



Public Notice

**U S Army Corps
of Engineers**
Huntington District

In reply refer to Public Notice No. 200300260 Issuance Date: May 4, 2005
Stream: RACCOON CREEK Closing Date: June 3, 2004

Please address all comments and inquiries to:
U.S. Army Corps of Engineers, Huntington District
ATTN: CELRH-OR-F Public Notice No. (reference above)
502 Eighth Street
Huntington, West Virginia 25701-2070

Phone: (304) 399-5210

PUBLIC NOTICE: The purpose of this public notice is to inform you of a proposal for work in which you might be interested. It is also to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest. We hope you will participate in this process.

REGULATORY PROGRAM: Since its early history, the U.S. Army Corps of Engineers (Corps) has played an important role in the development of the nation's water resources. Originally, this involved construction of harbor fortifications and coastal defenses. Later duties included the improvement of waterways to provide avenues of commerce. An important part of our mission today is the protection of the nation's waterways through the administration of the Corps Regulatory Program.

SECTION 404: The Corps is directed by Congress under Section 404 of the Clean Water Act (33 USC 1344) to regulate the discharge of dredged and fill material into all waters of the United States, including wetlands. The intent of the law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical and biological integrity.

TO WHOM IT MAY CONCERN: The following application has been submitted for a Department of the Army Permit under the provisions of Section 404 of the Clean Water Act. This notice serves as the Corps of Engineers' request to the Ohio Environmental Protection Agency (OEPA) to act on Section 401 Water Quality Certification for the following application:

APPLICANT: Ohio Department of Transportation
1980 West Broad Street
Columbus, Ohio 43223

LOCATION: The proposed project is located within the South Fork Licking River, Simpson Run, Moots Run, Chinney Run, Raccoon Creek and their unnamed tributaries and adjacent wetlands north and south of the existing State Route 161/37 between New Albany and Granville, Franklin and Licking Counties, Ohio.

DESCRIPTION OF THE PROPOSED WORK: The applicant proposes to improve a 12.6-mile segment of State Route 161/37 between New Albany and Granville, Ohio. According to the applicant, this stretch of 2-lane roadway represents one of the last two unimproved segments of the State Route 161/37/US 36 Macro-Corridor across east-central Ohio. The applicant has indicated the current Level of Service for this stretch of roadway is unacceptable for a major transportation facility and the combination of high travel demand volume and inadequate capacity has contributed to high accident rate along the roadway. The proposed improvement project would provide an acceptable Level of Service and safety and improve mobility and transportation efficiency along this segment of State Route 161/37. The proposal would result in impacts to 12,406' of nineteen stream channels and 2.7 acres of seventeen wetlands.

Work associated with the proposal would consist of the construction of a new 4-lane highway with 12' wide driving lanes, 72' depressed grass median, 6' passed inside shoulders and 10' outside shoulders bordered by grass drainage ditches and embankments. Access to the improved highway facility would be provided via three interchanges. Impacts to waters of the United States would include culvert/bridge construction, stream relocation, temporary stream de-watering, and roadway construction. Specifics regarding the proposed impacts can be found in Tables A, B, C, and D. A total 26,087 cubic yards of clean fill material will be placed below the ordinary high water elevation of approximately 5.60 acres of waters of the Untied States in conjunction with the proposal.

MITIGATION PLAN: The applicant has submitted a conceptual compensatory mitigation plan (CMP) to compensate for permanent impacts to waters of the United States regulated by the United States Army Corps of Engineers. To mitigate for stream impacts associated with the proposal, the applicant proposes to include natural stream channel design techniques into approximately 3,590' of five relocated stream channels (stream sites 6, 12, 24, 28, 42). The reconstructed stream channels would incorporate meandering, two-stage channels, riffle/pool complexes, gradual sloping benches (10:1 to 24:1), and vegetated riparian corridors. The sloping benches would provide for a bank-full width and areas for the establishment of hydrophytic vegetation and the riparian corridor. The riparian corridor would include four native tree species, four native shrub species, and a native seed mixture. Erosion protection would be established along the outside bank of meander locations to provide for channel stability. Other on-site stream mitigative techniques would include implementation of a sediment and erosion control plan, stormwater detention/treatment facilities, and oversized, buried culverts. The applicant also proposes to preserve a minimum of 9,000' of stream channel and associated riparian corridor along stream channels adjacent to the project area. The applicant is currently in consultation with several property owners within the watershed regarding potential stream easements.

To mitigate for wetland impacts associated with the proposal, the applicant proposes to restore approximately 15 acres of wetlands on property owned by the Dawes Arboretum along Dutch Fork Creek in Licking County, Ohio. The wetland mitigation site is approximately 7 miles southeast of the eastern terminus of the project. The objective of the wetland mitigation plan is to restore

approximately 21 acres of emergent, scrub-shrub, and forested habitat with an adjacent buffer area of big bluestem prairie at the site. Approximately 5.62 acres of the restored wetland would be used to compensate for impacts to 2.76 acres of jurisdictional wetland. The applicant would also mitigate for impacts to 1.19 acre of isolated wetlands at the site. The applicant has requested the remaining wetland acreage at the site be used to compensate for wetland impacts associated with future transportation projects within the Licking River Watershed. The mitigation wetlands and associated upland habitat would be permanently maintained and conserved by Dawes as arboretum lands. The wetlands would be monitored for a period of five years. Copies of the conceptual mitigation plan are available for review upon request.

A total of 2.76 acres of jurisdictional wetland would be filled as a result of the proposal. The project does not require access to or sitting within the wetlands to fulfill its basic purpose and is considered a non-water dependent activity. The Section 404(b)(1) Guidelines state that for non-water dependent activities, practicable alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise. The applicant is required to provide an alternative analysis that must overcome the presumption prior to receiving authorization for the placement of fill material. The applicant has submitted the required alternative analysis and it is currently being reviewed.

Plans of the proposed work are attached to this notice.

A section 401 Water Quality Certification is required for this project. It is the applicant's responsibility to obtain the certification from the Ohio Environmental Protection Agency.

HISTORIC AND CULTURAL RESOURCES: The National Register of Historic Places has been consulted and it has been determined the proposal would impact one site, 33Li1094/1096, which is eligible for the National Register of Historic Places. The applicant, in coordination with the Ohio State Historic Preservation Office, is preparing a Phase III date recovery plan and Memorandum of Agreement (MOA) regarding the site. A copy of this public notice will be furnished to the Ohio State Historic Preservation Office for their review. Comments concerning archeological sensitivity of the project area should be based upon collected data.

ENDANGERED/THREATENED SPECIES REVIEW: The project is located within the known or historic range of the following endangered species:

Indiana bat
Scioto madtom
Clubshell mussel
Eastern massasauga
Northern riffleshell mussel
Rayed bean mussel
Bald eagle

The Huntington District has consulted the most recently available information and based on the proposed avoidance and minimization measures, the project is not likely to adversely affect the Indiana bat, bald eagle, and eastern massasauga and will have no effect on the Scioto madtom, clubshell mussel, eastern massasauga, northern riffleshell mussel, or the rayed bean mussel or designated critical habitat for these Federally listed species. This public notice serves as a request to the U.S. Fish and Wildlife Service for any additional information they may have on whether any listed or proposed to be listed endangered or threatened species may be present in the area which would be affected by the activity, pursuant to Section 7(c) of the Endangered Species Act of 1972 (as amended).

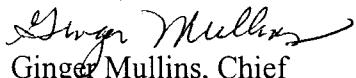
PUBLIC INTEREST REVIEW AND COMMENT: Any person who has an interest that may be adversely affected by the issuance of a permit may request a public hearing. The request must be submitted in writing to the District Engineer on or before the expiration date of this notice and must clearly set forth the interest which may be adversely affected and the manner in which the interest may be adversely affected by the activity. This application will be reviewed in accordance with 33 CFR 320-331, the Regulatory Program of the U. S. Army Corps of Engineers (USACE), and other pertinent laws, regulations, and executive orders. Our evaluation will also follow the guidelines published by the U. S. Environmental Protection Agency pursuant to Section 404(b) (1) of the CWA. Interested parties are invited to state any objections they may have to the proposed work. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors that may be relevant to the proposal will be considered including the cumulative effects thereof; of those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Written statements on these factors received in this office on or before the expiration date of this public notice will become a part of the record and will be considered in the final determination. A permit will be granted unless its issuance is found to be contrary to the public interest.

SOLICITATION OF COMMENTS: The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. For accuracy and completeness of the administrative record, all data in support of or in opposition to the proposed work should be submitted in writing setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

CLOSE OF COMMENT PERIOD: All comments pertaining to this Public Notice must reach this office on or before the close of the comment period listed on page one of this Public Notice. If no comments are received by that date, it will be considered that there are no objections. Comments and requests for additional information should be submitted to:

Kimberly Courts-Brown, Regulatory Project Manager
North Regulatory Section, CELRH-OR-FN
U. S. Army Corps of Engineers Huntington District
502 Eighth Street
Huntington, West Virginia 25701-2070.

Please note names and addresses of those who submit comments in response to this public notice may be made publicly available. Thank you for your interest in our nation's water resources. If you have any questions concerning this public notice, please contact Kimberly Courts-Brown of the North Regulatory Section at 304-399-5210.



Ginger Mullins
Ginger Mullins, Chief
Regulatory Branch

(O)

404 / 401 TABLE A Streams Affected by the Proposed Project

Stream Site	Description	Length	Nearest Stream	Probable Class I PHWH	Probable Class II PHWH	Probable Class III PHWH
Stream Site 9	Unnamed Tributary (300 ft Impacted)	05040001	8,500 ft	Blacklick Creek	8,000 ft	0.37 mi ²
Stream Site 11	Unnamed Tributary (320 ft Impacted)	05040006	4,500 ft	South Fork Licking River	450 ft	0.28 mi ²
Stream Site 10	South Fork Licking River(380 ft Impacted)	05040006	190,080 ft.	Licking River	182,160 ft.	1.87mi ²
Stream Site 12	Unnamed Tributary(1450 ft. Impacted)	05040006	6,300 ft	South Fork Licking River	1,400 ft	0.36 mi ²
Stream Site 13b	Unnamed Tributary(670 ft. Impacted)	05040006	7,000 ft	Pet Run	3000 ft	1.18mi ²
Stream Site 6	Simpson Run (440 ft. Impacted)	05040006	23,760 ft.	Raccoon Creek	10,560 ft.	1.47 mi ²
Stream Site 5	Simpson Run (170 ft. Impacted)	05040006	23,760 ft	Raccoon Creek	6,864 ft.	2.11 mi ²
Stream Site 23	Unnamed Tributary (306 ft. Impacted)	05040006	9400 ft	Raccoon Creek	6,600 ft.	0.13 mi ²
Stream Site 24	Unnamed Tributary (2,300 ft. Impacted)	05040006	13,500 ft	Raccoon Creek	6,500 ft.	0.62 mi ²
Stream Site 28	Unnamed Tributary (2170 ft. Impacted)	05040006	13,600 ft	Raccoon Creek	5,600 ft.	0.36 mi ²
Stream Site 34	Unnamed Tributary (460 ft. Impacted)	05040006	5,200 ft.	Unnamed Trib. Raccoon Creek	0 ft.	0.30 mi ²
Stream Site 33	Unnamed Tributary (530 ft. Impacted)	05040006	2,800 ft.	Unnamed Trib. Raccoon Creek	210 ft.	0.08 mi ²
Stream Site 2	Moots Run (285 ft. Impacted)	05040006	19,000 ft.	Raccoon Creek	3,000	9.41mi ²
Stream Site 35	Unnamed Tributary (500 ft. Impacted)	05040006	2,450 ft.	Unnamed Trib. Raccoon Creek	980 ft.	0.03 mi ²
						29 Probable Modified Class I PHWH

404 / 401 TABLE A
Streams Affected by the Proposed Project

Stream Name	Description	Stream ID	Length Impacted	Impacted Stream	Length	Area	Probable MWH
Stream Site 36	Unnamed Tributary (500 ft. Impacted)	05040006	4,620 ft.	Unnamed Trib. Raccoon Creek	1,330 ft.	0.26 mi ²	61 Probable Class III PHWH
Stream Site 16	Chimney Creek (60 ft. Impacted)	05040006	20,000 ft.	Raccoon Creek	2,000 ft.	2.96 mi ²	45.5 Probable LRW
Stream Site 42	Unnamed Tributary (330 ft. Impacted)	05040006	1680 ft	Raccoon Creek	210 ft.	0.14 mi ²	41 Probable Modified Class II PHWH
Stream Site 40	Unnamed Tributary (50 ft. Impacted)	05040006	11,000 ft.	Raccoon Creek	40 ft.	1.15 mi ²	57 Probable MWH
**Unnamed trib. To Dutch Fork #1	Unnamed Tributary (900 ft. Impacted)	05040006	3000 ft.	Dutch Fork	200 ft.	0.09 mi ²	51 Probable Modified Class II PHWH
**Unnamed trib. To Dutch Fork #2	Unnamed Tributary (500 ft. Impacted)	05040006	2000 ft.	Dutch Fork	700 ft.	0.12 mi ²	52 Probable Modified Class II PHWH

* Distances are scaled from USGS & project mapping

** Streams located at proposed Dawes Wetland Mitigation Area

404 / 401 TABLE B
Wetlands Affected by the Proposed Project

Wetland ID	Site ID	Wetland Name	Wetland Type	Size (acres)	Affected by	Proposed Action		
W-10	05040006	STA. 589+00	PEM	40	Mod 2	0.27 ac.(0.02 ac.)	golf course, residential, roadway	Near Wetland 11 & within Raccoon Creek Floodplain
W-11	05040006	STA. 599+00	PEM/PSS	72	3	7.09 ac. (0.56 ac.)	wetlands & open water	Adjacent to Stream Site 42 & within Raccoon Creek floodplain
W-12	05040006	STA. 609+00	PEM/PFO	—	2 or 3	0.14 ac. (0.01 ac.)	wetlands, roadway, open water	Adjacent to Stream Site 42 & within Raccoon Creek floodplain
W-13b	05040006	STA. 622+50	PEM	59	2	0.26 ac. (0.02 ac.)	Forested, wetlands, roadway	Adjacent to Stream Site 40 & within Raccoon Creek floodplain
W-28	05040001	STA. 25+00 BR	PEM	38	2	1.28 ac.(0.14 ac.)	Roadway, Forested Wetlands, Farm	Adjacent to Stream Site 9
W-50a	05040006	STA. 104+50	PEM	38.5	Mod 2	0.35 ac.(0.32 ac.)	residential, oldfield	Stream Site 10 watershed - South Fork Licking River
W-50b	05040006	STA. 104+00	PEM	32	1 or 2	0.02 ac. (0.02 ac.)	residential, oldfield	Stream Site 10 watershed - South Fork Licking River
W-50c	05040006	STA. 103+50	PEM	37	Mod 2	0.13 ac (0.10 ac.)	residential, oldfield	Stream Site 10 watershed - South Fork Licking River
W-50d	05040006	STA. 103+00	PEM	32	1 or 2	0.03 ac. (0.03 ac.)	residential, oldfield	Stream Site 10 watershed - South Fork Licking River
W-66	05040006	STA.210+50	PEM/PSS	58	2	11.46 ac. (0.42 ac.)	Agricultural cropland, residential, woodland	Stream Site 13b watershed - Pet Run
W-69	05040006	STA. 24+50 JM	PEM	21	1	1.47 ac. (0.01 ac.)	Agricultural pastureland, residential, roadway	Headwaters of unnamed tributary to Pet Run

WATERBODY	BASIN	WATER BODY	DRY	STREAM	TYPE	LAND USE	OWNER	PROXIMITY TO OTHER STREAMS
W-77	05040006	STA. 142+00	PEM	35	Mod 2	0.11 ac. (0.11 ac.)	oldfield & residential	Stream Site 12 watershed - Unnamed tributary to South Fork Licking River
W-78	05040006	STA. 144+50	PEM	44	Mod 2	1.24 ac. (0.58 ac.)	oldfield & residential	Stream Site 12 watershed - Unnamed tributary to South Fork Licking River
W-88c	05040006	STA. 332+00	PEM	30.5	1 or 2	2.97 ac. (0.32 ac.)	Agricultural cropland & pastureland	900 feet to unnamed tributary to Raccoon Creek
W-117	05040006	STA. 210+50 WR	PSS	32	1 or 2	0.09 ac. (0.05 ac.)	riparian linked woodland	Adjacent to Stream Site 26 - Unnamed tributary to Raccoon Creek
W-124	05040006	STA. 470+00	PFO	33.5	Mod 2	0.10 ac. (0.04 ac.)	Agricultural cropland wooded riparian corridor	Adjacent to Stream Site 33 - Unnamed tributary to Raccoon Creek
W-136	05040006	STA. 484+00	PFO	40	Mod 2	0.08 ac. (0.01 ac.)	Agricultural cropland & riparian linked woodland	Adjacent to Stream Site 2 - Moots Run
Totals						27.09 ac. (2.76 ac.)		

BR = Beech Road
JM = Jersey Mill Road
WR = Worthington Road

404 / 401 TABLE C Nature of Proposed Activities by Impacted Feature for the Preferred Alternative

Feature	Proposed Action	Estimated Volume		Estimated Volume		Estimated Volume		Estimated Volume	
		Flow	Depth	Flow	Depth	Flow	Depth	Flow	Depth
Stream Site 9	25+70 BR	Replace/extend culvert	300 ft.	N/A	N/A	125 CY	0.04 ac.	N/A	N/A
Stream Site 11	79+25 ML	Install culvert	320 ft.	N/A	N/A	126 CY	0.04 ac.	N/A	N/A
Stream Site 10	87+10 ML	Install culvert	380 ft.	N/A	N/A	323 CY	0.10 ac.	N/A	N/A
Stream Site 12	131+75 ML 13+12 MR	Install 84" steel culvert Install 84" steel culvert relocation	1450 ft.	N/A	N/A	430 CY	0.13 ac.	N/A	N/A
Stream Site 13b	250+90 ML	Install 102" steel culvert	670 ft.	N/A	N/A	149 CY	0.06 ac.	N/A	N/A
Stream Site 6	333+50 ML	relocation	440 ft.	N/A	N/A	220 CY	0.09 ac.	N/A	N/A
Stream Site 5	375+10 ML	Install 120" steel culvert	170 ft.	N/A	N/A	162.5 CY	0.05 ac.	N/A	N/A
Stream Site 23	408+50 ML 167+80 WR	Install box culvert replace culvert	306 ft.	N/A	N/A	113 CY	0.03 ac.	N/A	N/A
Stream Site 24	435+95 ML 209+50 WR	Install 90" steel culvert Install 102" steel culvert relocation	2300 ft.	N/A	N/A	1320 CY	0.40 ac.	N/A	N/A
Stream Site 28	203+70 WY 409+50 YR 458+80 RL	Install 48" steel culvert Install 60" steel culvert Install 60" steel culvert relocation	2170 ft.	N/A	N/A	407 CY	0.17 ac.	N/A	N/A
Stream Site 34	463+50 ML 229+00 SR11	Install 90" steel culvert Install 54" steel culvert	460 ft.	N/A	N/A	67.5 CY	0.04 ac.	N/A	N/A
Stream Site 33	470+00 ML 235+75 SR11	Install 48" steel culvert Install 48" steel culvert	530 ft.	N/A	N/A	55 CY	0.03 ac.	N/A	N/A
Stream Site 2	482+50 ML	Construct bridge & Temporary crossing	250 ft.	N/A	N/A	170 CY	0.03	35 ft.	277 CY 0.02
Stream Site 35	532+60 ML	Install 54" steel culvert	500 ft.	N/A	N/A	99 CY	0.09	N/A	N/A
Stream Site 36	524+50 ML	Install 48" steel culvert	380 ft.	N/A	N/A	115 CY	0.07	N/A	N/A

404 / 401 TABLE C Nature of Proposed Activities by Impacted Feature for the Preferred Alternative

Stream Site		Type of Impact		Impact Description		Impact Description		Impact Description		Impact Description	
Site Name	Location	Activity Type	Location	Impact Description	Location	Impact Description	Location	Impact Description	Location	Impact Description	Location
Stream Site 16	575+00 ML	Construct 4 bridges & 2 temporary stream crossings	N/A	N/A	N/A	N/A	(2 @ 30 ft. each)	60 ft.	138 CY	0.03	
Stream site 40	623+50 ML	Replace culvert	50 ft.	N/A	N/A	8 CY	0.002 ac.	N/A	N/A	N/A	
Stream Site 42	606+00 ML	Relocation	330 ft.	N/A	N/A	37 CY	0.02 ac.	N/A	N/A	N/A	
Unnamed Trib. Dutch Fork #1	N/A	Impoundment	900 ft.	N/A	N/A	67 CY	0.04 ac.	N/A	N/A	N/A	
Unnamed Trib. Dutch Fork #2	N/A	Impoundment	500 ft.	N/A	N/A	28 CY	0.02 ac.	N/A	N/A	N/A	
						4022 CY	1.45 ac	95 ft.	415 CY	0.05	

*Impact lengths do not include existing culverted segments

ML = Mainline 161/37

BR = Beech Road

MR = Mink Road

SR = Service Road

WR = Relocated Worthington Road

RJ = Ramp J

RL = Ramp L

WY = Watkins York Frontage Road

YR = York Road

404 / 401 TABLE C Nature of Proposed Activities by Impacted Feature for the Preferred Alternative

Wetland	Station	Description	Proposed Activity		Anticipated Construction Activities		Total Anticipated Area
			Area	Method	Area	Method	
Wetland 10	589+00 ML	PEM	0.02 ac.	Grading	N/A	32 CY	0.02 ac.
Wetland 11	599+00 ML	PEM/PSS	0.58 ac.	Grading	N/A	1,807 CY	0.56 ac.
Wetland 12	609+00 ML	PEM/PFO	0.01 ac.	Grading	N/A	16 CY	0.01 ac.
Wetland 13b	622+50 ML	PEM	0.02 ac.	Grading	N/A	65 CY	0.02 ac.
Wetland 28	25+00 BR	PFO	0.14 ac.	Grading	N/A	581 CY	0.14 ac.
Wetland 50a	104+50 ML	PEM	0.32 ac.	Grading	N/A	7,228 CY	0.32 ac.
Wetland 50b	104+00 ML	PEM	0.02 ac.	Grading	N/A	65 CY	0.02 ac.
Wetland 50c	103+50 ML	PEM	0.10 ac.	Grading	N/A	1,936 CY	0.10 ac.
Wetland 50d	103+00 ML	PEM	0.03 ac.	Grading	N/A	97 CY	0.03 ac.
Wetland 66	210+50 ML	PEMPSS	0.42 ac.	Grading	N/A	3,388CY	0.42 ac.
Wetland 69	24+50 JM	PEM	0.01 ac.	Grading	N/A	16 CY	0.01 ac.
Wetland 77	142+00 ML	PEM	0.11 ac.	Grading	887 CY	N/A	0.11 ac.
Wetland 78	144+50 ML	PEM	0.58 ac.	Grading	4195 CY	N/A	0.58 ac.
Wetland 88c	332+00 ML	PEM	0.32 ac.	Grading	N/A	5,162 CY	0.32 ac.
Wetland 117	210+50 WR	PSS	0.05 ac.	Grading	N/A	564 CY	0.05 ac.
Wetland 124	470+00 ML	PFO	0.04 ac.	Grading	N/A	387 CY	0.04 ac.
Wetland 136	484+00ML	PFO	0.01 ac.	Grading	N/A	16 CY	0.01 ac.
TOTALS			2.76 ac.		5,082	21,360CY	2.76 ac.

ML=Mainline 161/37
 BR=Beech Road
 WR=Worthington Road

Nature of Proposed Activities by Impacted Feature for the Preferred Alternative

404 / 401 TABLE C

PROJECT SUMMARY OF ACTIVITIES											
GENERAL INFORMATION			PROJECT ACTIVITIES								
Project ID	Project Name		Project Type			Project Status			Project Phases		
12,406ft	95 ft	12,501 ft.	No Calcs	No Calcs	5,082	0.69 ac.	5,082	0.69 ac.	4,437 CY	1.45 ac.	21,360 CY
									2.07 ac.	25,797 CY	3.52 ac.

404 / 401 TABLE D Impacts and Avoidance Estimations

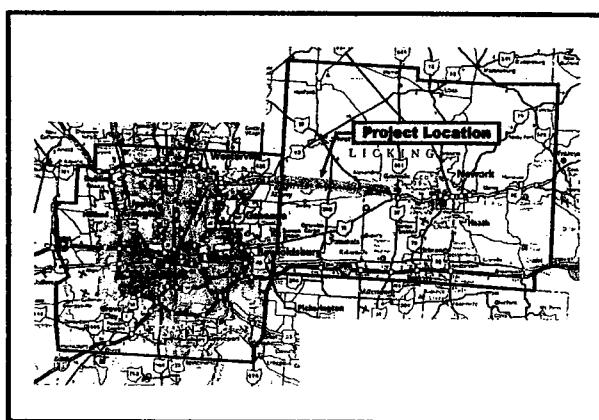
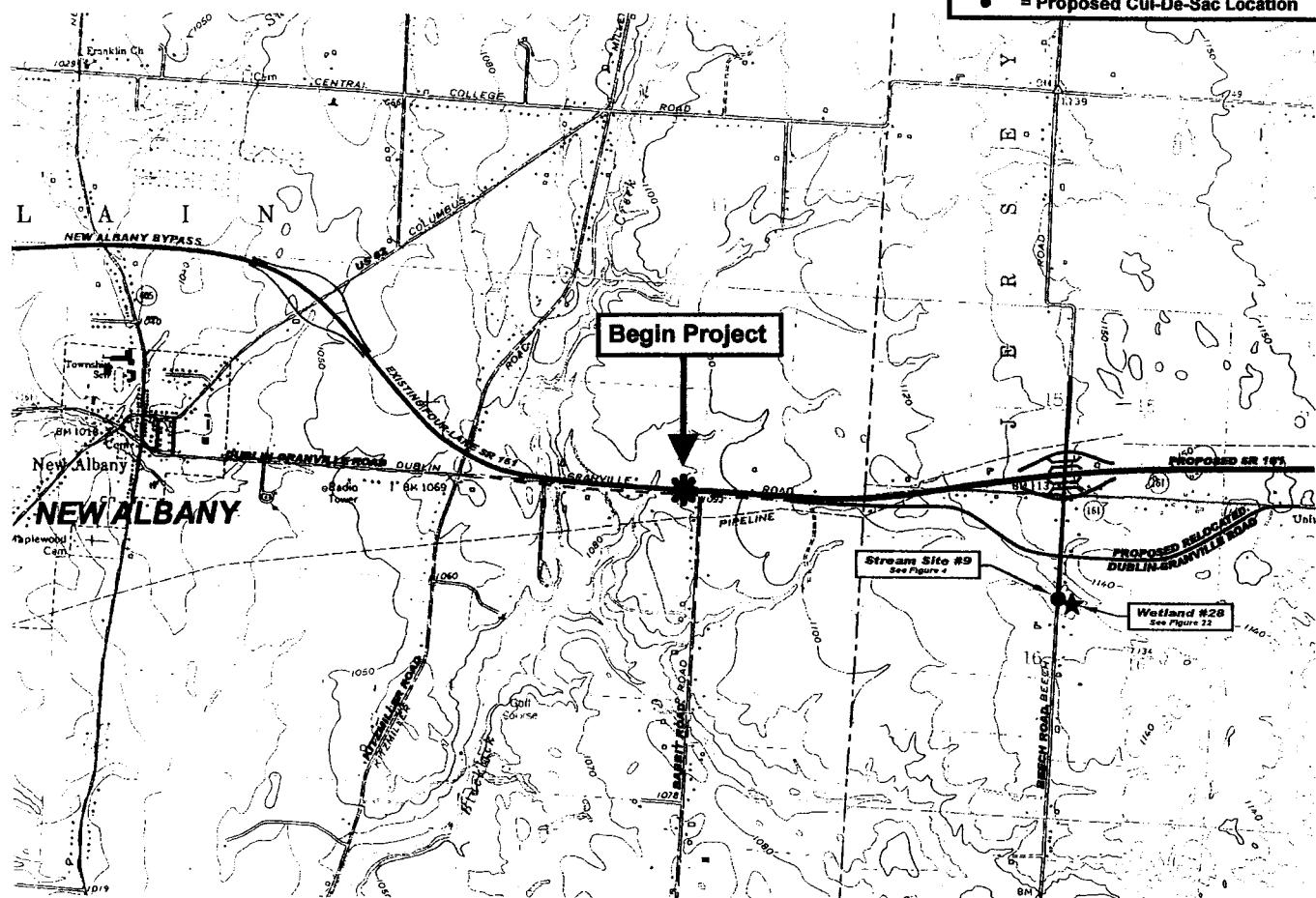
Wetland 10	0.02 Acre (Preferred Alternative) 0.01 (Minimal Degradation Alternative)	0.27 Acre	32 CY 16 CY	96.3% 96.3%
Wetland 11	0.56 Acre (Preferred Alternative) 0.02 Acre (Minimal Degradation Alternative)	7.09 Acre	1807 CY 48 CY	92.1% 99.7%
Wetland 12	0.01 Acre (Preferred Alternative) 0.00 Acre (Minimal Degradation Alternative)	0.14 Acre	16 CY 0 CY	97.09% 100 %
Wetland 13b	0.02 (Preferred Alternative) 0.00 (Minimal Degradation Alternative)	0.26 Acre	65 CY 0 CY	99.47% 100 %
Wetland 28	0.14 Acre (All Alternatives)	1.28 Acre	581 CY	89.1 %
Wetland 50a	0.32 Acre (All Alternatives)	0.35 Acre	7228 CY	8.6%
Wetland 50b	0.02 Acre (All Alternatives)	0.02 Acre	65 CY	0 %
Wetland 50c	0.10 Acre (All Alternatives)	0.13 Acre	1936 CY	23.1 %
Wetland 50d	0.03 Acre (All Alternatives)	0.03 Acre	97 CY	0 %
Wetland 66	0.42 Acre (All Alternatives)	11.46 Acre	3388 CY	96.3 %
Wetland 69	0.01 Acre (All Alternatives)	1.47 Acre	16 CY	99.3 %
Wetland 77	0.11 Acre (All Alternatives)	0.11 Acre	N/A	0 %
Wetland 78	0.58 Acre (All Alternatives)	1.24 Acre	N/A	53.2 %
Wetland 88c	0.32 Acre (All Alternatives)	2.97 Acre	5162 CY	89.2 %
Wetland 117	0.05 Acre (All Alternatives)	0.09 Acre	564 CY	44.4 %
Wetland 124	0.04 Acre (All Alternatives)	0.10 Acre	387 CY	60 %
Wetland 136	0.01 Acre (All Alternatives)	0.08 Acre	16 CY	87.5 %
Stream Site 9	300 ft. (All Alternatives)	8500 ft.	126 CY	96.5 %
Stream Site 11	320 ft. (All Alternatives)	4500 ft.	126 CY	92.9 %
Stream Site 10	380 ft. (All Alternatives)	190,080 ft.	323 CY	99.8 %
Stream Site 12	1450 ft. (All Alternatives)	6,300 ft.	430 CY	77 %

404 / 401 TABLE D
Impacts and Avoidance Estimations

Site	Length (ft.)	Width (ft.)	Volume (CY)	Percent
Stream Site 13b	670 ft. (All Alternatives)	7,000 ft.	150 CY	90.4 %
Stream Site 6	440 ft. (All Alternatives)	23,760 ft.	220 CY	98.1 %
Stream Site 5	170 ft. (All Alternatives)	23,760 ft.	1,625 CY	99.3 %
Stream Site 23	306 ft. (All Alternatives)	6,600 ft.	113 CY	95.4 %
Stream Site 24	2300 ft. (All Alternatives)	13,500 ft.	1,320 CY	83 %
Stream Site 28	2170 ft. (All Alternatives)	13,600 ft.	407 CY	84 %
Stream Site 34	460 (All Alternatives)	5,200 ft.	67.5 CY	91.2 %
Stream Site 33	530 (All Alternatives)	2,800 ft.	55 CY	81 %
Stream Site 2	250 (All Alternatives) (Permanent) 35 ft. (All Alternatives) (Temporary)	19,000 ft.	170 CY 277 CY (Temporary)	98.7 % 99.8 %
Stream Site 35	500 (All Alternatives)	2,450 ft.	152 CY	79.6 %
Stream Site 36	380 (All Alternatives)	4,620 ft.	115 CY	
Stream Site 16	0 ft. (All Alternatives) (Permanent) 60 ft. (All Alternatives) (Temporary)	20,000 ft.	0 CY 138 CY	100 % 99.7 %
Stream Site 42	0 ft. (Minimal Degradation Alternative) 330 ft. (Preferred Alternative)	1680 ft.	37 CY 0 CY	80.4 % 100 %
Stream Site 40	50 ft. (All Alternatives)	11,000 ft.	8 CY	99.5 %
*Un. Trib to Dutch Fork #1	900 ft. (All Alternatives)	3000 ft.	67 CY	70 %
*Un. Trib to Dutch Fork #2	500 ft. (All Alternatives)	2000 ft.	28 CY	75 %

* Wetland Mitigation Site

- = Stream Impact Location
- ★ = Wetland Impact Location
- ▷ = Proposed Interchange Location
- = Proposed Bridge Location
- = Proposed Cul-De-Sac Location



North ↑

Approximate Plan Scale: 1" = 3,000'



Figure 1a
Project Location Map
Project Alignment (Schematic) and Impacted Features

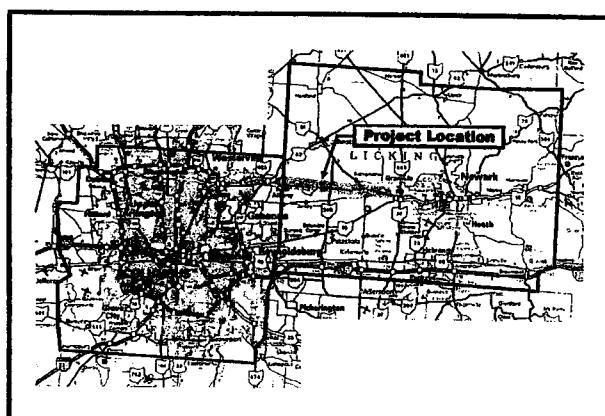
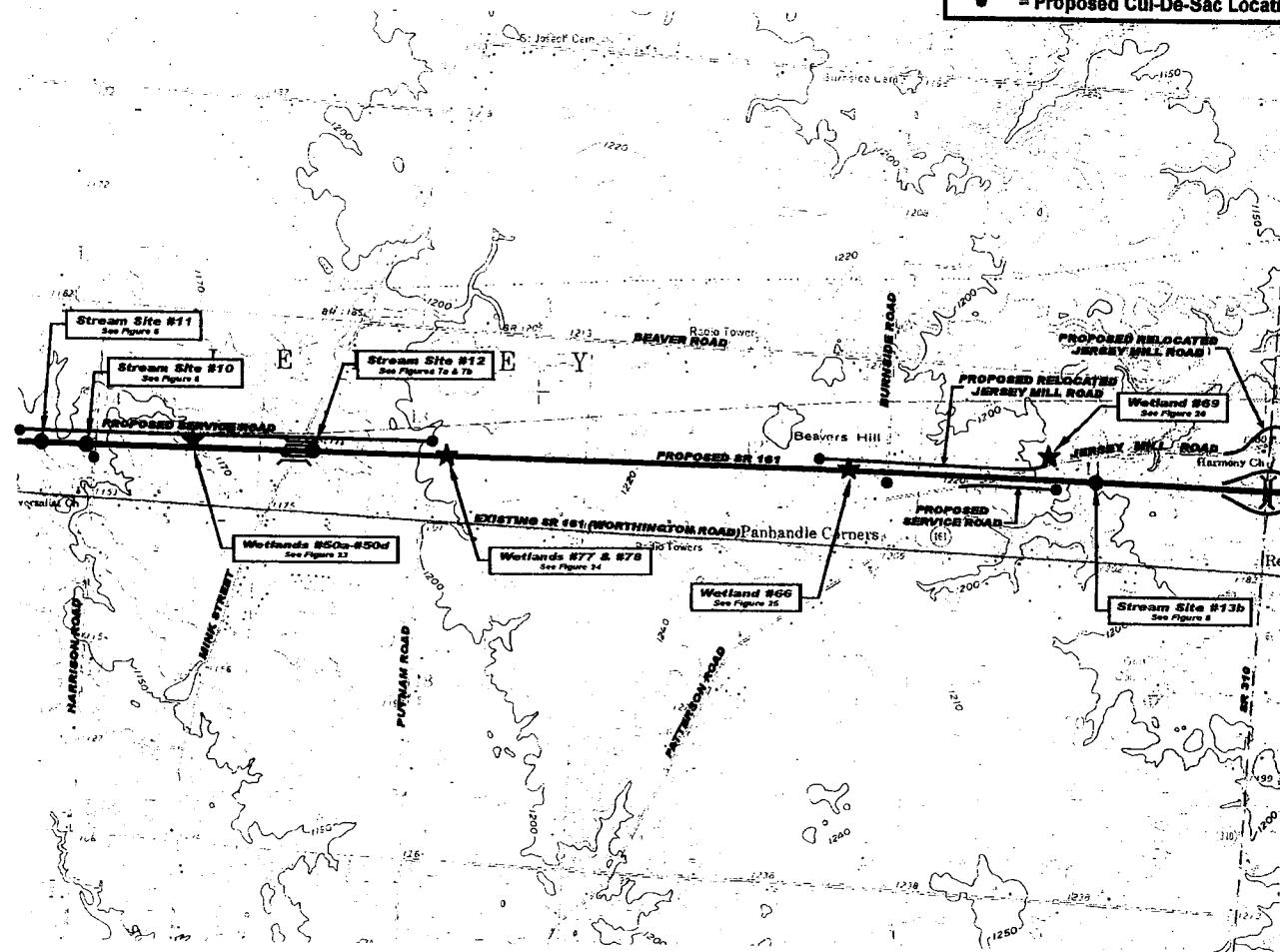
SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 1a of 33

- = Stream Impact Location
- ★ = Wetland Impact Location
- ︵ = Proposed Interchange Location
- ━ = Proposed Bridge Location
- = Proposed Cul-De-Sac Location



North ↑

Approximate Plan Scale: 1" = 3,000'



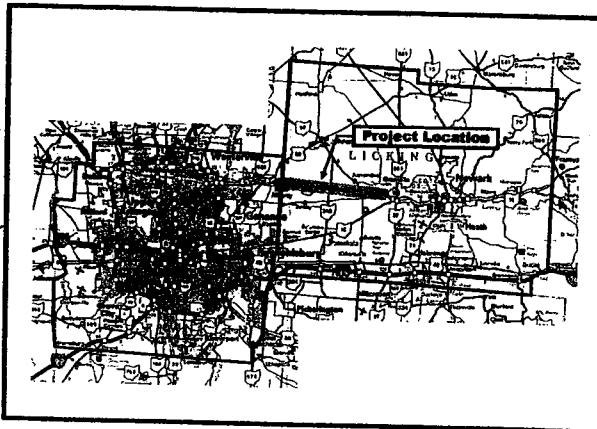
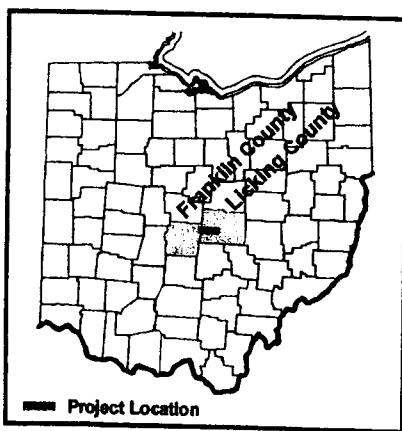
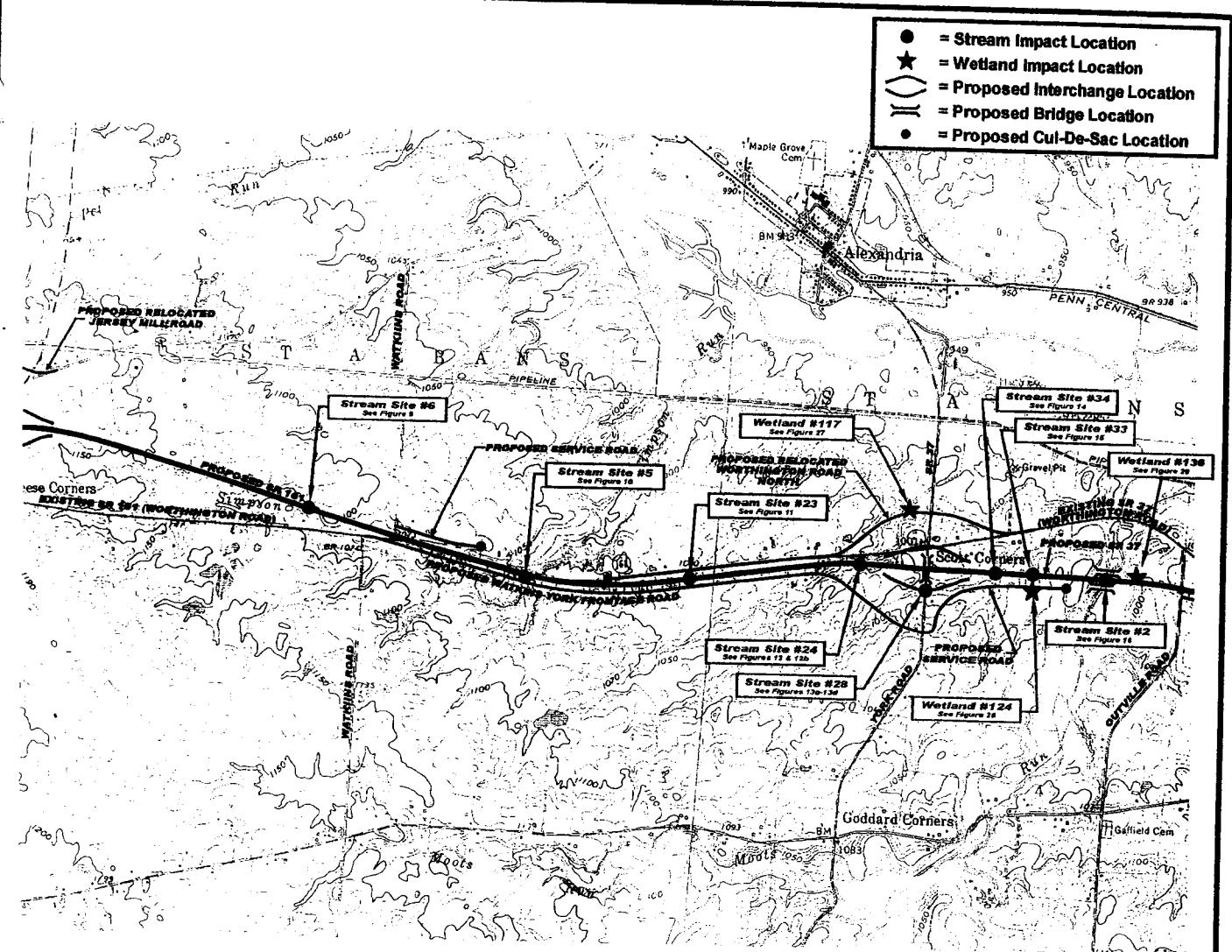
Figure 1b
Project Location Map
Project Alignment (Schematic) and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OSEA Section 401 Water Quality Certification Application

December 2004

Figure 1b of 33



North ↑

Approximate Plan Scale: 1" = 3,000'

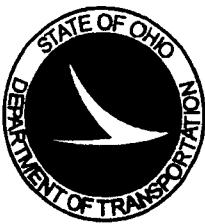


Figure 1c
Project Location Map
Project Alignment (Schematic) and Impacted Features

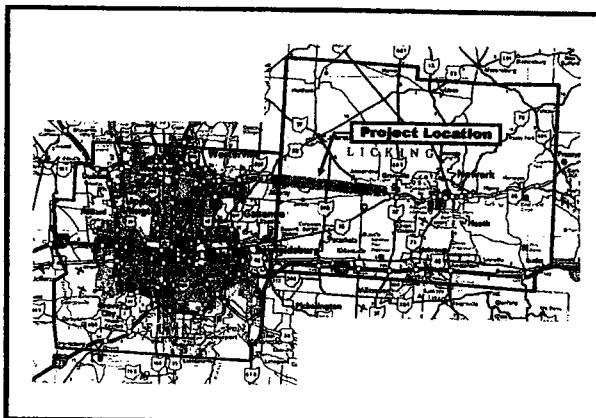
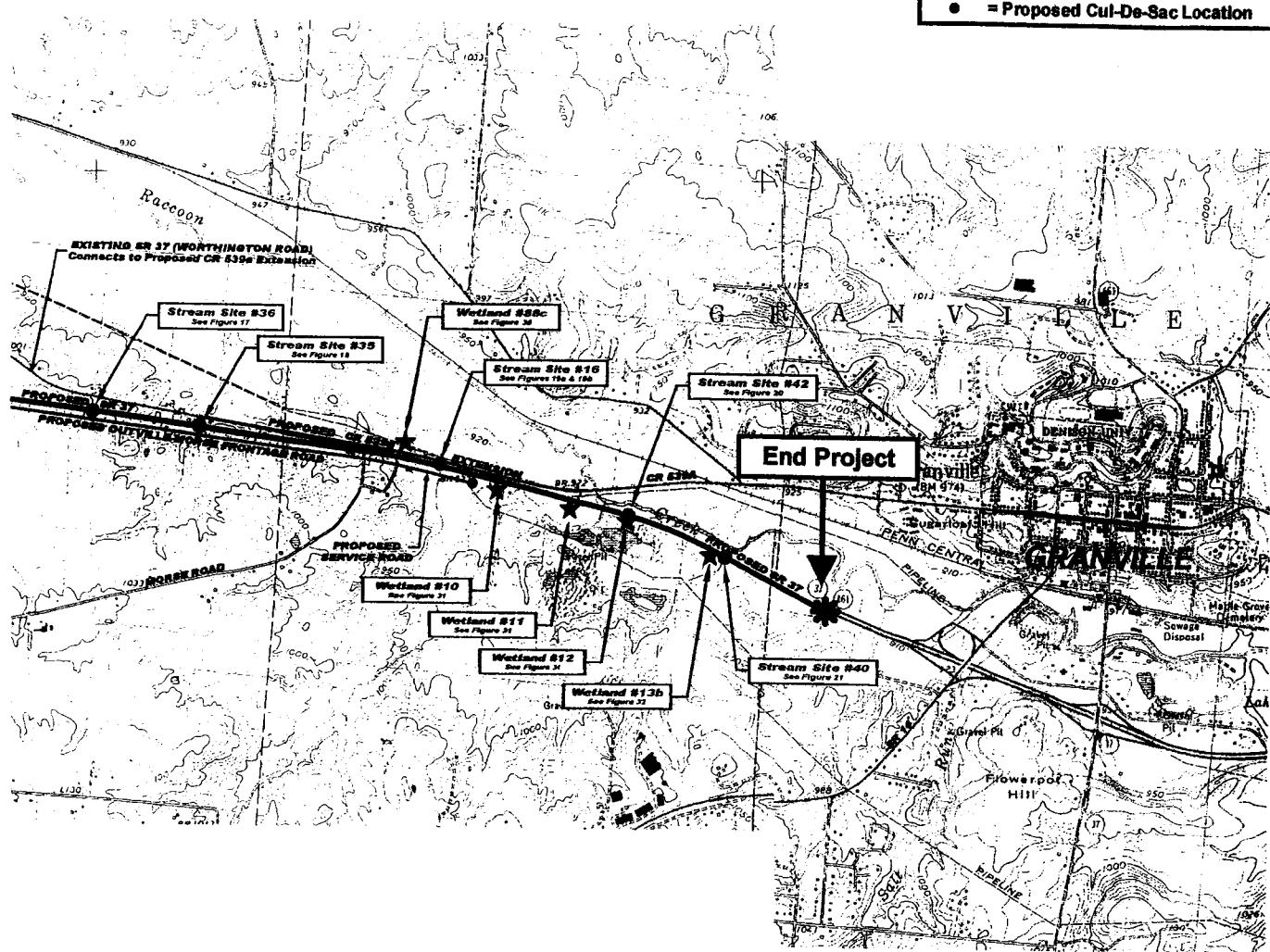
SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 1c of 33

- = Stream Impact Location
- ★ = Wetland Impact Location
- {} = Proposed Interchange Location
- = Proposed Bridge Location
- = Proposed Cul-De-Sac Location



North ↑

Approximate Plan Scale: 1" = 3,000'



Figure 1d
Project Location Map
Project Alignment (Schematic) and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

**U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application**

December 2004

Figure 1d of 33

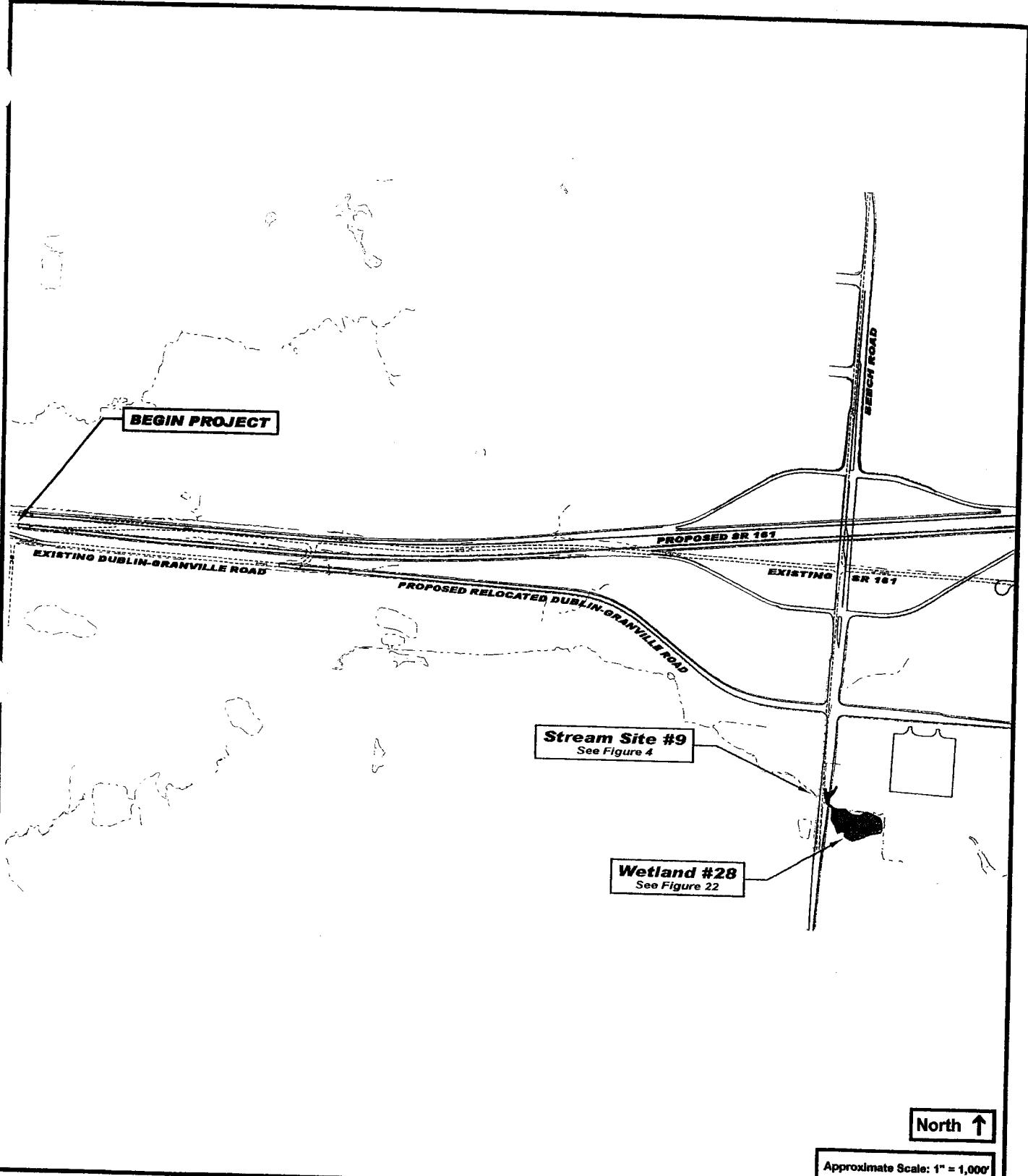


Figure 2a
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2a of 33

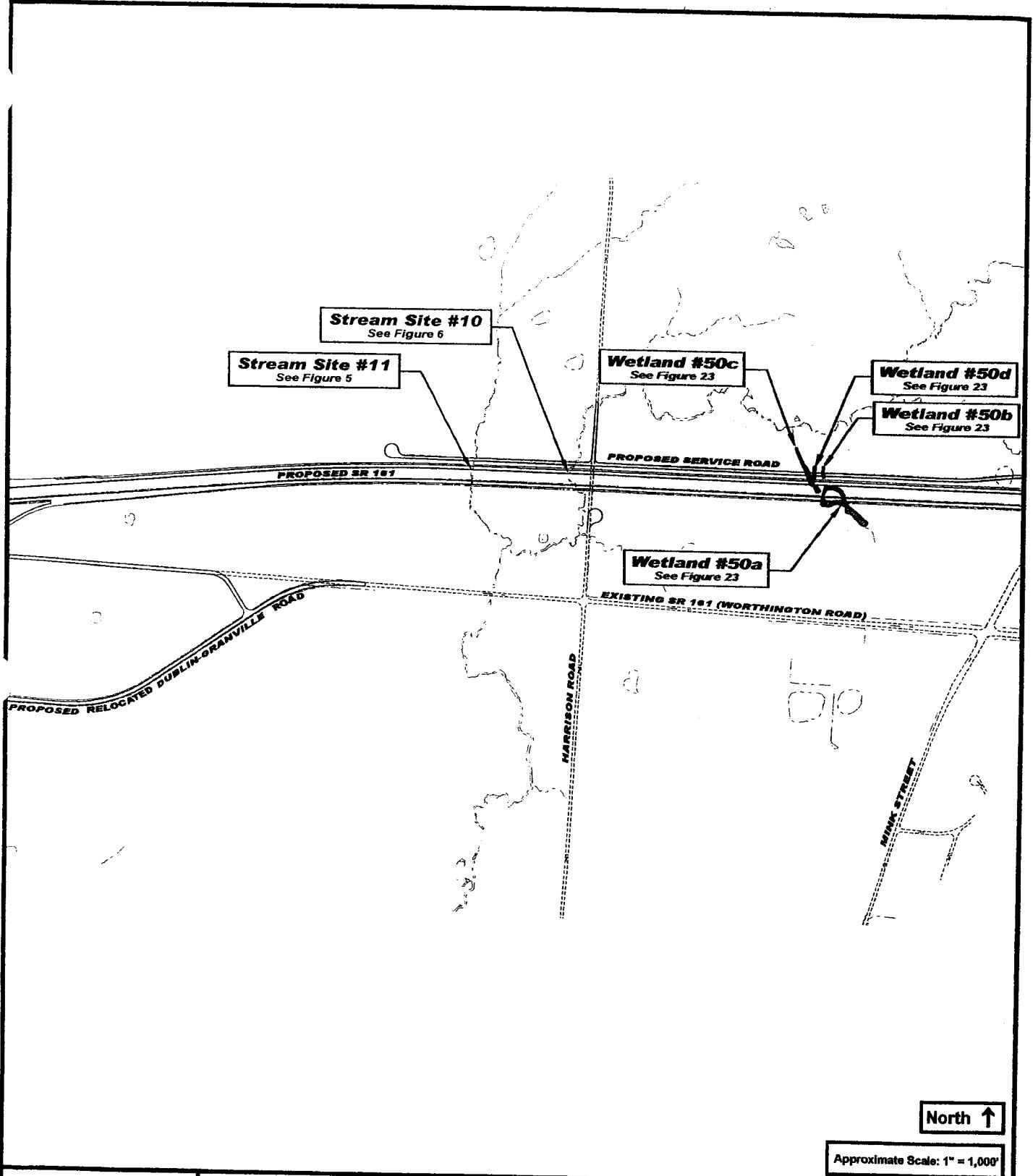


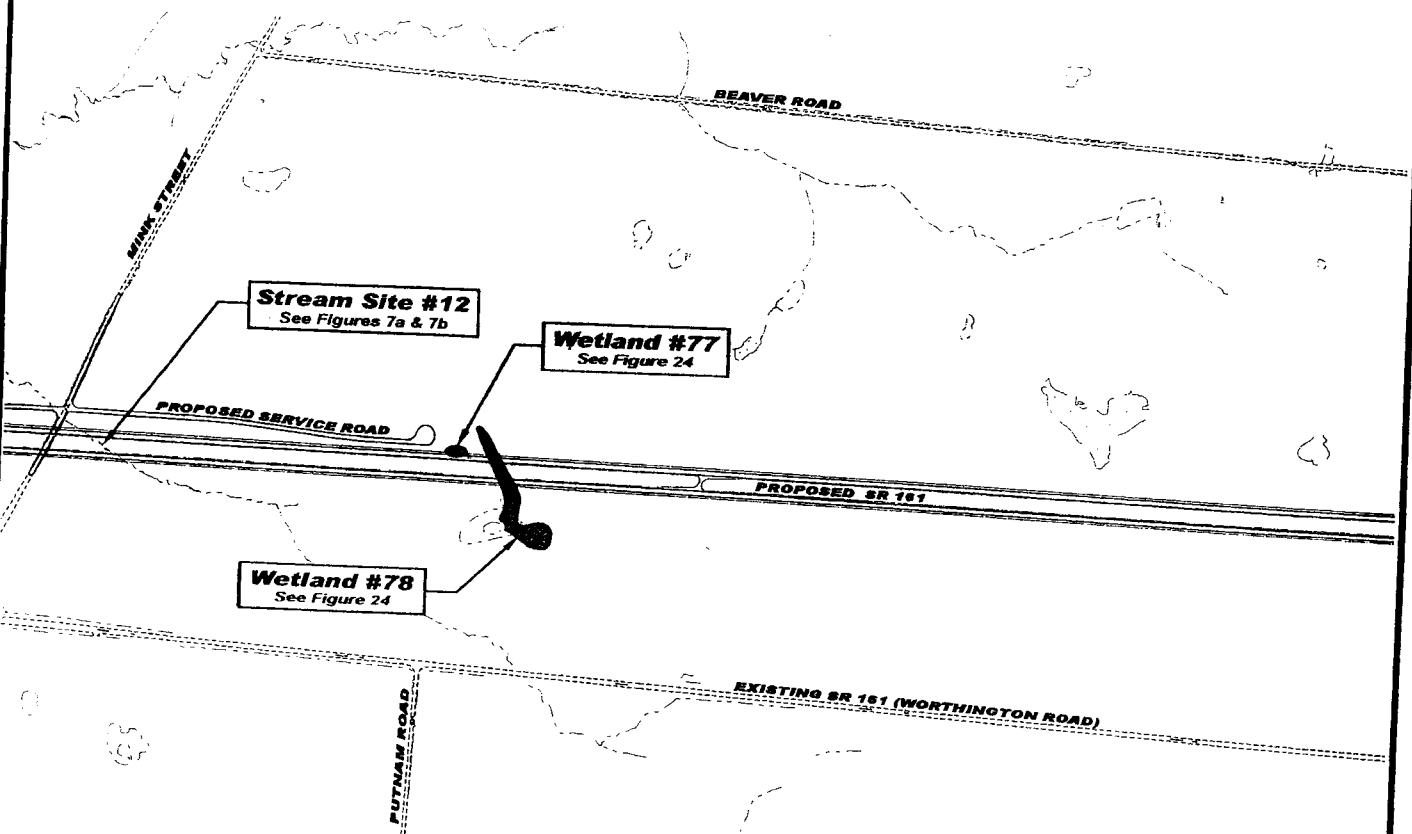
Figure 2b
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2b of 33



North ↑

Approximate Scale: 1" = 1,000'

Figure 2c
Stream/Wetland Location Map
Project Alignment and Impacted Features

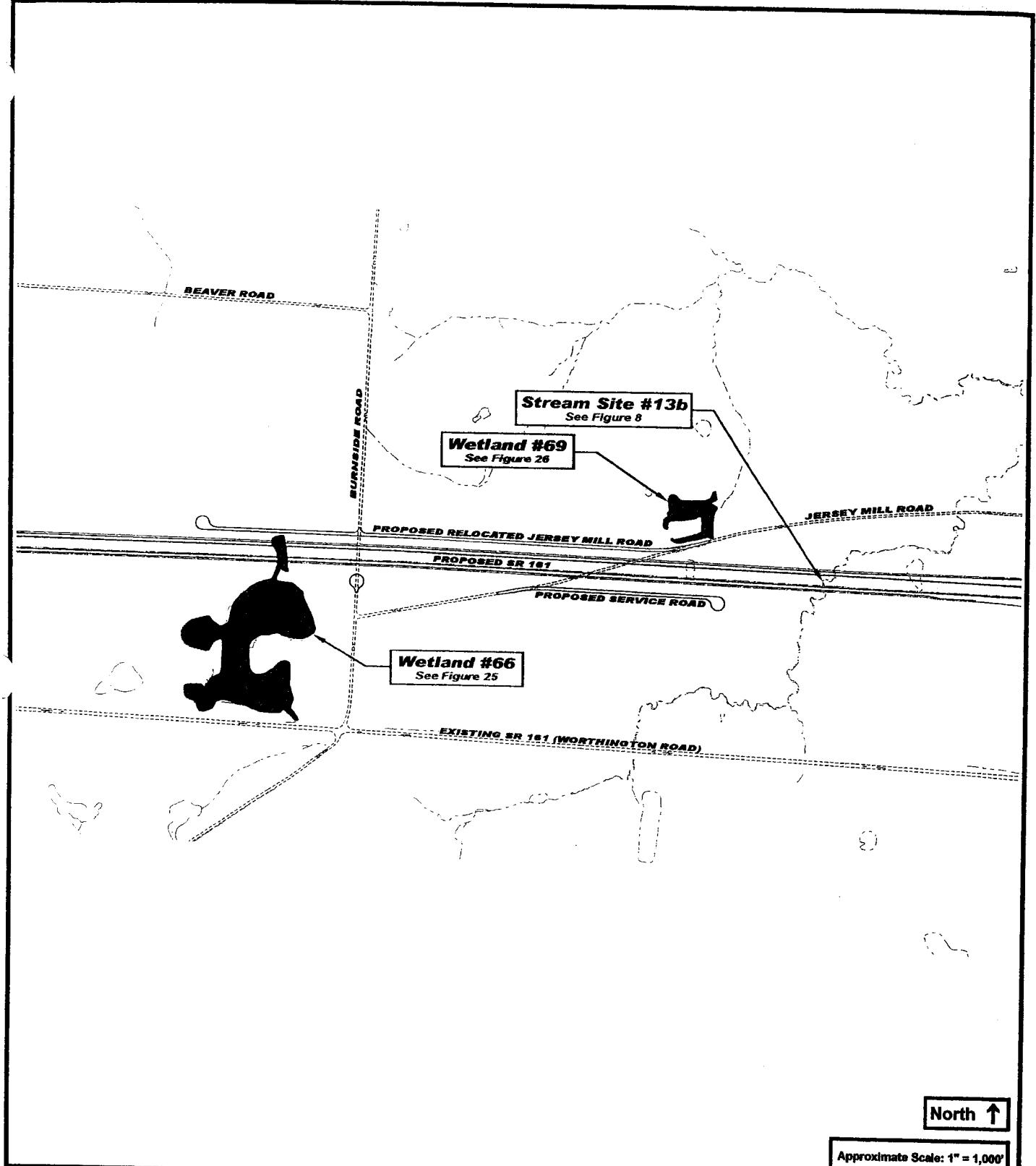
*SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139*

U.S. Army Corps of
 Engineers 404 Permit
 and OEPA Section 401
 Water Quality
 Certification
 Application

December 2004

Figure 2c of 33





North ↑

Approximate Scale: 1" = 1,000'



Figure 2d
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2d of 33

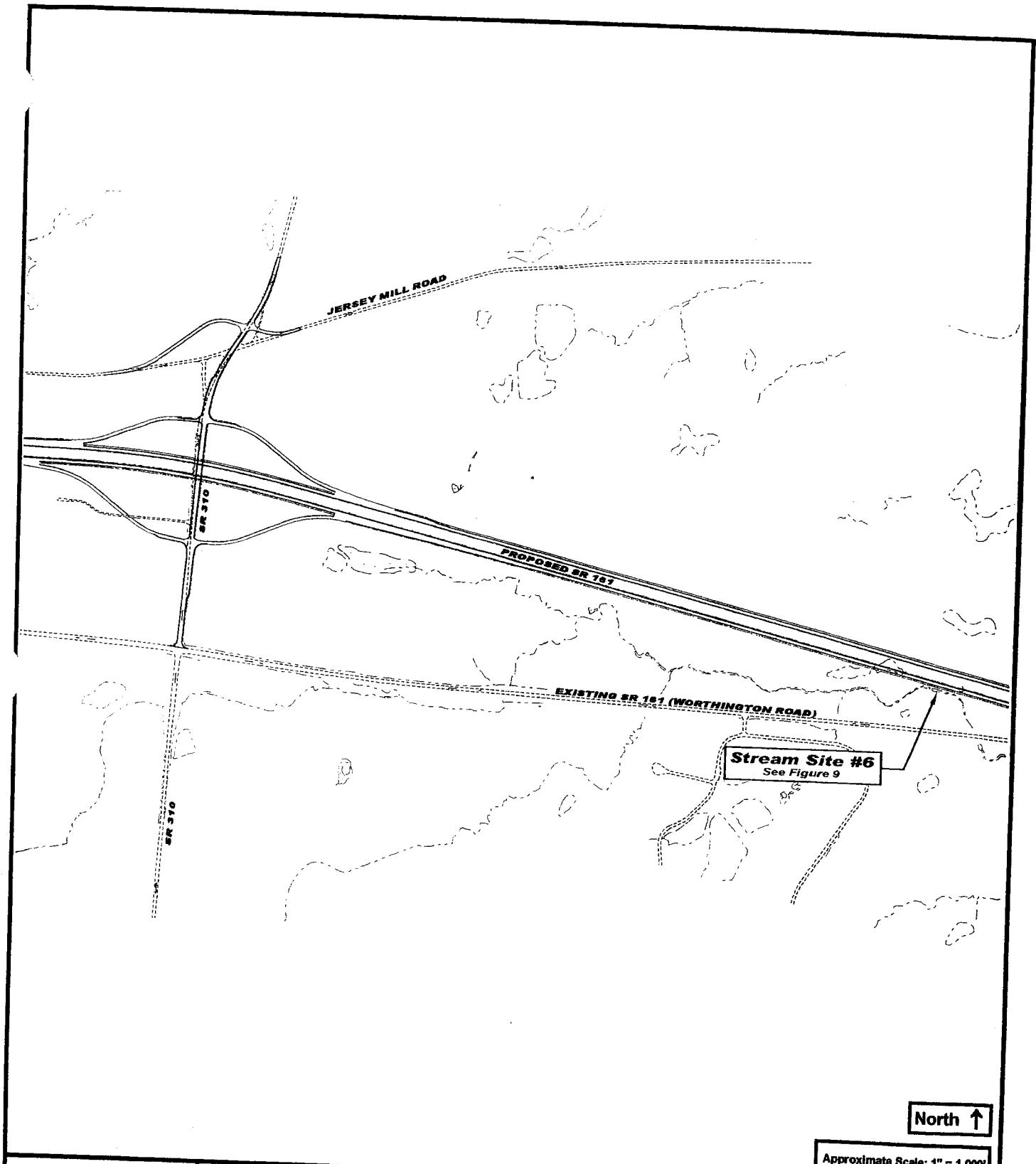


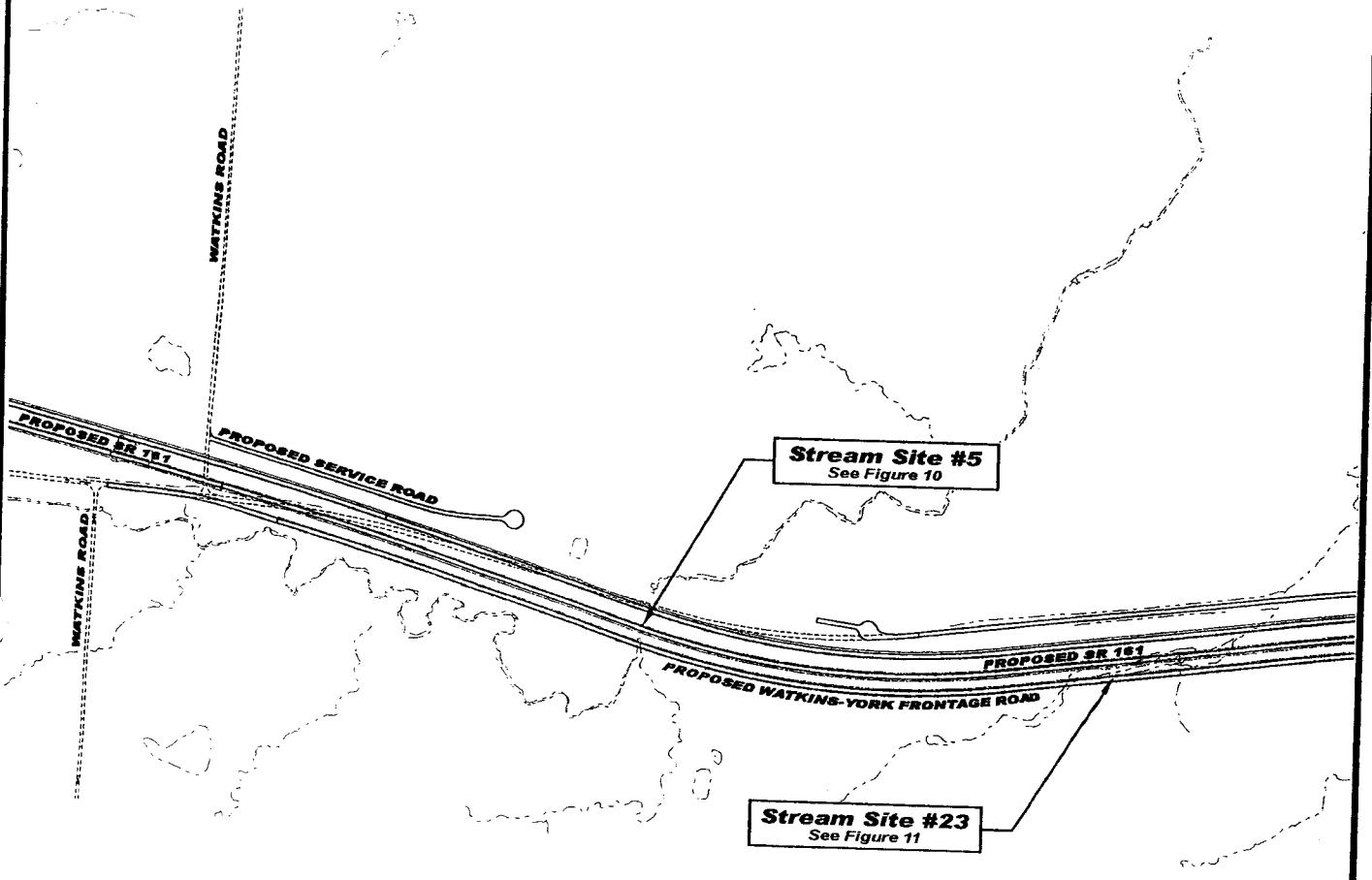
Figure 2e
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2e of 33



North ↑

Approximate Scale: 1" = 1,000'



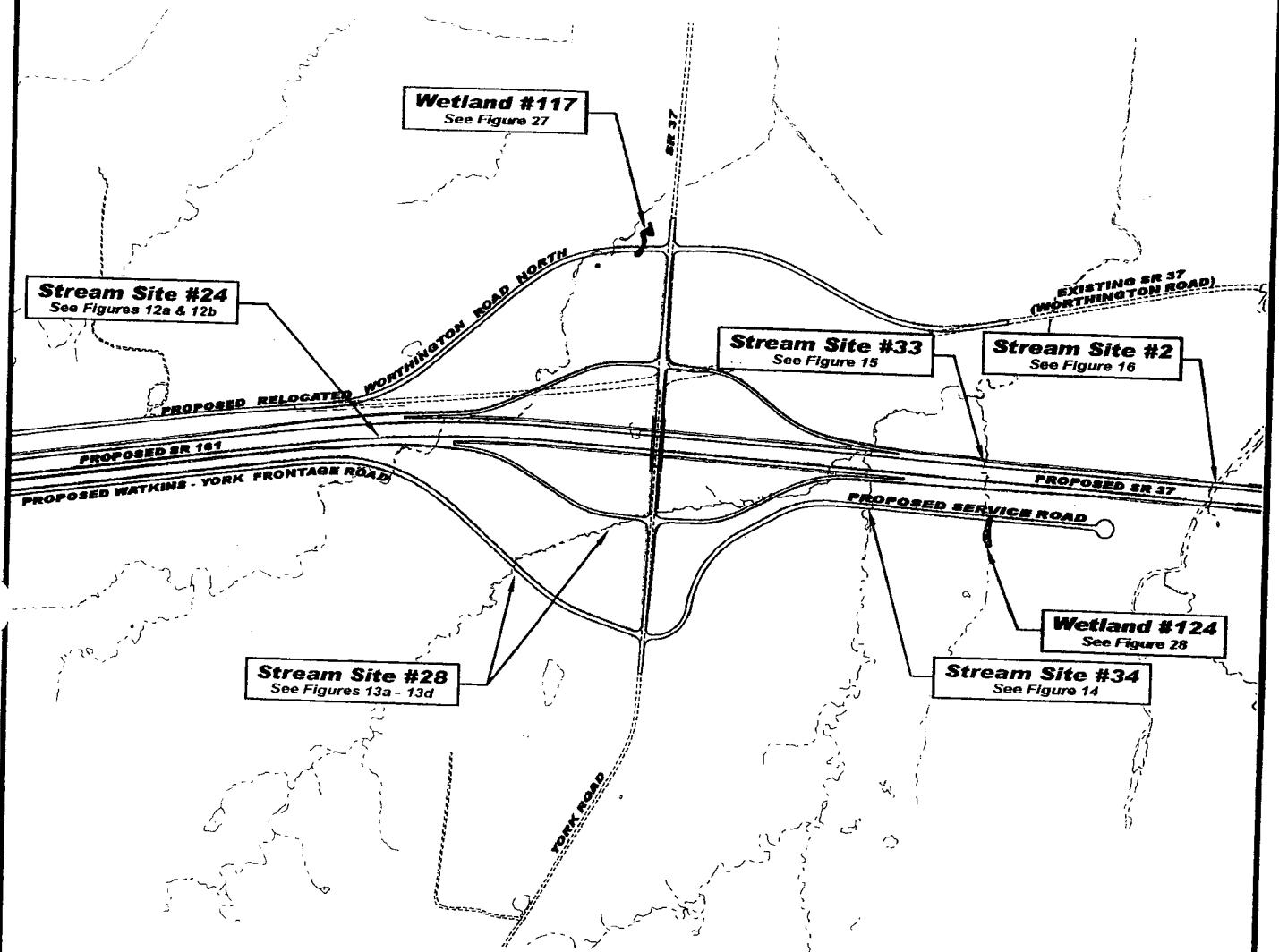
Figure 2f
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

**U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application**

December 2004

Figure 2f of 33



North ↑

Approximate Scale: 1" = 1,000'



Figure 2g
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 2g of 33

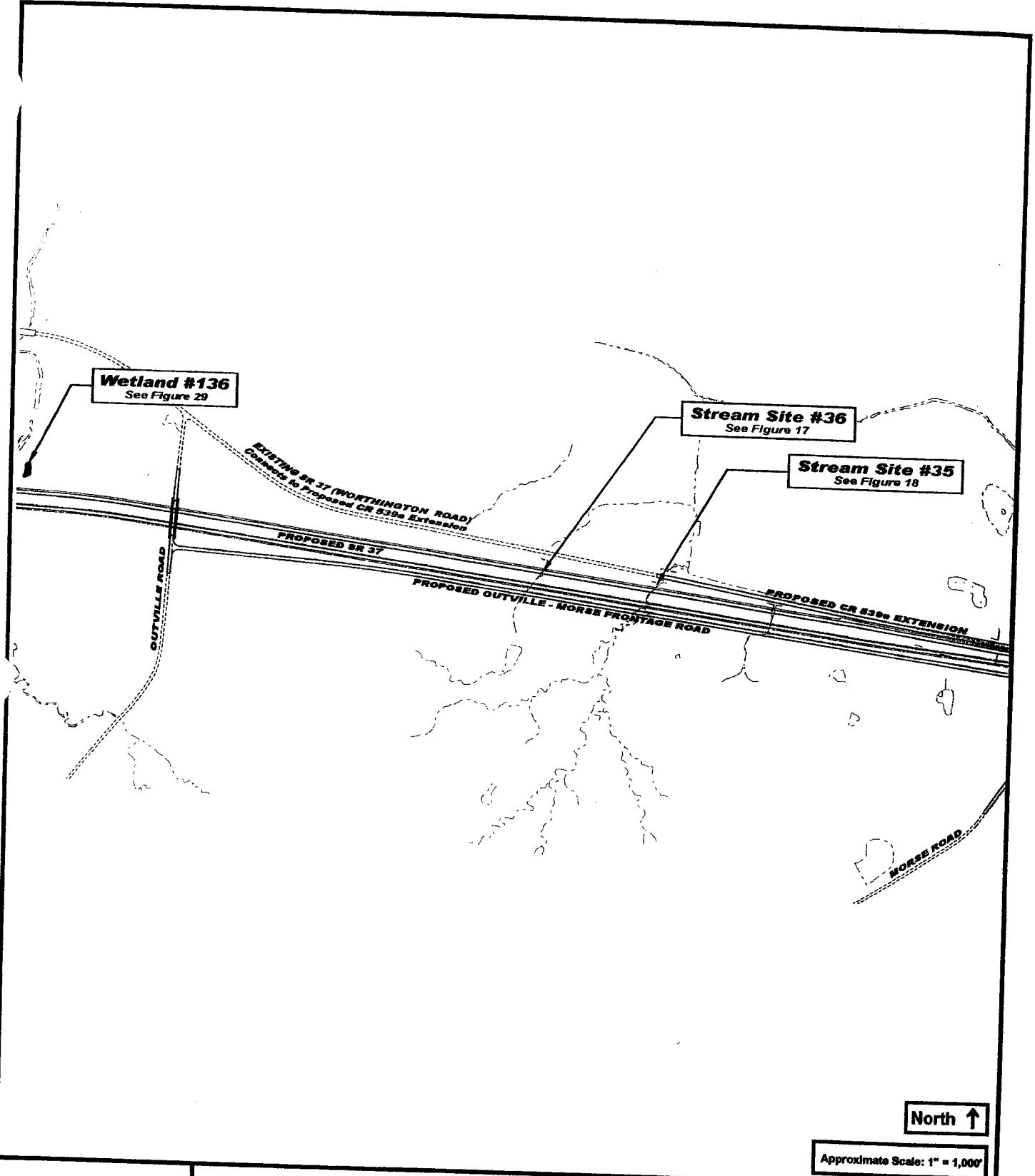


Figure 2h
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

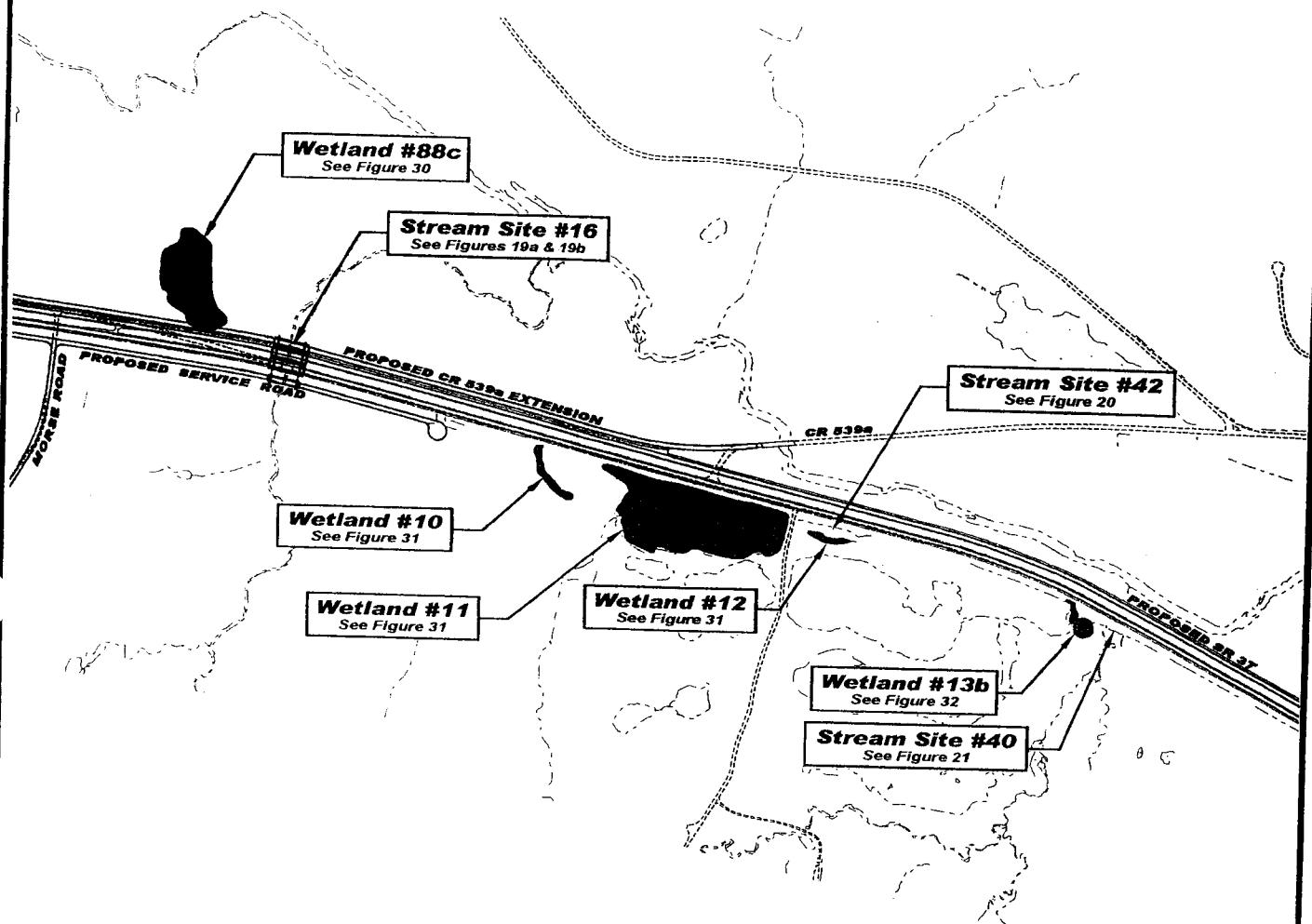
U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2h of 33

North ↑

Approximate Scale: 1" = 1,000'



North ↑

Approximate Scale: 1" = 1,000'



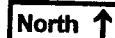
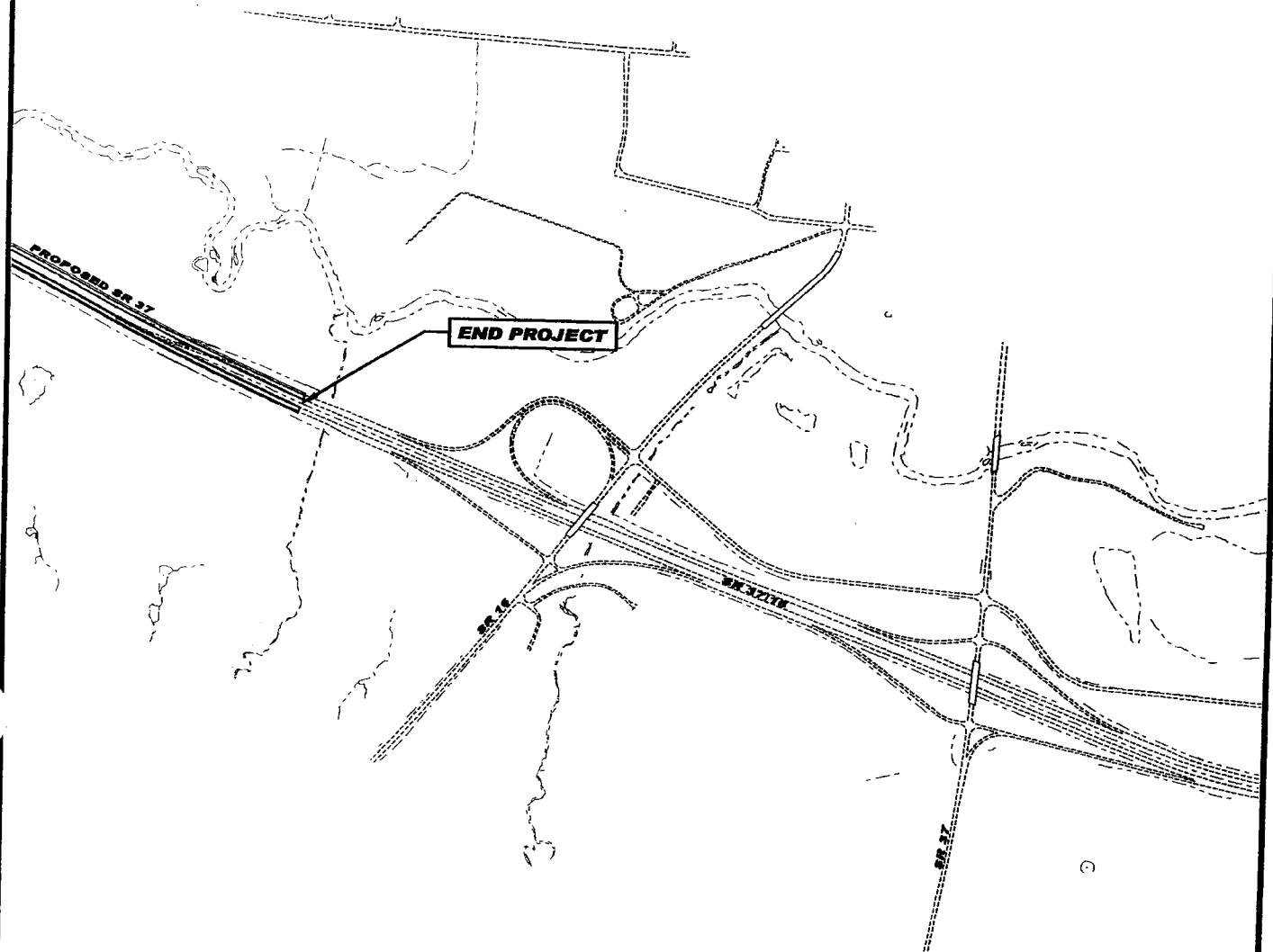
Figure 2i
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2i of 33



Approximate Scale: 1" = 1,000'



Figure 2j
Stream/Wetland Location Map
Project Alignment and Impacted Features

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

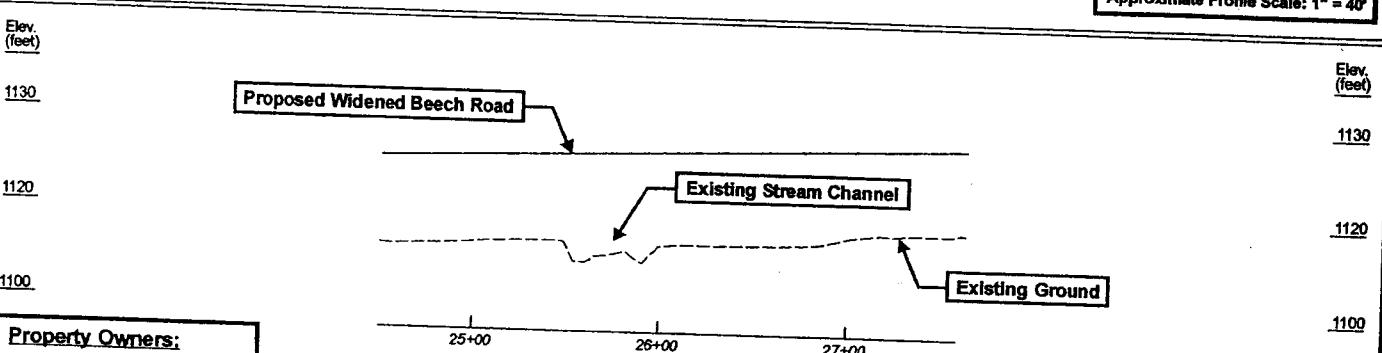
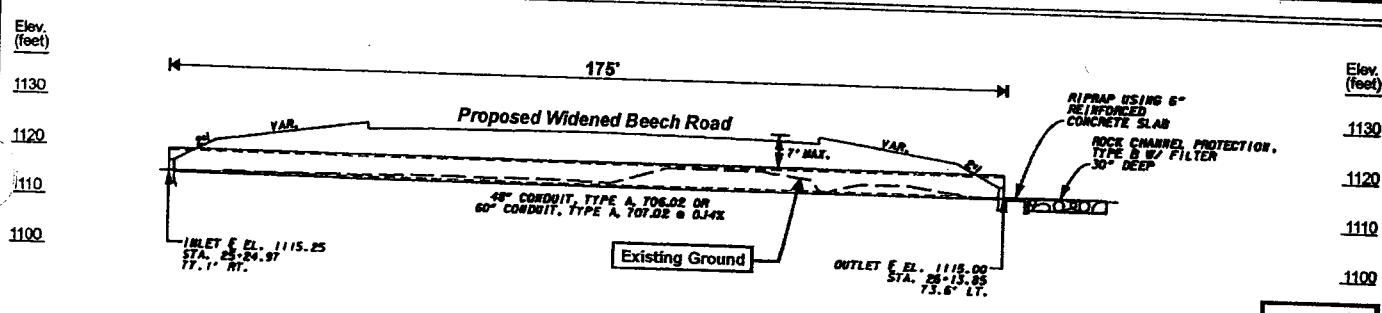
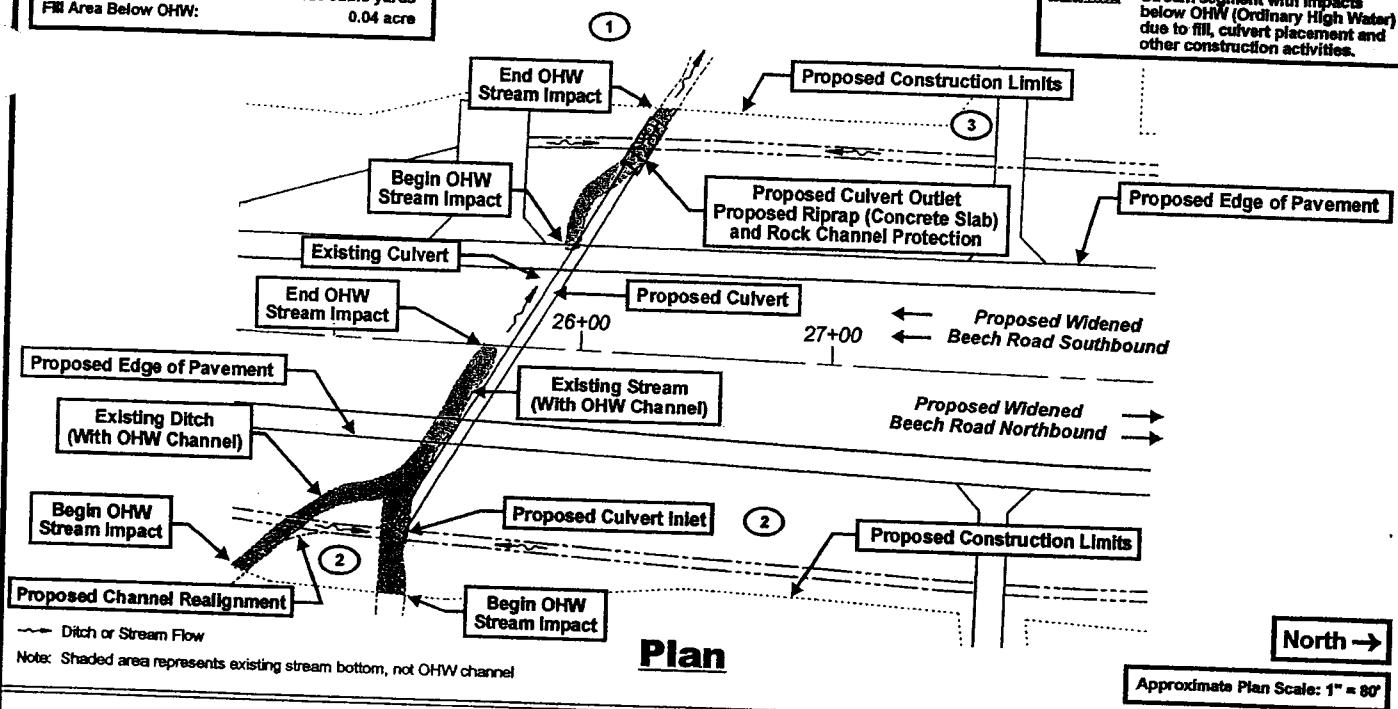
U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 2j of 33

Length of Channel Disturbed: 300 linear feet
 Fill Volume Below OHW: 126 cubic yards
 Fill Area Below OHW: 0.04 acre

Shaded area = Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



Property Owners:
1 Frank & Theresa Searcy
2 MBJ Holdings LLC
3 Michael & Patricia Duboe



Proposed Widened Beech Road Profile
showing existing channel cross section

Approximate Profile Scale: 1" = 100'

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

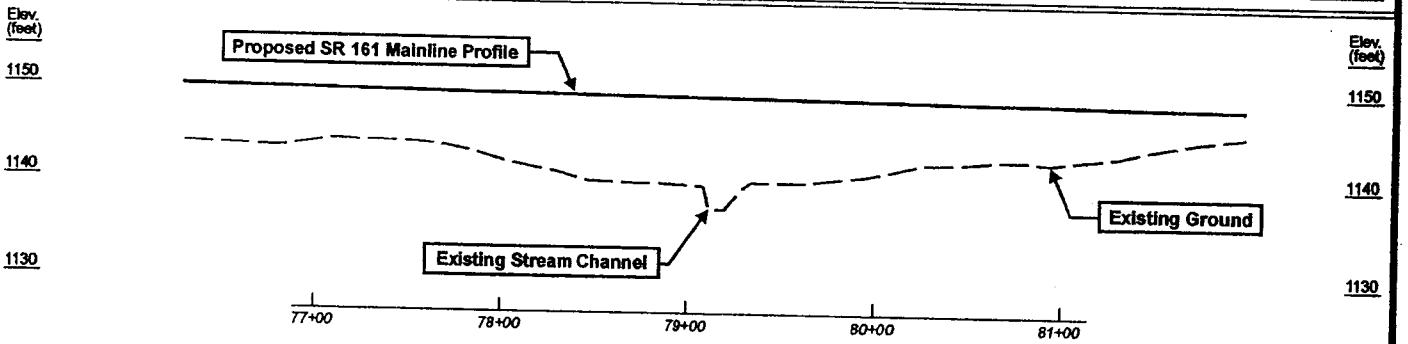
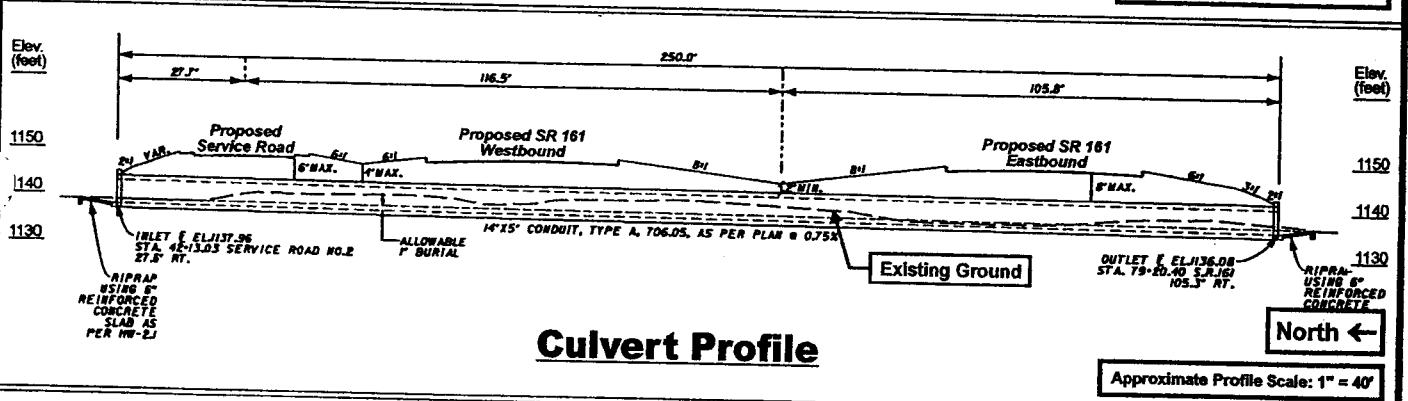
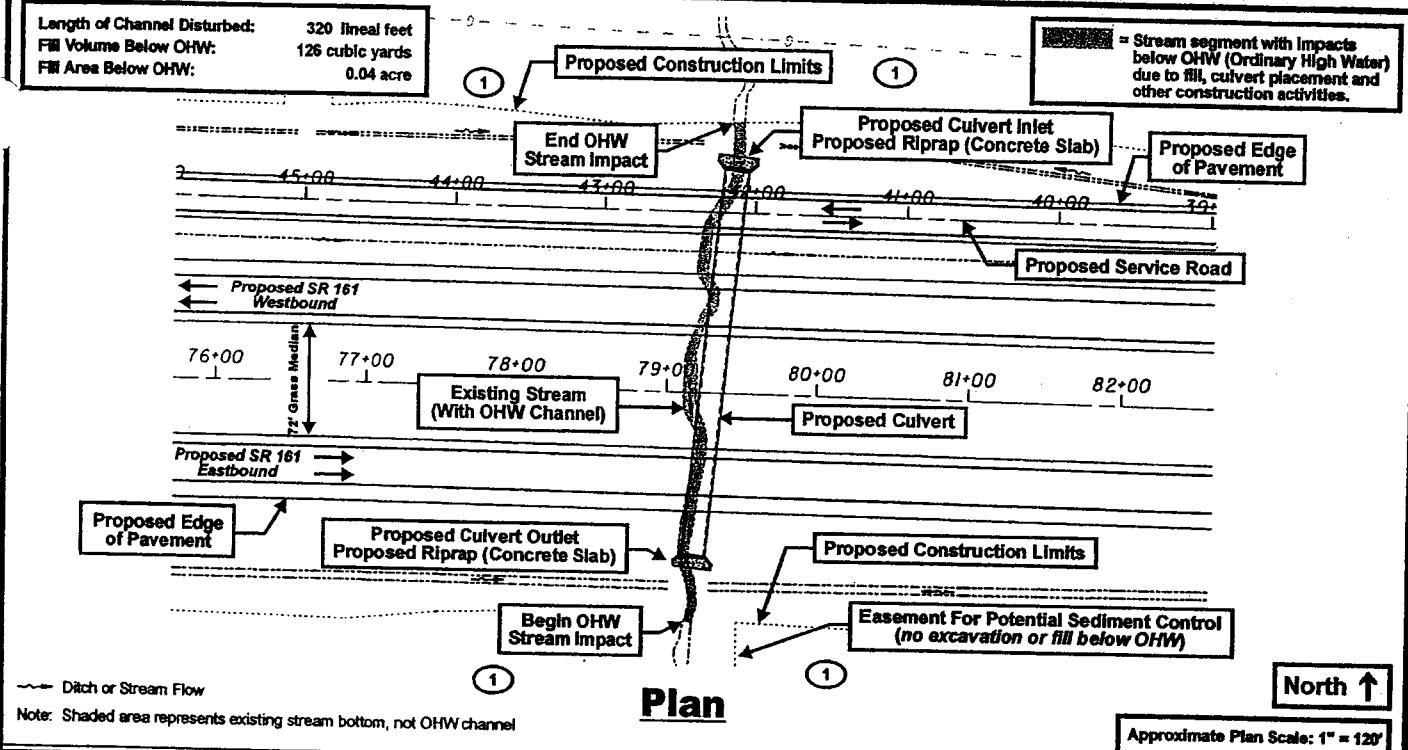
December 2004

Figure 4 of 33

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.150.00(11.75); PID #12139

Figure 4
Site Plan for Proposed Activity
Site #9 - Unnamed Blacklick Creek Tributary

Length of Channel Disturbed: 320 linear feet
 Fill Volume Below OHW: 126 cubic yards
 Fill Area Below OHW: 0.04 acre



Property Owners:
 1 Robert & Virginia Cole



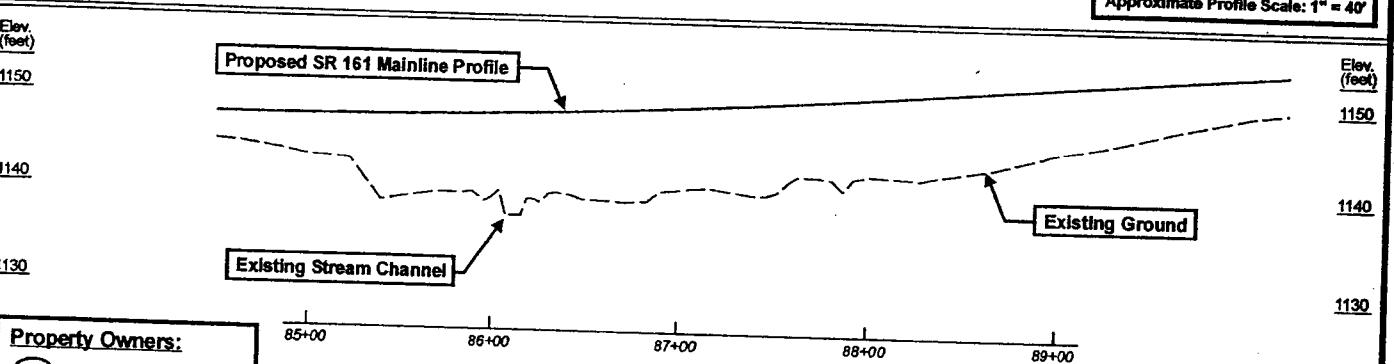
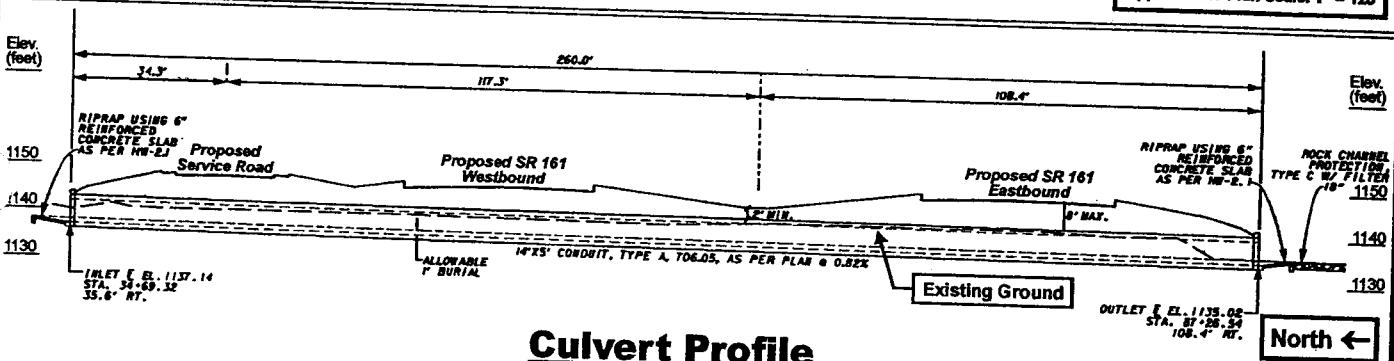
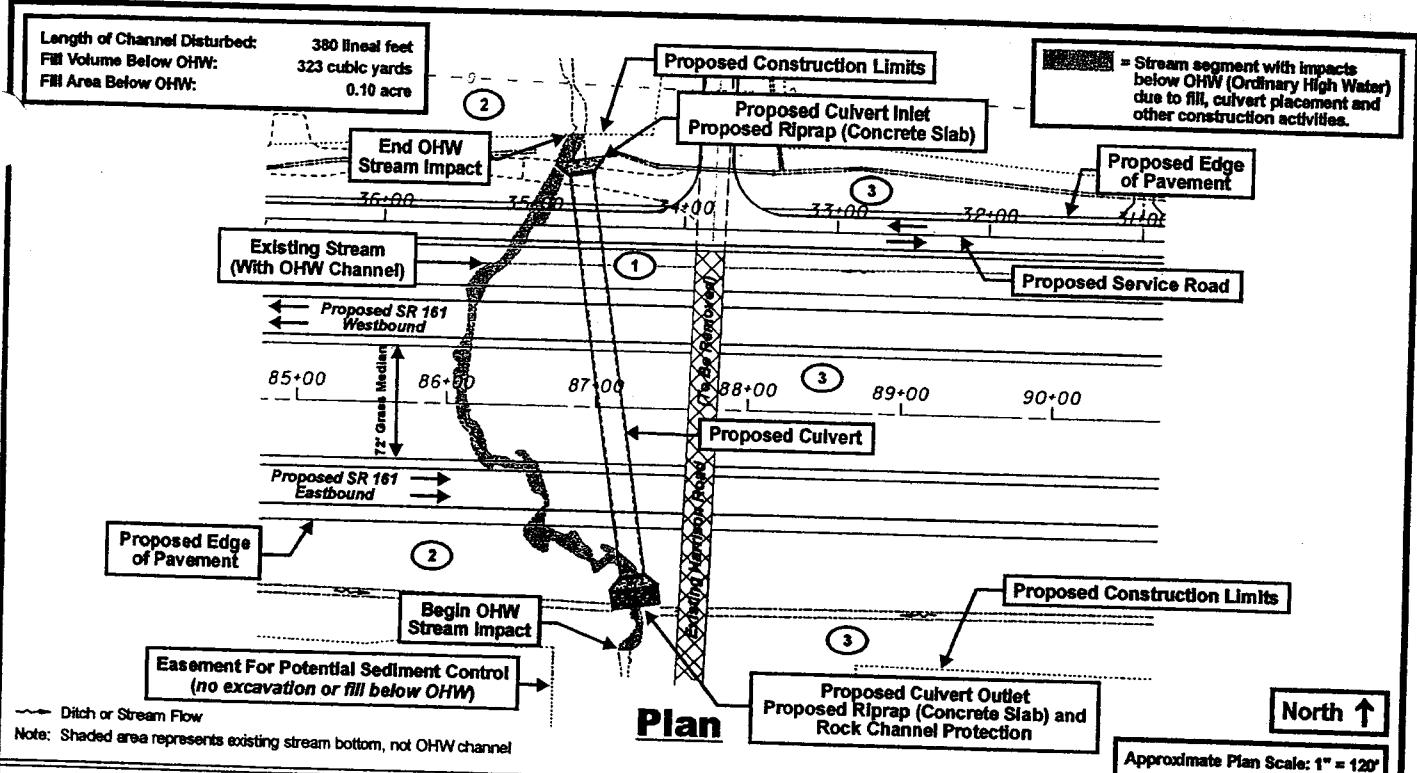
Figure 5
Site Plan for Proposed Activity
Site #11 - Unnamed South Fork Licking River Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 5 of 33



Property Owners:

- 1 David & Beverlee Stewart
- 2 Robert & Virginia Cole
- 3 Howard & Anne Evans

SR 161 Mainline Highway Profile showing existing channel cross section



Figure 6
Site Plan for Proposed Activity
Site #10 - South Fork Licking River

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

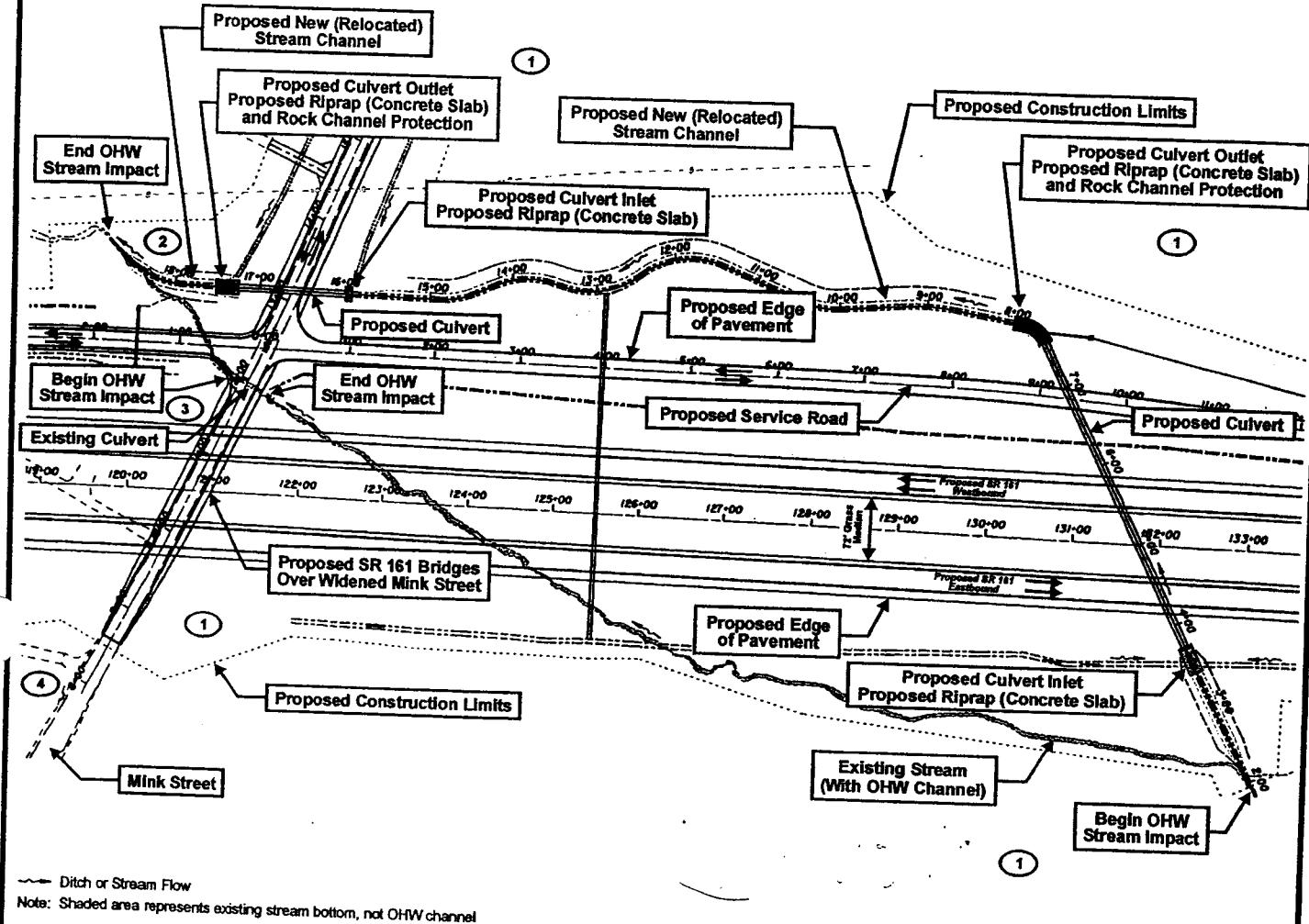
U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 6 of 33

Length of Channel Disturbed: 1,450 linear feet
 Fill Volume Below OHW: 430 cubic yards
 Fill Area Below OHW: 0.13 acre

= Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.


Property Owners:

- 1 Mary Dickerson & Ruth Brown, et al (Trustees)
- 2 Jerry & Dorothy Hill
- 3 Lydia McCleary
- 4 Lee & Sherry Connor

Plan


Approximate Plan Scale: 1" = 200'



Figure 7a
Site Plan for Proposed Activity (Plan View Only)
Site #12 - Unnamed South Fork Licking River Tributary

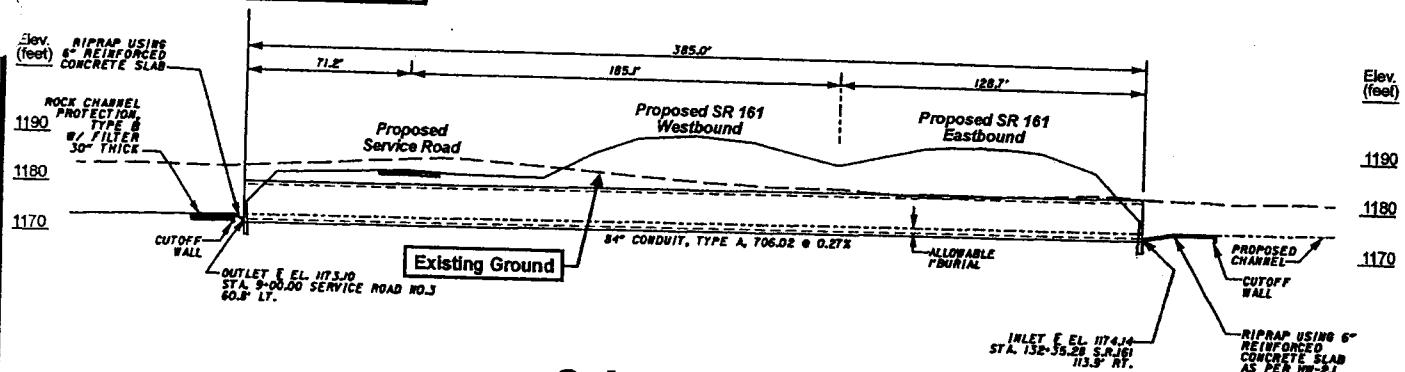
SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 7a of 33

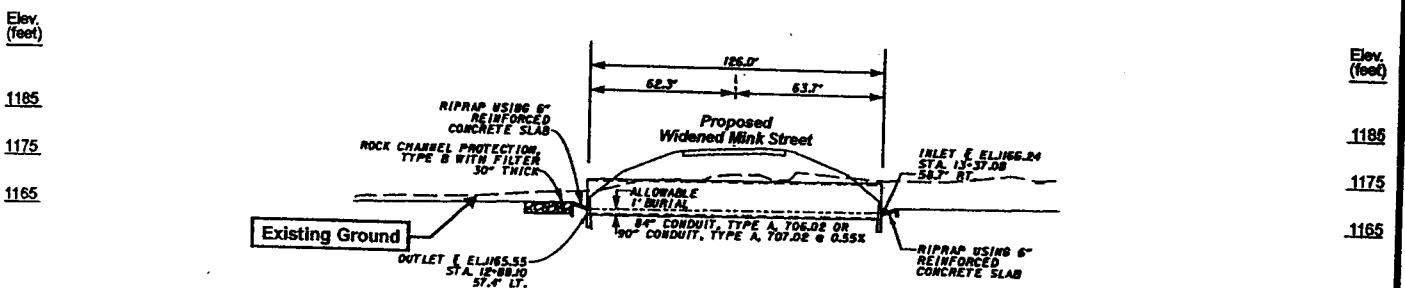
Length of Channel Disturbed: 1,450 linear feet
 Fill Volume Below OHW: 430 cubic yards
 Fill Area Below OHW: 0.13 acres



Culvert Profile
Proposed SR 161 at Sta. 131+80

Approximate Profile Scale: 1" = 80'

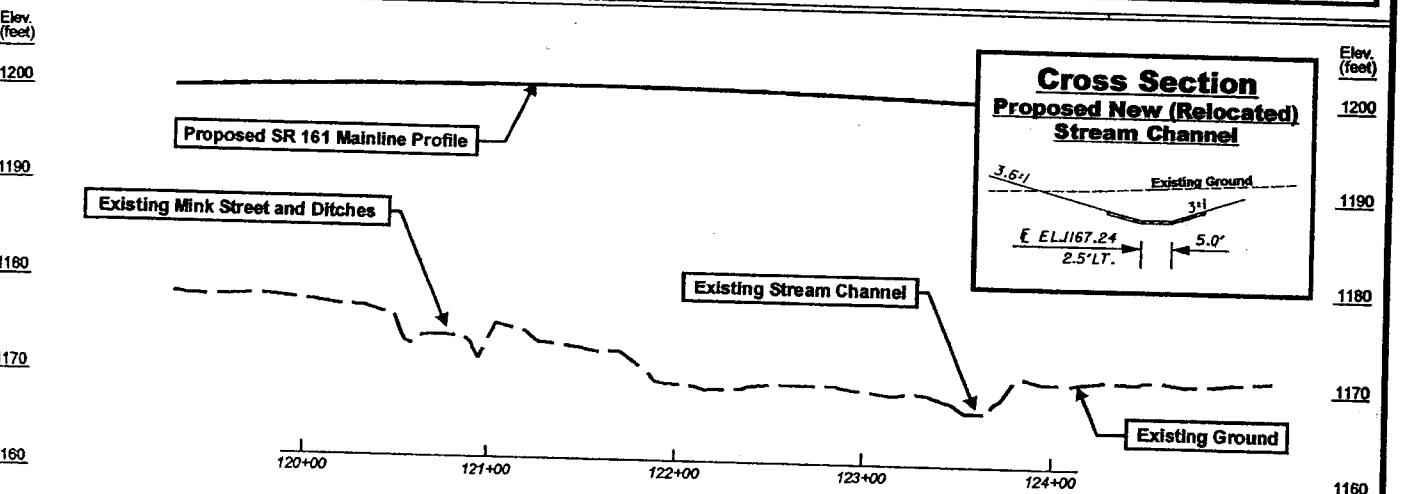
North ↗



Culvert Profile
Mink Street at Sta. 13+10

Approximate Profile Scale: 1" = 80'

North ↑



SR 161 Mainline Highway Profile
showing existing channel cross section

Approximate Profile Scale: 1" = 100'

North ↑



Figure 7b
Site Plan for Proposed Activity
Site #12 - Unnamed South Fork Licking River Tributary

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 7b of 33

Length of Channel Disturbed: 670 linear feet
 Fill Volume Below OHW: 150 cubic yards
 Fill Area Below OHW: 0.06 acre

Proposed Culvert Outlet
 Proposed Riprap (Concrete Slab) and Rock Channel Protection

Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.

Proposed Construction Limits

End OHW Stream Impact

Existing Stream (With OHW Channel)

Proposed Edge of Pavement

Proposed SR 161 Westbound

247+00

248+00

249+00

250+00

251+00

252+00

Proposed SR 161 Eastbound

247+00

248+00

249+00

250+00

251+00

252+00

Proposed Edge of Pavement

Proposed Culvert Inlet
 Proposed Riprap (Concrete Slab)

Proposed Relocated Stream Channel

Proposed Construction Limits

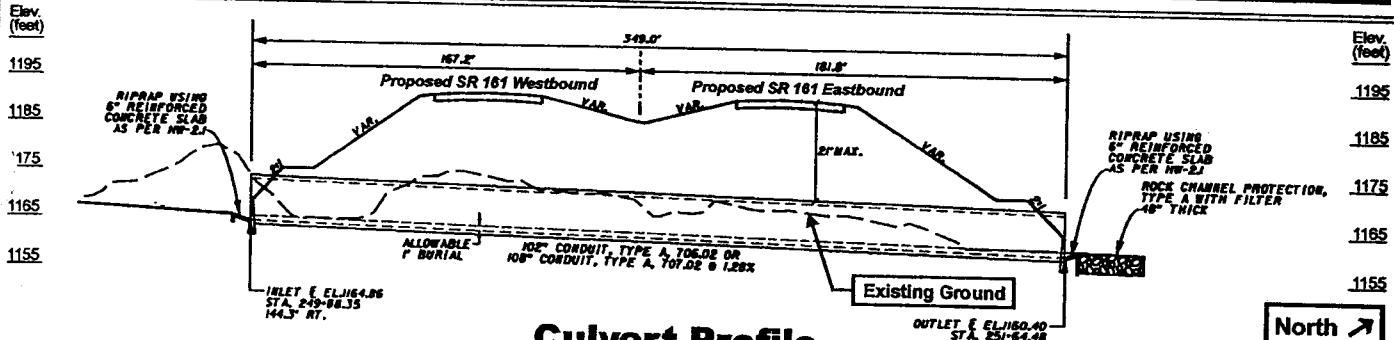
Plan

North ↑

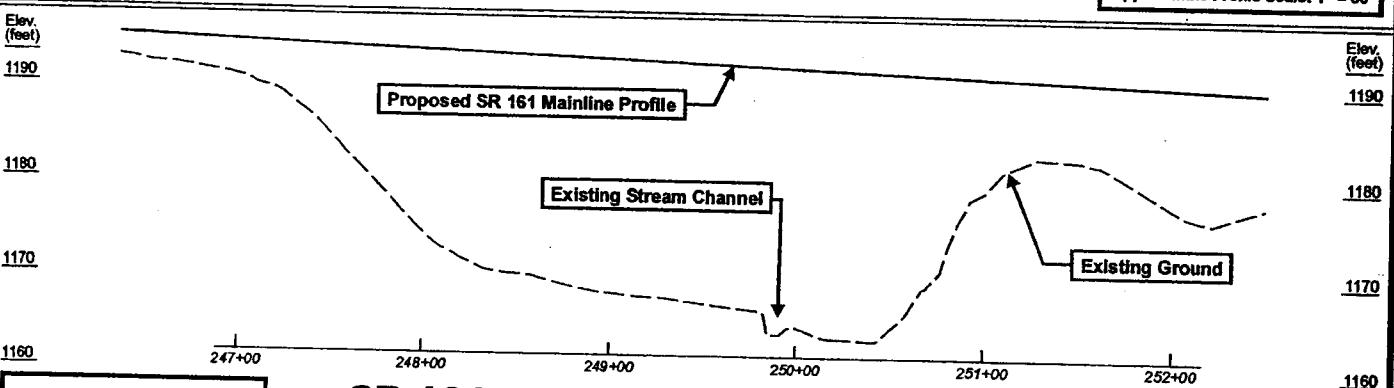
Approximate Plan Scale: 1" = 150'

— Ditch or Stream Flow

Note: Shaded area represents existing stream bottom, not OHW channel



Culvert Profile



SR 161 Mainline Highway Profile showing existing channel cross section

Property Owners:

1 Warren & Jackalyn Patten

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

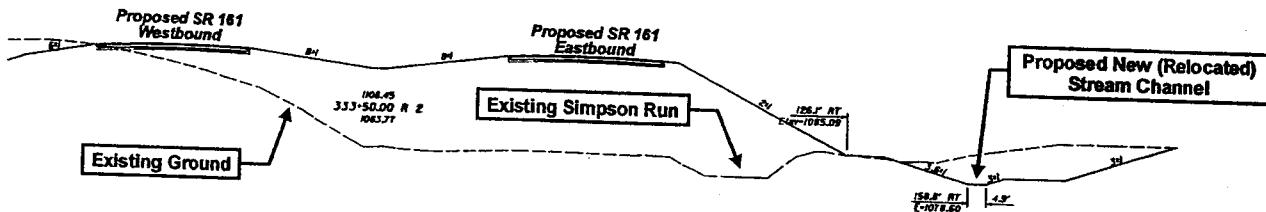
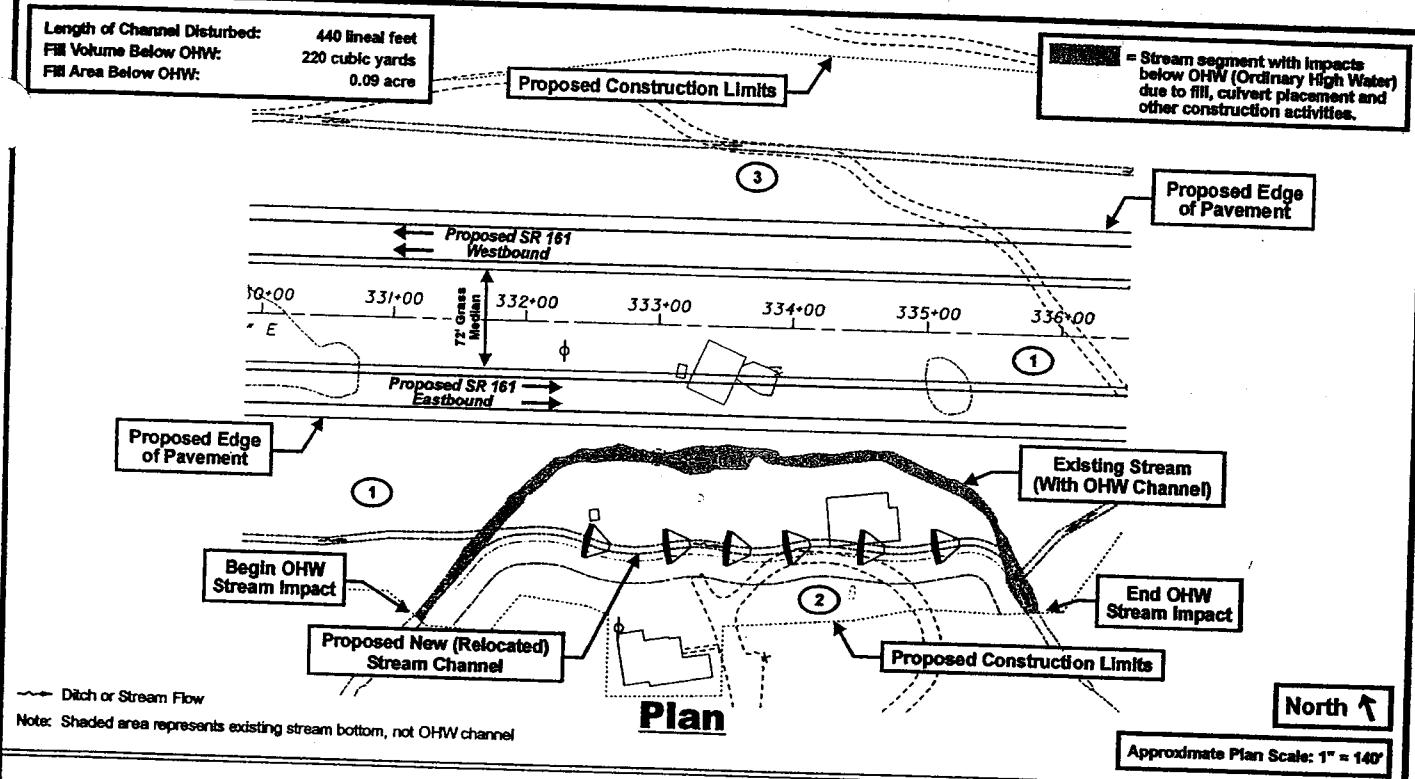
December 2004

Figure 8 of 33



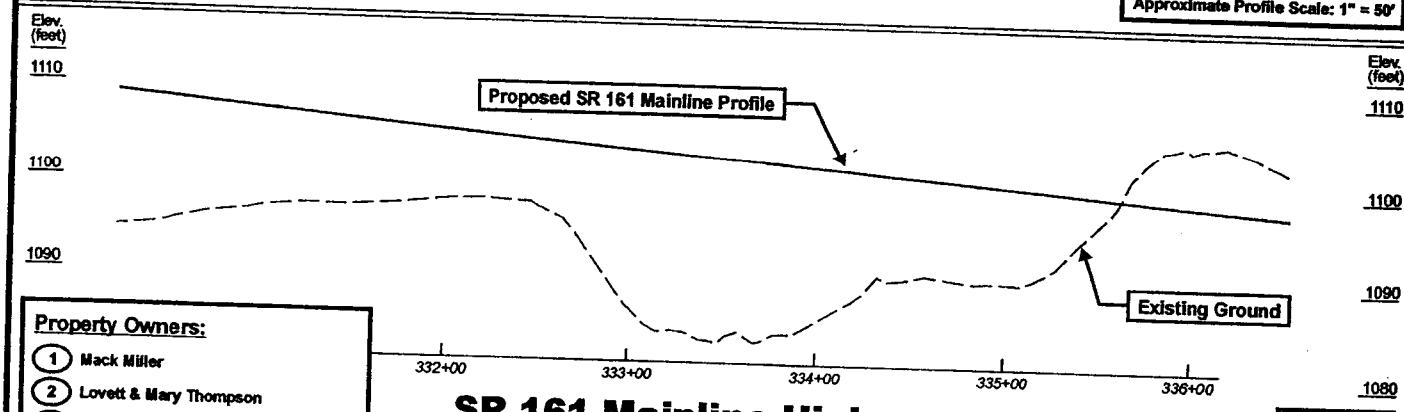
Figure 8
 Site Plan for Proposed Activity
 Site #13b - Unnamed Pet Run Tributary
 SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

20 of 60



Cross Section
Proposed SR 161 and New (Relocated) Stream Channel at Sta. 333+50

Approximate Profile Scale: 1" = 50'



**SR 161 Mainline Highway
Profile**

Approximate Profile Scale: 1" = 100'

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 9 of 33



Figure 9
Site Plan for Proposed Activity
Site #6 - Simpson Run

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

21 of 60

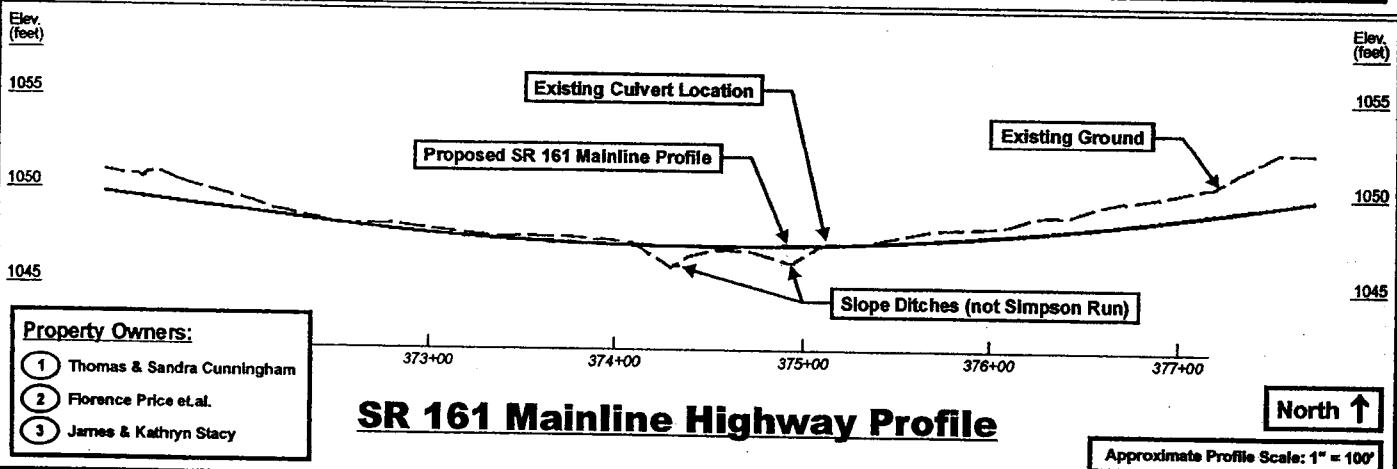
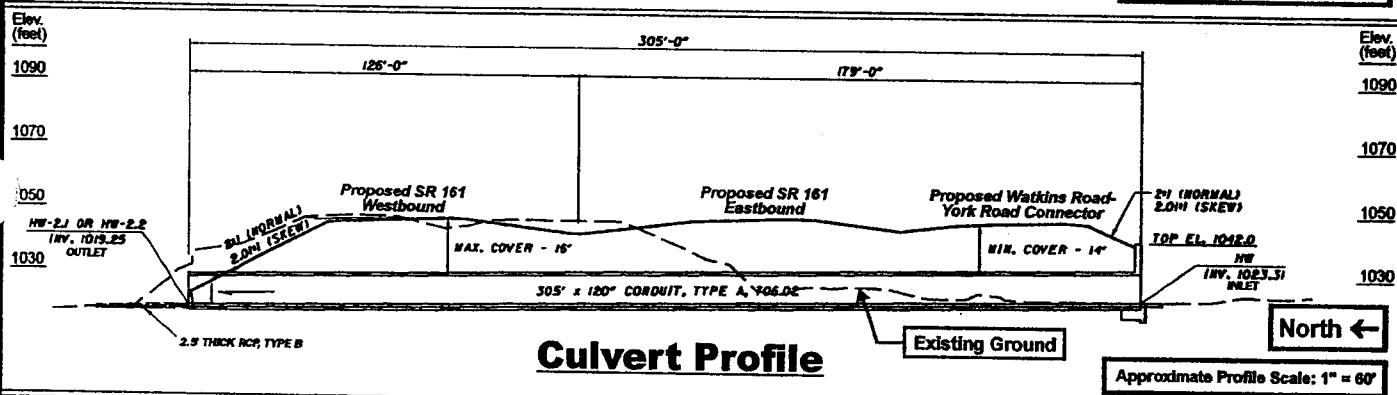
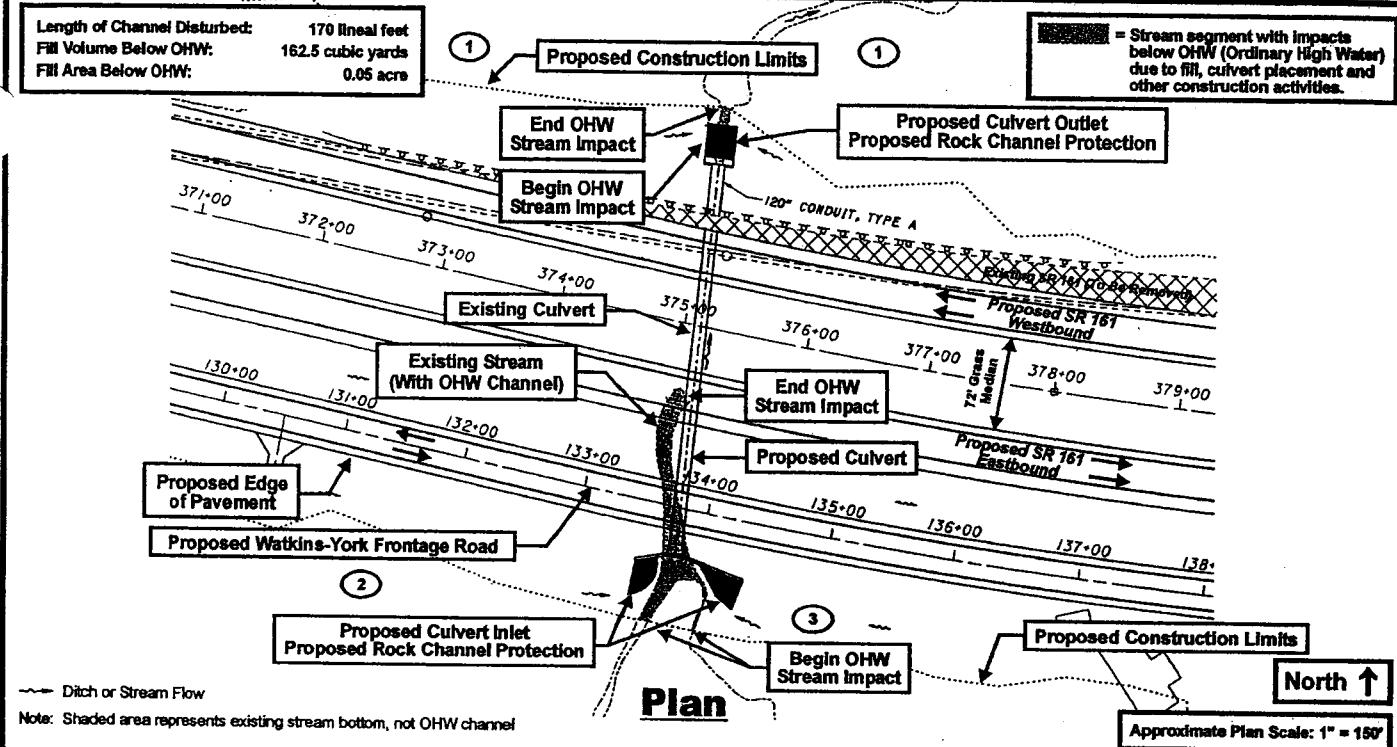


Figure 10
Site Plan for Proposed Activity
Site #5 - Simpson Run

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 10 of 33

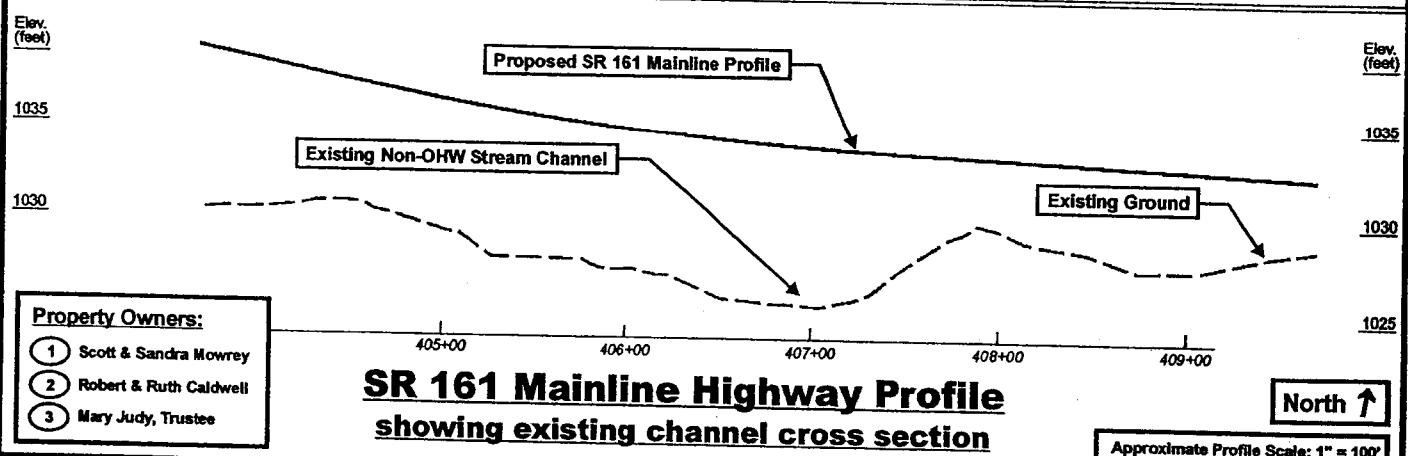
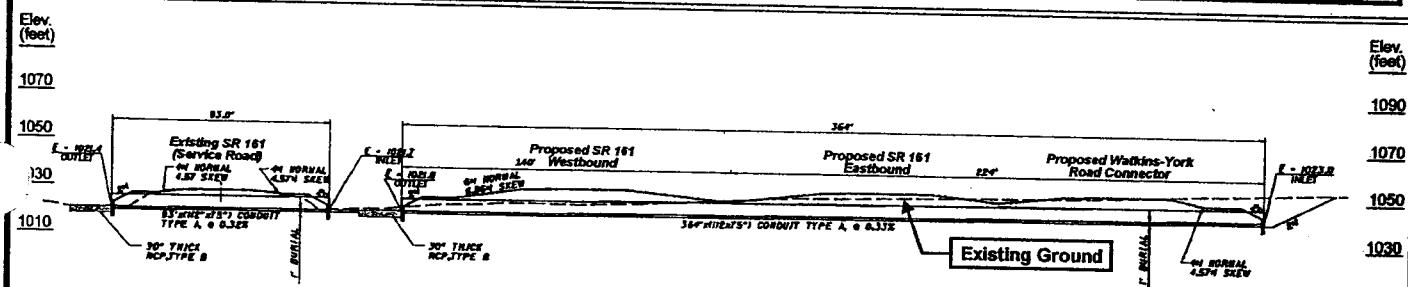
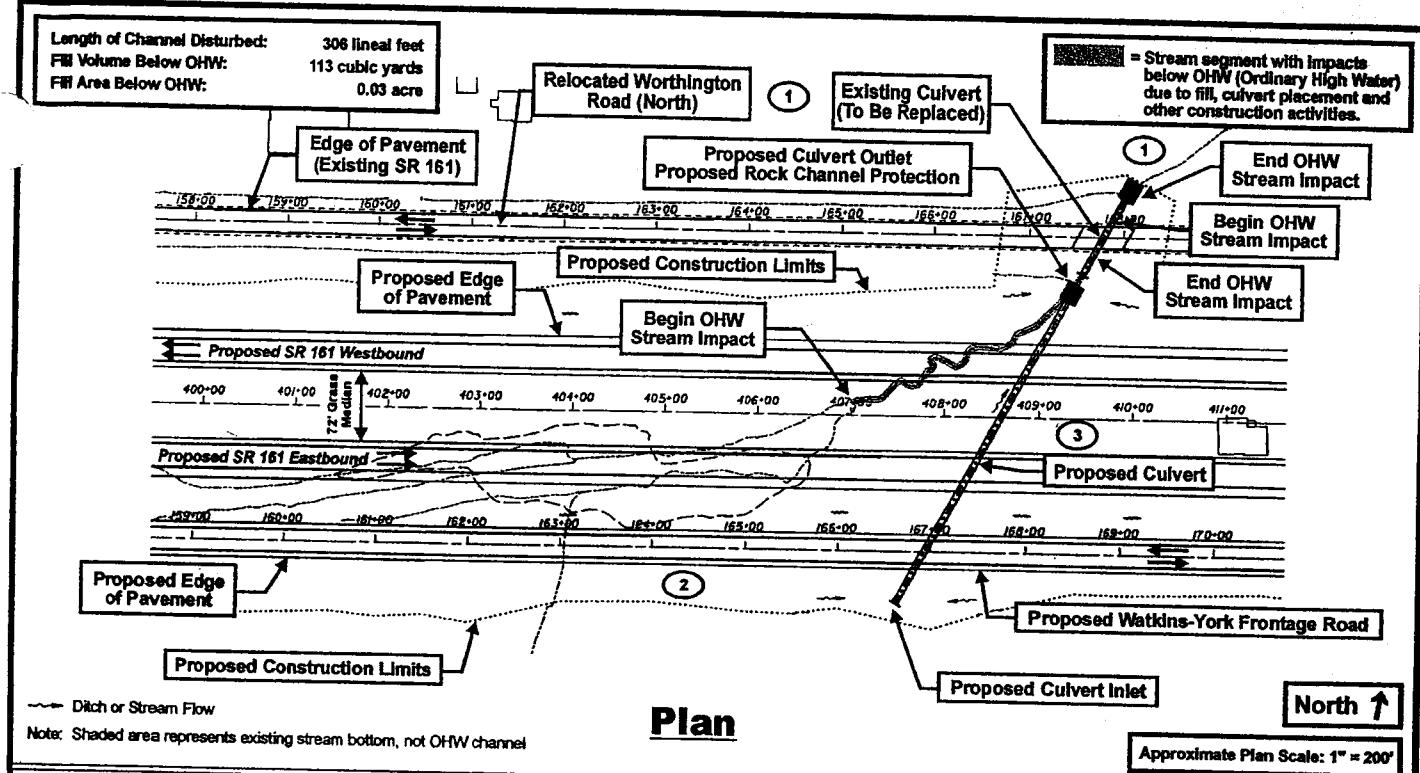


Figure 11
Site Plan for Proposed Activity
Site #23 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 11 of 33

Length of Channel Disturbed: 2,300 linear feet
 Fill Volume Below OHW: 1,320 cubic yards
 Fill Area Below OHW: 0.40 acre

= Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.

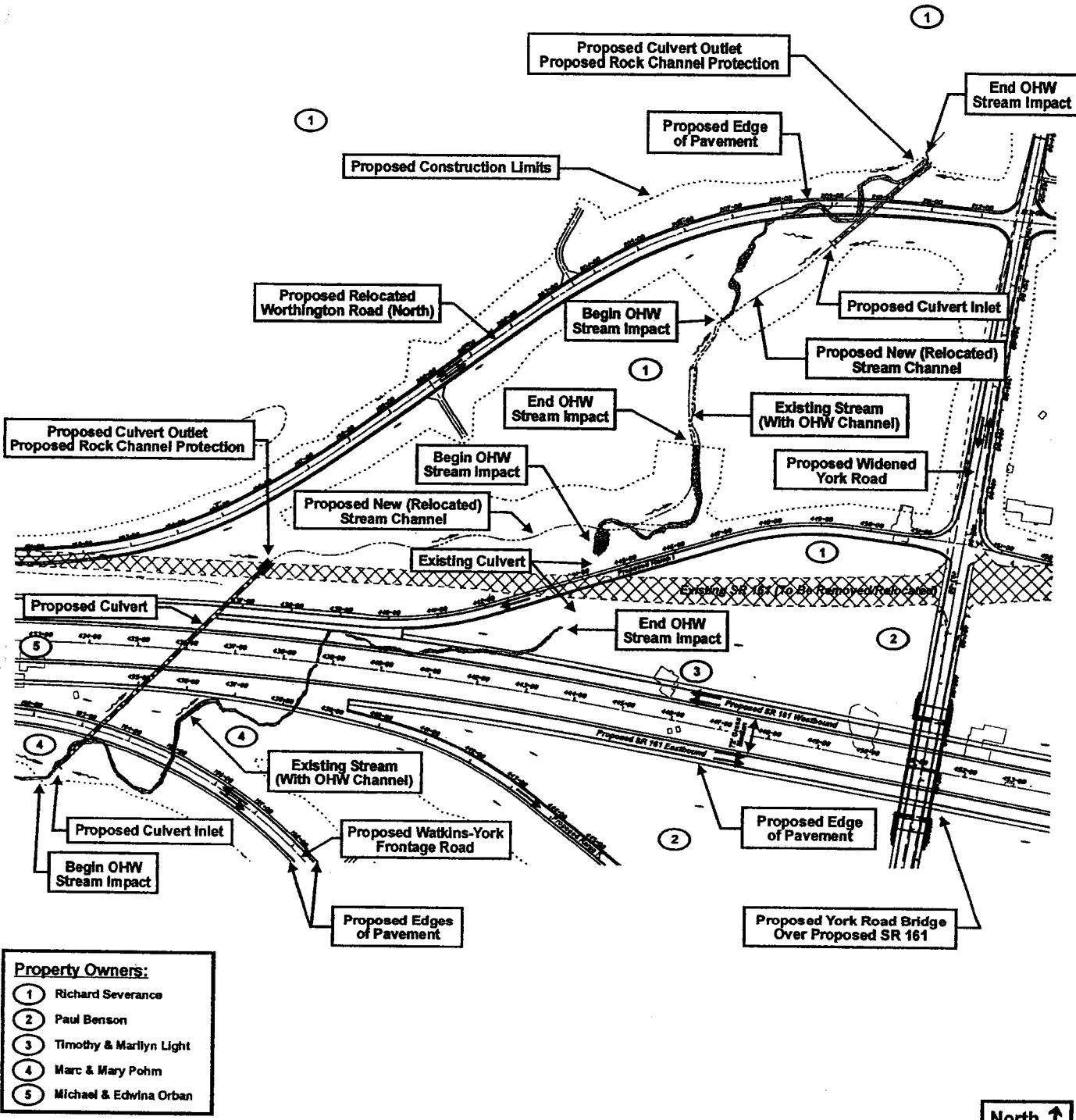


Figure 12a
Site Plan for Proposed Activity (Plan View Only)
Site #24 - Unnamed Raccoon CreekTributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

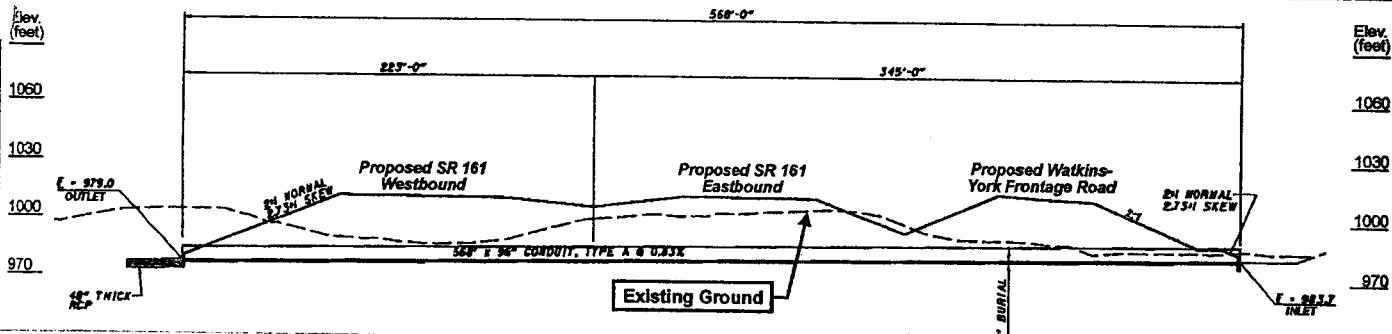
Figure 12a of 33



Length of Channel Disturbed: 2,300 linear feet
 Fill Volume Below OHW: 1,320 cubic yards
 Fill Area Below OHW: 0.40 acre

Approximate Profile Scale: 1" = 100'

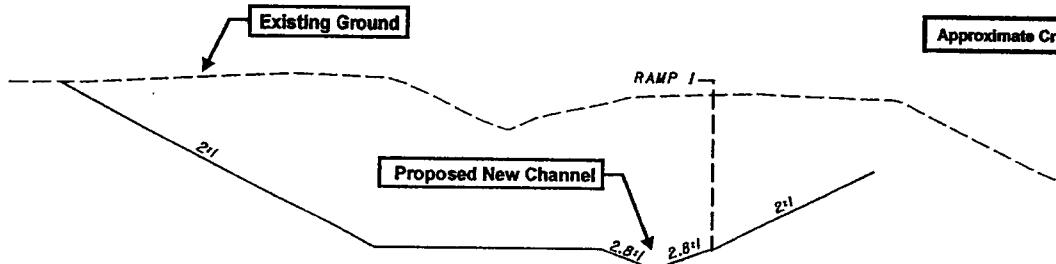
North ↘



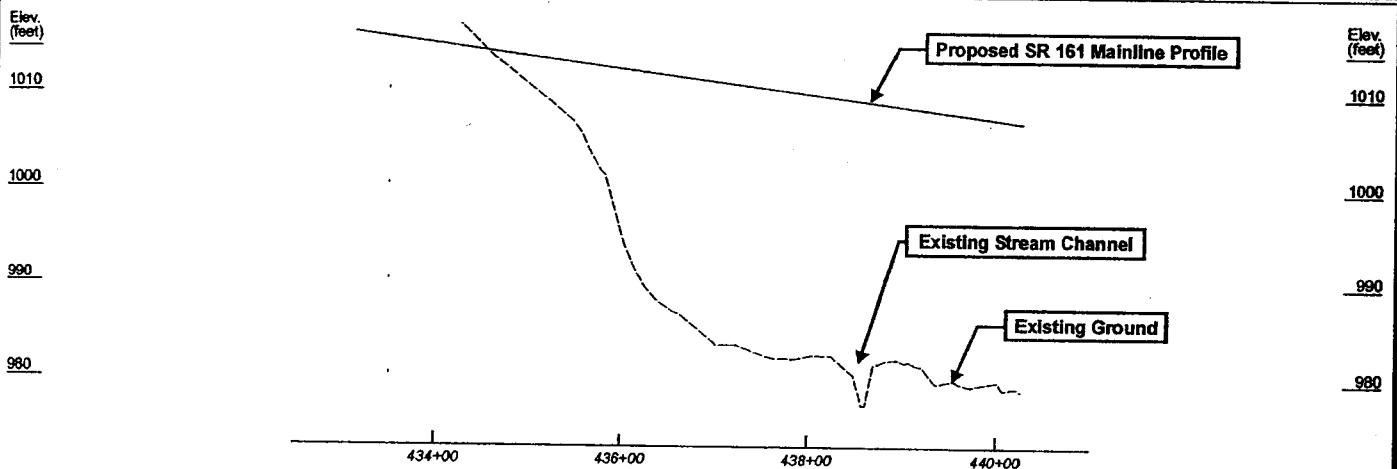
Culvert Profile
Proposed SR 161 at Sta. 436+00

Approximate Cross Section Scale: 1" = 30'

North ↘



Cross Section
Proposed (New) Relocated Stream Channel
(North of Proposed SR 161 and Ramp I at Approximately Sta. 437+50)



SR 161 Mainline Highway Profile
showing existing channel cross section

North ↑

Approximate Profile Scale: 1" = 200'



Figure 12b
Site Plan for Proposed Activity
Site #24 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

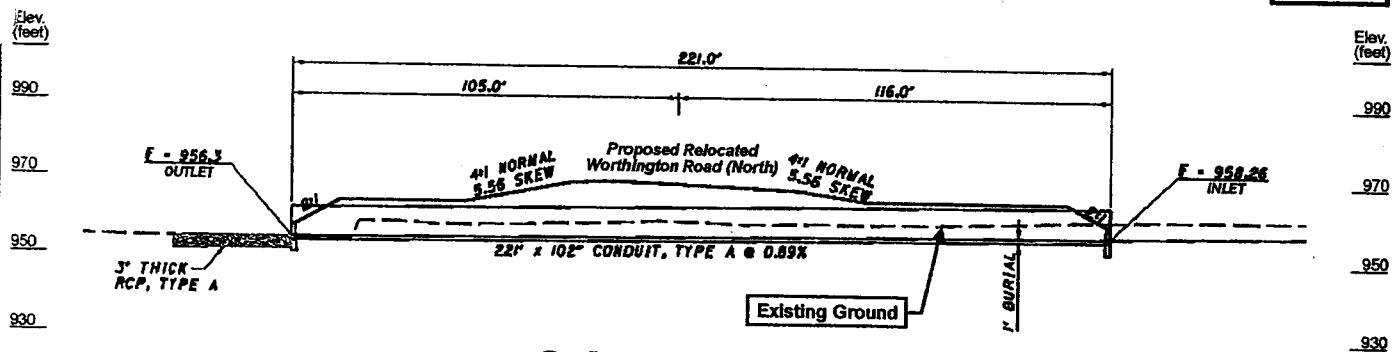
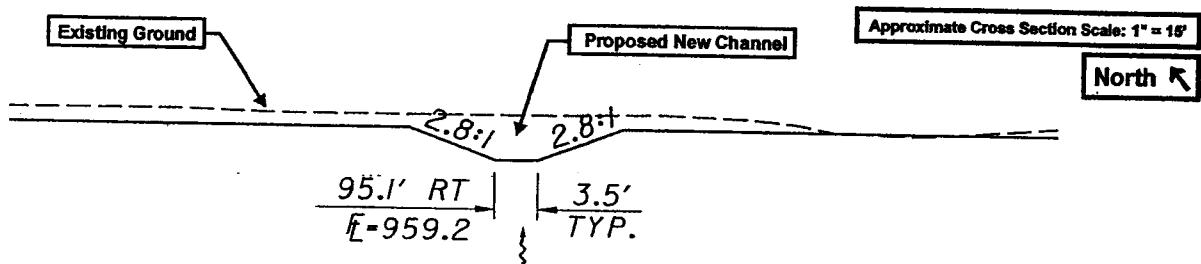
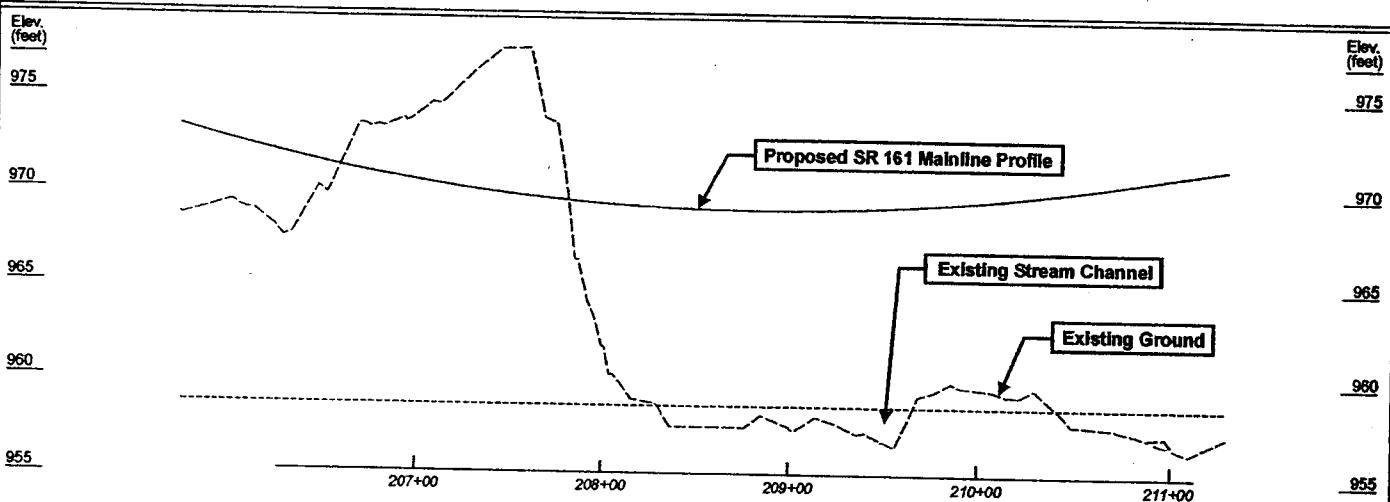
December 2004

Figure 12b of 33

Length of Channel Disturbed: 2,300 linear feet
 Fill Volume Below OHW: 1,320 cubic yards
 Fill Area Below OHW: 0.40 acre

Approximate Profile Scale: 1" = 50'

North ↗

**Culvert Profile****Proposed Relocated Worthington Road (North) at Sta. 210+00****Cross Section****Proposed (New) Relocated Stream Channel****(South of Proposed Relocated Worthington Road (North) at Approximately Sta. 208+00)****Relocated Worthington Road (North) Profile
showing existing channel cross section**

North ↑

Approximate Profile Scale: 1" = 100'



Figure 12c
Site Plan for Proposed Activity
Site #24 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.150.00(11.75); PID #12139

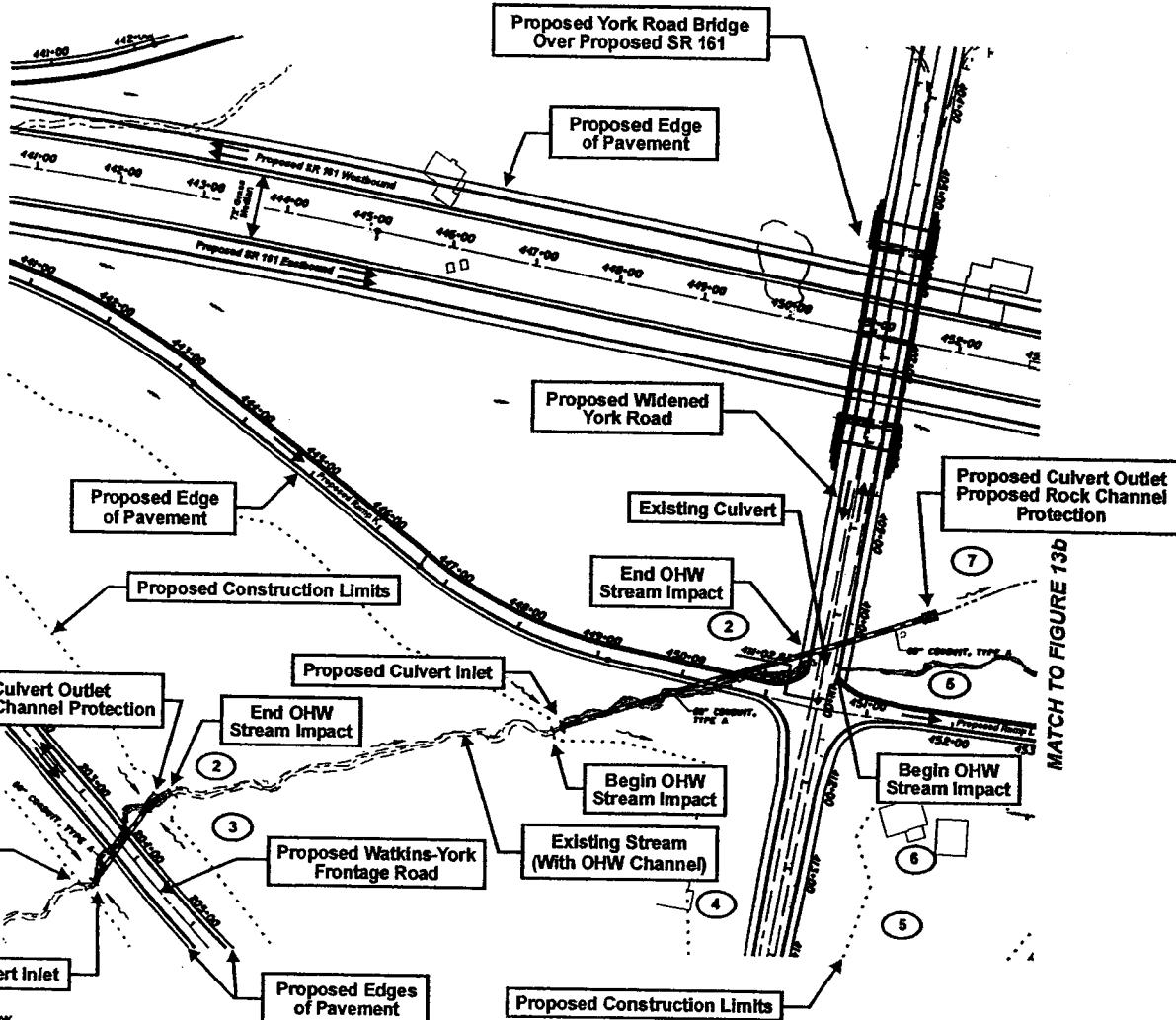
U.S. Army Corps of
 Engineers 404 Permit
 and OEPA Section 401
 Water Quality
 Certification
 Application

December 2004

Figure 12c of 33

Length of Channel Disturbed: 2,170 linear feet
 Fill Volume Below OHW: 407 cubic yards
 Fill Area Below OHW: 0.17 acre

= Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



MATCH TO FIGURE 13b

Note: Shaded area represents existing stream bottom, not OHW channel

Property Owners:

- 1 Marc & Mary Pohm
- 2 Paul Benson
- 3 Wilbert & Alice Boden
- 4 Brian Kent
- 5 David & Kathy Horner
- 6 Roger & Cheryl Skunda
- 7 Robert Baker

Plan

North ↑

Approximate Plan Scale: 1" = 200'



Figure 13a
Site Plan for Proposed Activity (Plan View Only)
Site #28 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

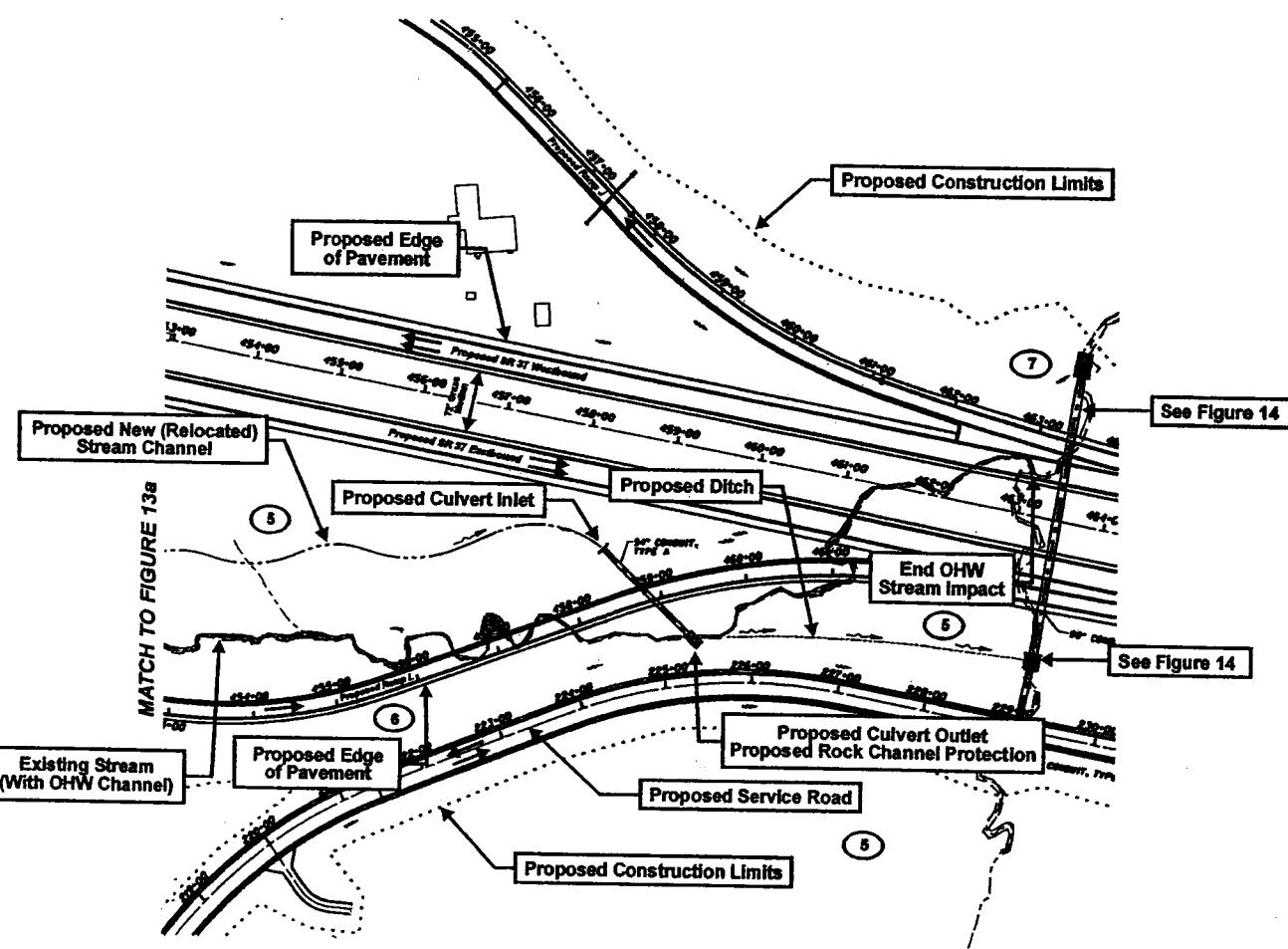
U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 13a of 33

Length of Channel Disturbed: 2,170 linear feet
 Fill Volume Below OHW: 407 cubic yards
 Fill Area Below OHW: 0.17 acre

Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



— Ditch or Stream Flow

Note: Shaded area represents existing stream bottom, not OHW channel

Property Owners:

- 5 Robert Baker
- 6 David & Kathy Homer
- 7 Lena Baker



Plan

Approximate Plan Scale: 1" = 200'



Figure 13b
Site Plan for Proposed Activity (Plan View Only)
Site #28 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

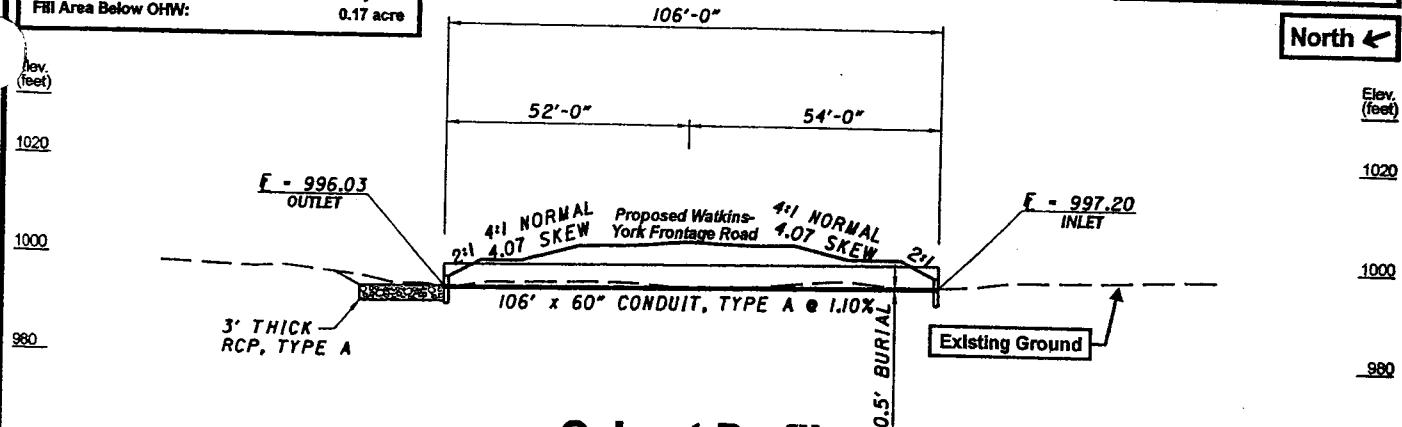
December 2004

Figure 13b of 33

Length of Channel Disturbed: 2,170 linear feet
 Fill Volume Below OHW: 407 cubic yards
 Fill Area Below OHW: 0.17 acre

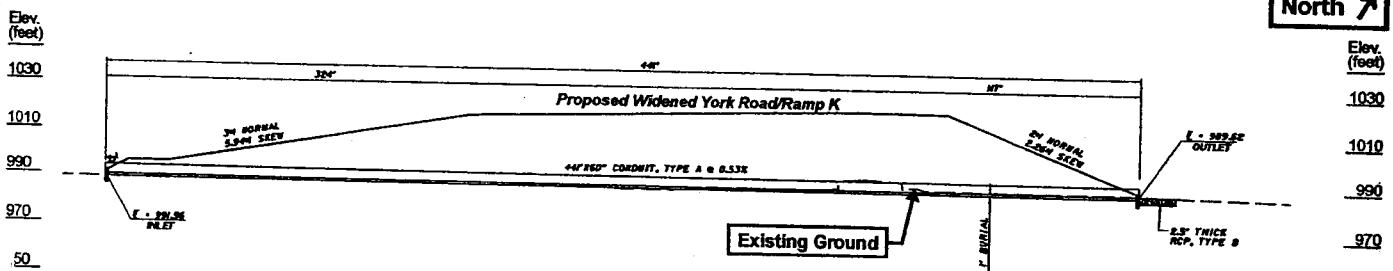
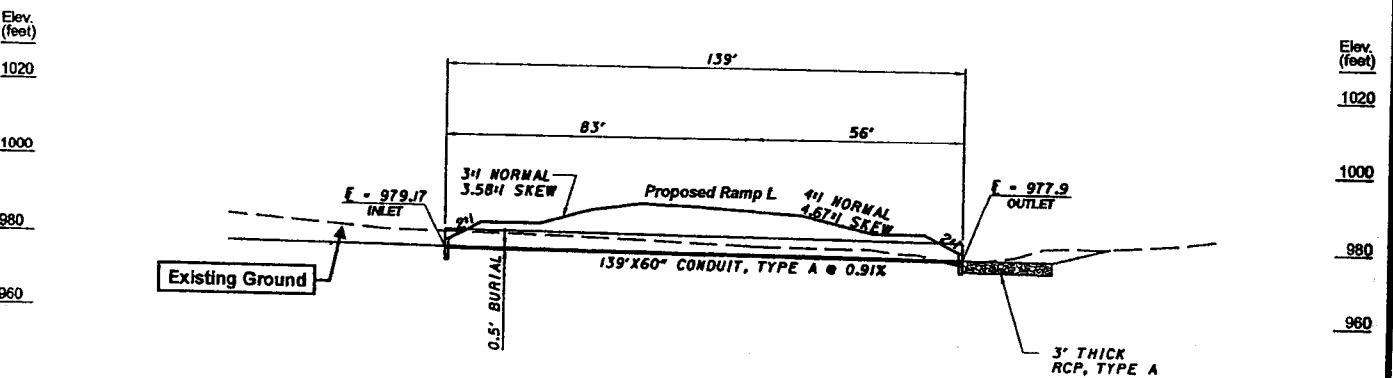
Approximate Profile Scale: 1" = 40'

North ↙

**Culvert Profile****Proposed Watkins-York Frontage Road at Sta. 203+70**

Approximate Cross Section Scale: 1" = 80'

North ↗

**Culvert Profile****Proposed Widened York Road at Sta. 410+50****Proposed Ramp K at Sta 450+50****Culvert Profile****Proposed Ramp L at Sta. 458+80**

North ↑

Approximate Profile Scale: 1" = 50'

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 13c of 33



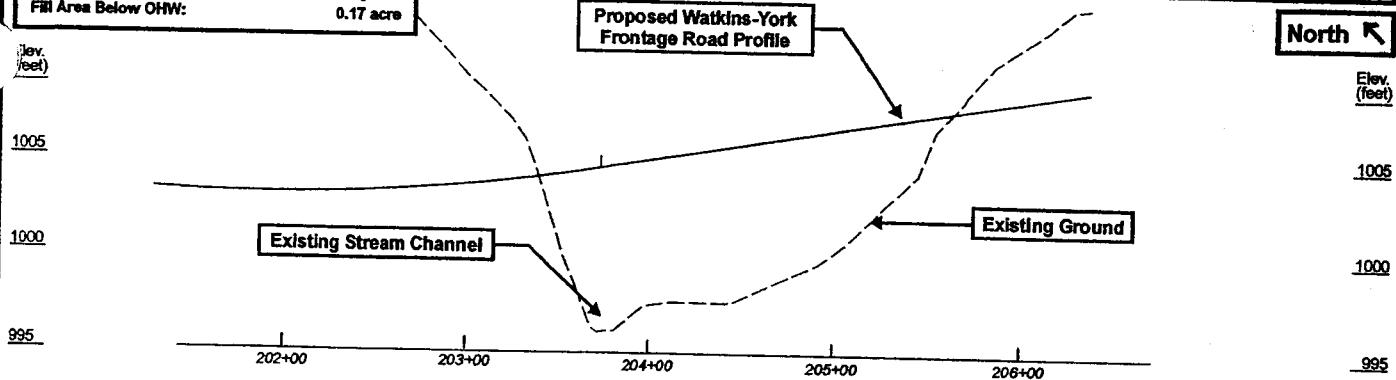
Figure 13c
Site Plan for Proposed Activity
Site #28 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

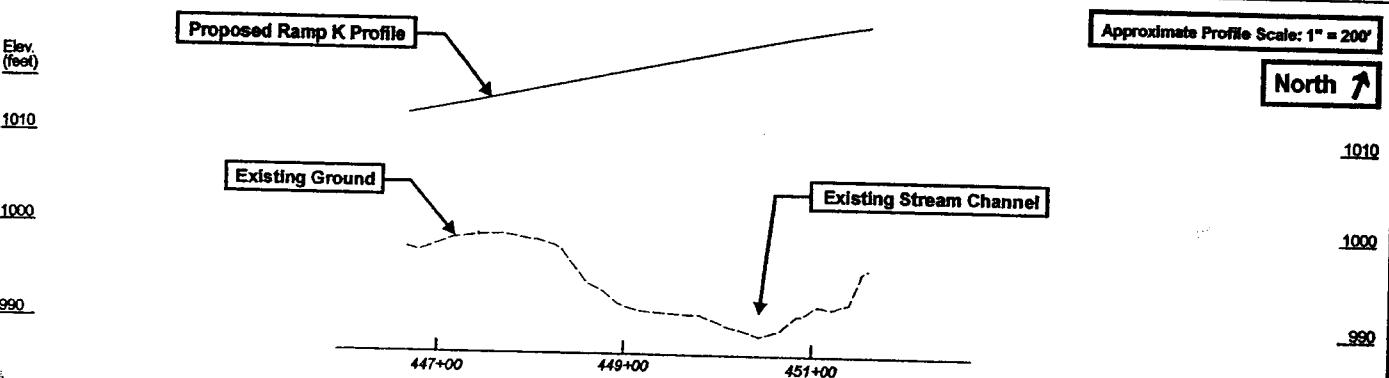
Length of Channel Disturbed:
2,170 linear feet
Fill Volume Below OHW:
407 cubic yards
Fill Area Below OHW:
0.17 acre

Approximate Profile Scale: 1" = 100'

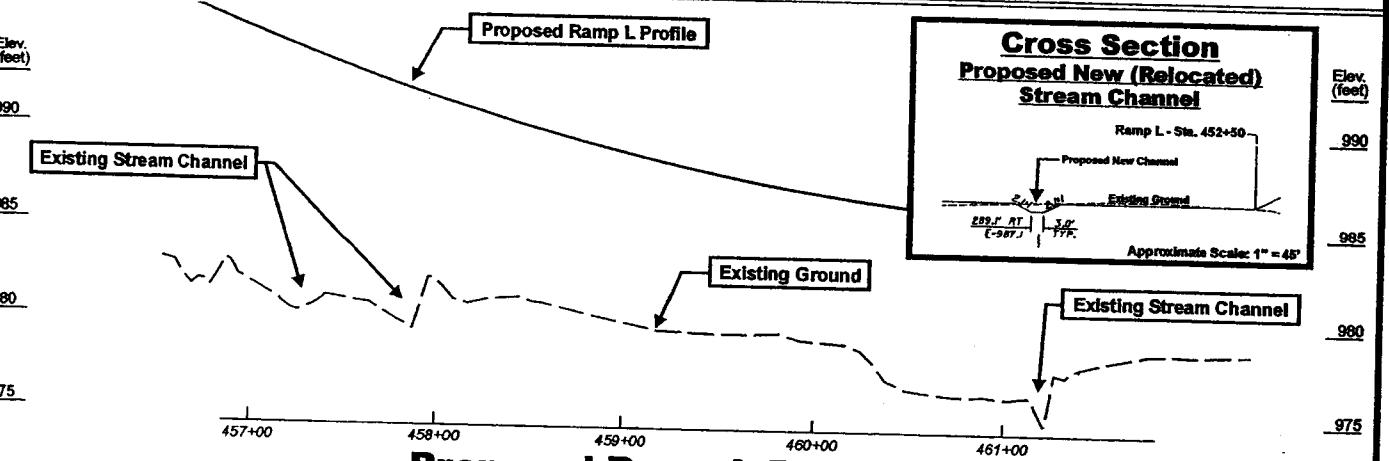
North ↗



Proposed Watkins-York Road Frontage Road Profile
showing existing channel cross section



Proposed Ramp K Profile
showing existing channel cross section



Proposed Ramp L Profile
showing proposed channel cross section

Approximate Profile Scale: 1" = 100'



Figure 13d
Site Plan for Proposed Activity
Site #28 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

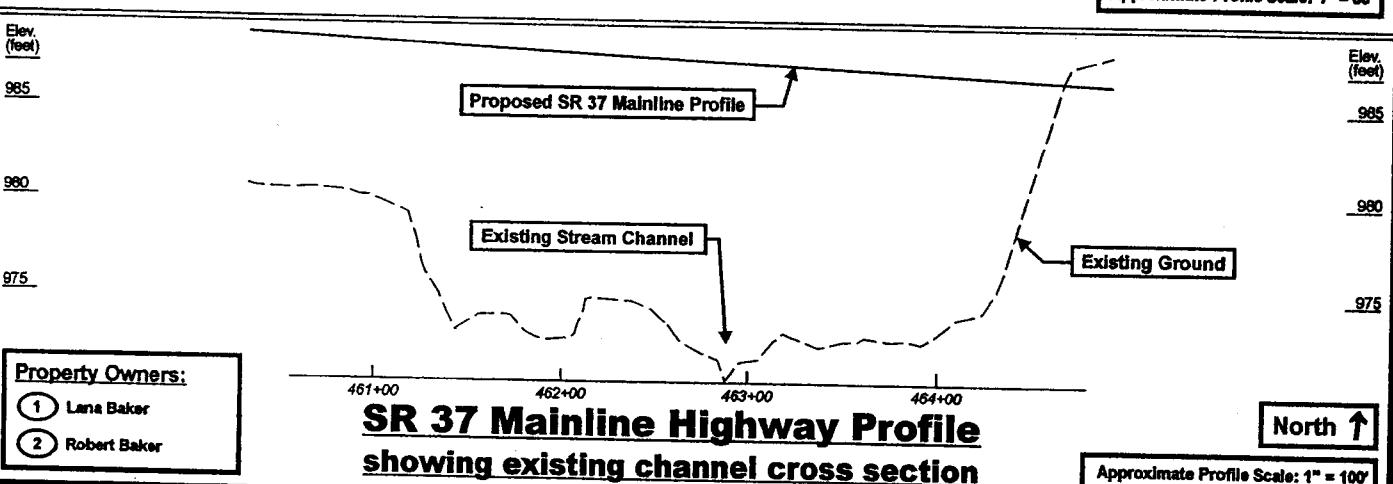
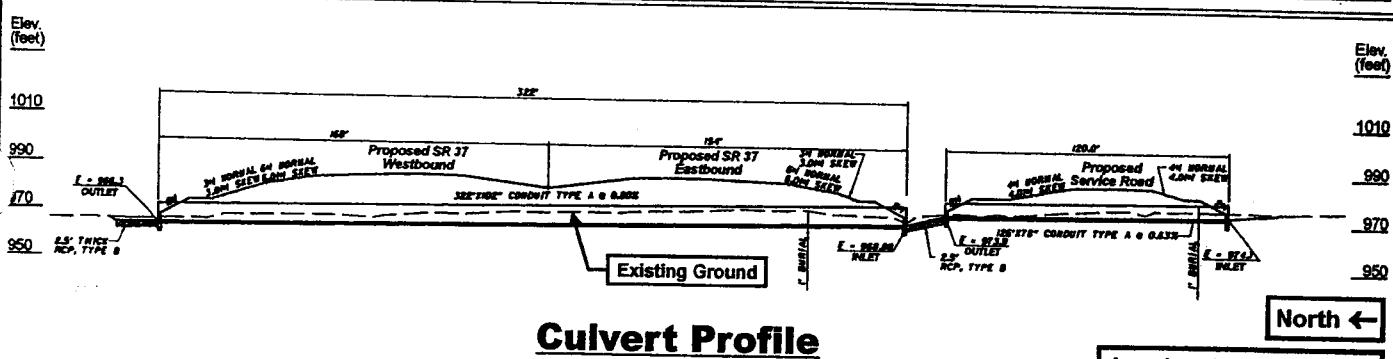
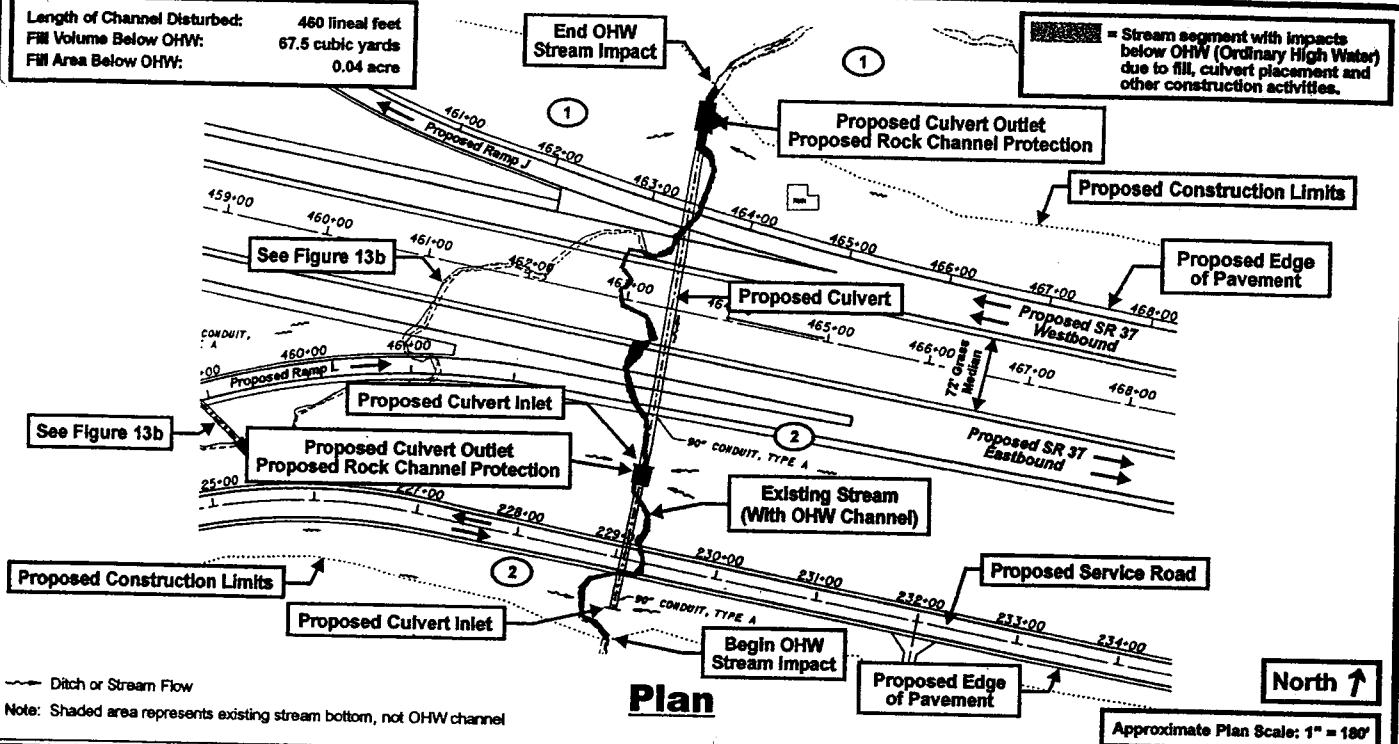
December 2004

Figure 13d of 33

Length of Channel Disturbed: 460 linear feet
 Fill Volume Below OHW: 67.5 cubic yards
 Fill Area Below OHW: 0.04 acre

End OHW Stream Impact

= Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



Property Owners:
 1 Lana Baker
 2 Robert Baker

SR 37 Mainline Highway Profile showing existing channel cross section



Figure 14
 Site Plan for Proposed Activity
 Site #34 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 14 of 33

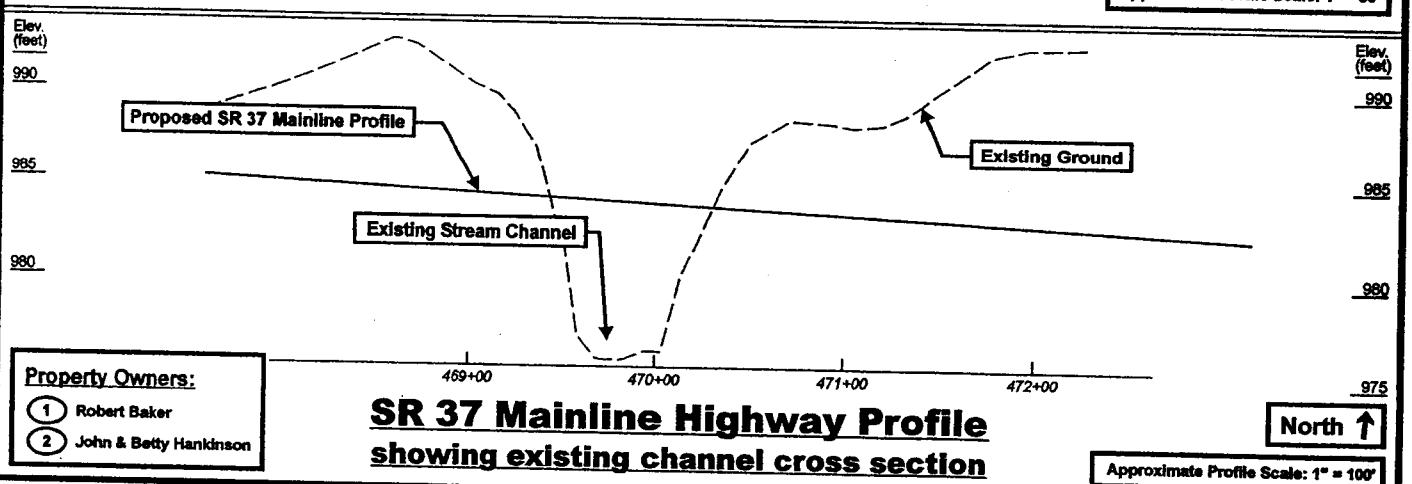
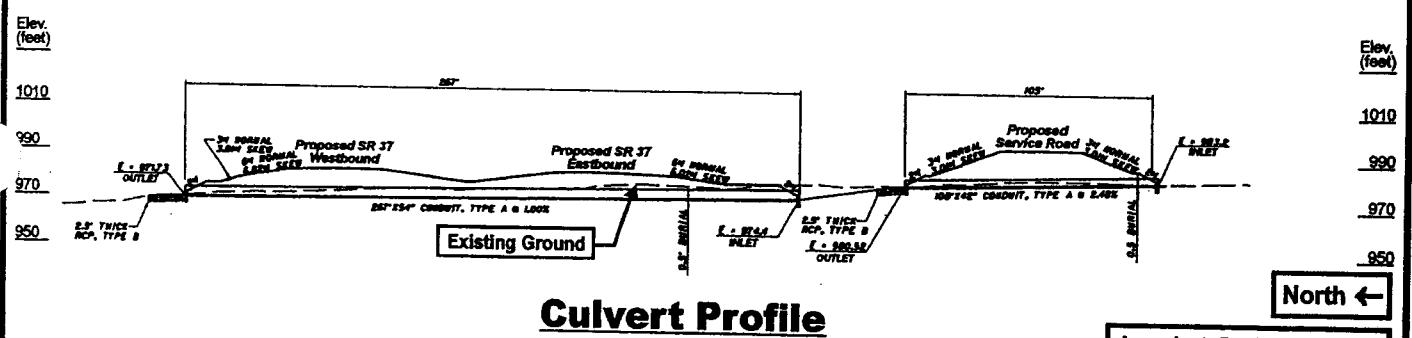
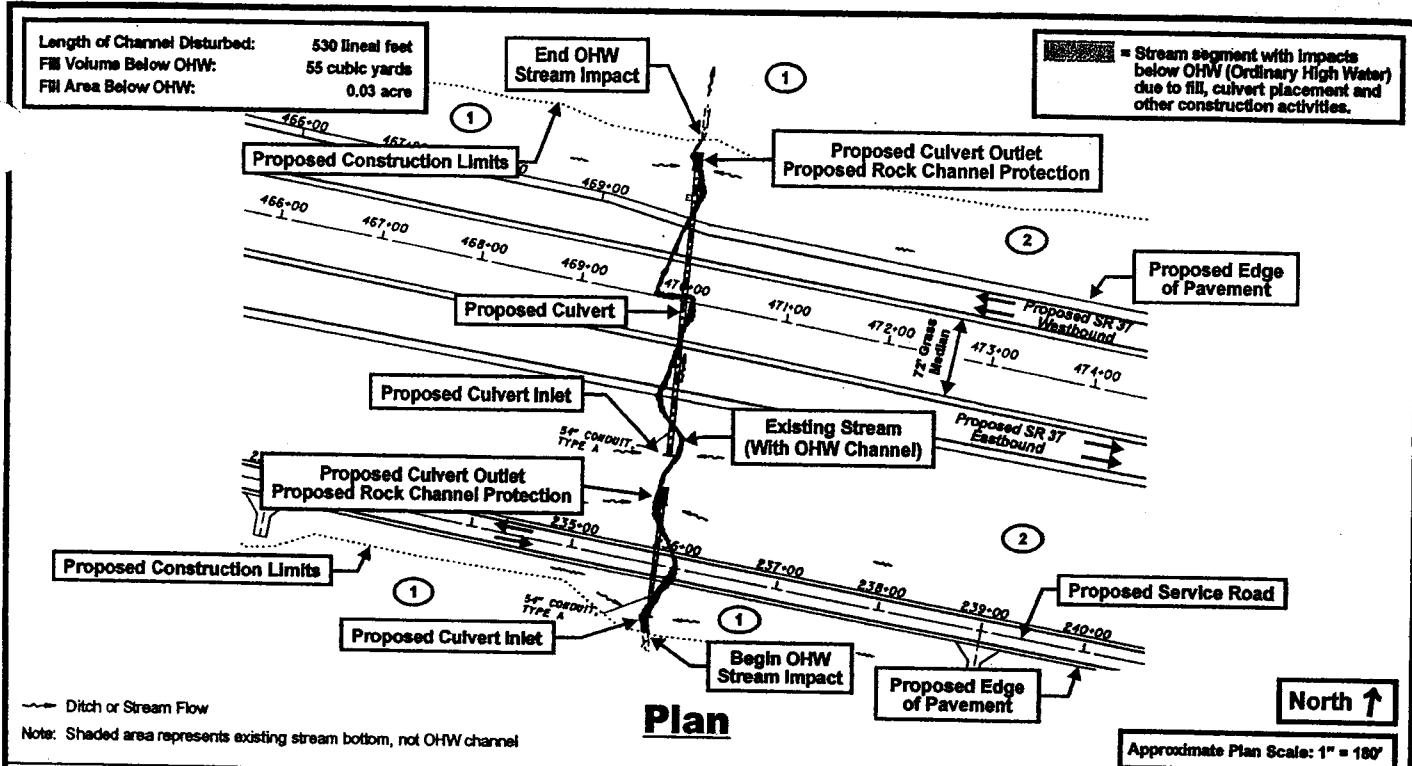


Figure 15
Site Plan for Proposed Activity
Site #33 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

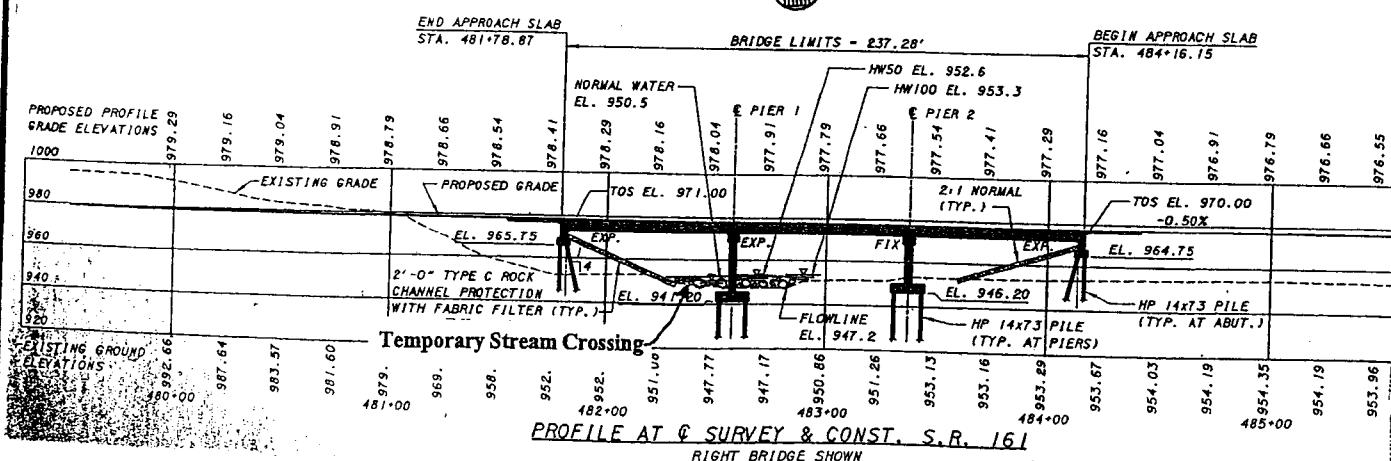
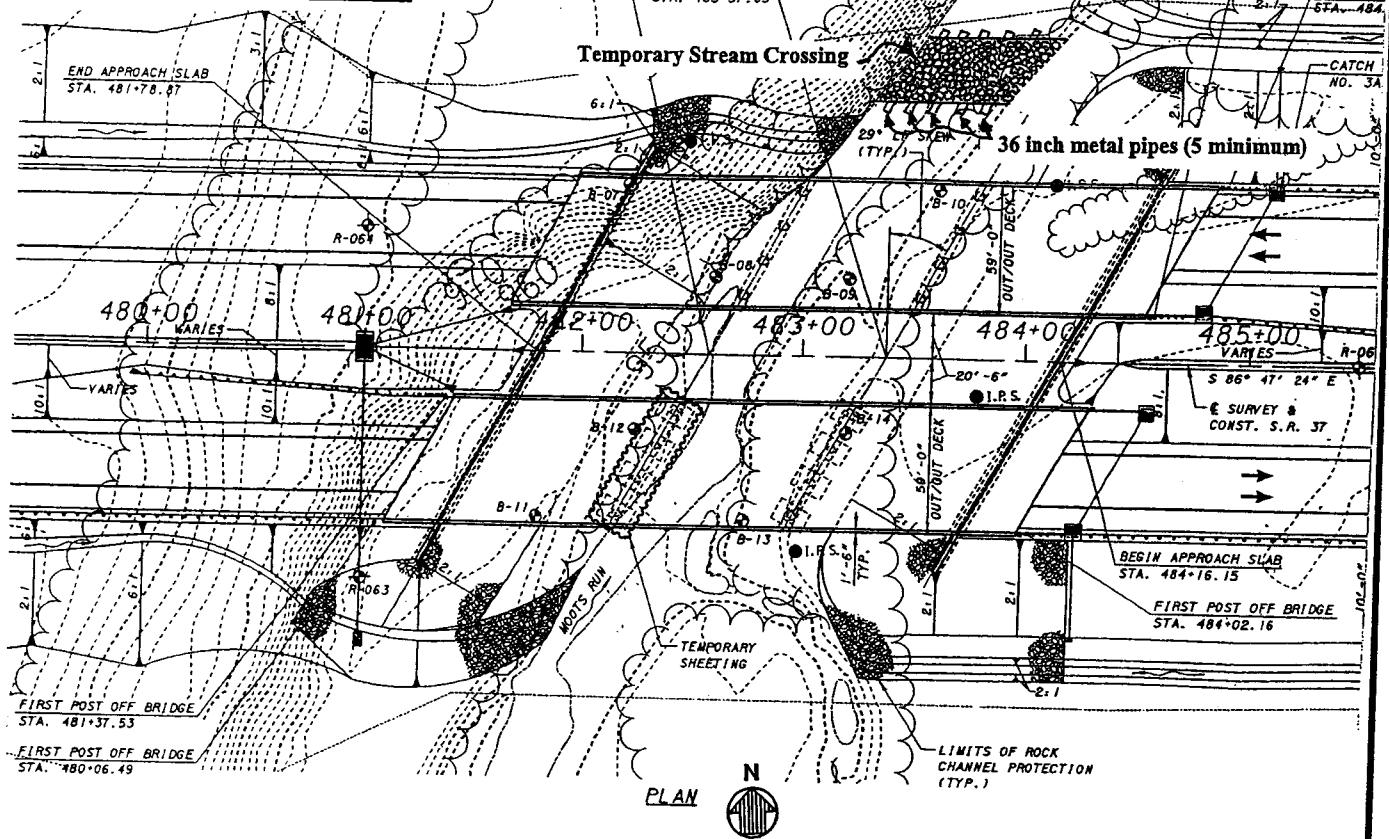
Figure 15 of 33

Impacts Due to Structure Placement:

Length of Channel Disturbed: 250 linear feet
 Fill Volume Below OHW: 170 cubic yards
 Fill Area Below OHW: 0.03 acre

Impacts Due to Temporary Crossing:

Length of Channel Disturbed: 35 linear feet
 Fill Volume Below OHW: 277 cubic yards
 Fill Area Below OHW: 0.02 acre



Property Owners:

(1) David & Mary Moritz

North ↑

Approximate Scale:



Figure 16
Site Plan for Proposed Activity
Site #2 - Moots Run (Bridge and Temporary Crossing)

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 16 of 33

Length of Channel Disturbed: 360 linear feet
 Fill Volume Below OHW: 115 cubic yards
 Fill Area Below OHW: 0.07 acre

Existing SR 37 (Worthington Road)

End OHW Stream Impact

Proposed Culvert Outlet
Proposed Rock Channel Protection

Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.

Proposed Construction Limits

Proposed SR 37 Westbound

Proposed Culvert

Proposed Edge of Pavement

+00
Base Grade
NW

522+00

523+00

524+00

525+00

526+00

527+00

524+00

525+00

526+00

527+00

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

2

Plan

North ↑

Approximate Plan Scale: 1" = 120'

Elev.
(feet)

1000

980

960

940

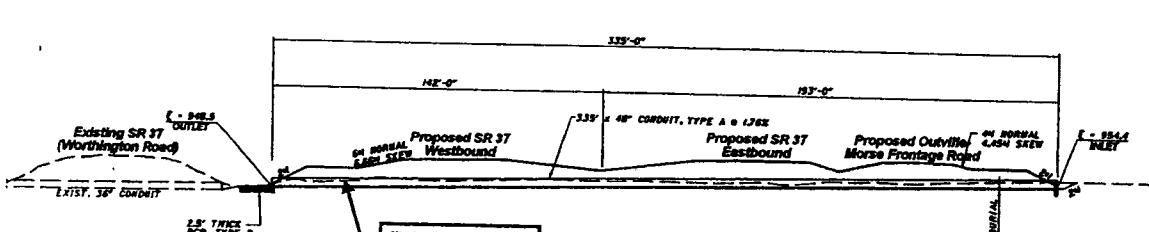
Elev.
(feet)

1000

980

960

940

**Culvert Profile**

North ←

Approximate Profile Scale: 1" = 80'

Elev.
(feet)

960

955

950

Elev.
(feet)

960

955

950

**SR 37 Mainline Highway Profile
showing existing channel cross section**

North ↑

Approximate Profile Scale: 1" = 100'

Property Owners:

- 1 State of Ohio
- 2 John & Betty Hankinson

**Figure 17****Site Plan for Proposed Activity
Site #36 - Unnamed Raccoon Creek Tributary**

SR 161/37 Improvement
 Franklin and Licking Counties, Ohio
 FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of
 Engineers 404 Permit
 and OEPA Section 401
 Water Quality
 Certification
 Application

December 2004

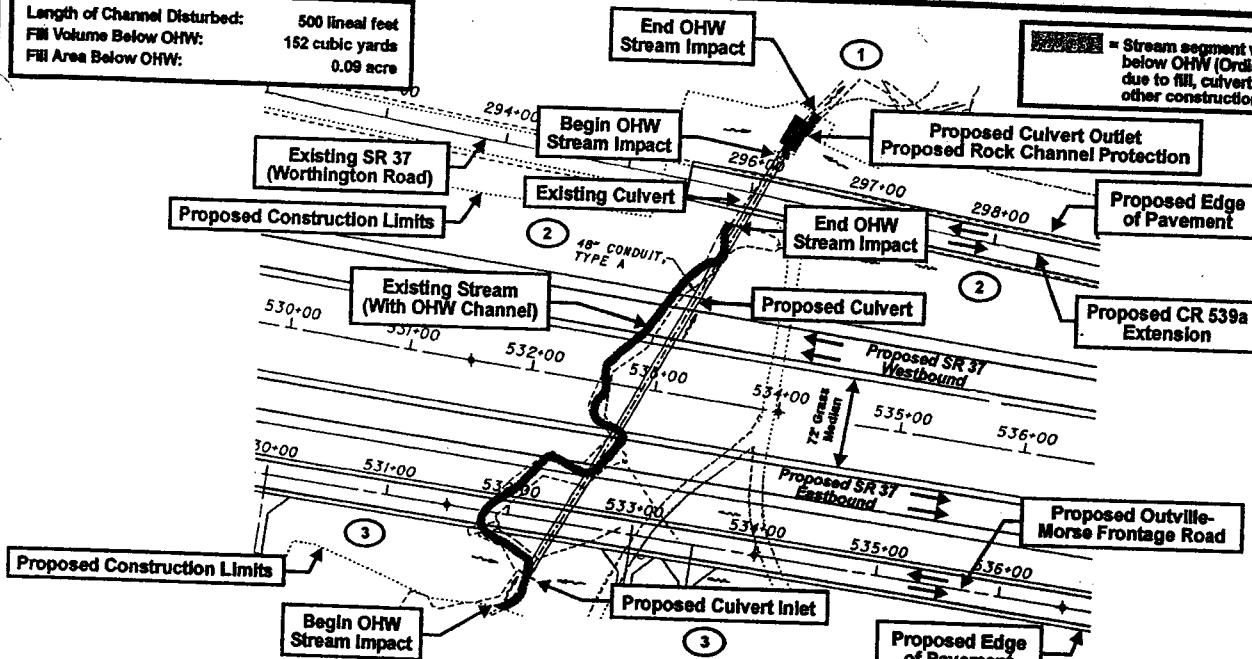
Figure 17 of 33

Length of Channel Disturbed:
Fill Volume Below OHW:
Fill Area Below OHW:

500 linear feet
152 cubic yards
0.09 acre

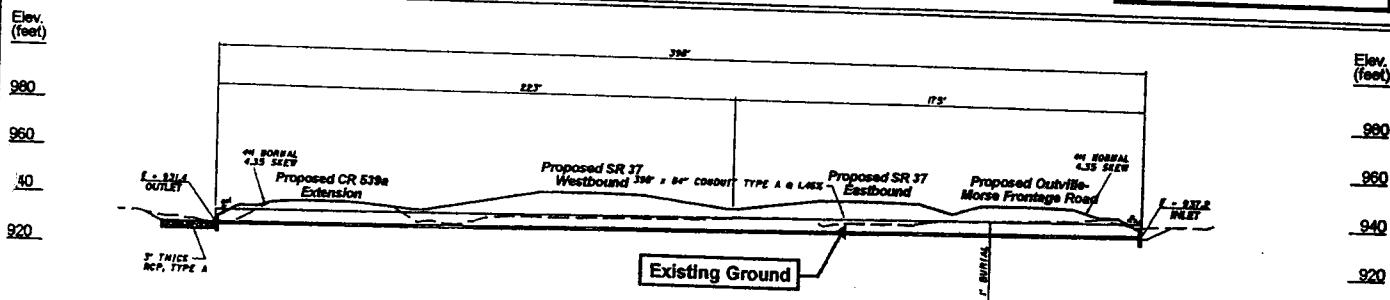
End OHW Stream Impact

1 = Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.

**Plan**

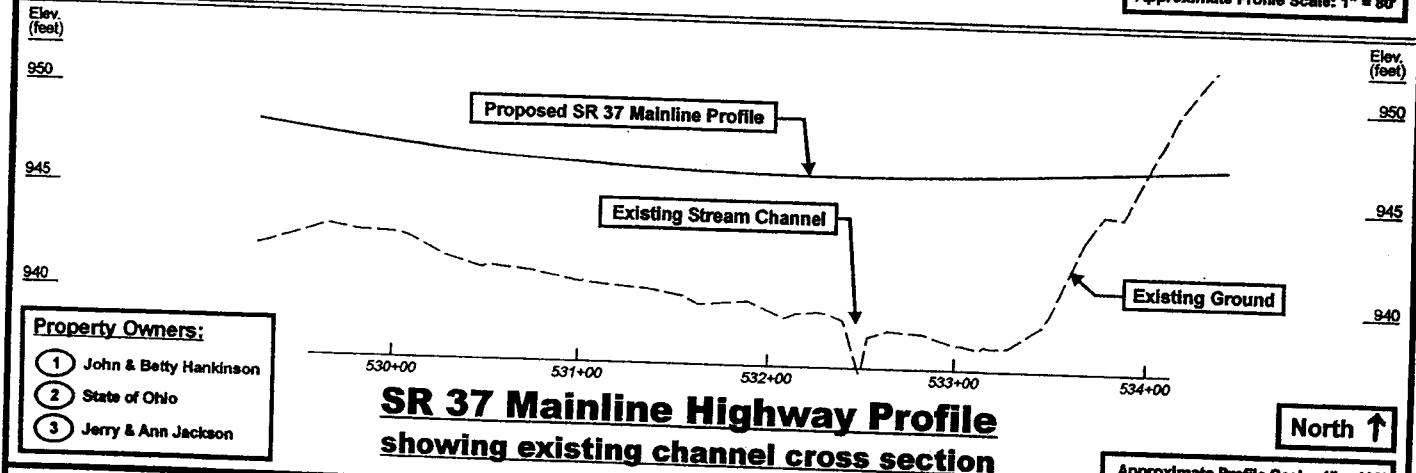
North ↑

Approximate Plan Scale: 1" = 150'

**Culvert Profile**

North ←

Approximate Profile Scale: 1" = 80'

**Property Owners:**

- 1 John & Betty Hankinson
- 2 State of Ohio
- 3 Jerry & Ann Jackson

SR 37 Mainline Highway Profile showing existing channel cross section

Approximate Profile Scale: 1" = 100'



Figure 18
Site Plan for Proposed Activity
Site #35 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

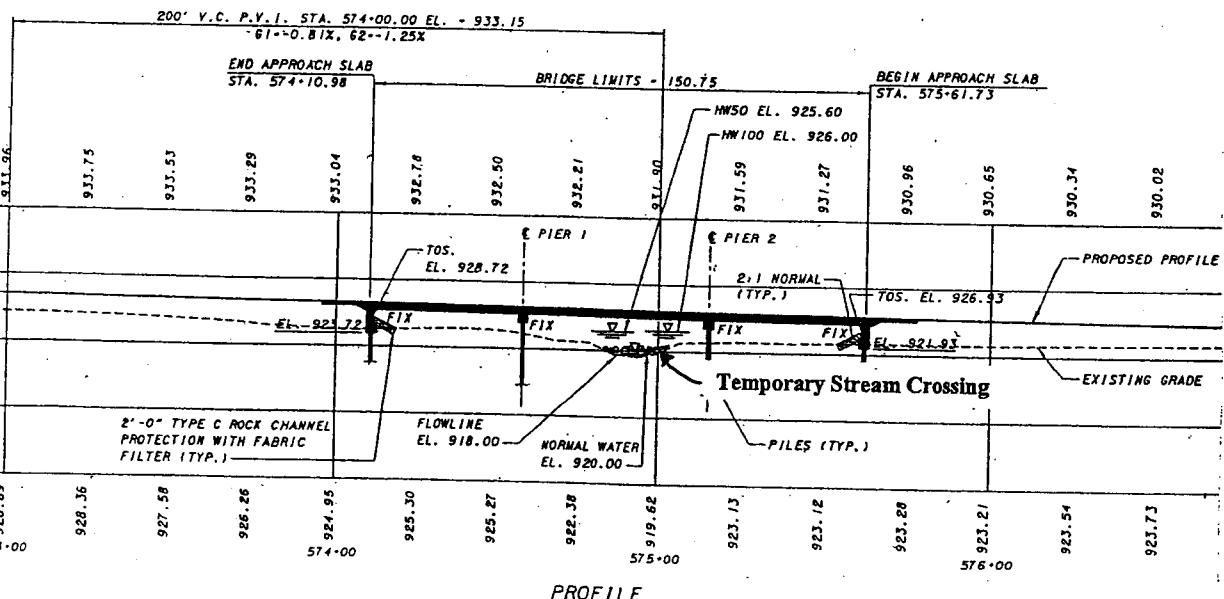
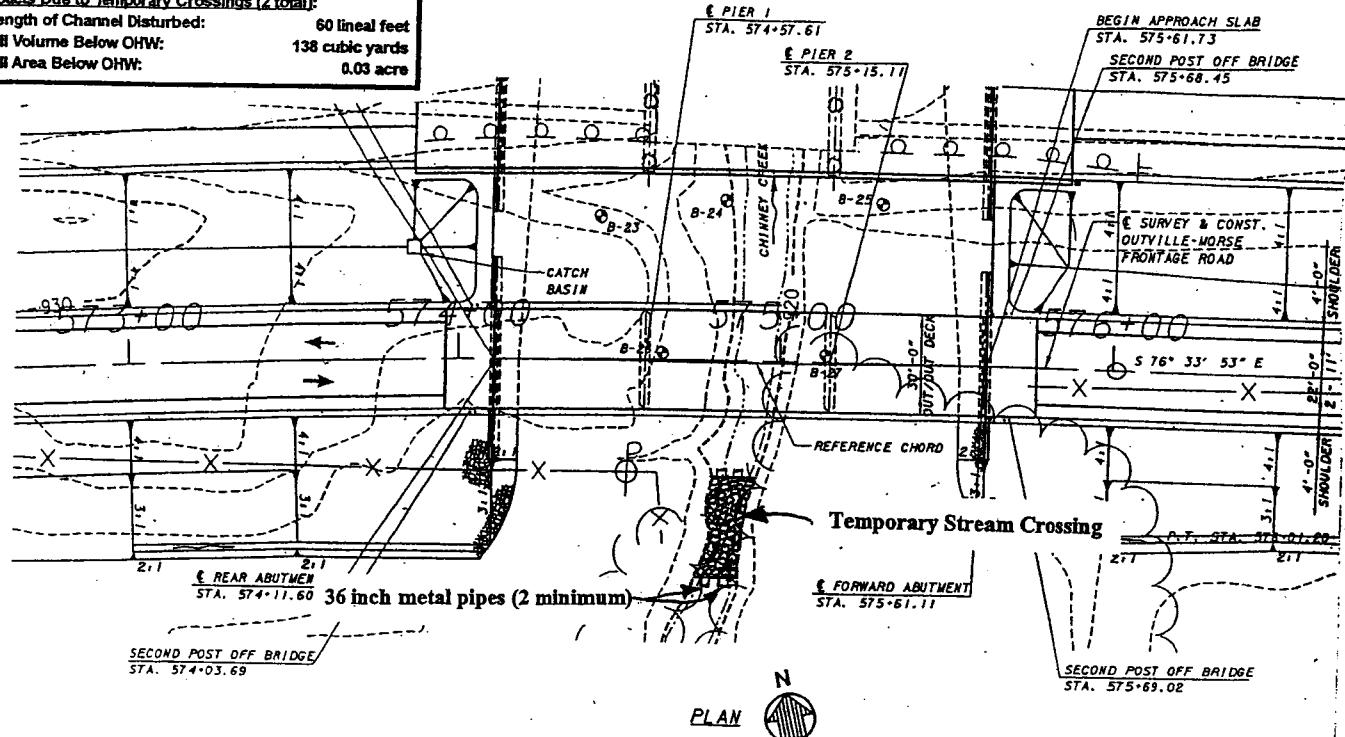
Figure 18 of 33

Impacts Due to Structure Placement:

Length of Channel Disturbed: No Impact
 Fill Volume Below OHW: No Impact
 Fill Area Below OHW: No Impact

Impacts Due to Temporary Crossings (2 total):

Length of Channel Disturbed: 60 linear feet
 Fill Volume Below OHW: 138 cubic yards
 Fill Area Below OHW: 0.03 acre



Property Owners:
 1 Eva & John Montgomery

North ↑

Approximate Scale:



Figure 19a
Site Plan for Proposed Activity
(Bridge and Temporary Crossing)
Site #16 - Chinney Creek

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

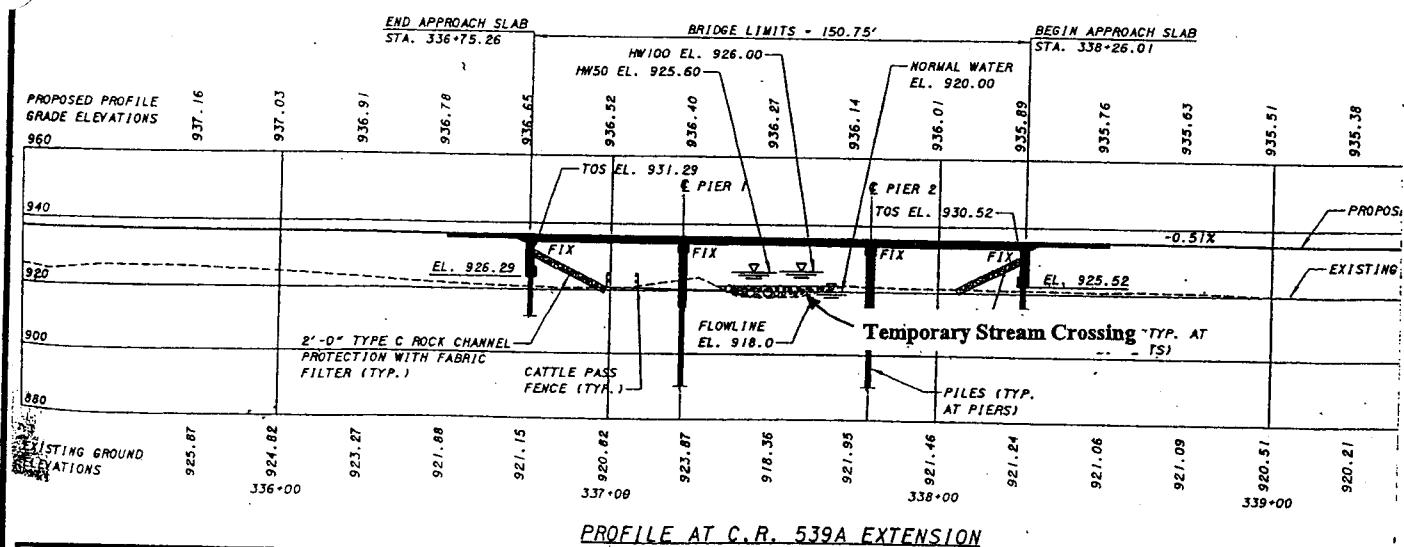
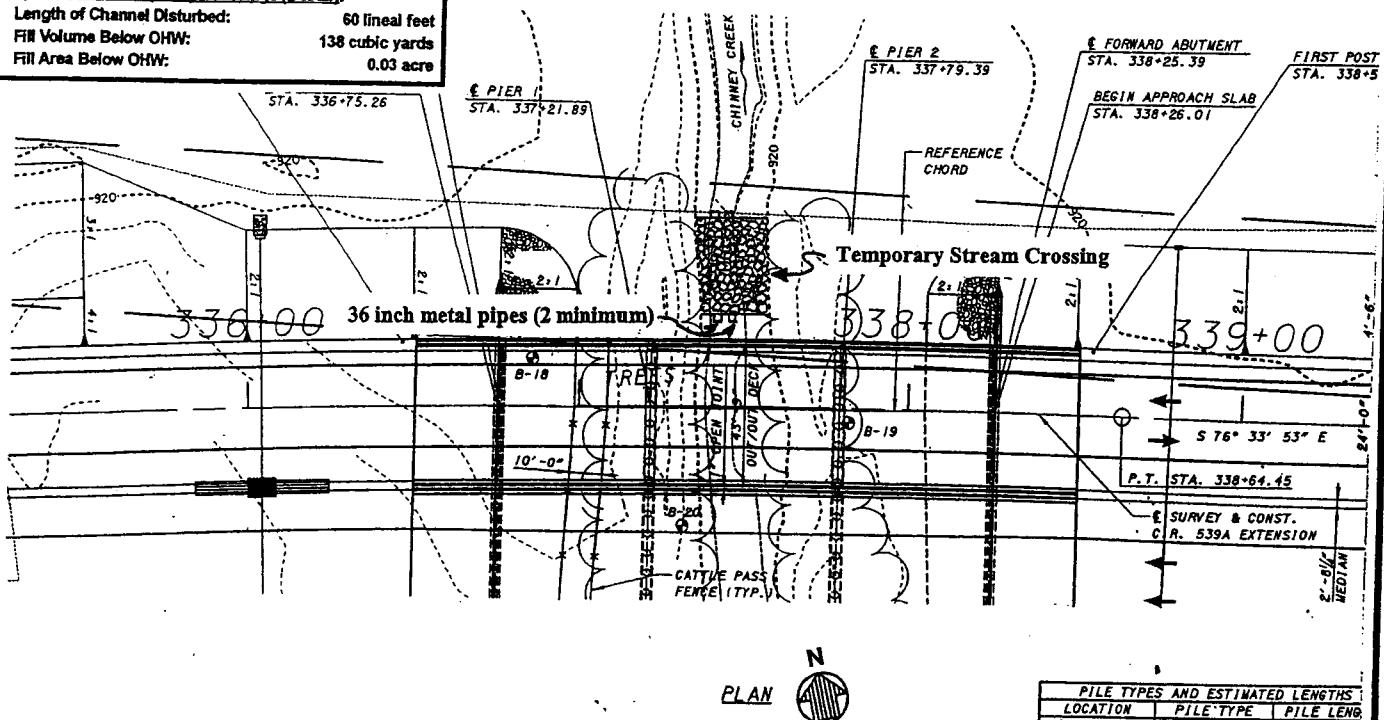
Figure 19a of 33

Impacts Due to Structure Placement:

Length of Channel Disturbed: No Impact
 Fill Volume Below OHW: No Impact
 Fill Area Below OHW: No Impact

Impacts Due to Temporary Crossings (2 total):

Length of Channel Disturbed: 60 linear feet
 Fill Volume Below OHW: 138 cubic yards
 Fill Area Below OHW: 0.03 acre

**Property Owners:**

1 Eva & John Montgomery

North ↑**Approximate Scale:**

Figure 19b
Site Plan for Proposed Activity
(Bridge and Temporary Crossing)
Site #16 - Chinney Creek

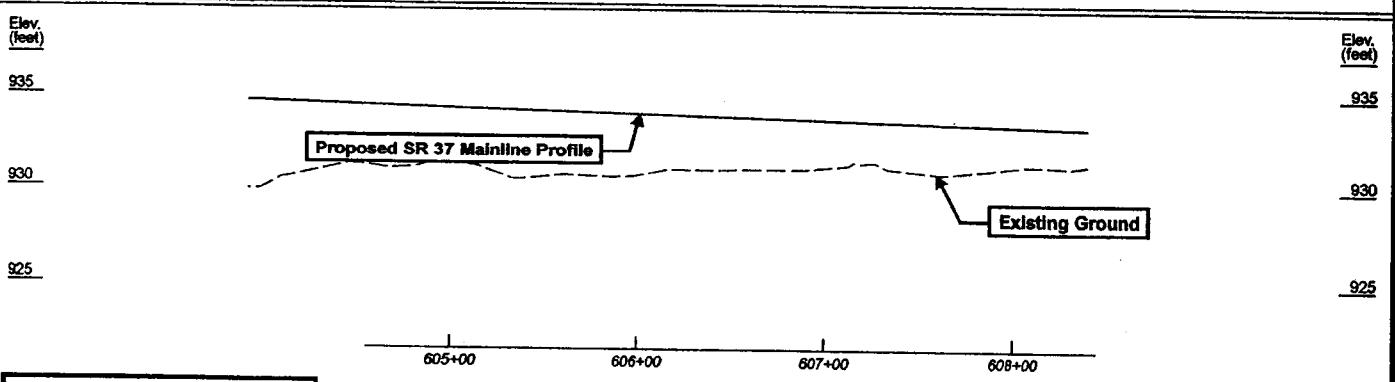
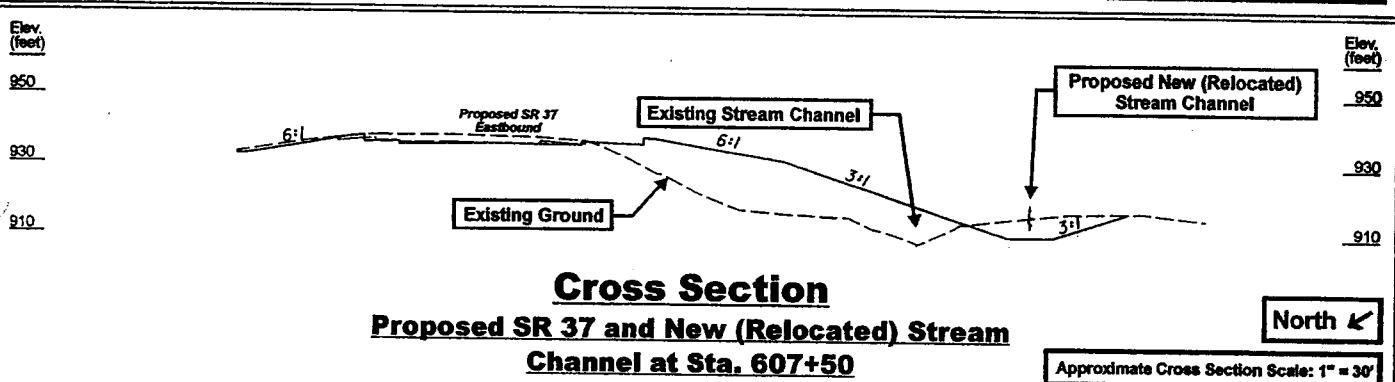
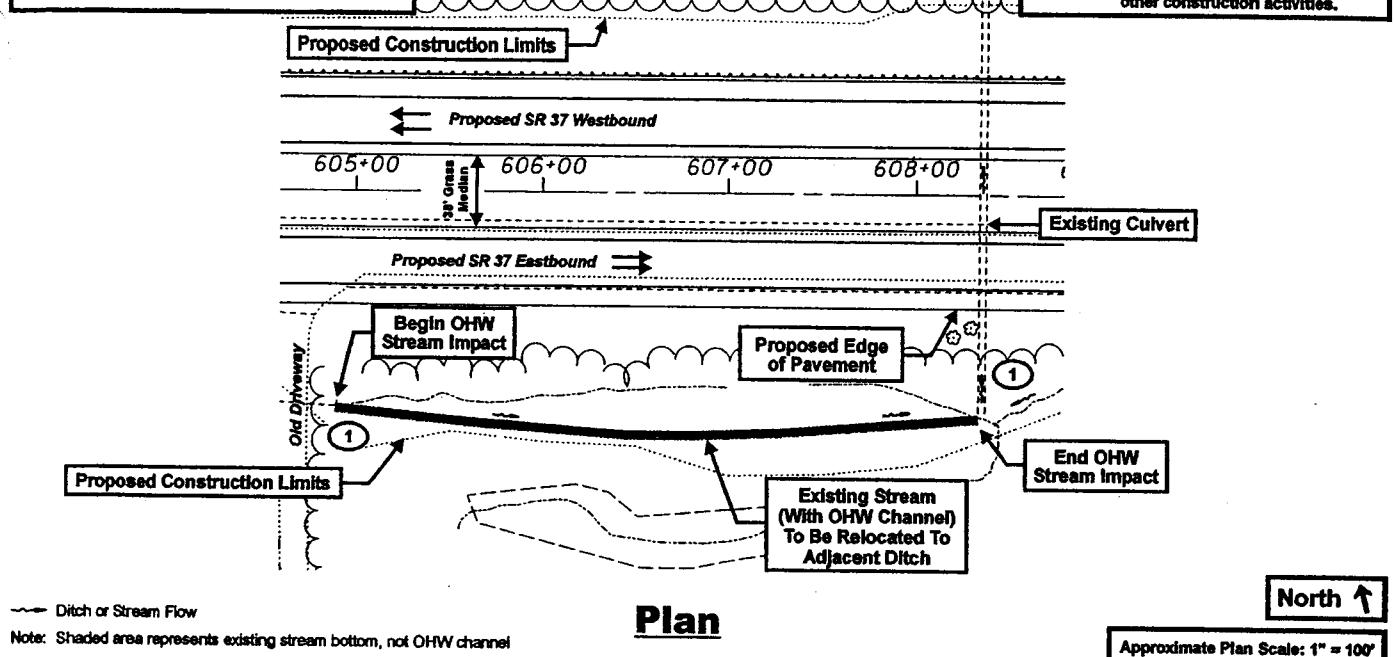
SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004**Figure 19b of 33**

Length of Channel Disturbed: 330 linear feet
 Fill Volume Below OHW: 37 cubic yards
 Fill Area Below OHW: 0.02 acre

REACHES = Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



Property Owners:
 1 Owens Corning Fiberglass Corp.



Figure 20
Site Plan for Proposed Activity
Site #42 - Unnamed Raccoon Creek Tributary

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

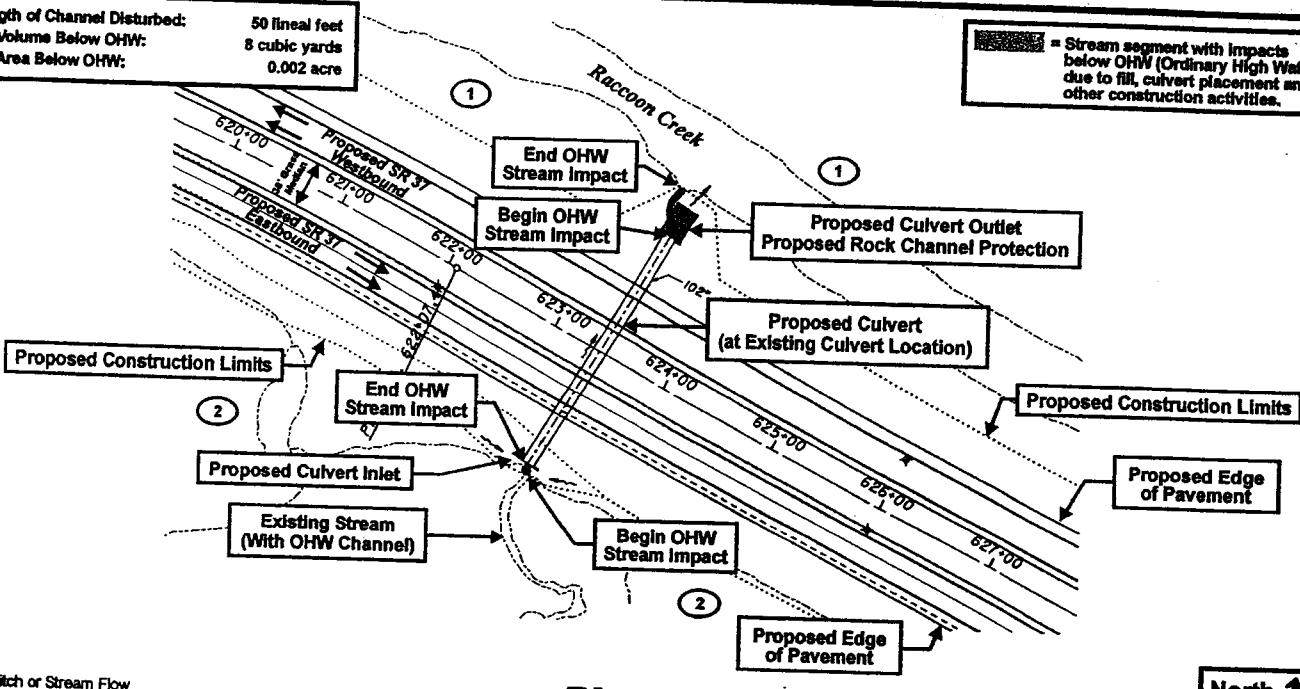
December 2004

Figure 20 of 33

Length of Channel Disturbed:
Fill Volume Below OHW:
Fill Area Below OHW:

50 linear feet
8 cubic yards
0.002 acre

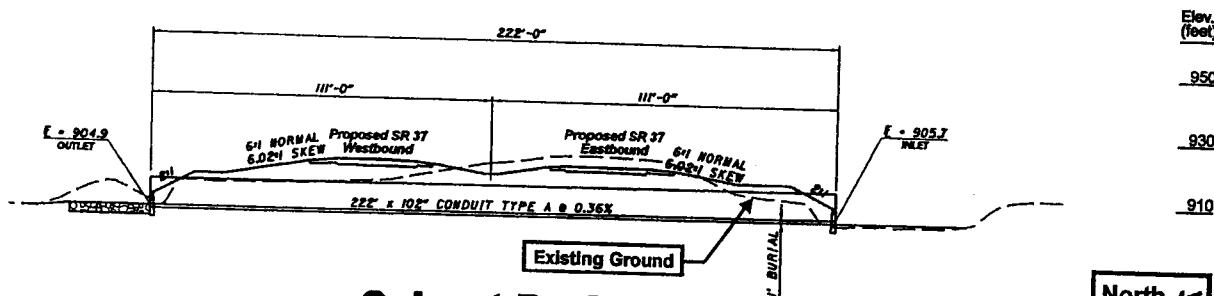
= Stream segment with impacts below OHW (Ordinary High Water) due to fill, culvert placement and other construction activities.



Ditch or Stream Flow

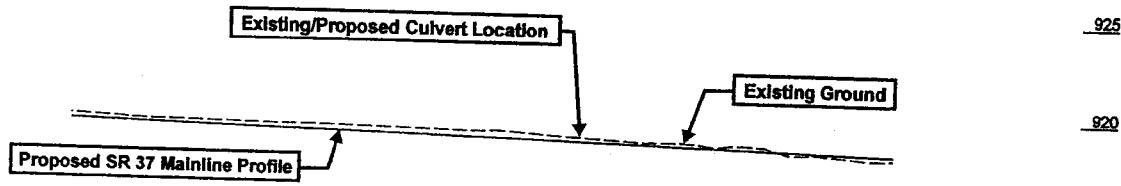
Note: Shaded area represents existing stream bottom, not OHW channel

Elev. (feet)



Elev. (feet)

Elev. (feet)



Property Owners:

- 1 T.J. Evans Foundation
- 2 Owens Corning Fiberglass Corp.

**SR 37 Mainline Highway Profile
at existing/proposed culvert location**

North ↑

Approximate Profile Scale: 1" = 100'

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 21 of 33



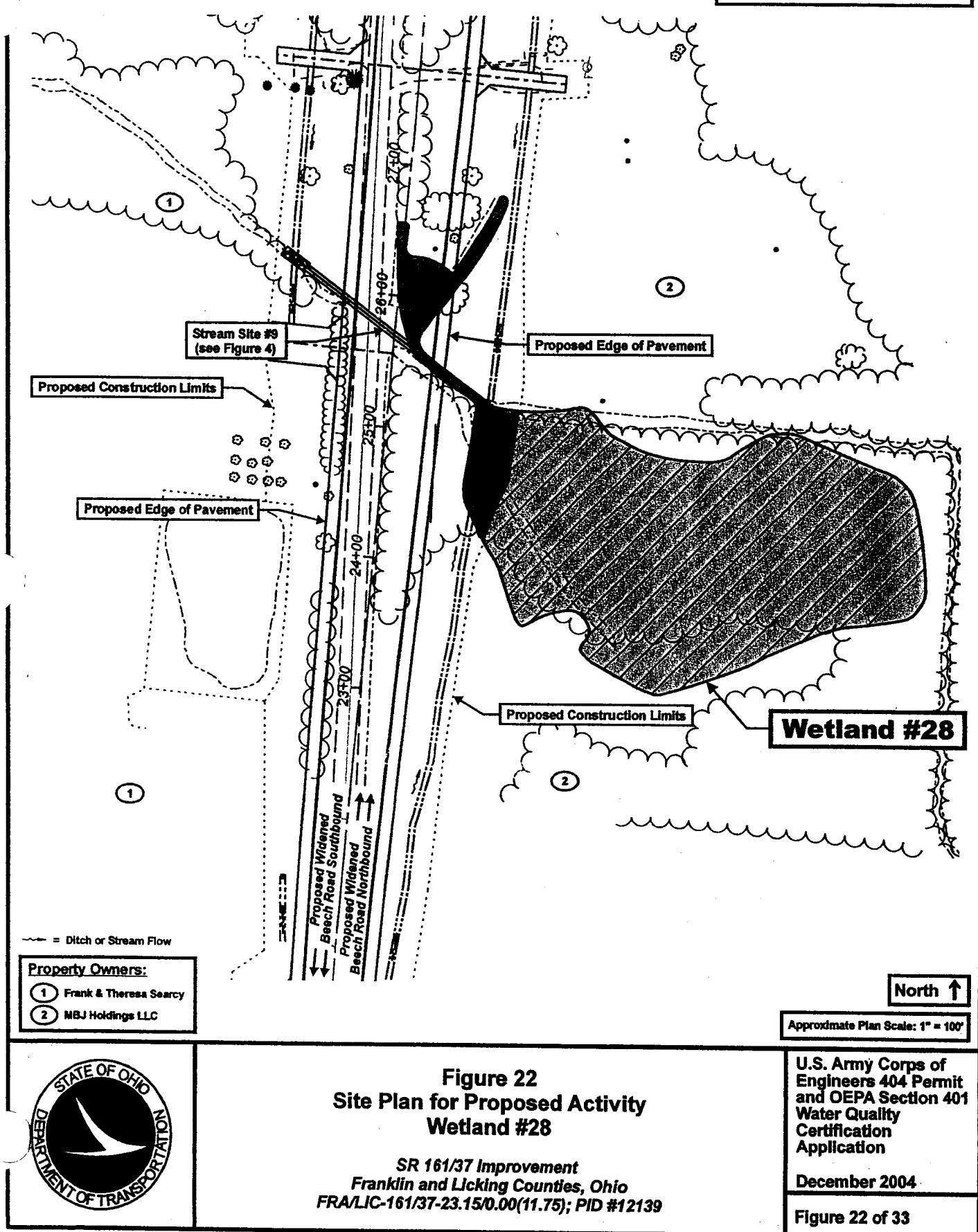
Figure 21
Site Plan for Proposed Activity
Site #40 - Unnamed Raccoon Creek Tributary

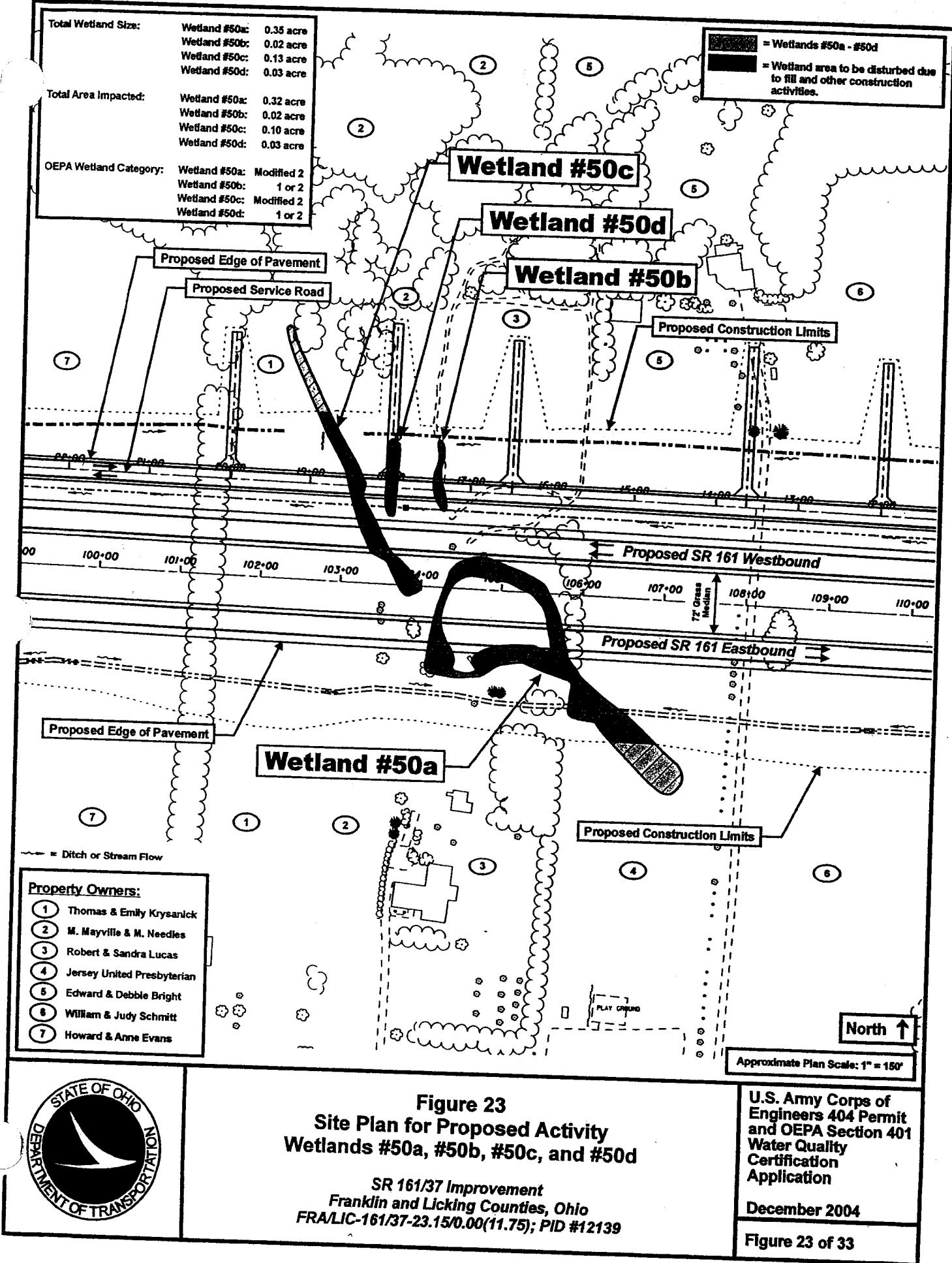
SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

Total Wetland Size:
1.26 acres
Total Area Impacted:
0.14 acre
OEPA Wetland Category:
2

1.26 acres
0.14 acre
2

- = Wetland #28
- = Wetland area to be disturbed due to fill and other construction activities.





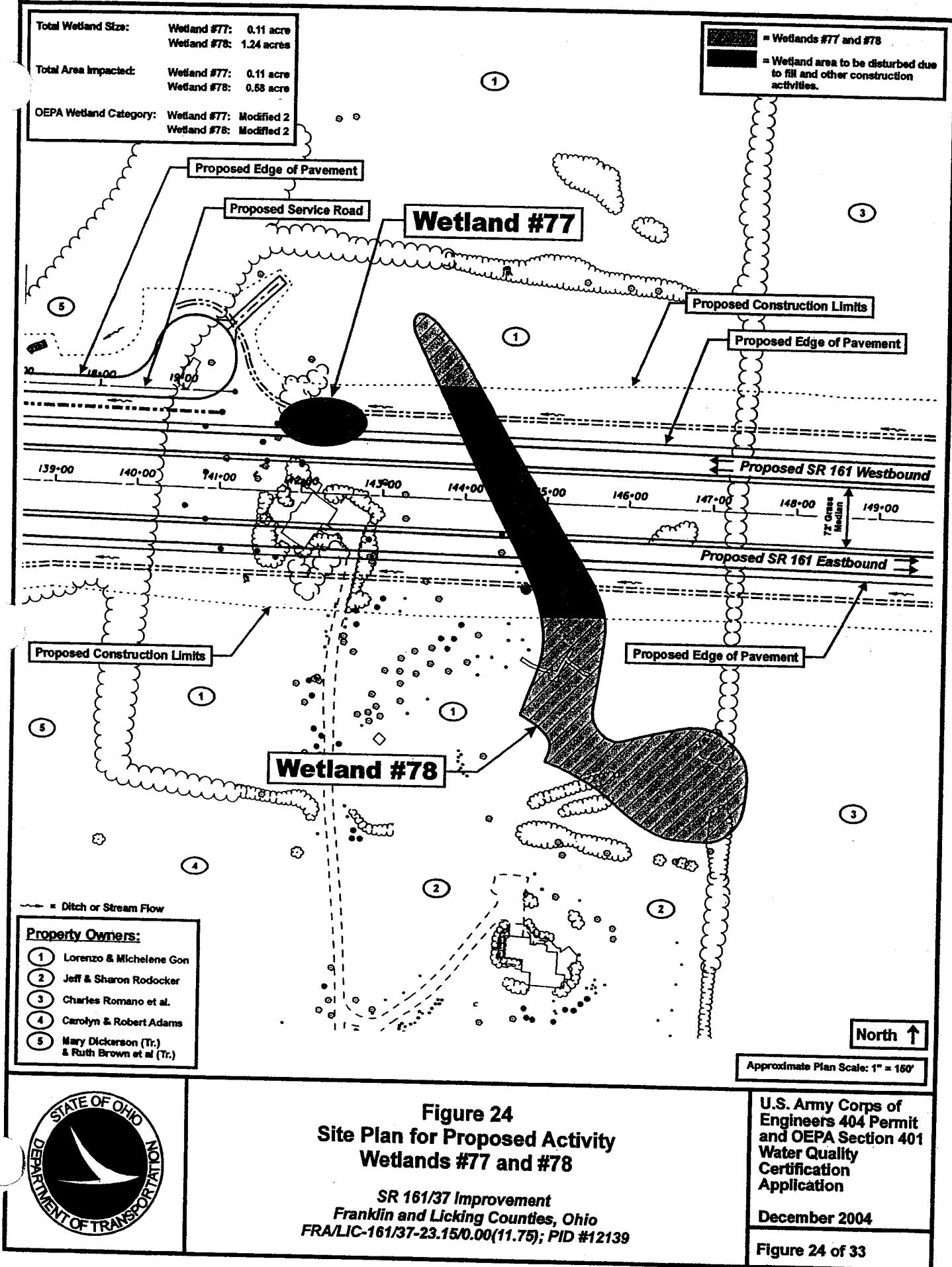
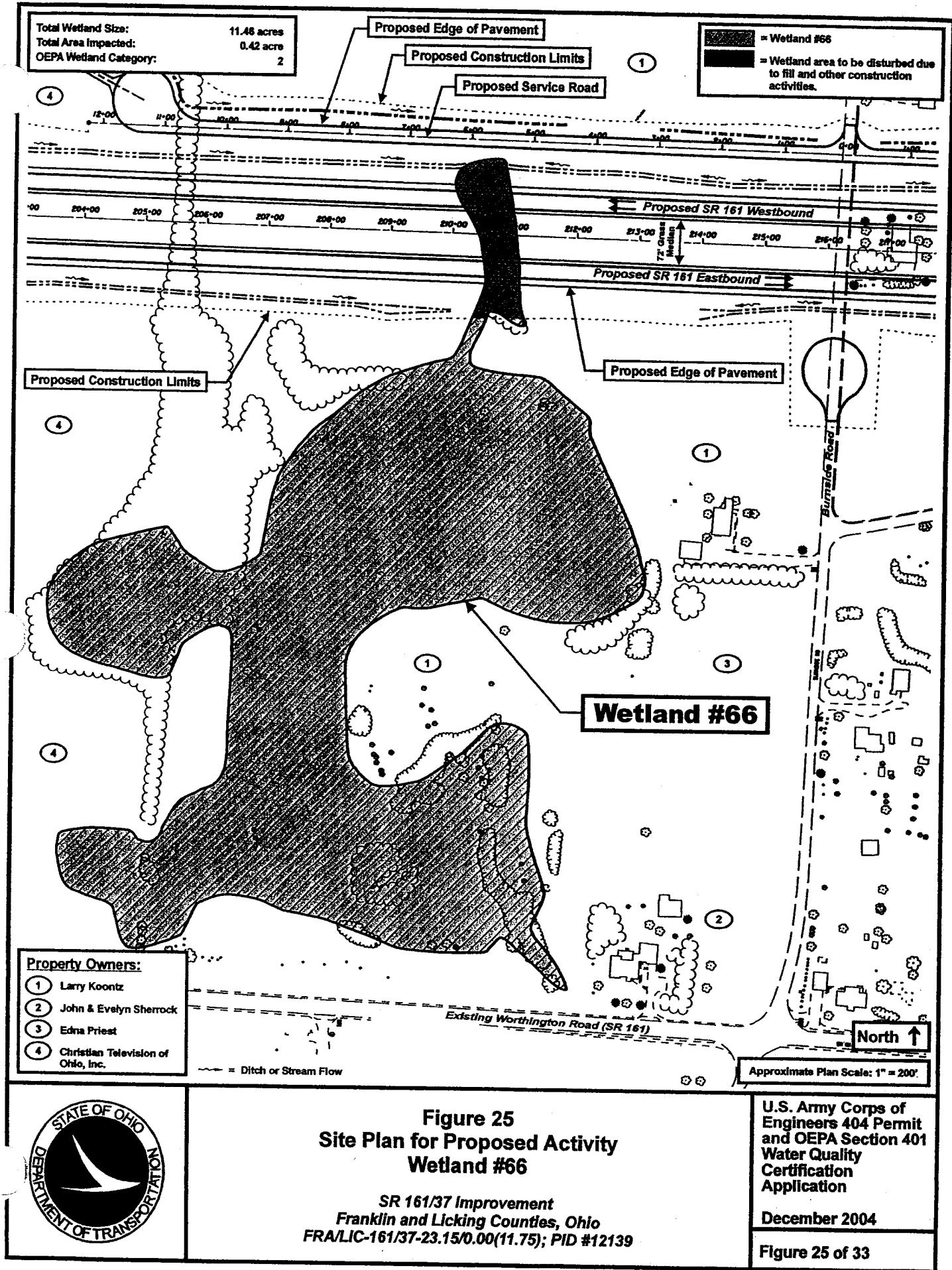


Figure 24
Site Plan for Proposed Activity
Wetlands #77 and #78

42 of 60



Total Wetland Size: 1.47 acres
 Total Area Impacted: 0.01 acre
 OEPA Wetland Category: 1

Wetland #69

= Wetland #69

= Wetland area to be disturbed due to fill and other construction activities.

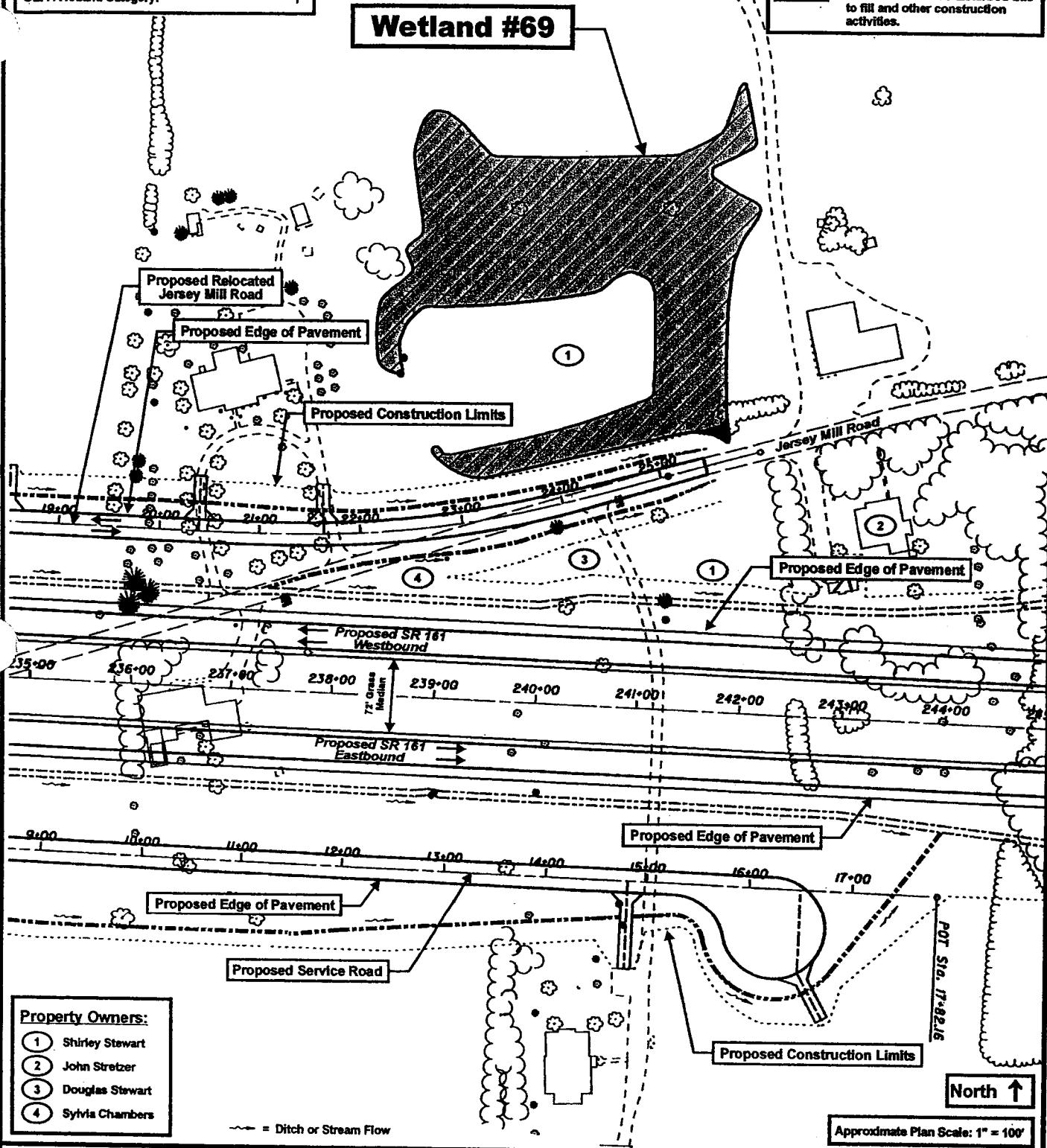


Figure 26
Site Plan for Proposed Activity
Wetland #69

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 26 of 33



Total Wetland Size:
0.09 acre
Total Area Impacted:
0.05 acre
OEPA Wetland Category:
1 or 2

0.09 acre
0.05 acre
1 or 2

= Wetland #117
= Wetland area to be disturbed due
to fill and other construction
activities.

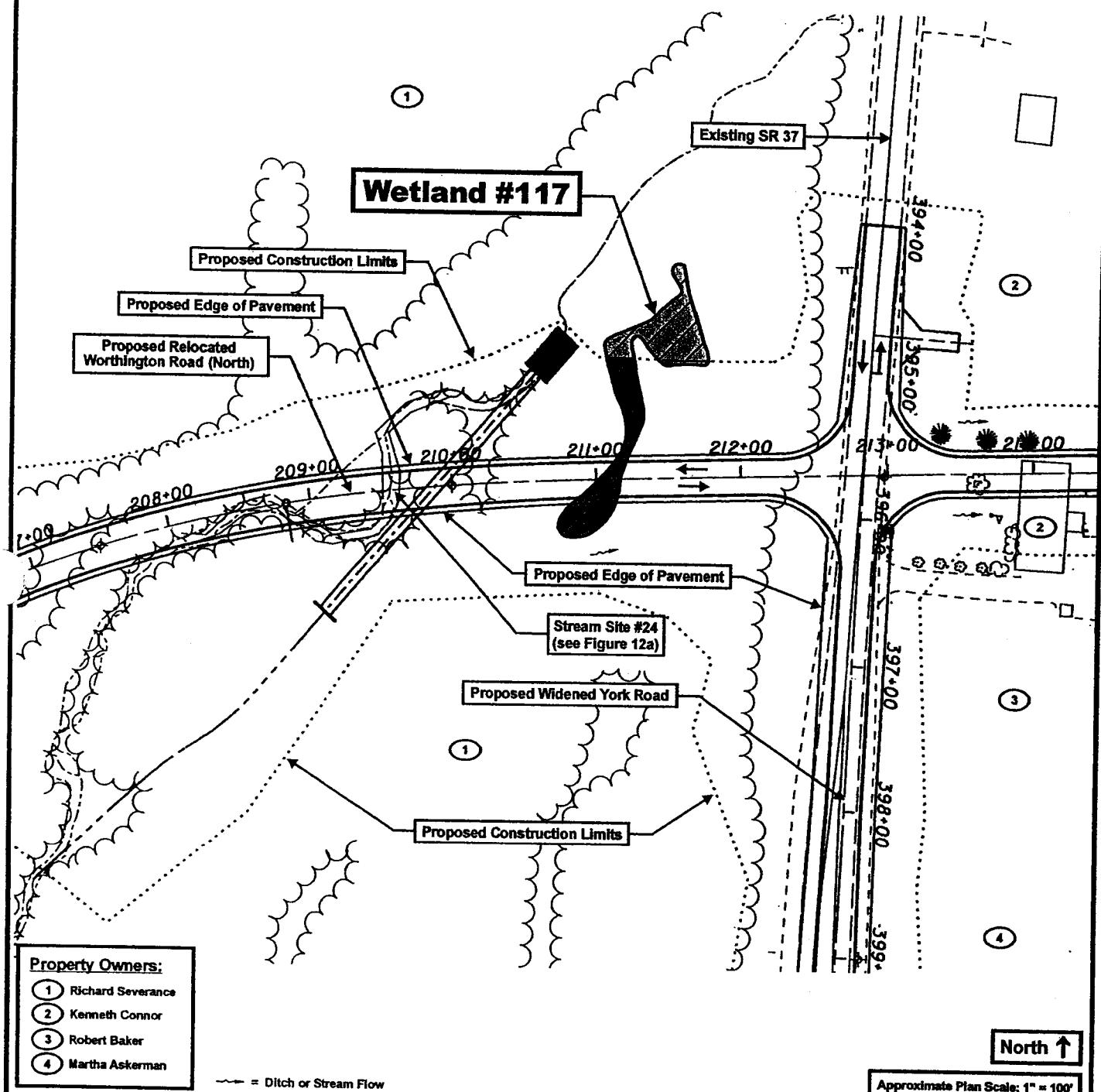


Figure 27
Site Plan for Proposed Activity
Wetland #117

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 27 of 33



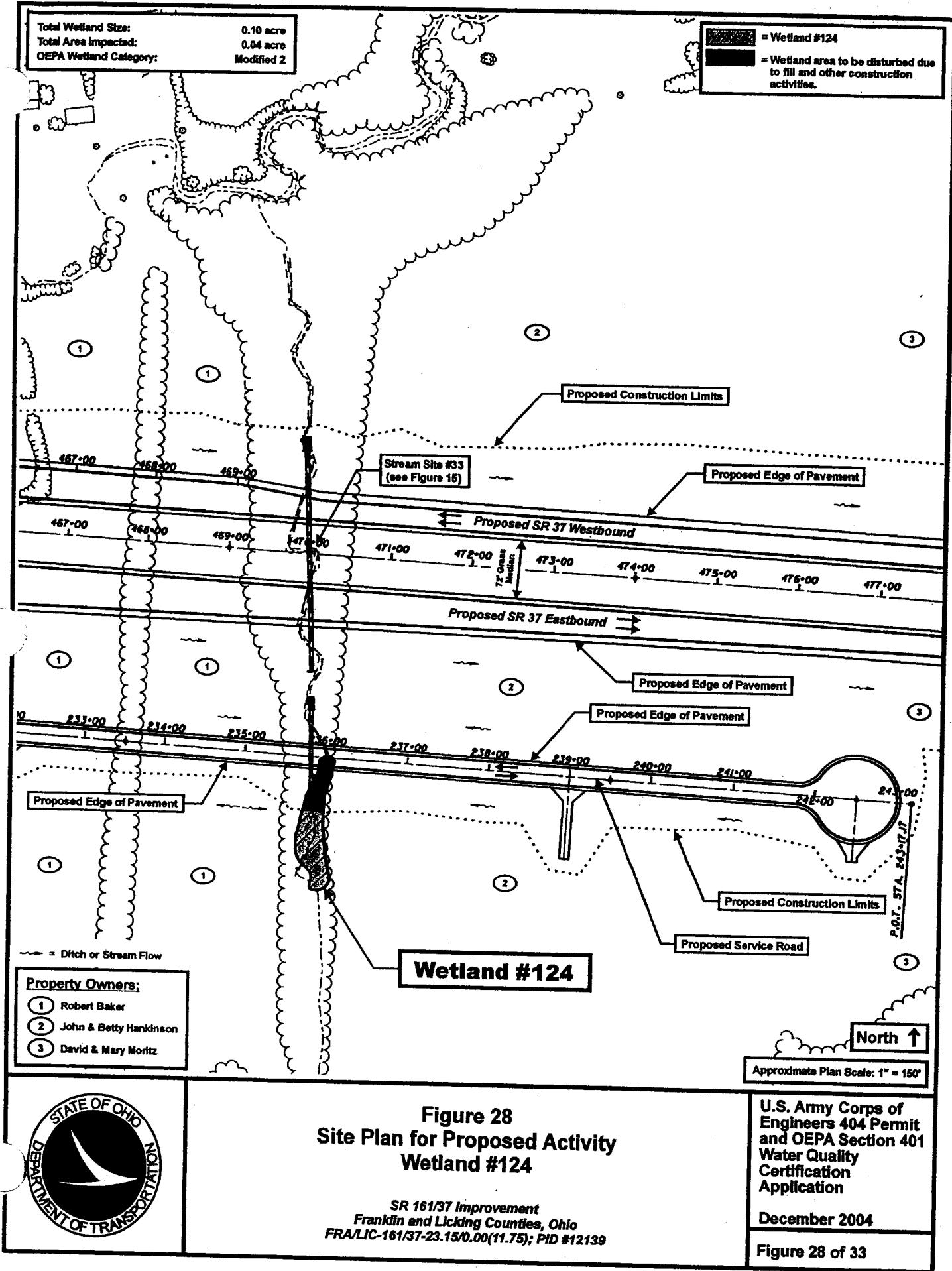


Figure 28
Site Plan for Proposed Activity
Wetland #124

Total Wetland Size:
0.08 acres
Total Area Impacted:
0.01 acre
OEPA Wetland Category:
Modified 2

0.08 acres
0.01 acre
Modified 2

= Wetland #136
= Wetland area to be disturbed due to fill and other construction activities.

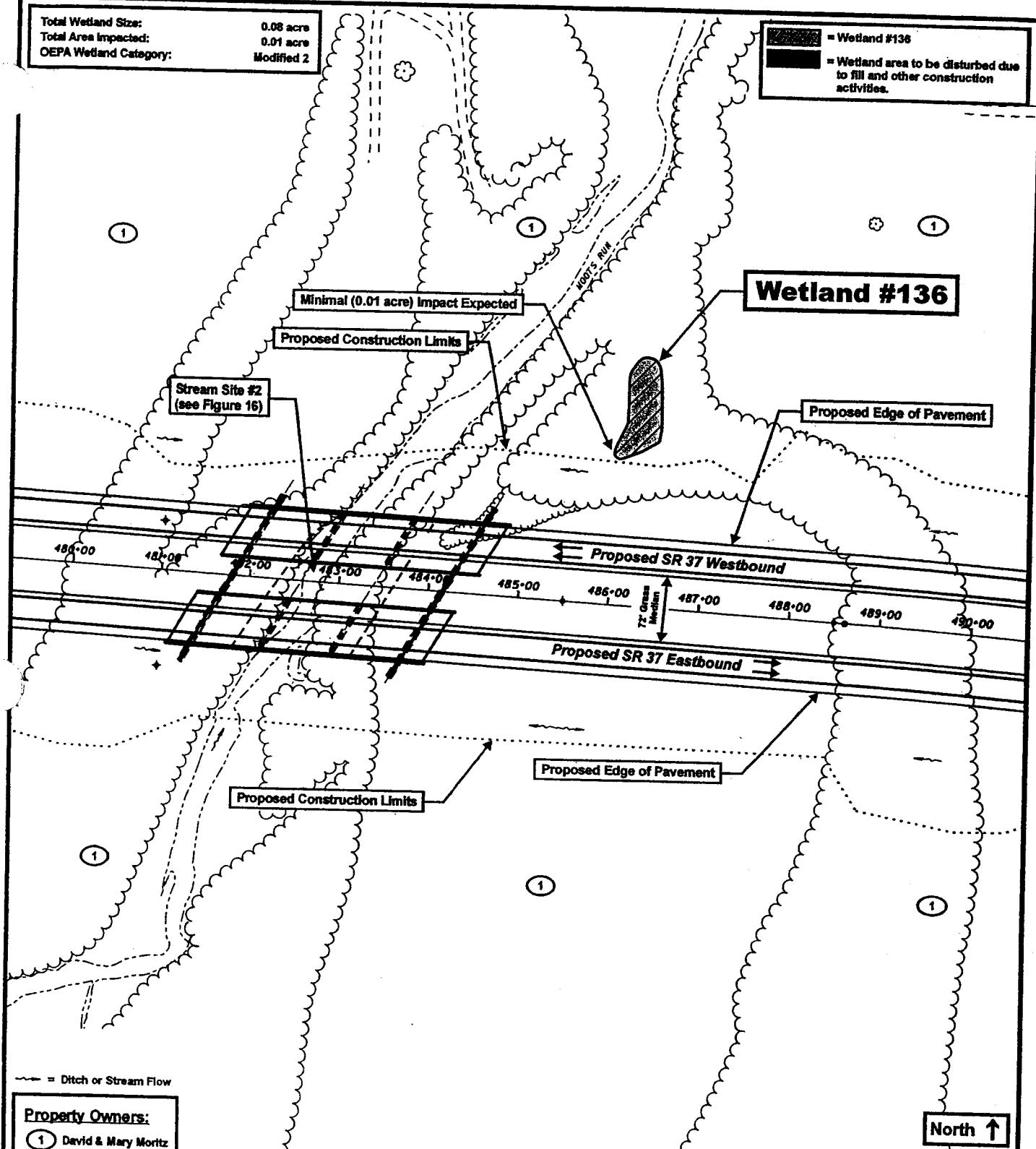


Figure 29
Site Plan for Proposed Activity
Wetland #136

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 29 of 33

Total Wetland Size:
Total Area Impacted:
OEPA Wetland Category:

2.97 acres
0.32 acres
1 or 2

= Wetland #88c

= Wetland area to be disturbed due to fill and other construction activities.

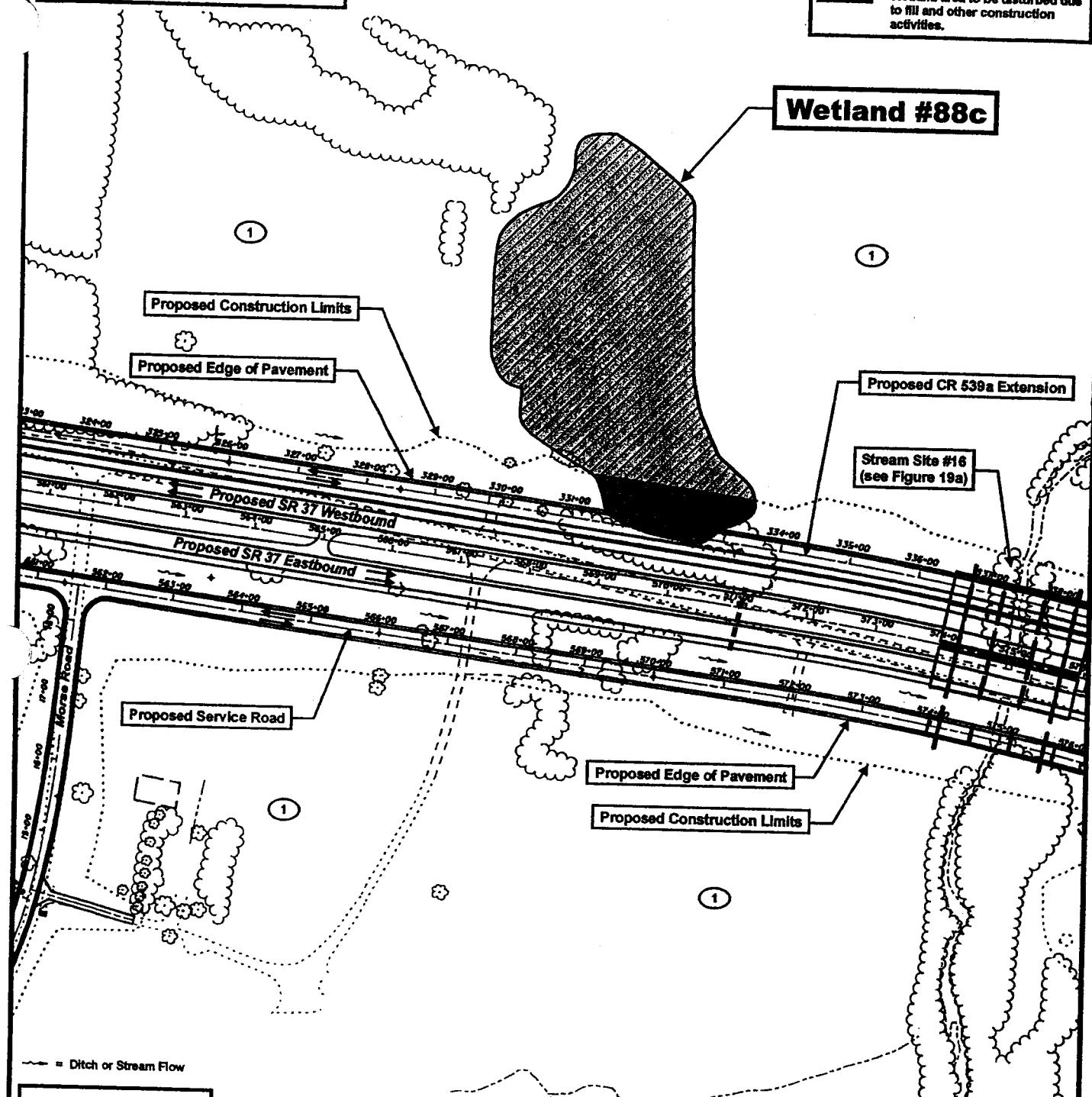
Wetland #88c

Figure 30
Site Plan for Proposed Activity
Wetland #88c

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

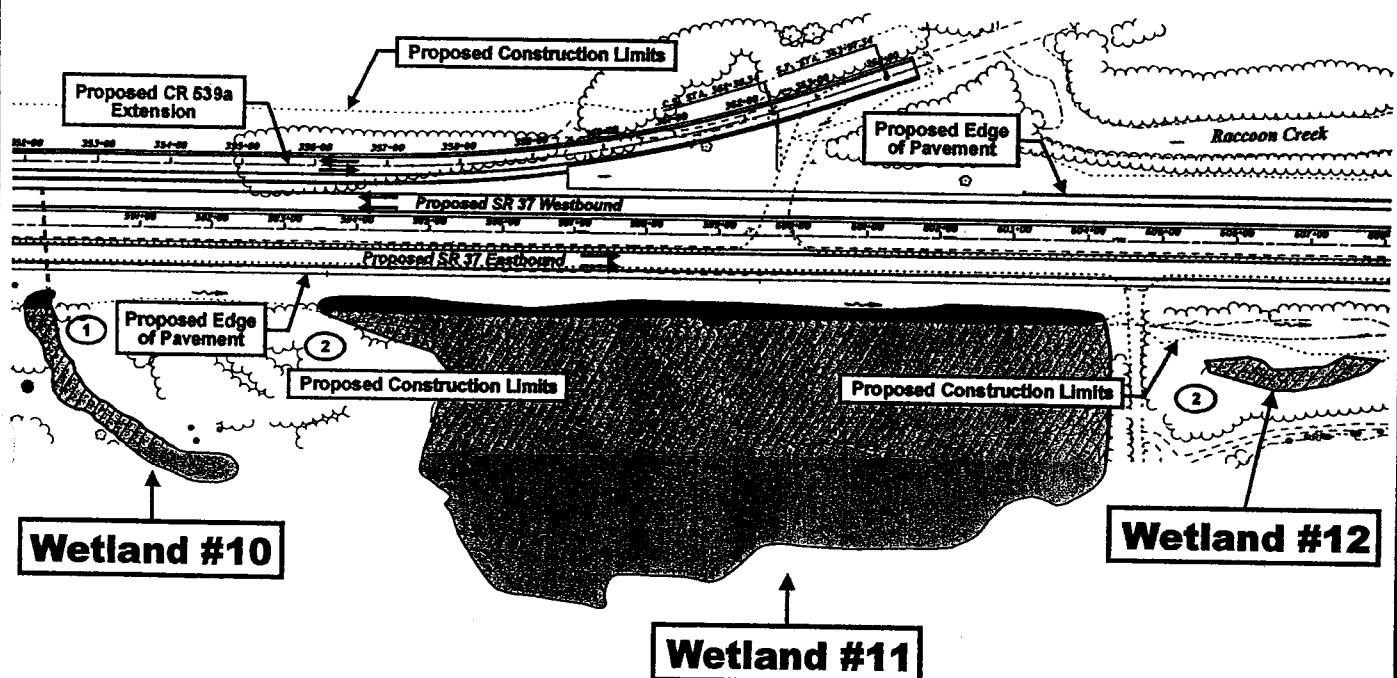
December 2004

Figure 30 of 33



Wetland #10 - Total Wetland Size:	0.27 acres
Wetland #10 - Total Area Impacted:	0.02 acre
Wetland #10 - OEPA Wetland Category:	Modified 2
Wetland #11 - Total Wetland Size:	7.09 acres
Wetland #11 - Total Area Impacted:	0.56 acre
Wetland #11 - OEPA Wetland Category:	3
Wetland #12 - Total Wetland Size:	0.14 acre
Wetland #12 - Total Area Impacted:	0.01 acre
Wetland #12 - OEPA Wetland Category:	2 or 3

White Box = Wetlands #10, #11 and #12
 Black Box = Wetland area to be disturbed due to fill and other construction activities.



~~~~ = Ditch or Stream Flow

|                                  |
|----------------------------------|
| <b>Property Owners:</b>          |
| 1 Richard Neff                   |
| 2 Owens Corning Fiberglass Corp. |

North ↑

Approximate Plan Scale: 1" = 250'



### Figure 31 Site Plan for Proposed Activity Wetlands #10, #11, and #12

SR 161/37 Improvement  
Franklin and Licking Counties, Ohio  
FRA/LJC-161/37-23.15/0.00(11.75); PID #12139

U.S. Army Corps of  
Engineers 404 Permit  
and OEPA Section 401  
Water Quality  
Certification  
Application

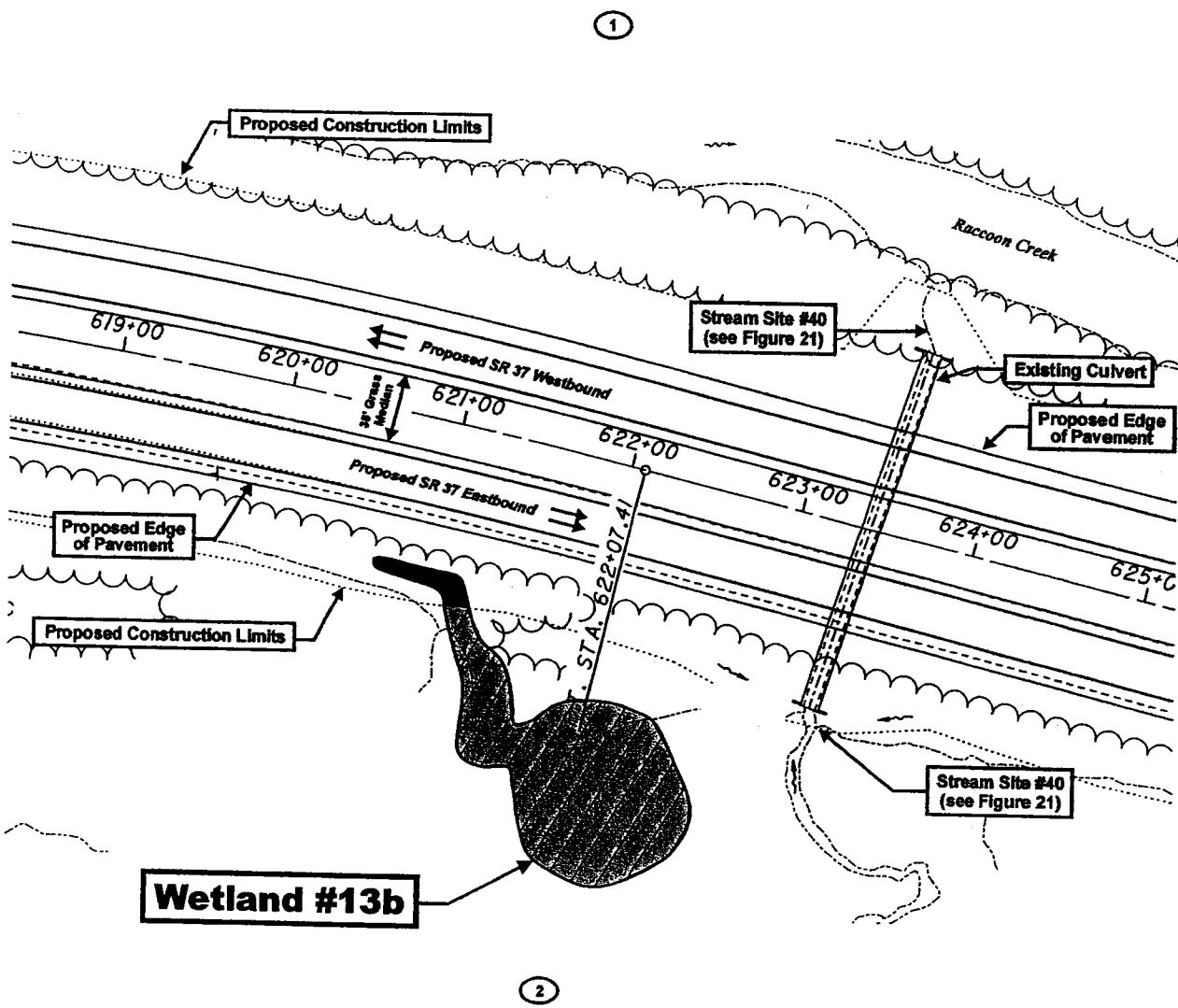
December 2004

Figure 31 of 33

Total Wetland Size:  
0.26 acre  
Total Area Impacted:  
0.02 acre  
OEPA Wetland Category:  
2

0.26 acre  
0.02 acre  
2

■ = Wetland #13b  
■ = Wetland area to be disturbed due to fill and other construction activities.



~~~ Ditch or Stream Flow

Property Owners:

- 1 T. J. Evans Foundation
- 2 Owens Corning Fiberglass Corp.

North ↑

Plan

Approximate Plan Scale: 1" = 100'



Figure 32
Site Plan for Proposed Activity
Wetland #13b

SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.150.00(11.75); PID #12139

U.S. Army Corps of Engineers 404 Permit and OEPA Section 401 Water Quality Certification Application

December 2004

Figure 32 of 33

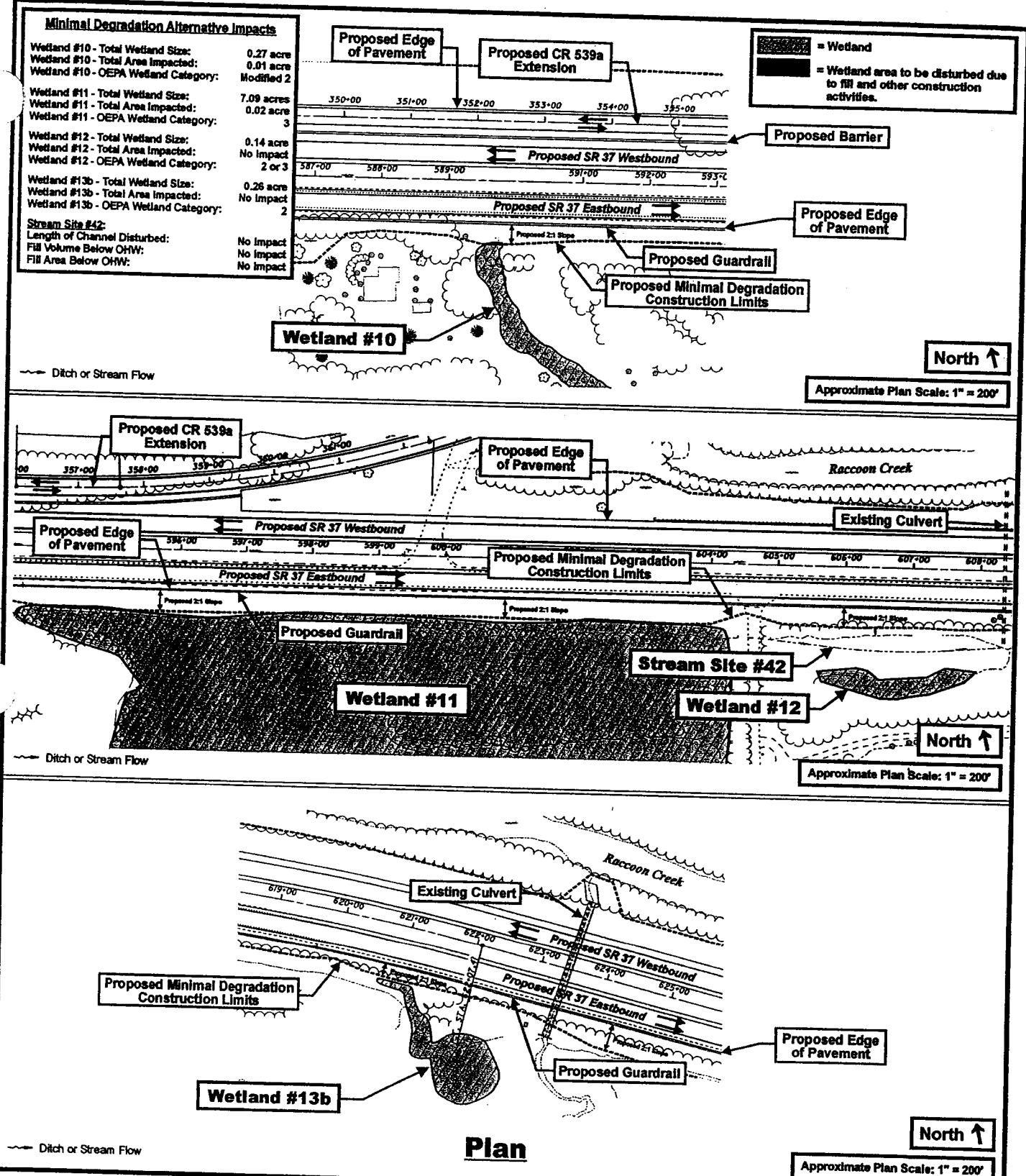


Figure 33
Minimal Degradation Alternative (Plan View Only)
Wetlands 10, 11, 12, 13b and Stream Site #42

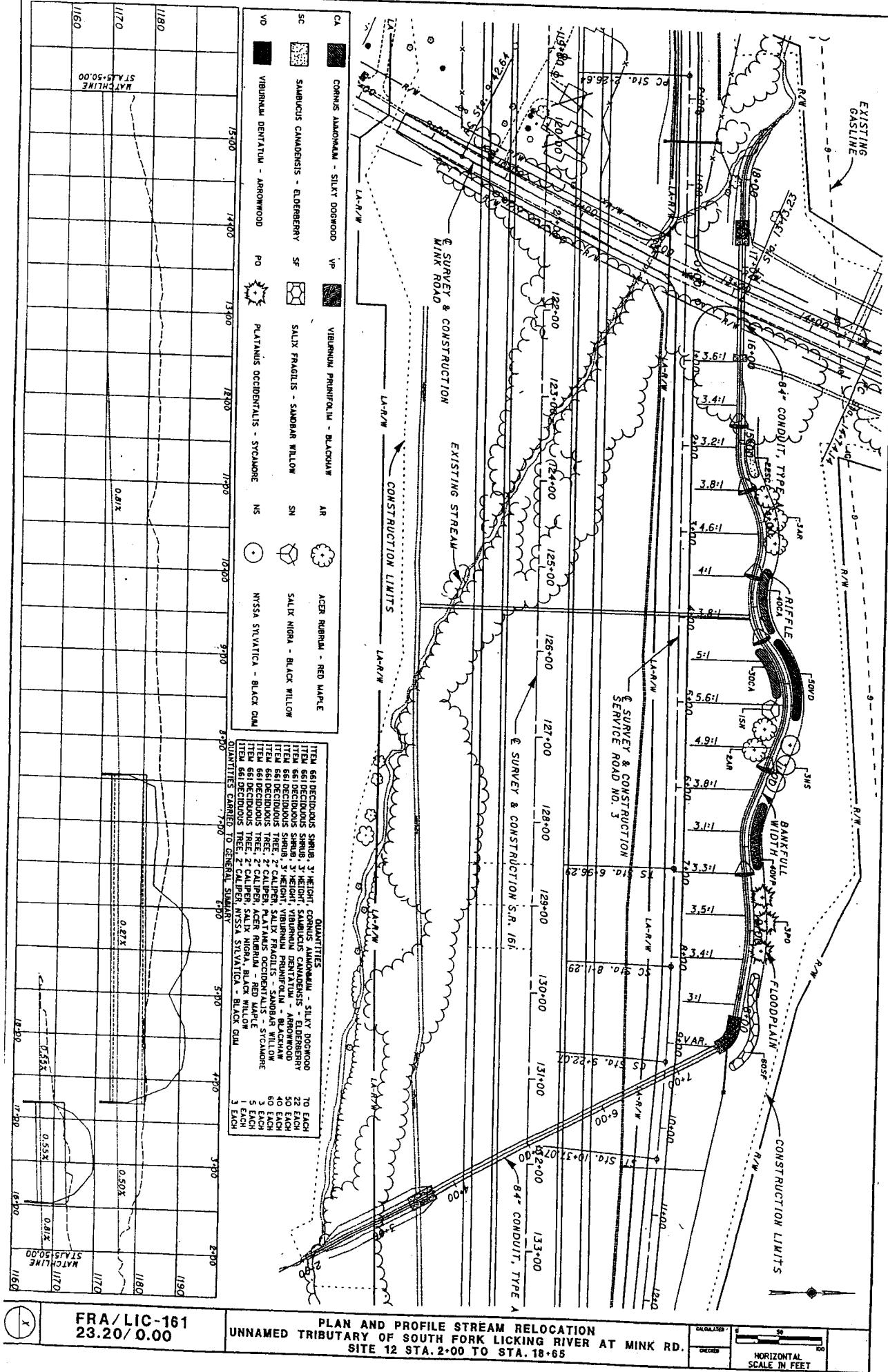
U.S. Army Corps of
Engineers 404 Permit
and OEPA Section 401
Water Quality
Certification
Application

December 2004

Figure 33 of 33



SR 161/37 Improvement
Franklin and Licking Counties, Ohio
FRA/LIC-161/37-23.15/0.00(11.75); PID #12139

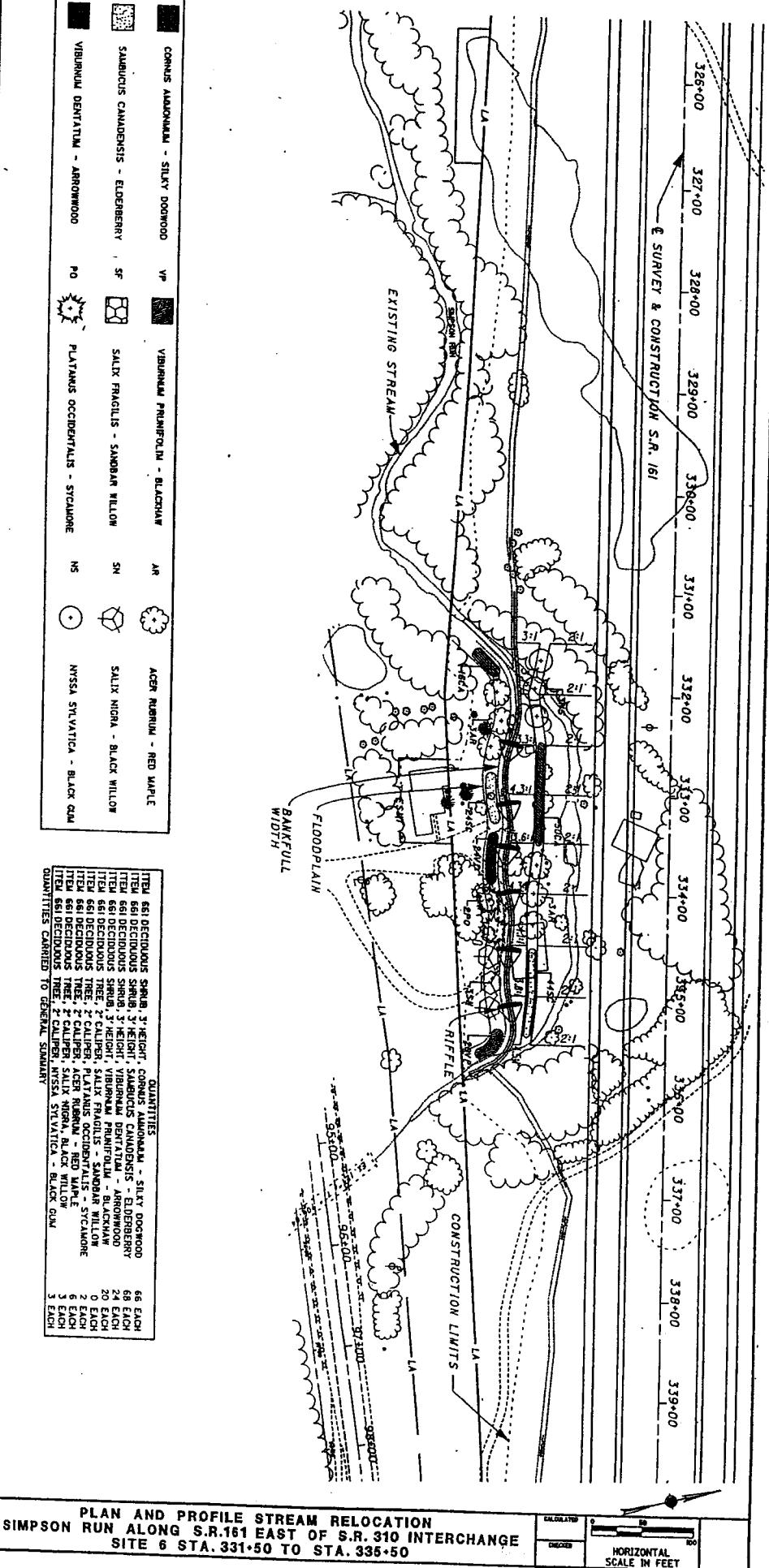


| | | | | | |
|----|----------------------------------|----|----------------------------------|----|-----------------------------|
| CA | CORNU ALPINUM - SILKY DOCKWOOD | VP | VIBURNUM PRUNIFOLIUM - BLACKHAW | AR | AZORELLE - RED MAPLE |
| SC | SAMBUCUS CANADENSIS - ELDERBERRY | SF | SALIX FRAGILIS - SANDBAR WILLOW | SN | SALIX NIGRA - BLACK WILLOW |
| VD | VIBURNUM DENTATUM - ARROWWOOD | PO | PLATANUS OCCIDENTALIS - SYCAMORE | NS | NYSSA SYLVATICA - BLACK GUM |

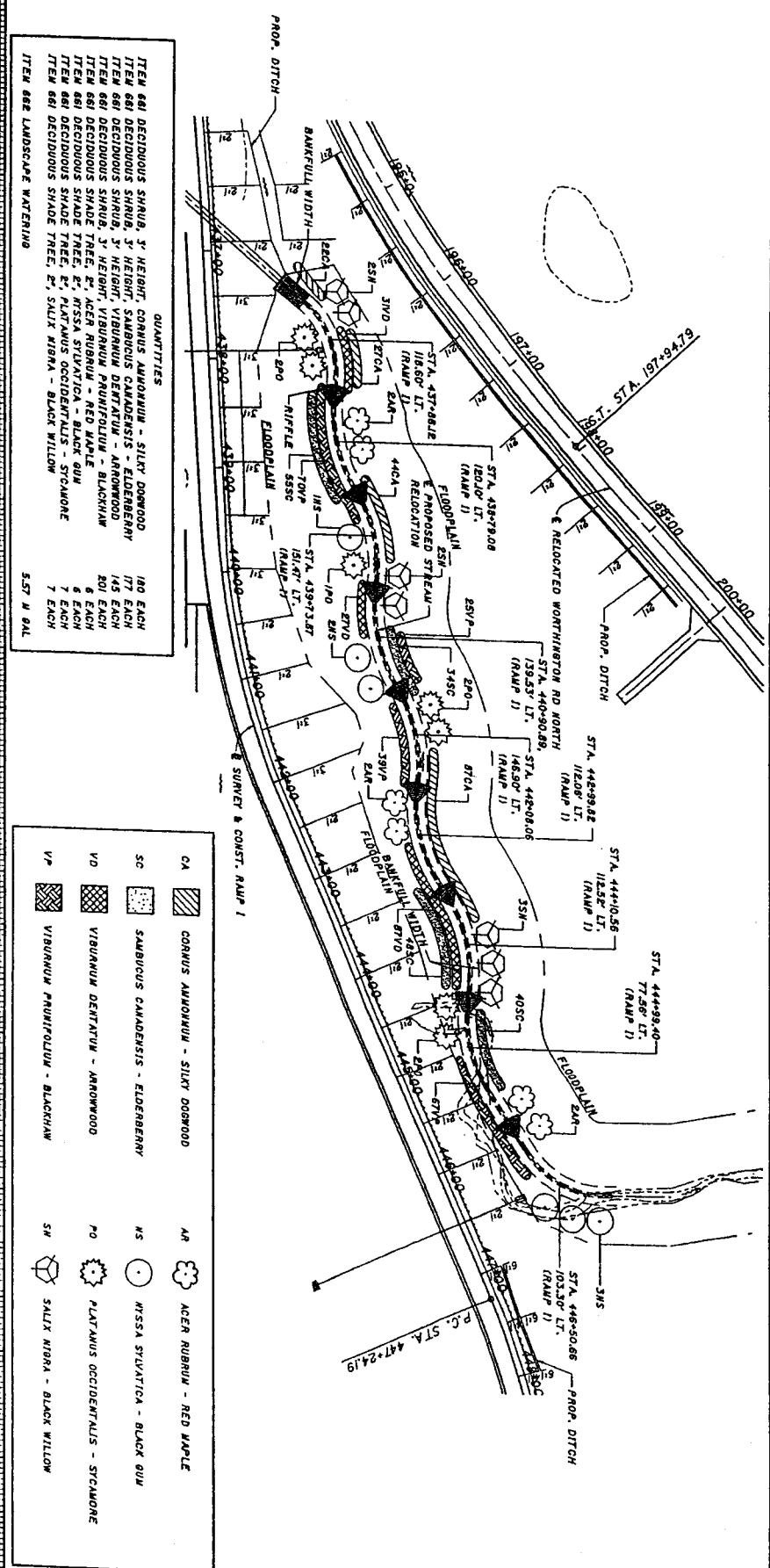
ITEM 66 DECIDUOUS SHRUB, 3' HEIGHT CORNU ALPINUM - SILKY DOCKWOOD
 ITEM 66 DECIDUOUS SHRUB, 3' HEIGHT SAMBUCUS CANADENSIS - ELDERBERRY
 ITEM 66 DECIDUOUS SHRUB, 3' HEIGHT VIBURNUM DENTATUM - ARROWWOOD
 ITEM 66 DECIDUOUS TREE, 2' CALIPER SALIX FRAGILIS SANDBAR WILLOW
 ITEM 66 DECIDUOUS TREE, 2' CALIPER PLATANUS OCCIDENTALIS - SYCAMORE
 ITEM 66 DECIDUOUS TREE, 2' CALIPER ACER RUBRUM - RED MAPLE
 ITEM 66 DECIDUOUS TREE, 2' CALIPER SALIX NIGRA - BLACK WILLOW
 ITEM 66 DECIDUOUS TREE, 2' CALIPER NYSSA SYLVATICA - BLACK GUM

QUANTITIES
 66 EACH
 66 EACH
 66 EACH
 20 EACH
 2 EACH
 6 EACH
 3 EACH

QUANTITIES CARRIED TO GENERAL SUMMARY



FRA/LIC-161
 23.20/0.00



PLAN AND PROFILE- STREAM RELOCATION
 SITE 24 - UNNAMED TRIBUTARY TO RACCOON CREEK
 EAST AT THE S.R. 37 INTERCHANGE

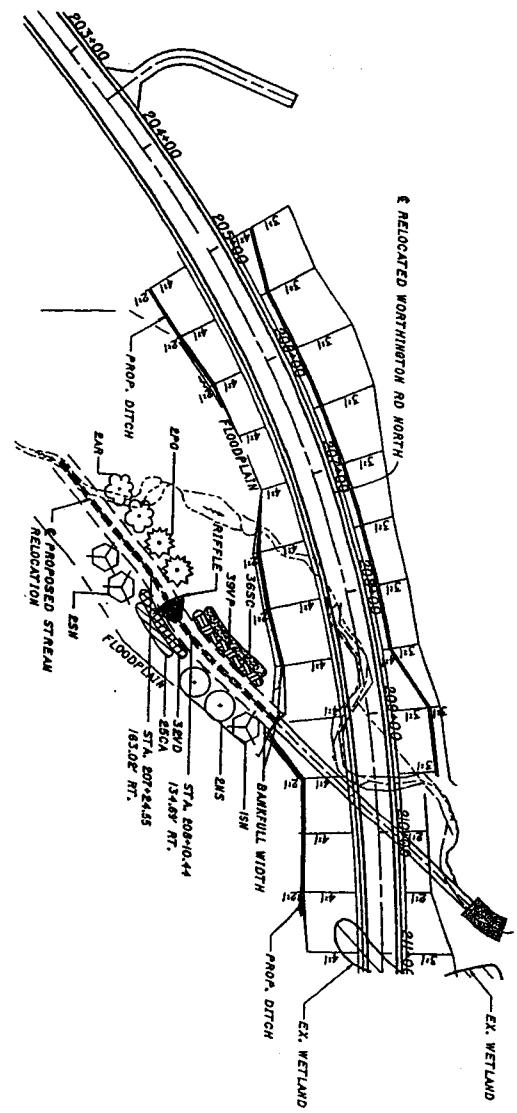
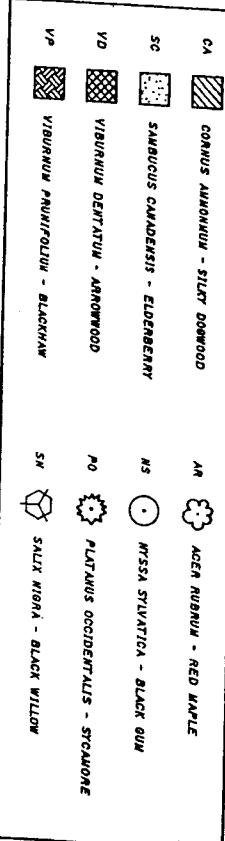
SCALE
 100'
 HORIZONTAL SCALE IN FEET



LIC-161-6.65
 LIC-37-10.25

| QUANTITIES | |
|---|---------|
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, CORNUS AMOMUM - SILTY DOOGWOOD | 25 EACH |
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, SAMBUCUS CANADENSIS - ELDERBERRY | 36 EACH |
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, VIARURUM DENTATUM - ARROWWOOD | 36 EACH |
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, VIARURUM PRUNIFOLIUM - BLACKHAW | 39 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 6", ACER RUBRUM - RED MAPLE | 2 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 6", NYSSA SYLVATICA - BLACK GUM | 2 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 6", PLATANUS OCCIDENTALIS - STONEOAK | 2 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 6", SALIX NIgra - BLACK WILLOW | 3 EACH |
| ITEM 662 LANDSCAPE WATERING | |

1/16" = 64'



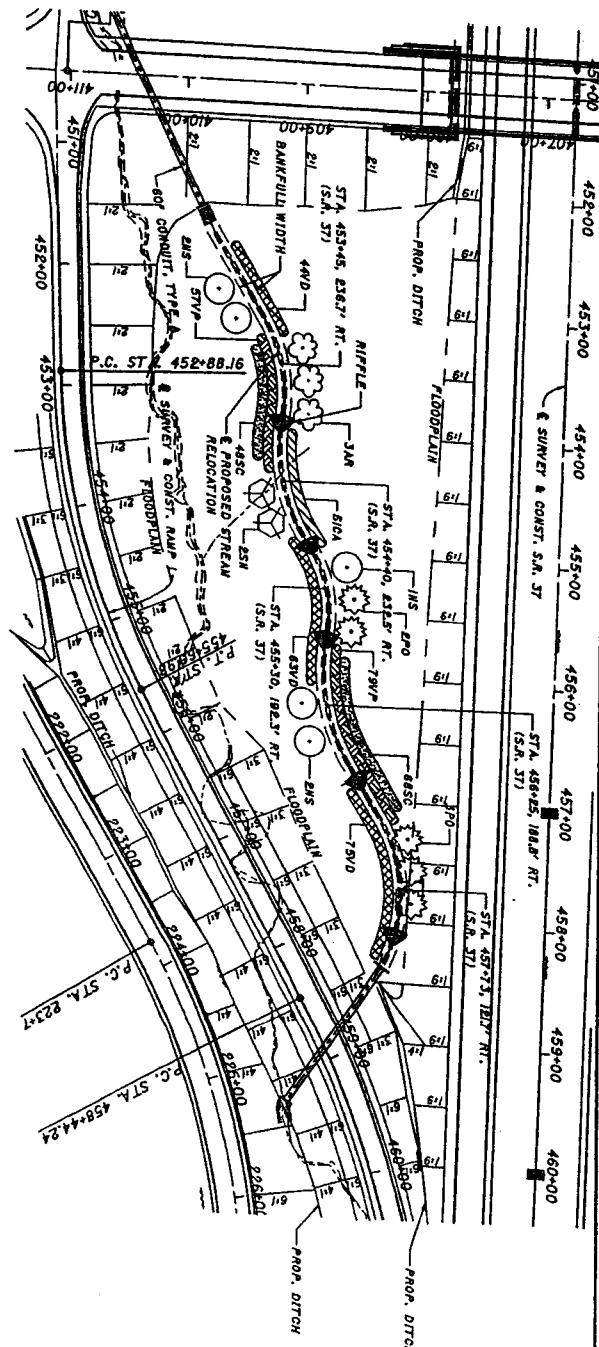
PLAN AND PROFILE- STREAM RELOCATION
SITE 24 - UNNAMED TRIBUTARY TO RACCOON CREEK
EAST AT THE S.R. 37 INTERCHANGE



LIC-161-6.65
LIC-37-10.25

CALIBRADE JHA
0 50 100
WAA 25 50 100
HORIZONTAL SCALE IN FEET

55 of 60



ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, CONES AMMONIUM - SILK DOGWOOD
 ITEM 662 DECIDUOUS SHRUB, 3' HEIGHT, SAMBUCUS CANADENSIS - ELDERBERRY
 ITEM 681 DECIDUOUS SHRUB, 3' HEIGHT, VIBURNUM DENTATUM - AMOURWOOD
 ITEM 681 DECIDUOUS SHADE TREE, 3' HEIGHT, VIBURNUM PRUNIFOLIUM - BLACKHAW
 ITEM 681 DECIDUOUS SHADE TREE, 2' AGER RUBRUM - RED MAPLE
 ITEM 681 DECIDUOUS SHADE TREE, 2' NYSSA SYLVATICA - BLACK BIRCH
 ITEM 681 DECIDUOUS SHADE TREE, 2' PLATANUS OCCIDENTALIS - STONECURE
 ITEM 681 DECIDUOUS SHADE TREE, 2' SALIX NIIRA - BLACK WILLOW

 ITEM 682 LANDSCAPE WATERING

| | | | |
|---|---|---|---|
|  | CA
<i>CORNUS AMOMUM</i> - SILKY DOGWOOD |  | AR
<i>ACER RUBRUM</i> - RED MAPLE |
|  | SC
<i>SAMBUCUS CANADENSIS</i> - ELDERBERRY |  | NS
<i>NYSSA SYLVATICA</i> - BLACK SUN |
|  | VD
<i>VIBURNUM DENTATUM</i> - ARROWWOOD |  | PO
<i>PLATANUS OCCIDENTALIS</i> - Sycamore |
|  | VP
<i>VIBURNUM PRUNIFOLIUM</i> - BLACKHAW |  | SN
<i>SALEY NIGRA</i> - BLACK WILLOW |

**PLAN AND PROFILE- STREAM RELOCATION
SITE 28 - UNNAMED TRIBUTARY OF MOOTS RUN
SOUTHWEST OF S.R. 37 INTERCHANGE**

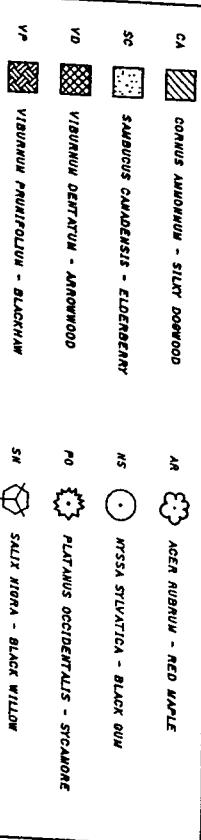
LIC-161-6.65
LIC-37-10.25

| | | |
|-------------------|---|---|
| CALCULATED
JWA |  |  |
| DECODED
WAA | HORIZONTAL
SCALE IN FEET | |

56 of 60

| QUANTITIES | |
|--|---------|
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, CORNUS AMOMNIA - SILKY DOGWOOD | 42 EACH |
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, SWINGUS CANADENSIS - ELDERBERRY | 0 EACH |
| ITEM 661 DECIDUOUS SHRUB, 3' HEIGHT, VIBURNUM DENTATUM - ARROWWOOD | 33 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 3' HEIGHT, AGERATUM RUBRUM - BLACKHAW | 2 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 3' HEIGHT, NYSSA SIEVATICA - RED MAPLE | 1 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 3' HEIGHT, PLATANUS OCCIDENTALIS - SycAMORE | 1 EACH |
| ITEM 661 DECIDUOUS SHADE TREE, 3' HEIGHT, SALIX NIOMA - BLACK WILLOW | 2 EACH |
| ITEM 662 LANDSCAPE WATERING | |

QAS N SLOPES



PLAN AND PROFILE- STREAM RELOCATION SITE 42
S.R. 37 STA. 605+00 TO STA. 608+31.81

1/4

LIC-161-6.65
LIC-37-10.25

CALCULATED JHA
DESIGN WAA
0 50 100
HORIZONTAL SCALE IN FEET

57 of 60

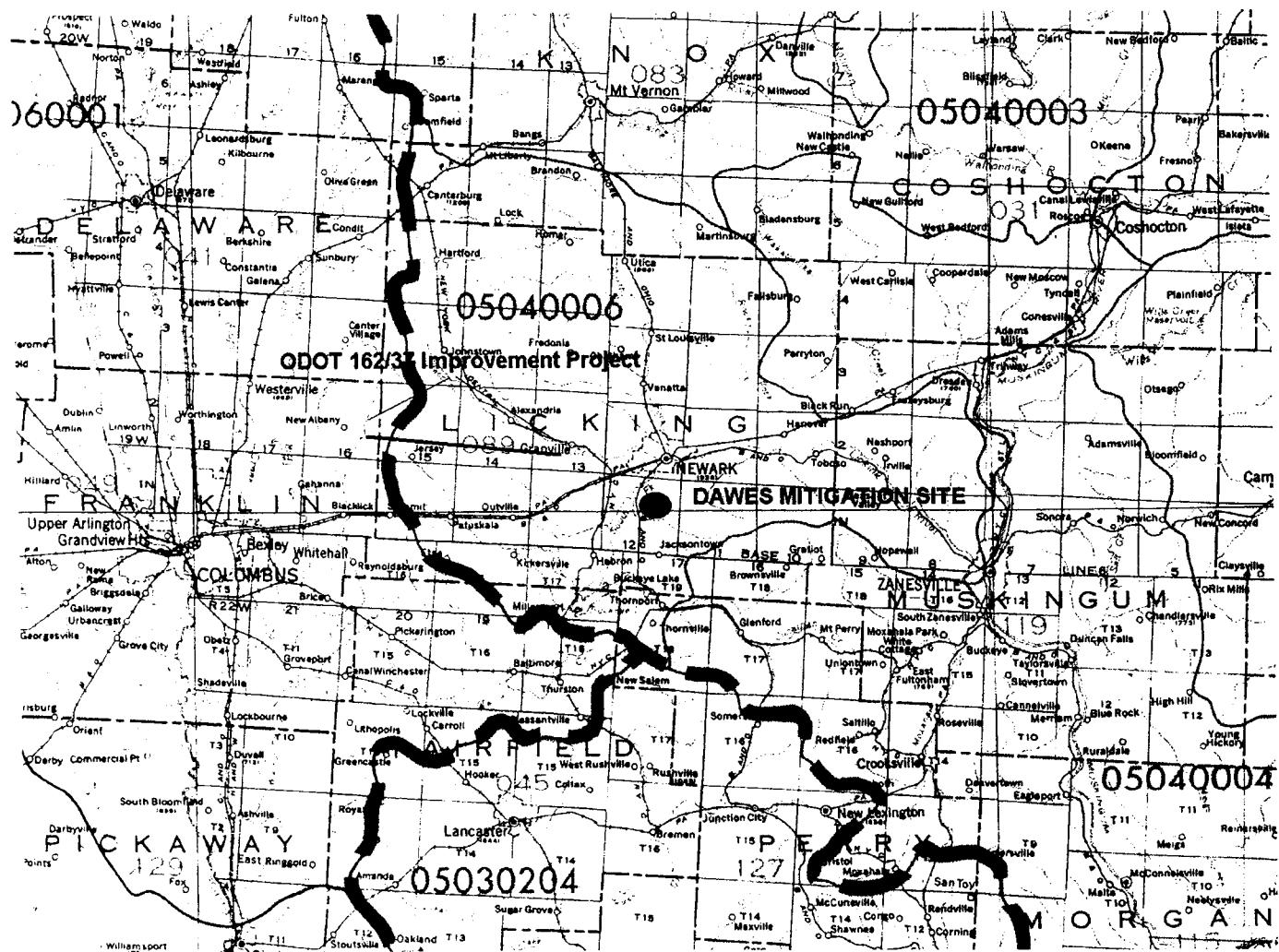
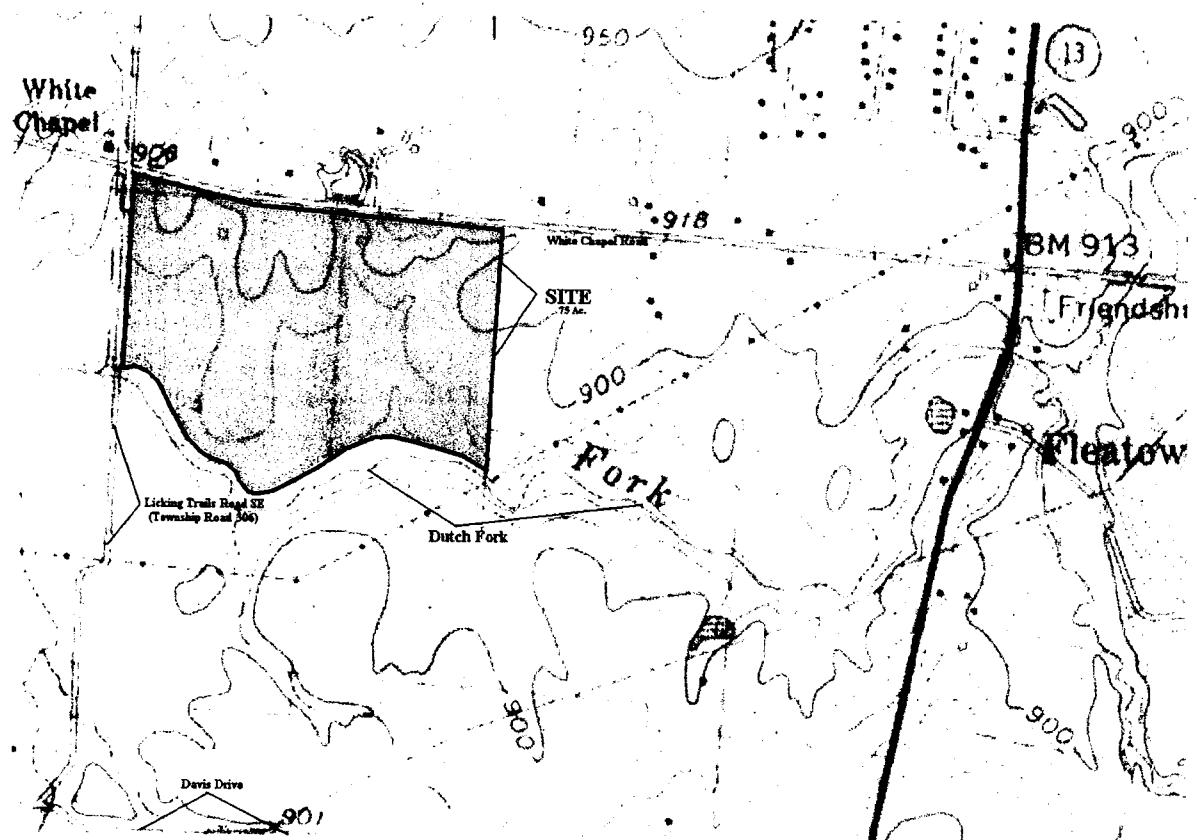


Figure 4: USGS Watershed Service Area Map Showing Impact Site and Mitigation Site



59 of 60

Figure 2: USGS Topographic Map

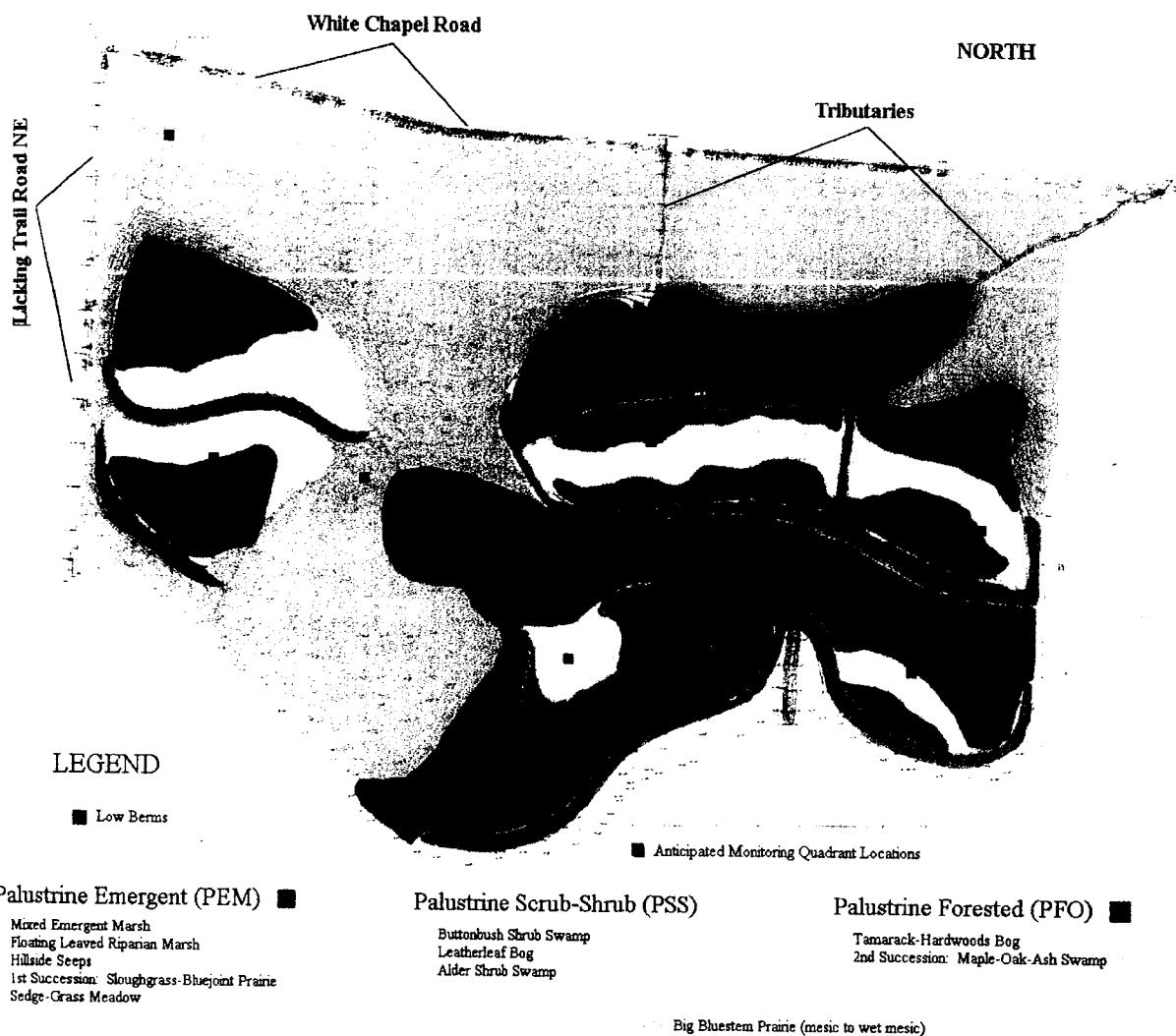


Figure 7: Conceptual Wetland Mitigation Plan Including Anticipated Monitoring Plot Locations

