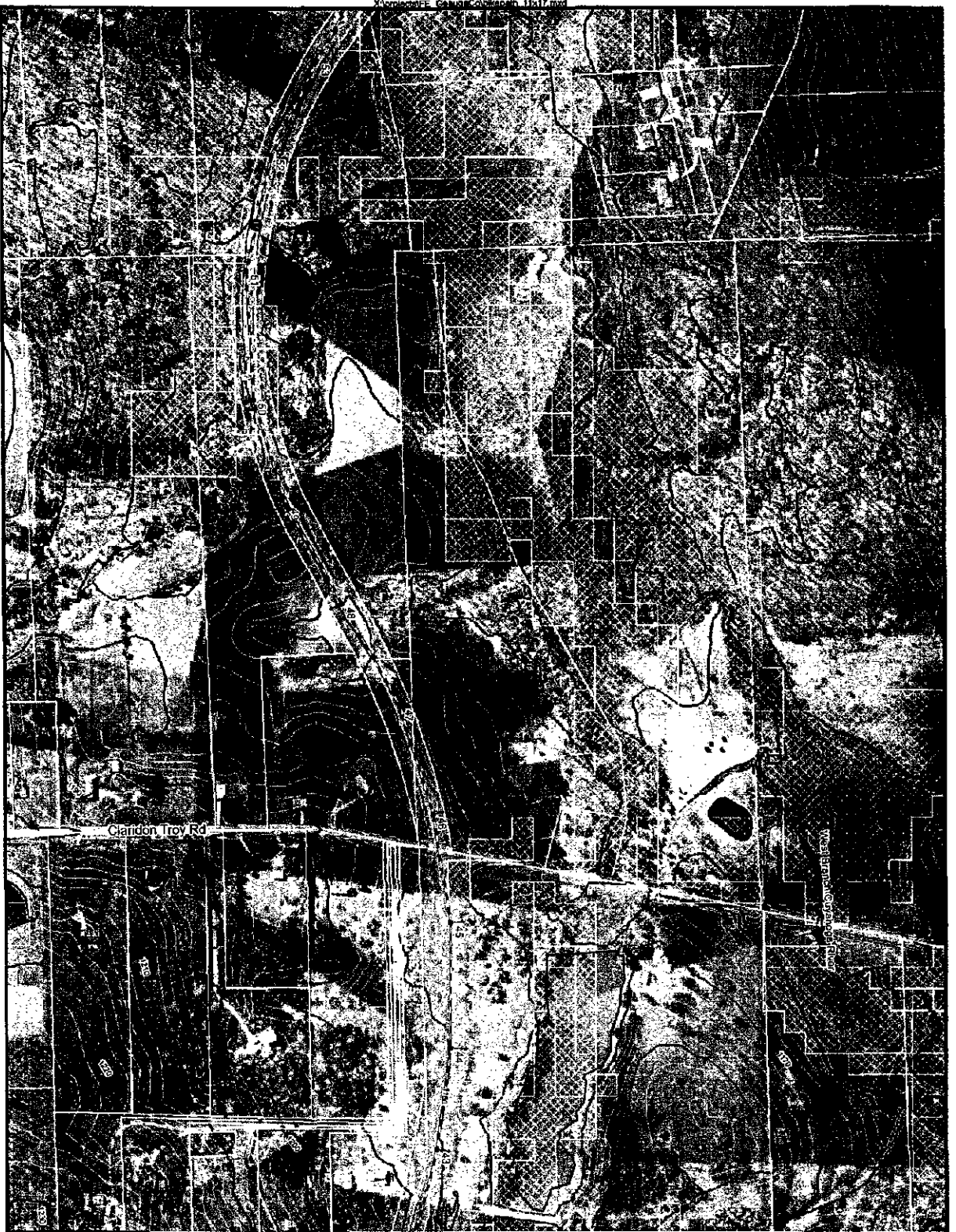


BASE MAP SOURCE:  
Gauga County Auditor  
2006 Aerial Photography

**FisEnergy** Geauga County 138 kV  
Electric Transmission Line

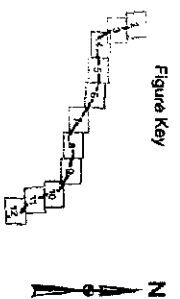
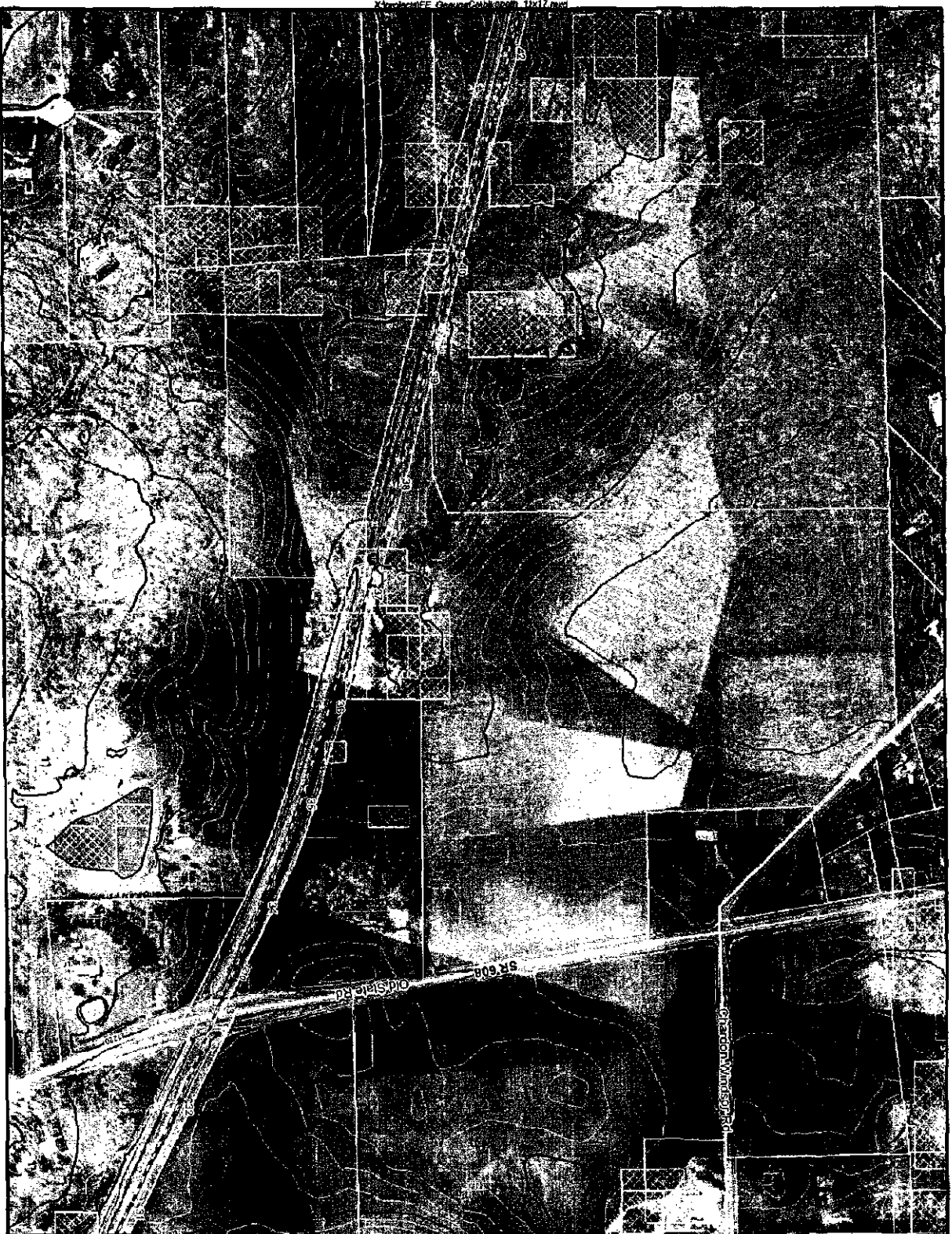
FIGURE 7  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN  
**URS**

JOB NO. 14948395



**LEGEND:**

- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence
- ODNR Designated Species Location
- OWM Designated Area
- Geauga County Park District Property
- Parcel Boundary
- Photo Location



**LEGEND:**

- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ⚡ Golf Course
- ⚡ School
- 1 Church
- Residence
- ▨ ODNR Designated Species Location
- ▨ OWM Designated Area
- ▨ Georgia County Park District Property
- ▨ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

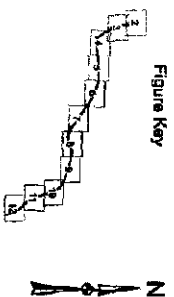
**FirstEnergy**

Georgia County 138 kV  
Electric Transmission Line

**FIGURE 9**  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 1446398

**URS**



# LEGEND:

- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence
- QDNR Designated Species Location
- OWI Designated Area
- ▨ Georgia County Park District Property
- ▭ Parcel Boundary
- Photo Location



**BASIS MAP SOURCE:**  
Georgia County Auditor  
2006 Aerial Photography

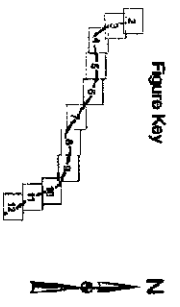
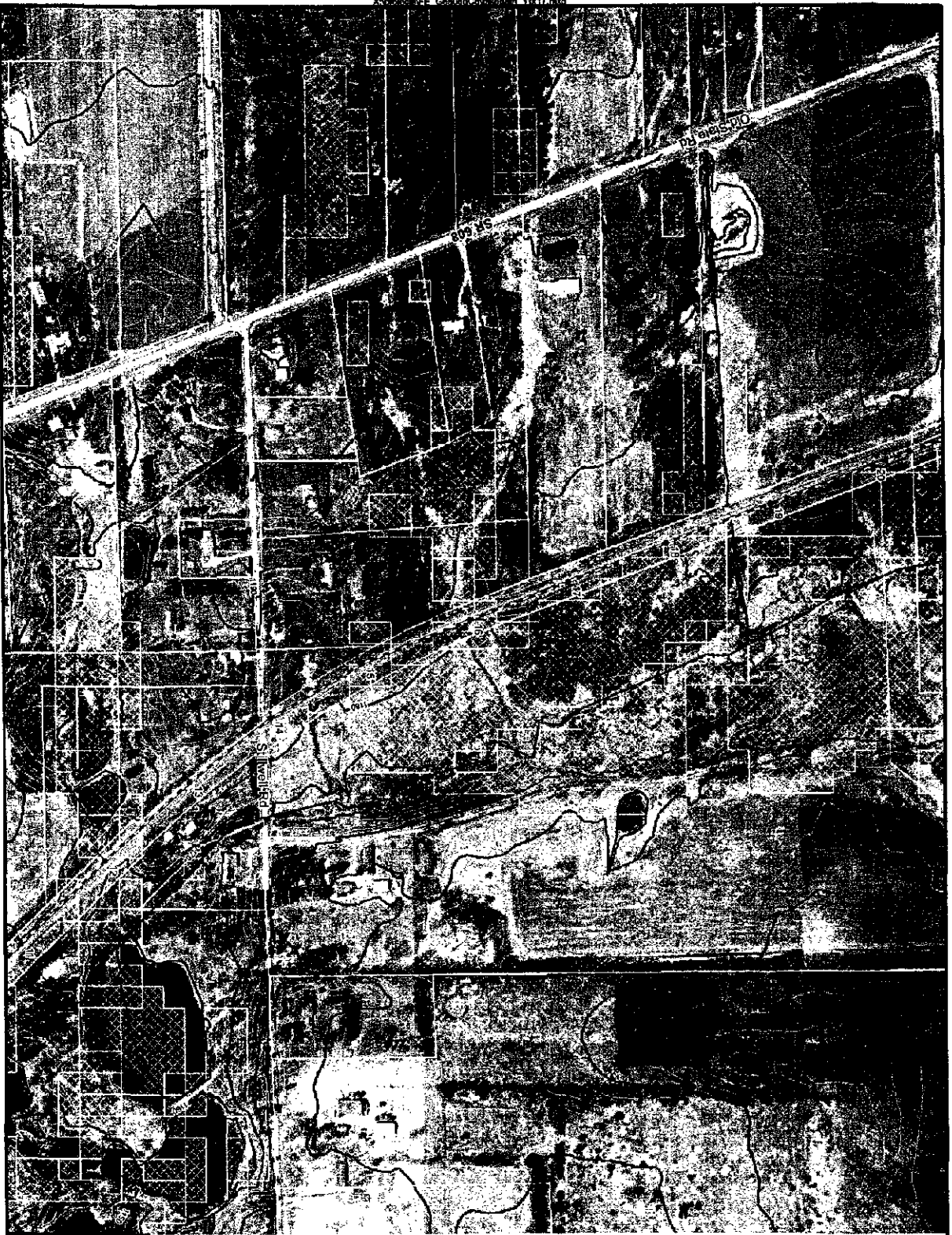
**FirstEnergy**

Georgia County 138 KV  
Electric Transmission Line

**FIGURE 10**  
**PRELIMINARY ROUTE WITH**  
**CONSTRAINTS AND ACCESS PLAN**

JOB NO. 14464398

**URS**



**LEGEND:**

- Approximate New Pole Location
- Likely Guying
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- + Golf Course
- ! School
- ! Church
- Residence
- ODNR Designated Species Location
- OMI Designated Area
- Georgia County Park District Property
- Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

**FirstEnergy**

Georgia County 138 kV  
Electric Transmission Line

**FIGURE 11**  
**PRELIMINARY ROUTE WITH**  
**CONSTRAINTS AND ACCESS PLAN**

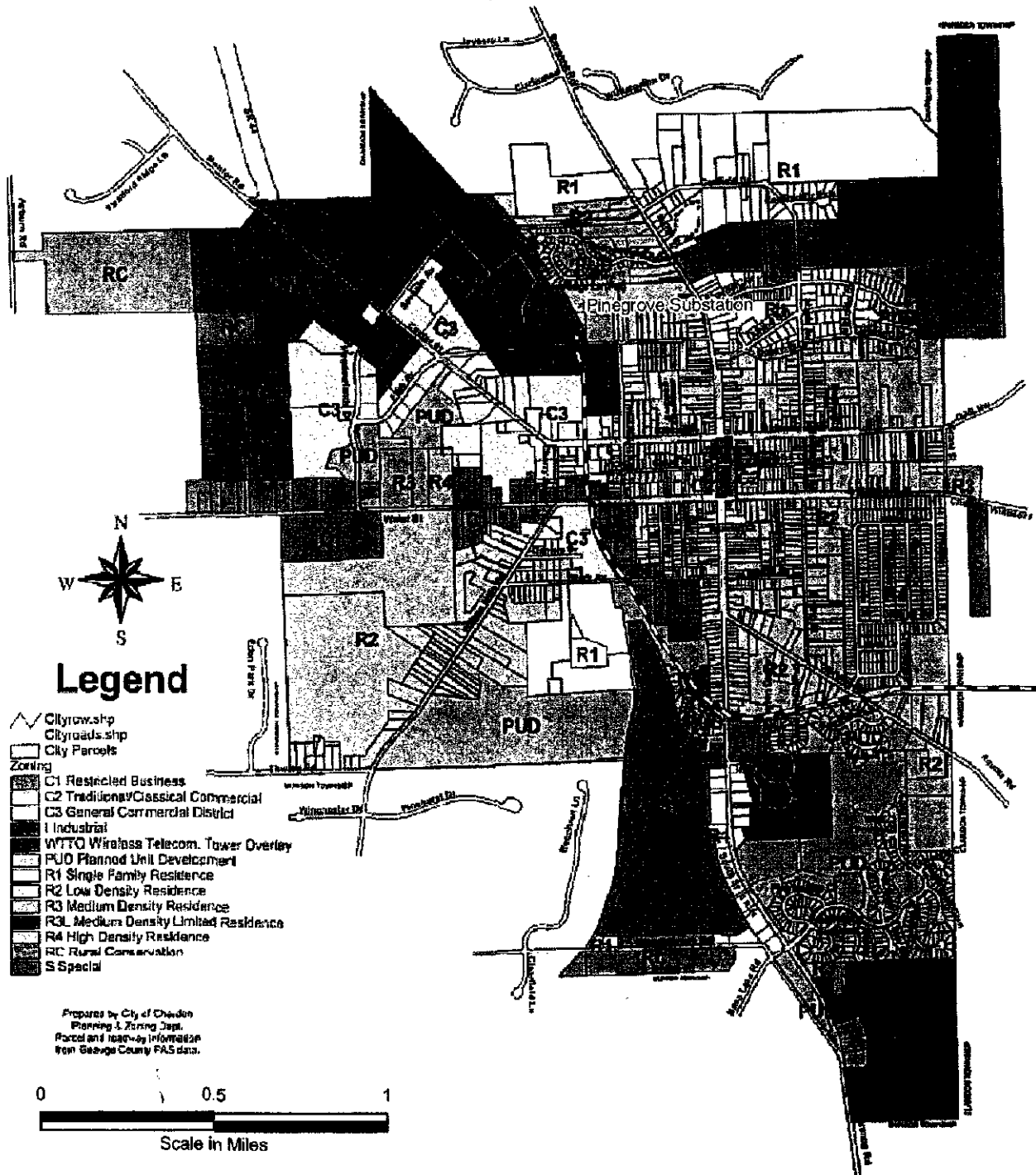
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**URS**



# City of Chardon Zoning Map

Effective April 8, 2006



## LEGEND:

Route Along Maple Highlands Trail and Abandoned Railroad

**FirstEnergy**

Geauga County 138 KV  
Electric Transmission Line

FIGURE 13  
CHARDON ZONING MAP

JOB NO. 14946398

**URS**

**ATTACHMENT 3**

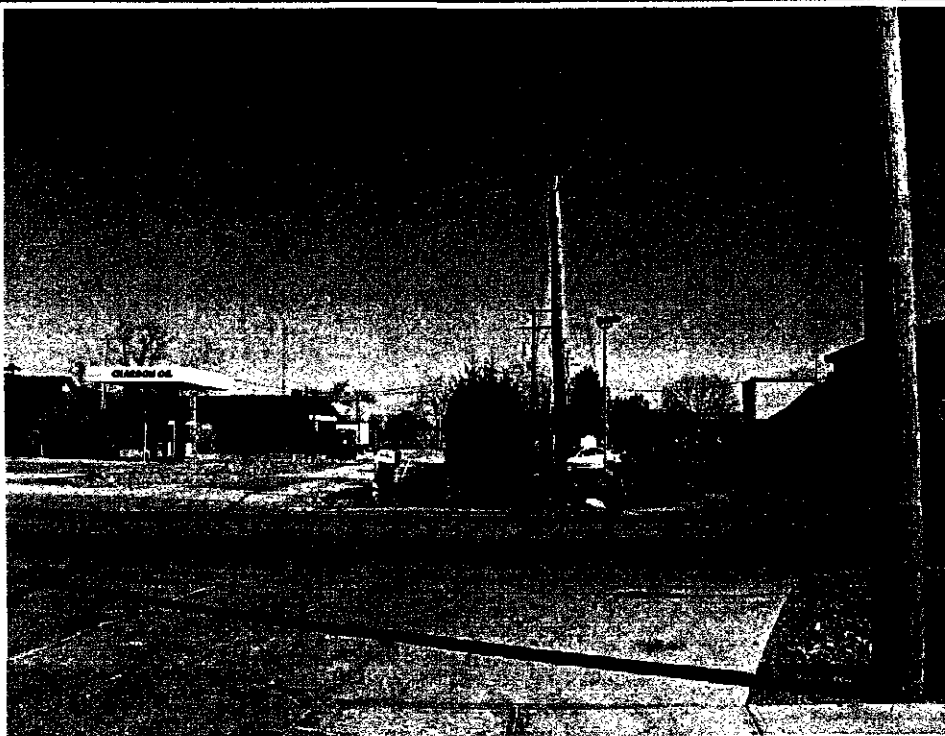
**SELECTED PHOTOGRAPHS**



**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 1**  
**Picture 1**

View to the north across Water Street in Chardon. Line follows a former rail spur rather than the former mainline alignment. That alignment is built over buildings.



**Photo Location 1**  
**Picture 2**

View to the south along the proposed alignment from Water Street in Chardon. The rear of a strip mall is to the right and a fast food restaurant is to the left





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 2**  
**Picture 1**

Swimming pool at the Greenway Drive subdivision. The alignment is to the right of the large leafless tree. Most of the visible vegetation on the right side of the photograph will be cleared.



**Photo Location 3**  
**Picture 1**

View to the west (towards South Street/SR 44 in Chardon) along the Maple Highlands Trail 600 feet west of Claridon/Aquilla Road. This location is elevated on a grade and has a distribution line on the left (south) side. Subdivisions are present to the south and north.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 3**  
**Picture 2**

View to the east along the south edge of the Maple Highlands Trail showing the proximity of residences in the Fox Pointe Drive Subdivision. At this location the poles are assumed to be on the north side of the path (i.e. off the left side of this photograph). Note the covered bridge in the background along the path.



**Photo Location 4**  
**Picture 1**

View to the southeast of the pond in the Fox Pointe Subdivision.



## PHOTOGRAPHIC RECORD Geauga County 138 kV Transmission Line Maple Highlands Trail and Abandoned Railroad

### Photo Location 4 Picture 2

View to the east along the north side of the bike path just west of the Claridon/Aquilla Road covered bridge. At this location the line would cross from the north to the south (from left to right in the photograph) side of the Maple Highlands Trail.



### Photo Location 5 Picture 1

View to the east along the northern edge of the bike path adjacent to the Claridon/Aquilla Road bridge.

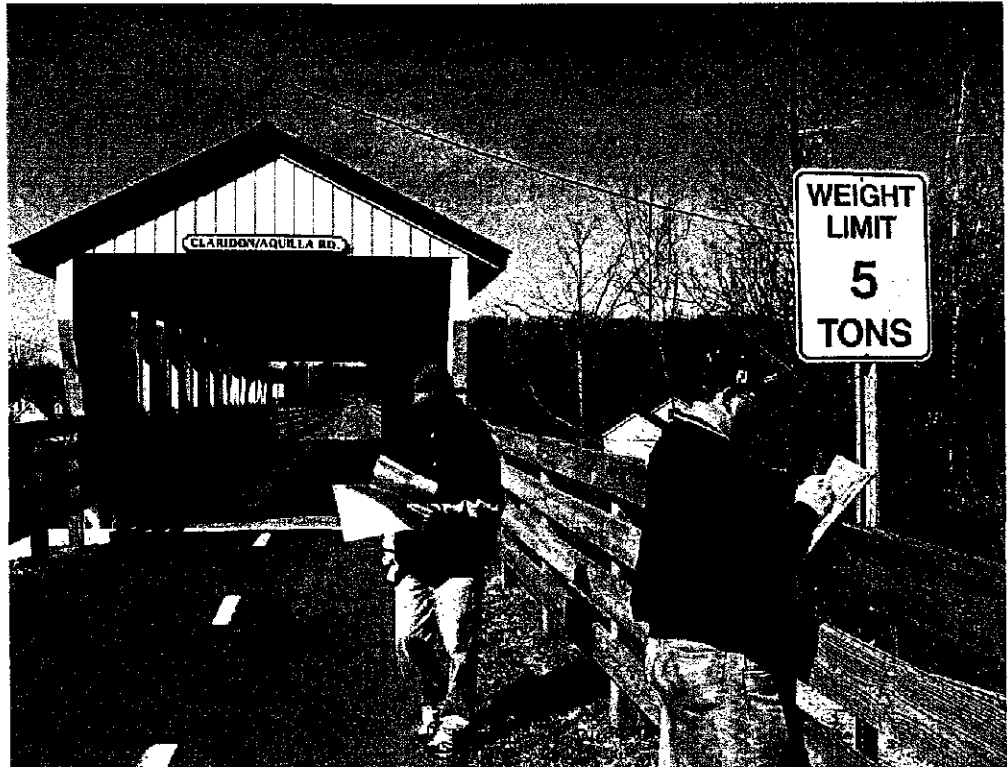


## PHOTOGRAPHIC RECORD

Geauga County 138 kV Transmission Line  
Maple Highlands Trail and Abandoned Railroad

### Photo Location 6 Picture 1

View to the west of the  
Claridon/Aquilla Road  
bridge.



### Photo Location 6 Picture 2

View to the north of the  
Crocket Boulevard  
subdivision on the north  
side of the Maple  
Highlands Trail. The line  
crosses to the south side of  
the path east of this  
location to avoid these  
houses.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 7**  
**Picture 1**

One of a number of large dead trees observed in the woods adjacent to the north and south of the Maple Highlands Trail between Claridon/Aquilla Road and Taylor Wells Road. This location is on the north side of the bike path opposite a cow pasture and barn about 1,500 feet east of the Claridon/Aquilla Road Bridge. Although not within 30 feet, some of these trees would be danger trees.



**Photo Location 7**  
**Picture 2**

View to the east of the developing tree canopy along the bike path near the cow pasture (600 feet west of the Mountain Run Station Path). Also visible are some of the many slope failures in the cut slope. At this location the line would be along the left side of the path near the toe of the embankment slope.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 8**  
**Picture 1**

Additional potential  
Indiana Bat trees located  
near Mountain Run  
Station on the north side  
of the bike path.



**Photo Location 9**  
**Picture 1**

Wetland area on the south  
side of the bike path  
approximately 800 feet  
east of Mountain Run  
Station. This is another  
Geauga County Park  
District owned property.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 10**  
**Picture 1**

Stream connecting the wetland from Photo Location 9. This is also on the south side of the path on Park District Property. View is towards the east.



**Photo Location 11**  
**Picture 1**

View to the west along the bike path from the Kenny Lane mobile home location. The proposed line location is on the right side of the path in this area.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 12**  
**Picture 1**

View to the northwest along the bike path from 700 feet northwest of Taylor Wells Road. Shows developing tree canopy over bike path. Line would be located along the right side of this picture. Poles would be placed along the right edge of the drainage ditch.



**Photo Location 13**  
**Picture 1**

View to the northwest along the north side of the bike path from the Taylor Wells Road covered bridge.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 13**

**Picture 2**

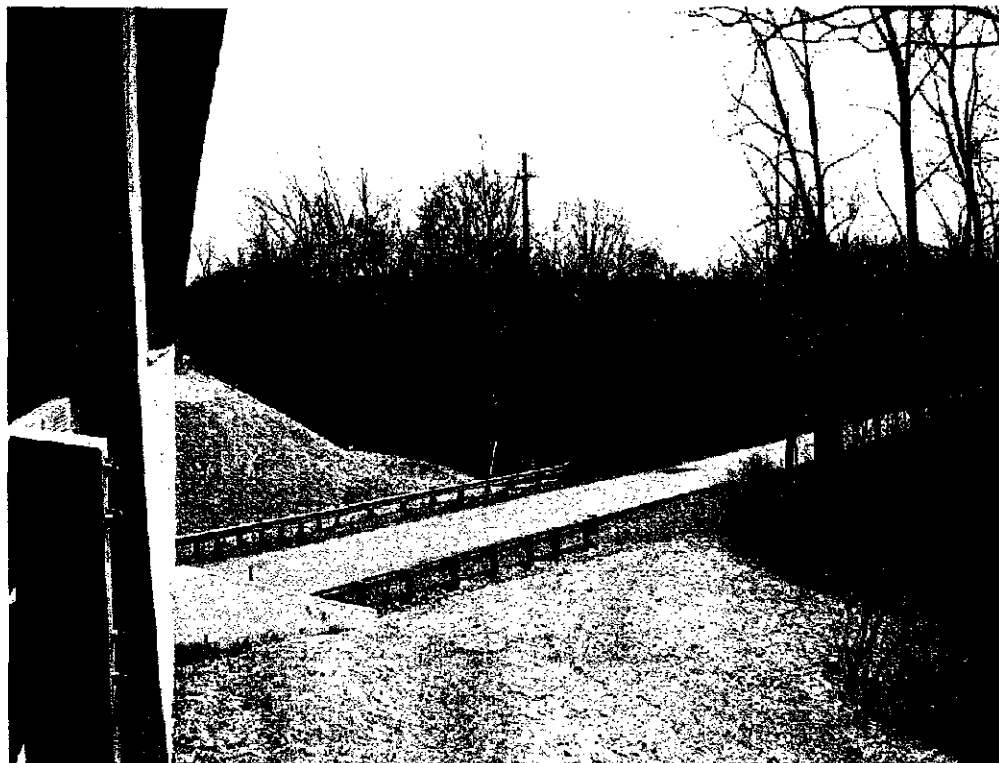
View to the northwest along the south side of the Taylor Wells Road covered bridge. The proposed line would be on this side of the Maple Highlands Trail at this location.



**Photo Location 14**

**Picture 1**

View to the northwest from the southeast end of the Taylor Wells Road covered bridge.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 15**  
**Picture 1**

West Branch of the  
Cuyahoga River from the  
covered bridge crossing



**Photo Location 16**  
**Picture 1**

View to the northwest  
towards the West Branch  
Cuyahoga River  
(foreground) and Taylor  
Wells Road covered  
bridge (background).  
Proposed line is location  
on the south side (left) of  
these two bridges.





**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 17**  
**Picture 1**

Wetland area on the south side of the bike path 2000 feet west of Claridon-Troy Road.



**Photo Location 17**  
**Picture 2**

Wetland area on the north side of the bike path 200 feet west of Claridon-Troy Road.





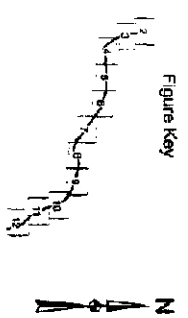
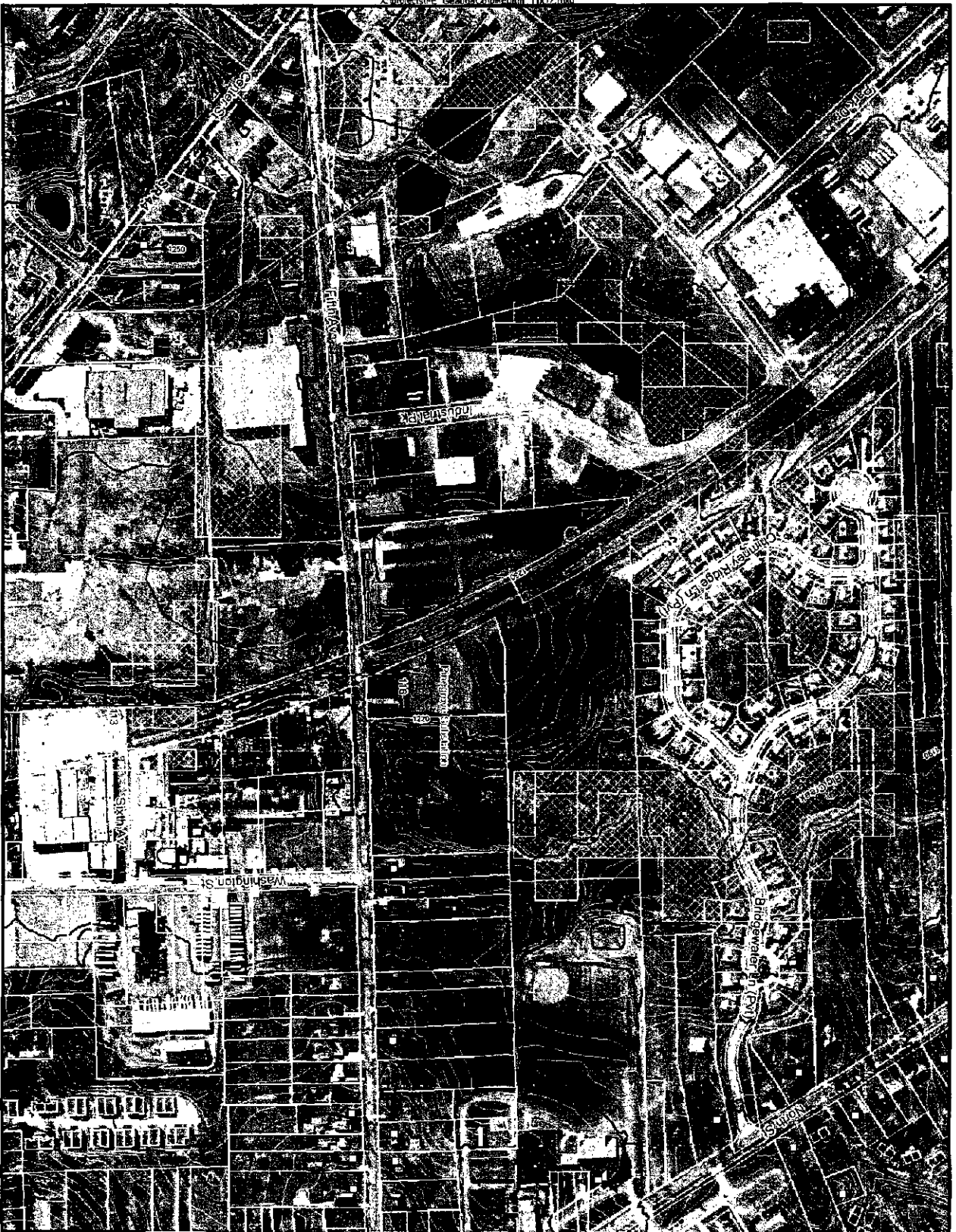
**PHOTOGRAPHIC RECORD**  
**Geauga County 138 kV Transmission Line**  
**Maple Highlands Trail and Abandoned Railroad**

**Photo Location 18**

**Picture 1**

Wetland on the north side  
of the Maple Highlands  
Trail 1,200 feet west of  
SR. 608.





**LEGEND:**

- Approximate New Pole Location
- Likely Guying
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚡ Golf Course
- ⚙ School
- ⛪ Church
- Residence
- ODNR Designated Species Location
- ▨ OWI Designated Area
- ▨ Geauga County Park District Property
- ▨ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Gauga County Auditor  
2006 Aerial Photography

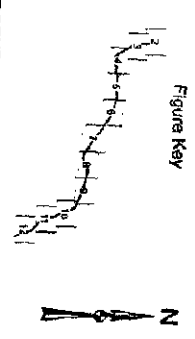
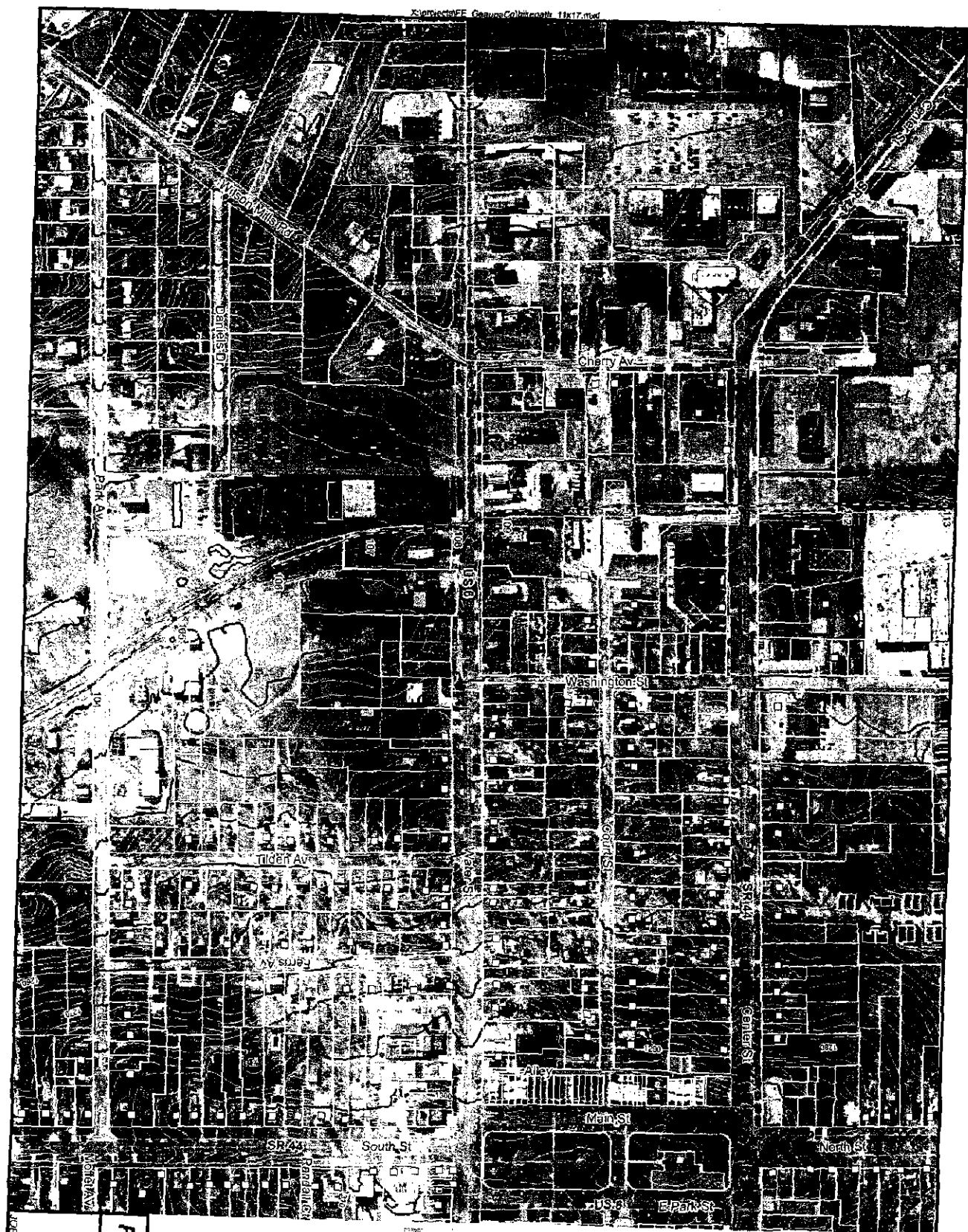
**FirstEnergy**

Gauga County 138 KV  
Electric Transmission Line

**FIGURE 2**  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

LOG NO. 1494898

**URS**



**LEGEND:**

- Approximate New Pole Location
- - - Likely Gating
- - - Preliminary Route
- - - Preliminary Access Path
- ▬ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archeology Site
- ⊙ NRHP Site
- ⊙ Golf Course
- ⊙ School
- ⊙ Church
- ⊙ Residence
- ⊙ ODNR Designated Species Location
- ▬ OWA Designated Area
- ▬ Georgia County Park District Property
- ▬ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

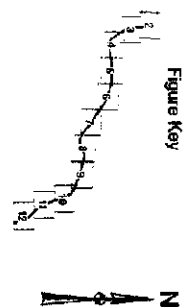
**FIRSTENERGY**

Georgia County 138 kV  
Electric Transmission Line

FIGURE 3  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

APP. NO. 149-0399

**URS**



#### Approximate New Pole Location

- Approximate New Pole Location
- Likely Gyring
- Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚓ Golf Course
- ⚓ School
- ⚓ Church
- Residence
- ODNR Designated Species Location
- OWI Designated Area
- Geauga County Park District Property
- Parcel Boundary
- Photo Location



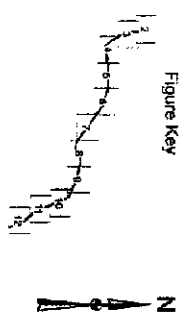
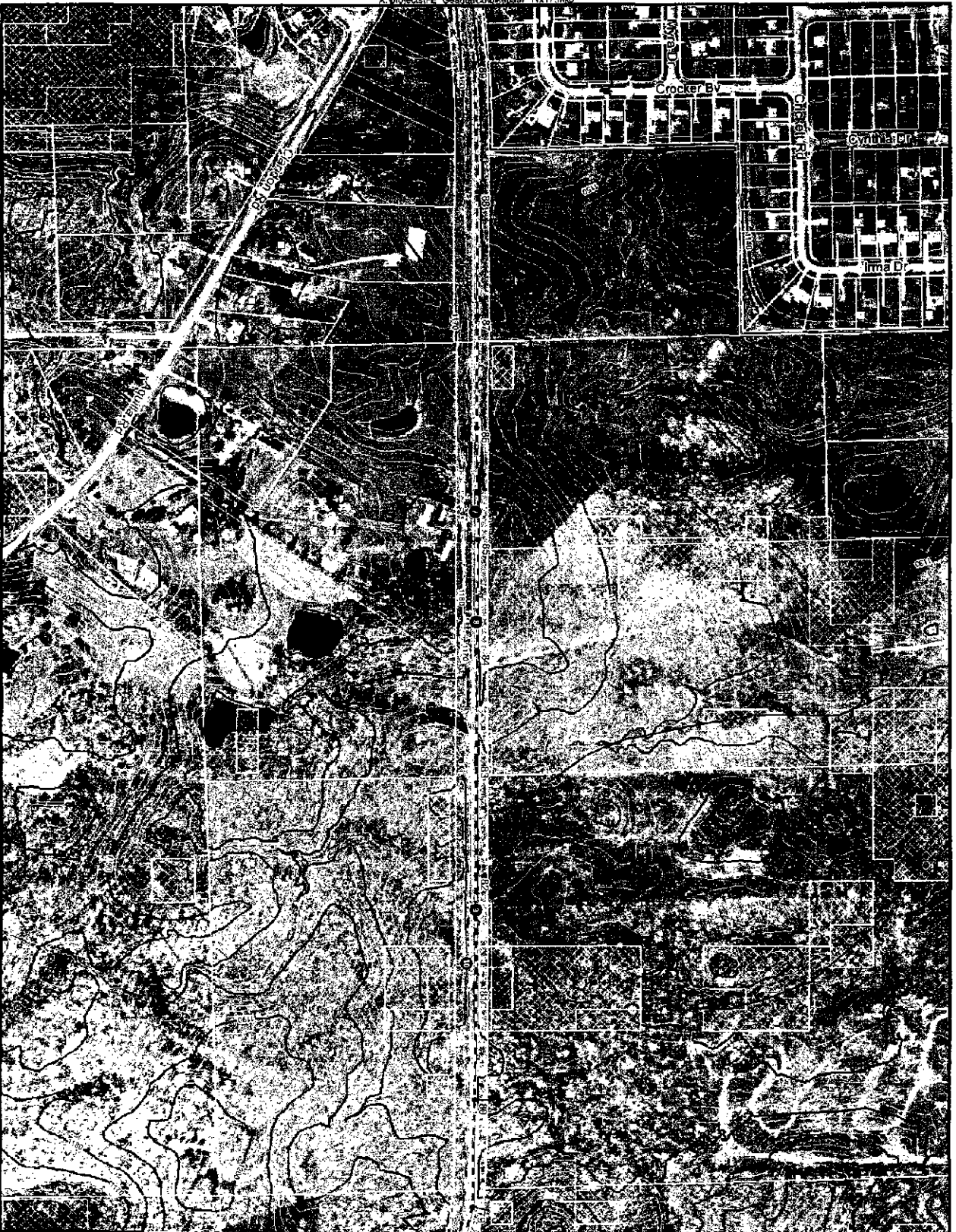
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Scale in Feet

**BASE MAP SOURCE:**  
Geauga County Auditor  
2006 Aerial Photography

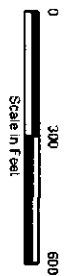
**Gaucha County 138 kV  
Electric Transmission Line**

**FIGURE 4  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN**



**LEGEND:**

- Approximate New Pole Location
- Likely Guying
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence
- ODNR Designated Species Location
- ▨ OWI Designated Area
- ▨ Gaucha County Park District Property
- ▨ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Gaucha County Auditor  
2006 Aerial Photography

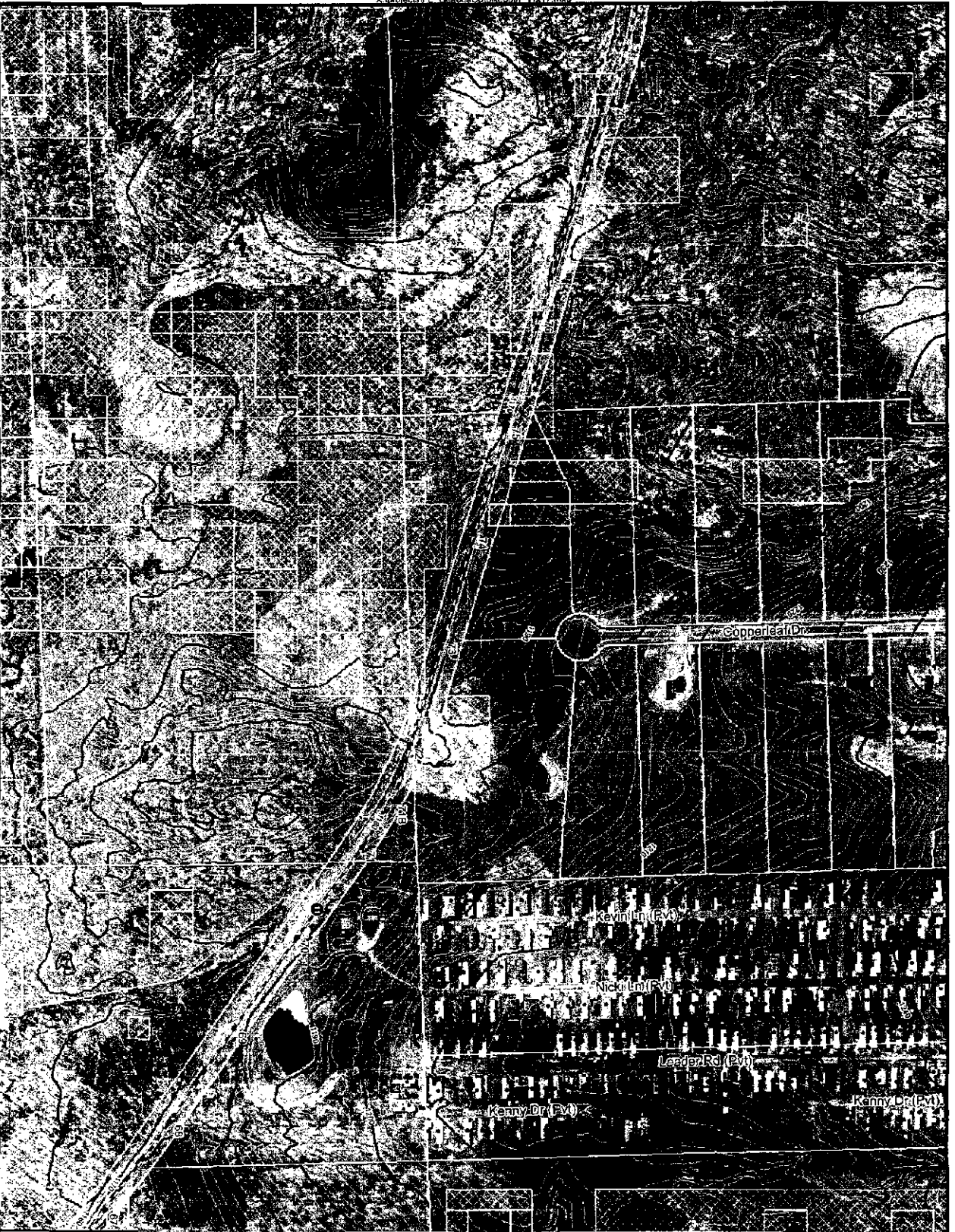
**FirstEnergy**

Gaucha County 138 kV  
Electric Transmission Line

**FIGURE 5**  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 149-0394

**URS**



**LEGEND:**

- Approximate New Pole Location
- Likely Gully
- - - Preliminary Route
- - - Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NHP Site
- ⚓ Golf Course
- 1 School
- 1 Church
- Residence
- ODNR Designated Species Location
- OVI Designated Area
- Gaucha County Park District Property
- Parcel Boundary
- Photo Location

0 300 600  
Scale in Feet

BASE MAP SOURCE:  
Gaucha County Auditor  
2006 Aerial Photography

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Gaucha County 138 KV  
Electric Transmission Line

FIGURE 6  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 10945398

**URS**



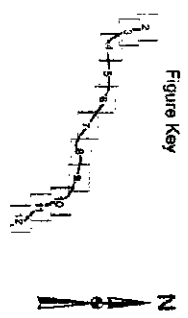
- Approximate New Pole Location
- Likely Gating
- - - Preliminary Route
- Preliminary Access Path
- Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ↘ Golf Course
- ⚡ School
- ⛔ Church
- Residence
- ODNR Designated Species Location
- OWI Designated Area
- Georgia County Park District Property
- Parcel Boundary
- Photo Location

0 300 600  
Scale in Feet

**BASE MAP SOURCE:**  
Gauga County Auditor  
2006 Aerial Photography

**Ga. 138 kV  
Electric Transmission Line**

**FIGURE 7  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN**



LEGEND:

- Approximate New Pole Location
- - - Likely Guying
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ⚡ Golf Course
- Ⓩ School
- Ⓜ Church
- Residence
- ▨ ODNR Designated Species Location
- ▨ OWM Designated Area
- ▨ Geauga County Park District Property
- Photo Location

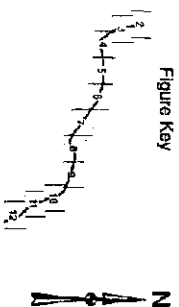


BASE MAP SOURCE:  
Gauga County Auditor  
2006 Aerial Photography

**FisEnergy** Geauga County 138 KV  
Electric Transmission Line



Figure Key



LEGEND:

- Approximate New Pole Location
- Likely Gating
- - - Preliminary Route
- - - Preliminary Access Path
- Approximate Bike Path Pavement
- - - Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ▽ Golf Course
- ⌵ School
- ⌵ Church
- Residence
- ODNR Designated Species Location
- OWI Designated Area
- Gauna County Park District Property Parcel Boundary
- Photo Location

0 300 600  
Scale in Feet

BASE MAP SOURCE:  
Gauna County Auditor  
2006 Aerial Photography

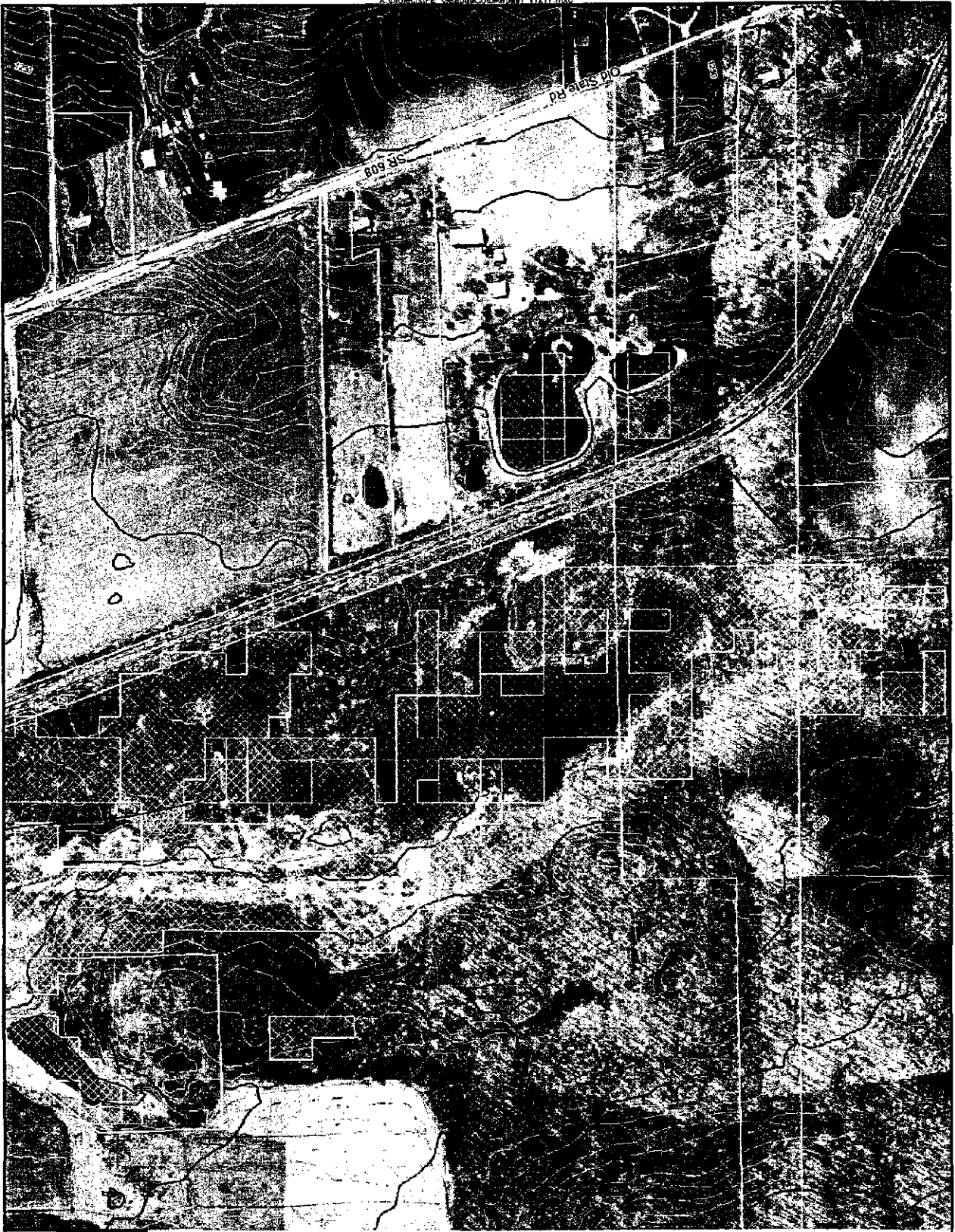
**FirstEnergy**

Gauna County 138 kV  
Electric Transmission Lines

FIGURE 9  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 14916398

**URS**



LEGEND:

- Approximate New Pole Location
- Likely Guying
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NRHP Site
- ⌘ Golf Course
- ⌘ School
- ⌘ Church
- Residence
- ODNR Designated Species Location
- OWI Designated Area
- ▨ Geauga County Park District Property
- ▨ Parcel Boundary
- Photo Location



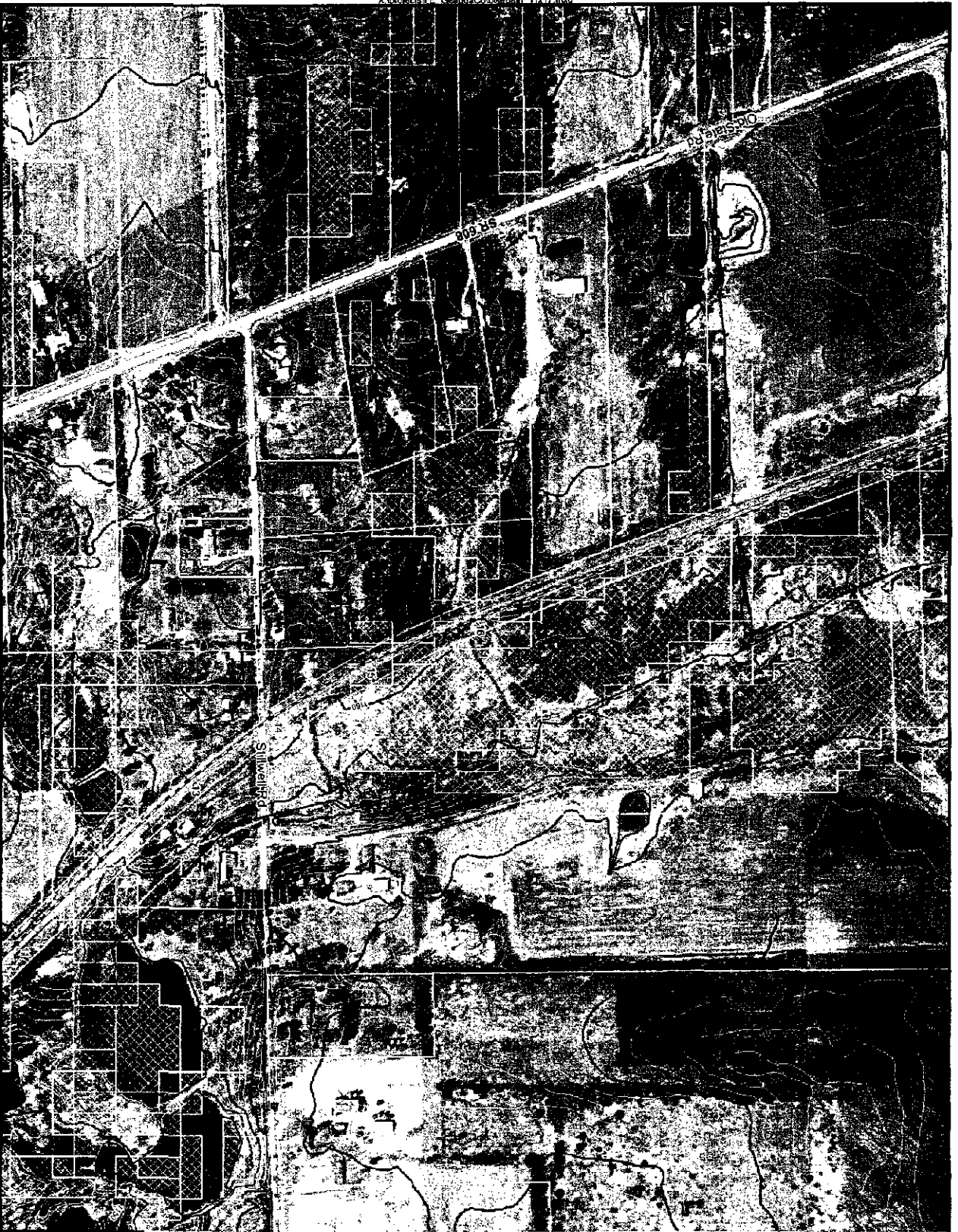
BASE MAP SOURCE:  
Gauga County Auditor  
2006 Aerial Photography

**FirstEnergy** Geauga County 138 kV  
Electric Transmission Line

FIGURE 10  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 11845338

URS



LEGEND:

- Approximate New Pole Location
- - - Likely Guying
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Elite Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- NRHP Site
- ⚡ Golf Course
- 1 School
- 1 Church
- Residence
- OCMR Designated Species Location
- ▨ OWM Designated Area
- ▨ Georgia County Park District Property
- Parcel Boundary
- Photo Location

0 300 500  
Scale in Feet

BASE MAP SOURCE:  
Georgia County Auditor  
2006 Aerial Photography

**FstEnergy**

Georgia County 139 KV  
Electric Transmission Line

FIGURE 11  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 14940388

**URS**

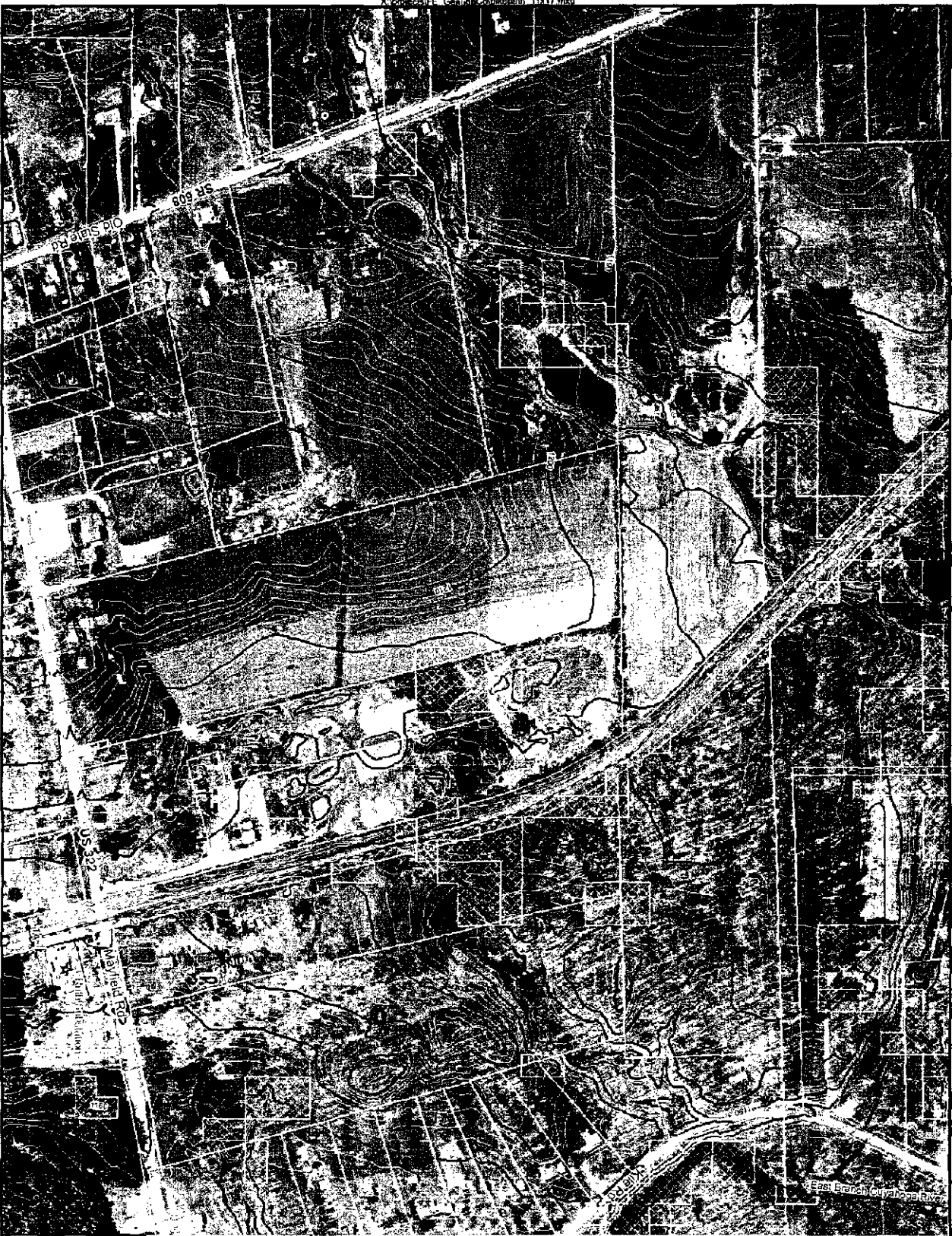
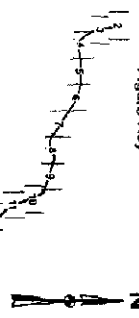


Figure Key



LEGEND:

- Approximate New Pole Location
- - - Likely Gully
- - - Preliminary Route
- - - Preliminary Access Path
- ▨ Approximate Bike Path Pavement
- Ohio Historic Inventory Structure
- △ Known Archaeology Site
- ⊙ NHP Site
- ⚡ Golf Course
- ⚡ School
- ⚡ Church
- Residence
- ODNR Designated Species Location
- OMI Designated Area
- ▨ Gaucha County Park District Property
- ▭ Parcel Boundary
- Photo Location



BASE MAP SOURCE:  
Gaucha County Auditor  
2006 Aerial Photography

**FirstEnergy** Gaucha County 138 kV  
Electric Transmission Line

FIGURE 12  
PRELIMINARY ROUTE WITH  
CONSTRAINTS AND ACCESS PLAN

JOB NO. 15490398

**URS**