Ohio EPA
Section 401
Water Quality Certification
Resubmittal – Oct. 21, 2011

<u>Project</u>

B.F. Iron & Metal
Barge Scrapping & Repair

<u>Applicant</u>

Bob Fowler, Owner
B.F. Iron & Metal
P.O. Box 1838
Ashland, KY 41105

<u>Authorized Agent</u>

Brian Horsley
Eta Engineering Consultants, PSC
5802 Brown Lane
Catlettsburg, KY 41129

EEC
P.S.C.
ETA ENGINEERING CONSULTANTS, PSC

October 21, 2011

Ohio EPA
Division of Surface Water
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049
Attention: Rose McLean

Resubmittal
401 Water Quality Certification (WQC) Application
Project: BF Iron & Metal Barge Maintenance Facility
County: Lawrence
SWIMS ID: 103670

Dear Rose:

Per our previous conversations and emails regarding the withdrawal and resubmittal of this application, I offer the attached revised application and supporting documents.

Please contact me if you need further information.

Sincerely,

Brian Horsley
Project Manager

5802 Brown Lane • Catlettsburg, Ky 41129 • Telephone: 606-739-6805 • Fax: 606-739-4659 • Web: eecpsc.com

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   a. *Drawings reflect prosed Minimal Degradation Design. The only difference between Preferred Design and Minimal Degradation Design is the access road route.*

Section 1

APPLICATION FOR OHIO EPA
SECTION 401 WATER QUALITY CERTIFICATION

Effective October 1, 1996
Revised August, 1998

This application must be completed whenever a proposed activity requires an individual Clean Water Act Section 401 Water Quality Certification (Section 401 certification) from Ohio EPA. A Section 401 certification from the State is required to obtain a federal Clean Water Act Section 404 permit from the U.S. Army Corps Engineers, or any other federal permits or licenses for projects that will result in a discharge of dredged or fill material to any waters of the State. To determine whether you need to submit this application to Ohio EPA, contact the U.S. Army Corps of Engineers District Office with jurisdiction over your project, or other federal agencies reviewing your application for a federal permit to discharge dredged or fill material to waters of the State, or an Ohio EPA Section 401 Coordinator at (614) 644-2001.

The Ohio EPA Section 401 Water Quality Certification Program is authorized by Section 401 of the Clean Water Act (33 U.S.C. 1251) and the Ohio Revised Code Section 6111.03(P). Ohio Administrative Code (OAC) Chapter 3745-32 outlines the application process and criteria for decision by the Director of Ohio EPA. In order for Ohio EPA to issue a Section 401 certification, the project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October, 1997 and May, 1998. The Rule includes additional application requirements and public participation procedures. **Because there is a lowering of water quality associated with every project being reviewed for Section 401 certification, every Section 401 certification applicant must provide the information required in Part 10 (pages 3 and 4) of this application**. In addition, applications for projects that will result in discharges of dredged or fill material to wetlands must include a wetland delineation report approved by the Corps of Engineers, a wetland assessment with a proposed assignment of wetland category (ies), official documentation on evaluation of the wetland for threatened or endangered species, and appropriate avoidance, minimization, and mitigation as prescribed in OAC 3745-1-50 to 3745-1-54. Ohio EPA will evaluate the applicant's proposed wetland category assignment and make the final assignment.

ıformation provided with the application will be used to evaluate the project for certification and is a matter of public record. If the Director determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Ohio EPA will inform the applicant in writing of the additional information that must be submitted. The application will not be accepted until the application is considered complete by the Section 401 Coordinator. An Ohio EPA Section 401 Coordinator will inform you in writing when your application is determined to be complete.

Please submit the following to "Section 401 Supervisor, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049:

- Four (4) sets of the completed application form, including the location of the project (preferably on a USGS quadrangle) and 8-1/2 x 11" scaled plan drawings and sections.
- One (1) set of original scaled plan drawings and cross-sections (or good reproducible copies).

(See Application Primer for detailed instructions)

1. The federal permitting agency has determined this project: (check appropriate box and fill in blanks)

   a. X requires an individual 404 permit/401 certification- Public Notice # (if known)_____

   b. ____ requires a Section 401 certification to be authorized by Nationwide Permit #_____

   c. ____ requires a modified 404 permit/401 certification for original Public Notice #_____

   d. ____ requires a federal permit under _____ jurisdiction identified by #_____

   e. ____ requires a modified federal permit under_____ jurisdiction identified by #_____

Click to clear all entered information (on all 4 pages of this form) CLEAR

2. Application number (to be assigned by Ohio EPA):

3. Name and address of applicant:

Bob Fowler
P.O. Box 1838
Ashland, KY 41105

Telephone number during business hours:

(304) 638-2102 (Residence)

(606) 928-6466 (Office)

3a. Signature of Applicant: Date:

4. Name, address and title of authorized agent:

Brian Horsley - Eta Engineering Consultants, PSC
5802 Brown Lane
Catlettsburg, KY 41129

Telephone number during business hours:

( ) (Residence)

(606) 739-6805 (Office)

4a. Statement of Authorization: I hereby designate and authorize the above-named agent to act in my behalf in the processing of this permit application, and to furnish, upon request, supplemental information in support of the application.

Signature of Applicant: Date:

5. Location on land where activity exists or is proposed. Indicate coordinates of a fixed reference point at the impact site (if known) and the coordinate system and datum used.

Address:

County Road 1A N38°33'55" E82°48'00"
Street, Road, Route, and Coordinates, or other descriptive location

Ohio & Little Sandy R Lawrence	Hamilton	Ironton	OH	45638
Watershed County	Township	City	State	Zip Code

6. Is any portion of the activity for which authorization is sought complete? ____ Yes X No
If answer is "yes," give reasons, month and year activity was completed. Indicate the existing work on the drawings.

7. List all approvals or certifications and denials received from other federal, interstate, state or local agencies for any structures, construction, discharge or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial
L.C. Soil & Water	Construction Per.	2006-090	8/22/06	9/20/06	Expired 10/1/07
USACE	Public Notice	2006-26-OHR	6/10/10	8/13/10	Expired 9/12/10 (Mitigation is now being proposed)

8. **DESCRIPTION OF THE ACTIVITY (fill in information in the following four blocks - 8a, 8b, 8c & 9)**

8a. Activity: Describe the Overall Activity:

Prepare the proposed site to accommodate Mr. Fowlers proposed business venture of repairing, and/or disassembling for scrap, aging and damaged barges. The site will include the installation of a rip rap dry dock area to provide a stable area for equipment to access and gain control of the empty river barges. This rip rap will be contained between driven pile and the existing river bank. Down river of the dry dock will be a series of concrete runners that will begin at the river and extend 150' away from the river to the scrapping/disassembling area. The concrete runners will provide a solid surface to drag the barges from the river to the scrapping/disassembling area, and prevent damage to the soil. At the river bank rip rap will be placed between the concrete runners to stabilize the river bank and to deter erosion. An access road to CR 1A will also be constructed to permit access to this area of the property.

8b. Purpose: Describe the purpose, need and intended use of the activity:

The purpose of this site is to provide access to river barges that are in need of repair, or are beyond repair, and need to be scrapped. Mr. Fowlers business adventure will provide a means of removing damaged barges from the river. Repairable barges will be removed from the water, via the concrete runners, then repaired at this proposed site. Repaired barges will be returned to the river, via the concrete runners, to a waiting tug boat. There will be no fleeting of barges at this facility. Barges will be in full control of a tug boat or facility equipment during the river to land transition. Barges that are aging, or damaged beyond repair, will be removed from the river in the same manner as repairable barges. These barges will then be disassembled and/or cut into smaller, manageable pieces of steel. The disassembled pieces will then be loaded into a truck or river barge and taken to a scrap metal facility for processing.

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards).

See attached Minimal Degradation Design - Description of Design

9. Waterbody and location of waterbody or upland where activity exists or is proposed, or location in relation to a stream, lake, wetland, wellhead or water intake (if known). Indicate the distance to, and the name of any receiving stream, if appropriate.

North Bank of Ohio River (see attached Wetland Delineation)

10. To address the requirements of the Antidegradation Rule, your application must include a report evaluating the:

- Preferred Design (your project) and Mitigative Techniques
- Minimal Degradation Alternative(s) (scaled-down version(s) of your project) and Mitigative Techniques
- Non-Degradation Alternative(s) (project resulting in avoidance of all waters of the state)

At a minimum, item a) below must be completed for the Preferred Design, the Minimal Degradation Alternative(s), and the Non-Degradation Alternative(s), followed by completion of item b) for each alternative, and so on, until all items have been discussed for each alternative (see Primer for specific instructions).

10a) Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water.

10b) Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation.

10c) Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.)

10d) For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents.

10e) To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource.

10f) Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project.

10g) Describe any impacts on human health and the overall quality and value of the water resource.

10h) Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy.

10i) Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans.

10j) Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species.

10k) Describe mitigation techniques proposed (except for the Non-Degradation Alternative):

- Describe proposed Wetland Mitigation (see **OAC 3745-1-54** and Primer)
- Describe proposed Stream, Lake, Pond Mitigation (see Primer)

11. Application is hereby made for a Section 401 Water Quality Certification. I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or I am acting as the duly authorized agent of the applicant.

Signature of Applicant	Date	Signature of Agent

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in Block 3 has been filled out and signed.

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Preferred Design

401 Water Quality Certification (WQC) Application
Project: BF Iron & Metal Barge Maintenance Facility
County: Lawrence
SWIMS ID: 103670

Description of Design:

- *Construct a 20' wide by 1,500' long access gravel road from CR 1A/Gallia Pike to open field on Mr. Fowler's property where barge maintenance will take place. Access road will cross two streams. The first crossing will require 3 - 10' diameter pipe culverts, 82' long and installed 1050' from CR 1A/Gallia Pike. Total stream impact at this first crossing will be approximately 100 linear feet, and the stream is 100' wide. The second crossing will be a 4' diameter pipe culvert, 40' long and installed 1,375' from CR 1A/Gallia Pike. Total stream impact at this second crossing will be approximately 70 linear feet. This access road will be a low volume, low speed gravel road for use by employees. This road will also provide access to the work area during and after construction, for the movement of necessary equipment.*
    - *First Crossing – 100 linear feet of impact (approx. 1200 cu.yd. fill)*
    - *Second Crossing - 70 linear feet of impact (approx. 300 cu. yd. fill)*
    - *Expected Total Cut Along Access Road – approx. 500 cu. yd.*
    - *Expected Total Fill Along Access Road – approx. 2,500 cu. yd.*

- *Construct a dry dock area filled with ODOT Type B Riprap, contained using PZ 22 piling. Dry dock piling will begin approximately 340' down river of eastern property line and extend approximately 260' down river. The dry dock will extend southwest into the river approximately 75' from the intersection of the existing bank and ordinary high water elevation (516'). The top of the dry dock will be level with the top of the existing eroding bank, at elevation 525', and extend approximately 30' northeast onto the subject property. Approximately 60' of existing river bank up river from dry dock will be reinforced by placing ODOT Type B Riprap, 2' thick. Riprap placement for bank reinforcement will start at or near ordinary high water elevation (516'), go up the bank, and extend from the top of the bank approximately 30' onto the property. A total of 5,000 cubic yards of rip rap will be placed below elevation 516.0' (normal pool) to form a base for the dry dock and approx. 7,000 cu. yd. will be placed above elevation 516.0' to complete the dry dock. This dry dock will be used by employees to maneuver the in-coming and out-going barges. Land based equipment will use the dock area to gain close access to the water when assisting tug boats as the tugs are arriving or leaving with the barges. This dock has not been designed for and will not be used for mooring or fleeting barges.*
    - *Dry Dock: 260 linear feet of impact (approx. 7,000 cu. yd. of riprap fill above normal pool elev. & approx. 5,000 cu. yd. of rip rap fill below normal pool elev.). The dry dock footprint below normal pool is less than 1/3 acre.*
    - *Bank Reinforcement (upstream from dry dock): 60 linear feet of impact (approx. 200 cu. yd. riprap fill)*
    - *Dry Dock + Bank Reinforcement: 260 lf + 60 lf = 320' lf*

- *Construct 11reinforced concrete runners down river from the dry dock. Concrete runners will be used to support barges and prevent soil erosion when barges are winched from and pushed back into the river. Concrete runners will be 3' wide and 4' deep and begin near the water's edge, extending 150'-200' onto the property. Top of concrete runners will be near grade level. Due to erosion and bank undercut, the top of bank will be cut and sloped back onto property. All areas between dry dock and first concrete runner, between each concrete runner and approximately 10' downstream of the last concrete runner will be reinforced by placing ODOT Type B Riprap, 2' thick. Riprap placement will start at the normal water level (516'), go up the bank, and extend from the top of the bank approximately 55' onto the property.*
    - *Bank Reinforcement (downstream from dry dock at concrete runners) – 430 linear feet of impact (approx. 2,700 cu. yd. riprap fill)*
    - *Bank Preparation (Cut to Slope and Grade Undercut and Eroding Bank) – approx. 400 cu. yd.*
    - *Total Excavation to Install Concrete Runners – approx. 750 cu. yd.*

- *Construct 6, 8' square x 6' deep foundations near the north end of the concrete runners. Foundations will be used as anchor points for electric winches that will pull the barges out of the river and up the concrete runners for repair.*
    - *Total Excavation to Install Foundations – approx. 60 cu. yd.*

Schematic:

- *Attached*

Economic Information:

- *The owner expects to initially hire 5-10 workers to get the facility running and to acquire a customer base. The typical worker would make about $20 per hour. The hours per week would depend on weather and business load. The owner also expects to acquire an increased workload in a short period of time. He conservatively expects to have approximately 50 daily workers within a few years of operation.*
    - *Projected Yearly Revenue*
        - *1st Year - $.5MM*
        - *2nd Year - $2MM*
        - *3rd Year - $5MM*
        - *4th Year - $6MM*

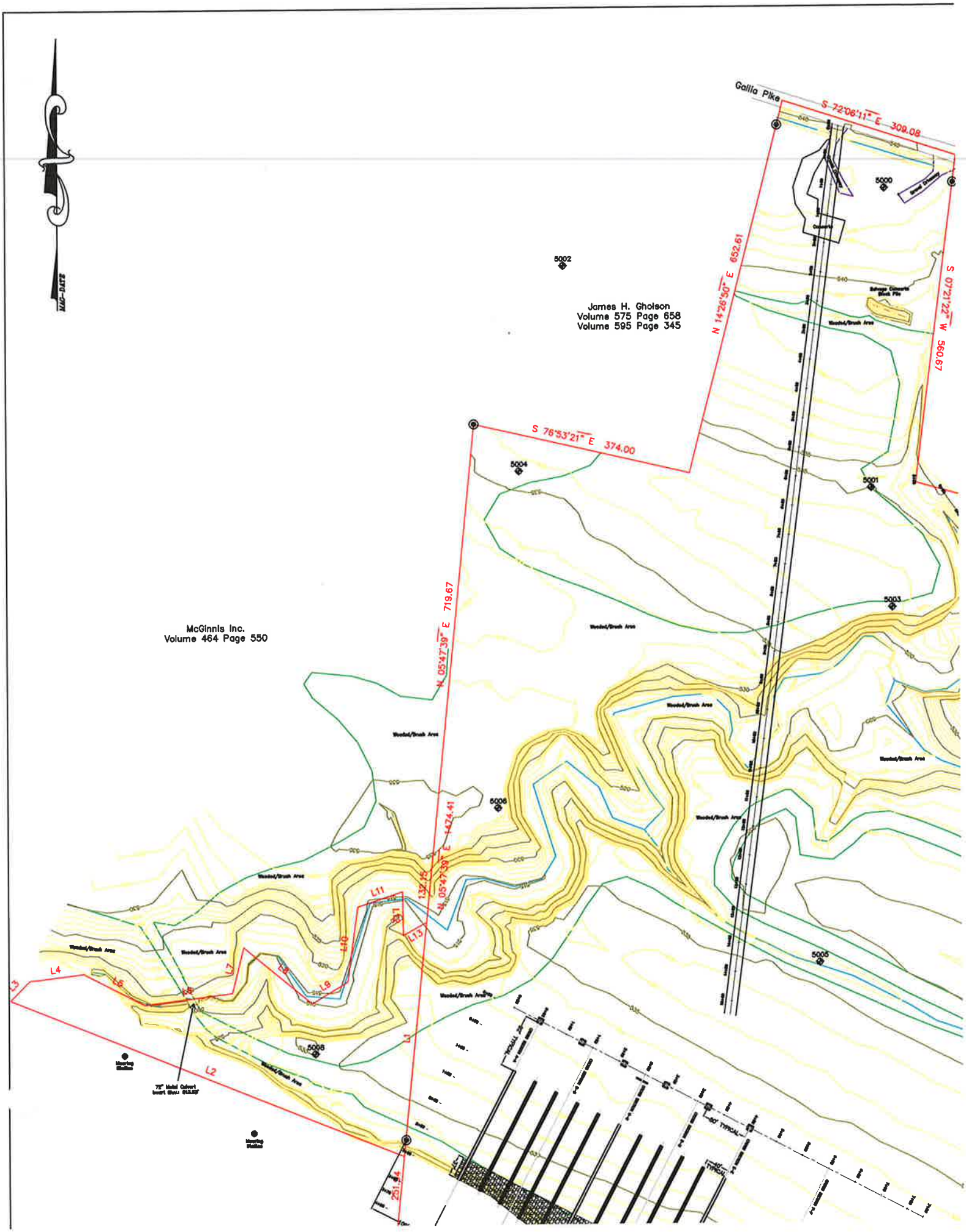
Application Questions 10a – 10k

- *10a – See "Description of Design" above and attached schematic.*
- *10b – This design will cross a category 2 wetland (W-B), see Wetland Delineation Report. The total on-site area of W-B is 2.33 acres. This crossing will affect .23 acres.*
- *10c – This project is technically feasible as designed. The design is very cost effective and utilizes simple construction materials and techniques that can be found locally. The repair and maintenance will be very minimal due to the nature of the work. The total cost of the project is expected to be approximately $980K. The operation of this facility will not cause water degradation.*
- *10d – No sewage treatment required for this facility.*
- *10e – None*

- *10f – No water pollution will result from this facility. Silt fencing will be used as a precautionary measure during construction, should a rain event occur.*
- *10g - There will be no impacts on human health and the overall quality and value of water resources.*
- *10h – See section titled "Economic Information" above. The state of the local economy is poor, providing highly skilled workers in need of immediate employment. The completion of this project will provide jobs and be a stimulant to the local economy and moral.*
- *10i – No social or economic benefits will be lost as a result of this project.*
- *10j – The proposed rip rap bank stabilization on the Ohio River will decrease the existing environmental risk of bank erosion. The existing earth bank is unraveling due to erosion, introducing silt and mud into the river. The area of wetland W-B will be decreased by 10% in total area.*
- *10k – As shown on the wetland delineation report this proposed route would cross a category 2 wetland (W-B), see Wetland Delineation Report. The total on-site area of W-B is 2.33 acres. This crossing will affect .23 acres. A Detailed Wetland Mitigation proposal has been completed for the Minimal Degradation Design, but not for this Preferred Design. Due to the severity of this impact it is expected that the execution of Wetland Mitigation for this Preferred Design would cost significantly more than the proposed Wetland Mitigation provided for the Minimal Degradation Design.*

Special Notes:

- *This project cannot be constructed without access to the Ohio River and CR-1A. Access to the river's edge and the small dry dock are minimal requirements to perform the proposed work. Complete barges exceed over the road hauling regulations and must be transported by waterway. Access to and from CR-1A and the proposed site is essential because there is currently no access, only rugged farming access. The two streams and crossings described traverse across Mr. Fowler's property. Therefore access to the site using Mr. Fowler's land is impossible without stream crossings.*
- *This property was surveyed by EEC to determine the exact locations of the two streams being crossed. The proposed access road, described in this Preferred Design, is placed to provide direct access from CR-1A to the proposed work area. This route will require substantially more cut and more fill than the proposed Minimal Degradation Design. This route will also cross a category 2 wetland (W-B), see Wetland Delineation Report. The total on-site area of W-B is 2.33 acres. This crossing will affect .23 acres.*
- *As directed by ODNR, Division of Wildlife (DOW), no in-water work to construct this project will occur from March 15th to June 30th.*



Gallia Pike
S 72°06'11" E 309.08
N 14°26'50" E 652.61
S 07°21'22" W 560.67
S 76°53'21" E 374.00
N 05°47'39" E 719.67
N 05°47'39" E 1474.41
132.15
251.84
James H. Gholson
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McGinnis Inc.
Volume 464 Page 550
5000
5001
5002
5003
5004
5005
5006
5008
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
L13
Weeded/Brush Area
72" Metal Culvert
Invert Elev. 613.53'

Minimal Degradation Design

401 Water Quality Certification (WQC) Application
Project: BF Iron & Metal Barge Maintenance Facility
County: Lawrence
SWIMS ID: 103670

Description of Design:

- *Construct a 20' wide by 1,750' long access gravel road from CR 1A/Gallia Pike to east side of open field adjacent to Mr. Fowler's property line, stopping 600' north of the Ohio River. Access road will cross two small streams. The first crossing will be a 10' diameter pipe culvert, 82' long and installed 850' from CR 1A/Gallia Pike. Total stream impact at this first crossing will be approximately 100 linear feet. The second crossing will be a 4' diameter pipe culvert, 49' long and installed 1,250' from CR 1A/Gallia Pike. Total stream impact at this second crossing will be approximately 70 linear feet. This access road will be a low volume, low speed gravel road for use by employees. This road will also provide access to the work area during and after construction, for the movement of necessary equipment.*
    - *First Crossing – 100 linear feet of impact (approx. 400 cu.yd. fill)*
    - *Second Crossing - 70 linear feet of impact (approx. 150 cu. yd. fill)*
    - *Expected Total Cut Along Access Road – approx. 700 cu. yd.*
    - *Expected Total Fill Along Access Road – approx. 1,200 cu. yd.*

- *Construct a dry dock area filled with ODOT Type B Riprap, contained using PZ 22 piling. Dry dock piling will begin approximately 340' down river of eastern property line and extend approximately 260' down river. The dry dock will extend southwest into the river approximately 75' from the intersection of the existing bank and ordinary high water elevation (516'). The top of the dry dock will be level with the top of the existing eroding bank, at elevation 525', and extend approximately 30' northeast onto the subject property. Approximately 60' of existing river bank up river from dry dock will be reinforced by placing ODOT Type B Riprap, 2' thick. Riprap placement for bank reinforcement will start at or near ordinary high water elevation (516'), go up the bank, and extend from the top of the bank approximately 30' onto the property. A total of 5,000 cubic yards of rip rap will be placed below elevation 516.0' (normal pool) to form a base for the dry dock and approx. 7,000 cu. yd. will be placed above elevation 516.0' to complete the dry dock. This dry dock will be used by employees to maneuver the in-coming and out-going barges. Land based equipment will use the dock area to gain close access to the water when assisting tug boats as the tugs are arriving or leaving with the barges. This dock has not been designed for and will not be used for mooring or fleeting barges.*
    - *Dry Dock: 260 linear feet of impact (approx. 7,000 cu. yd. of riprap fill above normal pool elev. & approx. 5,000 cu. yd. of rip rap fill below normal pool elev.). The dry dock footprint below normal pool is less than 1/3 acre.*
    - *Bank Reinforcement (upstream from dry dock): 60 linear feet of impact (approx. 200 cu. yd. riprap fill)*
    - *Dry Dock + Bank Reinforcement: 260 lf + 60 lf = 320' lf*

- *Construct 11reinforced concrete runners down river from the dry dock. Concrete runners will be used to support barges and prevent soil erosion when barges are winched from and pushed back into the river. Concrete runners will be 3' wide and 4' deep and begin near the water's edge, extending 150'-200' onto the property. Top of concrete runners will be near grade level. Due to erosion and bank undercut, the top of bank will be cut and sloped back onto property. All areas between dry dock and first concrete runner, between each concrete runner and approximately 10' downstream of the last concrete runner will be reinforced by placing ODOT Type B Riprap, 2' thick. Riprap placement will start at the normal water level (516'), go up the bank, and extend from the top of the bank approximately 55' onto the property.*
    - *Bank Reinforcement (downstream from dry dock at concrete runners) – 430 linear feet of impact (approx. 2,700 cu. yd. riprap fill)*
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    - *Total Excavation to Install Concrete Runners – approx. 750 cu. yd.*

- *Construct 6, 8' square x 6' deep foundations near the north end of the concrete runners. Foundations will be used as anchor points for electric winches that will pull the barges out of the river and up the concrete runners for repair.*
    - *Total Excavation to Install Foundations – approx. 60 cu. yd.*

Schematic:

- *Attached*

Economic Information:

- *The owner expects to initially hire 5-10 workers to get the facility running and to acquire a customer base. The typical worker would make about $20 per hour. The hours per week would depend on weather and business load. The owner also expects to acquire an increased workload in a short period of time. He conservatively expects to have approximately 50 daily workers within a few years of operation.*
    - *Projected Yearly Revenue*
        - *1st Year - $.5MM*
        - *2nd Year - $2MM*
        - *3rd Year - $5MM*
        - *4th Year - $6MM*

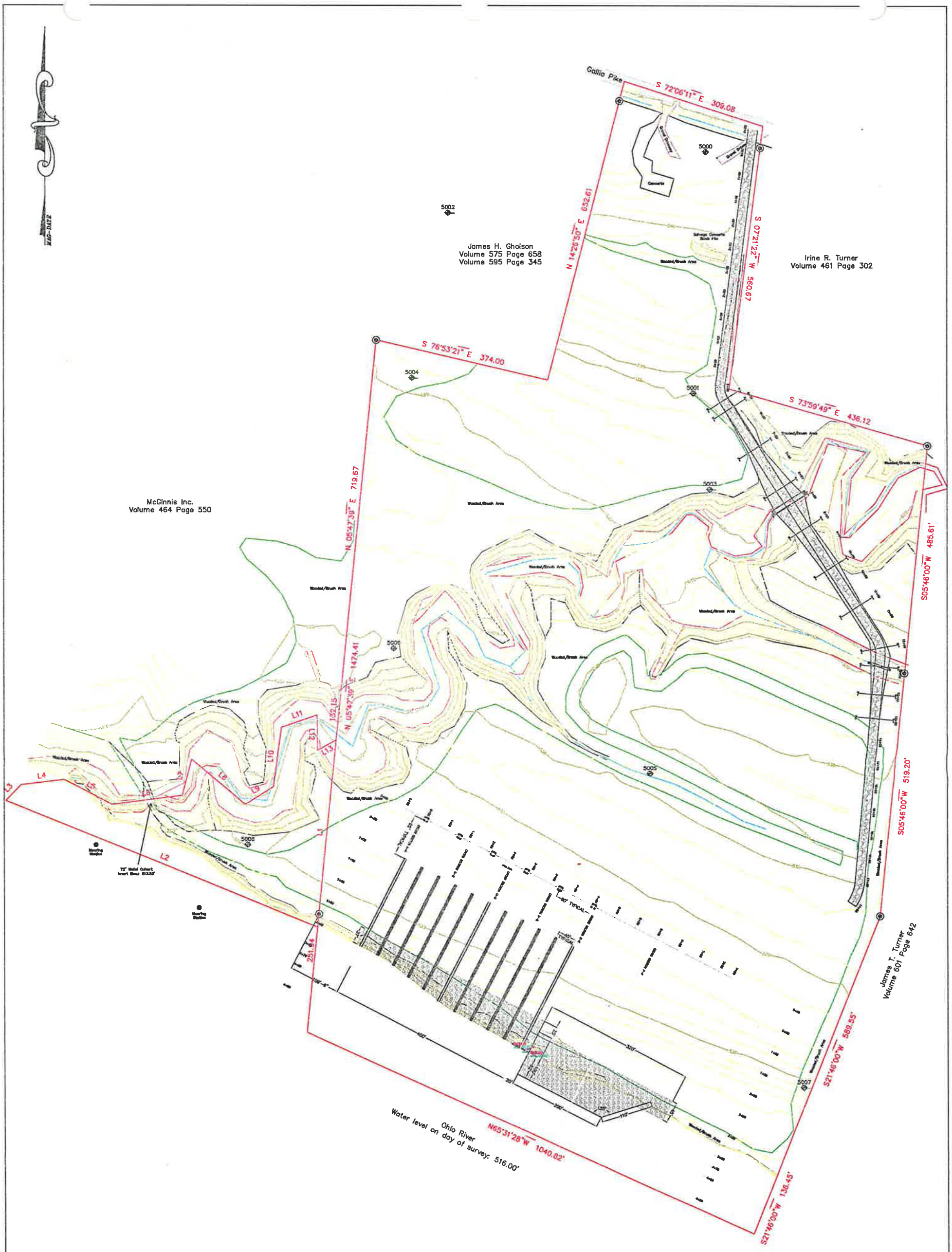
Application Questions 10a – 10k

- *10a – See "Description of Design" above and attached drawing.*
- *10b – This design will not lower the water quality. See attached Wetland Delineation Report.*
- *10c – This project is technically feasible as designed. The design is very cost effective and utilizes simple construction materials and techniques that can be found locally. The repair and maintenance will be very minimal due to the nature of the work. The total cost of the project is expected to be approximately $800K. The operation of this facility will not cause water degradation. Barges received at this facility will be clean and ready for repair or disassembled.*
- *10d – No sewage treatment required for this facility.*
- *10e – None*

- *10f – No water pollution will result from this facility. Silt fencing will be used as a precautionary measure during construction, should a rain event occur.*
- *10g - There will be no impacts on human health and the overall quality and value of water resources.*
- *10h – See section titled "Economic Information" above. The state of the local economy is poor, providing highly skilled workers in need of immediate employment. The completion of this project will provide jobs and be a stimulant to the local economy and moral.*
- *10i – No social or economic benefits will be lost as a result of this project.*
- *10j – The proposed rip rap bank stabilization on the Ohio River will decrease the existing environmental risk of bank erosion. The existing earth bank is unraveling due to erosion, introducing silt and mud into the river. No other environmental benefits will be lost or gained with this project. There are no effects on the aquatic life, wildlife, threatened or endangered species as a result of this project.*
- *10k – See attached Detailed Wetland Mitigation Proposal*

Special Notes:

- *This project cannot be constructed without access to the Ohio River and CR-1A. Access to the river's edge and the small dry dock are minimal requirements to perform the proposed work. Complete barges exceed over the road hauling regulations and must be transported by waterway. Access to and from CR-1A and the proposed site is essential because there is currently no access, only rugged farming access. The two streams and crossings described in the Minimal Degradation Design traverse across Mr. Fowler's property. Therefore access to the site using Mr. Fowler's land is impossible without stream crossings.*
- *This property was surveyed by EEC to determine the exact locations of the two streams being crossed. The proposed access road, described in this Minimal Degradation Design, is placed in the most feasible location and with the least stream impact possible, on Mr. Fowler's property.*
- *As directed by ODNR, Division of Wildlife (DOW), no in-water work to construct this project will occur from March 15th to June 30th.*



Minimal Degradation

Scale: 1"=200'

0' 100' 200' 300' 400' 500' 600'

Non-Degradation Design

401 Water Quality Certification (WQC) Application
Project: BF Iron & Metal Barge Maintenance Facility
County: Lawrence
SWIMS ID: 103670

Description of Design:

- *No Build*

Schematic:

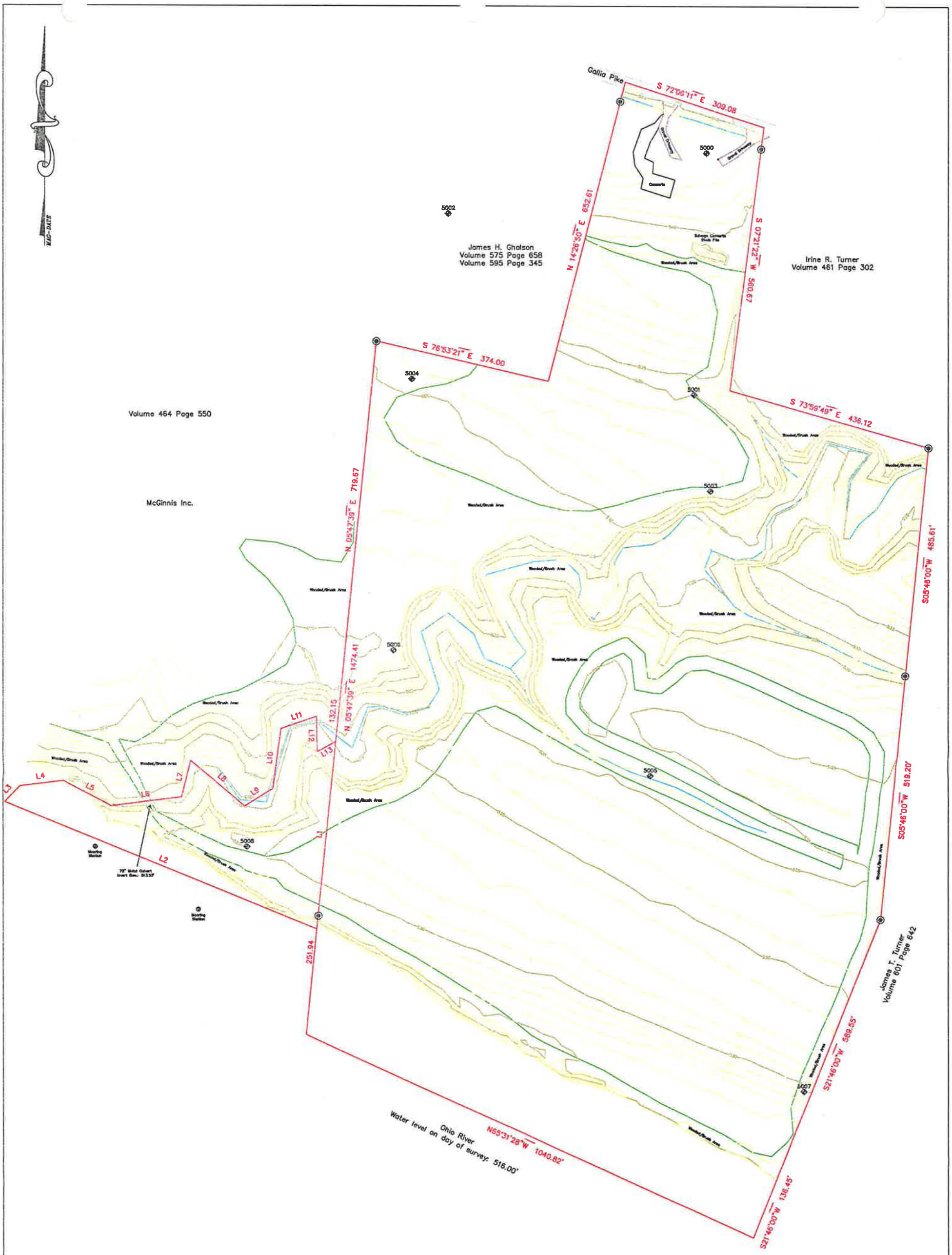
- *Attached*

Economic Information:

- *Potential lost revenue*
  - *Projected Lost Yearly Revenue*
    - *1st Year - $.5MM*
    - *2nd Year - $2MM*
    - *3rd Year - $5MM*
    - *4th Year - $6MM*

Special Notes:

- *This project cannot be constructed without access to the Ohio River and CR-1A. Access to the river's edge and the small dry dock are minimal requirements to perform the proposed work. Complete barges exceed over the road hauling regulations and must be transported by waterway. Access to and from CR-1A and the proposed site is essential because there is currently no access, only rugged farming access. The two streams and crossings described in the Minimal Degradation Design traverse across Mr. Fowler's property. Therefore access to the site using Mr. Fowler's land is impossible without stream crossings.*



Non–Degradation
(No Build)

Scale: 1"=200'

0' 200' 400' 600'

100' 300' 500'

Section 2

PHASE I CULTURAL RESOURCES SURVEY FOR THE PROPOSED B.F. IRON & METAL BARGE REPAIR FACILITY IN HAMILTON TOWNSHIP, LAWRENCE COUNTY, OHIO

Lead Agency:

U.S. Army Corps of Engineers
Huntington District
502 Eighth St., Huntington, W.Va. 25701

Submitted to:

Mr. Brian S. Horsley
Project Manager / Civil Engineer
Eta Engineering Consultants, PSC
5802 Brown Lane
Catlettsburg, KY 41129
(606) 739-6805 office
606, 739-4659 fax

Prepared by:

Norman A. Haywood, M.A., R.P.A.
Archaeological Principal Investigator

EnviroScience, Inc.
3781 Darrow Rd
Stow OH 44224
(330) 688-0111

April 2010

ABSTRACT

This report presents the results of a Phase I cultural resources survey for the proposed B.F. Iron and Metal Barge Repair Facility in Hamilton Township, Lawrence County, Ohio. The facility will be located on a terrace of the Ohio River and occupy approximately 8.7 acres. Access to the facility will be along a road to be constructed from Gallia Pike to the project area - a distance of approximately 533 m (1,750 ft.). The access road will be 6.1 m (20 ft.) wide, although there will be areas of greater disturbance where there will locations of cut and fill. Total acreage examined for this project was about 9.5 acres. The proposed access road will begin in an open field along Gallia Pike, follow an abandoned farm road which will be widened, continue through a rolling wooded area with two small stream crossings, enter an agricultural field, and terminate at the facility which, at the time of field investigations, was a recently plowed agricultural field that slopes gently towards the Ohio River.

The facility will be located within the boundaries of a previously recorded archaeological site (33-LE-99) that was identified in 1978. A total of 42 artifacts were recovered from the site at that time. Since there was no indication of the distribution of these artifacts within the site on the site form, it was decided that a Phase I survey, which would include deep testing, would determine if a Phase II evaluation would be required.

The Ohio Historic Inventory and National Register of Historic Places files were also examined. Although there are no structures or sites listed in the National Register in the vicinity of the project area, Our Lady of Fatima Shrine is listed in the Ohio Historic Inventory. It is located across Gallia Pike from the road which will lead to the proposed facility. It will not be visually impacted by the development.

Prior to field investigations, the agricultural field in which the facility and a portion of the access road will be located was plowed. This allowed for a pedestrian survey. Shovel testing was conducted along the proposed access road where it was not previously disturbed by the abandoned farm road or in steeply sloping areas. In addition, 29 trenches were excavated where the facility will be situated.

As a result of these investigations, six flakes or flake fragments were recovered during the pedestrian survey in the portion of 33-LE-99 that will be impacted. One other flake fragment was recovered within the site boundaries, but north of the area that will be impacted by the development. During deep test investigations, a feature consisting of a large quantity of rocks was encountered in the northwest portion of the project area. The feature, approximately 45 cm in diameter, was immediately below the plowzone. It extended from 33 cm below the surface to 65 cm below the surface. Although no artifacts were recovered from the feature, there were several small flecks of charcoal observed. No staining of the soil was evident.

During the shovel testing, two chert flakes were recovered from one shovel test in the open field near Gallia Pike. The site is recorded as 33-LE-728. No other artifacts were observed in radial shovel tests.

Site 33-LE-99 consists of a low density of artifacts recovered from the surface as a result of two surveys, as well as a feature encountered during deep testing. Although there could be additional features located across the site, the fact that only one was observed in 29 trenches and a total of 49 artifacts recovered from two surveys suggests that the site was not heavily utilized. On the original site form, the investigator mentioned that subsurface testing could reveal deeply buried cultural resources, including a potential Paleoindian component. However, the deep testing failed to encounter any such indications. Due to the low density of artifacts and the potentially small number of features that could be present at this site, 33-LE-99 is not considered significant and not eligible for listing in the National Register of Historic Places.

Site 33-LE-728 consists of two flakes recovered from a shovel test pit. No other evidence of cultural resources was encountered within the radial shovel tests that were excavated around the positive shovel test. This site is also not considered significant.

The literature review indicated that no structures are illustrated within the project area on historic maps, nor is the property associated with any significant historic events or individuals. It is recommended that no additional archaeological investigations should be required prior to construction activities for the proposed B. F. Iron and Metal Barge Repair Facility project.

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1.0 INTRODUCTION

This report presents the results of a Phase I cultural resources survey for the proposed B. F. Iron and Metal Barge Repair Facility in Hamilton Township, Lawrence County, Ohio (Figure 1; figures are provided in Appendix A). The facility will be located on a terrace of the Ohio River and will occupy approximately 8.7 acres. Access to the facility will be along a road to be constructed from Gallia Pike to the facility - a distance of approximately 533 m (1,750 ft.). The access road will be 6.1 m (20 ft.) wide, although there will be areas of greater disturbance where there will sections of cut and fill. Total acreage examined for this project was about 9.5 acres.

Following is a description of the proposed project as presented in U.S. Army Corps of Engineers Public Notice Number 2006-00026-OHR which was issued March 21, 2008:

> The applicant proposes to place fill material into waters of the United States in association with the construction of a barge cleaning and repair facility. A slipway would be constructed to allow dry docking of barges for cleaning and repair. The barges would move along concrete slides and a hoisting winch system would provide the mechanism for obtaining barges from the river.
>
> Concrete runners would be constructed along 450 linear feet of the riverbank and would be utilized in removing barges from the river. No fill material would be placed below the ordinary high water elevation of 516.0 in association with this construction activity. The applicant proposes no fleeting or mooring of barges, as each barge would be hoisted onto land for cleaning and/or repair upon arrival. No more than two barges would be delivered at a time and would be maneuvered adjacent to the facility in preparation for hoisting. A dock would be constructed just upstream of the slipway and would be utilized to dry-dock barges for cleaning and/or repair. This dock would extend 75 linear feet riverward and would extend 320 linear feet along the riverbank. This structure would be constructed of sheet piling and would be backfilled with ODOT Type B riprap. A total of 3,700 cubic yards of fill material would be placed below the ordinary high water mark of the river in association with dock construction activities.

Figure 2 provides an engineering plan for the proposed facility. The proposed access road will begin in an open field along Gallia Pike (Plate 1; plates are provided in Appendix B), follow an abandoned farm road which will be widened, continue through a rolling wooded area crossing two small streams, enter an agricultural field, and terminate at the facility which, at the time of field investigations, is an agricultural field that slopes gently towards the Ohio River.

The facility will be located within the boundaries of a previously recorded archaeological site (33-LE-99) that was identified in 1978. At that time, 42 artifacts were recovered from the site. Since there was no indication of the distribution of these artifacts within the site on the site form, it was decided that a Phase I survey, which would include deep testing, would determine if a Phase II evaluation would be required. This would aid in determining if the site is eligible for listing in the National Register of Historic Places (NRHP). The additional investigations along the proposed access road, which is outside of the previously recorded site, could lead to the identification of other cultural resources.

Background research involved the examination of the cultural and environmental history of the project area and surrounding areas, as well as a review of the archaeological and architectural resource files and NRHP at the Ohio Historic Preservation Office (OHPO). Field investigations consisted of a visual inspection of the ground surface, the excavation of shovel test pits, and the excavation of backhoe trenches.

The background research and report preparation were completed by Norman A. Haywood, M.A., R.P.A. David Fredle and Monica Warner assisted with the field investigations. Figures were completed by Michael A. Liptak, Ph.D. Field investigations were conducted on March 3, 4, 10, and 11, 2010. Copies of the report are filed with the OHPO, U.S. Corps of Engineers, B.F. Iron & Metal, Eta Engineering Consultants, and EnviroScience, Inc. All artifacts recovered during this investigation were retained by the landowner.

2.0 ENVIRONMENTAL SETTING

In order to better understand human settlement patterns of the past, it is important to recognize the present-day and paleoenvironmental setting of the area that is being examined. A variety of methods have been utilized to describe different ecosystems. The method used here is based on the ecoregion as developed by the U.S. Forest Service in which ecological boundaries are determined by geology, soil, vegetation, and other environmental characteristics (Keys and Carpenter 1995; McNab and Avers 1994). The project area is in the Western Hocking Plateau subsection of the Southern Unglaciated Allegheny Plateau section, which in turn is part of the Eastern Broadleaf Forest (Continental) Province.

The average daily low temperature in the winter in Lawrence County is 33° F. with an average daily summer temperature of 76.5° F. Average annual precipitation is 41.66 inches with an average of 16.0 inches of snowfall (McCleary and Hamilton 1998). Although precipitation occurs throughout the year, 55% of it falls from April through September.

The potential natural vegetation is mixed mesophytic forest and Appalachian oak forest, with smaller communities of mixed oak forest, oak-hickory-chestnut forest, oak-pine forest, hemlock forest, beech forest, floodplain forest, and swamp forest. Mammals commonly found in this ecoregion consist of white-tailed deer, gray fox, woodchuck, opossum, gray squirrel, white-footed mouse, and short-tailed shrew. Historically, the region was also once home to bison, elk, black bear, mountain lion, timber wolf, and bobcat. Common birds are wild turkey, ruffed grouse, barred owl, pileated woodpecker, eastern phoebe, blue-gray gnatcatcher, Acadian flycatcher, white-eyed vireo, Kentucky warbler, yellow-breasted chat, and summer tanager. Amphibian and reptiles include the fence lizard, American toad, wood frog, box turtle, snapping turtle, painted turtle, ringneck snake, northern water snake, black rat snake, and copperhead. Prior to 1850, common fish in the Ohio River included muskellunge, sturgeon, catfish, drum, spotted bass, walleye, and sauger.

The bedrock of this area consists of limestone, sandstone, and shales of the Waverly Formation which dates to the Mississippian (Bownocker 1992). The project area lies within the Unglaciated Plateau as depicted on the Ohio Department of Natural Resources "Physiographic

Sections of Ohio" map (ODNR 1986). The Quaternary map of Ohio indicates that the facility is likely on sediments associated with alluvium deposited during the Holocene, which extends from about 10,000 years ago to the present, whereas the access road is on valley train outwash material deposited during the Late Wisconsinan about 13,000 to 23,000 years ago (Pavey et al. 1999).

The soil association for the project area is the Elkinsville-Sciotoville-Nolin association (McLeary and Hamilton 1998). These are deep soils in valleys on floodplains, terraces, and alluvial fans. The soils where the facility will be located consist of Elkinsville silt loam on 1 to 6% slopes, Elkinsville silt loam on 15 to 40% slopes (along the river banks), Wheeling silt loam on 6 to 15% slopes which is eroded, and Nolin silt loam which is occasionally flooded. The access road will be on Elkinsville silt loam on 1 to 6% slopes, Elkinsville silt loam on 15 to 40% slopes, Sciotoville silt loam on 1 to 6% slopes, and Weinbach silt loam on 0 to 2% slopes.

3.0 CULTURAL OVERVIEW

3.1 Paleoindian Occupation (14,000 B.C. to 8000 B.C.)

The earliest known people to inhabit the New World were the Paleoindians who probably arrived about 14,000 years ago, although some archaeologists believe they could have arrived as much as 40,000 years ago. Most of the evidence of their presence consists of surface finds of diagnostic artifacts, especially fluted points (Dorwin 1966; Prufer and Baby 1963; Smail 1951; Winters 1963). Tools were typically made from high quality cherts obtained from distant sources (Tankersley 1989). This indicates they traveled extensively and/or had a large trade network. Additionally, the aesthetic appearance of the tools was important as suggested by the craftsmanship displayed in the projectile points and other tools.

As the Wisconsin glacier retreated, new areas became open for habitation by plants, animals, and the Paleoindians. The open grazing lands and boreal forests provided sustenance for such animals as the mammoth, mastodon, musk ox, bison, and other large mammals which could be hunted (Cleland 1966). In addition to these large mammals, the Paleoindian diet was supplemented by vegetal materials gathered throughout the landscape. It is believed these people were nomadic and lived in small groups. Many of the Paleoindian sites discovered in the Midwest are situated on hill tops and bluffs that overlook major river valleys and other larger rivers.

3.2 Archaic Occupation (8000 B.C. to 900 B.C.)

As the climate began to moderate around 9000 B.C., the glacial-boreal ecosystem of the Midwest changed. Warmer and drier conditions brought about a deciduous forest by 5000 B.C. (Cleland 1966). By this time, the large game animals had become extinct and were replaced by smaller mammals such as deer and bear.

During the Early Archaic period, which lasted from about 8000 to 6000 B.C., the presence of smaller game led to a shift from the Paleoindian lanceolate points to smaller and more diversified projectile points, such as the bifurcates. Other tools that became important were woodworking and milling tools such as axes, gouges, drills, and grinding stones (Chapman 1975; Jennings 1968). Although still nomadic, their geographic ranges became smaller as the territories became more well exploited (Potter 1970). Sites associated with the Early Archaic are typically small and located in uplands near secondary stream valleys (Benchley 1975).

From about 6000 to 3000 B.C., the climate was further moderated. During this period, known as the Middle Archaic, diversification became even greater as seasonal resources were further exploited. Although deer hunting was still the primary resource, a wider variety of plant sources was consumed and utilized (Cleland 1966). Additionally, a more complex social structure became evident (Griffin 1978).

Changes in sustenance are reflected in the tool kit as the Early Archaic bifurcate point types were replaced by large side-notched points (Fitzhugh 1972; Justice 1987). Ground and polished stone tools, such as full grooved axes, pendants, and bannerstones, also became increasingly important. Bone tools also were added to the tool kit during this period (Chapman 1975; Griffin 1968).

The Late Archaic period lasted from about 3000 to 900 B.C. About 2000 B.C. the deciduous forest reached its most northern limit (Cleland 1966:93). During this period, the people became more sedentary as seen in such regional cultures as the Glacial Kame, Red Ochre, and Old Copper cultures (Cleland 1966). Specialized artifacts such as steatite and sandstone bowls, stone tubes and beads, polished plummets, net sinkers, whistles and rattles, birdstones, boatstones, and bone awls, needles, and perforators entered into the tool assemblage (Chapman 1975:6). Also ceremonialism became increasingly important as suggested by more elaborate, formalized mortuary practices and exotic burial goods obtained through emerging trade networks (Chapman and Otto 1976:20).

Unlike the smaller and lightly utilized sites from earlier time periods, Late Archaic sites are large and suggest long periods of settlement. However, there was still seasonal exploitation of various areas, such as aquatic resources during the spring and summer and upland game animals during the winter.

3.3 Woodland Occupation (900 B.C. to A.D. 1000)

Essentially, the Early Woodland period, which lasted from about 900 to 100 B.C., represents a cultural expansion of the Late Archaic (Brose et al. 1978:67). At this time, there was a greater tendency toward territorial permanence, increasing elaboration of the ceremonial exchange and mortuary rituals, and the appearance of pottery. The Early Woodland diet was supplemented by domestication of various native and non-native cultigens, such as sunflower and chenopodium (Struever and Vickery 1973:11-19), although these food resources were also utilized to a lesser extent during the Archaic (Yarnell 1973). The cultivation of squash, pumpkin, sunflower, and gourd further augmented the hunting-gathering-fishing based economy (Potter 1970).

The Adena culture was the regional adaptation of the Early Woodland in Ohio. Similar to their predecessors in the Late Archaic, the Adena culture were semi-sedentary with semi-permanent village sites. In addition to the use of pottery, this culture was also noted for the conical mounds built for interment of the dead (Chapman and Otto 1976). Their pottery types included Fayette thick, Adena plain, and Montgomery incised. The tool kit included leaf-shaped blades and a variety of stemmed points such as Cresap, Robbins, and Adena. Copper, which was obtained as a trade good from the Great Lakes, was used for the production of decorative items such as beads, bracelets, rings, gorgets, and reels (Potter 1970:7). Other artifacts included tubular pipes, quadraconcave gorgets, pendants of banded slate materials, full grooved axes, hematite celts, and incised stone tablets (Chapman and Otto 1976:210).

From about 100 B.C. to A.D. 500, the Middle Woodland period flourished as trade networks became more extensive and complex. Throughout much of the eastern U.S., this period is referred to as the Hopewell Interaction Sphere. It extended from western New York to Kansas City and from the Gulf of Mexico to Lake Huron (Caldwell 1964; Struever 1964). This culture is especially noted for the elaborate geometric earthworks, enclosures, and mounds that are frequently associated with a variety of exotic ceremonial items (Brose et al. 1978:68). Included in the trade network were copper and silver from the Upper Great Lakes, quartz crystals and mica from the Lower Allegheny region, obsidian and grizzly bear teeth from the west, and shark and alligator teeth, marine shell, and pearls from the Gulf Coast region (Prufer 1964:75). Lithic artifacts associated with the Hopewell are Snyder points, small side-notched points, and prismatic blades. Hopewell village and mortuary sites are found in the valleys of major rivers (Asch et al. 1979:83). Smaller sites were generally located in bottomlands, which were situated to maximize quantities of selected resources, and uplands, utilized primarily as hunting camps.

The Late Woodland, which lasted from about A.D. 500 to 1000, witnessed a cultural decline, the exact cause of which is unknown. Some theorize it was associated with a climatic change (Baerreis et al. 1976; Griffin 1960) whereas others see problems inherent with a single subsistence activity (Cleland 1966; Farnsworth 1973). By A.D. 700 ceremonial centers were abandoned, trade networks were dissolving, and burial ceremonialism was less elaborate. It also marked an increased reliance on cultivated plants supplemented by hunting and gathering. Two distinct types of sites are prevalent during this period. A base camp or village with cultivated fields was established during the summer and hunting camps during winter months.

3.4 **Late Prehistoric Occupation** (A.D. 1000 - 1650)

During this period of time, much of eastern North America was dominated by the Mississippian cultural sequence. Agriculture, based on raising beans, maize and squash became increasingly more important to the subsistence base. Cultural groups of note during this time were the Monongahela complex (Griffin 1978; Mayer-Oakes 1955) and the Fort Ancient culture (Essenpreis 1982; Griffin 1978). Monongahela sites are typically on hill tops, high bottomlands near major streams, and on saddles between hills. The Monongahela village sites were usually less than five acres in size which was surrounded by a circular stockade. Within the stockade were housing

structures and a central plaza or courtyard. Fort Ancient villages were usually large permanently occupied settlements on high terraces or bluffs overlooking major streams or rivers.

3.5 Historic Occupation

Prior to the late 1700s, it was impractical for Euro-Americans to settle west of the Appalachians. Those who did enter these areas were French explorers and fur traders, Jesuit and Moravian missionaries, and Indian captives. However, after the signing of the Treaty of Greenville in 1795, the Northwest Territory became open for settlement.

Lawrence County was created on December 20, 1816 (Lawrence County Historical Book Committee 1990). It was formed from a portion of Gallia County and a small section of Scioto County. The county was named after Captain James Lawrence, a naval officer during the War of 1812 (Willard 1916). The county seat was originally established at Burlington, but was later moved to Ironton which developed as a rail-to-river port for the iron industry. By 1850, the town had a population of 574.

Hamilton Township, which was originally part of Scioto County, was organized in 1850 (Lawrence County Historical Book Committee 1990). The first settlers to the township were Luke Kelley, his wife, and seven children along with Mary Keyser. They arrived in 1796. The township was named after Robert Hamilton.

Iron furnaces played an important role in the regional economy in the 1800s. The first iron furnace in Lawrence County, Union Furnace, was started in 1826 by John Means. The economy was also supplemented by coal mining and mills. The importance of the iron furnaces to the economy can be seen in the population growth. In 1820, there were 3,499 residents in the county, but by 1830 there were 6,366 residents. As the iron furnaces had mostly closed by the late 1800s, agriculture became a dominant factor in the economy.

4.0 PHASE I SURVEY METHODS

4.1 Field Methods

Prior to field investigations, the entire parcel of land where the facility and a portion of the proposed access road will be located was plowed. This resulted in about 100% surface visibility which allowed for a pedestrian survey to be conducted. Since the facility will be constructed within the boundaries of a previously recorded archaeological site, a series of parallel transects spaced approximately 4 m (13.1 ft.) apart were walked across the entire proposed location of the facility and access road. Additional transects were walked at the same interval of the areas to the north and east of the proposed facility to ensure adequate surficial coverage in the event that construction vehicles could encroach upon those areas. The location of each artifact located in the plowed field was identified with a flag and subsequently mapped using a GPS unit.

Shovel testing was done on the remainder of the proposed access road. All of the shovel testing was conducted north of the boundary of site 33-LE-99. Shovel testing involved excavating a series of shovel test pits spaced at 15-m intervals along a single transect. Each test pit measured approximately 50 cm across. Soil matrix was screened through ¼-inch mesh in an attempt to locate any cultural resources. When an artifact was recovered in a shovel test, additional shovel tests were excavated at 7.5-m intervals in the cardinal directions around the positive shovel test. All shovel test pits were filled following their examination. Shovel tests were not excavated on steeply sloping land (greater than 15 degrees).

Since the proposed facility is within the Ohio River valley, there is the potential for the presence of deeply buried cultural resources. To investigate this aspect of the project area, a total of 29 trenches were excavated using a mini-trackhoe with a plate welded to the teeth of the bucket. Each trench measured approximately 3 to 4 m (10 to 13 feet) long by about 1 m (3 feet) wide. All trenches were excavated to an initial depth of about 120 cm (4 feet), per OSHA regulations. Trench walls were then cleaned with a trowel to facilitate description of the stratigraphic profile and examine the deposits for any cultural resources. Trenches 6, 13, 17, and 22 were excavated deeper than 120 cm, but these were not entered. Instead, the deeper deposits were examined in the backdirt pile. The north and south ends of each trench were recorded with a GPS unit. All trenches were filled following their examination.

In one of the trenches, a feature was encountered immediately below the plowzone. Excavation of the trench with the mini-trackhoe was halted at that point and the feature was systematically excavated with a trowel. Photographs were taken of the feature and a map produced. The location of the feature was also recorded with the GPS unit. Following recordation and removal of the feature, excavation of the trench with the mini-trackhoe resumed.

4.2 Laboratory Methods

Normally, artifacts are washed, labeled, and catalogued. Lithic assemblages are then assigned to technologically significant classes and historic artifacts are analyzed for date range, socio-economic status, ethnicity, region-specific attributes, settlement type, and intra-site distribution. However, since only a small number of flakes were recovered, this was not feasible. All artifacts recovered during this investigation were retained by the landowner.

5.0 BACKGROUND RESEARCH

5.1 Introduction

A Phase I cultural resources survey for the proposed B. F. Iron and Metal Barge Repair Facility was conducted by EnviroScience, Inc. In order to satisfactorily complete this project, a documentary research of the history of the area as well as all known historic and prehistoric cultural resources either within or near the project area were assessed for their significance in relation to this project. Following this, an archaeological field investigation was conducted within the project area.

5.2 Literature Review

A literature review was completed to establish the history of the project area and vicinity, to locate any previously recorded cultural resources within or near the project area, and to identify any archaeological investigations that had taken place in the vicinity. This included reviews of the NRHP, the Ohio Archaeological Inventory (OAI) site files, and the Ohio Historic Inventory (OHI) files at the OHPO. In addition to other contract archaeology publications, county and local histories were consulted to incorporate pertinent data on historical events. References were also reviewed at the Ohio State Library in Columbus and the Briggs Lawrence County Public Library in Ironton.

5.21 Literature Relating to the Prehistory of the Area

Probably the most obvious indications of prehistoric activity within Ohio are the numerous earthworks associated with the Adena and Hopewell cultures. An examination of the map indicating the known earthworks in Ohio as of 1914 indicates that they could be found in every county with the exception of Henry County in the northwest portion of the state (McGraw 1995). No mounds, earthworks, or other indications of prehistoric activity are depicted on Mills archaeological atlas (Mills 1914) near the project area (Figure 3). Also, there is no mention of mounds or earthworks in the vicinity of any of the project area in other references that were examined (Squier and Davis 1848, Webb and Baby 1975, Webb and Snow 1945). No trails or towns are depicted in the vicinity of the project area on Wilcox's (1933) map of Indian trails and villages in Ohio (Figure 4).

5.22 Historic Maps

Although there is often a margin of error that is associated with historic maps, they can prove to be valuable sources of information for identifying the location of early structures. The 1887 atlas for Lawrence County provides the property owner's names and locations of structures (Lake 1887). At that time, the property was owned by Geo. W. Sanford (Figure 5). No structures are depicted within or near the project area. There is no mention of Mr. Sanford in the contemporaneous literature that was examined. No structures are shown within or near the project area on the 1926 Greenup, Kentucky-Ohio, 15-minute topographic quadrangle (Figure 6).

5.23 Previous Cultural Resource Investigations

A number of cultural resource investigations were conducted throughout Lawrence County, as well as within Hamilton Township and adjacent Green Township in Scioto County. Of particular relevance are surveys that were conducted for a pipeline and a related energy facility. The survey for a 15.45-km (9.6-mi.) long proposed pipeline with a 61-m (200-ft.) wide corridor resulted in the identification of 58 sites (Purtill et al. 2001a). Although most of these sites consist of small scatters of prehistoric and/or historic artifacts, ten sites were deemed potentially eligible for the NRHP. Rerouting of the proposed line avoided five of these potentially eligible sites, but five

others, including site 33-SC-434, would require additional investigation. Site 33-SC-434 is within 1.6 km (1 mi.) of the project area.

Phase II evaluations of site 33-SC-434 and several other sites that would be impacted by the proposed pipeline were conducted (Purtill et al. 2002). At 33-SC-434, fifteen 1 m by 1 m units were hand-excavated, as well as four 5 m by 5 m blocks that were mechanically opened. This represented about 1.5% of the site that was within the corridor. A total of 364 prehistoric and 14 historic artifacts were recovered. There were also three features with fire-cracked rock (FCR) and staining of the soil. The site was interpreted as a short-term seasonal camp. Based on these findings, it was determined the site was not eligible for listing in the NRHP.

As a result of the proposed Hanging Rock Energy Facility survey, 12 sites were identified (33-LE-615 through 33-LE-626 which are discussed below in the "Previously Recorded Historic Properties and Archaeological Sites" section) (Purtill et al. 2001b). Similar to the pipeline survey, sites varied in size from a small number of artifacts to a large number. Five of the sites were determined to be not eligible for listing in the NRHP, three would be avoided, and four were evaluated for eligibility. Sites 33-LE-616 and 33-LE-618 were determined not eligible and 33-LE-623 was found to have deeply buried cultural materials. Holocene deposits were observed to a depth of at least 3 m (10 ft.). At a depth of 75 cm below the surface, a lenticular charcoal feature with no associated artifacts was encountered. A radiocarbon age of 2580 B.C. was obtained from the feature.

Site 33-LE-619 was determined eligible and a Phase III mitigation was conducted (Purtill 2002 a). A total of 4,950 m^2 of land was stripped for that investigation which resulted in the recovery of 14,989 artifacts and identification of 84 features.

Deep testing was conducted at two other locations associated with the pipeline. Both of these were on a terrace of the Ohio River a few miles north of the B. F. Iron and Metal Barge Repair Facility project area. At site 33-SC-148, it was determined that there was little potential for deeply buried cultural resources (Purtill 2002b) and at site 33-LE-421 it was established that the site is located on a Pleistocene terrace (Purtill 2003).

5.24 Previously Recorded Historic Properties and Archaeological Sites

Within a 1.6-km (1-mi.) radius of the project area, there are two historic properties listed in the OHI files. Across Gallia Pike from the access road is Our Lady of Fatima Shrine (LAW-409-7). It was constructed about 1950 and is an open air shrine which consists of three rockface stone gates, one of which is arched, a concrete pool, and monuments to the 12 apostles. The second property is the Austin House which dates to about 1870. It is a one and a half story Gothic Revival house with clapboard siding. Neither property is visible from the proposed facility because of the thick growth of trees between Gallia Pike and the proposed facility.

A total of 19 previously recorded sites, including 33-LE-99, are within a 1.6-km (1-mi.) radius of the project area. A brief synopsis of these sites is presented in Appendix C. Of these previously recorded sites, nine (47.4% of the sites) are of unassigned prehistoric affiliation; three (15.8%) of unassigned prehistoric affiliation and historic; one (5.3%) is Late Archaic; one (5.3%) is

Late Archaic and historic; one (5.3%) is Late Archaic, Late Woodland, and historic; one (5.3%) is Early Archaic; and the remaining three sites (15.8%) cover most of the Archaic, Woodland, Late Prehistoric, and historic periods. These latter three sites, which include site 33-LE-619 which is discussed above in the "Previous Cultural Resource Investigations" section, all have hundreds or thousands of artifacts recovered from them. The quantity of artifacts recovered from the other sites varies from eight flakes to over 100 artifacts. All of the sites are on the Ohio River terrace which also indicates they are relatively close to a source of water - either the Ohio River or one of the numerous small streams that flow into the Ohio River.

6.0 SURVEY RESULTS

As a result of this investigation, in addition to the investigation of previously recorded site 33-LE-99, site 33-LE-728 was identified (Figure 7). The cover pages of the site forms for these two sites are provided in Appendix D.

6.1 Proposed Access Road

For the proposed access road, there will be areas of cut and fill. As the access road begins at Gallia Pike, it will enter a level open field that, at the time of field investigations, was covered in grass and weeds (Plate 1). To the immediate east is a thick growth of virtually impenetrable briars. Shovel testing was conducted along this portion of the proposed access road (Figure 8). Two chert flakes were recovered from the second shovel test. Radial shovel tests to the north, west, and south were negative. The site, designated **33-LE-728**, appears to be heavily disturbed since the A horizon throughout this field is relatively thin. The positive shovel test displayed a soil profile of 10 cm of brown (10YR 4/3) silty clay loam underlain by yellowish brown (10YR 5/6) clay loam (Figure 9). Other shovel tests in this open field revealed the A horizon varied in thickness from 5 cm to 18 cm.

The access road will follow an abandoned farm road (Plate 2) which will require widening and cutting into the adjoining tree-covered slope. The farm road will be followed for a distance of approximately 122 m (400 ft.). The farm road goes to the south and then makes a turn to the southeast. Adjacent to this tree-covered area is a plowed field which was examined for the presence of any artifacts, but none was observed. Shortly after the farm road heads to the southeast, it changes directions to head to the southwest. At this point, the proposed access road continues to the southeast down a steep slope, crosses a small stream, and up another steep slope to a relatively level area with a thick undergrowth of vegetation (Plate 3). Shovel testing resumed in this area where the soil profiles consist of about 20 cm of brown (10YR 4/3) silty clay loam underlain by dark yellowish brown (10YR 4/6) clay loam (Figure 9). A second small creek with steep side slopes was encountered after the excavation of four shovel tests. Two additional shovel tests were excavated on the south side of the small stream. Soil profiles at this location are essentially the same as observed in the previous four shovel tests. The access road will then enter an agricultural field that eventually leads to the proposed facility (Plate 4). The agricultural field was plowed providing about 100% surface visibility and subjected to several walkovers, but no artifacts were observed.

6.2 Proposed Facility

6.21 Pedestrian Survey

Prior to the deep testing, a pedestrian survey was conducted of the entire proposed facility. As noted previously, this area coincides with most of site 33-LE-99. The survey was extended to the north beyond the proposed boundaries to ensure no significant cultural resources would be impacted. As noted in the "Field Methods" section, the area was walked over in parallel transects spaced at approximately 4-m (13.1-ft.) intervals. All artifacts observed were collected and the location of each find identified with a flag. A submeter-accurate GPS was later used to locate each artifact. The field was also examined during deep test excavations for any additional artifacts. These finds were also flagged and mapped. Two chert flakes and five chert flake fragments were recovered from the surface. With the exception of two flake fragments found in close proximity to one another, the artifacts were dispersed across the site (Figure 8). There are also numerous pieces of possible fire-cracked rock (FCR) scattered across the surface. No concentrations were observed. In addition, on the lower portion of the project area nearest the river, plastic bottles and other flood debris are scattered across the surface. These items are less noticeable farther from the river on the higher ground.

6.22 Deep Test Investigations

A total of 29 trenches were excavated (Plates 5 and 6; Figure 8). The two southern transects (Trenches 1 through 20) were excavated on a gentle slope which dips down towards the river. The third transect of trenches (Trenches 21 through 29) was excavated on slightly higher and more level ground. Complete soil descriptions for each trench are provided in Appendix E.

Soil profiles were remarkably consistent across the project area, varying primarily in the thicknesses of the various horizons with some minor variations in soil texture with the deeper deposits, particularly those nearest the river compared to those farther away from the river. In the transect of trenches nearest the river (Trenches 1 through 10), a typical soil profile, with the exception of Trench 1, consists of an A horizon which varies in thickness from 25 to 35 cm and consists of dark brown (10YR 3/3) silty clay loam underlain by a moderately well developed 15- to 25-cm thick B horizon of brown (10YR 4/3) clay loam (Figure 10; the dashed lines in the lower portions of the trench soil profiles of Figures 10 and 11 represent sediments that were examined in the backdirt pile). This is underlain by a weakly developed 30- to 60-cm thick B horizon of dark yellowish brown (10YR 4/4) clay loam. Basal deposits in the trench consist of a second weakly developed B horizon but of dark yellowish brown (10YR 4/6) silty clay loam. In Trench 1, the second weakly developed B horizon was not evident. Trench 6 was excavated to a depth of 190 cm. The dark yellowish brown (10YR 4/6) silty clay loam extended to a depth of about 140 cm. This was underlain by dark yellowish brown (10YR 4/6) fine sandy clay loam to the base of the trench. Occasional isolated flecks of charcoal and possible FCR were observed in the B horizons in several of the trenches. No concentrations of charcoal or FCR were noted.

In the two transects of trenches farthest from the river (Trenches 11 through 29), the deposits are essentially the same as observed in Trenches 2 through 10. However, the second weakly

developed B horizon has a slightly finer texture of dark yellowish brown (10YR 4/6) clay loam (Plate 7) compared to the silty clay loam in Trenches 2 through 10. Trenches 13, 17, and 22 were excavated to greater depths and the soils noted in the backdirt piles. The soils associated with Trench 17 provide a typical soil profile for this portion of the project area (Figure 11). The dark yellowish brown (10YR 4/6) clay loam of the lower weakly developed B horizon extends to a depth of about 130 cm. This is underlain by dark yellowish brown (10YR 4/6) silty clay to a depth of at least 170 cm. Similar to Trenches 1 through 10, occasional isolated flecks of charcoal and possible FCR were present in the B horizons in several of the trenches.

At the south end of Trench 21, Feature 1 was encountered immediately below the plowzone (Plate 8). The feature consisted of a tight cluster of rocks extending roughly in a 45-cm circular pattern from a depth of 33 cm below the surface to a depth of 65 cm. Although there were a few isolated flecks of charcoal observed, there were no artifacts and no soil discoloration. The rocks recovered from the feature, which weighed a total of 9.3 kg (20.6 lb.), range in size from 4.8 cm to 12.6 cm with the average being 7.4 cm (maximum dimension). A total of 49 rocks were recovered from the feature, although it is almost certain more were present prior to initial plowing over 100 years ago. Although many of the rocks are possible FCR, there are several others that are rounded with no sharp edges while a few others are relatively flat with rounded edges.

7.0 DISCUSSION

7.1 Site 33-LE-728

Two chert flakes were recovered at site 33-LE-728 from a shovel test which was excavated along the proposed access road to the proposed facility. Radial shovel tests in three of the four cardinal directions failed to recover any additional artifacts. A radial shovel test was not excavated to the east because of the dense growth of briars. The relatively thin A horizon of the soil profile revealed in these shovel tests, as well as throughout most of the open field where the site is located, indicates that the soil in this area is eroded. It appears that this site has little potential to contribute information to the prehistory of this area.

7.2 Site 33-LE-99

Although there was about 100% surface visibility within the boundaries of the proposed facility, only six chert flake or flake fragments were recovered as a result of this Phase I survey. One flake was found outside of the project area, but still within the previously mapped site boundaries. In addition to the 42 artifacts recovered in 1978, this brings the total artifact count to 49 in an area over ten acres in size.

On the original site form, the investigator mentioned that subsurface testing could reveal deeply buried cultural resources, including a potential Paleoindian component. However, the excavation of 29 trenches produced no indications for the presence of such resources. The only feature, a concentration of rocks, was identified near the western boundary of the project

area immediately below the plowzone. The lack of numerous features and the low density of artifacts indicate this site witnessed only ephemeral occupation.

8.0 RECOMMENDATIONS

Site 33-LE-728 consists of two flakes encountered in a shovel test. Seven flakes and a feature were recovered at site 33-LE-99. No diagnostic artifacts were found at either site. The low quantity of artifacts at each site and the low density of artifacts at 33-LE-99 indicate that neither site is likely to produce information important to the local or regional history or prehistory. Archival research indicates that the property is not associated with any significant historic events or individuals, nor is the remnants of any significant architectural design to be found here. It is recommended that no additional cultural resource investigations should be required prior to construction activities for the proposed B.F. Iron and Metal Barge Repair Facility.

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APPENDIX A

Figures

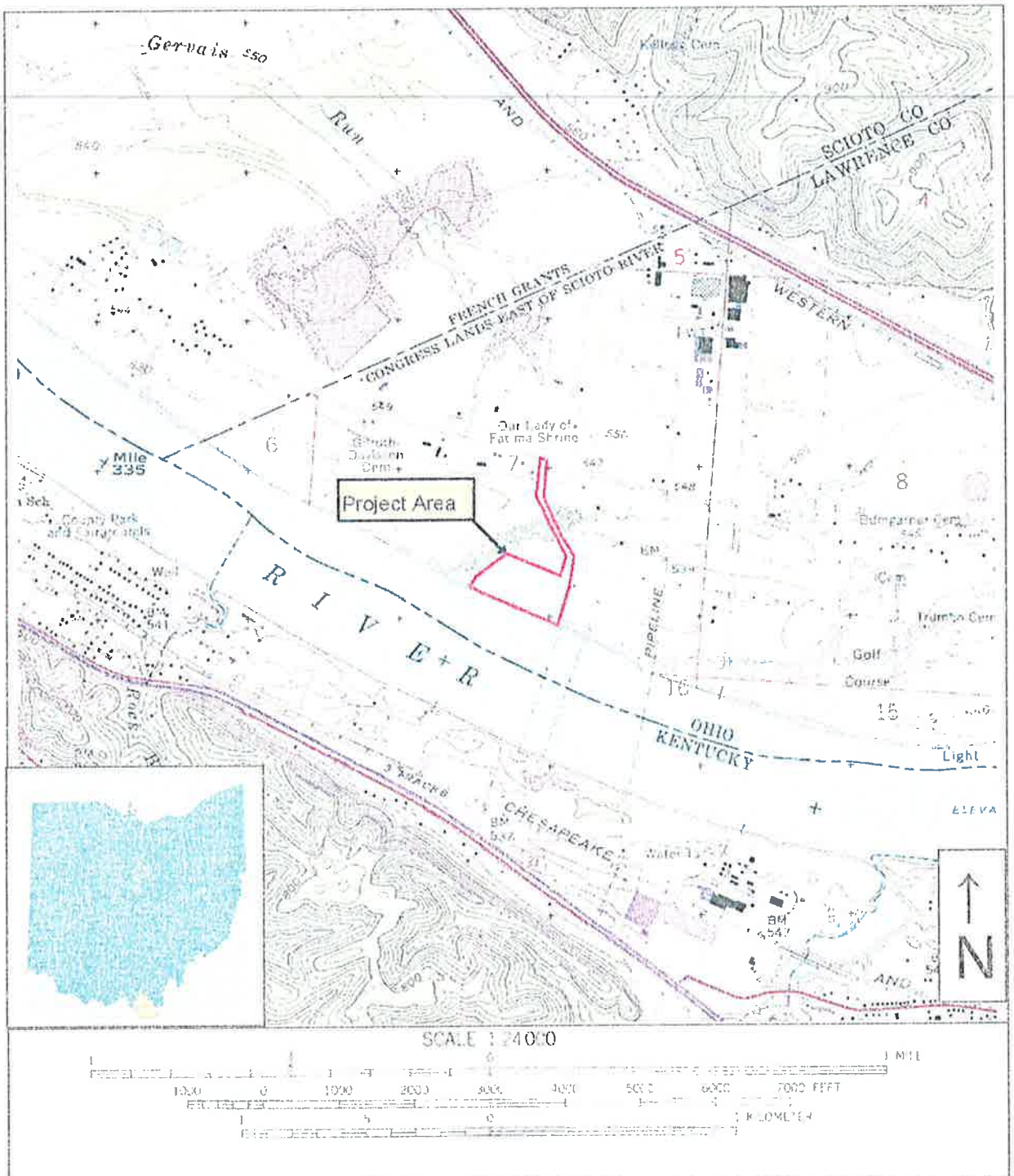

Figure 1. Portion of Greenup, KY-Ohio, 7.5-minute topographic quadrangle map showing location of project area.

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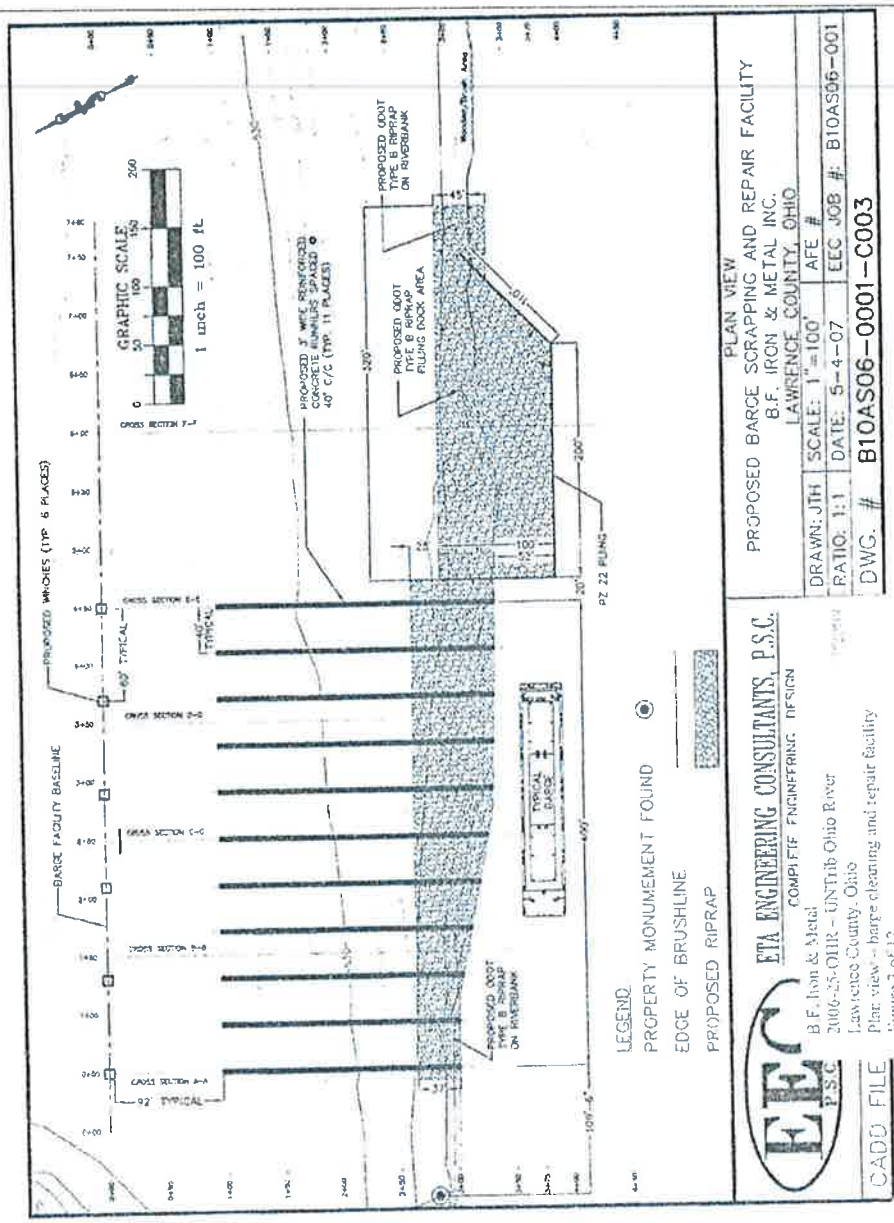

Figure 2. Engineering plan.

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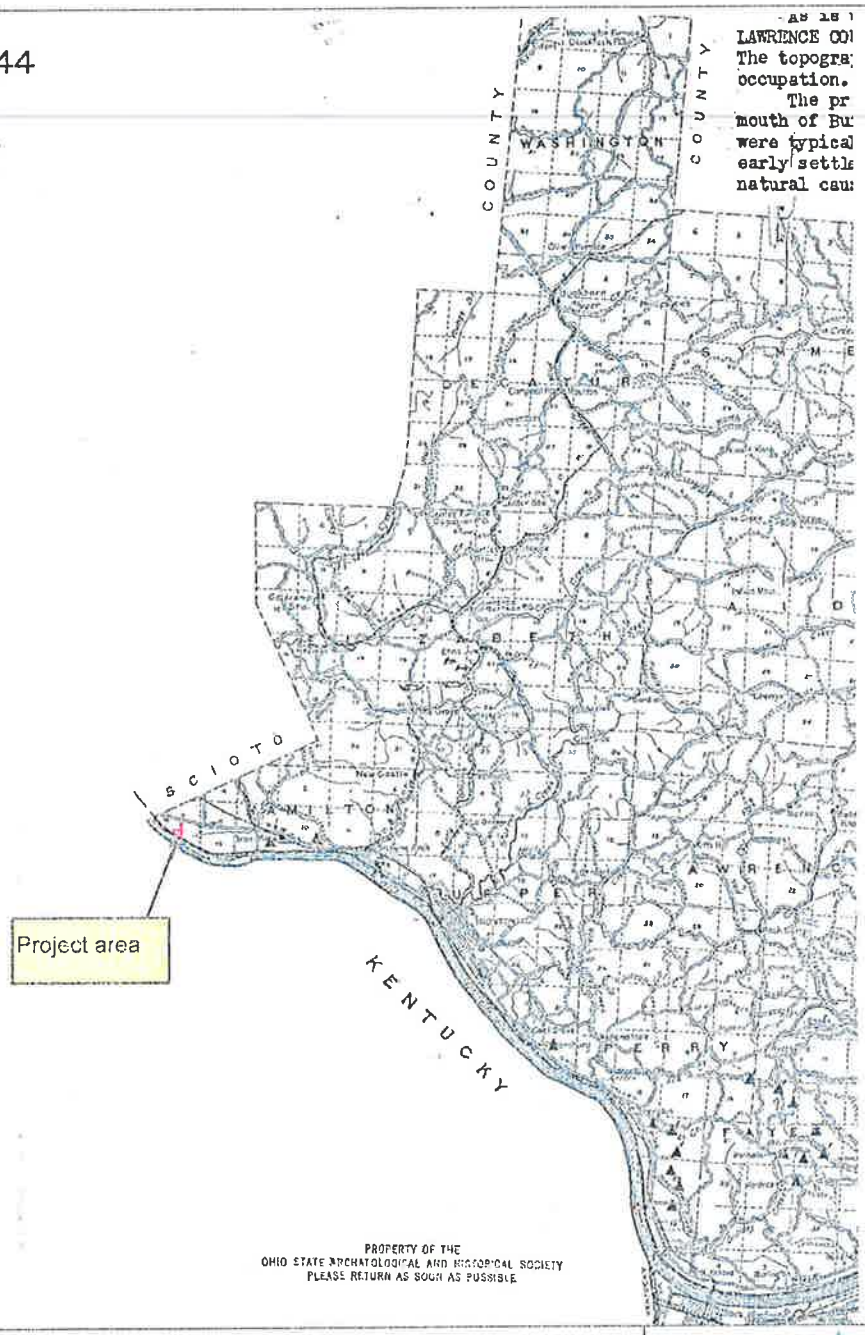

Figure 3 - Portion of Lawrence County, Ohio, map from Mills' archaeological atlas showing location of project area (Mills 1914).

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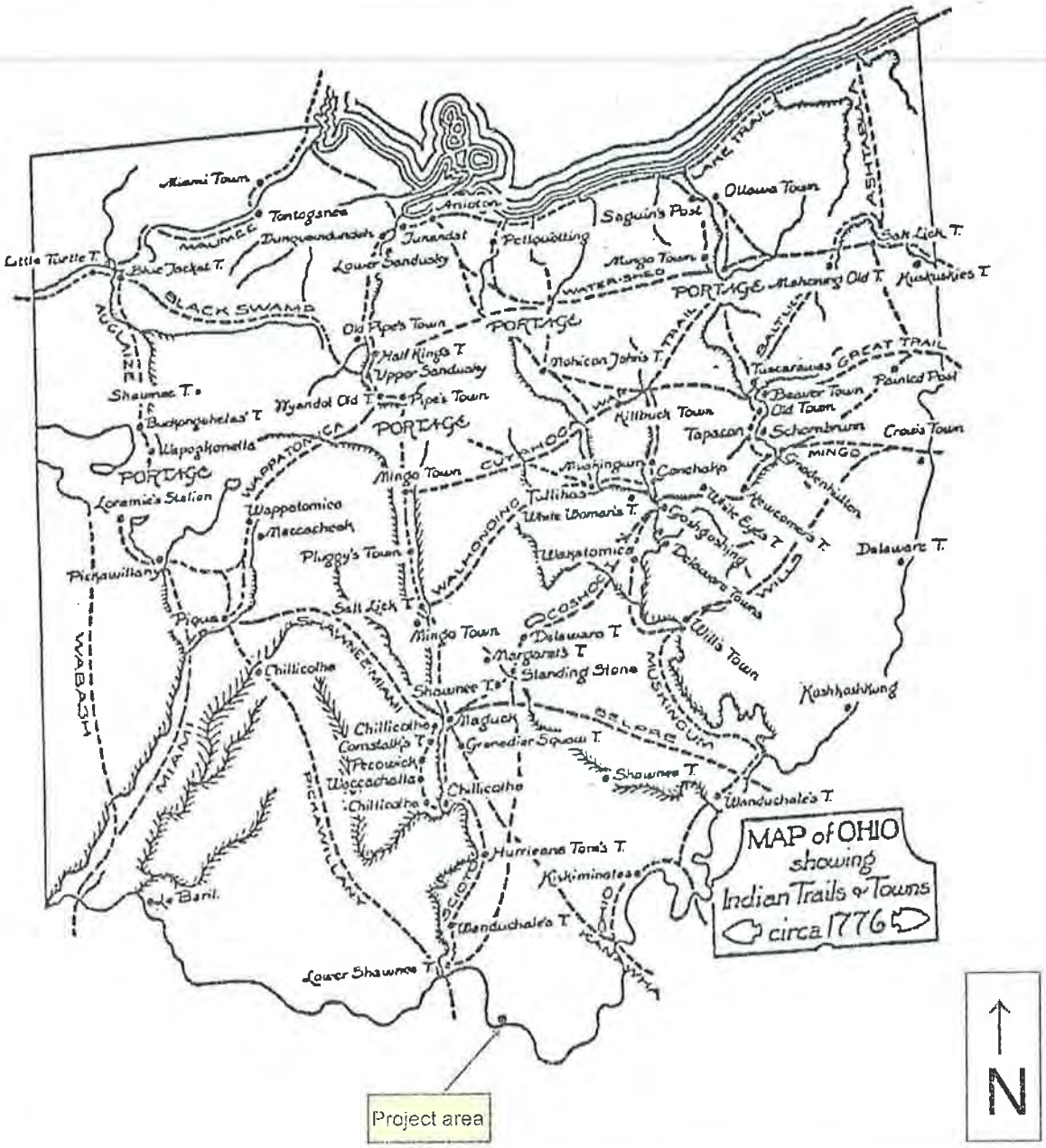

Figure 4 - Wilcox's map of Ohio showing relation of old trails to modern towns (Wilcox 1933).

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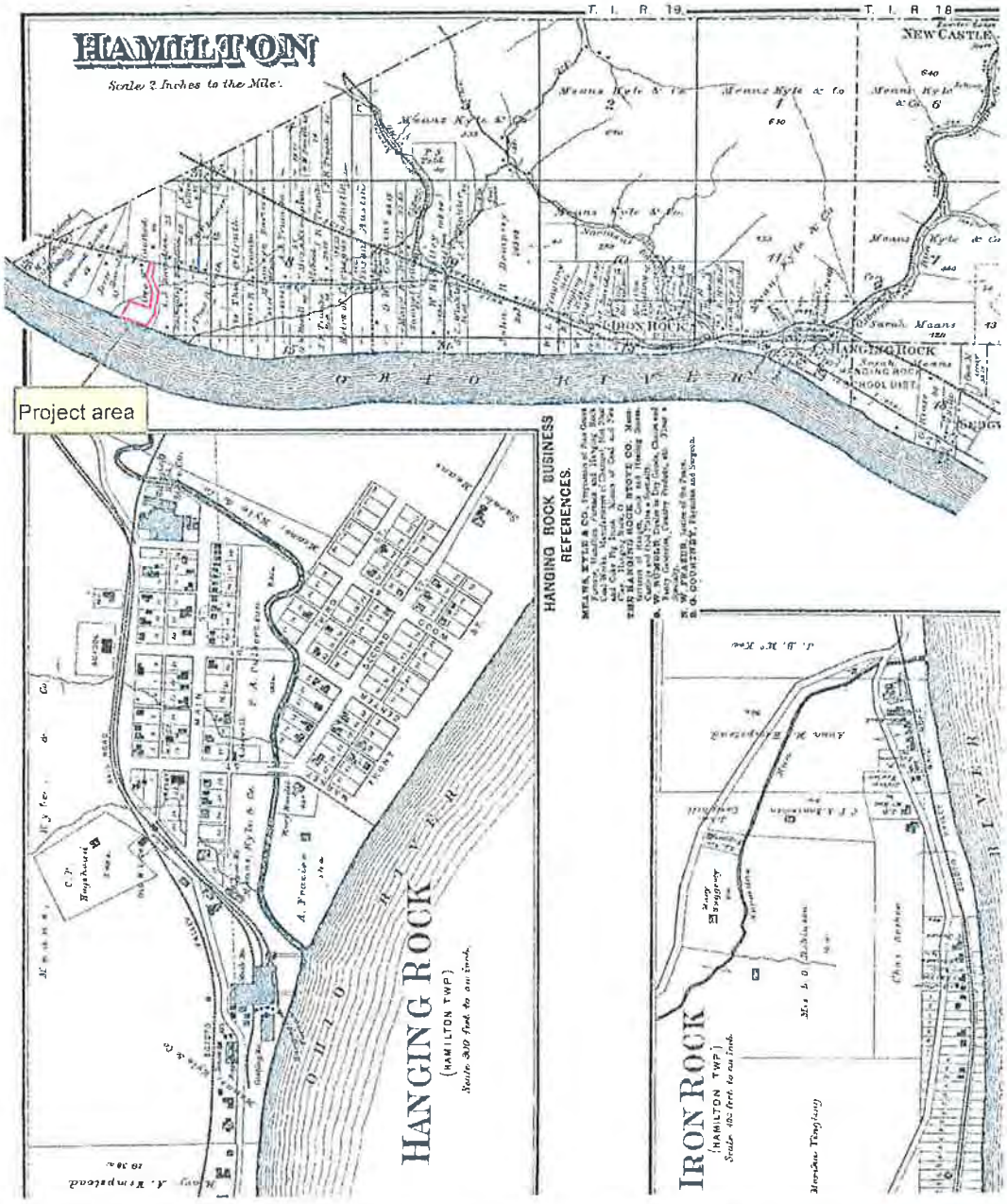

Figure 5 - Portion of 1887 map of Hamilton Township, Lawrence County, Ohio (Lake 1887), showing location of project area.

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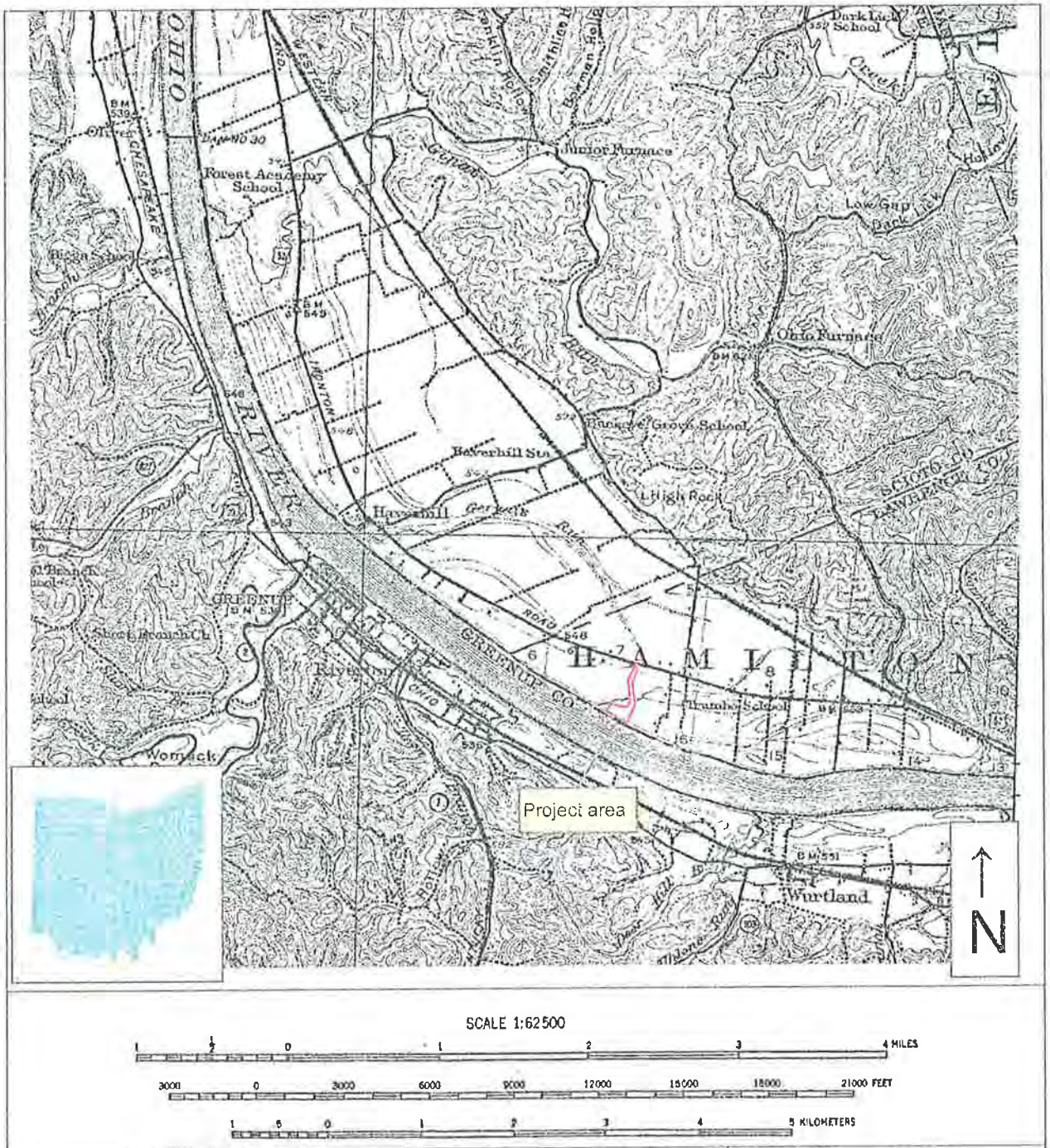

Figure 6 - Portion of 1926 Greenup, KY-Ohio 15-minute topographic quadrangle map showing location of project area.

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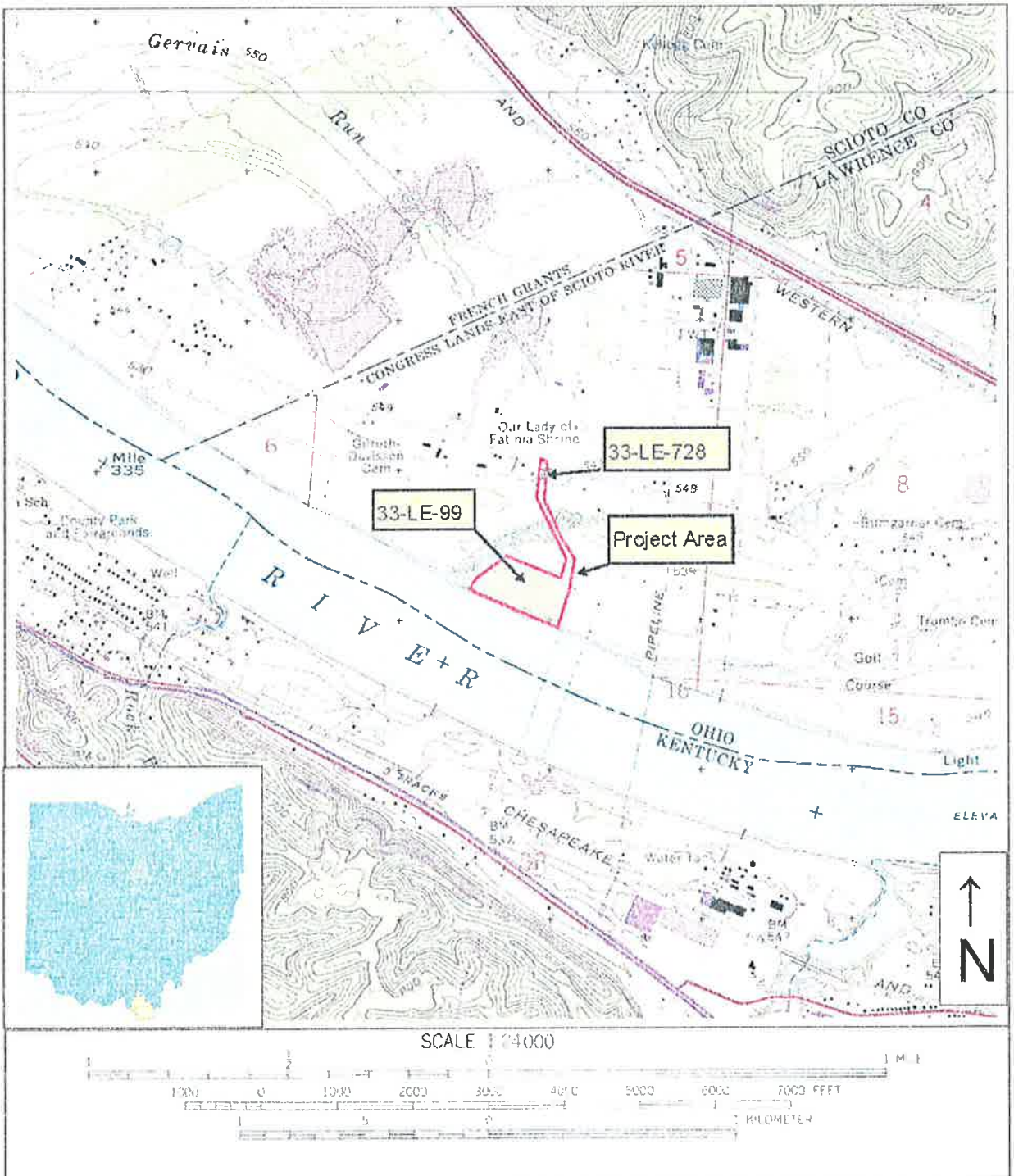

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Figure 7 - Portion of Greenup, KY-Ohio, 7.5-minute topographic quadrangle map showing location of sites 33-LE-99 and 33-LE-728.

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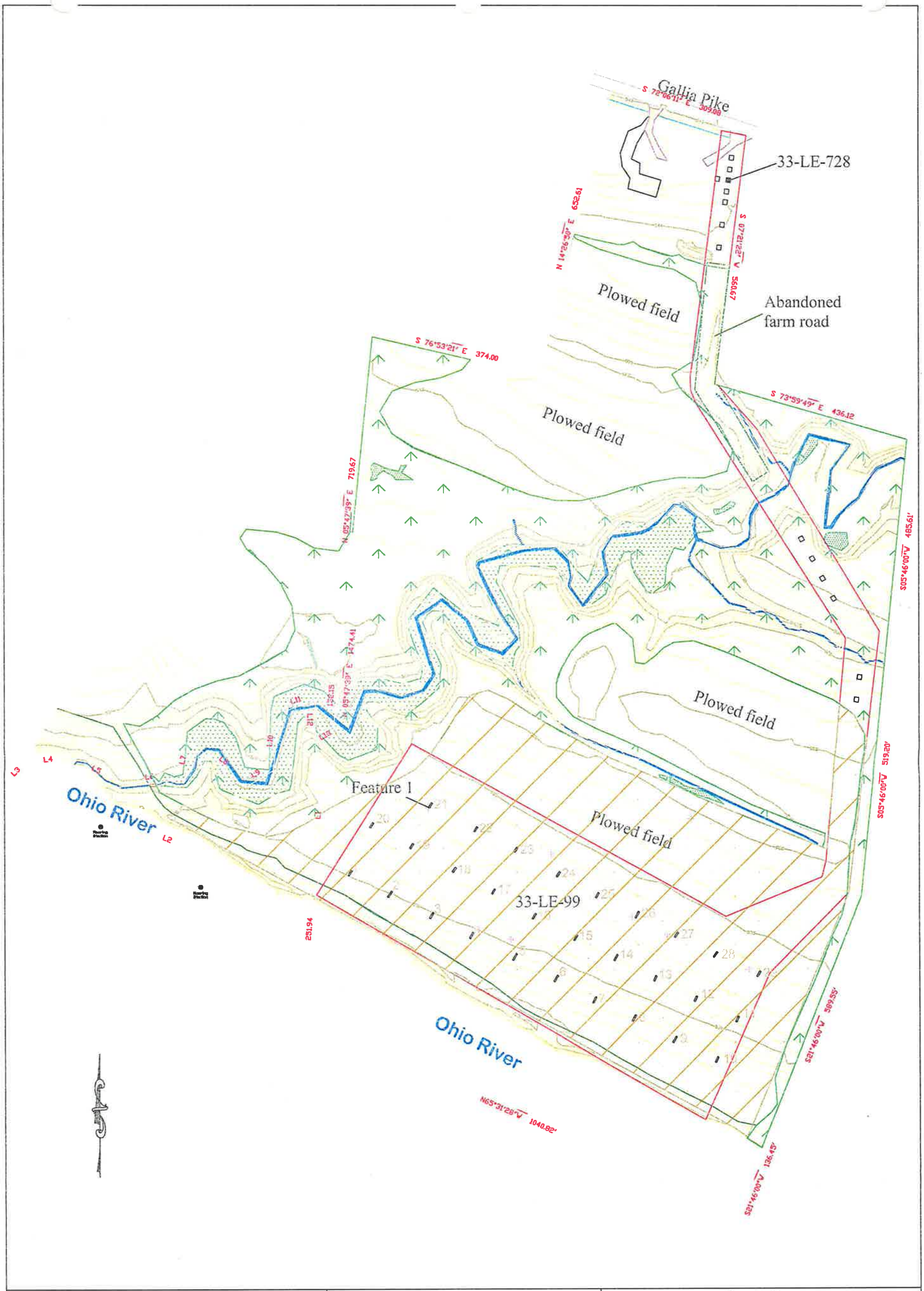

Figure 8. Survey coverage within the project area.

0 50 100 200 300ft

0 10 20 30 40 50 75 100m

6 April 2010

Legend

- = Property Boundary
- = 1ft Contours
- = driveways
- = Tree/Brushline
- = Project Area
- =wetland
- =stream
- = shovel test
- = positive shovel test
- =flake
- =trench
- =pedestrian survey area

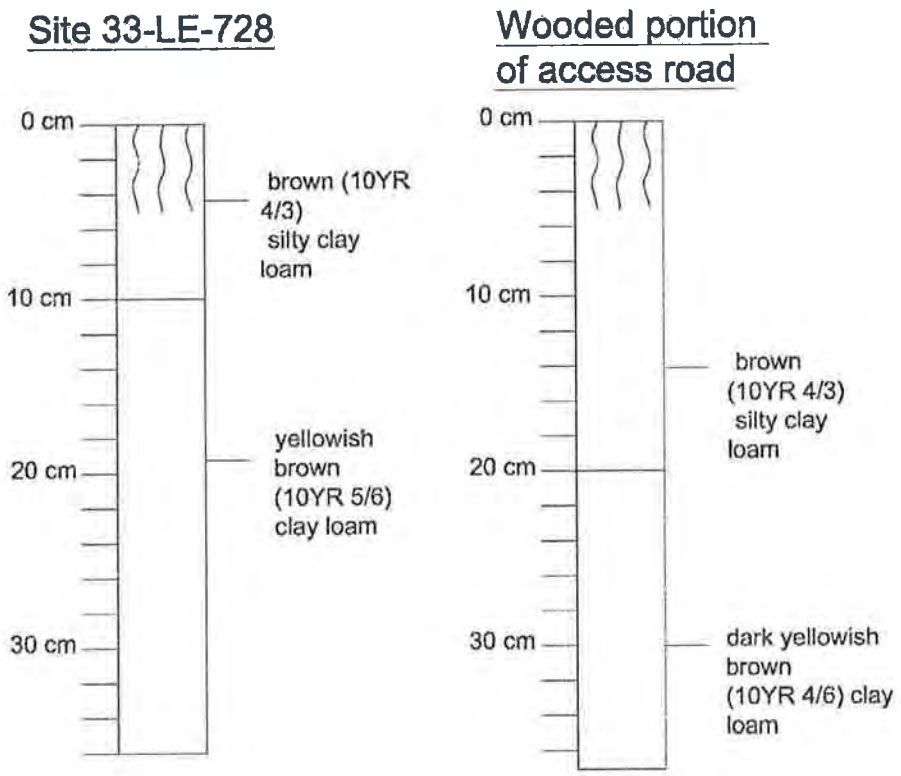

Figure 9 - Soil profiles along proposed access road.

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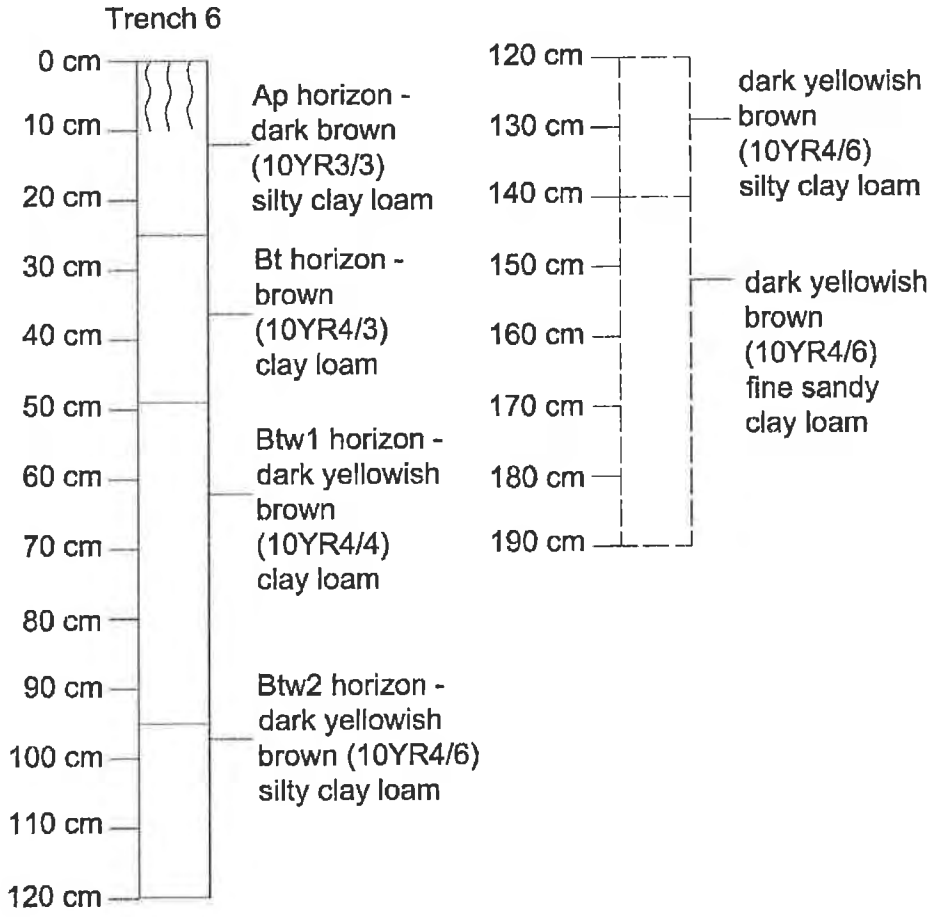

Figure 10 - Soil profile in Trench 6.

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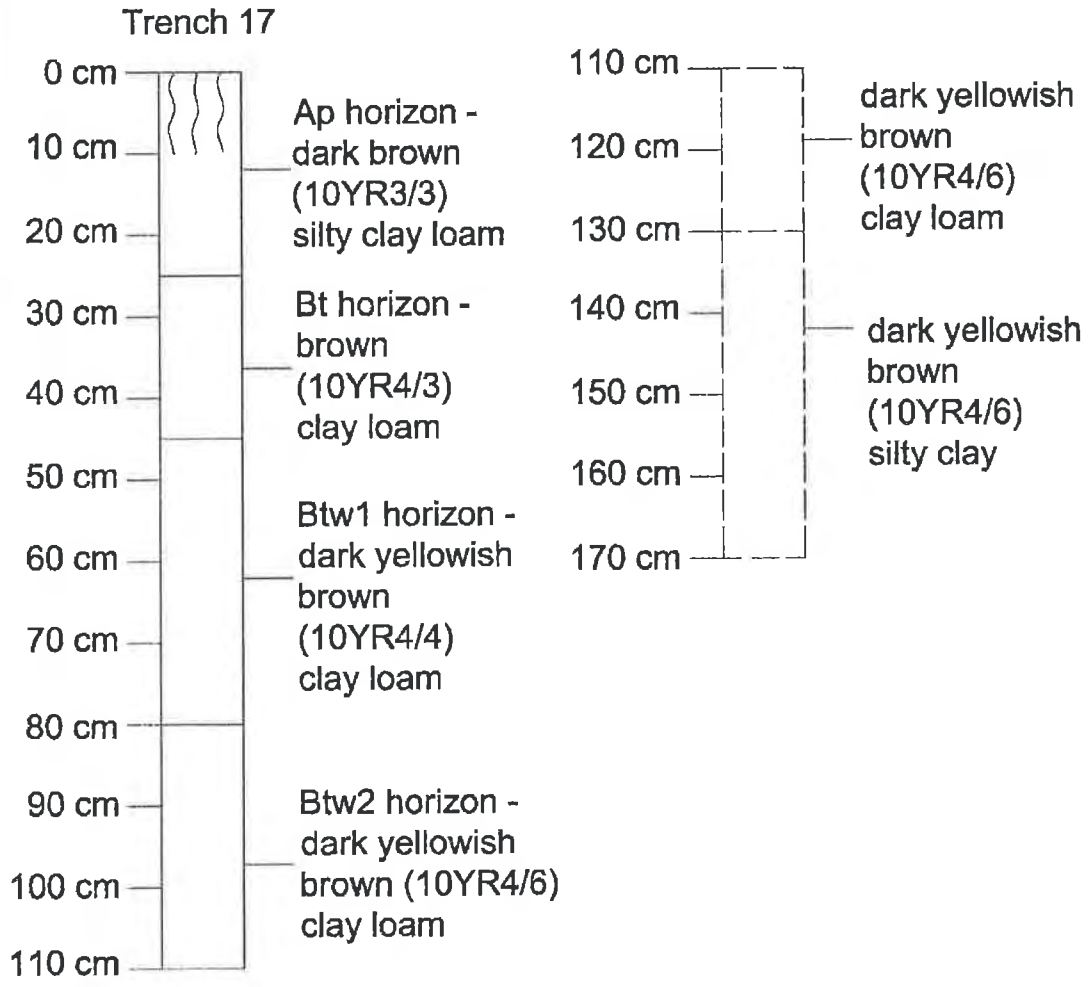

Figure 11 - Soil profile in Trench 17.

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APPENDIX B

Plates

Plate 1 - Open field off Gallia Pike - site 33-LE-728 - facing south

Plate 2 - Abandoned farm road - facing south

Plate 3 - Stream crossing for proposed access road - facing southeast.

Plate 4 - Agricultural field and woods near south end of proposed access road - facing north-northwest.

Plate 5 - Site 33-LE-99 during deep test investigations - facing southeast.

Plate 6 - Site 33-LE-99 during deep test investigations - facing northwest.

Plate 7 - West wall of Trench 16 - facing west.

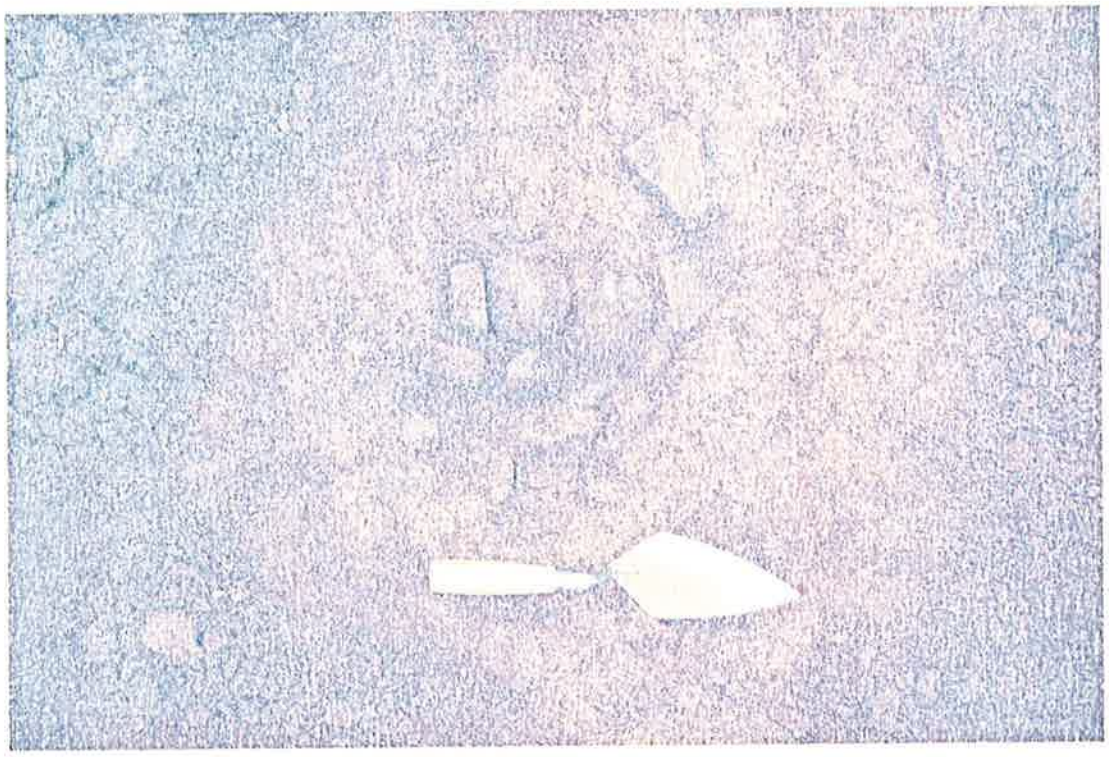


Plate 8 - Feature 1 at south end of Trench 21.

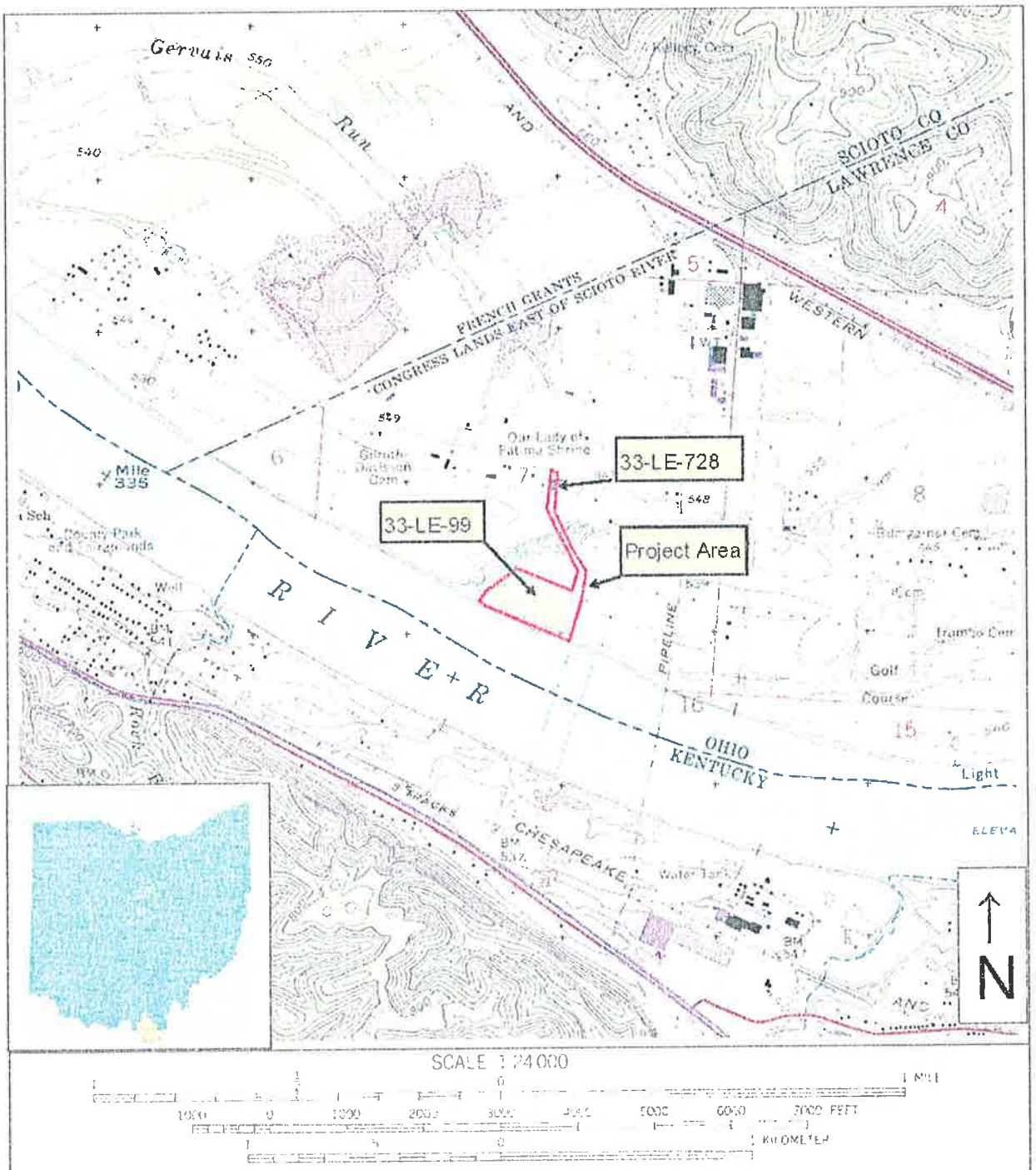
APPENDIX C

Previously Recorded Archaeological Sites

Site	Culture	Setting	Distance to water (m)
33-LE-93	unassigned prehistoric and historic	terrace	150
33-LE-95	unassigned prehistoric	terrace	10
33-LE-99	unassigned prehistoric	terrace	101
33-LE-615	unassigned prehistoric and historic	terrace	180
33-LE-616	Early and Late Archaic; Early and Late Woodland; historic	terrace	20
33-LE-617	unassigned prehistoric	terrace	90
33-LE-618	Early and Late Archaic; Early, Middle, and Late Woodland, Late Prehistoric; historic	terrace	60
33-LE-619	Early, Middle, and Late Archaic; Early, Middle, and Late Woodland; Late Prehistoric; historic	terrace	100
33-LE-620	unassigned prehistoric	terrace	255
33-LE-621	unassigned prehistoric	terrace	42
33-LE-622	unassigned prehistoric	terrace	304
33-LE-623	Late Archaic; Late Woodland; Late Prehistoric	terrace	180
33-LE-624	unassigned prehistoric and historic	terrace	60
33-LE-625	unassigned prehistoric	terrace	60
33-LE-626	unassigned prehistoric	terrace	210
33-LE-689	unassigned prehistoric	terrace	15
33-LE-690	Late Archaic	terrace	2
33-LE-692	Early Archaic	terrace	130
33-SC-434	Late Archaic and historic	terrace	165

APPENDIX D

Ohio Archaeological Inventory Site Forms



SCALE 1:24 000

Figure 7 - Portion of Greenup, KY-Ohio, 7.5-minute topographic quadrangle map showing location of sites 33-LE-99 and 33-LE-728.

ES ENVIRO SCIENCE INCORPORATED

Excellence in Ecological Monitoring

Ohio Historic Preservation Office
567 E. Hudson St.
Columbus, OH 43211
614/298-2000

Site No. 33-**LE-0099**

OHIO ARCHAEOLOGICAL INVENTORY

A. Identification

1. Type of Form:

New Form **X** Revised Form Transcribed Data

2. County: **Lawrence**

4. Site Name:

5. Project Number:

B. Location

1. UTM Zone: **17**

Easting: **343210**

Northing: **4269950**

3. Township: Range: Not Applicable

Section: **7** 1/4 Section: **SE**

Township Name: **Hamilton**

4. Quadrangle Name: **Greenup (Ky.)**
5. Quadrangle Date: **1972**
6. Confident of Site Location: **Yes**

C. Ownership

1. Name: **B.F. Iron & Metal**

Address: **P.O. Box 1838**

City, State, Zip: **Ashland, KY 41105**

Phone:

2. Tenant (if any):

Address:

City, State, Zip:

Phone:

3. Ownership Status: **Private (single)**

D. Temporal Affiliations

1. Affiliations Present: **Prehistoric**

Site No. 33- **LE-0099**
Plotted

Ohio Historic Preservation Office
567 E. Hudson St.
Columbus, OH 43211
614/298-2000

Site No. 33-LE-0728

OHIO ARCHAEOLOGICAL INVENTORY

A. Identification

1. Type of Form:

X New Form Revised Form Transcribed Data

2. County: **Lawrence**

4. Site Name:

5. Project Number:

B. Location

1. UTM Zone: **17**

   Easting: **343370**

   Northing: **4270410**

3. Township: Range: Not Applicable

   Section: **7** 1/4 Section: **SE**

   Township Name: **Hamilton**

4. Quadrangle Name: **Greenup (Ky.)**
5. Quadrangle Date: **1972**
6. Confident of Site Location: **Yes**

C. Ownership

1. Name: **B.F. Iron & Metal**

   Address: **P.O. Box 1838**

   City, State, Zip: **Ashland, KY 41105**

   Phone:

2. Tenant (if any):

   Address:

   City, State, Zip:

   Phone:

3. Ownership Status: **Private (single)**

D. Temporal Affiliations

1. Affiliations Present: **Prehistoric**

Site No. 33- **LE-0728**
Plotted

APPENDIX E

Trench Soil Profiles

Trench 1

0 - 35 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

35 - 65 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

65 - 120 cm Btw horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 2

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 95 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

95 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 3

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

100 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 4

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 5

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

100 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 6

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 49 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

49 - 95 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

95 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

120 cm + examined in backdirt pile

120 - 140 cm dark yellowish brown (10YR 4/6) silty clay loam.

140 - 190 cm dark yellowish brown (10YR 4/6) fine sandy clay loam.

Trench 7

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 70 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

70 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 8

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

Trench 8 (continued)

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 9

0 - 20 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

20 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

100 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 10

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 105 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

105 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) silty clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 11

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 12

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

Trench 12 (continued)

100 - 115 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 13

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

110 cm + examined in backdirt pile

110 - 130 cm dark yellowish brown (10YR 4/6) clay loam.

130 - 160 cm dark yellowish brown (10YR 4/6) silty clay loam.

Trench 14

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

100 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 15

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 85 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

85 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 16

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 17

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 80 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

80 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

110 cm + examined in backdirt pile

110 - 130 cm dark yellowish brown (10YR 4/6) clay loam.

130 - 170 cm dark yellowish brown (10YR 4/6) silty clay.

Trench 18

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 80 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

80 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 19

0 - 20 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

20 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 85 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

Trench 19 (continued)

85 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 20

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 21

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary; Feature 1 consisting of a concentration of rocks about 45 cm in diameter, first encountered at a depth of 33 cm and extended down to a depth of 65 cm below the surface, no artifacts.

40 - 60 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

60 - 110 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 22

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 100 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

100 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

120 cm + examined in backdirt pile

120 - 130 cm dark yellowish brown (10YR 4/6) clay loam.

130 - 170 cm dark yellowish brown (10YR 4/6) silty clay.

Trench 23

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 24

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 25

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 55 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

55 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 115 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 26

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 50 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

50 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 27

0 - 35 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

35 - 60 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

60 - 90 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

90 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 28

0 - 30 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

30 - 45 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

45 - 80 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

80 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

Trench 29

0 - 25 cm Ap horizon - dark brown (10YR 3/3) silty clay loam; moderate, fine to medium granular and subangular blocky structure; friable; clear, smooth boundary.

25 - 40 cm Bt horizon - brown (10YR 4/3) clay loam; moderate, fine to medium subangular blocky structure; friable; clear, smooth boundary.

40 - 80 cm Btw1 horizon - dark yellowish brown (10YR 4/4) clay loam; weak, fine to medium subangular blocky structure; friable; clear, smooth boundary.

80 - 120 cm Btw2 horizon - dark yellowish brown (10YR 4/6) clay loam; weak, fine to medium subangular blocky structure; friable.

OHIO HISTORY

RECORDS SEARCH FORM

Please send a completed Records Search Form and signed Conditions Sheet with a copy of applicable USGS topographical map(s) to the Ohio Historic Preservation Office, 567 East Hudson Street, Columbus, Ohio 43211-1030. Fax: 614-298-2037. The record search will be initiated following receipt of all documents. For custom shape searches (linear and other than radial), provide an ESRI-compatible shapefile in decimal degree format using NAD 1927. An additional fee will be applied to custom searches not accompanied by a shapefile.

USER INFORMATION

Name: Bob Fowler

Telephone: (304) 638-2102

Company: B.F. Iron + Metal Inc.

Fax: (304) 429-6368

Address: P.O. Box 1838
Ashland, KY 41105-1838

Email: _____

PROJECT INFORMATION

Name of Project: Proposed Barge Cleaning and Repair Facility

Name of Quad(s): Greenup, KY – Ohio

UTM or Latitude/Longitude: N 38°33'55" E 82°48'00"

TYPE OF SEARCH:

Standard Search – Five Day

☐ One-Mile Radius/Custom up to 3 sq. miles: $135

☒ Two-Mile Radius: $210

Expedited Search – Two Day

☐ One-Mile Radius/Custom up to 3 sq. miles: $265

☐ Two-Mile Radius: $415

_____ Add $45 per square mile for custom shape search request for area greater than 3 square miles.

_____ Add $25 if ESRI-compatible shapefile not provided for custom shape search request

TYPE OF DELIVERY: ☐ U.S. Mail ☐ Email with attachments ☐ Include resulting data as shapefile

☐ Private Shipper Overnight Service. The shipper will bill your account.

UPS Account: _____ Fed Ex Account: _____

PAYMENT INFORMATION:

☐ Check enclosed ☐ Purchase Order # _____ ☐ Visa ☐ American Express ☐ MasterCard ☐ Discover

☐ Bill to my account

Amount Due $_____

Name on Card _____

Card # _____ CID # _____

Expiration Date _____

_____
Cardholder Signature Date

For Office Use

Received: _____

Completed: _____

Mail Out: _____

Pymt Processed: _____

Entered: _____

Record #: _____

Filed: _____

Search By: _____

OHIO HISTORY

CONDITIONS FOR USE OF DIGITAL RESOURCE AND LOCATIONAL DATA

By accepting Ohio Historic Preservation Office data, the record user agrees to abide by all of the following conditions:

1. Access to data conveys no rights for the record user to release or distribute these data, or derivative works containing these data, in any form including electronic/magnetic or machine-readable form.

2. Record user will identify the Ohio Historic Preservation Office as data source on any map or publication using Ohio Historic Preservation Office data. Record user will also include the date that data were provided by the Ohio Historic Preservation Office.

3. Although the Ohio Historic Preservation Office maintains high standards of data quality control, the Ohio Historic Preservation Office makes no warranty that the data are necessarily accurate or complete.

4. Obtaining information on previously recorded historic properties does not constitute review or comment under Section 106 of the National Historic Preservation Act. If a project is federally funded, licensed, permitted or assisted, the federal agency may require you to obtain Ohio Historic Preservation Office comment under Section 106.

5. Record user understands and acknowledges that release of precise locations may threaten archaeological and historical resources. Record user shall take reasonable precautions to ensure the security of site locations.

6. Record user understands and acknowledges that the accuracy of these data is time-limited.

7. Record user will indemnify and hold the Ohio Historic Preservation Office and its officers and employees harmless against any claims by third parties arising out of the use by record user of the data provided hereunder.

8. This agreement is the entire agreement between the parties with respect to the subject matter hereof, and may be amended only in writing signed by both parties.

9. Record user shall pay agreed fees within 30 days of being billed by the Ohio Historic Preservation Office.

BOB FOWLER
Name

PRESIDENT
Title

B.F. IRON + METAL INC.
Company

Signature Date

OHIO HISTORICAL SOCIETY
Ohio Historic Preservation Office
567 East Hudson St Columbus, Ohio 43211-1030 ph: 614.298.2000 fx 614.298.2037
www.ohiohistory.org

OHIO HISTORY

September 18, 2007

Bob Fowler
B.F. Iron & Metal, Inc.
P.O. Box 1838
Ashland, KY 41105-1838

Mr. Fowler,

In accordance with our scope of service, attached are the results of the Records Search for Proposed Barge Cleaning and Repair Facility, received by our office on September 17, 2007. Included are four map printouts, which show resources identified within the radius you requested, and one table, which lists site numbers, property names and property addresses, as applicable.

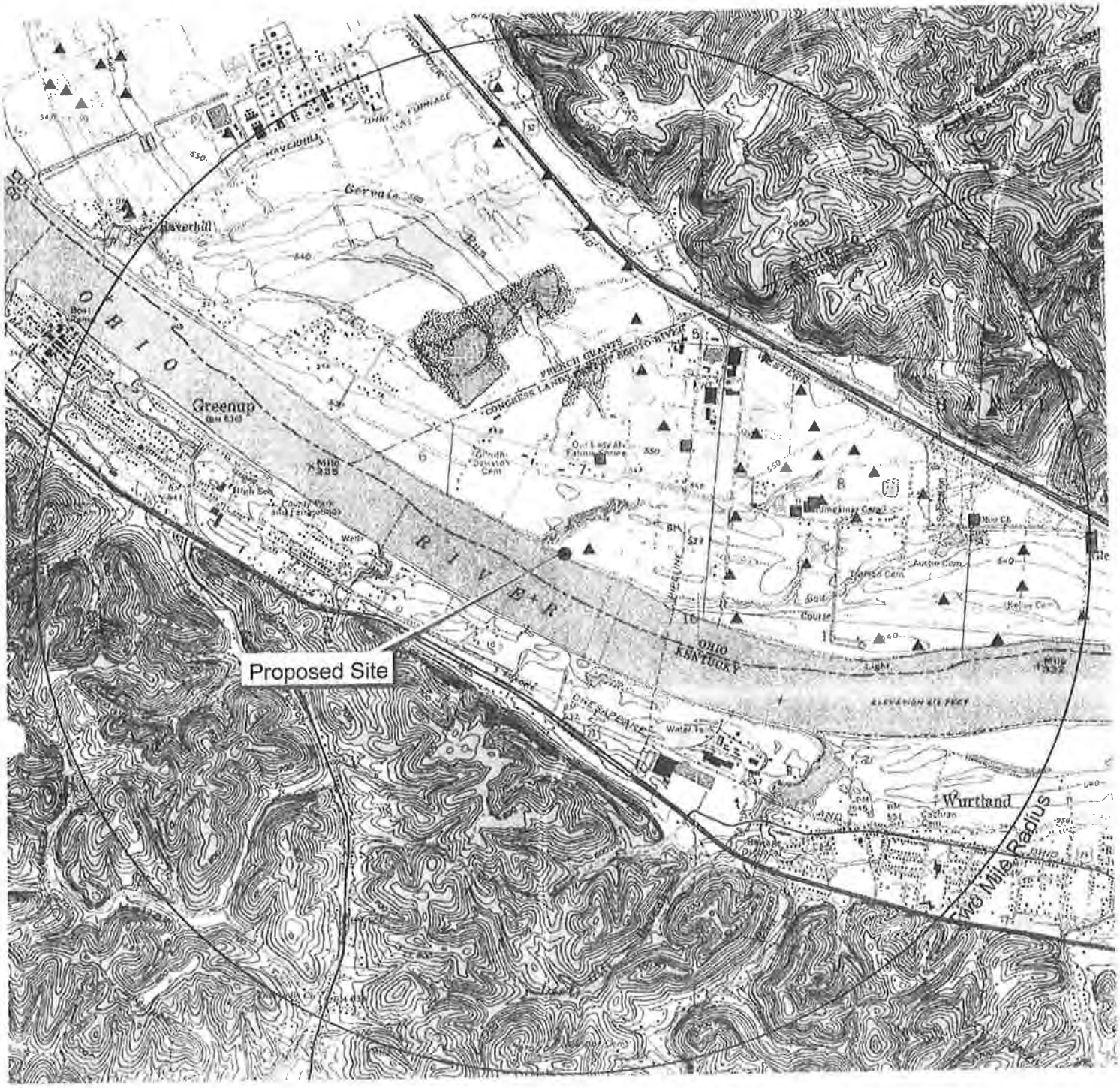
These data are provided with the understanding that they will be used in accordance with the signed "Conditions for Use of Digital Resource and Locational Data" submitted as part of your request. If you have any questions please contact me.

Sincerely,

Carrie Simmons
Technical Assistant

Enclosures

OHIO HISTORICAL SOCIETY
Ohio Historic Preservation Office
567 East Hudson Street, Columbus, Ohio 43211-1030 ph: 614.298.2000 fx: 614.298.2037
www.ohiohistory.org



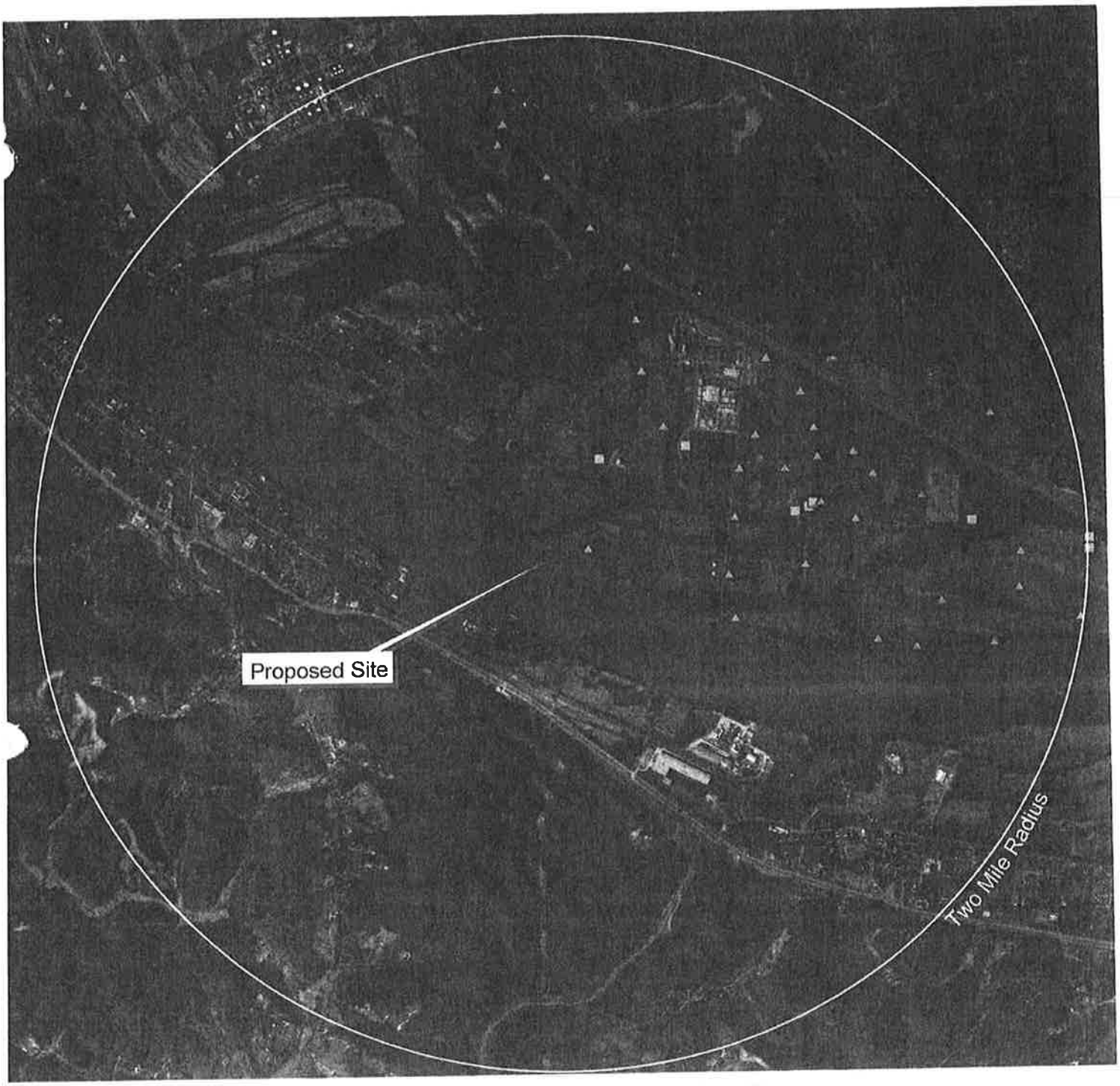
Proposed Barge Cleaning and Repair Facility
Greenup Quadrangle

N

- National Register Listed Properties
- Archaeological Inventory Properties
- Historic Inventory Properties
- National Register Listed Districts

September 18, 2007

1 0 1 Miles



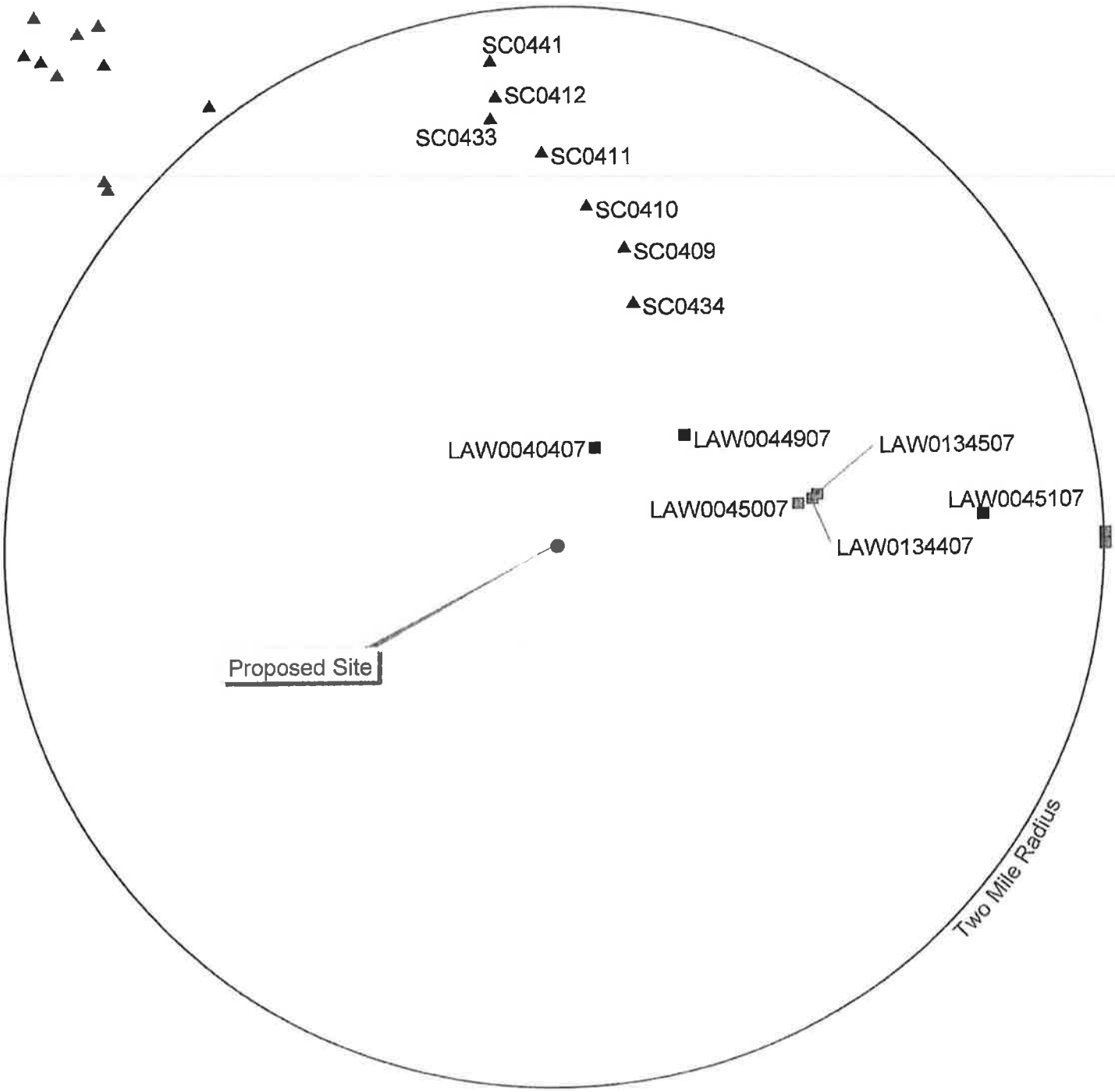
Proposed Barge Cleaning and Repair Facility
Greenup Quadrangle

N

- National Register Listed Properties
- Archaeological Inventory Properties
- Historic Inventory Properties
- National Register Listed Districts

September 18, 2007

1 0 1 Miles



Proposed Barge Cleaning and Repair Facility
Greenup Quadrangle

N

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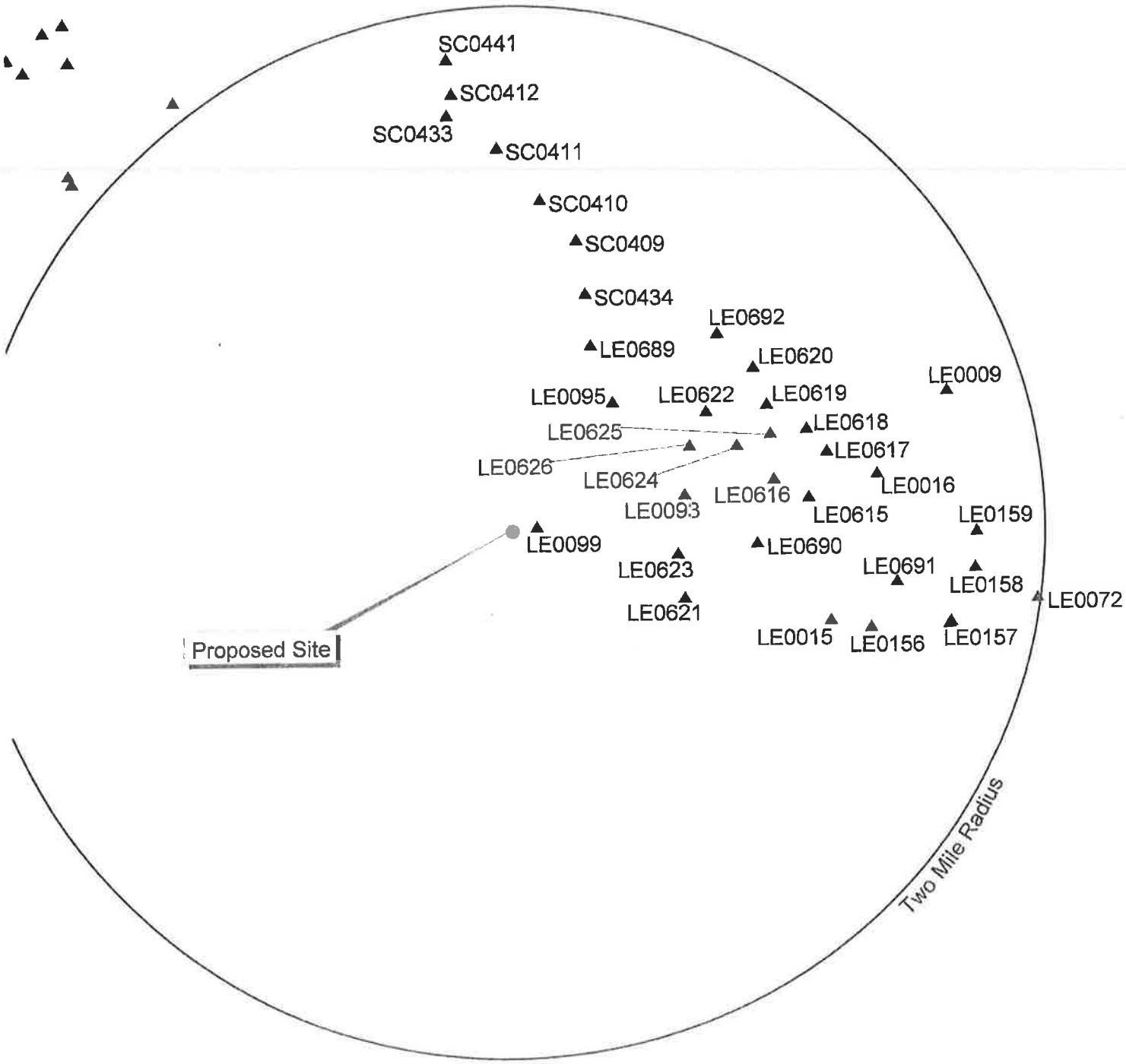
September 18, 2007

1 0 1 Miles



Proposed Barge Cleaning and Repair Facility
Greenup Quadrangle

N

- ● National Register Listed Properties
- ▲ Archaeological Inventory Properties
- ■ Historic Inventory Properties
- National Register Listed Districts

September 18, 2007

1 0 1 Miles

Proposed Barge Cleaning and Repair Facility

Ohio Historic Inventory

NUMBER	PRESENT NAME	OTHER NAME	ADDRESS	UTM ZONE	EASTING	NORTHING
LAW0040407	Our Lady of Fatima Shrine		CR 1 (Old 52)	17	343312	4270505
LAW0044907	Vacant	Residence	Gilberth Lane	17	343833	4270578
LAW0045007	Residence	Trumbo RL Farm	CR 1 (Old 52)	17	344500	4270162
LAW0045107	Church	Ohio Baptist Church	CR 1 (Old 52)	17	345590	4270089
LAW0134407	Bumgarner-Bush Family Cemetery		N side Old US 52	17	344583	4270190
LAW0134507		Bumgarner-Bush Barn	N side Old US 52	17	344612	4270215

Ohio Archaeological Inventory

NUMBER	SITE NAME	UTM ZONE	EASTING	NORTHING	NADB #
LE0009	Hamilton Township Mounds	17	345710	4270766	00000
LE0015		17	345000	4269367	00000
LE0016	Ohio Baptist Site	17	345280	4270260	00000
LE0072	Goldcamp Site	17	346260	4269490	14879
LE0093	Davisson Site	17	344130	4270140	15936
LE0095	Barq Site	17	343700	4270710	15936
LE0099	Gholson Site	17	343240	4269950	16391
LE0156		17	345240	4269320	12974
LE0157		17	345730	4269350	12974
LE0158		17	345880	4269680	12974
LE0159		17	345890	4269900	12974
LE0160		17	345720	4269340	12974
LE0615		17	344870	4270120	15940
LE0616		17	344660	4270230	15940
LE0617		17	344980	4270400	15940
LE0618		17	344860	4270540	15940
LE0619		17	344620	4270690	15946
LE0620		17	344540	4270920	15942
LE0621		17	344130	4269510	15940
LE0622		17	344260	4270650	15940
LE0623		17	344090	4269780	15940
LE0624		17	344440	4270440	15940
LE0625		17	344640	4270510	15940
LE0626		17	344160	4270440	15940

NUMBER	SITE NAME	UTM ZONE	EASTING	NORTHING	NADB #
LE0689		17	343570	4271060	15936
LE0690		17	344560	4269840	16391
LE0691		17	345400	4269600	15943
LE0692		17	344330	4271130	15942
SC0409		17	343490	4271710	00000
SC0410		17	343270	4271960	00000
SC0411		17	343010	4272280	00000
SC0412		17	342740	4272610	00000
SC0433		17	342710	4272480	15936
SC0434		17	343540	4271380	15938
SC0441		17	342710	4272820	15936

National Register of Historic Places
No resources found within radius

OHIO HISTORY

OHIO HISTORICAL SOCIETY

Ohio Historic Preservation Office
567 East Hudson Street
Columbus, OH 43211

Section 3