APPLICATION FOR:

USACE SECTION 404 PERMIT
and
OEPA SECTION 401
WATER QUALITY CERTIFICATION

OXFORD MINING COMPANY, LLC.
SHUGERT SOUTH AREA

FEBRUARY 2012

Prepared by:

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Civil Engineering Consultants
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APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT ENG FORM 4345 (33 CFR 325)	OMB APPROVAL NO.0710-003 Expires October 1996

Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-00031, Washington, DC 20503 Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413 Section 404 Principal Purpose: These laws require permits authorizing activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters Routine Uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary If information is not provided, however, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1 APPLICATION NO	2 FIELD OFFICE CODE	3 DATE RECEIVED	4 DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5 APPLICANT'S NAME **Oxford Mining Company, LLC.**	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) **Linn Engineering, Inc. / Timothy H. Linn , Consultant**
6 APPLICANT'S ADDRESS **544 Chestnut St.** **Coshocton, Ohio 43812**	9. AGENT'S ADDRESS **534 Market Street** **P.O. Box 2086** **Zanesville, Ohio 43702-2086**
	10. AGENT'S PHONE NUMBER W/AREA CODE
a Residence b. Business **740-623-0015**	a. Residence b Business **740-452-7434**

11. STATEMENT OF AUTHORIZATION

I hereby authorize Timothy H. Linn to act in behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE 2/24/12 DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

Shugert South (LRH-2010-911)

13 NAME OF WATERBODY, IF KNOWN (if applicable) **Drainage from the site flows via unnamed tributaries into Stillwater Creek .**	14. PROJECT STREET ADDRESS (if applicable) **N/A**
15 LOCATION OF PROJECT **Belmont** COUNTY **Ohio** STATE	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN, (see instructions)
Sections 25, 26, and 32; T-8, R-5; Union Township, Belmont County, Ohio

17. DIRECTIONS TO THE SITE
This site is located on Wilson Road (Twn Hwy 260) approximately one mile southwest of Morristown, Ohio.

18. Nature of Activity (Description of Project, include all features)

Surface coal mining to recover the #9 Meigs Creek coal seam by stripping and highwall mining techniques and the #11 Waynesburg coal seam by strip mining. Proposed mining activities include construction of drainage controls, construction of a temporary haul road stream crossing, tree clearing, removal and stockpiling of resoiling material, overburden removal, coal extraction, backfilling and grading, resoiling and revegetation. Environmentally responsible planning has minimized the area of affectment and impact to jurisdictional waters. Streams and wetlands will be mitigated on-site.

19. PROJECT PURPOSE (Describe the reason or purpose of the project, see instructions)

The project is necessary for the production of coal needed for electric power generation. This particular site was chosen based on topography, coal elevation and structure, and market area. Oxford has made a considerable investment to acquire surface mining rights and perform exploratory drilling, soil sampling, hydrologic studies, and engineering to delineate waters of the United States, and evaluate potential environmental impacts and mitigation measures. Significant capital investment is planned for the operation. The resultant impact will be to continue to supply a major economic stimulus to the area. Directly, the operation will support 40 jobs and indirectly up to 150 jobs.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. REASON(S) FOR DISCHARGE

See Blocks 18 and 19.

21. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS

Fill material is mainly shale. Dredging is not proposed. Quantity of fill under the three alternatives:
Streams: Non-degradation = 0 cy; Minimal degradation = 497 cy; Preferred degradation = 657 cy.
Wetlands: Non-degradation = 0 cy; Minimal degradation = 40 cy; Preferred degradation = 621 cy.
Open Water: Non-degradation = 0 cy; Minimal degradation = 0 cy; Preferred degradation = 0 cy.

22. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (see instruction)

Surface areas are summarized in the permit application.
Dozers, off road trucks and loaders will be used in mining and reclamation grading and highwall backfilling. Backhoes will be used in pond construction. Prior to earth moving activites drainage controls will be established to minimize erosion and sedimentation. Drainage controls include, but are not limited to, silt fence, straw bale dikes, sumps, diversion ditches, ponds, and temporary and permanent seeding and mulching.

23. IS ANY PORTION OF THE WORK ALREADY COMPLETE? ~~YES~~ NO IF YES DESCRIBE THE COMPLETED WORK

24. ADDRESSES OF ADJOINING PROPERTY OWNERS, LESSEES, ETC., WHOSE PROPERTY ADJOINS THE WATERBODY (if you have more that can be here, please attach a supplemental list).

Refer to Addendum to Block 24.

25. LIST OF OTHER CERTIFICATIONS OR APPROVAL/DENIALS RECEIVED FROM OTHER FEDERAL, STATE, OR LOCAL AGENCIES FOR WORK DESCRIBED IN THIS APPLICATION

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
ODNR-DMRM	Coal Mining & Reclam. Permit	10481	1/25/12	pending	
OEPA	401 WQC	pending	pending		pending

* Would include but is not restricted to zoning, building and floodplain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Signature of Applicant	Date	Signature of Agent	Date
			2/24/12

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 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ADDENDUM TO BLOCK 24.
ADDRESSES OF ADJOINING PROPERTY OWNERS, LESSEES, ETC., WHOSE PROPERTY ADJOINS THE WATERBODY
(if you have more that can be here, please attach a supplemental list).

John and Susan Mauersberger
P.O. Box 63
Morristown, OH 43759

K&S Shugert Farms Family
Limited Partnership
63568 County Home Road
Lore City, OH 43755

Robert A. Shugert
P.O. Box 2
Morristown, OH 43759

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.

Information 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. XX 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 #

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

3. Name and address of applicant:

Oxford Mining Company, LLC.
544 Chestnut Street
Coshocton, OH 43812

Telephone number during business hours:

(_____) _____ (Residence)

(740) 623-0015 (Office)

3a. Signature of Applicant: Date: 5-2-12

4. Name, address and title of authorized agent:
Timothy H. Linn, PE, PS
Linn Engineering, Inc.
534 Market Street
Zanesville, OH 43701

Telephone number during business hours:

(_____) _____ (Residence)

(740) 452-7434 (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: 5-2-12

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: **Sections 25, 26, and 32; T-8, R-5; Union Township, Belmont County, Ohio**

Street, Road, Route, and Coordinates, or other descriptive location

Stillwater Creek	Belmont	Union	N/A	Ohio	N/A
Watershed	County	Township	City	State	Zip Code

6. Is any portion of the activity for which authorization is sought complete? _____ Yes XX 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
ODNR-DMRM	**mining permit**	**10481**	**1/25/12**	**pending**	
USACOE	**Section 404**	**LRH-2010-911**	**2/27/2012**	**pending**	

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

8a. Activity: Describe the Overall Activity:
Surface coal mining to recover the #9 Meigs Creek and #11 Waynesburg coal seams by stripping and highwall mining techniques.

Proposed mining activities include construction of drainage controls, construction of temporary haul road stream crossings, tree clearing, removal and stockpiling of resoiling material, overburden removal, coal extraction, backfilling and grading, resoiling and revegetation. Environmentally responsible planning has minimized the area of affectment and impact to jurisdictional waters. Streams and wetlands will be mitigated on-site.

8b. Purpose: Describe the purpose, need and intended use of the activity:
The project is necessary for the production of coal needed for electric power generation. This particular site was chosen based on topography, coal elevation and structure, and market area.

Oxford has made a considerable investment to acquire surface mining rights and perform exploratory drilling, soil sampling, hydrologic studies, and engineering to delineate waters of the United States, and evaluate potential environmental impacts and mitigation measures. Significant capital investment is planned for the operation. The resultant impact will be to continue to supply a major economic stimulus to the area. Directly, the operation will support 40 jobs and indirectly up to 150 jobs.

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards). (OAC 3745-1-05(B)(2)(a))
Fill material is mainly shale. Dredging is not proposed. Quantity of fill under the three alternatives:
Streams: Non-degradation = 0 cy; Minimal degradation = 497 cy; Preferred degradation = 657 cy.
Wetlands: Non-degradation = 0 cy; Minimal degradation = 40 cy; Preferred degradation = 621 cy.
Open Water: Non-degradation = 0 cy; Minimal degradation = 0 cy; Preferred degradation = 0 cy.

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.

The proposed surface mining activity will affect upland areas, headwater streams, and wetlands associated with DMRM site LRH-2010-911. Drainage flows via unnamed tributaries to Stillwater Creek, which is approximately 1 mile southwest of the permit area.

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). (Application and review requirements appear at OAC 3745-1-05(B)(2), OAC 3745-1-05(C)(6), OAC 3745-1-05(C)(1) and OAC 3745-1-54).

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. (OAC 3745-1-05(B)(2)(b))

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. (OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54)

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.) **(OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54)**

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. **(OAC 3745-1-05(C)(6)(l))**

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. **(OAC 3745-1-05(B)(2)(g))**

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. **(OAC 3745-01-05(C)(6)(g))**

10g) Describe any impacts on human health and the overall quality and value of the water resource. **(OAC 3745-1-05(C)(6)(c) and OAC 3745-1-54)**

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. **(OAC 3745-1-5(B)(2)(e), and OAC 3745-1-05(C)(6)(l))**

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. **(OAC 3745-1-05(B)(2)(e,f), and OAC 3745-1-05(C)(6)(e))**

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. **(OAC 3745-1-05 (B)(2)(e,f), OAC 3745-1-05 (C)(6)(b) and OAC 3745-1-54)**

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
	5-2-12	

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.

Do not send a certification processing fee with this application. The appropriate fee will be assessed when a certification is issued.

INTRODUCTION

Oxford Mining Company, LLC. (Applicant) has submitted a surface coal mining permit application numbered 10481 to the Ohio Department of Natural Resources, Division of Mineral Resources Management (DMRM) for the removal of #9 Meigs Creek and #11 Waynesburg coal seams from the subject site, which is also known as the Shugert South Area. This document is prepared in order to receive Section 404 authorization from the U. S. Army Corps of Engineers, Huntington District (USACE) and Section 401 authorization from the Ohio Environmental Protection Agency (OEPA) for impacts to waters of the United States.

SITE DESCRIPTION

The subject property lies within Union Township, Belmont County, Ohio on the Bethesda 7.5 minute USGS Quadrangle Map. The site, which is approximately one mile south and west of Morristown, is nearly bisected by Wilson Road (Twp Hwy 160) and adjacent to the south side of Interstate 70. The site consists of approximately 59% undeveloped land, 37% pastureland, and 4% rural residential lands.

DELINEATION FOR JURISDICTIONAL WATERS

A delineation for jurisdictional waters was conducted on the subject property by Civil & Environmental Consultants, Inc. The report is titled, "*Jurisdictional Waters Delineation Report: Shugart-Maursberger Site, Morristown, Belmont County, Ohio: 40° 3' 6.471" N 81° 5' 42.142" W*", dated September 24, 2010. The Ohio Environmental Protection Agency (OEPA) and the U.S. Army Corps of Engineers have this report and have field reviewed the same. Verification of the data and findings in the report is provided in the letter of jurisdictional determination from the Corps, which is submitted in Appendix A. The delineation report is incorporated into and made part of this permit application by this reference.

PROJECT DESCRIPTION

Surface mining techniques, such as stripping and highwall mining, are proposed in the recovery of the #9 Meigs Creek coal seam, whereas only strip mining will be implemented to recover the #11 Waynesburg coal seam. Track excavators, off-road trucks, dozers, loaders, and a highwall miner, will be used to mine and reclaim the area. The proposed permit area, sought for under the Preferred Alternative, includes a total of 265.6 acres which is significantly smaller than the 380.3 acres that were delineated.

APPLICATION COORDINATION

As part of the permit application review process, the Ohio Department of Natural Resources (ODNR), Division of Mineral Resources Management (DMRM) notifies numerous federal, state and local agencies as to the location and nature of the permit application. Coordination with other agencies included the U.S. Fish and Wildlife Service (FWS), USDA Forest Service, U.S. Army Corps of Engineers, ODNR Division of Wildlife, ODNR Division of Natural Areas and Preserves, ODNR Soil and Water Conservation, Ohio EPA, Ohio Department of Transportation, County Commissioners, and Township Trustees.

Federally Listed Rare and Endangered Species

The FWS published list of endangered and threatened species in Ohio (3/2008) was reviewed. According to the list, Myotis sodalis (Indiana bat) is the only endangered species found distributed within this area of Belmont County.

According to Clark, B. K., et. al., *Myotis sodalis* is found in Ohio during summer months through September. Preferred habitat includes large living or dead trees with large cavities, cracks or exfoliated bark (1987). Tree species including *Ulmus americana* (American elm), *U. rubra* (slippery elm), *Quercus stellata* (post oak), *Q. rubra* (red oak), *Carya ovata* (shagbark hickory), *C. cordiformis* (bitternut hickory), *Populus deltoides* (Eastern cottonwood), *Acer saccharinum*

(silver maple) and *Fraxinus pennsylvanica* (green ash) have been documented as used by reproductively active females in Michigan (Kurta, et. al., 1993).

Tragus Environmental Consulting, Inc. performed a mist net survey of the subject sited on June 15, 16, and 17, 2010. The survey did not net any Indiana bats. The report on the mist net survey was approved by FWS in a letter dated August 19, 2010.

Archaeological and Historical Records

A Phase I Cultural Resources survey was performed by Professional Archeological Services Team ("P.A.S.T.") on behalf of Oxford. No significant findings were observed onsite. As stated on page 2 of the report, dated April 2011, "no additional archaeological or historical investigation is warranted for the proposed application."

REQUIRED AUTHORIZATION

USACE permits authorize the discharge of dredged or fill material under Section 404 of the Clean Water Act and are not valid until the State of Ohio certifies that the proposed discharge is not in violation of the state's water quality standards. Proposed impacts to waters of the United States include ephemeral, intermittent and perennial streams, as well as wetlands. This project is proposing authorization under the individual permitting process through Section 404 through the Corps of Engineers. A Section 401 Water Quality Certification is sought from the Ohio EPA.

An alternatives analysis is required for Section 404 permit and for the Section 401 Water Quality Certification through the antidegradation review. Due to the comprehensive nature of the requirements of the antidegradation review, the alternative analysis alternative is presented below and is intended to provide information for purposes of both Section 404 and Section 401 permit applications.

STREAM and WETLAND FEATURES / HABITAT ASSESSMENT

Civil & Environmental Consultants, Inc. conducted a stream and wetland survey and a jurisdictional delineation which covered both the Shugert North and South areas; however, only the South area is sought for approval in this 401/404 application. Therefore, all waters associated with the North area have been removed from the reported totals, leaving only those waters included in the South area. Details for these aquatic features and their respective habitat can be viewed in the delineation report, which has been previously submitted and verified.

Stream Features / Habitat Assessment

Based on the delineation, a total of 11,242 linear feet of stream features were identified. Of this total, 806 linear feet are considered isolated, resulting in 10,436 linear feet of jurisdictional streams. The jurisdictional length is summarized as one perennial stream (5,105 lf), eleven intermittent streams (5,168 lf), and one ephemeral stream (163 lf).

None of the streams appearing on the site are listed in the Ohio EPA's "Alphabetical List of Special High Quality Waters contained in Ohio Administrative Code 3745-1-05 effective 7/1/03".

Wetland / Wetland Habitat Assessment

Based on the delineation, a total of 6.71 acres of wetlands were identified on the site. Of this total, 0.38 acres are considered isolated, resulting in 6.33 acres of jurisdictional wetlands.

PROJECT ALTERNATIVES ANALYSIS - U. S. ARMY CORPS OF ENGINEERS

Over the last several years the Oxford Mining Company, LLC. has made a considerable investment to perform exploratory drilling, acquire land, evaluate the extent of environmental concerns, including the presence of waters of the United States, soil sampling, hydrology studies, engineering, and an evaluation of the potential environmental impacts and mitigative measures.

Selecting off-site alternatives are virtually impossible with mining projects. Unlike most development projects, natural resource extraction, is limited to geologic position on the landscape. As a result of these restrictions, Oxford Mining cannot seek off-site alternatives that allow them to achieve project goals (i.e. coal recovery) without impacting jurisdictional waters.

The DMRM mining plan was developed to minimize and avoid jurisdictional waters to the extent practicable. As such, the actual method of coal removal must be considered. Using current technology coal removal is done under the general methods of surface and underground mining. Surface mining is done by excavating the strata overlying the coal to create a pit from which the coal is removed. The pit walls can then be augered or highwall mined, if deemed feasible. Under the proposed plan, Oxford Mining intends to surface mine followed by augering and/or highwall mining. Underground mining is not proposed as there is insufficient reserve, particularly with respect to topographic conditions, to justify the high capital investment to open such a mine.

Numerous streams and wetlands have been avoided or if impact is unavoidable, the mining plan is designed to minimize impact. For example, the lower portion of Stream 5 and Wetlands J, O, P, U, V, plus the majority of Wetland S, are located outside the permit boundary and will be avoided. Through better mine planning and operation Oxford can control drainage and handle spoil more efficiently thus avoiding unnecessary impacts to delineated waters.

Oxford Mining is no different than any other business operating in a capitalistic economy. Failure to make a profit on an on-going basis will ultimately result in failure of the business. Since revenues are fixed by the market, Oxford Mining must be mindful of costs to ensure profitability. The efficient moving of spoil and constructing of drainage controls (e.g. sediment ponds and diversions) will significantly reduce operational costs. To briefly summarize - the shorter the haul distance and the fewer the sediment ponds, the lower the operational costs.

Therefore, from strictly an economic viewpoint, Oxford should theoretically build one large sediment pond across Stream 5 at approximate Sta 6+00. The pond would capture the vast majority of the permit's watershed, but in so doing, would also inundate Wetland J. Oxford recognizes that the mitigation liability under this extreme scenario far outweighs the benefits. Therefore, a balance must be reached between what features can be avoided and the additional operational costs that would be incurred by avoiding such features. Oxford feels that the proposed mining plan as presented in the preferred alternative achieves that balance.

CUMULATIVE IMPACT ASSESSMENT

Introduction

Oxford Mining proposes to employ conventional surface mining techniques, including strip and highwall mining, to recover the #9 Meigs Creek coal seam, whereas the #11 Waynesburg coal seam will only be recovered by strip mining. The mining of either coal requires removal of covering soil and rock (overburden), extraction of the coal, backfilling, grading, resoiling and revegetating disturbed areas. In developing the mining plan consideration was given to avoiding or minimizing impacts to cultural and natural resources. As such, the area of impact will be limited to only those areas for which there is substantial economic justification. Impacts are summarized in the OEPA Stream Impact/Avoidance Summary Table and the OEPA Wetland Impact/Avoidance Summary Table submitted collectively as Table 2.

The site is drained by unnamed tributaries of Stillwater Creek which is within the Tuscarawas River watershed. Affected stream lengths were determined to be unavoidable for the economically viable extraction of the coal resource. Fill is primarily required for overburden storage, the construction of drainage controls, coal extraction, and reclamation activities. The life of the DMRM mining permit is five years and may be renewed in five year increments. For this particular site, Oxford Mining anticipates all mining and reclamation activities will be completed within the initial five year period.

Impacts to Streams and Wetlands

To the extent practicable, the permit area and mining plan have been designed to avoid and/or minimize impacts to jurisdictional waters. The headwater habitat evaluation index (HHEI) and headwater macroinvertebrate field evaluation index (HMFEI) values provided were determined for the Delineation of Waters of the United States and used to assess stream functions. Essentially, a primary headwater habitat stream is a surface water of the state, as defined in Ohio Administrative Code 3745-1-02, as having a defined bed and bank, with either continuous or periodical flowing water, with watershed area less than or equal to one square mile (259 ha), and maximum depth of water pools equal to or less than 40 cm.

If watershed size is greater than one square mile or natural deep pools are greater than 40 cm regardless of watershed size, a Qualitative Habitat Evaluation Index (QHEI) evaluation should be completed in accordance with standard Ohio EPA procedures (Rankin, 1989). The QHEI evaluation can be used to determine if the stream has potential to support a warmwater habitat (WWH) community of fish, and has been used to assign aquatic life use designations for streams with drainage areas greater than one square mile. No streams within the project site have a watershed that meets QHEI criteria and subsequently cannot attain warmwater habitat status.

Wetlands are largely avoided. Only those which cannot practicably be avoided will be impacted. Those that are impacted will be mitigated on-site.

Sediment Ponds

Sediment ponds will benefit the project area both during and after mining. Through detention, the ponds will reduce sedimentation and discharge within appropriate effluent limits; thereby not adversely impacting the Stillwater Creek watershed. All sediment ponds are proposed as temporary.

Evaluation of Cumulative Effects Previous and Current Land Use/Cover

This Cumulative Impact Assessment (CIA) is prepared in accordance with the Clean Water Act Section 404 (b) (1) guidelines to evaluate the potential cumulative impacts associated with coal mining within the Stillwater Creek watershed.

The headwaters of Stillwater Creek lies in Belmont County, but its watershed also drains parts of Harrison and Tuscarawas Counties. The DMRM surface coal mining and reclamation permit application that is the subject of this application is located within the Tuscarawas River Drainage Basin, and occurs within HUC #05040001140-010 (Stillwater Creek).

According to the Gazetteer of Ohio Streams (Second Edition, August 2001), the Stillwater Creek watershed encompasses 485 square miles, and the source and mouth elevations are 1180 and 838 (msl), respectively. Having a length of 63.5 miles, Stillwater Creek has an average gradient of 5.4 ft/mile. At the permit site the elevation is 960 (msl).

The Stillwater Creek watershed has been impacted by previous surface and underground coal mining. Although the majority of the previously affected ground has been properly reclaimed, there are surface and ground waters that have been adversely impacted through alteration in drainage patterns and degradation in quality. Morever, areas that were mined prior to the Surface Mining Control and Reclamation Act (SMCRA), were not subject to mandatory reclamation.

The pre-mining landuses are primarily 59% undeveloped land, 37% pastureland, and 4% rural residential lands. The post mining landuse will result in changing the undeveloped lands to pastureland. The 9.2 acres of rural residential lands will remain residential. There are no existing land use policies or plans by governmental agencies for the land area.

Evaluation of Past, Present and Reasonably Foreseeable Future Impacts

Past

ODNR Division of Oil and Gas records indicate there is only one active oil/gas well inside or within 100 feet of the mining area. Within the Stillwater Creek watershed there are over a hundred active or abandoned oil and gas wells. Many of the wells were drilled when environmental regulations were either non-existent or not enforced. Other more recent drilled wells were developed without environmental consideration. Typically, areas would be stripped of vegetation and roads bulldozed without regard for sediment and/or erosion controls. As a result, during road building, siting or drilling no measures were taken to avoid or minimize impacts to streams, wetlands or other environmentally sensitive areas. Other potential hazards include pipes line breaks, grease or solvent contamination, brush clearing and grubbing, use of herbicides and a brine spill.

Both pre and post SMCRA operations involving both surface and underground mining have occurred in the Stillwater Creek watershed. The post SMCRA areas have been successfully reclaimed; while pre SMCRA mining activities were under little or no obligation to operate in an environmentally responsible manner. Many pre SMCRA mining areas were left abandoned and have been and will continue to be health and safety hazards, as well as contributors to surface and ground water degradation.

Present

There is only one producing oil/gas well currently within the proposed mining area. With the significance of the current Marcellus and Utica shale play, deep well development within the general mine site is likely. Certainly, deep shale well development is occurring within the larger Stillwater Creek watershed.

Past activities, namely the affects of pre-law mining and oil/gas production, will continue.

Future

The extent of future impacts is not known; nevertheless, with some certainty it is believed oil and gas production will continue. Particularly, development of the deeper Marcellus and Utica shale reserves is very likely to continue. With reclamation and mitigation activities, the post mining use of the land and mitigation activities will support aquatic and wildlife environments. The areas that are returned to pastureland will support a much higher level of productivity than they currently support.

It is assumed that the impacts that are within the Stillwater Creek watershed but are outside the project area, will continue.

Summary

By using the best available technology and management practices and implementing mitigation techniques, only minimal temporary individual and cumulative adverse impacts on the environment are expected from this project site. Mining and reclamation practices will be implemented to effectively and efficiently extract mineral resources, while minimizing impacts to the watershed. Sediment ponds, diversion ditches and other drainage controls that will be constructed during mining will assist in preventing deleterious effects on the Stillwater Creek watershed. Oxford's mining and reclamation operation will maximize recovery of a valuable natural resource and contribute to the local economy. With reclamation and mitigation operations, Oxford intends on restoring the function and value of unavoidably impacted waters.

PROJECT ALTERNATIVES ANALYSIS - OHIO EPA

Item 10 of the 401 Water Quality Certification form addresses the Antidegradation Rule and the analysis of the preferred, minimal and, non-degradation design alternatives. The following addendum addresses the Antidegradation Rule.

Addendum to Item 10 Antidegradation Rule

Project Purpose

The purpose of the proposed activity is to recover the #9 Meigs Creek and #11 Waynesburg coal seams by surface mining methods. The mining process will impact on-site stream and wetland habitats with earth disturbing activities that include clearing of trees and brush, topsoil removal and stockpiling, overburden removal, mineral extraction, and reclamation of disturbed areas. Reclamation activities involve backfilling, grading, re-distribution of resoiling material, revegetation, stream reconstruction and construction of mitigated wetlands.

Project Benefits

The proposed mining operation will not only recover coal that will be used for commercial and residential electricity. Economically the mining operation will provide jobs and tax revenues for the local economy. All mitigation activities will occur on-site.

Description of Alternatives

Unlike commercial site developments, coal extraction can only occur where the coal exists. Alternative sites were not considered in the following analysis because the selected site provides economical recovery of coal and because there is no reason to believe that an alternate site would result in decreased surface water impacts with equal opportunity of coal recovery.

The Ohio Revised Code, Chapter 1513 Coal Surface Mining, §1513.16 Performance Standards, states the following:

.....conduct coal mining operations so as to maximize the utilization and conservation of the solid fuel source being recovered so that re-affecting the land in the future through coal mining can be minimized;

The statute requires that the applicant maximize mined resources on a site so there is no need to

return at a later date and re-mine a reclaimed site. By removing as much coal as is technologically and feasiblely reasonable, this standard is met. As stated below, the Non-Degradation Alternative will result in such a low volume of coal recovery that it would not generate sufficient revenue to make the project viable. The statutory requirement cannot be met under the Minimal Alternative as it is simply does not allow for maximum coal recovery. Compared to the Preferred Alternative, the Minimal Alternative covers about 64.2 less acres and recovers 33% less coal. The Preferred Alternative is the only alternative that meets the statutory requirement.

NON-DEGRADATION ALTERNATIVE

As required by the OAC 3745-1-05(B)(2), OAC 3745-1-05(C)(6), OAC 3745-1-5(C)(1), and OAC3745-1-54, the applicant is providing an analysis of the impacts and benefits of a non-degradation alternative. The non-degradation alternative requires total avoidance of Jurisdictional Streams and Jurisdictional Wetlands; as a result, resource recovery is limited and the economic feasibility is marginal.

MINIMAL DEGRADATION ALTERNATIVE

The Minimal Degradation Alternative is the same as the Preferred Alternative except that the waters on the east side of Wilson Road are excluded from the permit. This alternative encompasses 201.4 acres and thereby removes about 64.2 acres of from the permit area. The avoided features are:

Stream #	Length (lf)
6 (all of)	1050
7 (all of)	57
9 (all of)	812

Wetland #	Area (ac)
K (all of)	0.72

While the selection of this alternative would result in reduced impact to jurisdictional waters, negative economic impacts to the mining operation would result. The minimal degradation reduces the areas of strip and auger/highwall mining, but in so doing would result in complicated and efficient operations of controlling drainage and handling spoil. Operating under such a scenario not only limits coal recovery, but also would lead to violations of the mining plan. Consequently, the minimal degradation alternative reduces the economic viability of the operation.

PREFERRED ALTERNATIVE

The Preferred Degradation Alternative is based on the mining plan that is under consideration by DMRM and is the alternative for which a 401 Water Quality Certification is sought. This alternative encompasses 265.6 acres of strip and auger/highwall mining. This alternative is the one Oxford favors from an economic and operational viewpoint. Therefore, the preferred degradation alternative not only has a greater area of mining, which enhances the economic viability of the operation, but it also responsibly recognizes the importance to minimize and avoid impact to aquatic features.

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. (OAC 3745-1-05(B)(2)(b))

PREFERRED DEGRADATION ALTERNATIVE

Material that would be discharged to surface waters is primarily shale overburden. The volume of fill to be placed in jurisdictional waters is approximately 1278 cubic yards. An acid-base accounting performed for the DMRM permit shows a neutralizing potential that would tend to not to produce post mining acid mine drainage (AMD). Construction activities which necessitate the placement of fill in surface waters are primarily the construction of temporary sediment ponds and mining and reclamation operations.

Sediment pond design is based on DMRM criteria, the two most important of which address sediment storage and spillway design. Sediment storage volume below the principal spillway must be no less than 0.1 acre-foot per disturbed watershed acre. The principal spillway must be able to pass the routed runoff from the 10 year 24 hour storm, and the combination of the principal and emergency spillways must be able to pass the routed runoff from the 25 year 24 hour storm.

Mining and reclamation will create a land form that will be a vegetated landscape graded to blend reclamation contours into surrounding contours. Stream channels will be reconstructed and their associated riparian areas/buffer zones will be planted with native grasses and trees.

MINIMAL DEGRADATION ALTERNATIVE

Construction work and the nature of the fill material for the Minimal Alternative is the same as the Preferred Alternate. The volume of fill is approximately 537 cubic yards.

NON-DEGRADATION ALTERNATIVE

The Non-Degradation Alternative excludes the No. 9 coal because it is located below drainage; therefore, the project entails the development of a smaller portion of the No. 11 coal. To effect the Non-Degradation Alternative, operations will be limited to the north central portion of the project. Strip mining the No. 11 coal would be restricted to an area away from surface waters; therefore, no streams or wetlands will be impacted. Under this alternative the No. 11 coal seam is expected to yield 44,582 strip tons.

The Non-Degradation Alternative requires total avoidance of surface waters on the project site. The construction of a haul road, drainage controls, spoil storage areas, and topsoil stockpile areas would be extremely difficult, unrealistic, and cost prohibitive. The potential gains would not exceed costs, making mining impractical. The numerous technical and economic considerations prevent this alternatives acceptance.

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. (OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54)

PREFERRED and MINIMAL DEGRADATION ALTERNATIVES

The Jurisdictional Waters Delineation Report has been previously submitted and field verified. The Corps of Engineers jurisdictional determination letter and map of aquatic features are both submitted in Appendix A.

Temporary adverse impacts to surface water will occur with the removal of overburden allowing greater exposure of coal and rock to oxygen and water, resulting in higher acidic concentrations and lower pH values. The lowering of pH typically results in increased concentrations of iron,

manganese, sulfates, and hardness. Also, sediment yields (including total suspended and dissolved solids) will likely increase with mining due to devegetation of the affected area. Sediment ponds will collect runoff from disturbed areas and provide treatment such that water discharged from the permit will meet all applicable effluent limits.

The delineation of waters did not identify the presence of important commercial or sport fish species, threatened or endangered species, or the presence of any high value aquatic habitat. Moreover, a mist net study failed to capture an endangered Indiana bat, and the site is not in close proximity to existing or proposed nature preserves or scenic rivers.

The following table compares the impacts to aquatic features under both the Minimal and Preferred Alternatives.

Impacted Feature	Minimal	Preferred	% Increase Min vs Pref
wetland (ac.)	0.05	0.77	93.5
stream (lf)	1,240	4,670	73.4

NON-DEGRADATION ALTERNATIVE

The Non-Degradation Alternative will have no affect on water quality as there would be no impacts to streams or wetlands.

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.) (OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54)

PREFERRED and MINIMAL DEGRADATION ALTERNATIVES

The project is technically feasible, cost effective and ready to proceed once all necessary permits have been obtained. Oxford Mining has the financial resources, equipment, personnel and experience to mine and reclaim the proposed area in accordance with applicable regulations.

The ability to maximize coal recovery is not only one of the criteria used in the review of the DMRM permit, but is also one of the main factors in operating a cost-effective mine. Oxford has determined that mining the proposed area will be more economically viable under the Preferred Alternative than under the Minimal Alternative. To mine only a portion of the area or to mine in a different method than that which is proposed under the Preferred Alternative would compromise resource recovery and introduce inefficiencies with drainage controls, spoil handling, and reclamation grading that would result in a mining operation that is not as cost effective as the Preferred Alternative. Such is the case, as the Minimal Alternative is not as cost effective as the Preferred; therefore the Preferred Alternative is the one sought for approval.

Operational and maintenance difficulties are not uncommon in the coal mining industry and will certainly not be unique to the proposed project. Oxford, however, has the resources, in terms of financial strength, personnel, equipment and experience, to address these issues before they develop into chronic problems. State law requires that mining companies post performance security in the amount of $2500 per acre for each acre affected by mining plus at least $0.14 per ton for each ton produced. The last fifteen percent of the performance security amount is not released until at least five years following the last date of seeding, provided all reclamation and water qualities meet applicable standards. It is in Oxford's best interest to minimize impact of the land and to properly perform reclamation and maintenance responsibilities.

Typical maintenance issues which could potentially lead to increased surface water degradation, if not properly addressed include, failure to achieve stable backfilled slopes which could lead to land slips, failure to maintain properly functioning drainage controls, failure to maintain adequate haul roads in terms of width, gradient and surface materials, failure to meet reclamation timetables, and failure to meet re-vegetation standards. Oxford actively monitors its mining and reclamation operations to maintain compliance with applicable law and timely responds to notice of any noncompliance issues.

NON-DEGRADATION ALTERNATIVE

Under this alternative, the area available in which to operate a surface mine is limited to the north and central portions of the project area. Site topography and constraints of avoiding Jurisdictional Waters, limits the operational area and compromises earthmoving operations and construction, operation and maintenance of drainage controls, as well as reclamation activities. As such the cost of this production is excessive relative to the costs to acquire and permit the reserves because of economies of scale do not allow expenses to be spread over a large production base. Consequently, operating under the Non-Degradation Alternative is not technically prudent or economically feasible.

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. (OAC 3745-1-05(C)(6)(I))

PREFERRED, MINIMAL AND NON-DEGRADATION ALTERNATIVES

Not applicable. The project does not involve the collection and treatment of sewage.

10c) 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. (OAC 3745-1-05(B)(2)(g))

PREFERRED, MINIMAL DEGRADATION AND NON-DEGRADATION ALTERNATIVES

There are no known 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. (OAC 3745-01-05(C)(6)(g))

PREFERRED ALTERNATIVE				MINIMAL ALTERNATIVE				NON-DEGRADATION ALTERNATIVE			
Item	Est'd Const. Cost ($)	Annual O&M ($)	Cost to Remove ($)	Item	Est'd Const. Cost ($)	Annual O&M ($)	Cost to Remove ($)	Item	Est'd Const. Cost ($)	Annual O&M ($)	Cost to Remove ($)
Sediment Ponds (4)	60,000	8,000	24,000	Sediment Ponds (3)	45,000	6,000	18,000	Sediment Ponds (2)	30,000	6,000	12,000
Diversions	100,000	10,000	50,000	Diversions	50,000	5,000	25,000	Diversions	30,000	5,000	20,000
Temp. Erosion Control	100,000	10,000	50,000	Temp. Erosion Control	75,000	7,500	35,000	Temp. Erosion Control	30,000	3,000	20,000
Stream Recon-struction	140,000	14,000	N/A	Stream Recon-struction	37,000	3,800	N/A	Stream Recon-struction	-0-	-0-	N/A
Wetland Mitigation	36,000	2,000	N/A	Wetland Mitigation	2,500	2,000	N/A	Wetland Mitigation	-0-	-0-	N/A
TOTAL	436,000	44,000	124,000	TOTAL	209,500	24,300	78,000	TOTAL	90,000	14,000	52,000

10g) Describe any impacts on human health and the overall quality and value of the water resource. (OAC 3745-1-05(C)(6)©) and OAC 3745-1-54)

PREFERRED AND MINIMAL DEGRADATION ALTERNATIVES

The affected water resources do not impact human health. The water bodies are not sources of recreation or used for any commercial or industrial purpose.

The quality and value of the aquatic resources are described in the delineation of waters of the United States.

NON-DEGRADATION ALTERNATIVE

No impacts are expected to occur to human health or to the overall quality and value of the water resource due to implementation of the Non-Degradation Alternative.

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. (OAC 3745-1-5(B)(2)(e), and OAC 3745-1-05(C)(6)(I))

Oxford Mining Company, LLC is a publicly owned company striving to wisely harvest and use Ohio's coal resources. The coal that will be produced will be burned in order to create and supply commercial and residential electricity for homes and businesses throughout the Ohio valley. In order to meet market demand, Oxford Mining must constantly permit areas with sufficient reserves at a reasonable depth for surface mining. Typically, the development of a mine site involves investigating an area for several years to determine the feasibility of mining. Once an area is identified as a future mining site, preparation of the various permit applications can take upwards to two years. The time for the various regulatory agencies to review applications is an important consideration as this may take an additional two years. As the coal from a mining operation is exhausted, it is crucial that other areas be ready for mining in order to ensure the

steady supply to meet market demand.

The National Mining Association considers Ohio's mining industry to be vital to the State's economy. The coal industry's current estimated total economic benefit to the state of Ohio exceeds $3 billion. This industry provides jobs to more than 2,600 Ohioans, most of which are high paying jobs that contribute directly and indirectly to the local tax base in a depressed portion of Appalachia. Ohio, the third largest coal consuming state, produces 88% of its electricity at a fraction of the cost of other fuels.

As taken from the most recent report, namely the *2008 Report on Ohio Mineral Industries: An Annual Summary of the State's Economic Geology*.

> Coal was sold or produced by 31 companies from 86 mines in 16 Ohio counties during 2008. Sales of coal totaled 26,035,593 tons (+16.8 percent from 2007). Belmont, Monroe, Harrison, Jefferson, and Perry Counties accounted for 80.9 percent of those sales. Reported known production totaled 21,062,794 tons. Ohio ranks fourteenth nationally in the production of coal out of 26 producing states. The top five coal-consuming states, in descending order of coal consumption, are Texas, Indiana, Ohio, Pennsylvania, and Illinois. These five states used 33.6 percent of the total coal consumed by all 50 states in 2008. The total value of coal sold in 2008 was $1,025,832,946. Average price per ton was $39.44. Surface-mined coal averaged $37.35 per ton whereas underground-mined coal averaged $40.53 per ton. The top five mined seams in 2008, in descending order, are The Pittsburgh (No.8), Middle Kittanning (No.6), Upper Freeport (No.7), Lower Freeport (No.6A), and Meigs Creek (No.9). These five seams produced 89.9 percent of the total 2008 coal production. An annual average of 2,657 employees worked an average of 206 days to produce coal. Total wages of $170,222,562 were paid to all employees. The average annual wage, based on those employees for whom wages were reported, was $60,066. Surface mine production employees were payed an average annual wage of $50,212 whereas underground-

mine production employees average annual wage was $62,613. Coal is primarily used for the generation of electricity. Other uses for byproducts of coal include the production of rubber, steel, cosmetics, chemicals and tar.

Coal combustion by-products also have a number of beneficial uses, such as an aggregate additive in cement, pipe bedding and backfill, road building material, structural fill, soil additive, landfill capping material, and neutralization of coal refuse or spoil.

Mining is a basic industry. Not only does it create production and non-production jobs in the industry itself, but it also creates jobs in ancillary businesses. Most directly, equipment suppliers and manufacturers, fuel companies, the electric service provider, and others who provide mining supplies and services will benefit. Additional employment will be created from downstream operations, including transportation, handling, and processing of the coal. The majority of these jobs will pay more than the average pay for the area. The local housing, food, clothing, and other retail businesses will benefit. Economic studies have shown that for every direct mining job, 3 to 7 ancillary jobs are created. It is obvious this operation will generate a significant amount of tax revenue for state and local governments. The Belmont County profile as compiled by the Ohio Department of Development is submitted in Appendix C.

Affordable energy is essential to the sustained growth of the United States and to preservation of the comfortable lifestyle its citizens enjoy. Coal is currently the fuel used to generate more than half the electricity in the US. Consumers have recently experienced higher energy costs due to increasing cost of natural gas and oil. These fuels are 2-3 times more expensive than coal on a cents-per-million-BTU basis. This price disparity will increase due to the limited natural gas and oil reserves that are available to the US.

Studies have estimated the US has a 300-year reserve of coal. All of this coal can be mined

within the borders of the US, decreasing dependence on foreign sources for fuel.

The economic advantages to be realized by this mining project are significant. High paying mining jobs will be provided for an extended period of time. As shown in the Belmont County profile, average weekly wages in the Natural Resource and Mining sector are the highest amongst all other categories. The direct jobs will create additional jobs in ancillary businesses within the local area. All tax revenues, federal, state and local, will be enhanced.

The social benefits are also significant. Increased tax revenues to local governments relate to better roads, schools, etc. Maintaining and increasing the use of coal, as the fuel of choice, will provide the lowest possible energy cost to consumers and decrease our dependence on foreign sources of fuel. For the reasons just stated, coal is essential as a component to any national energy policy and this operation should be given a high priority for permit issuance. Furthermore, an individual's valuation of self worth is increased when one knows he is a positive contributor to the betterment of the community.

The proposed temporary lowering of water quality is necessary to accommodate important economic development and to meet a demonstrated public need as defined in rule 3745-1-50 of the Administrative Code:

> 3745-1-50(11) "Public need" means an activity or project that provides important tangible and intangible gains to society that satisfies the expressed or observed needs of the public where accrued benefits significantly outweigh reasonably foreseeable detriments.

A tabular comparison of the socio-economic impacts of the Preferred, Minimal and Non-Degradation Alternatives is provided below.

Socio-Economic Comparison			
Metric	Preferred	Minimal	Non-Degradation
Coal tonnage	1,231,978	835,142	44,582
Sales value ($)	$46,014,350	$31,192,550	$1,665,100
Difference from Preferred	N/A	$14,821,800	$44,349,250
State sales tax revenue @7.0%	$3,221,000	$2,183,479	$116,567
No. of jobs supported	40	40	40
Difference from Preferred	N/A	0	0
State income tax (est'd annual revenue)	$48,300	$32,750	$1,750
Federal income tax (est'd annual revenue)	$322,100	$218,350	$11,650
Unemployment Rates	Nov 2011	Belmont County = 7.2%	State of Ohio = 7.6% USA = 8.7%
Population below poverty level	2009	Belmont County = 15.4% / Ohio = 13.6%	
Environmental Benefits	Creation of additional wetlands. On-site mitigation.	Creation of additional wetlands. On-site mitigation.	Existing conditions would be maintained.
Social Benefits	Continuance of 40 direct jobs and about 150 indirect jobs. Significant tax revenue.	Continuance of 40 direct jobs and about 150 indirect jobs of a shorter duration. Lesser tax revenue.	None. The project would not proceed under this alternative.
Recreational Benefits	Return of stream value and function within local watershed, e.g. hunting opportunities, wildlife viewing, waterfowl breeding habitat, and passerine bird habitat.	Return of stream value and function within local watershed, e.g. hunting opportunities, wildlife viewing, waterfowl breeding habitat, and passerine bird habitat	None. The project would not proceed under this alternative. No benefits would occur.

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. (OAC 3745-1-05(B)(2)(e,f), and OAC 3745-1- 05(C)(6)(e))

PREFERRED, MINIMAL DEGRADATION AND NON-DEGRADATION ALTERNATIVES

The economic impact statistics provided above would be lost if the proposed mining operation does not take place. There is no current commercial or recreational use of the water resources associated with this site, which means the project does not jeopardize any current social and economic benefits potentially realized by those activities.

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. (OAC 3745-1-05 (B)(2)(e,f), OAC 3745-1-05 (C)(6)(b) and OAC 3745-1-54)

PREFERRED DEGRADATION ALTERNATIVE

The retention time created by sediment ponds will slightly reduce downstream flooding to Stillwater Creek, given the large size of its watershed. There are no downstream users or critical structures that will be impacted by the proposed mining operation. Furthermore, alteration of drainage patterns will not occur.

The Indiana bat is the only threatened or endangered specie which may be present in and around the project area. A mist net study was performed and no Indiana bats were captured.

The reclamation plan calls for the area that is proposed to be affected to be reclaimed to support "pastureland". The planting plan includes grasses and legumes that can be used in hay production or for livestock grazing. Furthermore, the riparian planting plan specifies tree planting along the restored stream corridors and mitigated wetlands.

Final reclamation will create stable contours that blend into surrounding contours and all mitigation activities will be done on-site. These measures will help support the overall enhancement of the hydrologic balance.

Table 3 show the aquatic feature Gain-Loss Summaries of the Preferred Alternate for Impoundments. Wetlands and Streams.

MINIMAL DEGRADATION ALTERNATIVE

The response is the same as the Preferred Alternative except the impacts are obviously less.

NON-DEGRADATION ALTERNATIVE

Not applicable. This alternative does not propose to affect water resources.

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)**

Mitigation techniques are the same regardless of the alternative. The extent of mitigation, however, does vary with each alternative. The Preferred Alternative is the one of choice, and the extent of mitigation and the responses below reflect this alternative.

Wetland Mitigation

Mitigation will occur on-site. The soils in and around existing wetlands are generally well vegetated and their qualities indicate an excess buffering capacity. Prior to revegetating disturbed area, soil samples will be taken to determine if soil amendments are needed.

Unavoidable impact to wetlands has been minimized to the extent that mitigation can occur at a single location. Per the table below, sediment Pond 002 is design with a relatively large surface

areas and shallow depth. The intent is to have the pond ultimately develop into a wetland mitigation area after mining is completed. During mining the ponds will collect sediment and discharge in accordance with applicable effluent limits. Once vegetation is established in its watershed, the pond is no longer needed. Rather than removing the pond and disturbing the ground, the "pond" will remain as a wetland mitigation area without any modification to the structure with the exception of perhaps having to the lower the spillway elevation.

During Mining	Post Mining	
Pond #	Wetland Mitigation Area	Area (ac)
002	1	1.2
	Total	1.2

Best Management Practices (BMP's) will be employed and will generally follow the standards and regulatory requirements of the DMRM mining permit. In particular BMP's include,

- salvage and stockpile hydric soils prior to impact;
- all water resources and their buffers, which are to be avoided, shall be clearly indicated on site drawings and demarcated in the field prior to site disturbance. Demarcation materials shall remain in place and be maintained throughout the construction process;
- materials used for fill or bank protection shall consist of suitable material free of toxic contaminants in other than trace quantities. Broken asphalt is specifically excluded from use as fill or bank protection;
- avoid and minimize impact to jurisdictional waters; avoid the extension of earth-disturbing activities into areas not needed for mining operations;
- sediment ponds will remain in-place until vegetation has been deemed to be successfully re-established in its watershed; thereby ensuring off-site sedimentation will be controlled and water quality effluent standards will be met;
- grading, resoiling and planting will be completed within one year following the completion of mining (defined herein to mean the completion of all coal extraction), and,

- provide diligent maintenance and monitoring during active mining and after reclamation.

Oxford Mining or their authorized representative will be responsible for maintenance and monitoring while these tasks are required.

Stream, Lake and Pond Mitigation

Mitigation of stream impacts will occur on-site. There are no lakes on-site. None of the sediment ponds proposed for the mining operation will remain permanently. The location of stream reconstructions are shown on the Aquatic Resource Reconstruction and Mitigation Map.

Best Management Practices (BMP's) will be employed as described for Wetland Mitigation.

Stream reconstruction, restoration, and mitigation is an inexact science. Variables which affect design and the ultimate re-establishment of function are too numerous to predict with any certainty. Therefore, the structural designs and planting plan are intended as only guidelines. It is expected that:

- Once the stream channel is restored, flow variations will gradually and naturally modify the stream channel (within the designed streambed) to provide changing depth, width, and channel bank slopes. Riffles will also naturally develop in transitional zones.

- Once the channel has stabilized, additional materials such as eddy rocks and woody debris may be added where appropriate to provide additional habitat and cover.

- Re-planting of vegetation (either of the same species or new species) may be necessary to achieve acceptable survival rates.

STREAM and WETLAND MITIGATION PLAN

Scenario

The impacts to streams and wetlands are those proposed under the Preferred Alternative.

Goals and Objectives

Site Selection: Factors related to site selection considered. 1) that mitigation be done on-site. 2) that mitigation be compatible with surrounding landuses. and 3) the site selected is in an area that will not be disturbed in the future.

Stream Mitigation: Restore or construct stream length that results in no net loss of length or function.

Wetland Mitigation: Create at least 1.5 times the area of impacted wetlands. In lieu of ephemeral stream mitigation. the area of impacted ephemeral streams will be added to the area of jurisdictional wetland mitigation. The locations of wetland mitigation are shown on the Aquatic Resource Reconstruction and Mitigation Map.

Stream Impact Summary

Refer to Table 2: OEPA Stream Impact/Avoidance Summary and Table 3: Gain-Loss Summaries.

Stream Mitigation Summary

Intermittent and perennial streams will be restored to their pre-mining locations. Ephemeral streams. on the other hand. will not be restored. instead the area of impacted ephemeral streams will be mitigated as wetland mitigation. Refer to Table 3: Gain-Loss Summaries.

Wetland Impact Summary

Refer to Table 2: OEPA Wetland Impact/Avoidance Summary.

Wetland Mitigation Summary

Refer to Table 3: Gain-Loss Summaries. Mitigation of impacted wetlands will occur on-site at the locations as shown on the Aquatic Resource Reconstruction and Mitigation Map, which is submitted in Appendix D.

Mitigation Techniques and Specifications

Stream Construction Techniques – Pools and riffles are proposed to be constructed at the outside meander bends and runs, respectively. Natural movement of material through the channel will aid in further shaping those pools over time. Riffles will be constructed using practiced construction techniques for successful, functioning riffles that mimic natural riffle slope and produce accelerated flows that create the downstream pools.

Wetland Basins - Sediment ponds, when no longer needed, will be retained as wetland mitigation areas. Throughout the year the depth of water in the wetland mitigation area will vary. The modifications needed to create a wetland within the basin of a sediment pond will result in a maximum water depth of six (6) inches. Relatively impermeable material (i.e. shale or clay) will be obtained on-site and placed in the bottom of the basin. This material will be placed in 9" uncompacted lifts and then compacted by repetitious passes of heavy earthmoving equipment to form an 18" thick layer. A 12" thick layer of uncompacted organic material or previously stockpiled hydric soils will be placed on the clay layer. The basin will be vegetated according to the seed mixture in Appendix E. A 50' buffer surrounding the basin will be planted in trees according to the riparian/wetland tree specie table in Appendix E.

Natural recruitment of native plants will be allowed in the on-site wetland mitigation area. After permanent vegetation is established on the reclaimed areas, sediment loads in runoff should

approximate pre-mining levels, which would result in satisfactory water quality. Post-mining surface water quantity should approximate quantities that existed prior to mining in the area. Therefore, the leaving of permanent headwater source ponds and the post-mining topography/watershed should provide sufficient baseflow for the reconstructed streams.

Erosion control - Sediment ponds, diversion ditches, silt fences, straw bale dikes, and sumps will be used, as necessary, to control drainage. All runoff from the disturbed area will be directed to either a sediment pond or sump, unless an exemption has been granted. Sumps will not be used as primary sediment control structures unless an exemption has been granted. Affecting as small an area as possible and temporarily seeding and vegetating the affected areas quickly will also be implemented.

Planting - Planting of native trees along the relocated/restored riparian corridors is planned. Trees and shrubs will be slightly staggered to increase shade coverage. The plan calls for rows on 4 foot centers with 8 foot spacing between seedlings. This usually equates to 600 trees per acre. Planting will be done in a swath 50' wide extending back from the top of the stream bank along both sides of the stream.

Species that have been selected for planting are native to the region and are cold hardy. Value to wildlife was also considered when preparing the plant species list. Disturbed areas, such as side slopes, will be seeded with a rapidly germinating annual cover mixture to provide erosion control and prevent the establishment of undesirable species. Planting will take place in the first growing season following completion of mining operations on each section of the site to allow for the most optimal conditions for establishment. All plant materials will be inspected prior to planting, and those showing signs of stress will be replaced. Plantings will be periodically inspected to ensure success. Oxford will successfully mitigate streams and wetlands and provide for long-term maintenance, including the planting of emergent and shrub/scrub species.

Areas planted with riparian vegetation will not be cut or mowed in order to encourage the development of volunteer vegetation, so long as this vegetation does not compromise the success of the overall revegetation plan. Species of tree, shrubs, grasses and legumes, which appear naturally will not be removed but remain to enhance the wildlife environment along the streams.

Upland Areas

Temporary and Permanent Vegetation

Temporary Vegetation: 2 lbs. Rye Grass per acre

Permanent Planting: 20 lbs. Orchard Grass; 3 lbs. Timothy; 2 lbs. Perennial Ryegrass; 6 lbs. Red Clover and 1 lb. Ladino Clover per acre.

Temporary and permanent planting will be done simultaneously and will commence as soon as weather allows upon the completion of topsoil distribution.

An average of 2 tons of hay/straw per acre will be distributed by commercial mulching machines.

Preservation of Restored/Reclaimed Streams/Wetlands

Mitigation will occur on-site. A protective covenant will be placed on mitigation areas to provide long term protection. To Oxford's knowledge, the potential mitigation areas do not contain any pre-existing easements/ownership rights that may preclude them as an acceptable mitigation site.

Stream Monitoring Methodology

The objective of stream monitoring is to ascertain whether restored or enhanced channels are meeting the criteria to replace lost functions. Several permanent sampling points on-site will be selected for specific monitoring activities. Sample point locations will be permanently marked in the field. The entire length of the stream will also be evaluated to look for any areas of concern.

Photographs of the station locations will be taken during monitoring sampling. Monitoring will take place once in early spring during high flow conditions and again in late summer during low flow conditions. Parameters to be monitored within the relocated channel include the following:

- HHEI data will be taken at each monitoring point in accordance with OEPA's Field Evaluation Manual for Primary Headwater Habitat Streams, Review Copy 3, October 2009.
- HMFEI data will be collected on reconstructed streams.
- Cross-sectional measurements will be taken.
- Along the length of the restoration reaches, planted riparian corridor plantings will be checked for survivability.

Data collected during sampling periods will be compiled into an annual report to be provided to the USACE and OEPA by December 31 of each of the monitoring years. These reports will provide information on community assemblages and habitat development and will include data results for monitoring and cross-sectional measurements. They will also include a photographic documentation of the restored reaches from fixed positions, as well as discussion on whether the stream is meeting the design goals.

Wetland Monitoring Methodology

Initiation of Monitoring: Wetland monitoring will begin immediately upon the completion of the mining operation. Notice of the completion of the mining operation will be given to the Ohio EPA and to the U.S. Army Corps of Engineers.

Oxford Mining personnel (or experienced consultant) will monitor the restored wetland during years 3 and 5 following completion of construction. In addition, regulatory inspection personnel will conduct monitoring of the completed restored wetland on a regular basis until final bond release is obtained. Final bond release is usually obtained two (2) years following any major

repair or seeding completed within a specific area.

Wetland mitigation will be monitored during years 3 and 5 after final reclamation. This monitoring will be included within a report prepared by Oxford Mining and submitted to the U.S. Army Corps of Engineers and the Ohio EPA within the 30 days proceeding the first annual date of the 401-404 permit issuance.

BEST MANAGEMENT PRACTICES FOR CONSTRUCTION

All sediment controls that are utilized will be kept in place during mining activities and until the site has been stabilized and reclaimed. All areas disturbed during mining will be seeded to encourage the establishment of a vegetative cover and decrease erosion potential.

MANAGEMENT AND MAINTENANCE

Site maintenance and management during mining and post mining will be conducted by Oxford Mining and/or subcontractors. Specifications for any necessary repairs will be developed as needed for the site.

CONCLUSIONS

A permit application requesting authorization for impacts to waters of the United States on a mineral extraction project has been prepared for Oxford Mining Company, LLC. This document provides information to address permit requirements for a Section 404 - Individual Permit from the U. S. Army Corps of Engineers and a Section 401 Water Quality Certification from the Ohio Environmental Protection Agency. An alternatives analysis in the form of information required by Ohio's Anti-Degradation Rule is also provided. Information requested by the USACE and Ohio EPA was presented for Preferred Design, Minimal Degradation, and Non-Degradation alternatives and mitigation techniques were proposed for site impacts. The alternative for which this 401-404 proposal for authorization is sought is the Preferred Degradation alternative.

A mitigation plan is presented in which all mitigation will take place on-site. Stream mitigation will result in a greater length than that which will be disturbed, and since the headwaters of most of the streams will not be disturbed by mining, mitigated streams show a very good likelihood for success. One wetland mitigation area is proposed on-site, totaling 1.2 acres.

The mining and reclamation plan together with the measures proposed in this request for 401 and 404 authorization demonstrates that Oxford Mining cannot only extract the coal in an environmentally safe manner, but also achieve on-site mitigation and return the land to productive use.

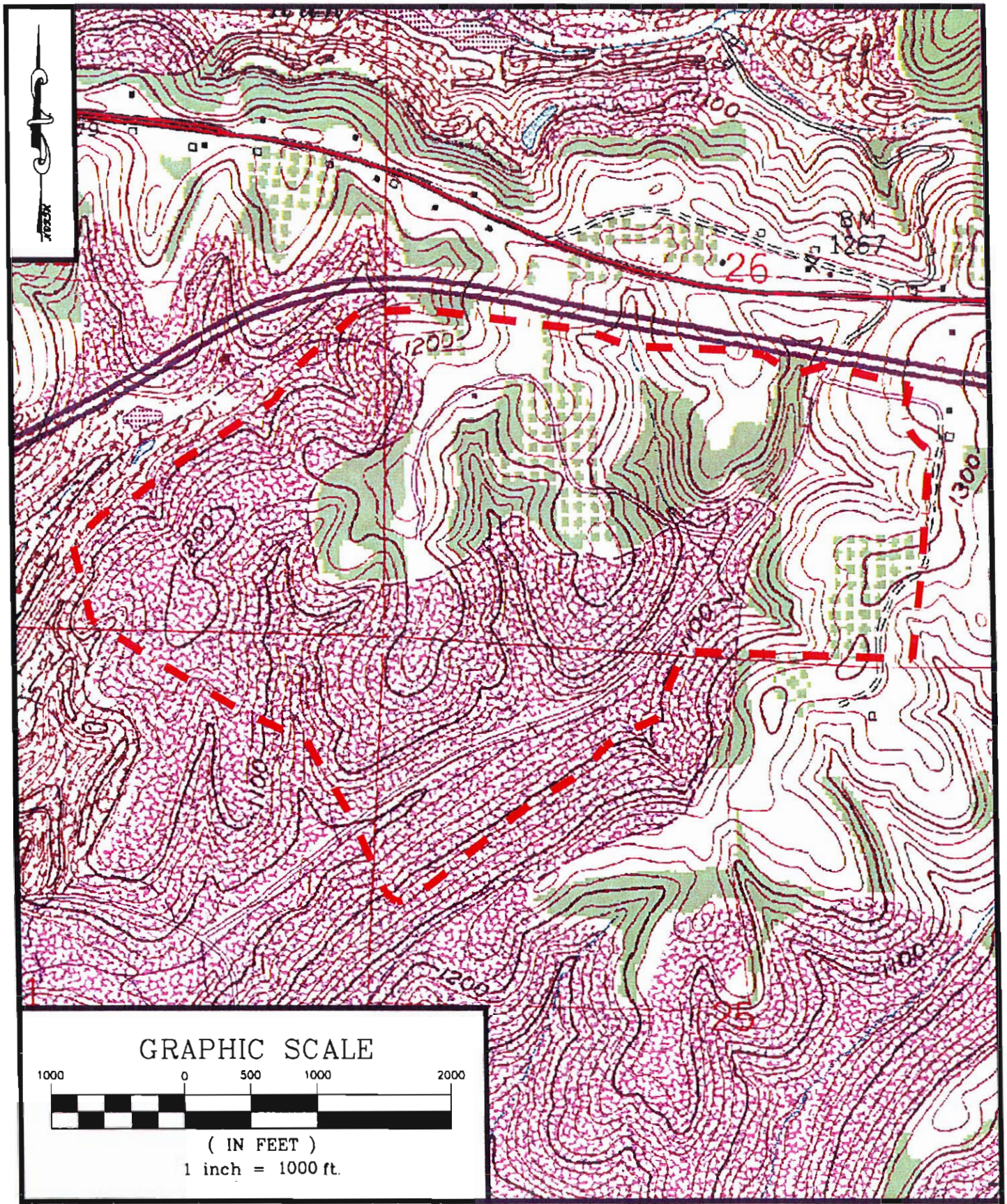
FIGURES

Fig. 1: Location Map

Fig. 2: Preferred Degradation Alternative Map

Fig. 3: Minimal Degradation Alternative Map

Fig. 4: Non-Degradation Alternative Map



LAT: 40° 03' 24"N LONG: 81° 05' 37"W

Source: USGS 7.5 minute Bethesda quadrangle

STUDY AREA, 380.3 acres

Figure 1: LOCATION MAP

OXFORD MINING COMPANY, LLC.

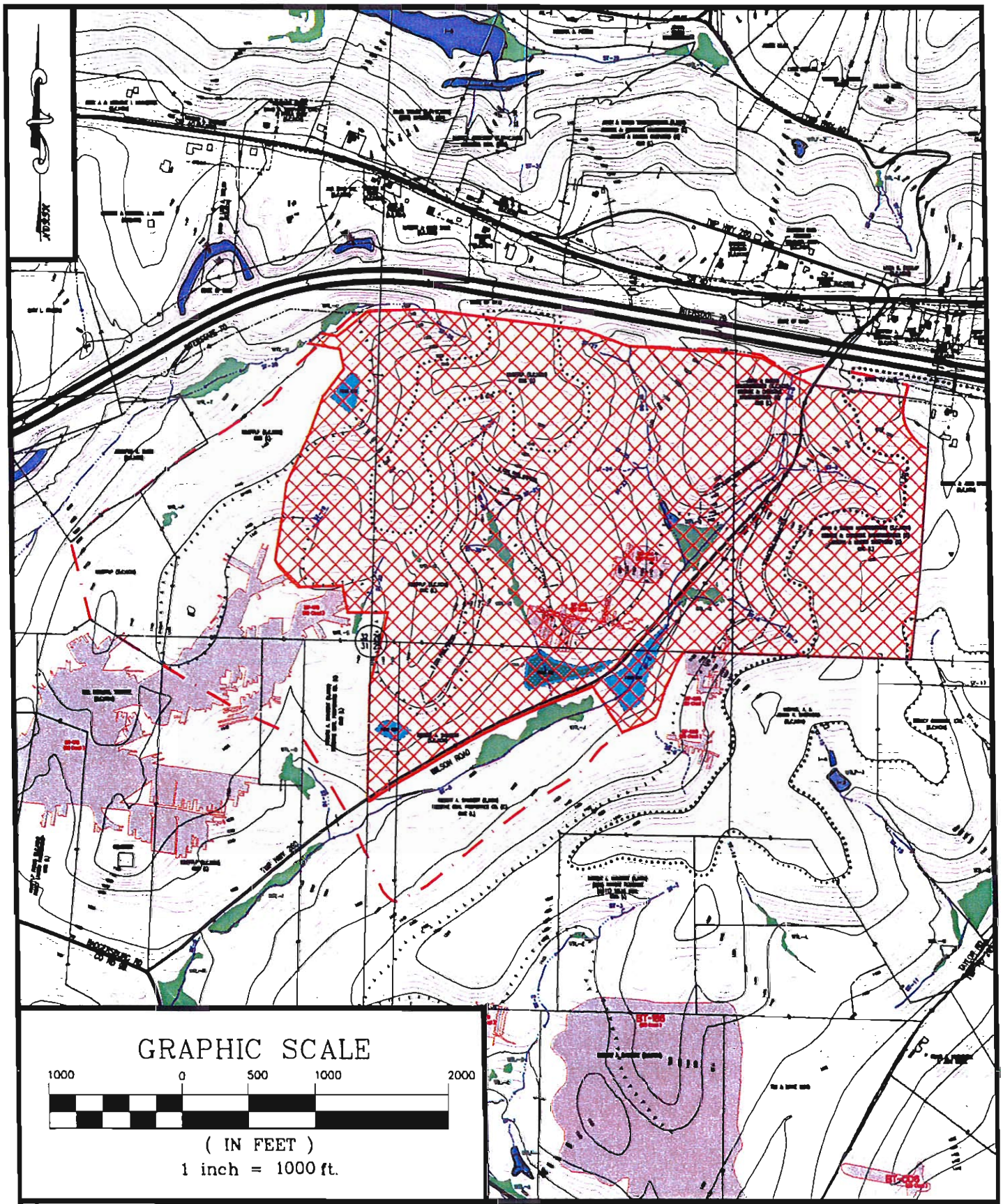
BELMONT COUNTY, OHIO

DATE: 01/05/12 SCALE: 1" = 1000'

Linn Engineering, Inc. 740-452-7434

Civil Engineering Consultants

P.O. Box 2086 Zanesville, Ohio 43702-2086



AREA, 265.6 ACRES

STUDY AREA

DEEPMINE

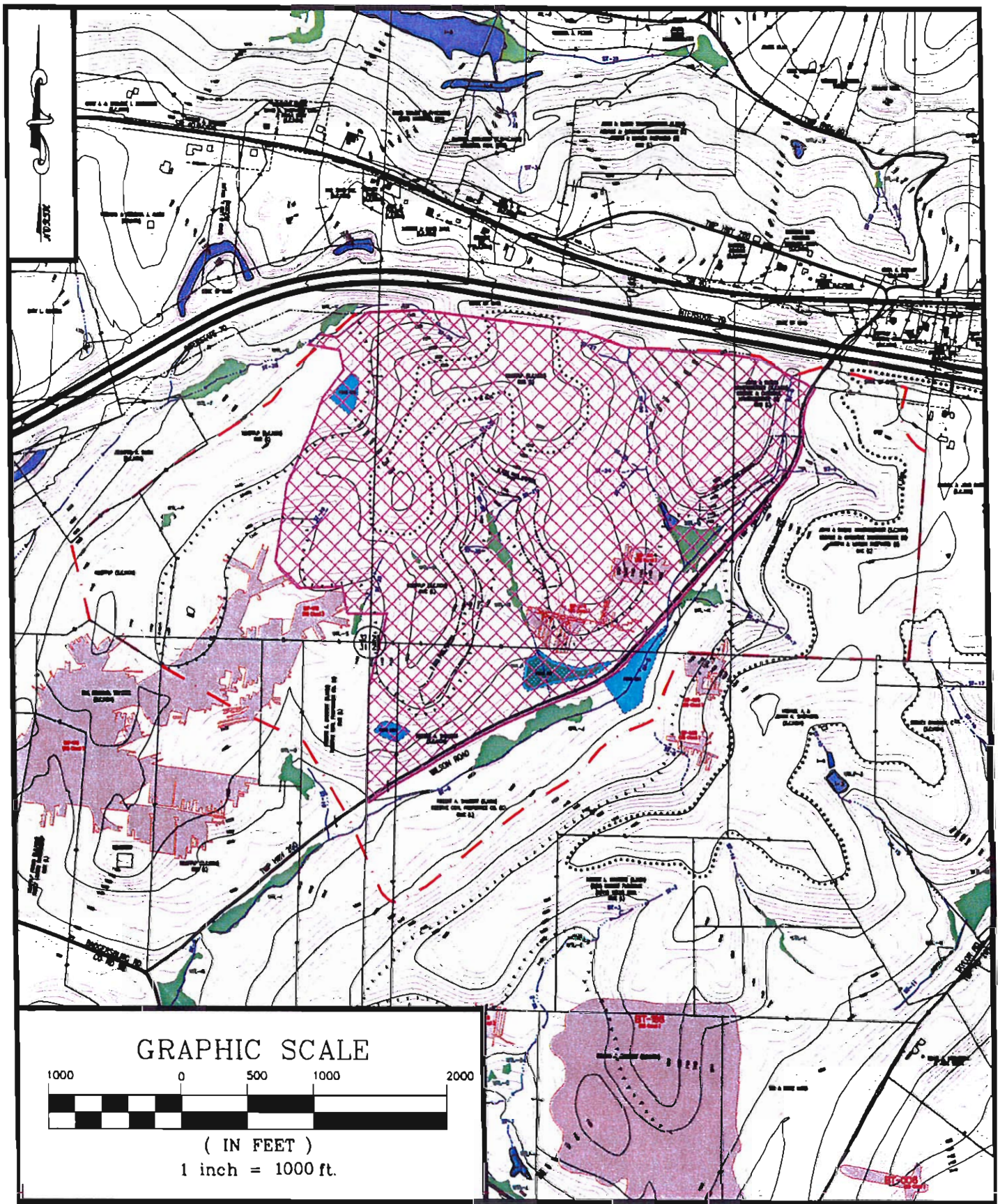
Figure 2: PREFERRED DEGRADATION ALTERNATIVE

OXFORD MINING COMPANY, LLC.

BELMONT COUNTY, OHIO

DATE: 01/05/12 SCALE: 1" = 1000'

Linn Engineering, Inc. 740-452-7434
Civil Engineering Consultants
P.O. Box 2086 Zanesville, Ohio 43702-2086



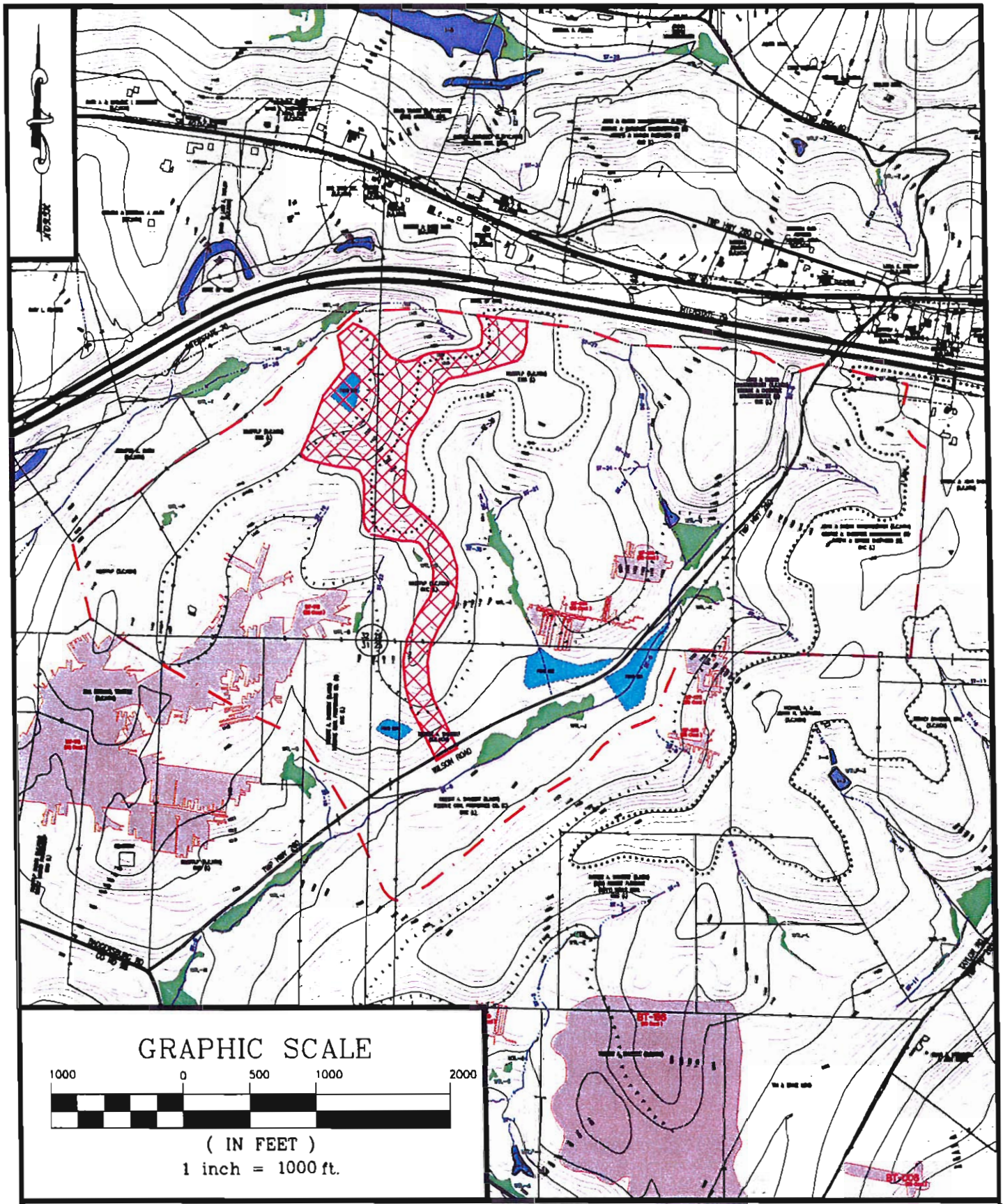
AREA, 201.4 ACRES

STUDY AREA

DEEPMINE

Figure 3: MINIMAL DEGRADATION ALTERNATIVE
OXFORD MINING COMPANY, LLC.
BELMONT COUNTY, OHIO
DATE: 01/05/12 SCALE: 1" = 1000'

Linn Engineering, Inc. 740-452-7434
Civil Engineering Consultants
P.O. Box 2086 Zanesville, Ohio 43702-2086



AREA, 31.2 ACRES

STUDY AREA

DEEPMINE

Figure 4: NON-DEGRADATION ALTERNATIVE
OXFORD MINING COMPANY, LLC.
BELMONT COUNTY, OHIO
DATE: 01/05/12 SCALE: 1" = 1000'

Linn Engineering, Inc. 740-452-7434
Civil Engineering Consultants
P.O. Box 2086 Zanesville, Ohio 43702-2086

APPENDIX A

USACE Jurisdictional Determination Letter

Aquatic Features Map

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701-2070

June 27, 2011

Operations and Readiness Division
Regulatory Branch
LRH-2010-911

Mr. Jon Demarest
8740 Orion Place, Suite 100
Orion Office Park
Columbus, Ohio 43240

Dear Mr. Demarest:

This letter is in response to the Jurisdictional Waters Delineation Report, Shugart-Mauersberger Site, for Oxford Mining Company, LLC's, 423 acre Shugart-Mauersberger Site located in Union Township, Belmont County, Ohio. The waters on-site are unnamed tributaries to Coal Run, an indirect tributary to Stillwater Creek, and to Unnamed Tributaries to Stillwater Creek, a direct tributary to the Tuscarawas River, a Traditional Navigable Water.

This site was investigated in accordance with the Coordinated Application Process on November 22, 2010. Representatives of the United States Army Corps of Engineers (USACE), Ohio Environmental Protection Agency-Division of Surface Water (OEPA-DSW), Ohio Department of Natural Resources - Division of Mineral Resources Management (ODNR-DMRM), United States Fish & Wildlife Service (USFWS), Civil and Environmental Consultants, Inc. and Linn Engineering participated in the on-site field investigation. You have requested an approved jurisdictional determination for the proposed permit area.

The USACE authority to regulate waters of the U.S. is based, in part, on the definitions and limits of jurisdiction contained in 33 CFR 328 and 33 CFR 329. Section 404 of the Clean Water Act (CWA) requires that a Department of the Army (DA) permit be obtained prior to the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for any work in, on, over or under a navigable water. In addition, our December 2, 2008 headquarters guidance titled "Revised Guidance on Clean Water Act Jurisdiction Following the U.S. Supreme Court Decision in Rapanos v. United States and Carabell v. United States" must be followed for the USACE to provide final verification of CWA jurisdiction.

Jurisdictional and isolated waters on site are identified on the attached table titled Approved Jurisdictional Determination LRH-2010-911, Shugart-Mauersberger Site, Oxford Mining Company, Jurisdictional and Non Jurisdictional Aquatic Resources.

Printed on Recycled Paper

In summary, a total of 12,730 linear feet of stream was identified on-site. Of this, approximately 11, 569 linear feet of stream was determined to be relatively permanent waters (RPW's), 163 linear feet of stream was determined to be non-relatively permanent waters (NRPW's) and 998 linear feet of stream was determined to be isolated waters. A total of 6.83 acres of wetland was identified on-site. Of this, 6.41 acre of wetland was determined to be jurisdictional and 0.42 acre of wetland was determined to be isolated. A total of 1.15 acres of water impoundment was identified on-site. Of this, 0.99 acres was determined to be jurisdictional and 0.16 acres was determined to be isolated.

Relevant Reaches (RR) 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 and 18 were determined to be jurisdictional Relatively Permanent Waters (RPWs) that flow into Stillwater Creek. Relevant Reaches 14, 15, 16 and 17 were determined to be Relatively Permanent Waters (RPW) that flow into Coal Run, an indirect tributary to the Stillwater Creek. RR 8 was determined to be a jurisdictional NRPW.

Wetlands J, K, Q, R, V and Z were determined to be jurisdictional as all of these waters directly abut RPWs that were identified on-site. Existing Water Impoundments 5 and 6 were determined to be jurisdictional in-stream impoundments within RPWs identified on-site.

Streams 19, 22, 31, 36, Wetlands S, P, W and Impoundment 7 wetland fringe and Water Impoundment 7 were determined to be isolated.

In accordance with the June 5, 2007 Joint Memorandum between the U.S. Environmental Protection Agency (USEPA) and the USACE and the January 28, 2008 USACE Memorandum regarding coordination on jurisdictional determinations, this determination was coordinated with the USEPA Region 5 with coordination completed on August 26, 2010.

This jurisdictional verification is valid for a period of five years from the date of this letter unless new information warrants revision of the delineation prior to the expiration date. Should you disagree with our jurisdictional determination, you have the right to file an administrative appeal under the Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form.

If you request to appeal this determination, you must submit a completed RFA form to the Great Lakes and Ohio River Division Office at the following address:

Review Officer
Great Lakes and Ohio River Division
550 Main Street, Room 10032
Cincinnati, Ohio 45202-3222
Phone: (513) 684-7261 Fax: (513) 684-2460

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by July 16, 2011. **It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.** I am forwarding a copy of this letter via email to OEPA- DSW Ric Queen Ric.Queen@epa.state.oh.us ; ODNR-DMRM Brent Heavilin Brent.Heavilin@dnr.state.oh.us; USFWS Jeromy Applegate Jeromy_Applegate@fws.gov ; Oxford Mining Company NLeggett@oxfordresources.com and Linn Engineering linneng@scbglobal.net.

If you have any questions concerning the above, please contact Mr. Shawn Blohm of our Dillon Lake Field Office at (740) 454-2225 ext. 6 or at shawn.u.blohm@usace.army.mil.

Sincerely,

Terry Clarke
Acting Chief
Energy Resources Section

Encl

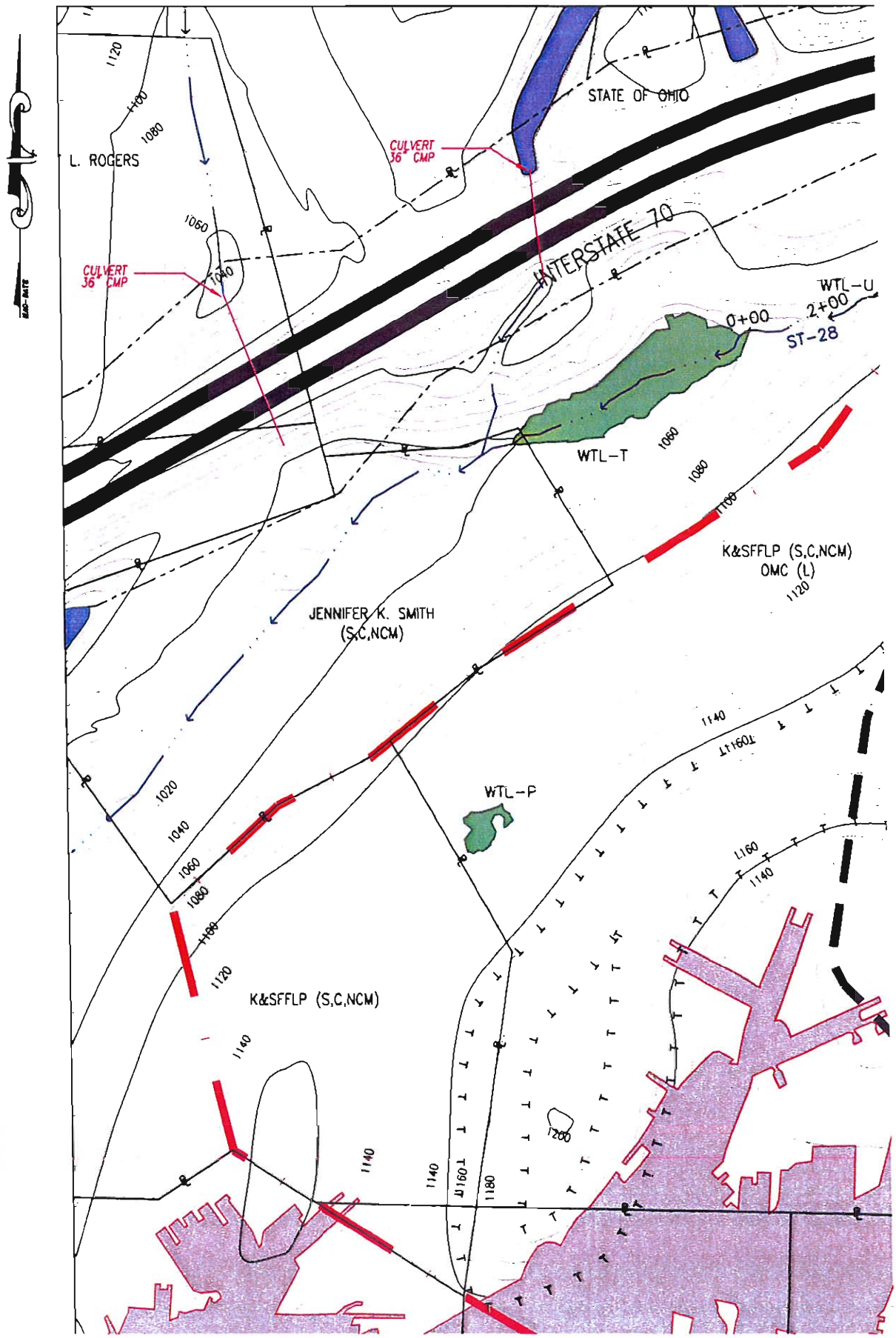
Table 1 Approved Jurisdictional Determination LRH-2010-911, Shugart-Mauersberger Site, Oxford Mining Company, Jurisdictional and Non Jurisdictional Aquatic Resources

Relevant Reach	Stream	Flow Regime	Order	Jurisdictional /Isolated	Linear Feet	Wetland(s)	Acreage	Existing Water Impoundment	Acreage
1	5	Perennial	2nd	Jurisdictional	5105				
2	6	Intermittent	2nd	Jurisdictional	1050				
3	7	Intermittent	1st	Jurisdictional	57				
4	9	Intermittent	1st	Jurisdictional	812				
5	20	Intermittent	1st	Jurisdictional	211				
6	21	Intermittent	1st	Jurisdictional	290				
7	23	Intermittent	2nd	Jurisdictional	161				
8	24	Ephemeral	1st	Jurisdictional	163				
9	25	Intermittent	1st	Jurisdictional	61				
10	26	Intermittent	1st	Jurisdictional	100				
11	26	Intermittent	2nd	Jurisdictional	1620				
12	27	Intermittent	1st	Jurisdictional	235				
13	28	Intermittent	1st	Jurisdictional	400				
14	30	Intermittent	1st	Jurisdictional	274				
15	32	Intermittent	1st	Jurisdictional	293				
16	33	Intermittent	1st	Jurisdictional	195				
17	34	Intermittent	1st	Jurisdictional	534				
18	35	Intermittent	1st	Jurisdictional	171				
	19	Ephemeral	1st	Isolated	186				
	22	Intermittent	1st	Isolated	369				
	31	Ephemeral	1st	Isolated	192				
	36	Ephemeral	1st	Isolated	251				
				Jurisdictional		J	2.44		
				Jurisdictional		K	0.72		
				Jurisdictional		O	2.01		
				Jurisdictional		R	1.09		
				Jurisdictional		V	0.07		
				Jurisdictional		Z	0.08		
				Isolated		1-7 Wet	0.04		
				Isolated		S	0.18		
				Isolated		P	0.15		
				Isolated		W	0.05		
				Jurisdictional				Impoundment 5	0.03
				Jurisdictional				Impoundment 6	0.96
				Isolated				Impoundment 7	0.16

AQUATIC FEATURES MAP
LEGEND

1	2	3	4
5	6	7	8

1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L. ROGERS
CULVERT
36" CMP
CULVERT
36" CMP
INTERSTATE 70
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2+00
0+00
ST-28
WTL-T
K&SFFLP (S,C,NCM)
OMC (L)
JENNIFER K. SMITH
(S,C,NCM)
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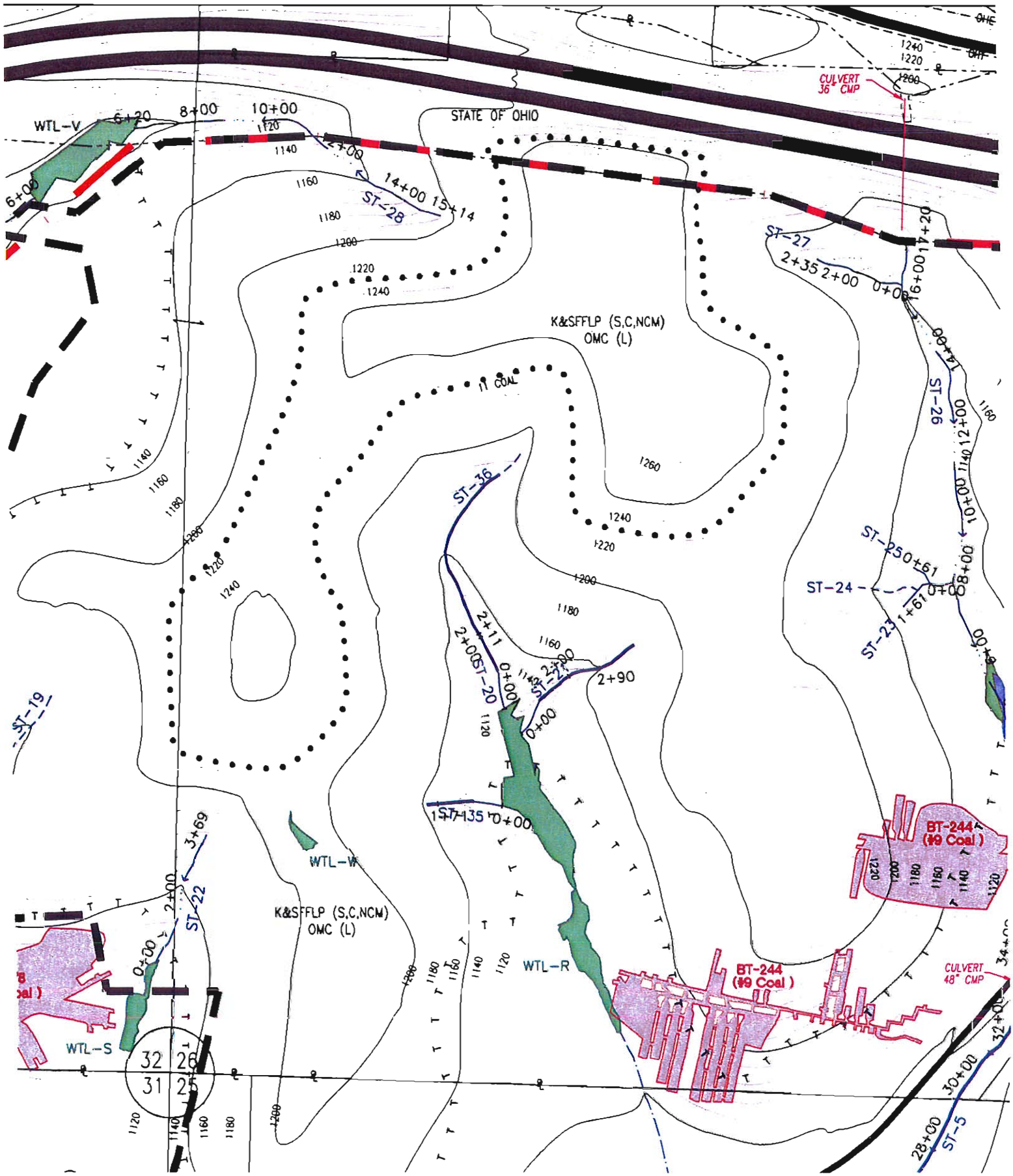
2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CULVERT 48" CMP
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WTL-W
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ST-22
ST-23
ST-24
ST-25
ST-26
ST-27
ST-28
ST-36
ST-135
ST-5
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OMC (L)
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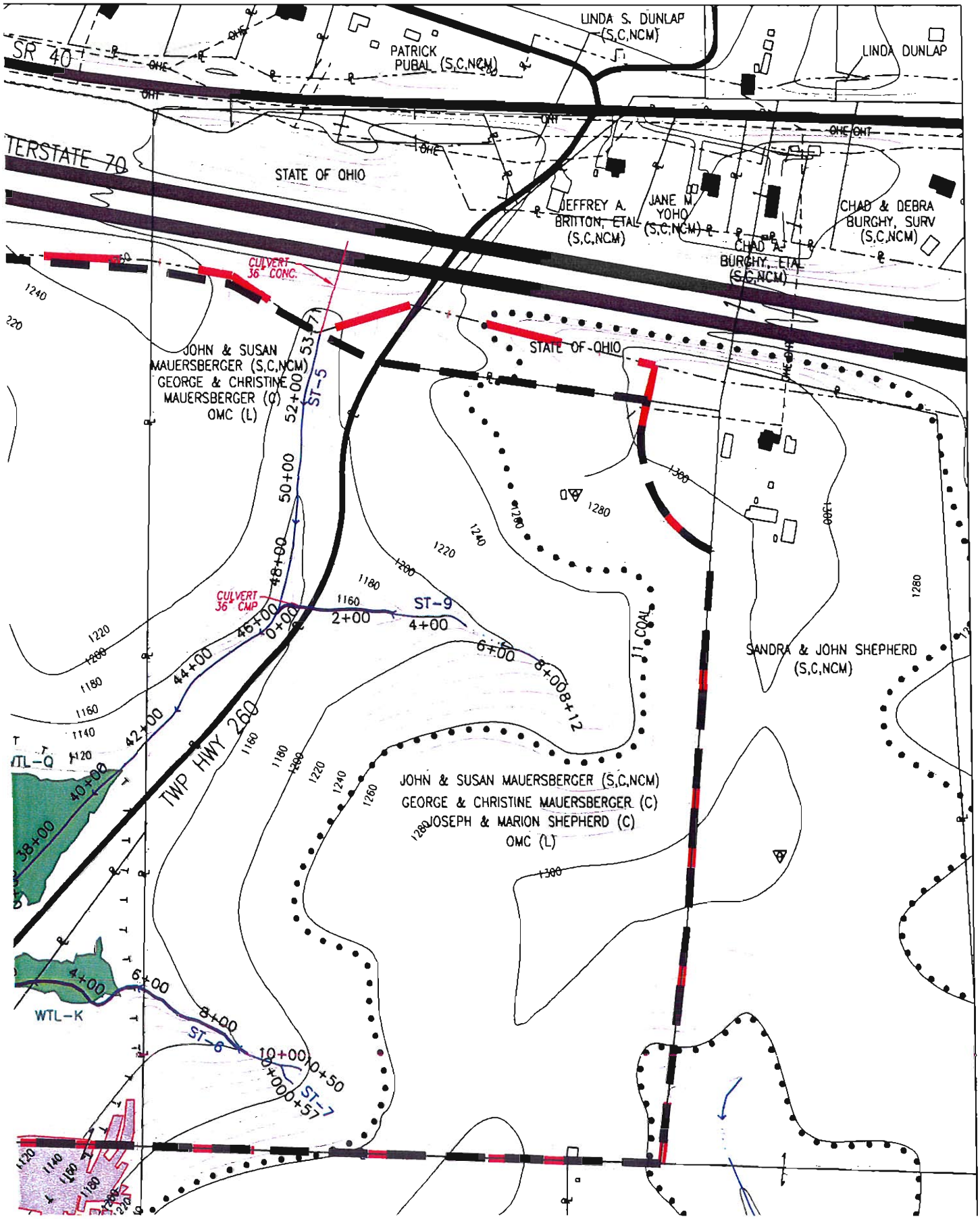
BT-244
(#9 Coal)
32
26
31
25

3


SR 40
TERSTATE 70
LINDA S. DUNLAP (S,C,NCM)
PATRICK PUBAL (S,C,NCM)
LINDA DUNLAP
STATE OF OHIO
JEFFREY A. BRITTON, ETAL (S,C,NCM)
JANE M YOHO (S,C,NCM)
CHAD & DEBRA BURGHY, SURV (S,C,NCM)
CHAD A BURGHY, ETAL (S,C,NCM)
CULVERT 36" CONC.
STATE OF OHIO
JOHN & SUSAN MAUERSBERGER (S,C,NCM)
GEORGE & CHRISTINE MAUERSBERGER (C)
OMC (L)
ST-5
CULVERT 36" CMP
ST-9
J1 COAL
SANDRA & JOHN SHEPHERD (S,C,NCM)
TWP HWY 260
JOHN & SUSAN MAUERSBERGER (S,C,NCM)
GEORGE & CHRISTINE MAUERSBERGER (C)
JOSEPH & MARION SHEPHERD (C)
OMC (L)
WTL-Q
WTL-K
ST-6
ST-7

4

STREAM SUMMARY					
	REGIME	HHEI SCORE	PHWH CLASS	LENGTH (FT)	JURISDICTIONAL
	PERENNIAL	70	2	5105	YES
	INTERMITTENT	55	2	1050	YES
	INTERMITTENT	22	1	57	YES
	INTERMITTENT	40	2	812	YES
9	EPHEMERAL	17	1	186	NO
0	INTERMITTENT	39	1	211	YES
1	INTERMITTENT	36	2	290	YES
2	INTERMITTENT	38	1	369	NO
3	INTERMITTENT	38	1	161	YES
4	EPHEMERAL	23	1	163	YES
5	INTERMITTENT	38	2	61	YES
6	INTERMITTENT	51	2	1720	YES
7	INTERMITTENT	37	1	235	YES
8	INTERMITTENT	61	2	400	YES
5	INTERMITTENT	35	2	171	YES
6	EPHEMERAL	21	1	251	NO

WETLAND SUMMARY					
	DESIGNATION	ORAM SCORE	ORAM CATEGORY	AREA (AC.)	JURISDICTIONAL
	PEM	33.5	1 OR 2 GRAY	2.44	YES
	PEM	30.5	1 OR 2 GRAY	0.72	YES
	PEM	26.5	1	0.15	NO
	PEM	43.5	MODIFIED 2	2.01	YES
	PEM,PSS	32.5	1 OR 2 GRAY	1.09	YES
	PEM	28.5	1	0.18	NO
	PEM	52	2	0.07	YES
	PEM	23.5	1	0.05	NO

Linn Engineering, Inc.
Civil Engineering Consultants
P.O. Box 2086 Zanesville, Ohio 43702-2086 740-452-7434

NY, LLC
REA
ES
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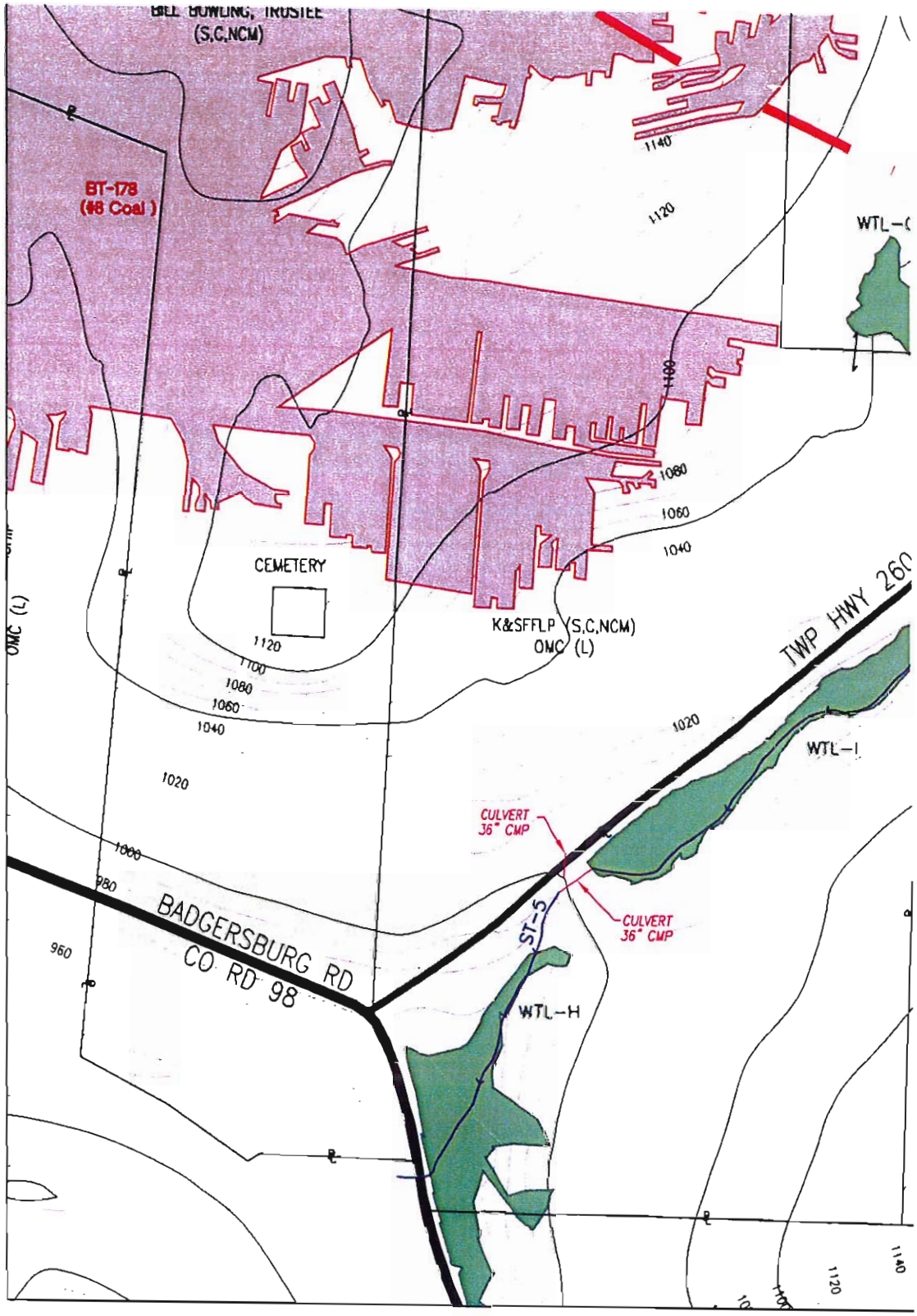

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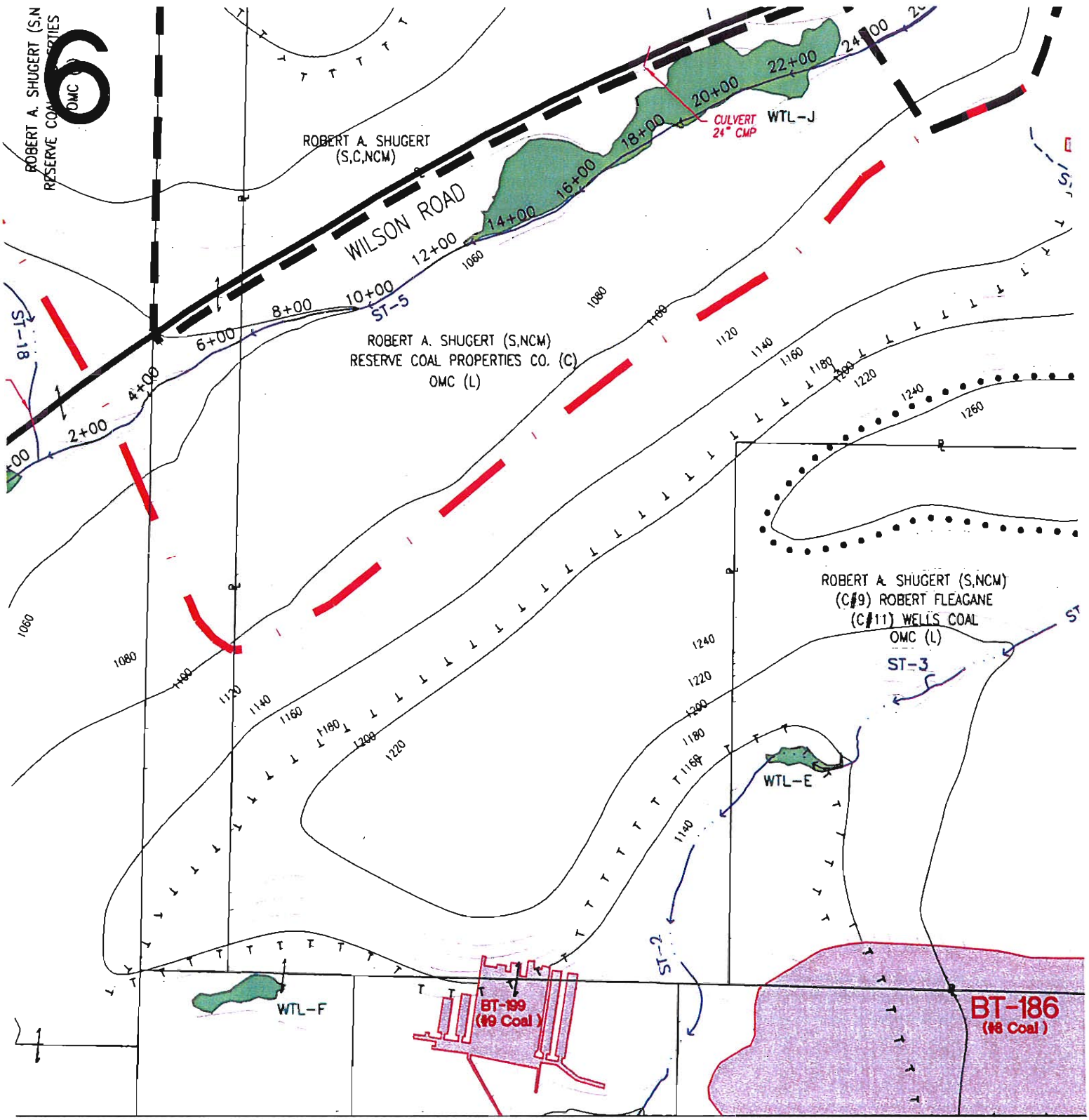
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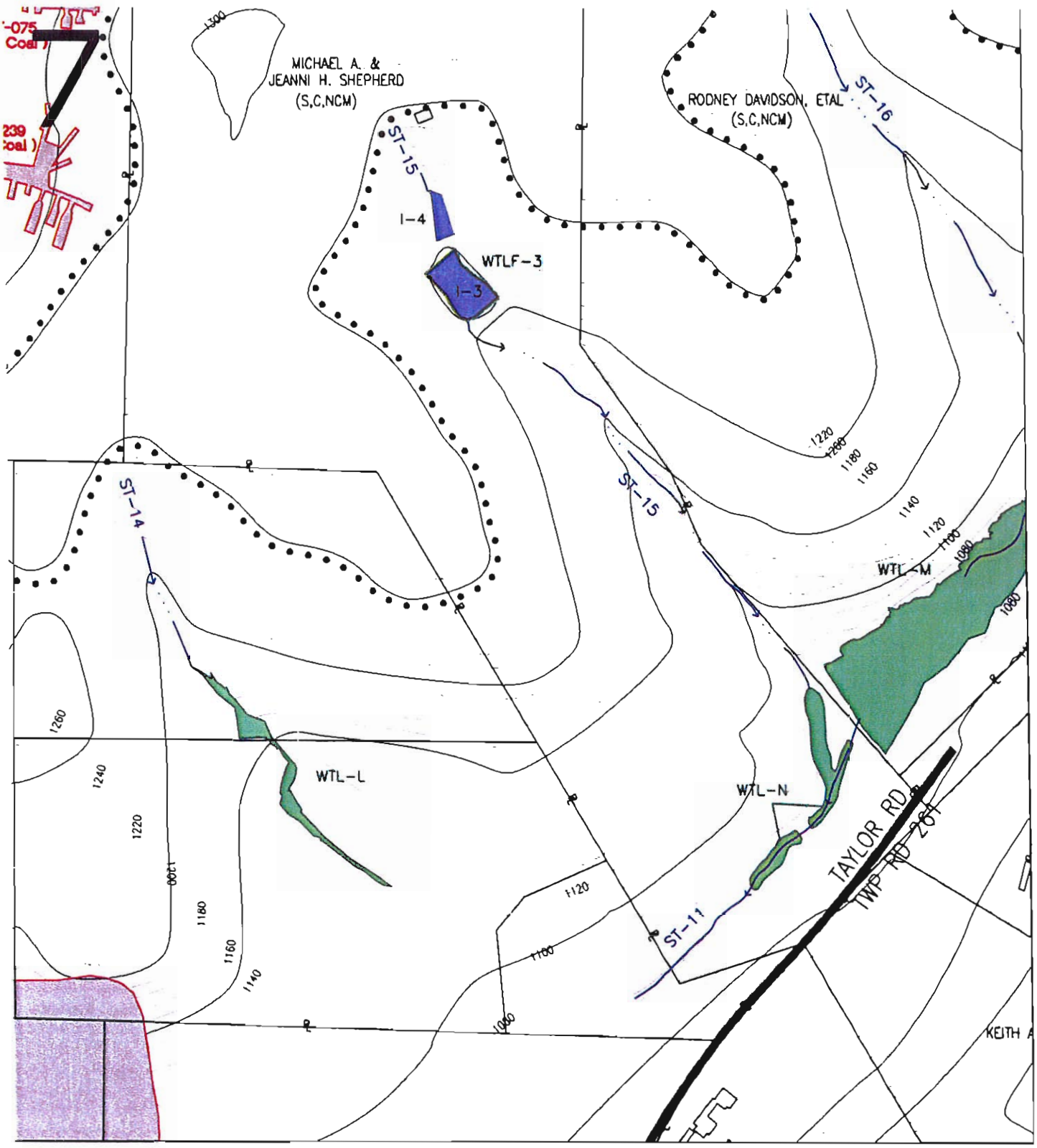
ROBERT A. SHUGERT (S,N
RESERVE COA
OMC
ROBERT A. SHUGERT
(S,C,NCM)
WILSON ROAD
CULVERT
24" CMP
WTL-J
22+00
24+00
20+00
18+00
16+00
14+00
12+00
10+00
8+00
6+00
4+00
2+00
ST-5
ST-18
ROBERT A. SHUGERT (S,NCM)
RESERVE COAL PROPERTIES CO. (C)
OMC (L)
ROBERT A. SHUGERT (S,NCM)
(C#9) ROBERT FLEAGANE
(C#11) WELLS COAL
OMC (L)
ST-3
WTL-E
ST-2
WTL-F
BT-199
(#9 Coal)
BT-186
(#8 Coal)


MICHAEL A. &
JEANNI H. SHEPHERD
(S,C,NCM)
RODNEY DAVIDSON, ETAL
(S,C,NCM)
ST-16
ST-15
I-4
WTLF-3
I-3
ST-15
ST-14
WTL-M
WTL-L
WTL-N
ST-11
TAYLOR RD
TWP RD 261
KEITH A
1300
1260
1240
1220
1200
1180
1160
1140
1120
1100
1080
1060
1040

8

LEGEND

- PROPOSED PERMIT AREA
- "WATERS" of the U.S. STUDY AREA
- WETLAND AREA
- EXISTING IMPOUNDMENT
- UNDERGROUND MINES
- EXISTING HIGHWALL
- PREVIOUSLY MINED AREA
- COAL OUTCROP
- PERENNIAL STREAM
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SWALE

GRAPHIC SCALE

300 0 150 300 600

(IN FEET)

1 inch = 300 ft.

AQUATIC FEATURES

OXFORD MINING COM
SHUGERT SOUTH
AQUATIC FEATU
ADDENDUM TO PART

Revisions	By	Date

Scale	
Horiz. 1" = 300'	
Vert. 1" = N/A	
Field Book No.	

	By	Date
Designed	THL	
Drawn	JAP	1/14/12
Checked	THL	
Approved	THL	

Project No.
SMS

Sheet No.	Of
1	1

APPENDIX B

Tables

Table 1: Delineation Summary

Table 2: OEPA Stream Impact/Avoidance Summary

OEPA Wetland Impact/Avoidance Summary

Table 3: Gain-Loss Summary

Oxford Mining Company, LLC
App. Shugert South

Table 1
Aquatic Features Summary
As Delineated

Impoundments

Existing Pit Impoundment	Type of Impoundment	Wetland Fringe (ac)	Area (ac)	Approx. Water Depth (ft)	Volume of fill below OHWM (cy)	Isolated (X)
	No impoundments were delineated onsite.					
Total	**Non-Isolated**					
Total	**Isolated**					

Wetlands

Wetland	Designation	ORAM Score	ORAM Category	Area (ac)	Isolated (X)
J	Emergent	33.5	1 or 2 gray	2.44	
K	Emergent	30.5	1 or 2 gray	0.72	
P	Emergent	26.5	1	0.15	X
Q	Emergent	43.5	Modified 2	2.01	
R	Emergent/Scrub-Scrub	32.5	1 or 2 gray	1.09	
S	Emergent	28.5	1	0.18	X
V	Emergent	52	2	0.07	
W	Emergent	23.5	1	0.05	X
Total			**Non-Isolated**	**6.33**	
Total			**Isolated**	**0.38**	

Jurisdictional Wetlands	Category 1	0.38
	Category 2	6.33
	Category 3	0.00

Oxford Mining Company, LLC
App. Shugert South

Table 1
Aquatic Features Summary
As Delineated

Streams

Stream Designation	Flow Regime	HHEI	PHWH CLASS	HMFEI	HMFEI CLASS	Water Depth (in)	Stream Width (ft)	Area (ac)	Stream Length (ft)	Isolated (X)
Stream 5	Perennial	70	2	8	2	11.0	5.6	0.66	5,105	
Stream 6	Intermittent	55	2	17	2	9.8	3.0	0.07	1,050	
Stream 7	Intermittent	22	1	-	-	2.0	3.3	0.004	57	
Stream 9	Intermittent	40	2	12	2	7.9	3.3	0.06	812	
Stream 19	Ephemeral	17	1	-	-	-	2.0	0.01	186	X
Stream 20	Intermittent	39	1	0	1	3.5	2.3	0.01	211	
Stream 21	Intermittent	36	2	-	-	3.5	2.6	0.02	290	
Stream 22	Intermittent	38	1	0	1	3.5	2.3	0.02	369	X
Stream 23	Intermittent	38	1	0	1	3.1	3.0	0.01	161	
Stream 24	Ephemeral	23	1	-	-	-	2.6	0.01	163	
Stream 25	Intermittent	38	2	-	-	2.4	2.3	0.003	61	
Stream 26	Intermittent	51	2	-	-	7.1	4.6	0.18	1,720	
Stream 27	Intermittent	37	1	0	1	2.8	2.3	0.01	235	
Stream 28	Intermittent	61	2	-	-	7.1	3.9	0.04	400	
Stream 35	Intermittent	35	2	4	1	2.3	2.0	0.01	171	
Stream 36	Ephemeral	21	1	-	-	-	2.6	0.02	251	X
Total On-Site Stream Length (ft.)									**11,242**	

Jurisdictional Summary	**Flow Regime / Class**	**Area (ac)**	**Length (ft)**
	Perennial	0.66	5,105
	Intermittent	0.42	5,168
	Ephemeral	0.01	163
	PHWH Class 1	0.05	827
	PHWH Class 2	1.04	9,608
	PHWH Class 3	0.00	0
	HMFEI Class 1	0.04	778
	HMFEI Class 2	0.79	6,967
	HMFEI Class 3	0.00	0

OEPA Stream Impact/Avoidance Summary Table

Applicant: Oxford Mining Company, LLC **Project Name:** Shugert South **Corps #:** LRH-2010-911
Date: 12/27/2011

Stream Id/Name	HHEI	HMFEI	Total stream length on-site	Preferred Impacts			Minimal Impacts		
				Stream Length		Describe proposed types of impacts	Stream Length		Describe proposed types of Impacts
				Impacted	Avoided		Impacted	Avoided	
ST-5	70	8	5,105	2,529	2,576	790' temp pond const; 1192' sed trans; 547' mined thru	317	4,788	317' sed trans and temp diversion
ST-6	55	17	1,050	907	143	744' sed trans; 163' mined thru	0	1,050	avoided
ST-7	22	-	57	0	57	avoided	0	57	avoided
ST-9	40	12	812	311	501	311' mined thru	0	812	avoided
ST-19	17	-	186	0	186	avoided	0	186	avoided
ST-20	39	0	211	211	0	211' sed trans	211	0	211' sed trans
ST-21	36	-	290	290	0	19' mined thru; 271' sed trans	290	0	19' mined thru; 271' sed trans
ST-22	38	0	369	0	369	avoided	0	369	avoided
ST-23	38	0	161	0	161	avoided	0	161	avoided
ST-24	23	-	163	0	163	avoided	0	163	avoided
ST-25	38	-	61	0	61	avoided	0	61	avoided
ST-26	51	-	1,720	0	1,720	avoided	0	1,720	avoided
ST-27	37	0	235	0	235	avoided	0	235	avoided
ST-28	61	-	400	0	400	avoided	0	400	avoided
ST-35	35	4	171	171	0	171' sed trans	171	0	171' sed trans
ST-36	21	-	251	251	0	112' mined thru; 139' sed trans	251	0	112' mined thru; 139' sed trans

Impact Type:

MT = Mine Through
PC = Pond Construction
HR = Highwall Reclamation
SS = Spoil Storage
ST = Sediment Transport
TR = Temporary Relocation
WM = Wetland Mitigation
RC = Reconstruction
AV = Avoided

JURISDICTIONAL

OEPA Wetlands Impact/Avoidance Summary Table

Applicant: Oxford Mining Company, LLC

Project Name: Shugert South

Corps # LRH-2010-911

ORAM Version Used: 5.0

Date: 12/27/2011

Id #	ORAM Score	Total acres on-site	Type of Impact	Preferred Degradation Alternative (acres)						Minimal Degradation Alternative (acres)					
				Impact			Avoidance			Impact			Avoidance		
				Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided	Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided
Category 1 or 2 gray															
WTL-J	33.5	2.44	AV		0.00	0.00		2.44	2.44		0.00	0.00		2.44	2.44
WTL-K	30.5	0.72	RG		0.72	0.72		0.00	0.00		0.00	0.00		0.72	0.72
WTL-R	32.5	1.09	AV		0.00	0.00		1.09	1.09		0.00	0.00		1.09	1.09
Total		4.25			0.72	0.72		3.53	3.53		0.00	0.00		4.25	4.25

Id #	ORAM Score	Total acres on-site	Type of Impact	Preferred Degradation Alternative (acres)						Minimal Degradation Alternative (acres)					
				Impact			Avoidance			Impact			Avoidance		
				Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided	Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided
Category 2 (modified)															
WTL-Q	43.5	2.01	AV		0.00	0.00		2.01	2.01		0.00	0.00		2.01	2.01
Total		2.01			0.00	0.00		2.01	2.01		0.00	0.00		2.01	2.01

Id #	ORAM Score	Total acres on-site	Type of Impact	Preferred Degradation Alternative (acres)						Minimal Degradation Alternative (acres)					
				Impact			Avoidance			Impact			Avoidance		
				Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided	Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided
Category 2															
WTL-V	52	0.07	AV		0.00	0.00		0.07	0.07		0.00	0.00		0.07	0.07
Total		0.07			0.00	0.00		0.07	0.07		0.00	0.00		0.07	0.07

Jurisdictional Grand Total	6.33			0.72	0.72		5.61	5.61		0.00	0.00		6.33	6.33

Impact Type:

MT = Mine Through
PC = Pond Construction
HR = Highwall Reclamation
RG = Reclamation Grading
SS = Spoil Storage
ST = Sediment Transport
TR = Temporary Relocation
WM = Wetland Mitigation
RC = Reconstruction
AV = Avoided

NON-JURISDICTIONAL

OEPA Wetlands Impact/Avoidance Summary Table

Applicant: Oxford Mining Company, LLC **Project Name:** Shugert South **Corps #** LRH-2010-911

ORAM Version Used: 5.0 **Date:** 12/27/2011

Id #	ORAM Score	Total acres on-site	Type of Impact	Preferred Degradation Alternative (acres)						Minimal Degradation Alternative (acres)					
				Impact			Avoidance			Impact			Avoidance		
				Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided	Forested	Non-Forested	Total Impact	Forested	Non-Forested	Total Avoided
Category 1															
WTL-P	26.5	0.15	AV		0.00	0.00		0.15	0.15		0.00	0.00		0.15	0.15
WTL-S	28.5	0.18	AV		0.00	0.00		0.18	0.18		0.00	0.00		0.18	0.18
WTL-W	23.5	0.05	RG		0.05	0.05		0.00	0.00		0.05	0.05		0.00	0.00
Total		0.38			0.05	0.05		0.33	0.33		0.05	0.05		0.33	0.33
Non-Jurisdictional															
Grand Total		0.38			0.05	0.05		0.33	0.33		0.05	0.05		0.33	0.33

Impact Type:

MT = Mine Through
PC = Pond Construction
HR = Highwall Reclamation
RG = Reclamation Grading
SS = Spoil Storage
ST = Sediment Transport
TR = Temporary Relocation
WM = Wetland Mitigation
RC = Reconstruction
AV = Avoided

Oxford Mining Company, LLC
Shugert South

Table 3
Gain-Loss Summaries

Wetlands

Loss Summary					
Jurisdictional Wetlands	ORAM Score	ORAM Category	Designation	Hydrologic Connectivity	Acreage
WTL-K	30.5	1 or 2 gray	emergent	yes	0.72
Total Loss					0.72

Loss Summary					
Isolated Wetlands	ORAM Score	ORAM Category	Designation	Hydrologic Connectivity	Acreage
WTL-W	23.5	1	emergent	no	0.05
Total Loss					0.05

Gain Summary		
Mitigation Area	former Pond #	Acreage
1	002	1.20
Total Gain		1.20

Gain Required	
	Acreage
Total Loss	0.77
Mitigation Factor	1.50
Req'd Gain	1.16
Ephemeral Stream Area	0.015
Total Req'd Gain	1.17

Oxford Mining Company, LLC
Shugert South

Table 3
Gain-Loss Summaries

Streams - Perennial and Intermittent

Loss Summary

Stream Designation	Flow Regime	Type of Impact / Length (ft)			
		Mine Thru	Sediment Transport	Temporary Pond	Total
ST-5	Perennial	547	1,192	790	2,529
ST-6	Intermittent	0	744	163	907
ST-9	Intermittent	311	0	0	311
ST-20	Intermittent	0	211	0	211
ST-21	Intermittent	19	271	0	290
ST-35	Intermittent	0	171	0	171
	Total (ft)	877	2,589	953	**4,419**

Gain Summary

Stream Designation	Constructed Length On-site (ft)
ST-5	1,622
ST-6	907
ST-9	311
ST-20	500
ST-21	300
ST-35	125
Gain Length (ft)	**3,765**

Streams - Ephemeral

Loss Summary

Stream Designation	Flow Regime	Type of Impact / Length (ft)				Width (ft)	Area (ac)
		Mine Thru	Sediment Transport	Temporary Pond	Total		
ST-36	Ephemeral	112	139	0	251	2.6	0.015
	Total (ft)	112	139	0	**251**	**Loss Area (ac)**	0.015

Class 1 ephemeral stream loss area will be mitigated as additional wetland mitigation.

APPENDIX C

Ohio County Unemployment Rates, Nov 2011

Poverty Rates by County, 2009

Belmont County Profile

November 2011 Ranking of
Ohio County Unemployment Rates
(Not Seasonally Adjusted)

Among the state's 88 counties, the November 2011 unemployment rates ranged from a low of 4.9 percent in Mercer County to a high of 13.9 percent in Pike County. Rates decreased in 85 of the 88 counties. In November, the comparable rate for Ohio was 7.6 percent. (See table below).

Five counties had unemployment rates below 6.0 percent in November. The counties with the lowest rates, other than Mercer were: Holmes; 5.2; Delaware and Geauga 5.5; and Medina, 5.8 percent.

Five counties had unemployment rates at or above 11.0 percent during November. The counties with the highest rates, other than Pike, were: Ottawa, 11.9; Scioto, 11.5; Meigs, 11.3; and Clinton, 11.0 percent.

EDITOR'S NOTE: These estimates, prepared in cooperation with the Bureau of Labor Statistics, U.S. Department of Labor, are based on 2010 benchmark and geared to county of residence. Unemployment rates for all Ohio counties as well as cities with populations of 50,000 or more are presented in the monthly ODJFS ***Civilian Labor Force Estimates*** publication. For updated statewide historical data visit http://ohiolmi.com/asp/laus/vbLaus.htm or contact the Bureau of Labor Market Information at (614) 752-9494.

December 2011 unemployment rates and nonagricultural wage and salary data for Ohio will be released by ODJFS on Friday, January 20, 2012. County, city and metropolitan area unemployment rates will be available on Tuesday, January 24, 2012. This information and the monthly statistical summaries it is based on are also available at http://jfs.ohio.gov/releases.

Ranking Report
Ohio Unemployment Rates by County
November 2011

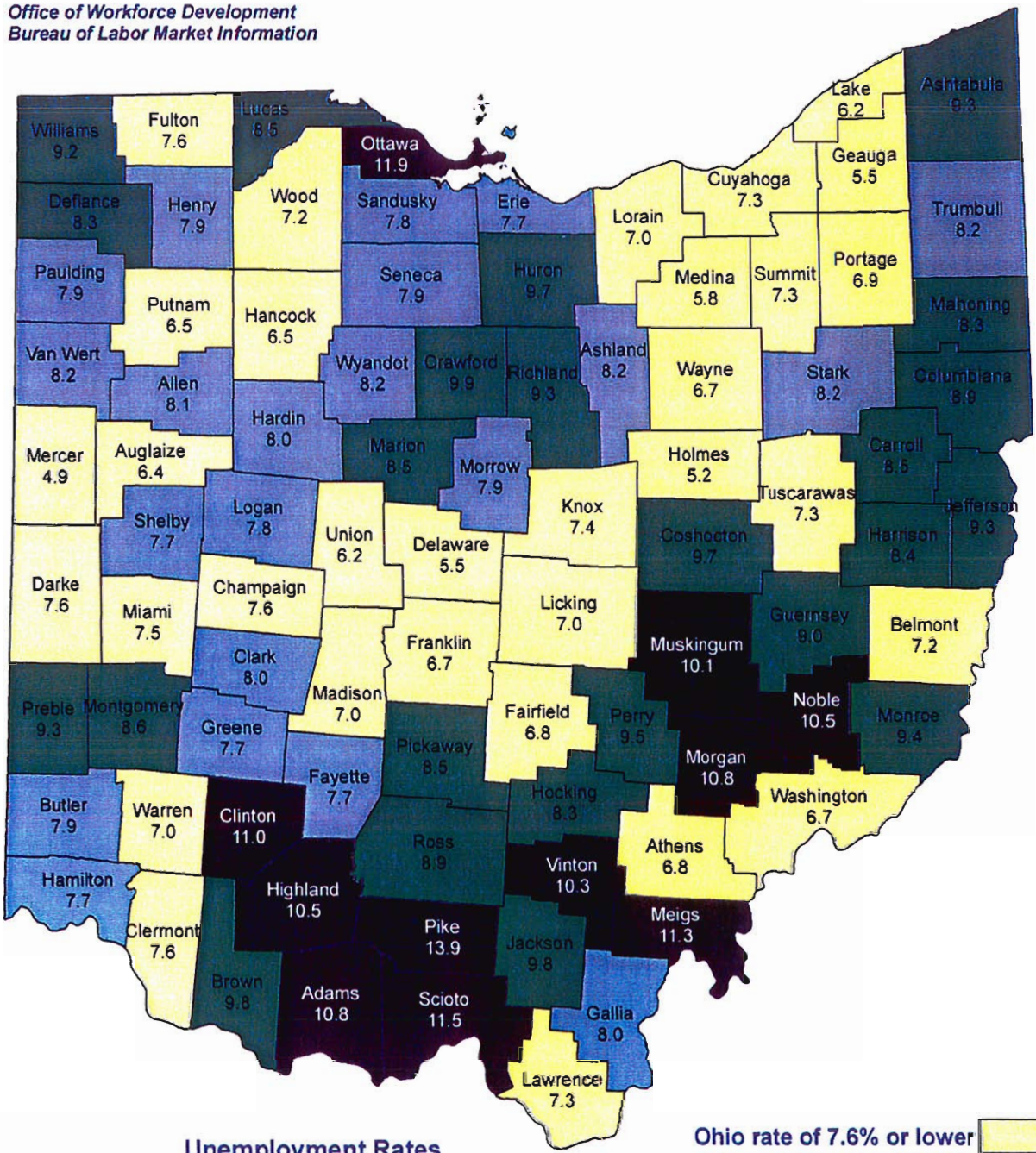
Rank (b)	County	Unemployment Rate	Rank (b)	County	Unemployment Rate
1	Pike County	13.9	45	Butler County	7.9
2	Ottawa County	11.9	46	Morrow County	7.9
3	Scioto County	11.5	47	Seneca County	7.9
4	Meigs County	11.3	48	Henry County	7.9
5	Clinton County	11.0	49	Paulding County	7.9
6	Morgan County	10.8	50	Logan County	7.8
7	Adams County	10.8	51	Sandusky County	7.8
8	Highland County	10.5	52	Shelby County	7.7
9	Noble County	10.5	53	Hamilton County	7.7
10	Vinton County	10.3	54	Fayette County	7.7
11	Muskingum County	10.1	55	Greene County	7.7
12	Crawford County	9.9	56	Erie County	7.7
13	Brown County	9.8	57	Champaign County	7.6
14	Jackson County	9.8	58	Clermont County	7.6
15	Coshocton County	9.7	59	Fulton County	7.6
16	Huron County	9.7	60	Darke County	7.6
17	Perry County	9.5	61	Miami County	7.5
18	Monroe County	9.4	62	Knox County	7.4
19	Jefferson County	9.3	63	Summit County	7.3
20	Richland County	9.3	64	Cuyahoga County	7.3
21	Ashtabula County	9.3	65	Lawrence County	7.3
22	Preble County	9.3	66	Tuscarawas County	7.3
23	Williams County	9.2	67	Belmont County	7.2
24	Guernsey County	9.0	68	Wood County	7.2
25	Ross County	8.9	69	Lorain County	7.0
26	Columbiana County	8.9	70	Madison County	7.0
27	Montgomery County	8.6	71	Licking County	7.0
28	Lucas County	8.5	72	Warren County	7.0
29	Carroll County	8.5	73	Portage County	6.9
30	Marion County	8.5	74	Athens County	6.8
31	Pickaway County	8.5	75	Fairfield County	6.8
32	Harrison County	8.4	76	Washington County	6.7
33	Mahoning County	8.3	77	Franklin County	6.7
34	Hocking County	8.3	78	Wayne County	6.7
35	Defiance County	8.3	79	Putnam County	6.5
36	Trumbull County	8.2	80	Hancock County	6.5
37	Wyandot County	8.2	81	Auglaize County	6.4
38	Van Wert County	8.2	82	Union County	6.2
39	Ashland County	8.2	83	Lake County	6.2
40	Stark County	8.2	84	Medina County	5.8
41	Allen County	8.1	85	Geauga County	5.5
42	Gallia County	8.0	86	Delaware County	5.5
43	Clark County	8.0	87	Holmes County	5.2
44	Hardin County	8.0	88	Mercer County	4.9

[a] These estimates, prepared in cooperation with the Bureau of Labor Statistics, U.S. Department of Labor, are based on 2010 benchmark, are geared to county of residence, and NOT seasonally adjusted. (b) Rankings based upon unrounded unemployment rates.

Ohio Department of Job and Family Services
Office of Workforce Development
Bureau of Labor Market Information
Columbus 43215

Ohio Not Seasonally Adjusted Unemployment Rates November 2011

Office of Workforce Development
Bureau of Labor Market Information



Unemployment Rates

	Not Seasonally Adjusted	Seasonally Adjusted
United States..	8.2%	8.6%
Ohio.....	7.6%	8.5%

Ohio rate of 7.6% or lower
Above Ohio rate of 7.6%; US rate of 8.2% or lower
Above US rate of 8.2%; below 10.0%
10.0% or above

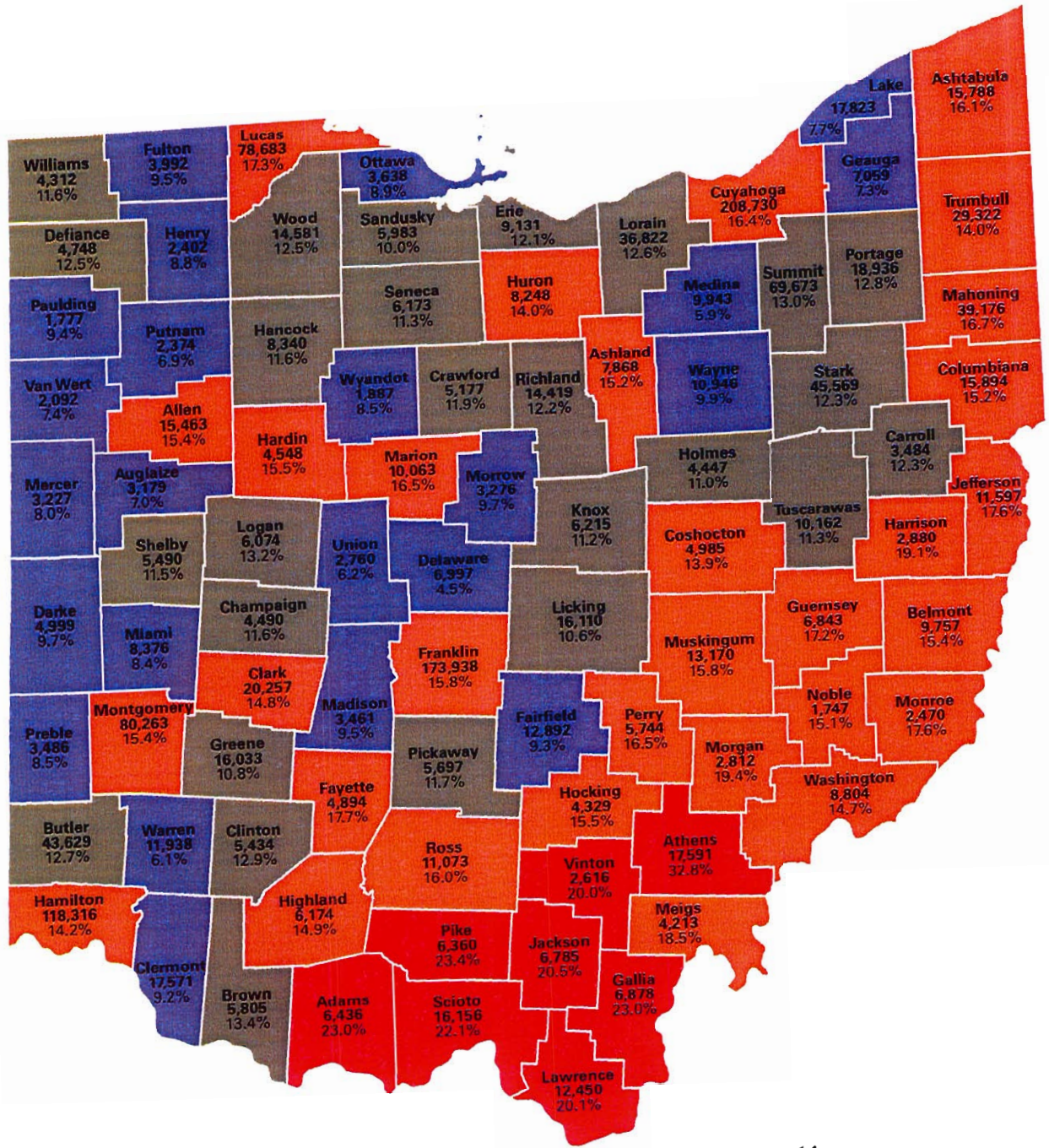
Ohio Department of Job and Family Services

John R. Kasich, **Governor** Michael B. Colbert, **Director**

Ohio | Department of Development

Poverty in Ohio by County

2005-2009 American Community Survey



Statewide Poverty
1,526,350
13.6%

Percentage County Population in Poverty

- 4.5% - 9.9%
- 10% - 13.5%
- 13.6% - 19.9%
- 20% - 32.8%

This map shows the 2005-2009 American Community Survey estimates of the number and percentage of persons in poverty by county

Source:
2005-2009 American Community Survey,
U.S. Census Bureau

Prepared by:
Ohio Department of Development,
Policy Research and Strategic Planning
April 2011

R032911A

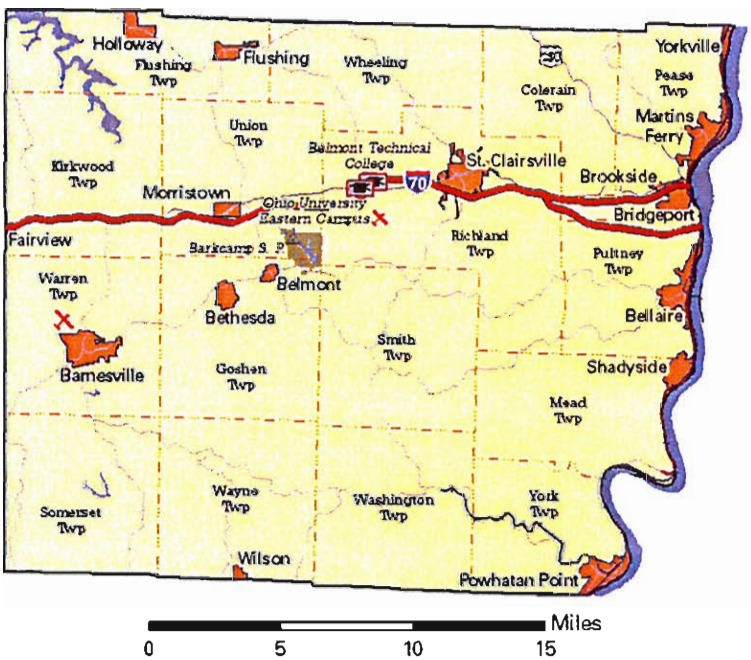
Ohio County Profiles

Ohio Department of Development

Prepared by the Office of Policy, Research and Strategic Planning

Belmont County

Established: Proclamation - September 7, 1801
2010 Population: 70,400
Land Area: 537.3 square miles
County Seat: St. Clairsville City
Named for: French: "Beautiful Mountain"



Taxes

Taxable value of real property	$949,822,220
Residential	$629,171,580
Agriculture	$89,642,770
Industrial	$36,169,460
Commercial	$190,160,110
Mineral	$4,678,300
Ohio income tax liability	$33,220,505
Average per return	$1,105.25

Land Use/Land Cover

	Percent
Urban (Residential/Commercial/Industrial/ Transportation and Urban Grasses)	1.85%
Cropland	14.88%
Pasture	12.89%
Forest	69.55%
Open Water	0.82%
Wetlands (Wooded/Herbaceous)	0.00%
Bare/Mines	0.00%

Largest Places

	Census 2010	Census 2000
Martins Ferry city	6,915	7,226
St. Clairsville city	5,184	5,057
Bellaire village	4,278	4,892
Barnesville village	4,193	4,225
Shadyside village	3,785	3,675
Bridgeport village	1,831	2,186
Powhatan Point village	1,592	1,744
Bethesda village	1,256	1,413
Flushing village	879	900
Brookside village	632	644

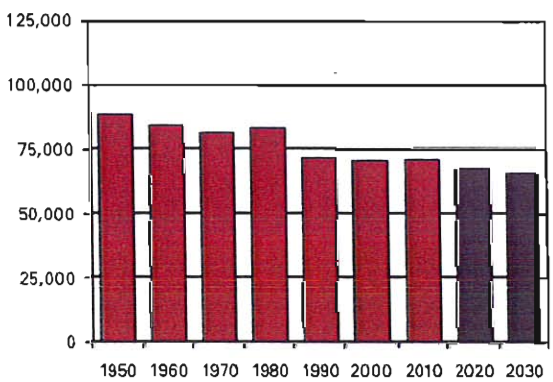
Total Population

Census

1800		1880	49,638	1950	87,740
1810	11,097	1890	57,413	1960	83,864
1820	20,329	1900	60,875	1970	80,917
1830	28,627	1910	76,856	1980	82,569
1840	30,901	1920	93,193	1990	71,074
1850	34,600	1930	94,719	2000	70,226
1860	36,398	1940	95,614	2010	70,400
1870	39,714				

Projected

2020	66,810
2030	65,340



Belmont County

Population by Race

	Number	Percent
ACS Total Population	68,372	100.0%
White	64,069	93.7%
African-American	2,705	4.0%
Native American	86	0.1%
Asian	307	0.4%
Pacific Islander	76	0.1%
Other	103	0.2%
Two or More Races	1,026	1.5%
Hispanic (may be of any race)	348	0.5%
Total Minority	4,448	6.5%

Educational Attainment

	Number	Percent
Persons 25 years and over	48,771	100.0%
No high school diploma	6,673	13.7%
High school graduate	22,379	45.9%
Some college, no degree	9,116	18.7%
Associate degree	4,061	8.3%
Bachelor's degree	4,377	9.0%
Master's degree or higher	2,165	4.4%

Family Type by Employment Status

	Number	Percent
Total Families	19,253	100.0%
Married couple, husband and wife in labor force	7,235	37.6%
Married couple, husband in labor force, wife not	2,926	15.2%
Married couple, wife in labor force, husband not	1,406	7.3%
Married couple, husband and wife not in labor force	3,111	16.2%
Male householder, in labor force	848	4.4%
Male householder, not in labor force	400	2.1%
Female householder, in labor force	2,199	11.4%
Female householder, not in labor force	1,128	5.9%

Household Income

	Number	Percent
Total Households	28,343	100.0%
Less than $10,000	2,788	9.8%
$10,000 to $19,999	4,362	15.4%
$20,000 to $29,999	3,972	14.0%
$30,000 to $39,999	3,898	13.8%
$40,000 to $49,999	2,690	9.5%
$50,000 to $59,999	2,577	9.1%
$60,000 to $74,999	2,831	10.0%
$75,000 to $99,999	3,064	10.8%
$100,000 to $149,999	1,608	5.7%
$150,000 to $199,999	383	1.4%
$200,000 or more	170	0.6%
Median household income	$37,753	

Percentages may not sum to 100% due to rounding.

Population by Age

	Number	Percent
ACS Total Population	68,372	100.0%
Under 5 years	3,480	5.1%
5 to 17 years	10,239	15.0%
18 to 24 years	5,882	8.6%
25 to 44 years	16,983	24.8%
45 to 64 years	19,757	28.9%
65 years and more	12,031	17.6%
Median Age	42.6	

Family Type by Presence of Own Children Under 18

	Number	Percent
Total Families	19,253	100.0%
Married-couple families with own children	4,854	25.2%
Male householder, no wife present, with own children	695	3.6%
Female householder, no husband present, with own children	1,760	9.1%
Families with no own children	11,944	62.0%

Poverty Status of Families By Family Type by Presence Of Related Children

	Number	Percent
Total Families	19,253	100.0%
Family income above poverty level	16,862	87.6%
Family income below poverty level	2,391	12.4%
Married couple, with related children	423	17.7%
Male householder, no wife present, with related children	196	8.2%
Female householder, no husband present, with related children	1,099	46.0%
Families with no related children	673	28.1%

Ratio of Income To Poverty Level

	Number	Percent
Population for whom poverty status is determined	63,514	100.0%
Below 50% of poverty level	4,335	6.8%
50% to 99% of poverty level	5,422	8.5%
100% to 149% of poverty level	6,403	10.1%
150% to 199% of poverty level	7,280	11.5%
200% of poverty level or more	40,074	63.1%

Geographical Mobility

	Number	Percent
Population aged 1 year and older	67,742	100.0%
Same house as previous year	60,447	89.2%
Different house, same county	3,897	5.8%
Different county, same state	1,933	2.9%
Different state	1,354	2.0%
Abroad	111	0.2%

Belmont County

Travel Time To Work

	Number	Percent
Workers 16 years and over	27,742	100.0%
Less than 15 minutes	8,195	29.5%
15 to 29 minutes	11,610	41.8%
30 to 44 minutes	4,283	15.4%
45 to 59 minutes	1,726	6.2%
60 minutes or more	1,928	6.9%
Mean travel time	24.4 minutes	

Housing Units

	Number	Percent
Total housing units	31,508	100.0%
Occupied housing units	28,343	90.0%
Owner occupied	20,883	73.7%
Renter occupied	7,460	26.3%
Vacant housing units	3,165	10.0%

Year Structure Built

	Number	Percent
Total housing units	31,508	100.0%
Built 2005 or later	363	1.2%
Built 2000 to 2004	1,267	4.0%
Built 1990 to 1999	2,736	8.7%
Built 1980 to 1989	2,204	7.0%
Built 1970 to 1979	4,820	15.3%
Built 1960 to 1969	3,160	10.0%
Built 1950 to 1959	3,400	10.8%
Built 1940 to 1949	2,543	8.1%
Built 1939 or earlier	11,015	35.0%
Median year built	1956	

Value for Specified Owner-Occupied Housing Units

	Number	Percent
Specified owner-occupied housing units	20,883	100.0%
Less than $20,000	1,405	6.7%
$20,000 to $39,999	1,935	9.3%
$40,000 to $59,999	3,064	14.7%
$60,000 to $79,999	3,518	16.8%
$80,000 to $99,999	3,239	15.5%
$100,000 to $124,999	2,130	10.2%
$125,000 to $149,999	1,609	7.7%
$150,000 to $199,999	1,826	8.7%
$200,000 to $299,999	1,611	7.7%
$300,000 to $499,999	419	2.0%
$500,000 to $999,999	100	0.5%
$1,000,000 or more	27	0.1%
Median value	$82,900	

House Heating Fuel

	Number	Percent
Occupied housing units	28,343	100.0%
Utility gas	14,513	51.2%
Bottled, tank or LP gas	2,106	7.4%
Electricity	6,323	22.3%
Fuel oil, kerosene, etc	3,999	14.1%
Coal, coke or wood	1,204	4.2%
Solar energy or other fuel	114	0.4%
No fuel used	84	0.3%

Percentages may not sum to 100% due to rounding.

Gross Rent

	Number	Percent
Specified renter-occupied housing units	7,460	100.0%
Less than $100	113	1.5%
$100 to $199	439	5.9%
$200 to $299	619	8.3%
$300 to $399	1,100	14.7%
$400 to $499	1,404	18.8%
$500 to $599	1,326	17.8%
$600 to $699	552	7.4%
$700 to $799	579	7.8%
$800 to $899	178	2.4%
$900 to $999	96	1.3%
$1,000 to $1,499	111	1.5%
$1,500 or more	25	0.3%
No cash rent	918	12.3%
Median gross rent	$464	
Median gross rent as a percentage of household income	26.6	

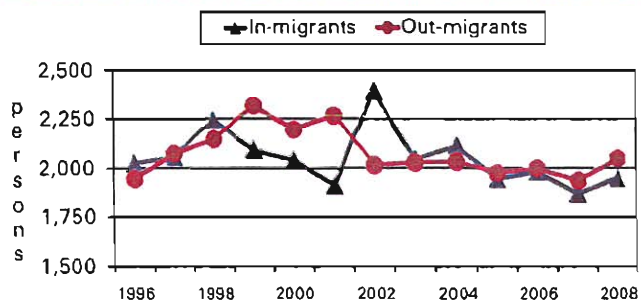
Selected Monthly Owner Costs for Specified Owner-Occupied Housing Units

	Number	Percent
Specified owner-occupied housing units with a mortgage	11,315	100.0%
Less than $400	483	4.3%
$400 to $599	1,516	13.4%
$600 to $799	2,634	23.3%
$800 to $999	2,090	18.5%
$1,000 to $1,249	2,013	17.8%
$1,250 to $1,499	1,137	10.0%
$1,500 to $1,999	969	8.6%
$2,000 to $2,999	402	3.6%
$3,000 or more	71	0.6%
Median monthly owners cost	$899	
Median monthly owners cost as a percentage of household income	20.2	

Vital Statistics

	Number	Rate
Births / rate per 1,000 women aged 15 to 44	722	61.3
Teen births / rate per 1,000 females 15-19	87	46.3
Deaths / rate per 100,000 population	894	1,316.5
Marriages / rate per 1,000 population	440	6.4
Divorces / rate per 1,000 population	240	3.5

Migration



Ohio County Profiles

Belmont County

Agriculture

Land in farms (acres)	127,000
Number of farms	660
Average size (acres)	192
Total cash receipts	$19,378,000
Per farm	$29,361

Education

Public schools	23
Students (Average Daily Membership)	9,213
Expenditures per student	$9,059
Student-teacher ratio	16.3
Graduation rate	92.9
Teachers (Full Time Equivalent)	591.9
Non-public schools	11
Students	931
4-year public universites	0
Branches	1
2-year public colleges	1
Private universities and colleges	0
Public libraries (Main / Branches)	4 / 5

Transportation

Registered motor vehicles	79,745
Passenger cars	49,353
Noncommercial trucks	15,335
Total license revenue	$2,093,399.77
Interstate highway miles	33.66
Turnpike miles	0.00
U.S. highway miles	32.01
State highway miles	215.24
County, township, and municipal road miles	1,204.63
Commercial airports	2

Voting

Number of precincts	70
Number of registered voters	47,834
Voted in 2010 election	24,136
Percent turnout	50.5%

Health Care

Physicians (MDs & DOs)	74
Registered hospitals	3
Number of beds	306
Licensed nursing homes	11
Number of beds	893
Licensed residential care	5
Number of beds	201
Adults with employer-based insurance	59.8%
Children with employer-based insurance	63.8%

State Parks, Forests, Nature Preserves, And Wildlife Areas

Areas/Facilities	5
Acreage	19,040.57

Communications

Television stations	0
Radio stations	3
Daily newspapers	1
Circulation	18,792

Crime

Total crimes reported in Uniform Crime Report	800

Finance

FDIC insured financial institutions (HQs)	3
Assets (000)	$876,632
Branch offices	38
Institutions represented	13

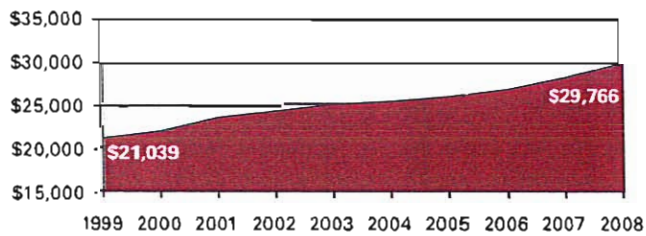
Transfer Payments

Total transfer payments	$530,323,000
Payments to individuals	$518,839,000
Retirement and disability	$204,485,000
Medical payments	$228,777,000
Income maintenance (Supplemental SSI, family assistance, food stamps, etc)	$43,445,000
Unemployment benefits	$8,694,000
Veterans benefits	$12,132,000
Federal education and training assistance	$14,240,000
Other payments to individuals	$7,066,000
Total personal income	$2,025,948,000
Depedency ratio	26.2%

Federal Expenditures

Direct expenditures or obligations	$509,150,612
Retirement and disability	$232,132,517
Other direct payments	$170,142,075
Grant awards	$82,650,129
Highway planning and construction	$4,437,401
Temporary assistance to needy families	$4,502,920
Medical assistance program	$57,186,990
Procurement contract awards	$9,447,334
Dept. of Defense	$855,627
Salary and wages	$14,778,557
Dept. of Defense	$38,000
Other federal assistance	$79,842,643
Direct loans	$11,091,944
Guaranteed loans	$24,631,757
Insurance	$44,118,942

Per Capita Personal Income



Belmont County

Civilian Labor Force

	2005	2006	2007	2008	2009
Civilian labor force	32,400	32,700	32,800	33,300	34,000
Employed	30,300	30,800	31,000	31,300	30,900
Unemployed	2,100	1,900	1,800	2,000	3,100
Unemployment rate	6.4	5.7	5.6	6.1	9.1

Establishments, Employment, and Wages by Sector: 2008

Industrial Sector	Number of Establishments	Average Employment	Total Wages	Average Weekly Wage
Private Sector	1,494	19,573	$569,913,866	$560
Goods-Producing	226	3,680	$190,192,691	$994
Natural Resources and Mining	25	1,316	$92,755,487	$1,356
Constuction	149	1,163	$41,500,671	$686
Manufacturing	52	1,202	$55,936,533	$895
Service-Providing	1,269	15,892	$379,721,175	$459
Trade, Transportation and Utilities	437	5,620	$142,979,278	$489
Information	18	469	$16,663,050	$683
Financial Services	144	1,143	$33,888,723	$570
Professional and Business Services	170	1,030	$26,424,105	$494
Education and Health Services	195	4,091	$116,659,288	$548
Leisure and Hospitality	150	2,824	$31,660,140	$216
Other Services	154	710	$11,393,033	$309
Federal Government		190	$9,108,817	$923
State Government		808	$36,039,957	$858
Local Government		3,181	$96,867,215	$586

Private Sector total includes Unclassified establishments not shown.

Change Since 2003

Private Sector	-2.0%	-2.3%	21.1%	23.9%
Goods-Producing	-13.1%	1.6%	37.8%	35.6%
Natural Resources and Mining	-24.2%	13.9%	57.1%	37.9%
Construction	-11.3%	14.8%	48.5%	29.2%
Manufacturing	-13.3%	-17.3%	9.6%	32.6%
Service-Producing	0.3%	-3.2%	14.2%	17.7%
Trade, Transportation and Utilities	-3.5%	-6.0%	19.7%	27.3%
Information	-5.3%	-12.8%	5.3%	20.7%
Financial Services	-4.0%	-3.1%	14.7%	18.3%
Professional and Business Services	-1.7%	12.7%	3.9%	-7.7%
Education and Health Services	21.1%	-5.4%	11.5%	17.8%
Leisure and Hospitality	-1.3%	-0.1%	13.7%	13.7%
Other Services	-1.3%	8.2%	14.9%	6.2%
Federal Government		-3.6%	16.6%	20.8%
State Government		-2.4%	13.0%	15.9%
Local Government		-0.7%	10.3%	11.2%

Business Numbers

	2004	2005	2006	2007	2008
Business starts	114	91	115	95	76
Active businesses	1,421	1,369	1,392	1,303	1,239

Residential Construction

	2005	2006	2007	2008	2009
Total units	41	47	62	10	10
Total valuation (000)	$2,338	$4,209	$7,334	$1,525	$1,522
Total single-unit bldgs	19	23	18	10	10
Average cost per unit	$105,689	$95,366	$90,757	$152,453	$152,176
Total multi-unit bldg units	22	24	44	0	0
Average cost per unit	$15,000	$84,000	$129,545	$0	$0

Major Employers

Barnesville Hospital Assn	Serv
Belmont Community Hospital	Serv
Belmont County Government	Govt
Belmont Technical College	Govt
Commercial Vehicle Group	Mfg
East Ohio Regional Hospital	Serv
Kroger Co	Trade
Ohio Valley Coal Co	Mining
Severstal Wheeling Inc	Mfg
State of Ohio	Govt
Wal-Mart Stores Inc	Trade

APPENDIX D

Reconstruction and Mitigation Map

Wetland Mitigation Area

Stream Reconstruction Details

WETLAND MITIGATION AND STREAM RECONSTRUCTION LEGEND

1	2	3	4
5	6	7	8

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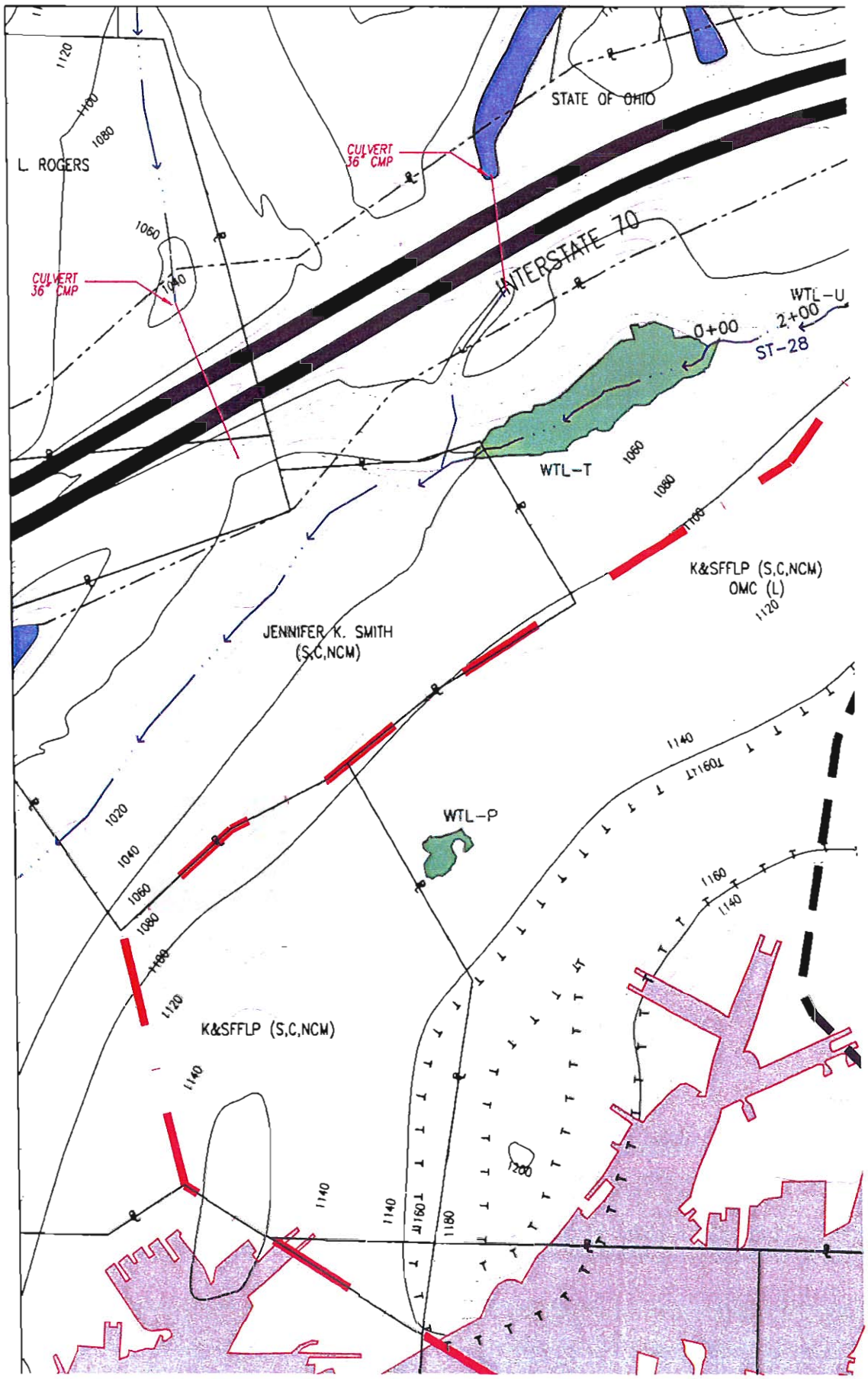
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CULVERT
36" CMP
INTERSTATE 70
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ST-28
WTL-T
K&SFFLP (S,C,NCM)
OMC (L)
JENNIFER K. SMITH
(S,C,NCM)
WTL-P
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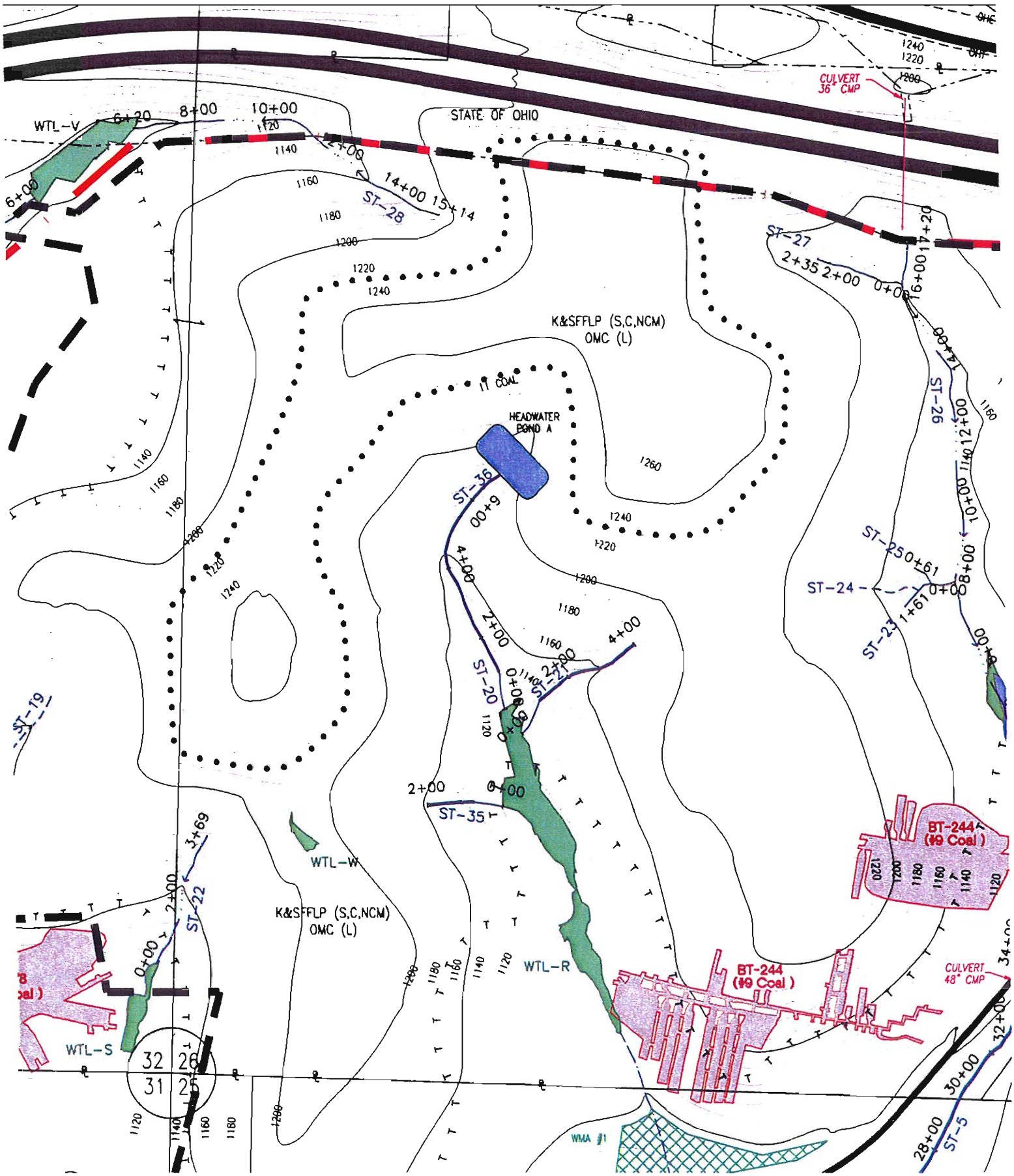
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CULVERT 36" CMP
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K&SFFLP (S,C,NCM)
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ST-35
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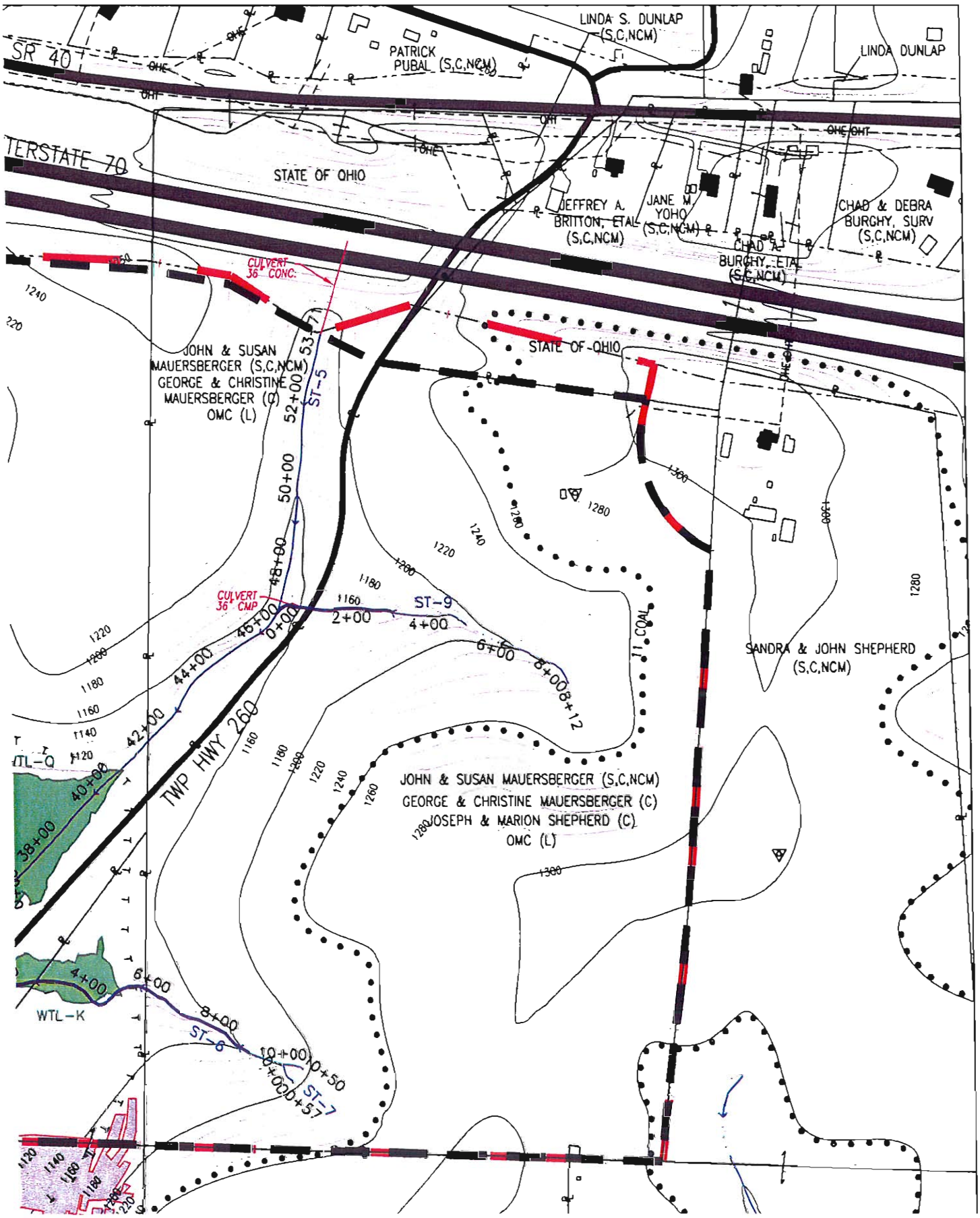
WTL-R
WTL-S
BT-244 (#9 Coal)
CULVERT 48" CMP
ST-5
WMA #1

3


SR 40
TERSTATE 70
LINDA S. DUNLAP (S,C,NCM)
PATRICK PUBAL (S,C,NCM)
LINDA DUNLAP
STATE OF OHIO
JEFFREY A. BRITTON, ETAL (S,C,NCM)
JANE M. YOHO (S,C,NCM)
CHAD & DEBRA BURGHY, SURV (S,C,NCM)
CHAD A. BURGHY, ETAL (S,C,NCM)
CULVERT 36" CONC.
JOHN & SUSAN MAUERSBERGER (S,C,NCM)
GEORGE & CHRISTINE MAUERSBERGER (C)
OMC (L)
STATE OF OHIO
ST-5
ST-9
CULVERT 36" CMP
TWP HWY 260
SANDRA & JOHN SHEPHERD (S,C,NCM)
JOHN & SUSAN MAUERSBERGER (S,C,NCM)
GEORGE & CHRISTINE MAUERSBERGER (C)
JOSEPH & MARION SHEPHERD (C)
OMC (L)
WTL-K
ST-6
ST-7

4

LEGEND

- PROPOSED PERMIT AREA
- "WATERS" of the U.S. STUDY AREA
- WETLAND AREA
- WETLAND MITIGATION AREA
- EXISTING IMPOUNDMENT
- UNDERGROUND MINES
- EXISTING HIGHWALL
- PREVIOUSLY MINED AREA
- COAL OUTCROP
- PERENNIAL STREAM
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SWALE
- RECONSTRUCTED STREAM

Linn Engineering, Inc.

Civil Engineering Consultants

P.O. Box 2086 Zanesville, Ohio 43702-2086 740-452-7434

NY, LLC
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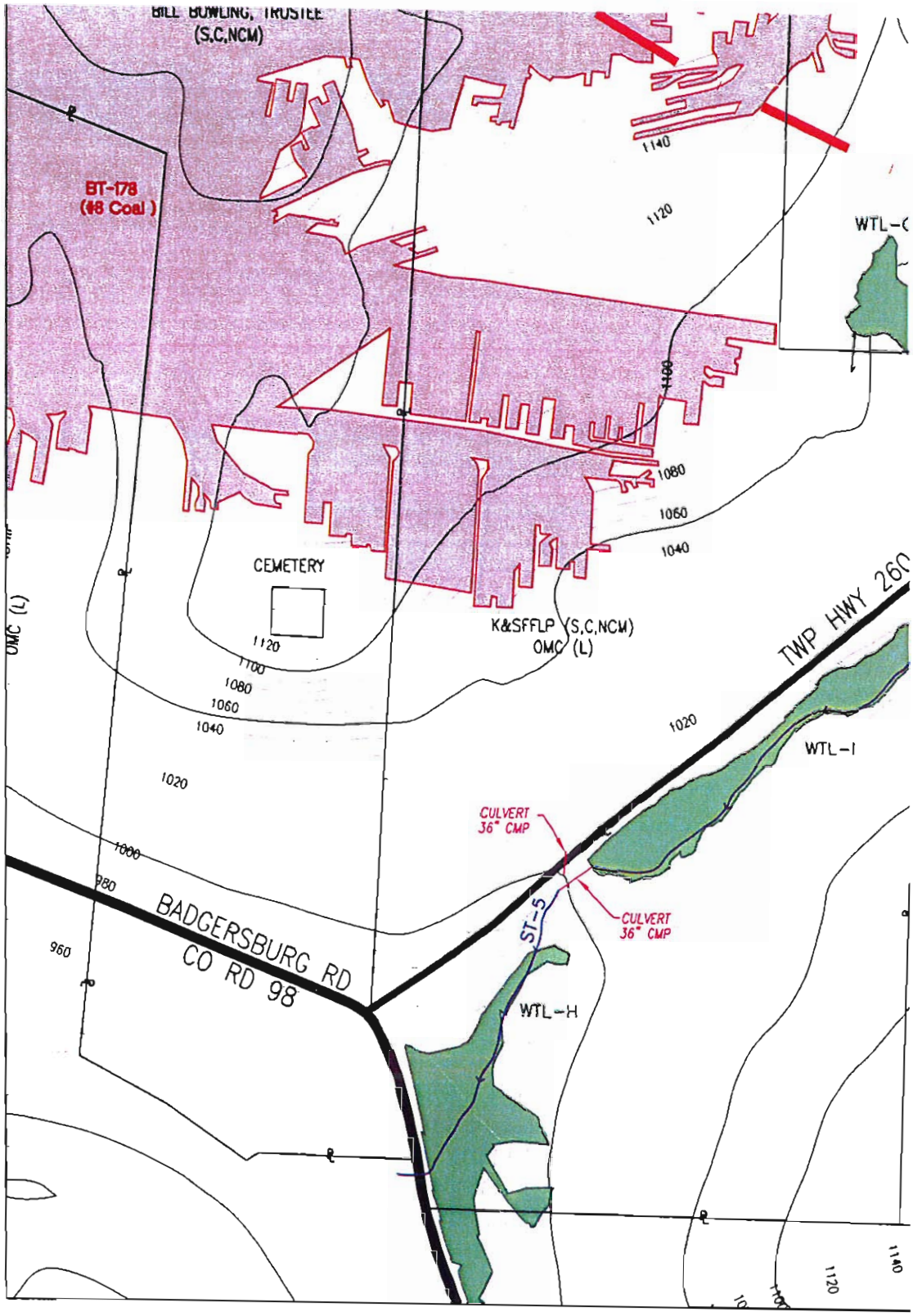

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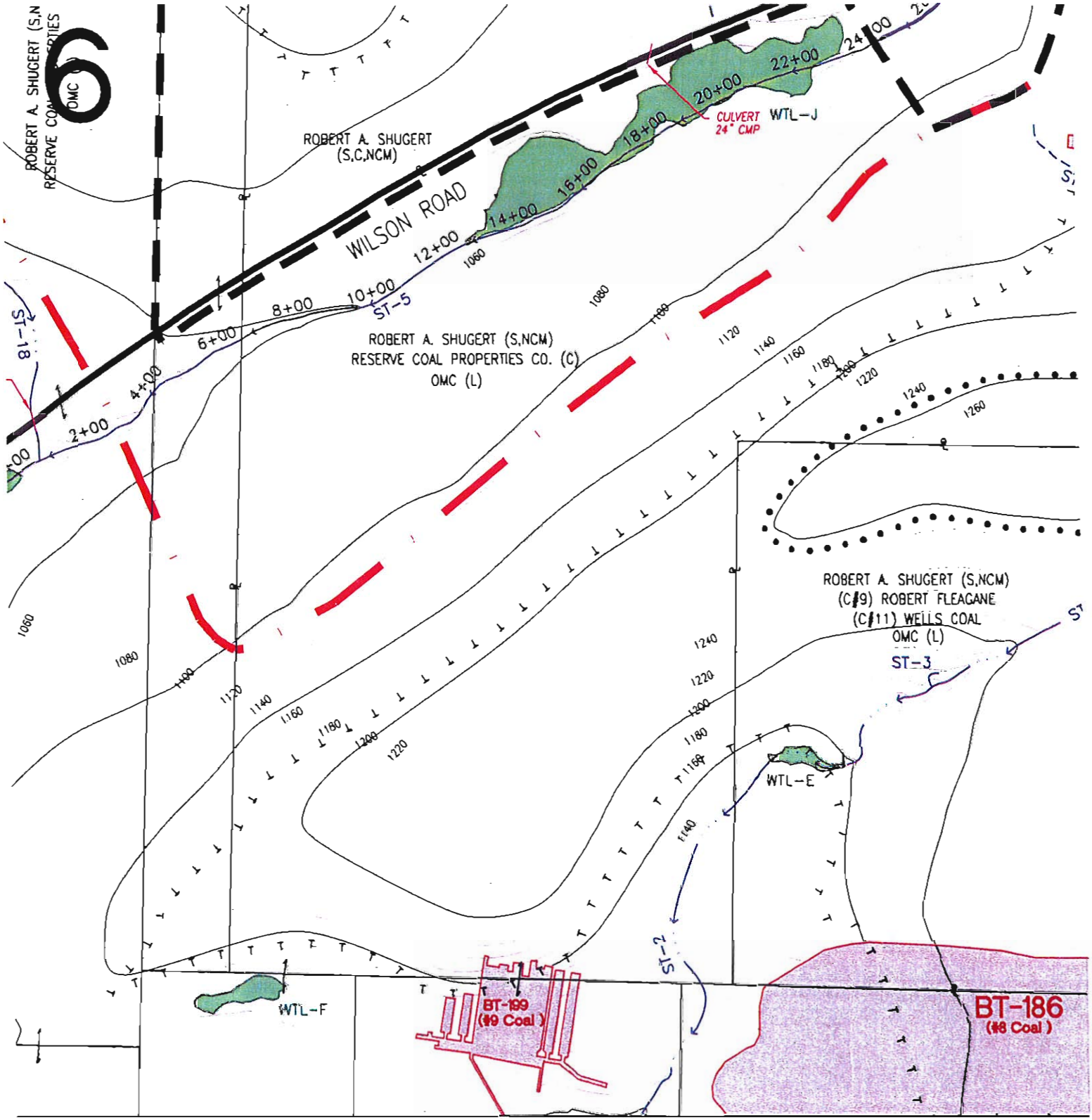
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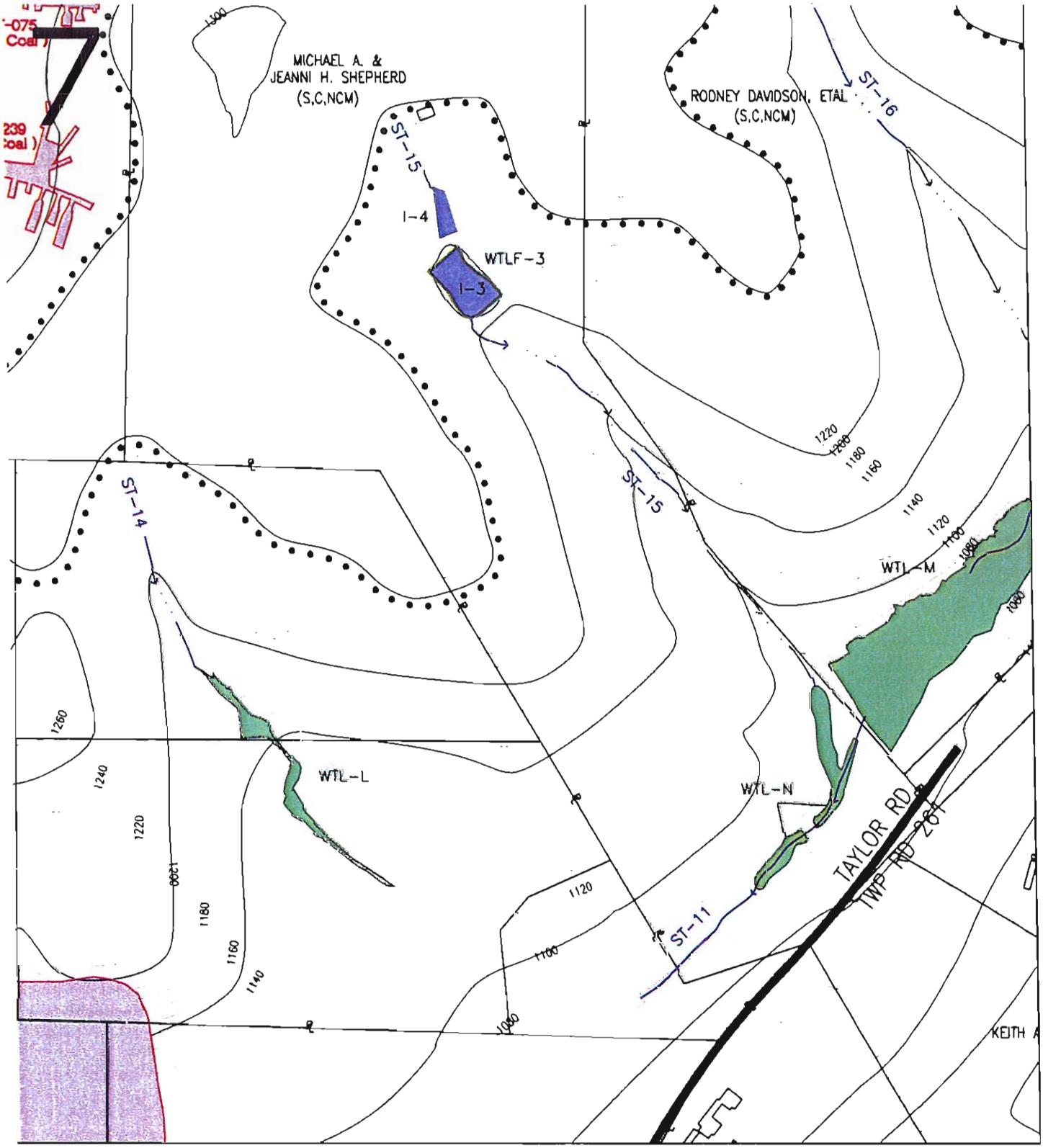
ROBERT A. SHUGERT (S,N
RESERVE COA
OMC
ROBERT A. SHUGERT
(S,C,NCM)
WILSON ROAD
CULVERT
24" CMP
WTL-J
ST-5
ST-18
ROBERT A. SHUGERT (S,NCM)
RESERVE COAL PROPERTIES CO. (C)
OMC (L)
ROBERT A. SHUGERT (S,NCM)
(C#9) ROBERT FLEAGANE
(C#11) WELLS COAL
OMC (L)
ST-3
WTL-E
ST-2
WTL-F
BT-199
(#9 Coal)
BT-186
(#8 Coal)


MICHAEL A. &
JEANNI H. SHEPHERD
(S,C,NCM)
RODNEY DAVIDSON, ETAL
(S,C,NCM)
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I-4
WTLF-3
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WTL-L
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TWP RD 261
KEITH A
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8

GRAPHIC SCALE

(IN FEET)
1 inch = 300 ft.

WETLAND MITIGATION AND STREAM RECONSTRUCTION

OXFORD MINING COM
SHUGERT SOUTH
WETLAND MITIGATI
STREAM RECONSTR

	By	Date
Designed	THL	
Drawn	JAP	1/14/12
Checked	THL	
Approved	THL	

Scale	Revisions	By	Date
Horiz. 1"= 300' Vert. 1"= N/A			
Field Book No.			

Project No.
SMS

Sheet No.	Of
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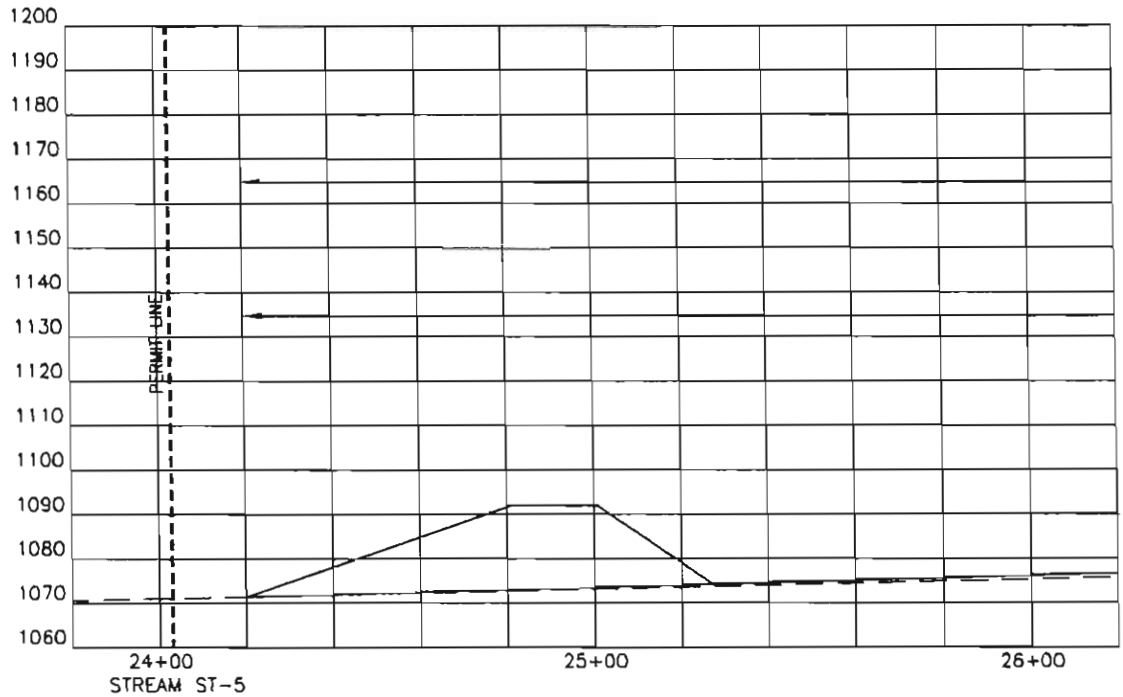
STREAM RECONSTRUCTION SHEET 1

LEGEND

1	2	3	4
5	6	7	8

1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1110
1100
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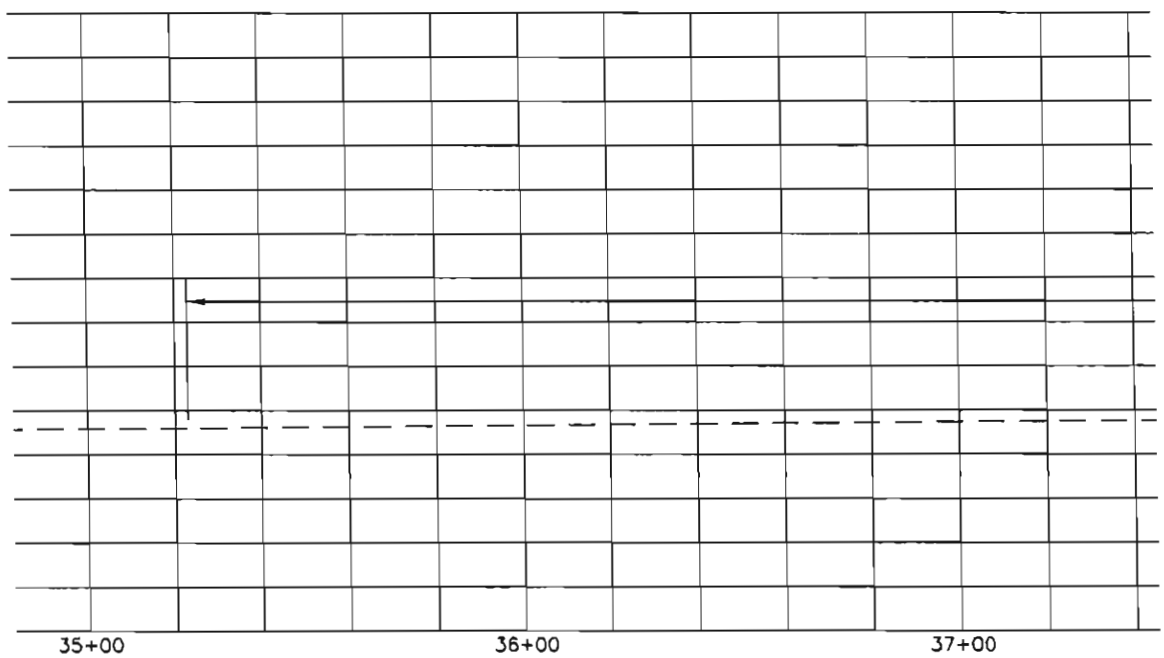
PERMIT LINE
24+00
25+00
26+00
STREAM ST-5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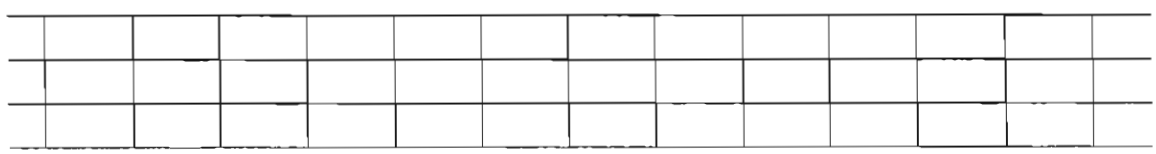
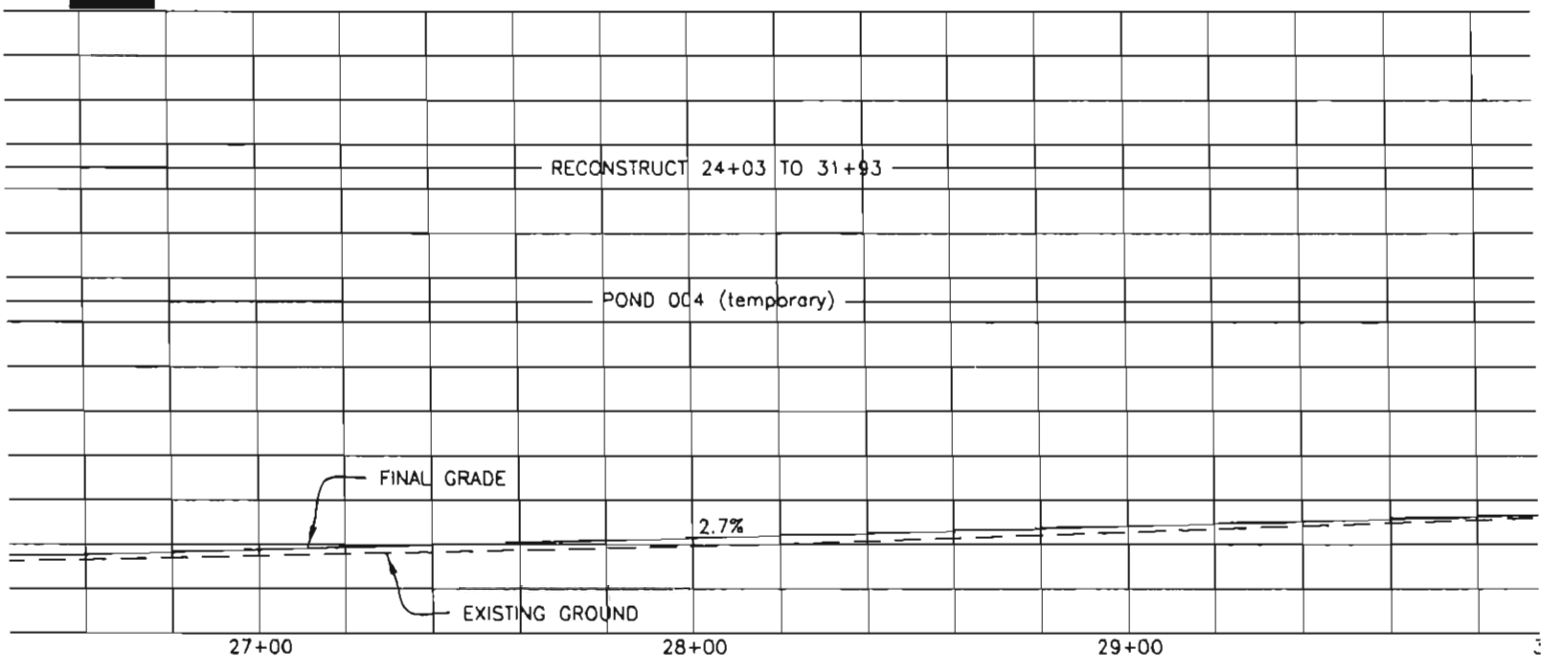
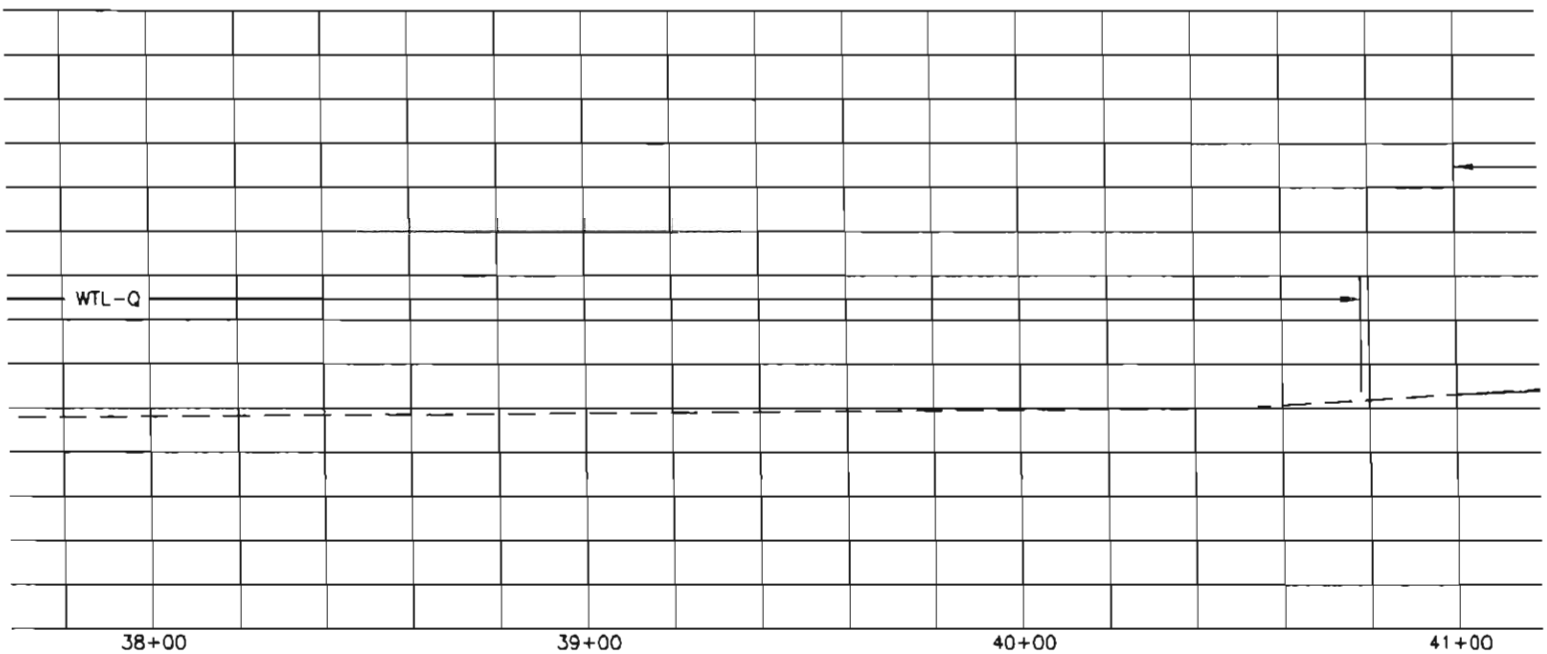
36+00
37+00

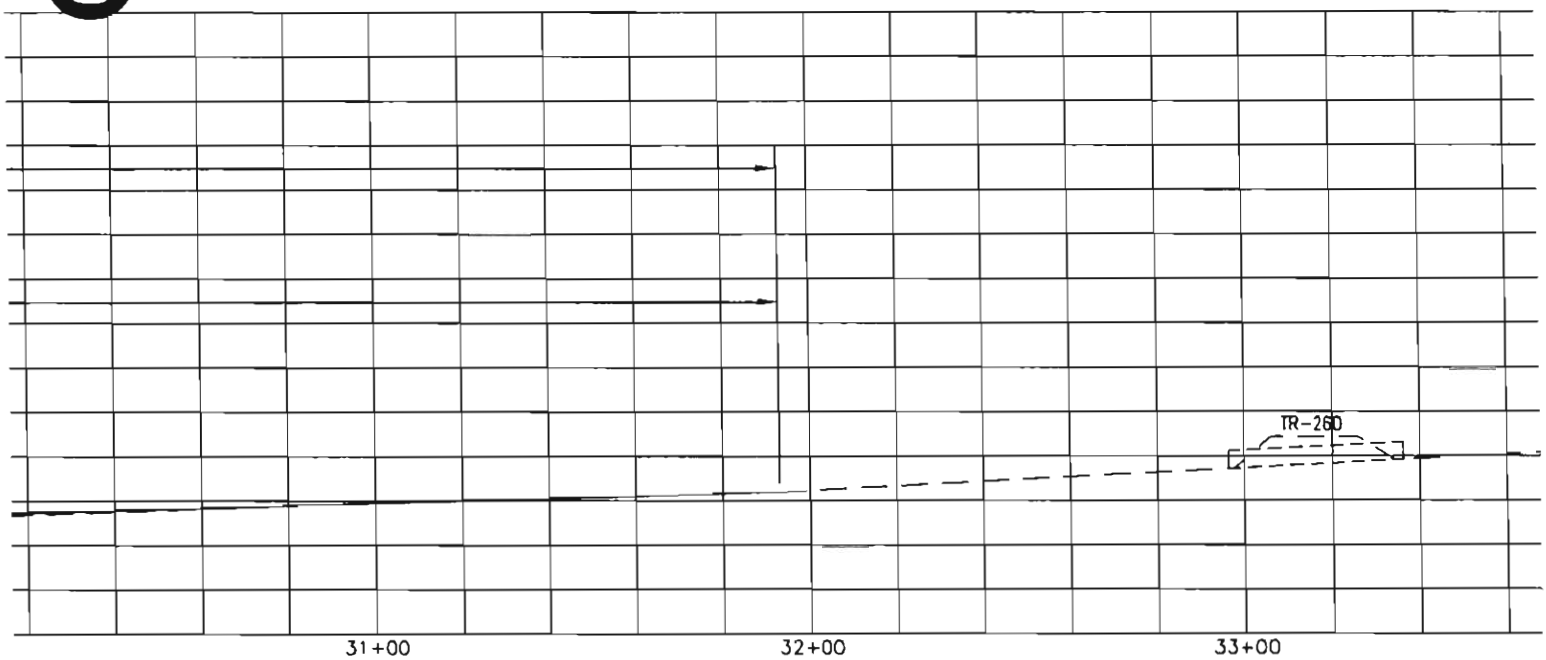


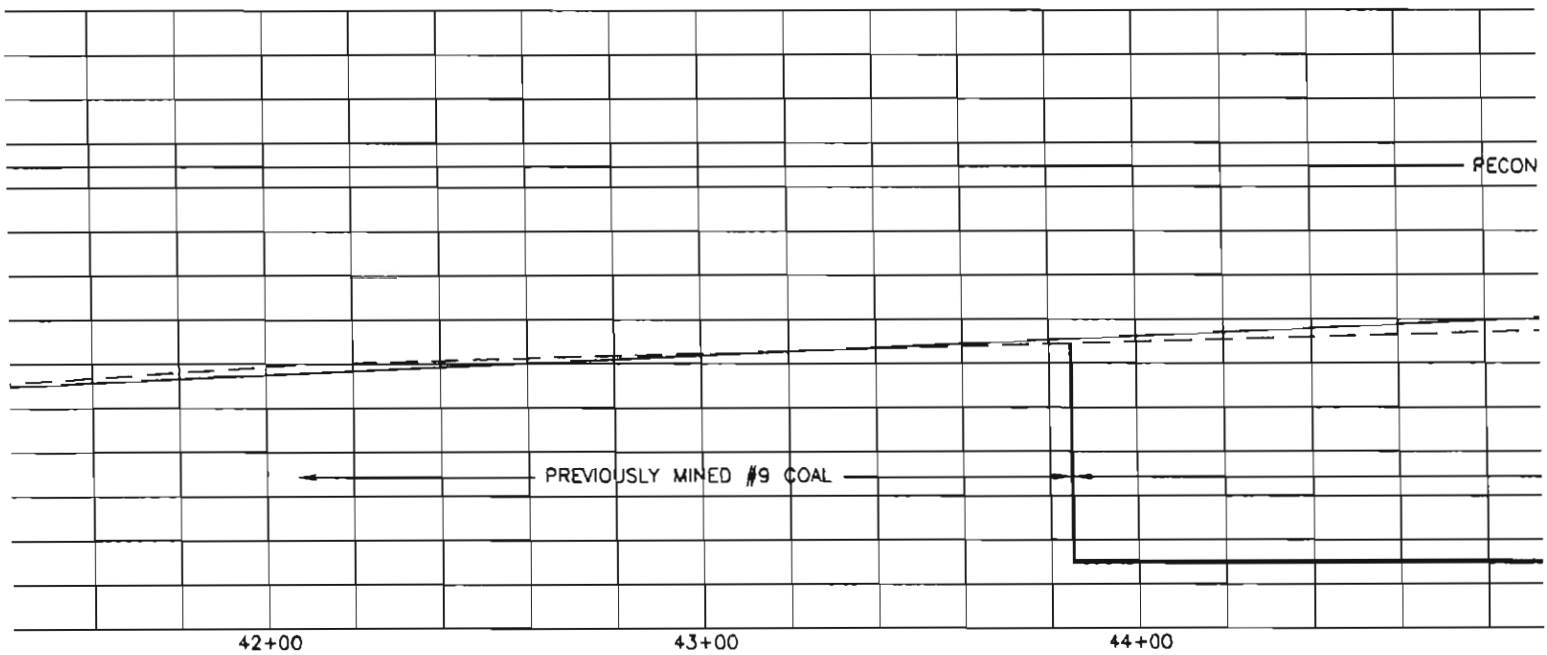
2


RECONSTRUCT 24+03 TO 31+93
POND 004 (temporary)
FINAL GRADE
2.7%
EXISTING GROUND
27+00
28+00
29+00


WTL-Q
38+00
39+00
40+00
41+00

3


TR-260
31+00
32+00
33+00


RECON
PREVIOUSLY MINED #9 COAL
42+00
43+00
44+00

)0

30

30

70

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Civil Engineering Consultants
P.O. Box 2086 Zanesville, Ohio 43702-2086
740-452-7434

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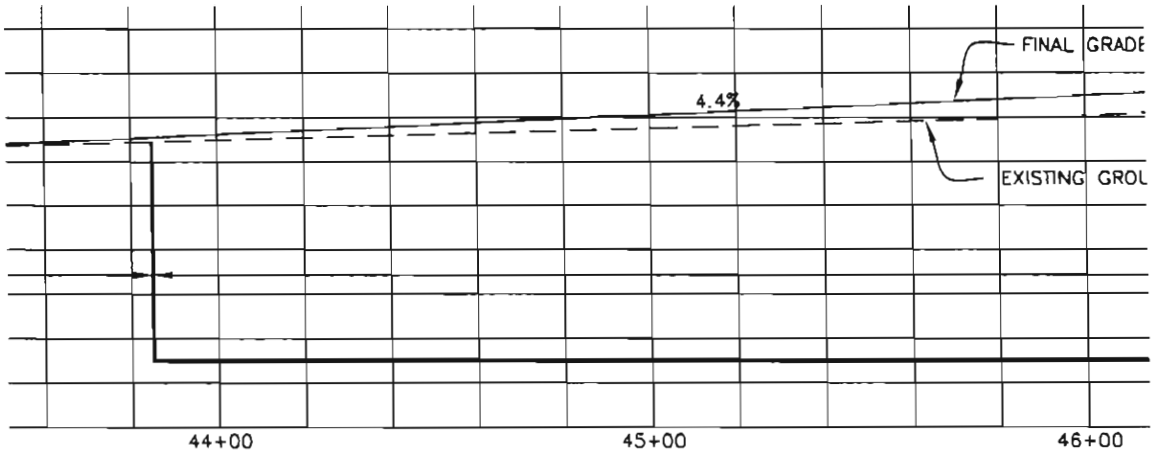
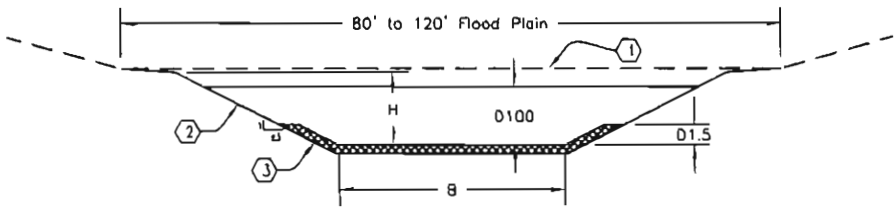




TYPICAL SECTION

SINGLE STAGE CHANNEL

NOTES

Channel:
The capacity of the channel shall carry the 100 year 6 hour storm. Flow depth = D100.
Base flow depth is flow from the 1.5 year 6 hour storm = D1.5.

The flow length of the low flow channel should equal or exceed the original channel length.

Minimize use of riprap armored channels. Rip rap depth above channel bottom = D1.5.

If riprap is placed above D1.5 the normal low flow should be covered with soil and planted.

Create features for stream stability, water quality, habitat enhancement and visual interest, including meanders, eddy rocks, pools and riffles.

Rock checks, meanders, eddy rock, woody debris, or vegetation can be used to reduce erosive flow velocities.

Flood Plain:
Final grading will provide positive drainage to the channel.

Encourage natural vegetation in the Flood Plain for the benefits of water quality, bank stability and wildlife.

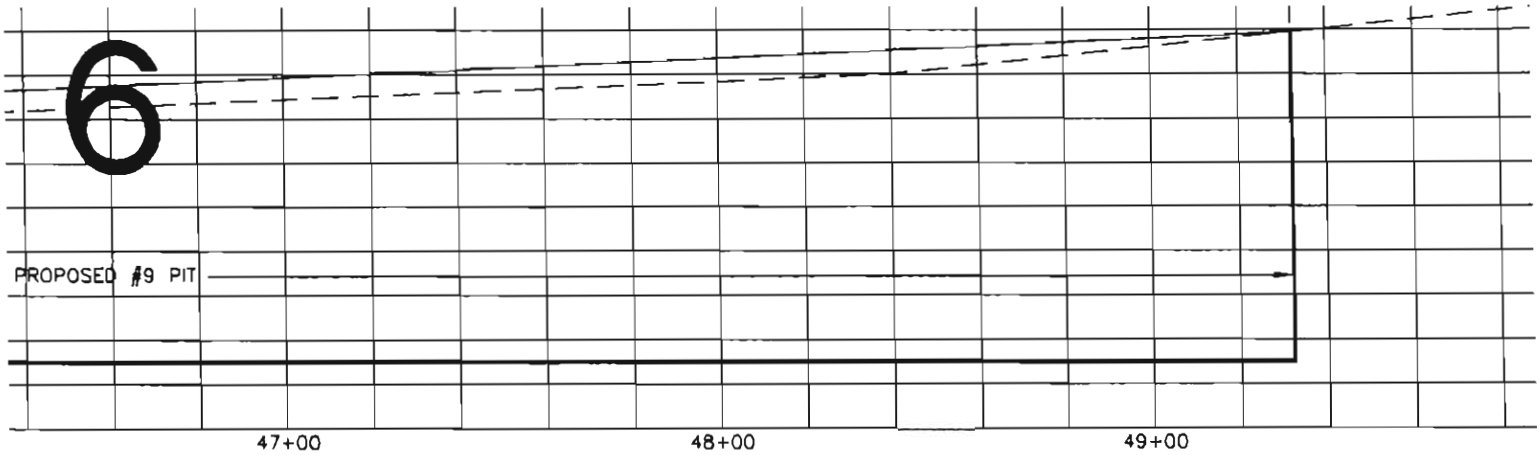
KEYNOTES

(1) Typical configuration of stream corridor / flood plain following rough backfilling and grading.

(2) Typical configuration of stream channel following final reconstruction.

(3) Rock channel protection. Thickness = 2 x D50.

F:\COAL\CAD\OX\Shugert-Mauersberger SOUTH\drainage plan.dwg, 2/23/2012 12:42:28 PM, CAW



DESIGN GUIDELINES:
Peak runoff will be calculated based on conditions at the time of final reclamation that will consider watershed area, ground cover, soil type, land slope and flow path.

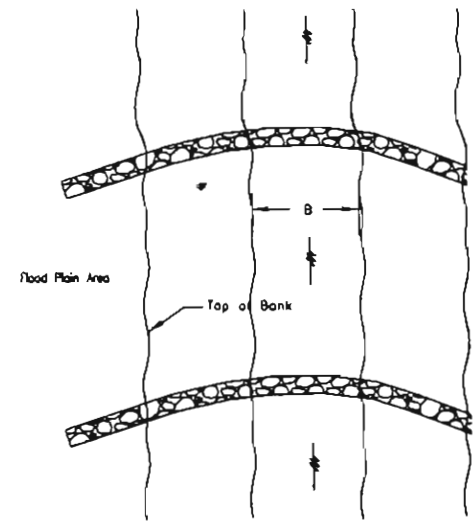
Where a steep channel (>10%) transitions into a lesser sloped channel, rip rap channel lining will extend along the flatter channel for a distance of at least 20 feet.

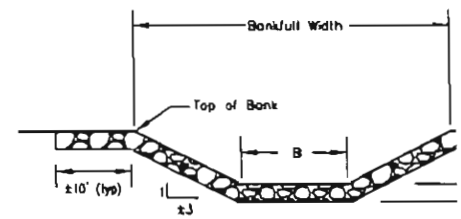
Channels may be stabilized with partially buried logs, stumps, root wads, rock check dams, wooden posts and supplemental planting.

Rock rip rap may consist of larger rock that are partially buried. Void space between larger rock or other channel stabilizing features should filled with smaller rock.

The channel and flood plain corridor shall be planted with appropriate riparian vegetation including trees and shrubs.

NOTES :
1. For 4-10% and >10% channels, meander pattern is not specified; however, straight channels are discouraged. Reconstructed channels should include slight meanders which will introduce channel diversity.
2. In general, the steeper the slope, the fewer the meanders.
3. 4-10% channel, place Rock Check upstream and downstream of Gravel Riffle.
4. >10% channel, place Rock Check at 50' intervals and Gravel Riffle between every third or fourth Rock Check.





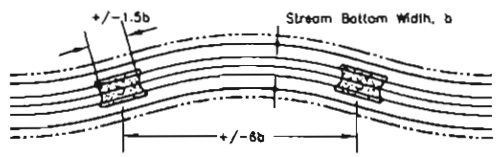
ROCK CHECK

ODOT Type C rock (18" < D50 < 24") shall be used.

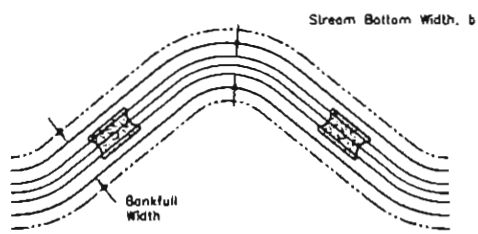
The ends shall extend from the top of the channel into
ft. or a distance equal to about one-half the channel
is less.

The trench shall be 1 to 2 ft. wide and shall be dug b
vee pointing upstream with the midsection of the rock
upstream than where it meets the channel bank.

The rock check shall be flush with the channel so that
rock surface is on the same grade as the channel bott
creating a dam or ponding water.

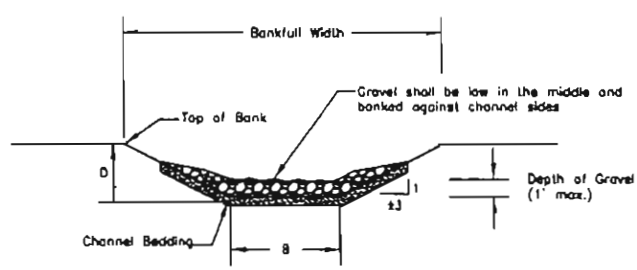


Spacing of 5 to 7 times Stream Bottom Width (b)
Length = +/- 1.5 times Stream Bottom Width (b)



Cross Over of Meander

GRAVEL RIFFLE PLACEMENT AND SPACING



GRAVEL RIFFLE

The length of gravel riffle shall be equivalent to 1.5 times the stream bottom width, b.

The gravel shall NOT be placed so that it acts as a dam or creates a backwater pool. It shall be generally less than 1 ft. thick and no higher than the Max. Riffle Depth.

The gravel shall be placed so that it is slightly lower in the middle and higher by the streambanks.

Gravel size shall be similar to the substrate from the former stream channel. The gravel will be stable at bankfull flow but erodible at Q100 flow.

8

HORIZONTAL & VERTICAL SCALES

TIMOTHY H. LINN, PE, PS

DATE

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STREAM RECONSTRU
ADDENDUM TO PART

Revisions	By	Date

Scale	Date	By	
Horiz. 1" = 40' Vert. 1" = 40'		THL	Designed
	1/16/12	IGB	Drawn
		THL	Checked
Field Book No.		THL	Approved

Project No.
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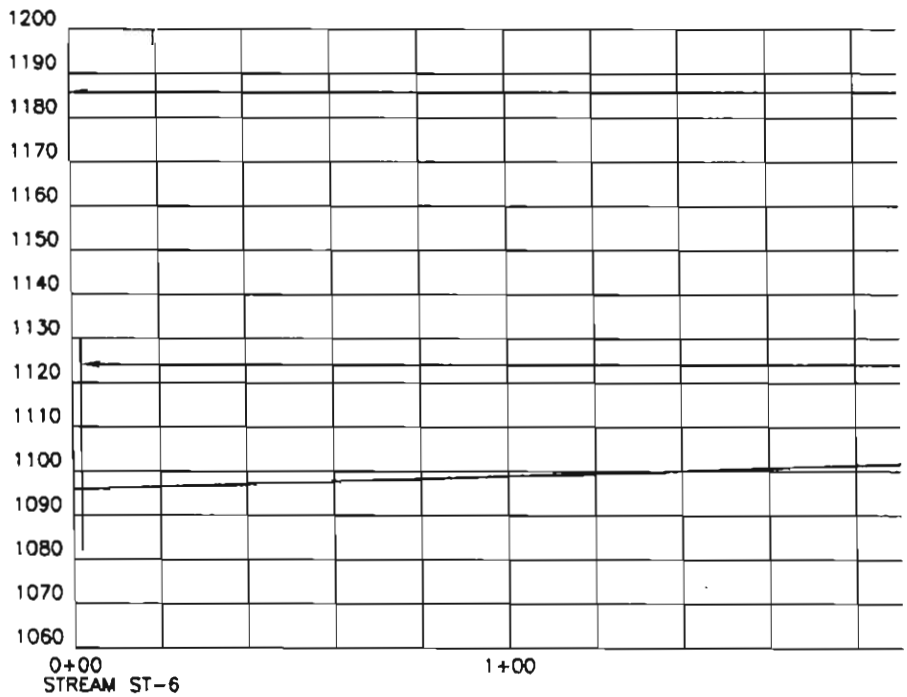
Sheet No. 1 Of 2

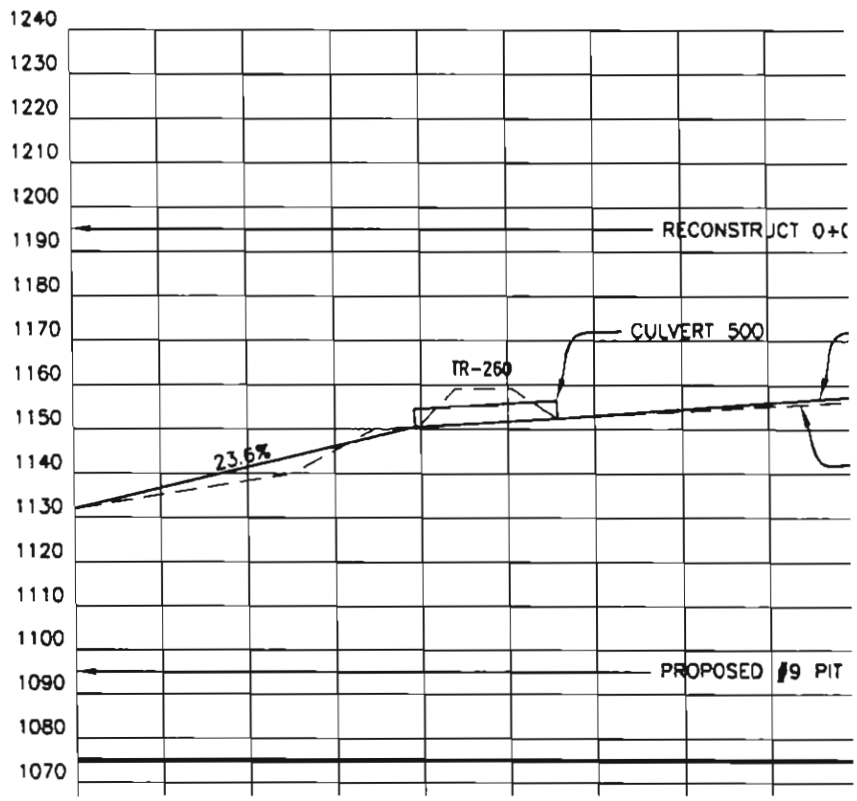
STREAM RECONSTRUCTION SHEET 2

LEGEND

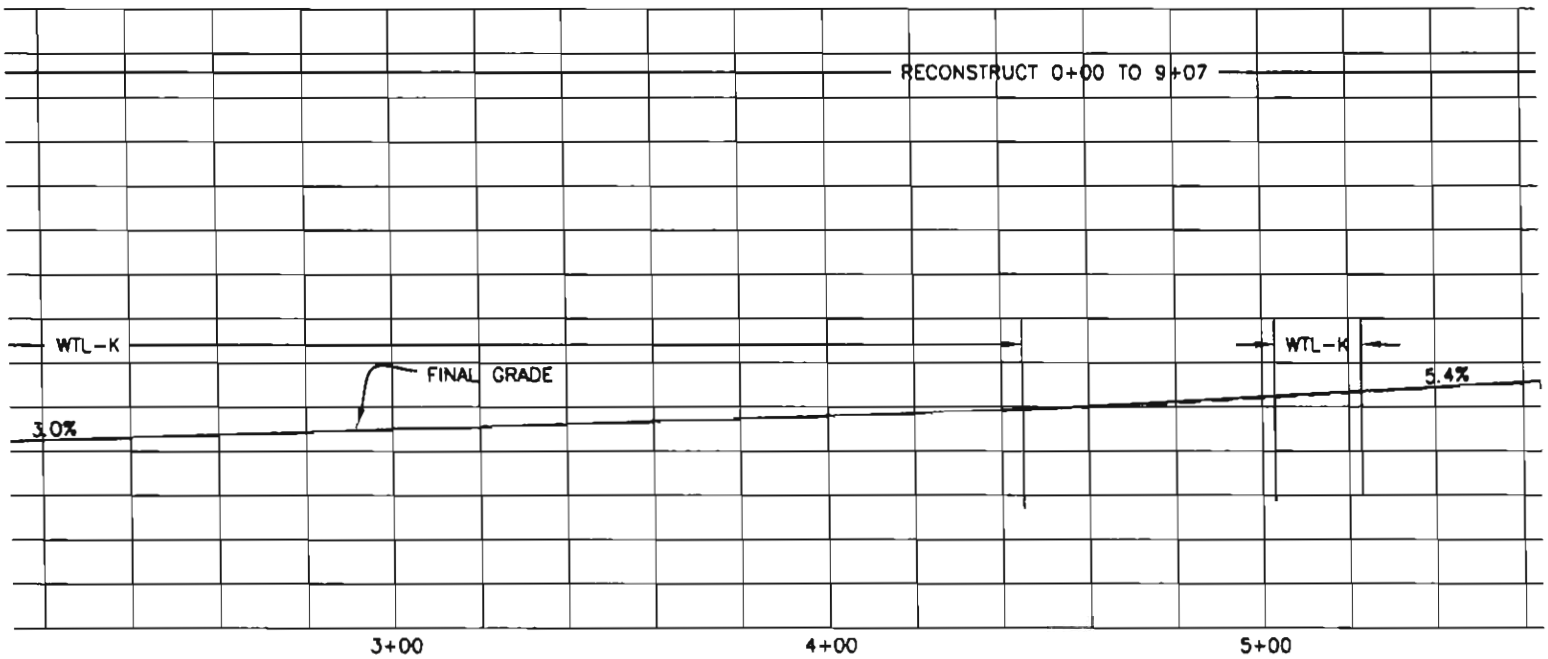
1	2	3	4
5	6	7	8

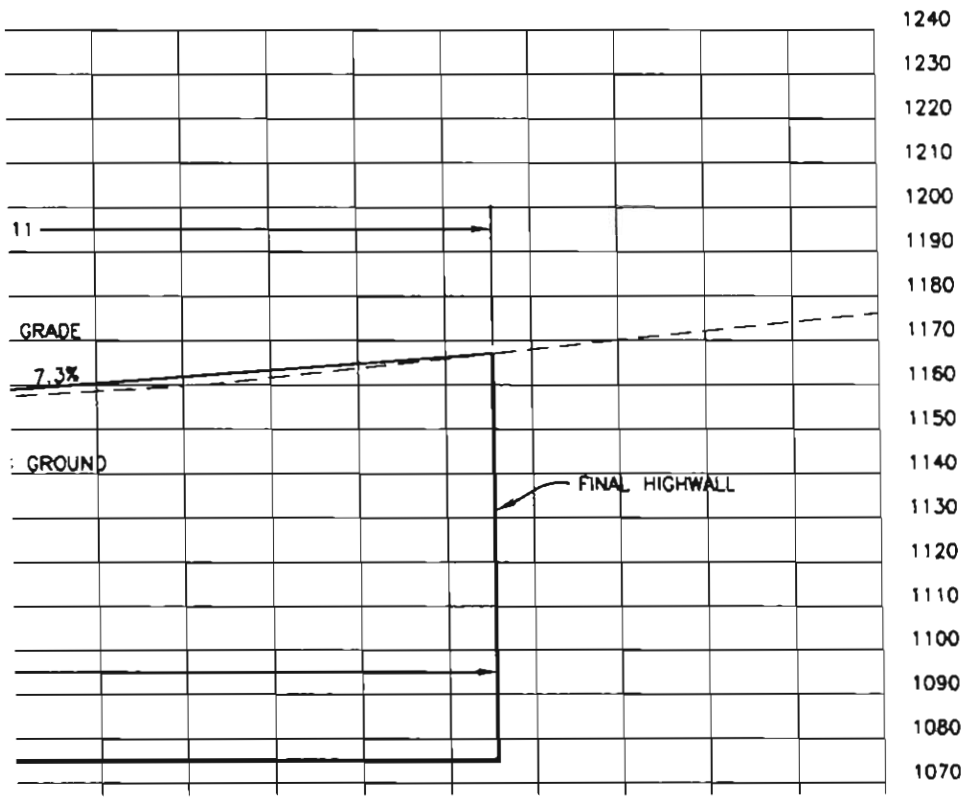
1


1200
1190
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1060
0+00
STREAM ST-6
1+00

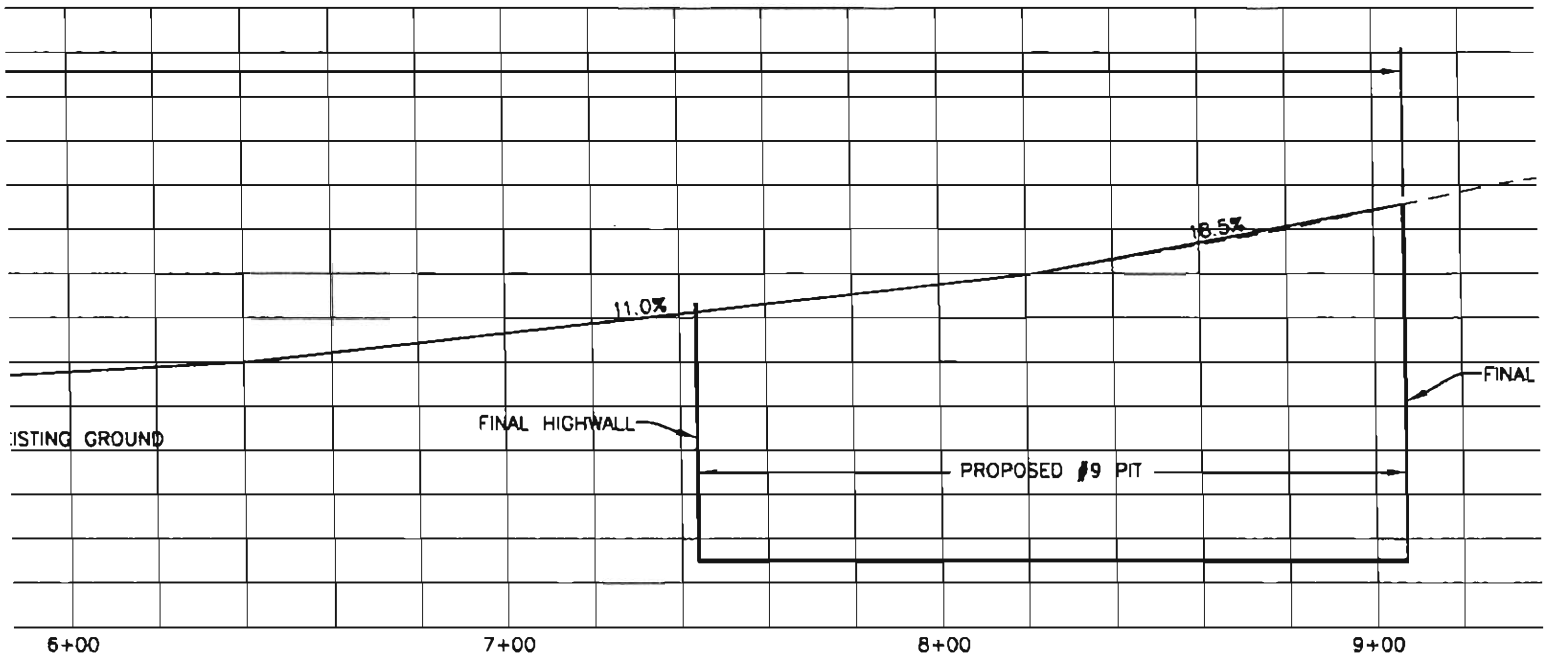

1240
1230
1220
1210
1200
1190
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
RECONSTRUCT 0+(
CULVERT 500
TR-260
23.6%
PROPOSED #9 PIT

2


RECONSTRUCT 0+00 TO 9+07
WTL-K
WTL-K
FINAL GRADE
3.0%
5.4%
3+00
4+00
5+00


1240
1230
1220
1210
1200
11
1190
1180
GRADE
1170
7.3%
1160
1150
GROUND
1140
FINAL HIGHWALL
1130
1120
1110
1100
1090
1080
1070

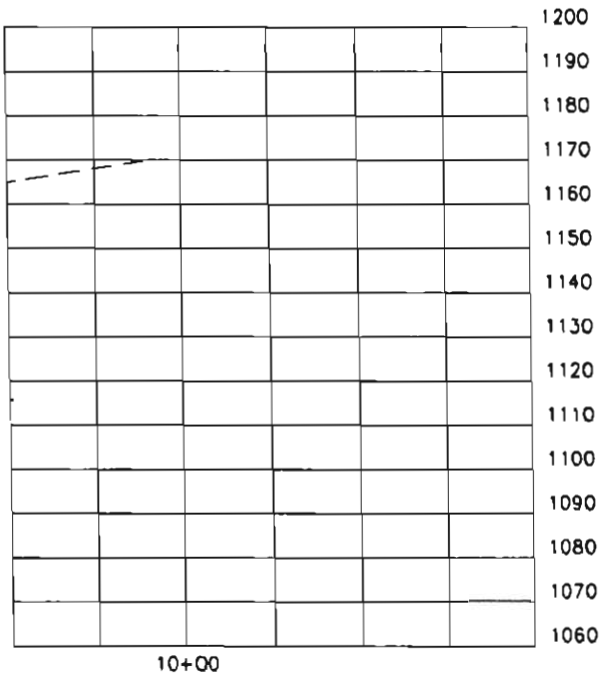
3



Stream	Sta
ST-5	24+03
	41+00
ST-6	0+00
	4+45
	6+41
	8+22
ST-9	0+00
	0+79
ST-20	1+00
ST-21	1+00
ST-35	0+75

Hydrologic Data

4



Area	CN	Tc	Q100	Q1.5	S	B	H	D100	D1.5	V100	V1.5	CL	D50
80.3	82	0.150	186.1	44.9	2.7	6.0	2.5	2.0	1.0	6.9	5.2	B	6
32.4	79	0.100	65.7	15.7	4.4	4.0	1.5	1.3	0.6	6.6	4.6	B	6
26.0	84	0.100	78.2	22.9	3.0	4.0	1.5	1.4	0.8	6.6	4.5	B	6
18.8	84	0.100	54.2	15.2	5.4	4.0	1.5	1.1	0.6	6.6	4.6	B	6
16.1	84	0.100	46.1	12.8	11.0	4.0	1.0	0.9	0.4	7.2	5.3	B	6
12.3	78	0.100	33.8	8.6	18.5	4.0	1.0	0.7	0.3	7.6	5.3	B	6
22.9	84	0.100	74.3	23.8	23.6	4.0	1.5	1.1	0.6	9.8	7.0	B	9
21.3	84	0.100	68.8	22.1	7.3	4.0	1.5	1.2	0.6	7.4	5.8	B	6
16.8	80	0.100	49.0	13.6	9.6	4.0	1.5	1.0	0.5	7.1	5.3	B	6
6.7	80	0.100	19.5	5.4	18.0	4.0	1.0	0.5	*	6.5	*	B	6
4.3	84	0.100	14.0	4.5	24.9	4.0	1.0	0.4	*	6.5	*	B	6

Base Flow

Notes:
1. Peak runoff calculated using SEDCAD 4.0
2. Channel design using SEDACD 4.0

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740-452-7434

NY, LLC
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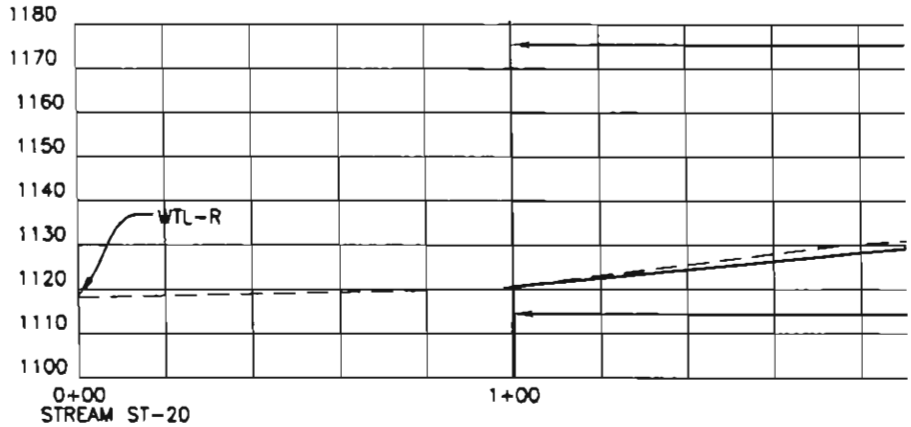
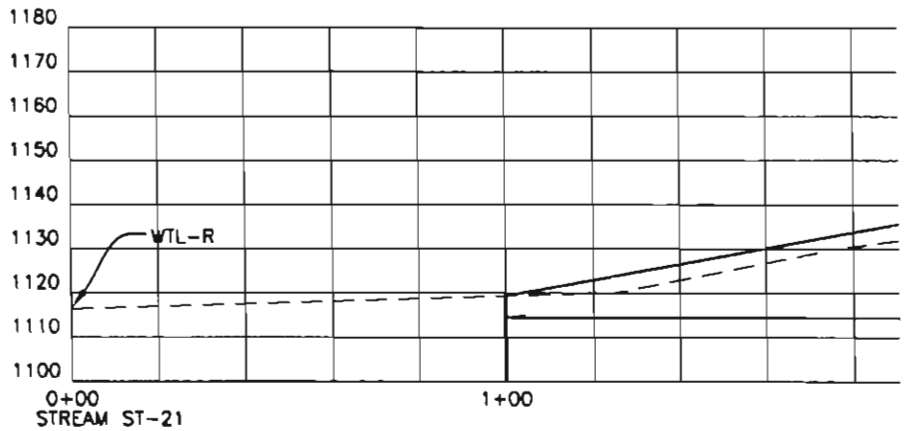
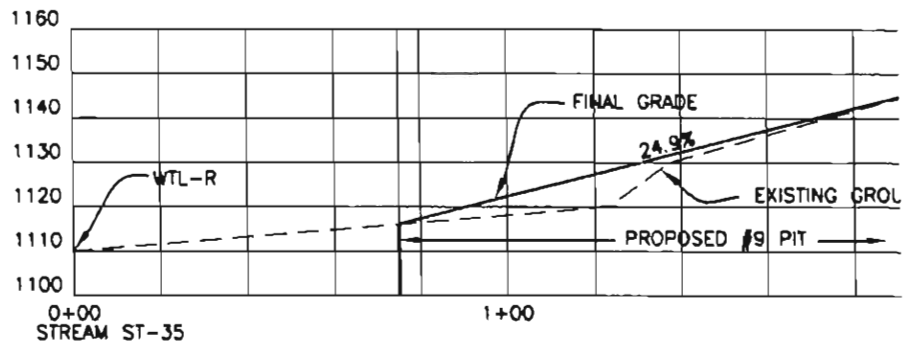
STREAM ST-9







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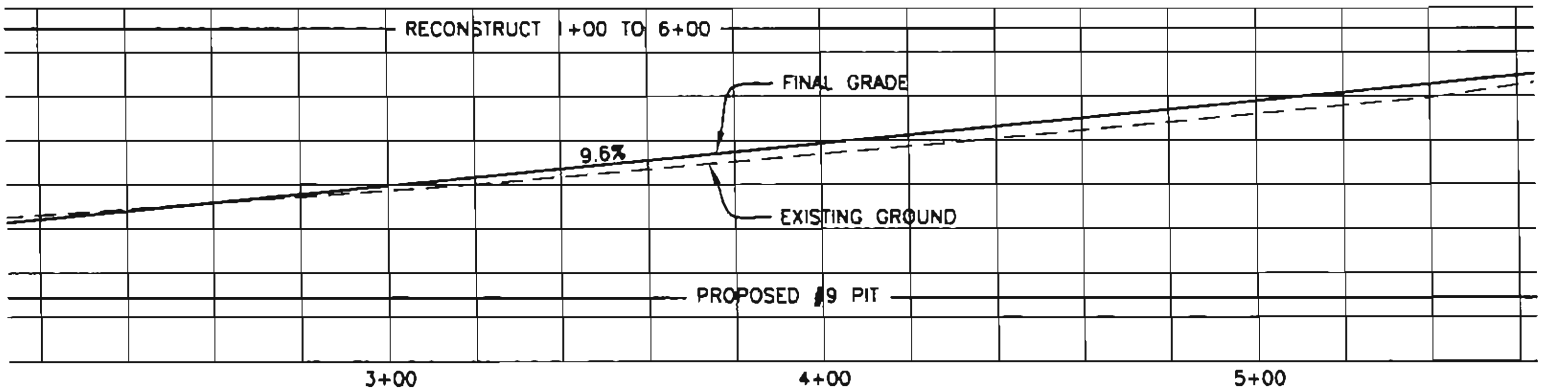
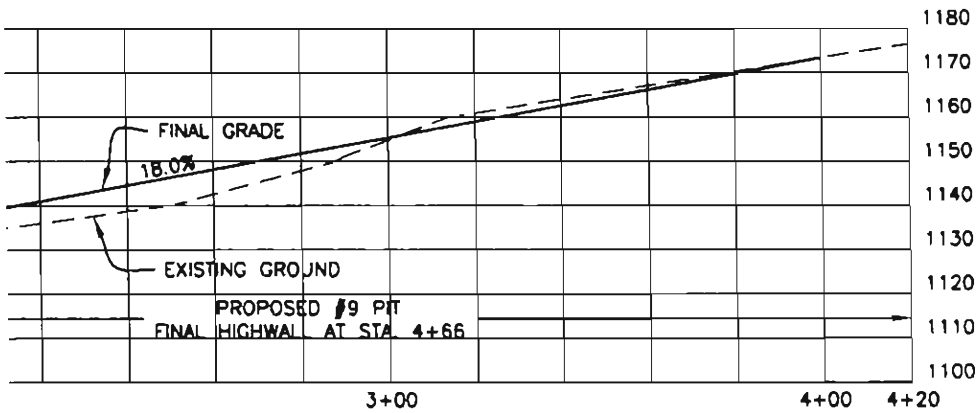
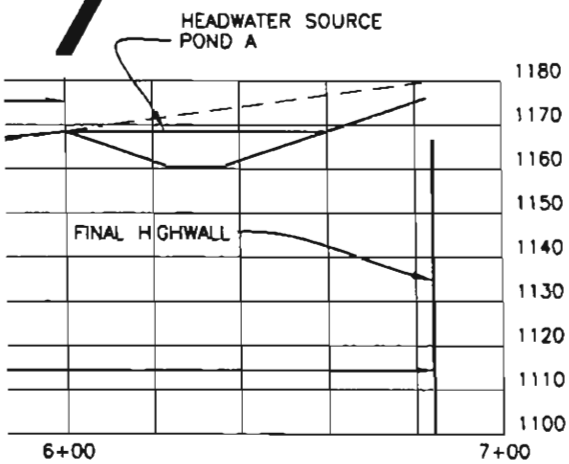

RECONSTRUCT 1+00 TO 6+00
FINAL GRADE
9.6%
EXISTING GROUND
PROPOSED #9 PIT
3+00
4+00
5+00


FINAL GRADE
18.0%
EXISTING GROUND
PROPOSED #9 PIT
FINAL HIGHWALL AT STA. 4+66
1180
1170
1160
1150
1140
1130
1120
1110
1100
3+00
4+00
4+20

7



Tc: time of concentrati	
Channel Data	
Q:	peak runoff (cfs
S	channel slope (
B:	bottom width (f
D	flow depth (ft)
H	channel depth
V	velocity (ft/s)
CL	channel lining t
	Type A:
	Type B:
D50	rock size (in)
Rock depth:	
Channel Shape	
Side slopes:	

8 -tall fescue el	4 Riprap may consist of larger rocks that are partially buried. Void space between larger rocks shall be filled with smaller rock 5 Channels may be stabilized with partially buried logs, stumps, root wads, rock check dams, wooden posts, and supplemental planting * insufficient flow to calculate

0' 40' 80' 120'

HORIZONTAL & VERTICAL SCALES

TIMOTHY H. LINN, PE, PS DATE

OXFORD MINING COM
SHUGERT SOU
STREAM RECONSTR
ADDENDUM TO PART

	By	Date
Designed	THL	
Drawn	IGB	1/16/12
Checked	THL	
Approved	THL	

Scale	Revisions	By	Date
Horiz. 1" = 40' Vert. 1" = 40' Field Book No.			

Project No.
SMS

Sheet No. 2 Of 2

APPENDIX E

Riparian Corridor / Wetland Buffer - Trees

Wetland Seed Mixture

RIPARIAN CORRIDOR/WETLAND BUFFER – TREES	
Botanical Name	**Common Name**
Acer spp.	Maple(s)
Betula nigra	River birch
Carya spp.	Hickory(s)
Celtis occidentalis	Common hackberry
Cercis Canadensis	Eastern redbud
Crataegus phaenopyrum	Washington hawthorne
Crataegus crusgalli	Cockspur hawthorne
Fagus grandifolia	Beech
Fraxinus pennsylvanica	Green ash
Fraxinus Americana	White ash
Gleditsia triacanthos 'inermis'	Honeylocust
Hamamelis virginiana	Common witchhazel
Liriodendron tulipifera	Tulip poplar
Liquidambar styraciflua	Sweetgum
Platanus occidentalis	Sycamore
Populus deltoids	Eastern cottonwood
Prunus serotina	Black cherry
Quercus alba	White oak
Quercus palustris	Pin oak
Quercus rubra	Red oak

Note: Final planting quantities and species types will be dependent on market availability at the time of planting.

FACW WETLAND MIX

20%	Elymus virginicus	Virginia Wild Rye
19%	Carex vulpinoidea	Fox Sedge
5.5%	Verbena hastata	Blue Vervain
5%	Heliopsis helianthoides	Ox-Eye Sunflower
5%	Juncus effusus	Soft Rush
5%	Scirpus atrovirens	Green Bulrush
5%	Euthamia graminifolia	Grass Leaved Goldenrod
4%	Gylceria grandis	American Mannagrass
3%	Carex lurida	Lurid/Shallow Sedge
3%	Eupatorium perfoliatum	Boneset
3%	Scirpus polyphyllus	Many Leaved Bulrush
2%	Aster umbellatus	Flat Topped White Aster
2%	Carex comosa	Cosmos/Bristly Sedge
2%	Carex lupulina	Hop Sedge
2%	Scirpus cyperinus	Wool Grass
2%	Vernonia gigantea	Giant Ironweed
1.5%	Eupatorium fistulosum	Joe Pye Weed
1.5%	Eupatorium maculatum	Spotted Joe Pye Weed
1.5%	Veratrum viride	False Hellebore
1%	Bromus latiglumis	Wild Brome Grass
1%	Carex scoparia	Blunt Broom Grass
1%	Geum laciniatum	Rough Avens
1%	Helenium autumnale	Common Sneezeweed
1%	Zizia aurea	Golden Alexanders
.5%	Cinna arundinacea	Wood Reedgrass
.5%	Ludwigia alternifolia	Seedbox
.5%	Mimulus ringens	Square Stemmed Monkey Flower
.5%	Penthorum sedoides	Ditch Stonecrop
.5%	Pycnanthemum tenuifolium	Narrowleaf Mountain Mint
.25%	Juncus acuminatus	Sharp Fruited Rush
.25%	Sanguisorba canadensis	Canadian Burnet

SEED AT 15 LBS PER ACRE OR 1/3 LB. to 1/2 LB. PER 1000 SQ. FT.

APPENDIX F

Monitoring Forms - Wetlands

Monitoring Forms - Streams

Wetland Mitigation Site
Annual Monitoring
Wetland Ecology based success criteria for 20___

Company _____ Site Name _____

Site ID _____

1. Estimate % open water, % vegetated area, and % non-vegetated area.
   a. % Open Water _____ %
      _____ % with submerged vegetation
      _____ % with submerged vegetation

   b. % Vegetated _____ %

      i. _____ % emergent List species _____

      ii. _____ % shrub List species _____

      iii. _____ % trees List species _____

   c. % Vegetated _____ %

2. Amount of Water in Mitigation Site

1st Qtr (Jan - Mar)	depth of: standing water _____ inches;	saturated soils _____ inches
2nd Qtr (Apr - Jun)	depth of: standing water _____ inches;	saturated soils _____ inches
3rd Qtr (Jul - Sep)	depth of: standing water _____ inches;	saturated soils _____ inches
4th Qtr (Oct - Dec)	depth of: standing water _____ inches;	saturated soils _____ inches

3. Water Quality in Mitigation Site

Inflow	pH _____	Conductivity _____ umhos/cm
	TSS _____ mg/l	Total Iron _____ mg/l
Outflow	pH _____	Conductivity _____ umhos/cm
	TSS _____ mg/l	Total Iron _____ mg/l

4 Photographs (to be attached) document where taken and provide narrative on subject.

5. Inspector _____ Date _____
   (printed)

   Inspector _____
   (signature)

Stream Mitigation Site
Annual Monitoring
Riparian Planting success criteria for 20___

(TO BE COMPLETED DURING THE GROWING SEASON)

Company _____ Site Name _____

Site ID _____

1. Trees # originally planted _____.

   # of live stems _____.

   # of dead stems _____.

   Survivorship _____ % (Seedlings/trees must be guaranteed at 80% survivorship for the duration of the monitoring period.)

2. Replanting

   # trees replanted _____ List species_____

   # trees replanted _____ List species_____

   # trees replanted _____ List species_____

   # trees replanted _____ List species_____

   # trees replanted _____ List species_____

   # trees replanted _____ List species_____

3. Herbaceous growth assessment

   area originally planted _____ sq. ft.

   barren area _____ sq. ft.

   Survivorship _____ % (must be guaranteed at 80% survivorship for the duration of the monitoring period.)

4. Photographs (to be attached) document where taken and provide narrative on subject.

5. Inspector _____ Date _____

   (printed)

   Inspector _____

   (signature)

APPENDIX G

Threatened and Endangered Species

Archaeologic and Cultural Resources

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Division of Mineral Resources Management
Lanny E. Erdos, Chief
2050 E. Wheeling Avenue
Cambridge, OH 43725-2159
Phone: (740)439-9079 Fax: (740)432-7711

Date: 1/27/2012

To: Appropriate Governmental Agencies

From: Alicia Davis, Environmental Specialist

Re: Coal Mine Application Number: 10481

Applicant: OXFORD MINING COMPANY LLC
544 Chestnut Street
PO BOX 427
Coshocton, OH 43812

Telephone: (740) 622-6302

Date Deemed Complete: 1/25/2012

COUNTY	TOWNSHIP	SECTION	LOTS	T	R	Quad
BELMONT	UNION	26		8-N	5-W	BETHESDA
BELMONT	UNION	25, 26		8-N	5-W	BETHESDA

Surface Acres: 265.6 **Underground Acres:** 0

Mine Name: Shugert South

Application is filed at: Belmont County Recorder's Office
101 W. Main Street
St. Clairsville, OH 43950

The Division of Mineral Resources Management has received an application for a coal mining and reclamation permit from the above named applicant. The applicant has to file a complete copy of the permit application at the office and address shown above. The complete permit application will be on file for public review for a period of thirty (30) days after the last date of publication of the public notice. The public notice can be published on or after the complete date shown above.

Written comments on this application will be accepted by the Chief for a period of thirty (30) days from the receipt of this notification. The written comments are to be submitted to the Division's Columbus Office at 2045 Morse Road, Building H-3, Columbus, Ohio 43229-6693. Include with written comments the applicant's name and application number.

District Office: CAMBRIDGE

Distribution List:

Division of Wildlife
Attn: John Navarro, Environmental Section Supervisor
2045 Morse Road, Bldg. G-3
Columbus, OH 43229-6693

Office of Surface Mining
4605 Morse Road
Room 102
Columbus, OH 43230

U.S. Fish & Wildlife Service
Attn: Mary Knapp, Ph. D.
4625 Morse Rd
Suite 104
Columbus, OH 43230

Ohio Historical Preservation Office
800 E. 17th Avenue
Columbus, OH 43211-2497

MSHA
50985 National Road
St. Clairsville, OH 43950

Mark Mann
Ohio EPA, Division of Surface Water
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Ric Queen
Ohio EPA, Division of Surface Water
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Michael Eggert
Ohio EPA, Division of Drinking & Groundwater
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Debbie Woischke
Division of Wildlife
Ohio Biodiversity Database Program
2045 Morse Road, Bldg. G-3
Columbus, OH 43229-6693

Linn Engineering, Inc.
534 Market Street
Zanesville, OH 43701

Blaine Gerdes
Division of Soil & Water Resources
2045 Morse Road, Bldg. B-3
Columbus, OH 43229-6693

Christopher A. Davis
Columbia Gas Transmission
Route 2
P.O. Box 138
Sandyville, WV 25275

Mike Kosek
Division of Mineral Resources Management
2050 East Wheeling Avenue
Cambridge, OH 43725

Lanny Erdos
Division of Mineral Resources Management
2050 East Wheeling Avenue
Cambridge, OH 43725

Ginger Mullins, Chief, Regulatory Branch
U.S. Army Corps of Engineers, Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Bruce Goff
Ohio EPA, Southeast District Office
2195 Front Street
Logan, OH 43138

Belmont County Commissioners
Courthouse
Main Street
St. Clairsville, OH 43950

Belmont County Planning Commission
Courthouse
Main Street
St. Clairsville, OH 43950

Doug Dillon, P.E.
ODOT, District 11
Roadway Services Engineer
2201 Reiser Ave., SE
New Philadelphia, OH 44663

Union Township Trustees
c/o Suz Miller Pubal, Fiscal Officer
101 Memory Lane
Morristown, OH 43759

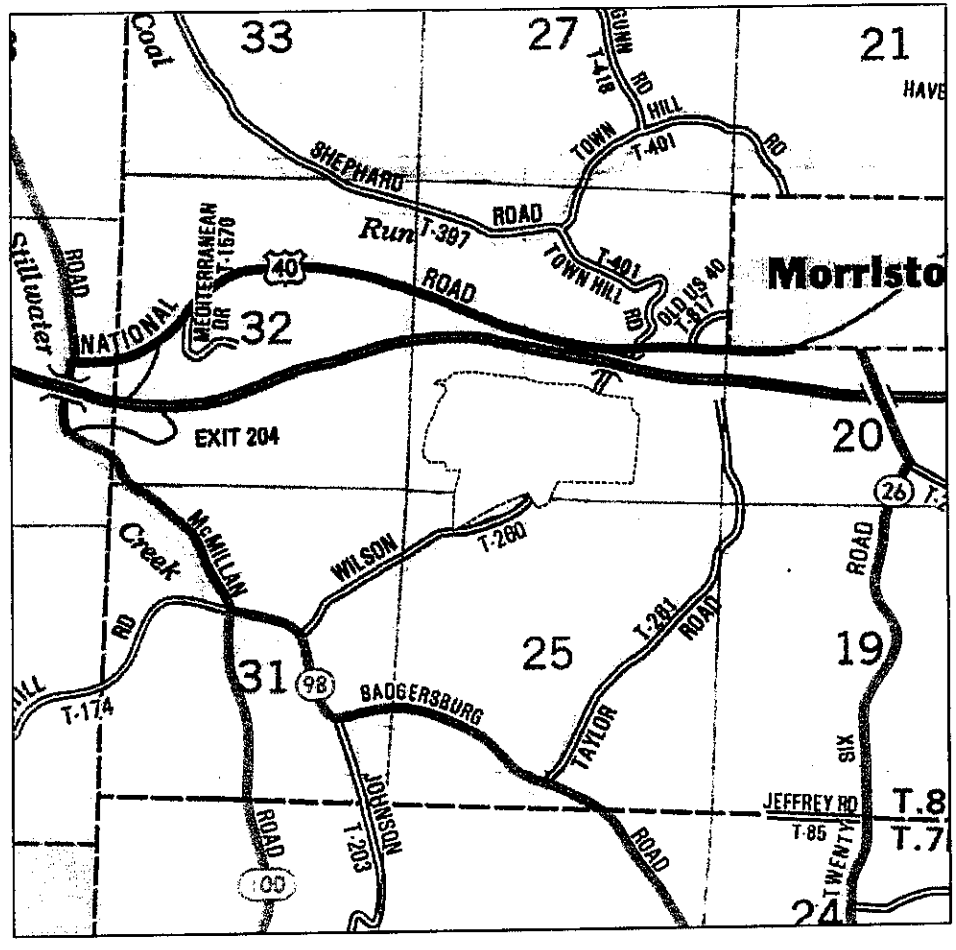
Dean Eaton
Rockies Express Pipeline - Kinder Morgan
8899 Brookside Ave., Suite 102
West Chester, OH 45069

USGS QUAD

BETHESDA

DRAINAGE BASIN

STILLWATER CREEK



LOCATION MAP

SCALE: 1" = 1 MILE

UNION TOWNSHIP, BELMONT COUNTY, OHIO

LEGEND

Inventory of Bat Species

Shugert-Mauersberger Area
Belmont County, Ohio

July, 2010

Submitted to

Linn Engineering Incorporated
Engineering Consultants
534 Market Street
P.O. Box 2086
Zanesville, Ohio 43702-2086
740-452-7434

Prepared by

Tragus Environmental Consulting, Inc.
37 North Highland Avenue
Akron, Ohio 44313
330-472-7013

TRAGUS

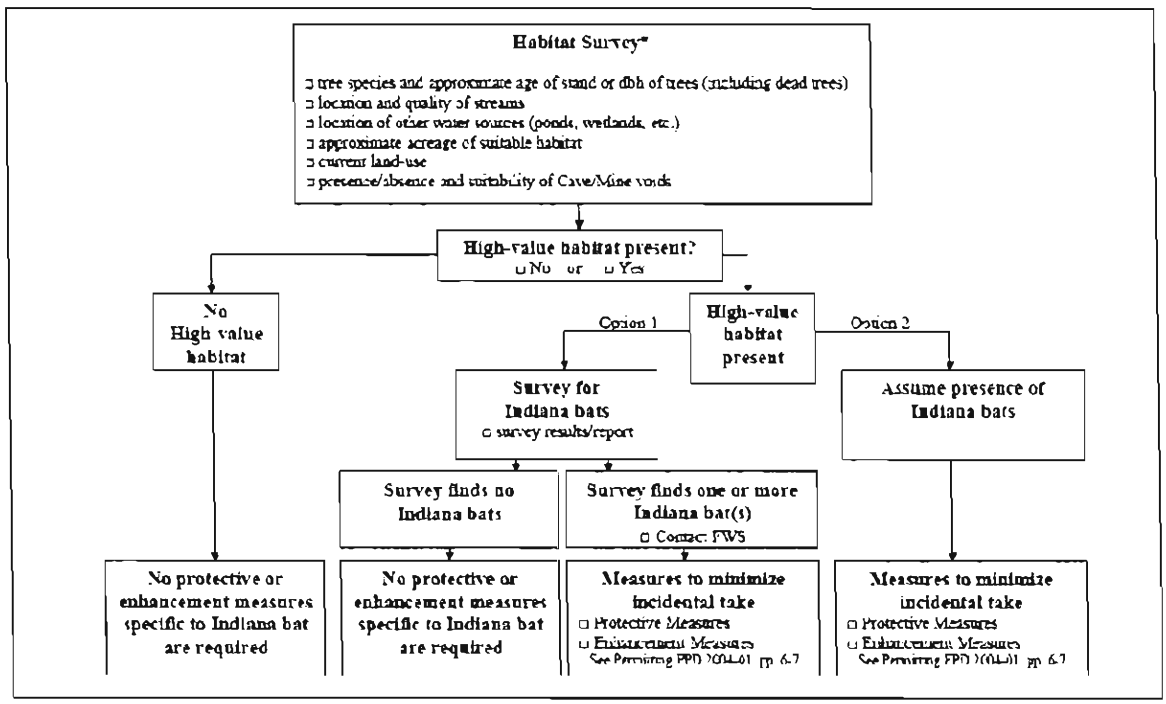
Survey Team

Mike Johnson – Lead Field Biologist
Heidi Raynor – Field Biologist
James Hale – Field Assistant
David Blackie – Field Assistant

Introduction

The Shugert-Mauersberger Area is area is 1006-acres and located in Belmont County, Ohio. The site is a mix of forested areas and agriculture. Approximately 400-acres of the site supports forested habitats.

Effective May 15, 2004, the Ohio Department of Natural Resources, Division of Mineral Resources Management and the United States Fish and Wildlife Service, established a Policy Procedure Directive (PPD) for the protection of the state and federally endangered Indiana bat on proposed mining sites in Ohio. This study was implemented to comply with this process as indicted in the flow chart below:



This report details the results of intensive habitat investigations and results of a mist-netting survey to document the potential presence of Indiana bat from the proposed mine site.

Indiana Bat (Myotis Sodalis) – Natural History Summary

The known range of the federally endangered Indiana bat *(Myotis sodalis)* covers all of Ohio. This rare species is a migratory hibernator, and caves and abandoned mines are the exclusive winter habitat or hibernacula. Moreover, the species appears highly selective in its choice of caves, occupying only those that have stable winter temperatures.

Following hibernation, female bats disperse (March-May) and can potentially be found throughout Ohio. After emerging from winter hibernation, females migrate to summer maternity roosts to rear their young. Indiana bat is highly specific concerning maternity roost

selection. Maternity roosts are almost exclusively trees with characteristics that include exfoliating bark or open cavities larger than a fist. *Carya ovata* (shagbark hickory) is commonly cited as the classic maternity roost tree for this species. Furthermore, maternity roosts usually need to be positioned so as to receive sufficient amounts of direct sunlight to provide thermal conditions necessary for the rapid development of young (Humphrey, et al., 1977) (Kurta, et al., 1993). Trees at the edges of streams or in beaver ponds, standing alone in fields or fence-rows, or in forest clearings are usually chosen, as they tend to receive more sunlight than a tree in the middle of a dense woods or forest.

There is evidence that many bats return to the same watershed each year (Humphrey, et al., 1977). The inadvertent destruction of all suitable roosting trees within a watershed or large geographical area can play a major role in the decline of this species. If a pregnant female migrant returns to a traditional roost watershed to find no suitable roosting trees, she faces additional energy drains in searching for a suitable site at a time when she is already stressed from hibernation, migration, and the energy demands of pregnancy. These additional stresses may be sufficient to cause her own mortality or that of her offspring.

Indiana bat forages over wooded areas and riparian and floodplain forests near small to medium sized streams (Humphrey, et al., 1977). Riparian corridor use may be more a function of availability than preference, since clearing has left fewer habitats in upland areas.

Deforestation has been cited as a cause of decline for this species. Tree cutting during the summer brooding season is especially destructive and can impact entire colonies. Currently, the U.S. Fish and Wildlife Service (USFWS) restricts the cutting of potential maternity roost trees between April 15 and September 15. The removal of trees outside of this time period can be conducted with minimal impact to the species. If circumstances necessitate the cutting of trees within this restricted period, a mist-netting survey is required to document the status of this species within the area of concern.

Habitat Survey - Results

Habitat surveys were performed July 15-17 concurrently with the mist-netting. Special emphasis was placed on locating rock ledges, caves, or abandoned mine openings that might serve as suitable habitat for hibernating bats. No caves, ledges, or mines were discovered that could potentially serve as hibernacula for bats.

The majority of the site is devoted to pasture, much of which is presently going fallow and dominated becoming invaded by autumn olive shrubs. Proximally 450-acres of the center of the project area is forested. In this area, steep topography likely limited logging and the use of the land as pasture. Most of the forested areas are of young to moderate successional stage with older patches of forest along the highest ridge tops and along the banks of old strip ponds where logging trucks cannot reach. Deep ravines, seeps, springs, and older high walls are common features of the site. Much of the site has been mined in the past. There are no major stream corridors present on the subject property. Small streams flowing through ravines are present but do not represent the best conditions for flight corridors. Small ponds are present and represent good areas for foraging/drinking bats but netting is difficult in these areas due to the open nature of the surrounding landscape. A recently cut access road is present on the southern portion of the property and represents an excellent flight corridor.

Common trees noted for this site include American beach, locust, and tree of heaven, tulip tree, red maple, sugar maple, ash, red oak, American elm, cottonwood, sycamore, and black cherry. Many of these tree species support characteristics necessary for maternity colonization by Indiana bat. Many of the ash trees were noted to be in a state of decline and exhibited signs of EAB.

Overall bat habitat on the subject property is marginal.

Mist-Netting Survey - Results

Mist-Netting Techniques

Current guidelines issued by the USFWS indicate that 16-20 net-nights are required for a project of this size. Guidelines further indicate that a prevalence of suitable weather must persist throughout the course of the investigation. Strong winds, precipitation, and temperatures below 10 degrees Celsius (50 degrees Fahrenheit) may deter bats from flying and foraging for insects.

This study completed 19 net-nights over a three night period which meets the minimum guidelines required for compliance purposes.

Weather was variable throughout the study. Daily weather records are provided in the pages that follow.

Mist-netting procedures followed guidelines developed by the Indiana Bat Recovery Team (Brady, et al., 1983) and endorsed by the U.S. Fish and Wildlife Service (USFWS). Sites were selected as described below. At each site, a tier of low-visibility nylon mist nets was erected across likely flyways and other areas where bat activity was anticipated or otherwise noted. When possible, nets were erected to sufficient height and width to entirely block off the flight corridor. Nets were secured to a rope-and-pulley system suspended from telescoping poles (Kunz, 1988). Nets were erected during the twilight hours and monitored every 15-20 minutes for a five-hour period. All mist nets were constructed of 50-denier/2-ply (1.5-inch mesh) nylon.

Data Collection

Basic biological data were collected from all bats netted, including species identification, ear, tragus, forearm length, gender, age (juvenile or adult), weight in grams, and reproductive condition (if discernible). All bats were released at the site of capture. Additional information recorded includes the climatalogical conditions, date, time of capture, lunar phase, and percent cloud cover. Species identification was based on the keys described by Belwood (1998).

Site Selection and Descriptions

Potential flight corridors were identified based upon field reconnaissance conducted during daylight hours. Potential flight corridors within this study included the access roads that run

through the site, wetlands, and headwater stream corridors. A hand-held ultrasound detector (ANABAT) and a pair of infrared binoculars were used to monitor bat activity at the site and to identify additional areas for the placement of mist nets.

July 15, 2010 (total net nights = 5)

July 15th was characterized as hot and sunny with high humidity. Sunny skies prevailed throughout most of the day and clear skies through the evening. Lunar phase was a slight crescent and the night was exceptionally dark. Temperatures ranged from 87 degrees when the nets were raised (8:30 PM) to about 75 degrees at the time nets were lowered (1:40 AM).

Net #1 consisted of 2 tiers of six-meter mist nets set over a small stream and raised to the underside of the tree canopy. Net #2 consisted of 2 tiers of nine-meter mist nets set over the same stream as Net #1 and raised to the underside of the tree canopy. Nets #3 and #4 both consisted of 2 tiers of six-meter mist nets set over an access road and raised to the underside of the tree canopy. Net #5 consisted of two tiers of 12-meter mist nets set over an access drive. At this location, it was not possible to block off the vertical limits of the flight corridor.

July 16, 2010 (total net nights = 6)

July 16th was characterized as hot and sunny with high humidity. Sunny skies prevailed throughout most of the day and through the evening. Lunar phase was a slight crescent and the night was exceptionally dark. A brief but severe storm occurred at approximately 6:00 PM but cleared before nets were raised. Temperatures ranged from 80 degrees when the nets were raised (8:30 PM) to about 70 degrees at the time nets were lowered (1:40 AM). Between 8:00 PM and 1:00 AM distant heat lighting was observed continuously thorough the evening.

Nets #3 and #4 from the previous evening were left in place and monitored for a second event. All other nets were dismantled.

In addition to Nets #3 and #4, four additional nets were established. All were set along a newly constructed access road that represented the best flight corridor on the site. Net #6 consisted of a single tier of 6-meter mist nets raised to the underside of the tree canopy. Net #7 consisted of two tiers of 6-meter mist nets raised to the underside of the tree canopy. Net #8 consisted of two tiers of 6-meter mist nets raised to the underside of the tree canopy near an opening to a small meadow. Net #9 consisted of two tiers of 6-meter mist nets raised to the underside of the forest canopy in the vicinity of an old strip mine pond.

July 17, 2010 (Net nights = 8)

July 17th was characterized as hot and sunny with high humidity. Cloudy skies prevailed throughout most of the day and through the evening. Lunar phase was a slight crescent and the night was exceptionally dark. Temperatures ranged from 80 degrees when the nets were raised (8:30 PM) to about 68 degrees at the time nets were lowered (1:30 AM). A strong breeze picked up around 1:00 AM.

Nets #5 through #9 from the previous evening were left in place and monitored for a second night. In addition two more nets were set along the same access path as Nets #5 through #9. Net #10 consisted of two tiers of 6-meter mist nets set over a side access path to the newly constructed access trail. At this location, it was possible to raise nets to the underside of the

tree canopy. Net #11 consisted of single 6-meter mist net set over a side access path. At this location, it was possible to entirely block off the flight corridor.

In addition, two nets were established at the far northern end of the project site. Net#11 consisted of two tiers of 6-meter mist nets set over a small access road to a hunting cabin and Net #12 consisted of two tiers of 6-meter mist nets set over a small stream. At both locations, it was possible to entirely block off the flight corridor.

Results

A total of 30 bats were captured over a period of three nights (19 net-nights). Biological data for all species captures are presented in Appendix A. The level of effort for this study meets the minimum range that would typically be required for a site of this size. Four species of bat were captured during the course of this investigation. All species encountered during this survey are considered common. No state or federally listed species were noted during this study.

Despite the history of disturbance, there is ample, high quality habitat for bats at this site.

No natural caves, mine openings, or subsidence areas were noted during the course of this investigation.

Appendix A
Bat Capture Data

Table 1. Species List and Biological Data[1]

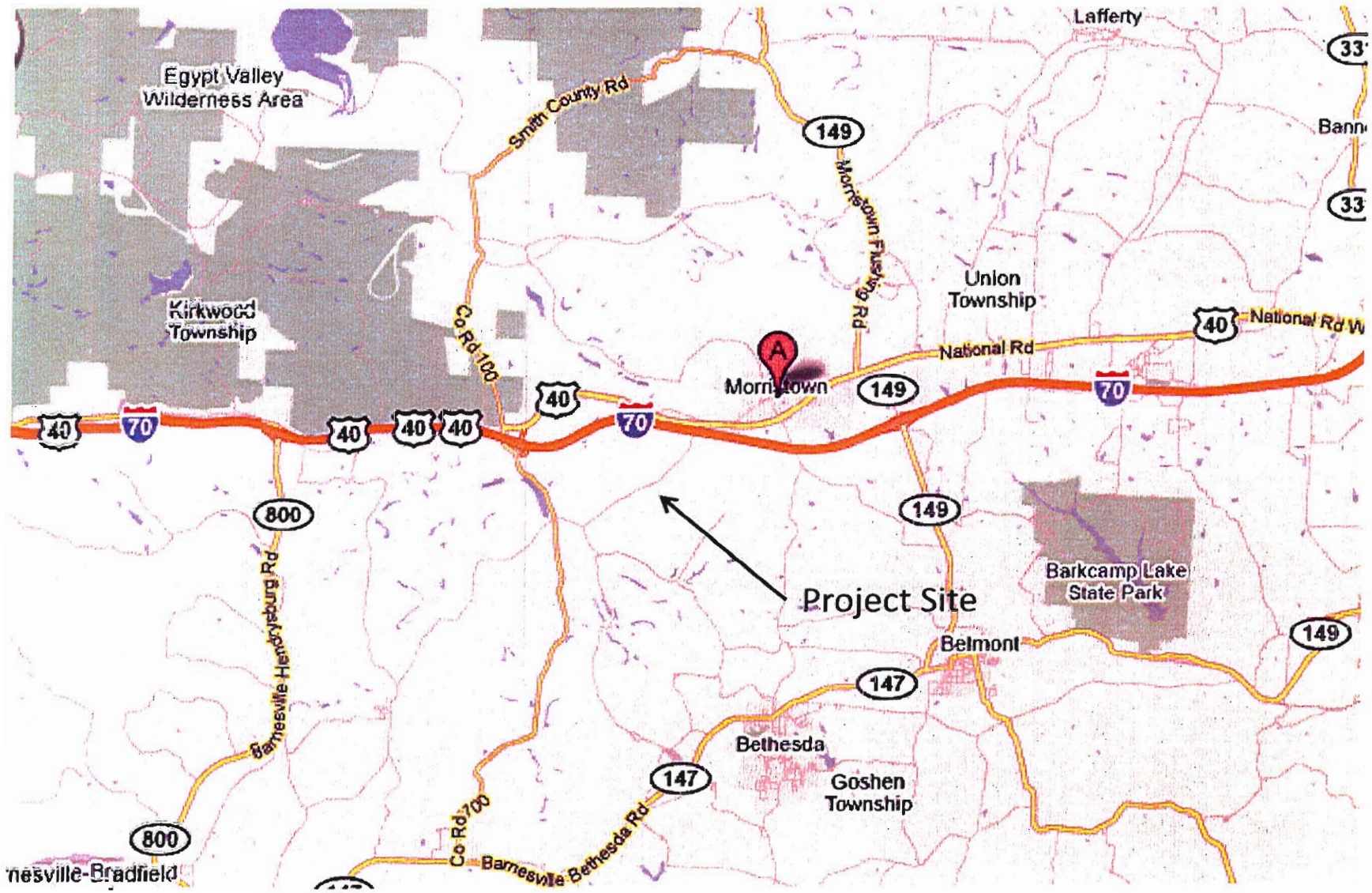
Date	Time	Species	Station	Forearm (mm)	Weight (g)	Gender	Age	Breeding Status
7-15	1:00 AM	Little brown bat	4	37	7	F	A	Lactating
7-15	1:00 AM	Little brown bat	4	36	6	F	J	n/a
7-16	8:45 PM	Big brown bat	6	45	18	F	A	Lactating
7-16	9:00 PM	Big brown bat	6	47	15	M	J	n/a
7-16	9:45 PM	Little brown bat	6	35	7	M	A	n/a
7-16	10:30 PM	Little brown bat	6	37	9	F	A	Lactating
7-16	11:30 AM	Little brown bat	6	38	8	F	A	Lactating
7-16	12:15 AM	Big brown bat	7	49	17	M	J	N/A
7-16	12:15 AM	Big brown bat	7	46	15	F	A	Lactating
7-16	12:30 AM	Big brown bat	8	47	17	M	J	N/A
7-16	1:00 AM	Big brown bat	6	45.5	14	M	J	N/A
7-16	1:15 AM	Big brown bat	7	48	16	F	A	Lactating
7-16	1:30 AM	Big brown bat	9	44	15	F	A	Lactating
7-16	1:45 AM	Big brown bat	6	45	14.5	M	A	N/A
7-16	10:45 PM	Big brown bat	4	45	19	F	A	Lactating
7-16	10:45 PM	Little brown bat	4	--	9.5	M	A	N/A
7-17	10:00 PM	Big brown bat	10	45.5	15	F	A	Lactating
7-17	10:40 PM	Little brown bat	7	37	8	F	--	Lactating
7-17	10:50 PM	Red bat	11	40	8.5	F	J	N/A
7-17	10:40 PM	Red bat	11	40	14.5	F	A	Lactating
7-17	10:45 PM	Little brown bat	9	37	7	F	A	N/A
7-17	10:45 PM	Big brown bat	9	48	18	F	A	Post Lactating
7-17	11:15 PM	Big brown bat	8	43	16	M	A	N/A
7-17	11:20 PM	Big brown bat	7	44	16	M	J	N/A
7-17	11:30 PM	Red bat	8	39	9	M	J	N/A
7-17	11:45 PM	Little brown bat	9	36.5	8	F	A	Lactating
7-17	12:00 AM	Little brown bat	9	35.5	7	M	A	N/A
7-17	12:00 AM	Northern long-eared bat	10	34	5.5	M	J	N/A
7-17	12:30 AM	Big brown bat	11	49.5	21.5	F	A	Lactating
7-17	1:15 AM	Big brown bat	10	47	17	F	J	N/A

[1] Note: Tragus has temporarily discontinued banding due to injuries noted to recaptures in 2005.

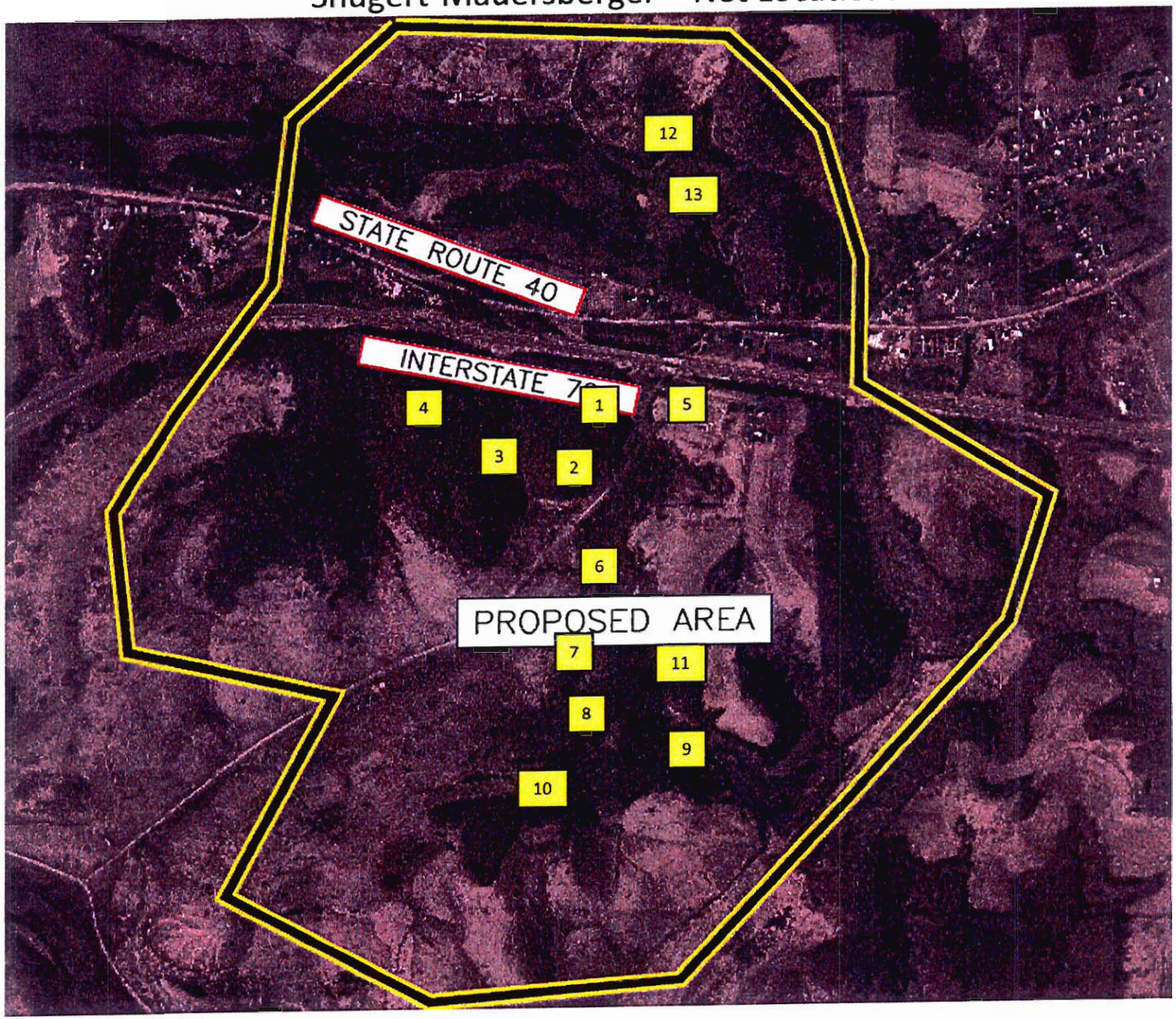
Appendix B
Location Map and Maps Showing Locations of Net Placement

Shugert-Mauersberger– Overview of Area and Location of Sites

40 degrees 03 minutes 09.36 seconds North
81 degrees 04 minutes 55.84 seconds West



Shugert-Mauersberger – Net Locations



Appendix C
Photographs

Net #1

Net #2

Net #3

Net #4

Net #5

Net #6

Net #7

Net #8

Net #10

Net #11

Net #12

Net #13

Appendix D
References and Suggested Reading

Belwood, Jaqueline, J. 1998. In Ohio's Backyard: Bats. Ohio Biological Survey Backyard Series: i-x, 1-196.

Brady, J.T., R.K. LaVal, T.H. Kunz, M.D. Tuttle, D.E. Wilson, and R.L. Clawson. 1983. *Recovery Plan for the Indiana Bat.* U.S. Fish and Wildlife Service. 80 pp.

Gottschang, J. L. 1981. *A Guide to the Mammals of Ohio.* The Ohio State University Press, Columbus. xi + 176 pp., 13 plates.

Humphrey, Stephen R., A.R. Richter, and C. James. 1977. *Summer habitat and ecology of the endangered Indiana bat (Myotis sodalis).* J. Mamm. 58:334-346.

Kurta, Allen, D. King, J.A. Teramino, J.M. Stribley, and K.J. Williams. 1993. *Summer roosts of the endangered Indiana bat (Myotis sodalis) on the northern edge of its range.* Am. Midl. Nat. 129:132-138.

Kunz, T.H. ed. 1988. *Ecological and Behavioral Methods for the Study of Bats.* Smithsonian Institution Press, Washington.

APPENDIX H

Form of Protective Covenant

Form of Protective Instrument

Conservation Easement

This Conservation Easement (this "Easement") is made this _____ day of _____, 20__ by and between [GRANTOR] (the "Grantor"), and [GRANTEE] (the "Grantee").

WHEREAS, the Grantor is the owner in fee of certain real property, hereinafter described, situated in Belmont County, Ohio (the "Property"), which the Grantee have determined to be of importance to the water quality of Stillwater Creek in the Tuscarawas River Drainage Basin; and

WHEREAS, having applied for and received a [TYPE OF PERMIT] from [REGULATORY ENTITY] for impacts to jurisdictional waters, the Grantor submitted a specific and detailed mitigation proposal including this Easement as the proposed legal mechanism for long-term protection of the mitigated features.

NOW THEREFORE, in consideration of ONE DOLLAR ($1.00) and other good and valuable consideration, the Grantor does hereby grant and convey, in perpetuity, unto the Grantee and its successors and assigns, a conservation easement in the Property of the nature and character and to the extent hereinafter expressed, to be and to constitute a servitude upon the Property, which servitude will result from the covenants and restrictions set out below and hereby imposed upon the use of the Property, and to that end and for the purpose of accomplishing the intent of the parties hereto, the Grantor covenants, on behalf of itself and its successors and assigns, with the Grantee and its successors and assigns, to do and refrain from doing, severally and collectively, upon the Property, the various acts hereinafter mentioned, it being hereby agreed and expressed that the doing and the refraining from said acts, and each thereof, upon the Property is and will be for the benefit of the Grantee.

The restrictions hereby imposed upon the use of the Property by the Grantor, and the acts which the Grantor so covenants to do and refrain from doing upon the Property in connection therewith, are and shall be as follows:

1. The Property shall be kept in its natural state. As herein used, the term "natural state" is intended to mean that no buildings, billboards, signs or other structures of any kind, either temporary or permanent, shall be placed or erected on the Property, unless otherwise expressly provided hereunder.

2. There shall be on or in the Property no fillings, excavating, or removal of topsoil, sand, gravel, rock, minerals or other materials, nor any building of roads or change in the topography of the land in any manner, other than that which occurred prior to the effective date hereof or caused by the forces of nature or as reserved hereafter.

3. Herbicides or pesticides may only be used on the Property in accordance with the prescribed methods approved by the ODNR Division of Soil and Water.

4. No power transmission lines may be erected, nor shall any interest in the Property be granted for this purpose. It is the intent of this provision to grant to the Grantee such an interest in the Property as is sufficient to prohibit the exercise of the power of eminent domain by public utility companies and any other body or person. The Grantor, and its successors and assigns, reserve the right and easement on the Property to maintain and repair existing telephone, electric, water, wells, or other utility lines or mains needed to provide for the needs of the Grantor, and its successors and assigns.

5. No trees, ground cover, or other vegetation shall be cut on or removed from the Property unless approved by the Grantee.

6. The Property shall at all times be kept free of garbage, trash, and machinery; and no other unsightly material shall be allowed to accumulate or be stored thereon, except that the Grantor shall have no duty to remove garbage, trash, etc. unlawfully deposited on the premises by persons acting without the Grantor's consent.

7. Each and every other activity that might endanger the natural state of the Property is forbidden.

8. The Grantee reserves the right to periodically inspect the Property for any breach of this Easement, and if upon sixty (60) days advance written notice the Grantor has not cured said breach or breaches the Grantee may cure said breach or breaches at the expense of the Grantor. The Grantee or its authorized representative may enter upon the Property for the purpose of inspection.

9. The Grantor shall post, clearly mark and maintain the markers of the boundaries of the Property with designated boundary signs provided by the Grantee. The Grantee's intent is to clearly define and maintain all survey pins, corners, points on line, traverse and reference points and line of sight clearance to insure that all boundaries are easily identifiable in perpetuity.

10. There shall be no further manipulation or alteration of creeks, streams, surface or subsurface springs or other bodies of water, or any activities on or uses of the Property detrimental to water purity or quality.

11. Except as may be necessary for reasonable preservation, management or restoration of the Property, there shall be no building of new roads or other rights of way. Existing roads may be maintained but shall not be widened or improved. This restriction does not prohibit the construction, development, and maintenance of unpaved recreational trails for hiking, cross country skiing, interpretive signs, nature observation or other similar purposes, and such trails may be used by motorized vehicles only for maintenance and security and in case of an emergency. Horseback riding, bicycles including mountain biking, skateboards, in-line skates, or similar means of transportation shall not be permitted. All road and trail maintenance, construction, or development shall be subject

to the approval of the Grantee.

12. There shall be no recreational operation of snowmobiles, dune buggies, motorcycles, all-terrain vehicles or other motorized recreational vehicles.

13. There shall be no domestic livestock, no non-native animals and no feedlots permitted on the Property.

14. All written material, media releases, and main entrance signs specifically developed for the Property shall prominently give acknowledgment to the Grantee for protecting Stillwater Creek and its respective riparian buffer.

15. The Grantor shall conduct removal and control of invasive plant species. Control of invasive/non-native plant species through the use of herbicides may only be conducted in accordance with the prescribed methods approved by the Grantee.

16. There shall be no user fees imposed by the Grantor without prior written approval from the Grantee.

The conservation easement granted hereunder and the covenants heretofore made are subject to the following rights of the Grantor which are expressly reserved hereunder.

1. Except as expressly limited herein, the Grantor reserves for itself, and its successors and assigns, all rights as owner of the Property, including the right to use the Property for all purposes not inconsistent with this Easement.

The Property to which the provisions of this Easement apply is situated in the Township of Union in Belmont County and the State of Ohio, and is more particularly described as follows:

[description of actual mitigated features based on post mitigation survey of as-built feature], as shown in Exhibit A.

TO HAVE AND TO HOLD unto the Grantee and its successors and assigns forever. The covenants agreed to and the restrictions imposed, as aforesaid, shall be binding upon the Grantor, its successors, and assigns, and each of them, and shall constitute as a servitude upon the Property, and the Grantor does COVENANT and WARRANT that the title to the Property is CLEAR, FREE, and UNENCUMBERED, and that it will DEFEND the same against all lawful claims of all persons whomsoever.

[Remainder of Page Intentionally Left Blank with Signatures on Following Page]

IN WITNESS WHEREOF, the Grantor has hereunto set its hand on the date first set forth above.

Grantor: [GRANTOR]

By: _____

Name: _____

Title: _____

STATE OF _____, COUNTY OF _____, ss

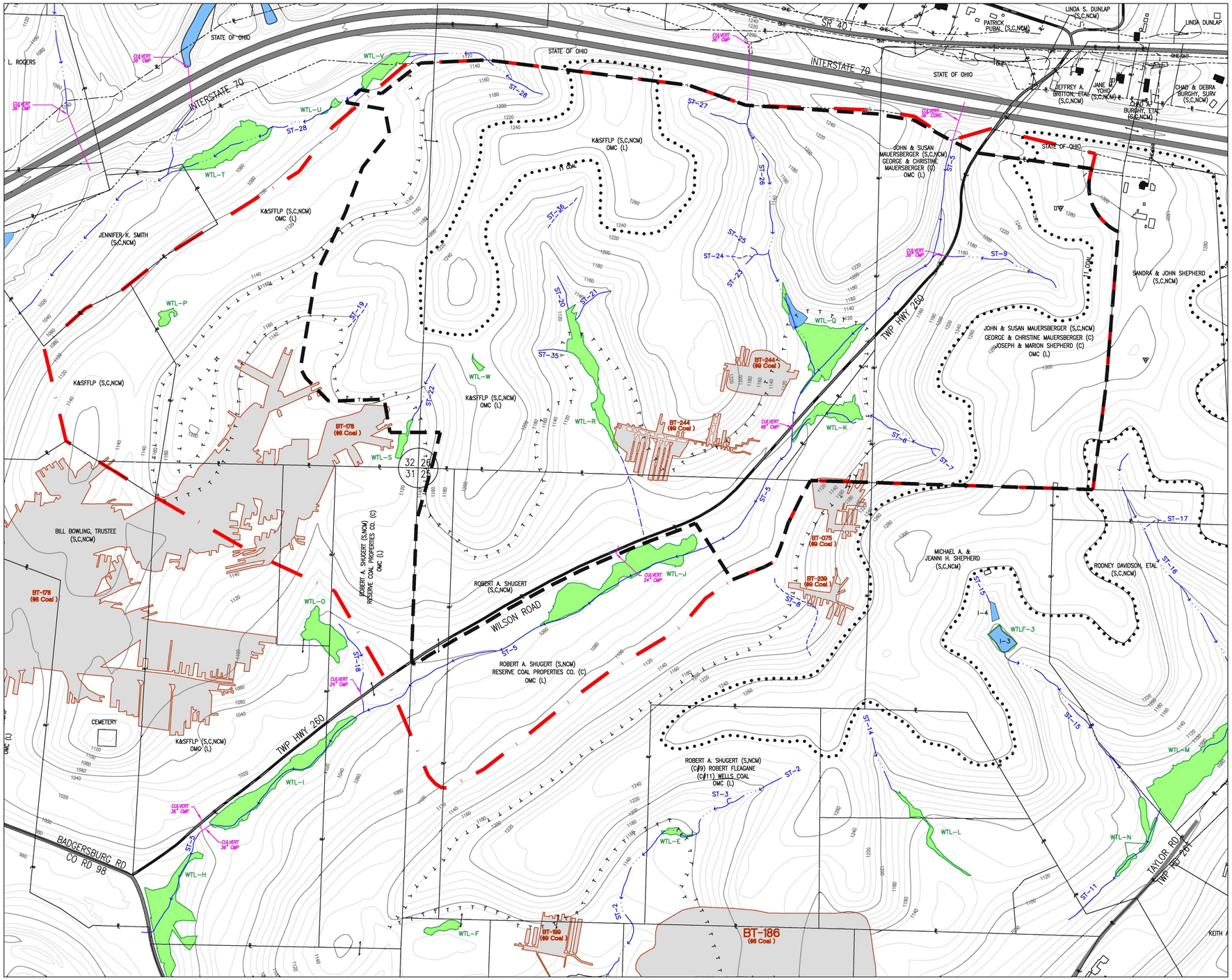
Before me, a notary public in and for said state and county, the foregoing Conservation Easement was acknowledged, subscribed and sworn to me by _____, as the _____ of the Grantor, for and on behalf of the Grantor.

In testimony whereof, I hereunto set my hand and official seal at _____, this ___ day of _____, 20____.

_____
Notary Public

My Commission expires: _____

This instrument prepared by: Oxford Mining Company, LLC



STREAM SUMMARY					
ID	REGIME	HHEI SCORE	PHWH CLASS	LENGTH (FT)	JURISDICTIONAL
5	PERENNIAL	70	2	5105	YES
6	INTERMITTENT	55	2	1050	YES
7	INTERMITTENT	22	1	57	YES
9	INTERMITTENT	40	2	812	YES
19	EPHEMERAL	17	1	186	NO
20	INTERMITTENT	39	1	211	YES
21	INTERMITTENT	36	2	290	YES
22	INTERMITTENT	38	1	369	NO
23	INTERMITTENT	38	1	161	YES
24	EPHEMERAL	23	1	163	YES
25	INTERMITTENT	38	2	61	YES
26	INTERMITTENT	51	2	1720	YES
27	INTERMITTENT	37	1	235	YES
28	INTERMITTENT	61	2	400	YES
35	INTERMITTENT	35	2	171	YES
36	EPHEMERAL	21	1	251	NO

WETLAND SUMMARY					
ID	DESIGNATION	ORAM SCORE	ORAM CATEGORY	AREA (AC.)	JURISDICTIONAL
J	PEM	33.5	1 OR 2 GRAY	2.44	YES
K	PEM	30.5	1 OR 2 GRAY	0.72	YES
P	PEM	26.5	1	0.15	NO
Q	PEM	43.5	MODIFIED 2	2.01	YES
R	PEM,PSS	32.5	1 OR 2 GRAY	1.09	YES
S	PEM	28.5	1	0.18	NO
V	PEM	52	2	0.07	YES
W	PEM	23.5	1	0.05	NO

LEGEND

- PROPOSED PERMIT AREA
- "WATERS" of the U.S. STUDY AREA
- WETLAND AREA
- EXISTING IMPOUNDMENT
- UNDERGROUND MINES
- EXISTING HIGHWALL
- PREVIOUSLY MINED AREA
- COAL OUTCROP
- PERENNIAL STREAM
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SWALE

GRAPHIC SCALE

300 0 150 300 600

(IN FEET)
1 inch = 300 ft.

AQUATIC FEATURES

Linn Engineering, Inc.
Civil Engineering Consultants
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OXFORD MINING COMPANY, LLC
SHUGERT SOUTH AREA
AQUATIC FEATURES
ADDENDUM TO PART 3, D(20)

	By	Date
Designed	THL	
Drawn	JAP	1/14/12
Checked	THL	
Approved	THL	

Revisions

Scale: Horiz. 1"= 300' Vert. 1"= N/A

Field Book No.

Project No. SMS

Sheet No. 1 Of 1

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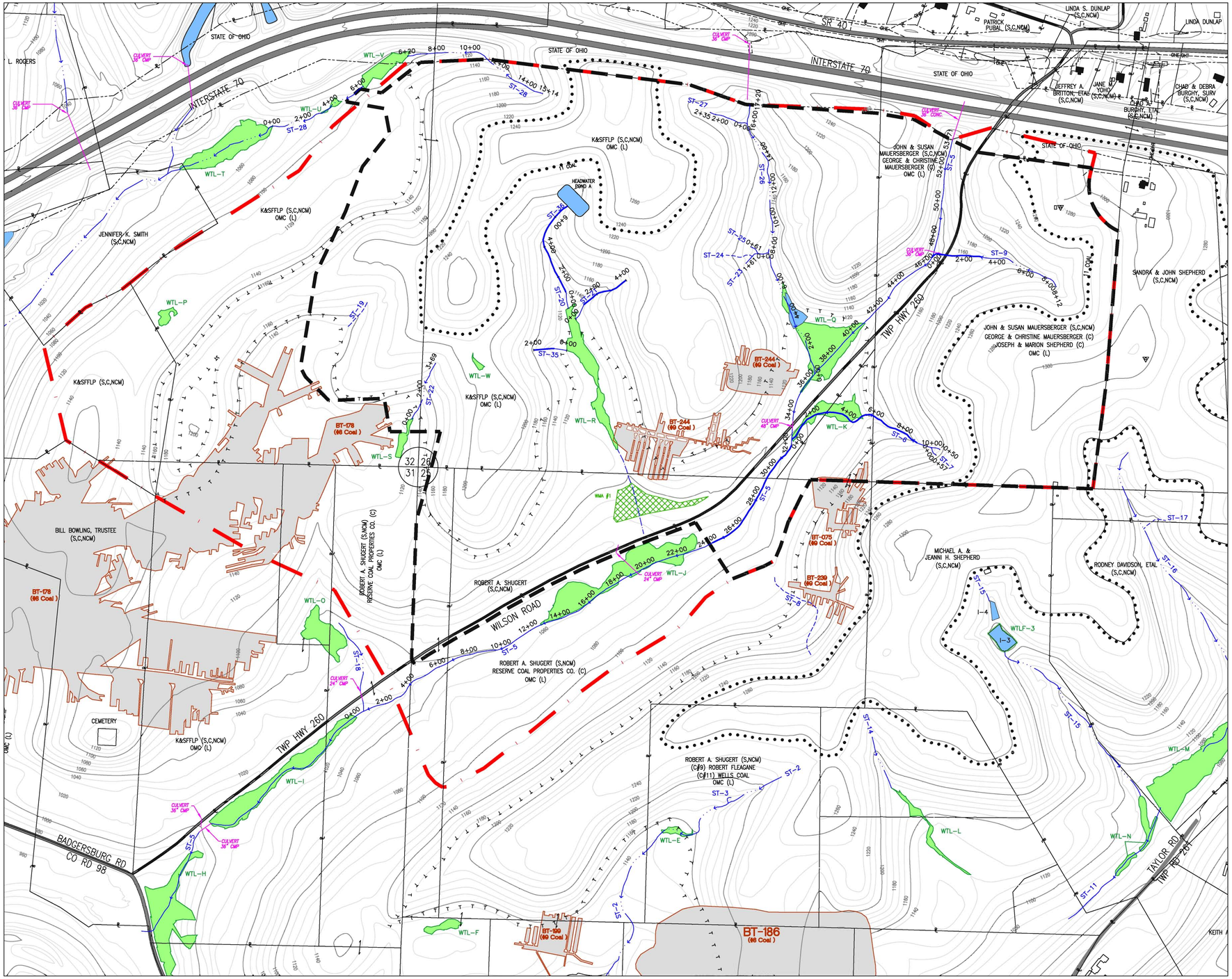

LEGEND

- PROPOSED PERMIT AREA
- "WATERS" of the U.S. STUDY AREA
- WETLAND AREA
- WETLAND MITIGATION AREA
- EXISTING IMPOUNDMENT
- UNDERGROUND MINES
- EXISTING HIGHWALL
- PREVIOUSLY MINED AREA
- COAL OUTCROP
- PERENNIAL STREAM
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SWALE
- RECONSTRUCTED STREAM

GRAPHIC SCALE

300 0 150 300 600

(IN FEET)
1 inch = 300 ft.

WETLAND MITIGATION AND STREAM RECONSTRUCTION

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OXFORD MINING COMPANY, LLC
SHUGERT SOUTH AREA
WETLAND MITIGATION AND
STREAM RECONSTRUCTION

	By	Date
Designed	THL	
Drawn	JAP	1/14/12
Checked	THL	
Approved	THL	

Revisions	By	Date

Scale: Horiz. 1"= 300' Vert. 1"= N/A

Field Book No.

Project No. SMS

Sheet No. 1 Of 1

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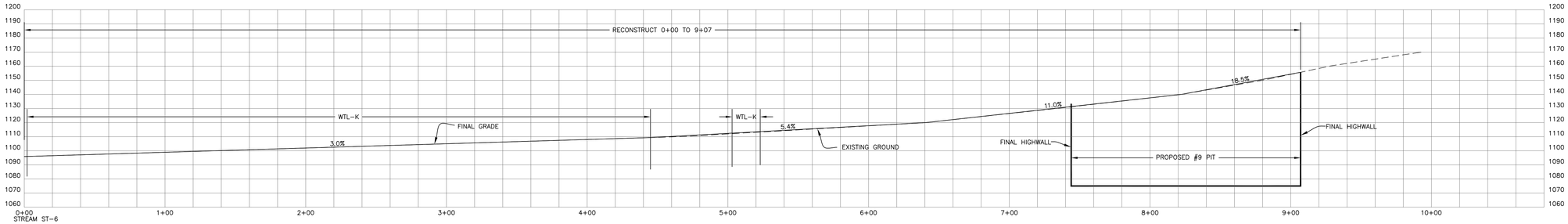

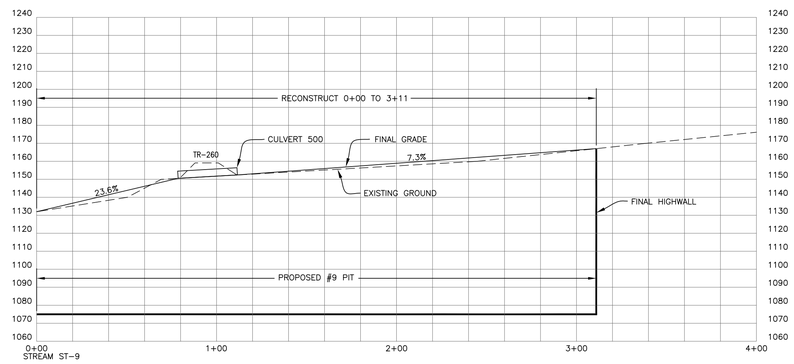

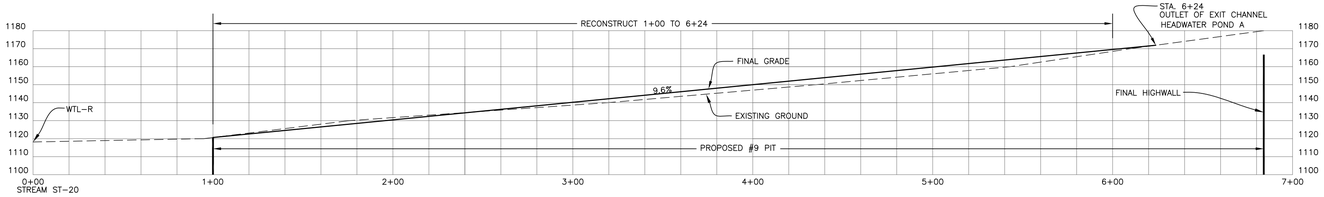

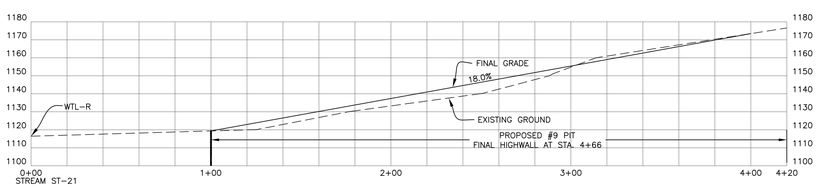

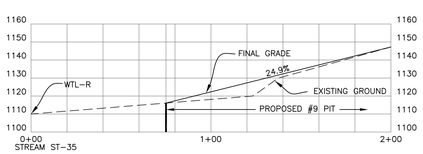

Stream	Sta	Sta	Area	CN	Tc	Q100	Q1.5	S	B	H	D100	D1.5	V100	V1.5	CL	D50
ST-5	24+03	31+93	80.3	82	0.150	166.1	44.9	2.7	6.0	2.5	2.0	1.0	6.9	5.2	B	6
	41+00	49+32	32.4	79	0.100	65.7	15.7	4.4	4.0	1.5	1.3	0.6	6.6	4.6	B	6
ST-6	0+00	4+45	26.0	84	0.100	78.2	22.9	3.0	4.0	1.5	1.4	0.8	6.6	4.5	B	6
	4+45	6+41	18.6	84	0.100	54.2	15.2	5.4	4.0	1.5	1.1	0.6	6.6	4.6	B	6
	6+41	8+22	16.1	84	0.100	46.1	12.6	11.0	4.0	1.0	0.9	0.4	7.2	5.3	B	6
	8+22	9+07	12.3	78	0.100	33.8	8.6	18.5	4.0	1.0	0.7	0.3	7.6	5.3	B	6
ST-9	0+00	0+79	22.9	84	0.100	74.3	23.8	23.6	4.0	1.5	1.1	0.6	9.8	7.0	B	9
	0+79	3+11	21.3	84	0.100	68.8	22.1	7.3	4.0	1.5	1.2	0.6	7.4	5.8	B	6
ST-20	1+00	6+00	16.8	80	0.100	49.0	13.0	9.6	4.0	1.5	1.0	0.5	7.1	5.3	B	6
ST-21	1+00	4+00	6.7	80	0.100	19.5	5.4	18.0	4.0	1.0	0.5	*	6.5	*	B	6
ST-35	0+75	2+00	4.3	84	0.100	14.0	4.5	24.9	4.0	1.0	0.4	*	6.5	*	B	6

Hydrologic Data

	Channel	Base Flow
Design storm:	100yr 6hr	1.5yr 6hr
Precipitation:	3.8"	1.8"
Area: watershed (ac)		
Tc: time of concentration (hr)		

Channel Data

Q: peak runoff (cfs)
S: channel slope (ft/)
B: bottom width (ft)
D: flow depth (ft)
H: channel depth (ft)
V: velocity (fps)
CL: channel lining type
Type A: vegetated-tall fescue
Type B: rock lined
D50: rock size (in)
Rock depth: 2 x D50
Channel Shape: trapezoidal
Side slopes: 3H:1V

Notes:
1. Peak runoff calculated using SEDCAD 4.0.
2. Channel design using SEDACD 4.0.
3. Where a steep channel (>10%) transitions into a lesser sloped channel, rip rap channel lining will extend along the flatter channel for a distance of at least 10 feet.
4. Rip rap may consist of larger rocks that are partially buried. Void space between larger rocks shall be filled with smaller rock.
5. Channels may be stabilized with partially buried logs, stumps, root wads, rock check dams, wooden posts, and supplemental planting.
* insufficient flow to calculate.

0' 40' 80' 120'
HORIZONTAL & VERTICAL SCALES

TIMOTHY H. LINN, PE, PS DATE

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OXFORD MINING COMPANY, LLC
SHUGERT SOUTH
STREAM RECONSTRUCTIONS
ADDENDUM TO PART 3, H(4)

Revisions	By	Date
REV 1		3/19/12

Scale	Date	By	
Horiz. 1" = 40' Vert. 1" = 40'			Designed
Field Book No.	1/16/12	IGB	Drawn
		THL	Checked
		THL	Approved

Project No. SMS

Sheet No. 2 Of 2

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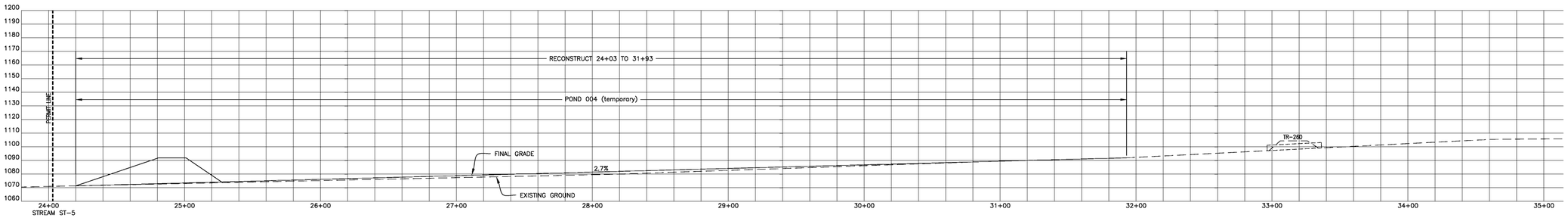
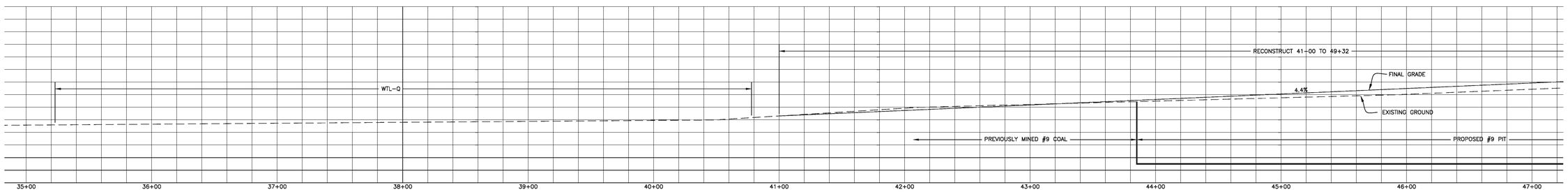
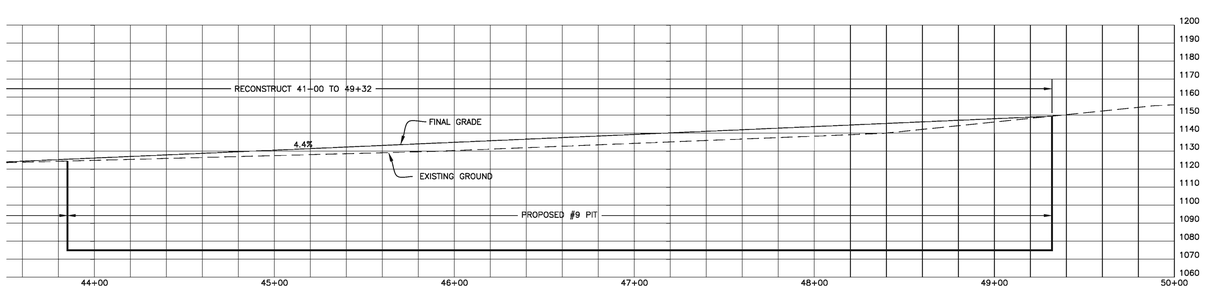
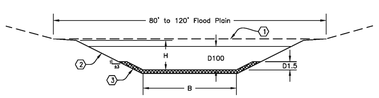








TYPICAL SECTION

SINGLE STAGE CHANNEL

NOTES
Channel:
The capacity of the channel shall carry the 100 year 6 hour storm. Flow depth = D100.
Base flow depth is flow from the 1.5 year 6 hour storm = D1.5.

The flow length of the low flow channel should equal or exceed the original channel length.

Minimize use of riprap armored channels. Rip rap depth above channel bottom = D1.5.

If riprap is placed above D1.5 the normal low flow should be covered with soil and planted.

Create features for stream stability, water quality, habitat enhancement and visual interest, including meanders, eddy rocks, pools and riffles.

Rock checks, meanders, eddy rock, woody debris, or vegetation can be used to reduce erosive flow velocities.

Flood Plain:
Final grading will provide positive drainage to the channel.

Encourage natural vegetation in the Flood Plain for the benefits of water quality, bank stability and wildlife.

KEYNOTES
1. Typical configuration of stream corridor / flood plain following rough backfilling and grading.
2. Typical configuration of stream channel following final reconstruction.
3. Rock channel protection. Thickness = 2 x D50.

DESIGN GUIDELINES:
Peak runoff will be calculated based on conditions at the time of final reclamation that will consider watershed area, ground cover, soil type, land slope and flow path.

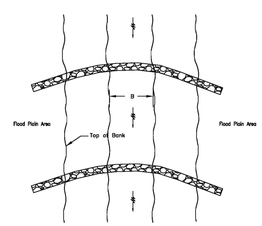
Where a steep channel (>10%) transitions into a lesser sloped channel, rip rap channel lining will extend along the flatter channel for a distance of at least 20 feet.

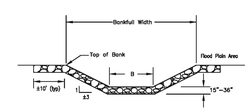
Channels may be stabilized with partially buried logs, stumps, root wads, rock check dams, wooden posts and supplemental planting.

Rock rip rap may consist of larger rock that are partially buried. Void space between larger rock or other channel stabilizing features should filled with smaller rock.

The channel and flood plain corridor shall be planted with appropriate riparian vegetation including trees and shrubs.

NOTES :
1. For 4-10% and >10% channels, meander pattern is not specified; however, straight channels are discouraged. Reconstructed channels should include slight meanders which will introduce channel diversity. 2. In general, the steeper the slope, the fewer the meanders.
3. 4-10% channel, place Rock Check upstream and downstream of Gravel Riffle.
4. >10% channel, place Rock Check at 50' intervals and Gravel Riffle between every third or fourth Rock Check.





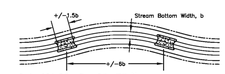
ROCK CHECK

ODOT Type C rock (18"< D50 < 24") shall be used.

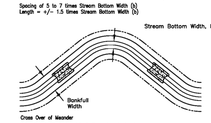
The ends shall extend from the top of the channel into the banks 10 ft. or a distance equal to about one-half the channel width, whichever is less.

The trench shall be 1 to 2 ft. wide and shall be dug to arc or form a vee pointing upstream with the midsection of the rock check farther upstream than where it meets the channel bank.

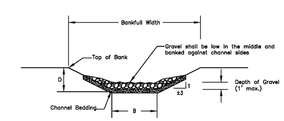
The rock check shall be flush with the channel so that the finished rock surface is on the same grade as the channel bottom and not creating a dam or ponding water.



Spacing of 5 to 7 times Stream Bottom Width (b)
Length = +/- 1.5 times Stream Bottom Width (b)



GRAVEL RIFFLE PLACEMENT AND SPACING



GRAVEL RIFFLE

The length of gravel riffle shall be equivalent to 1.5 times the stream bottom width, b.

The gravel shall NOT be placed so that it acts as a dam or creates a backwater pool. It shall be generally less than 1 ft. thick and no higher than the Max. Riffle Depth.

The gravel shall be placed so that it is slightly lower in the middle and higher by the streambanks.

Gravel size shall be similar to the substrate from the former stream channel. The gravel will be stable at bankfull flow but erodible at Q100 flow.

0' 40' 80' 120'

HORIZONTAL & VERTICAL SCALES

TIMOTHY H. LINN, PE, PS DATE

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REV 1		3/19/12

	By	Date	Scale
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Drawn	IGB	1/16/12	Vert. 1" = 40'
Checked	THL		Field Book No.
Approved	THL		

Project No. SMS

Sheet No. 1 Of 2

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