

APPENDIX E

**Initiate Formal Consultation
With Biological Assessment**



DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
3701 Bell Road
NASHVILLE, TENNESSEE 37214

July 1, 2008

REPLY TO
ATTENTION OF:

Regulatory Branch

SUBJECT: File No. 2007-01488 and 2007-02202; Section 7 Consultation for City of Athens Proposed Waterline and Sewerline Crossings on Piney Creek and French Mill Creek, a tributary to Tennessee River Mile 310.8R, Limestone County, Alabama

Mr. William J. Pearson
U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

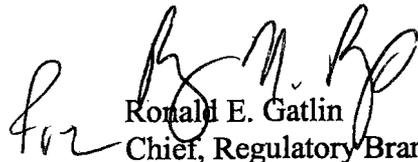
The city of Athens, Alabama is proposing a new waterline and sewerline which would cross Piney Creek and French Mill Creek in various locations. This office is reviewing a Department of the Army (DA) permit for the proposed pipeline crossings. A public notice for the proposed work will be issued upon receipt of complete information concerning the crossings. However, in previous surveys of the area and previous coordination with your office, indicate that the presence of the armored snail (*Maristonia pachyta*) and the slender campeloma snail (*Campeloma decampi*) are known to occur within the project area. Your agency responded by letter dated March 28, 2008, providing information concerning formal consultation for the project. We believe that a "may affect" determination would be warranted for this project since "take" could occur as a result of the proposed creek crossing construction activities.

We are considering issuing a permit to the city of Athens, Alabama under Section 404 of the Clean Water Act. After discussions with your agency and the survey results, we have concluded that the project may affect a portion of the population of the two snail species. As a result, we request initiation of formal consultation with your agency, pursuant to Section 7(a)(2) of the Endangered Species Act, as amended. Please find enclosed the Biological Assessment, dated May 2008 (revised July 2008), prepared for this proposed project.

I believe this information is sufficient to allow us to initiate formal consultation. We await your evaluation of the potential impacts of this project upon the snail species.

If you have any questions, please contact Ms. Amy Robinson of my staff at the above address or telephone 615-369-7509.

Sincerely,


Ronald E. Gatlin
Chief, Regulatory Branch
Operations Division

Copy Furnished:

Ms. Nina Williams
Krebs Architectural and Engineering, Inc.
2100 River Haven Drive, Suite 100
Birmingham, Alabama 35244

Ms. Samantha Strickland
Tennessee Valley Authority
P.O. Box 1010
Muscle Shoals, Alabama 35662-1010

Ms. Tonya Mayberry
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36110

 BISHOP/OP-F

TRANSMITTAL LETTER

TO: Amy Robinson
U.S. Army COE
3701 Bell Road
Nashville, TN 37214-2660

DATE: July 1, 2008
PROJECT NAME: Piney Creek Sewers
CONTRACT NO.: 07034

SENT VIA:

- Regular Mail
 Overnight Mail
 Hand Delivered
 Pick Up

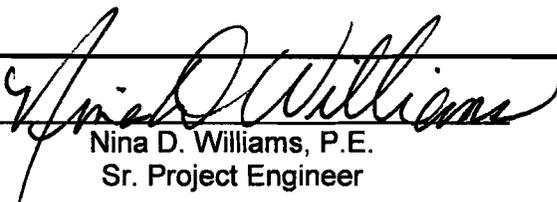
TRANSMITTED:

- For Your Use/Record
 For Review and Comment
 As Requested
 For Execution

COPIES	DESCRIPTION
1	Revised Biological Assessment (July 2008)

COMMENTS

By


Nina D. Williams, P.E.
Sr. Project Engineer

cc: Mr. John Stockton
Ms. Samantha Strickland
Krebs File No. 07034/B3

03 JUL 2008

BIOLOGICAL ASSESSMENT

For

**The Piney and French Mill Creek Utilities Improvements
Athens, Alabama**

**May 2008
(Revised July 2008)**

**Submitted for:
City of Athens Utilities**

**Submitted by:
Krebs Architecture & Engineering, Inc.
2100 Riverhaven Drive
Birmingham, Al 35244
205-987-7411**

I. DESCRIPTION OF THE ACTION

The City of Athens Utilities is planning a sanitary sewer and water main project to be installed in the southeast portion of their service area adjacent to U.S. Highway 72, along a 2 mile stretch of Piney Creek and along a 1.5 mile section of French Mill Creek (reference Figure 1: Project Location Map). Specifically, the project will consist of approximately 24,000 linear feet of 8" and 12" water main and 19,500 linear feet of 8" through 24" sewer.

The improvements will be located south of U.S. Highway 72, west of Mooresville Rd., east of Cambridge Lane, and along the Piney Creek and French Mill Creek between the highway and the City's existing Canebrake pump station. The project is necessary to provide sewer service to the residential and commercial developments being planned and those currently underway. Construction of the improvements will result in multiple crossings of both Piney and French Mill Creeks. Temporary construction access across Piney Creek will also be necessary.

Alternatives to the project would consist of the installation of individual wells and septic tanks in an area of relatively shallow bedrock. The use of individual wells has the potential to cause a health threat as a result of improperly treated water consumption. The use of septic tanks has the potential to cause a health threat and have a large affect on the habitat as a result of the raw sewage getting in the ground water, surfacing on the ground, and getting in the streams.

The project requires a permit from the U.S. Army Corp of Engineers (COE) due to the planned stream crossings. Since the presence of two endangered species invokes the National Environmental Policy Act (NEPA), concurrence from the U.S. Fish & Wildlife Service is required.

The endangered species in question are 1) the E-Slender campeloma snail (*Campeloma decampi*), and 2) the E-Armored snail (*Marstonia pachyta/Pyrgulopsis pachyta*). The two species are on the endangered species list due to the fact that their only known habitat is in Piney Creek and its tributaries, and Limestone and Round Island Creeks in Limestone County, Alabama¹.

The project is intended to be a final method of providing water and sewer service to the developing areas south of U.S. Highway 72. The sewer design is based on full development of the drainage basin within the City's service area. Although the trunk sewer design evaluated possible future collector sewer

and service line locations to minimize future environmental impacts along the creeks, the collector sewers and service lines to be installed in the future should be treated as separate projects to be permitted as required.

II. DESCRIPTION OF THE AFFECTED AREA

The affected area is located in Sections 23, 24 and 25 of Township 3 South, Range 4 West of Limestone County, Alabama; and Sections 19 and 30 of Township 3 South, Range 3 West of Limestone County, Alabama.

There will be 14 separate crossings of the two creeks and three temporary construction access points (reference Figure 2: USGS Site Map and Figure 3: Aerial Site Map). The latitude and longitude for each crossing is listed in Table 1: Location of Crossings. Following are descriptions of each proposed crossing. Plan and profiles of creek crossings are also attached for reference.

Piney Creek Crossings and Tributaries of Piney Creek

Crossing 1.1

This crossing is located approximately 85 feet east of the Canebrake Pump Station on a tributary to Piney Creek. The crossing will consist of a 24" sewer and an 8" water line. A temporary construction access will be located adjacent to the crossing. This access is required to be able to construct the improvements within the lower reaches of the drainage area.

Crossing 1.2

Crossing 1.2 occurs on a small tributary of Piney Creek which serves as an outlet for the nearby golf course impoundment. This crossing will allow the utilities to be routed along the north side of Piney Creek between the creek and the Canebrake golf course. The crossing will consist of a 24" sewer and an 8" water line. A temporary construction access will be located adjacent to the crossing. This access is required to be able to construct the improvements within the lower reaches of the drainage area.

Crossing 1.3

This crossing consists of a 24" sewer and an 8" water line across a bypass channel associated with Piney Creek. The route east of the channel crossing places the improvements north of the meandering portion of Piney Creek and minimizes the number of water crossings in this area.

Crossing 1.4

This crossing of the original Piney Creek channel occurs just northwest of the

creek's confluence with French Mill Creek. It will include a 24" sewer and an 8" water line. This crossing allows the lines to stay on the north side of the creek through the adjacent property, which is a requirement of the easement. A temporary construction access will be located adjacent to the crossing. This access is required to be able to construct the improvements between the diversion channel and the original alignment of Piney Creek.

Crossing 3.1

Crossing 3.1 brings the 18" sewer line to the northeast side of Piney Creek due to the extreme terrain on the opposite side. Moving the line to this side of the creek will minimize construction disturbance.

Crossing 3.2

Crossing 3.2 is required to bring the 16" sewer across Piney Creek to serve development occurring west of the creek along U.S. Highway 72.

Crossing 4.1

The 12" water main located on the south side of U.S. Highway 72 crosses Piney Creek at this point. The 12" water main is necessary to furnish adequate water supply and pressure to the east along U.S. Highway 72. Alternatives include attachment of the water line the highway bridge and an aerial crossing. Attachment of the water line to the bridge is discouraged by the Alabama Department of Transportation. Construction of an aerial crossing would be expensive and likely require location of an intermediate support in the creek.

French Mill Creek Crossings and Tributaries of French Mill

Crossing 1.5

This crossing consists of a 12" sewer which crosses French Mill Creek to bring the line to the south side of the creek. The terrain on the north side of the creek in this area is very steep, and avoiding it will minimize construction disturbance. After passing to the south side of the creek, the sewer changes size to an 8" line and crosses a small tributary to French Mill Creek.

Crossing 1.6

At crossing 1.6, the sewer once again crosses over to the opposite side to avoid steep terrain near the creek. This crossing brings the 8" sewer to the north side of French Mill Creek where it continues until termination of the sewer at U.S. Highway 72.

Crossing 2.1

Crossing 2.1 is a 10" sewer which brings the line to the south side of French

Mill Creek and serves as a connection point for development occurring on the south side of the creek.

Crossing 4.2

Crossing 4.2 is across French Mill Creek adjacent to U.S. Highway 72, and makes possible water supply to the developing areas east of the creek. No endangered species were located at this crossing.

III. DESCRIPTION OF INSTALLATION, OPERATION, AND MAINTENANCE ACTIVITIES

The water mains and trunk sewers will be installed using open cut methods. Water and sewer pipe installed parallel to each other at a creek crossing will be install concurrently to minimize impacts to the habitat. Pipe materials for creek crossings will be ductile iron. Construction of utilities at creek crossings will require installation of cofferdams to divert flow. Stream flow will be diverted, complete blockage will not be allowed. Cofferdam materials may consists of materials such as stone, concrete blocks, and portable water barriers (bladders). Earthen-type cofferdams using dirt or soil will not be allowed. All materials utilized for flow diversion will be removed once the crossing has been completed.

Geotechnical investigations at two locations along Highway 72 at Piney Creek and French Mill Creek indicate a moderately hard, fairly continuous gray limestone bedrock located below the creek bottom within the proposed excavation. Construction methods for excavation of this rock will include blasting prior to removal of unsuitable materials for disposal off site. Discussions with the geotechnical engineer indicate a highly unlikely event of water loss in the creek using this method of installation.

Dewatering of pipe trench by pumping will be required for proper installation of pipe. The pipe will be bedded and backfilled with crushed stone. The top 1' 0" of the trench will be backfilled with larger stone and graded back to the existing contours (reference Sheet DT3 Details). Native material (when suitable) can be used for bedding and backfill of the utility trench. The banks will be returned to the original contour and stabilized using rip-rap (reference Sheet DT3 Details). Restoration will begin as soon as practical to minimize the impacts on the habitat.

Temporary construction access stream crossings will be required for construction. The temporary construction access road will be constructed of pipe, rip-rap and coarse aggregate. Earthen fill materials will not be allowed. Once temporary construction access is no longer required, the temporary

construction access road will be removed (reference Sheet DT2 Details).

Creek crossings are designed to be perpendicular to the creek to minimize the crossing length. A clearing width of 30 - 40 feet will be conducted for construction along the route containing only the sewer line and 35 feet - 45 feet along the route containing the sewer and water line (reference individual creek crossing details for specific information).

Types of construction equipment expected to be used for this project include track hoes, rubber tire front end loaders, track mounted drill rigs, small track mounted dozers, and dump trucks.

Construction is proposed to occur any time of the day or week during a low flow time of year. Using the above proposed method of installation, the duration per each crossing is estimated to take 10 days or less. The duration is dependent upon the amount of rock, length of crossing, amount of stream flow, and size of pipe.

Best management practices (BMPs) will be required to be used for erosion control. BMPs will include, but are not limited to, hay bales, check dams, culvert inlet protection, and silt fences (reference Sheet DT1 Details).

Construction alternatives considered included trenchless installation methods (such as directional drilling and boring), installation above ground, non blasting methods, installation of concrete caps, and bioengineered stream bank stabilization. These alternatives are briefly described below:

1. Trenchless methods were not feasible due to the presence of gray limestone, sewer pipe size, and required depth of sewer.
2. Installation of the sewer above ground was not feasible due to the required sewer depth. Installation of the water above ground was not feasible due to the Alabama Department of Transportation's regulations, the span length requiring intermediate supports in the creek, and maintenance issues associated with above ground installation.
3. Use of non-blasting methods were considered to lengthen the duration time of installation in the creek; therefore, non-blasting methods were determined to potentially cause a greater impact to the habitat than blasting.
4. Installation of concrete caps were considered for the creek crossings, as well as, the installation of bioengineered stream bank stabilization, such as root balls. The species of snail present appear to be thriving in algae substrate areas along the creek. The substrate is considered to attach

well to stone and rip-rap; therefore, stone backfill and rip-rap stabilization of the banks was chosen for reestablishment of the algae habitat for the snails.

The utilities, once installed, will be monitored for maintenance as needed. Newly installed utilities are tested using pressure, vacuum and air test to insure proper installation, resulting in, minimal to no maintenance. Maintenance typically required is due to aging infrastructure. A permanent clearing width of 20 feet for the sewer line and 30 feet for the parallel water line and sewer line will be maintained by mechanical means to perform this monitoring.

IV. DESCRIPTION OF SPECIES

The armored snail occurs only in Piney and Limestone Creeks, Limestone County, Alabama, and has never been noted outside of this area. The range of the slender *campeloma* has been reduced (Aquatic Resources Center (ARC) 1997) by at least three-quarters from its historical distribution and the species now occurs only in Round Island, Piney, and Limestone Creeks, Limestone County, Alabama. These species are now in a particularly precarious position, being restricted to a few isolated sites along two or three short river reaches. Inhabited sites appear to be rather small, covering only a few square meters. Threats to these species include siltation, direct loss of habitat, altered water chemistry, and chemical pollution. Siltation and other pollutants from poor land-use practices and waste discharges are contributing to the general deterioration of water quality, likely affecting these species.

Piney Creek was a tributary to Limestone Creek prior to the construction of Wheeler Lake on the Tennessee River. Thus, the two populations of the armored snail are likely remnants of a once larger population. No entire population of the armored snail is known to have been lost.

Armored snails are generally found among submerged tree roots and bryophytes (nonflowering plants comprising mosses and liverworts) along stream margins in areas of slow to moderate flow. Occasionally they are found in the submerged detritus (organic matter and rock fragments) along pool edges.

Campeloma decampi is typically found burrowing in soft sediment (sand and/or mud) or detritus. It does not appear abundant at any site, and the spotty distribution appears consistent with other *Campeloma* species. The food habits of the slender *campeloma* are not known, but they likely feed on detritus.¹

The attached Protected Species Assessment dated September 25, 2007 by AST

Environmental Group describes the findings of these species at the proposed creek crossings.

V. EFFECT OF THE ACTION ON THE SPECIES

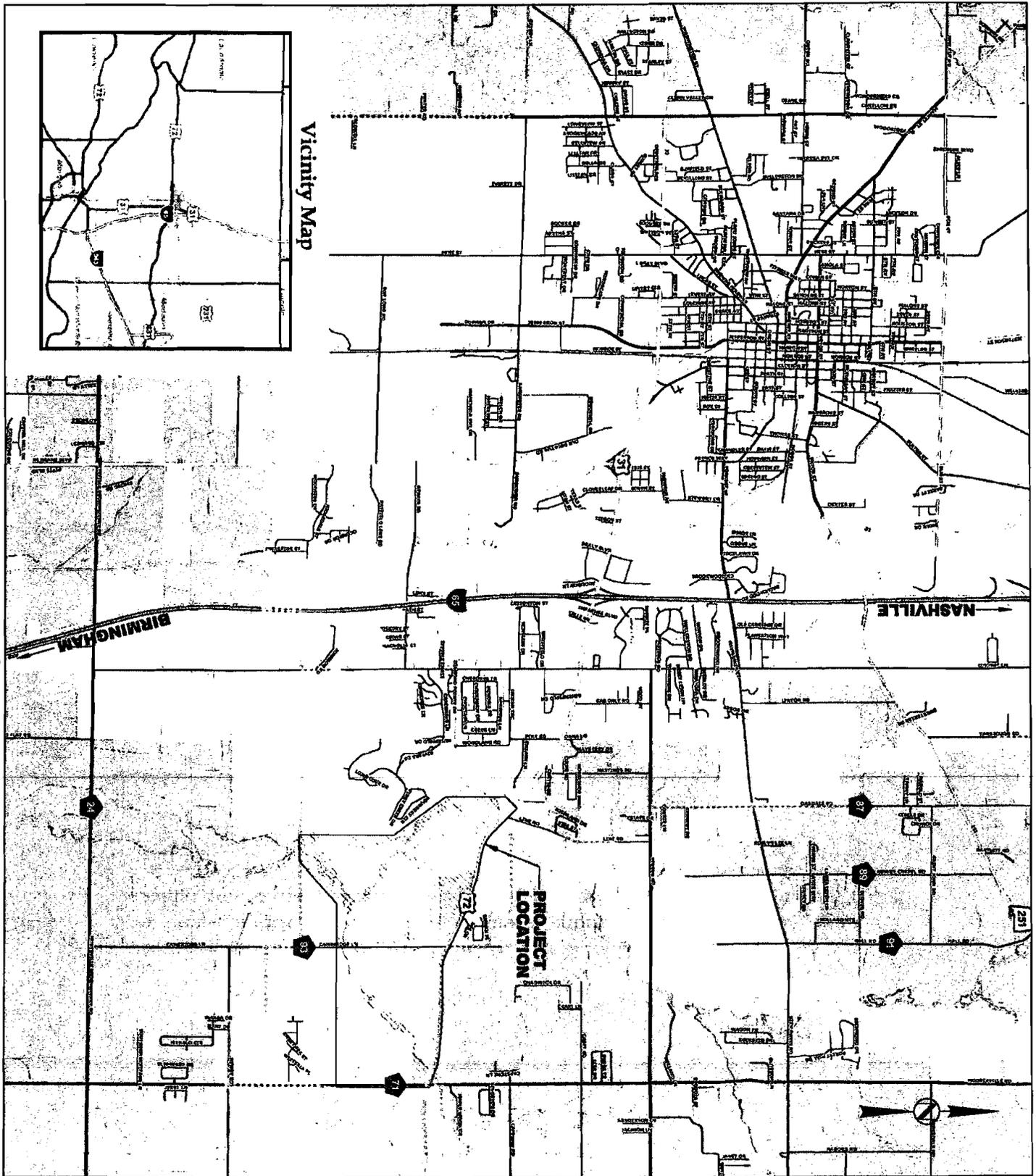
The effect of the action on the species will vary depending on whether or not mitigation is performed. Alternatives are discussed below. Without mitigation, the proposed action will likely result in a take of individuals. Although best management practices would be in place to minimize erosion and siltation, disturbance of the habitat would occur. Submerged tree roots and detritus, bryophytes and other features where the snails are generally found which lie within an approximate 30 foot wide swath centered on each crossing are vulnerable to being removed. Restoration to pre-construction conditions, to the extent possible, would be performed.

With mitigation, the proposed action would minimize the impact on the species. The proposed mitigation would consist of relocation of individuals either upstream or downstream of the affected areas. Relocation is recommended to be performed by Mr. Jeff Selby of AST Environmental Group. Mr. Selby is a qualified biologist who possesses a valid permit to identify and handle the species under consideration (USFWS Federal Collection Permit TE100626-4)². Mr. Selby conducted the protected species assessment used for this biological assessment; therefore, he is familiar with the area and creek crossing locations.

The relocation area would include 20 feet upstream and 20 feet downstream of each stream crossing clearance width (the impact area). Each stream crossing width of clearance is indicated on the creek crossing details. Species relocation would be conducted 5 days prior to construction of each creek crossing. It is estimated 90% of the species at each crossing will be relocated.

The proposed mitigation would consist of restricting construction activities within the creeks during low flow conditions. Construction activities as previously described would be implemented to minimize the duration within the creek and best management practices to minimize erosion and siltation would be implemented.

While mitigation efforts will be directed at complete removal of individuals from each impact zone and minimize impact on the habitat, it is impossible to ensure that 100% of the individuals will be found or adversely affected. Therefore, it is possible that some take will occur. However, with best management practices in place and a qualified biologist performing the relocations, impact to the species will be minimized.

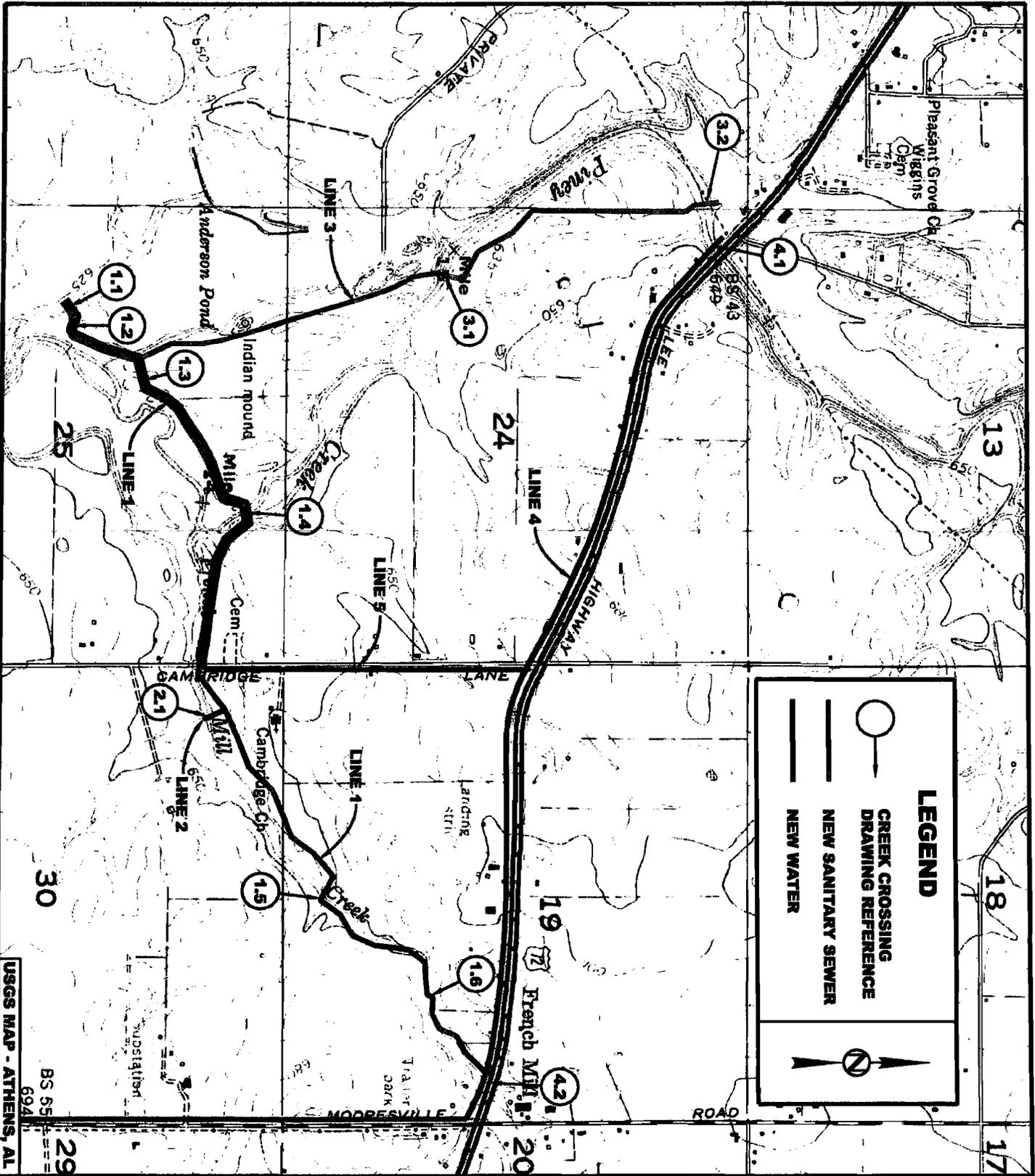


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SHEET TITLE	
FIGURE 1: LOCATION MAP	
SHEET NO	PROJECT NO 07034
LM1	SCALE NO SCALE
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FIGURE 2: USGS SITE MAP	
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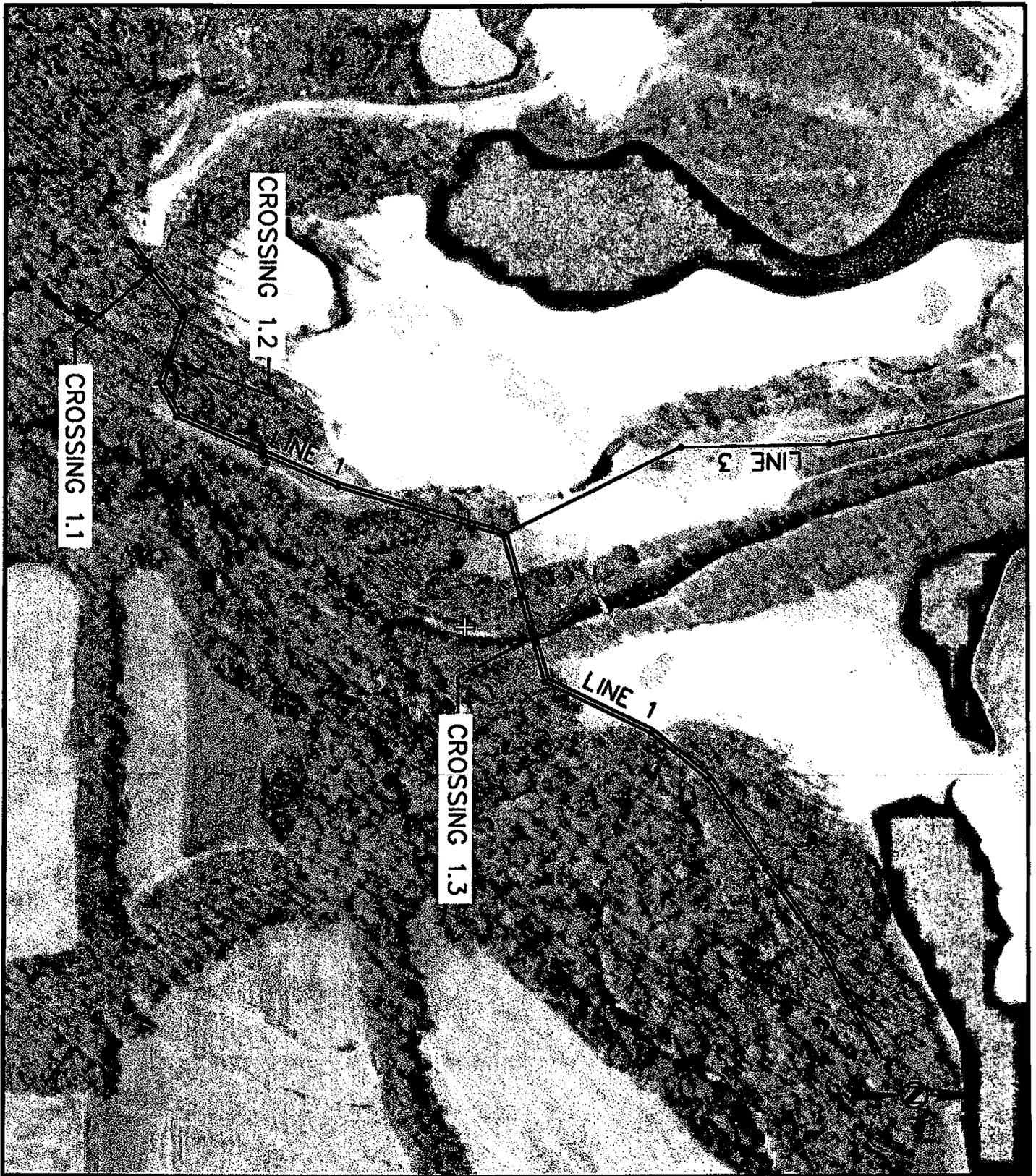
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FIGURE 3: AERIAL SITE MAP	
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Table 1: Location of Crossings

Crossing Number	Type of Crossing	Latitude	Longitude
Piney Creek			
1.1	Water Line Sewer Line	N34°45'8.5"	W86°54'31.6"
1.2	Water Line Sewer Line	N34°45'8.8"	W86°54'29.3"
1.3	Water Line Sewer Line	N34°45'16.9"	W86°54'21.6"
1.4	Water Line Sewer Line	N34°45'28.6"	W86°54'3.3"
3.1	Sewer Line	N34°45'51.2"	W86°54'36"
3.2	Sewer Line	N34°46'21.6"	W86°54'46.5"
4.1	Water Line	N34°46'22.6"	W86°54'40.0"
5.1	Water Line	N34°45'51.6"	W86°53'42.2"
French Mill Creek			
1.5	Sewer Line	N34°45'38.7"	W86°53'9.6"
1.6	Sewer Line	N34°45'50"	W86°52'55.8"
2.1	Sewer Line	N34°45'24.9"	W86°53'35.1"
4.2	Water Line	N34°45'56.4"	W86°52'44.4"
4.3	Water Line	N34°45'27.4"	W86°52'38.6"



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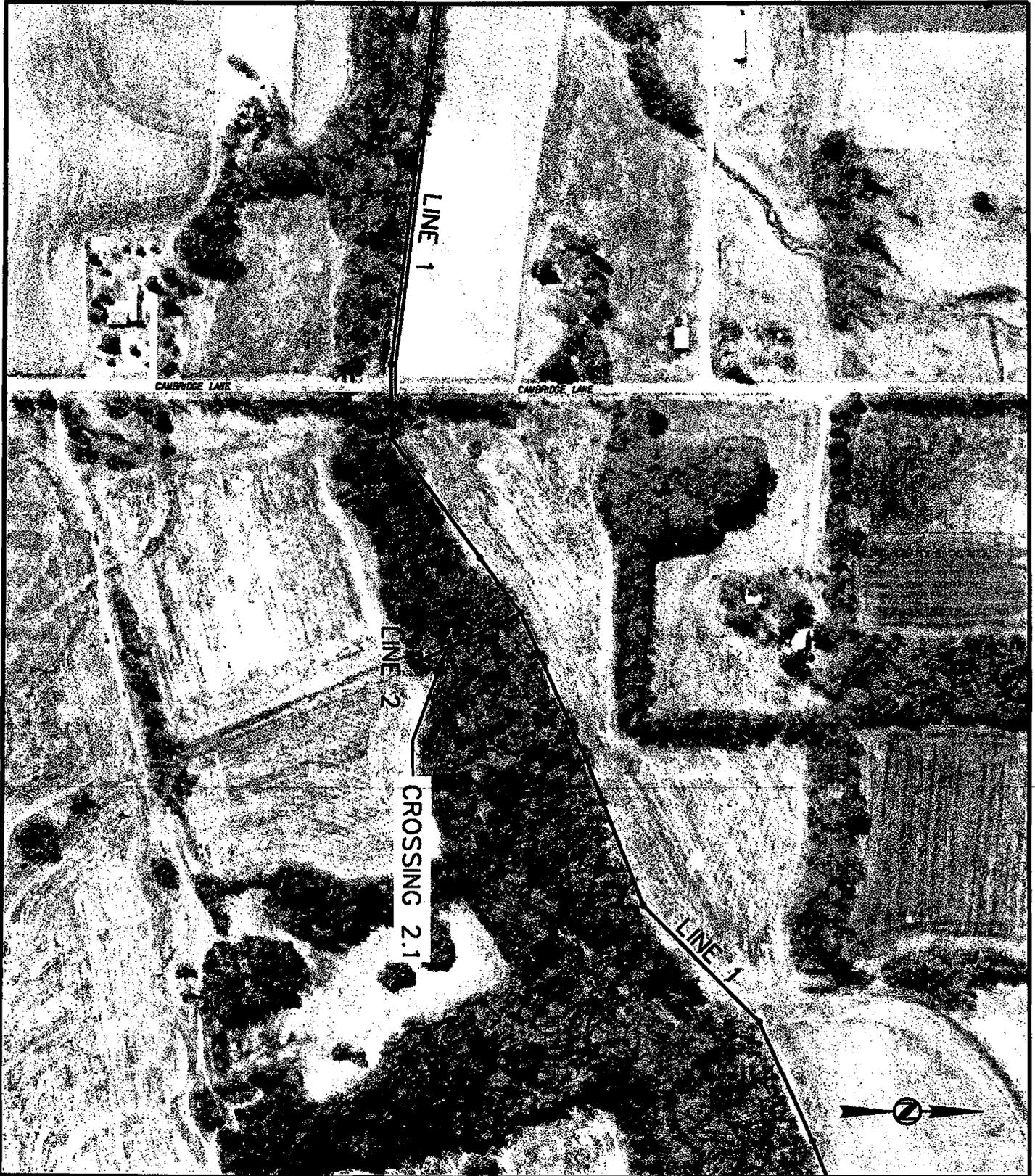


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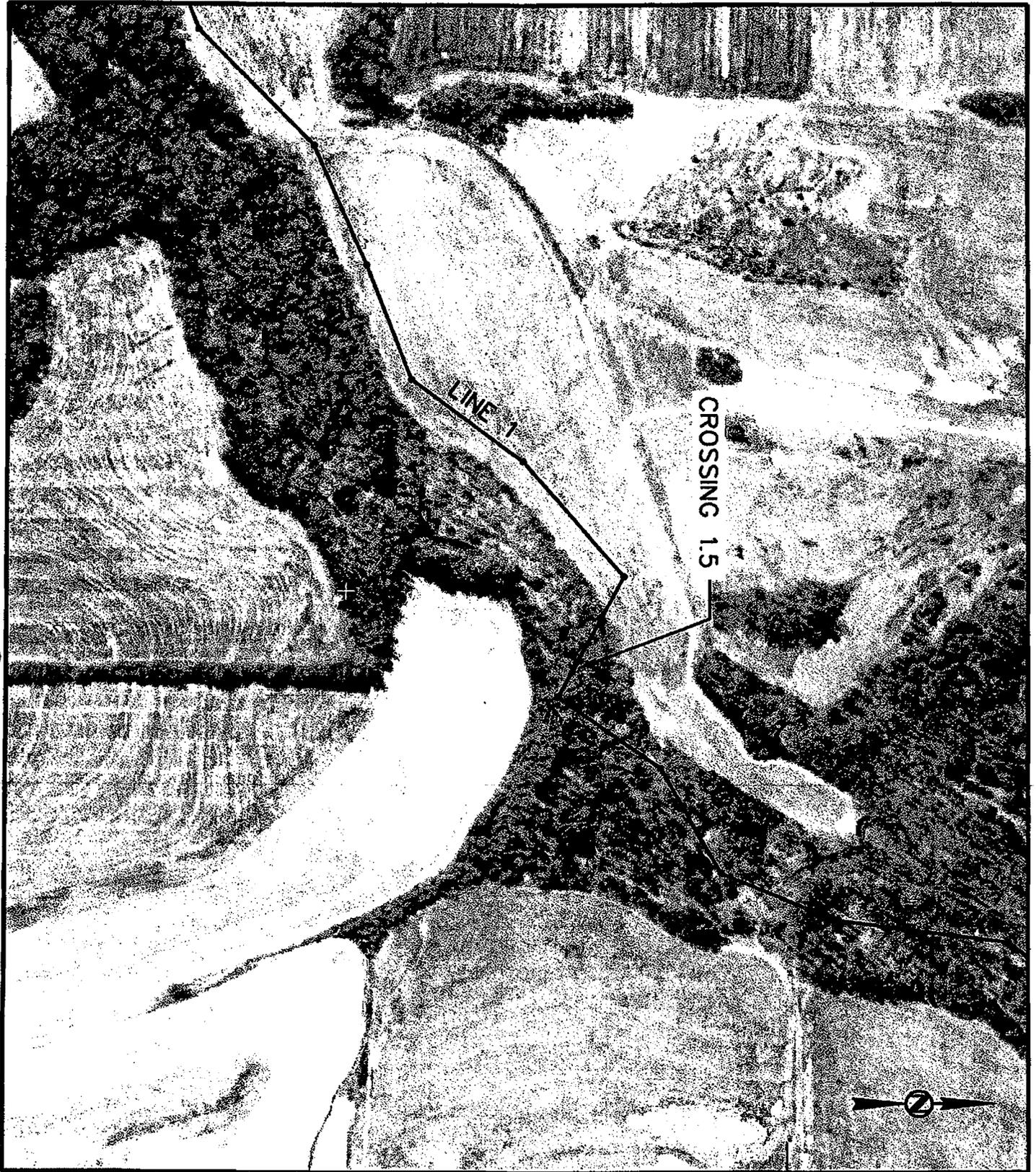


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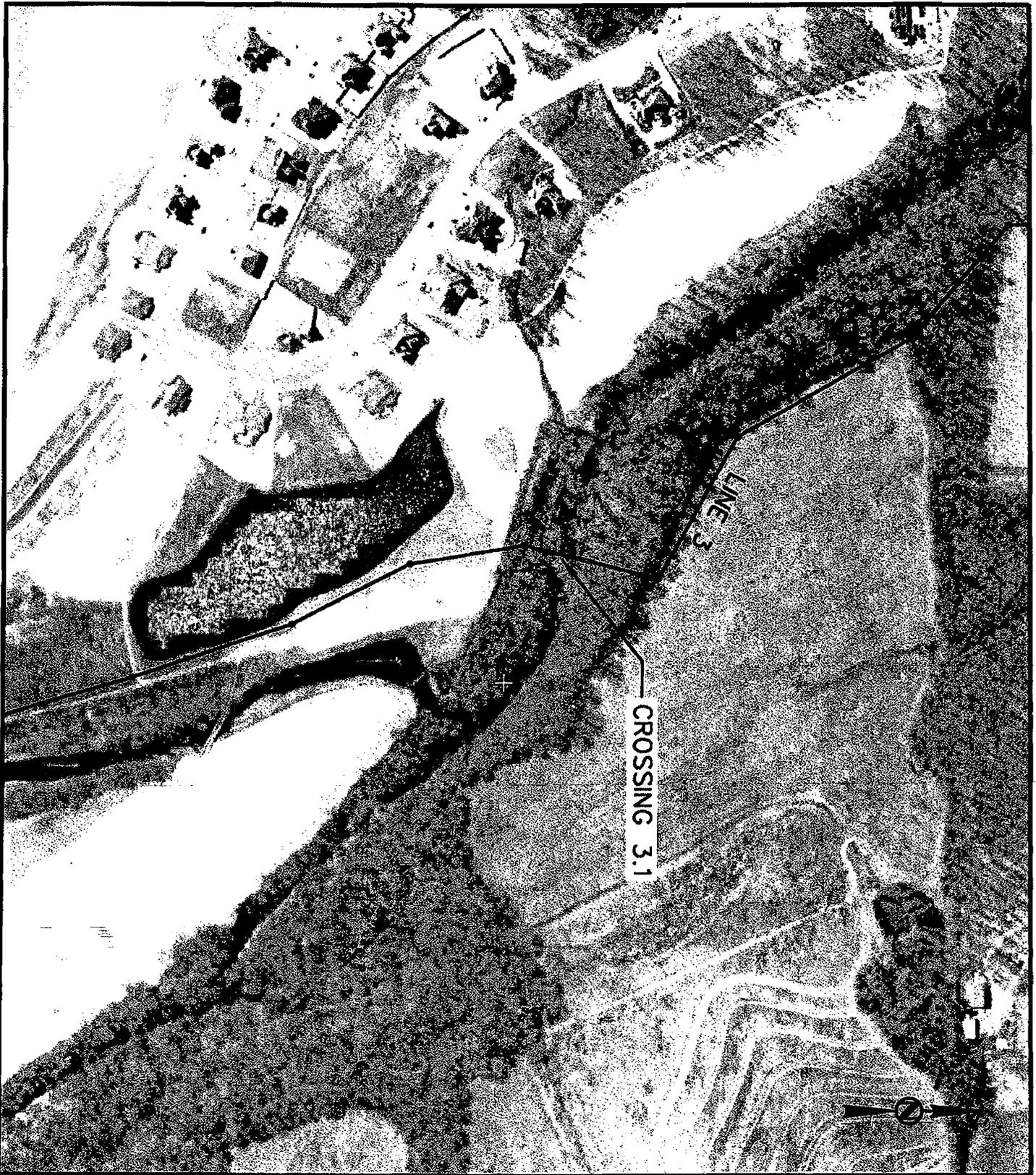
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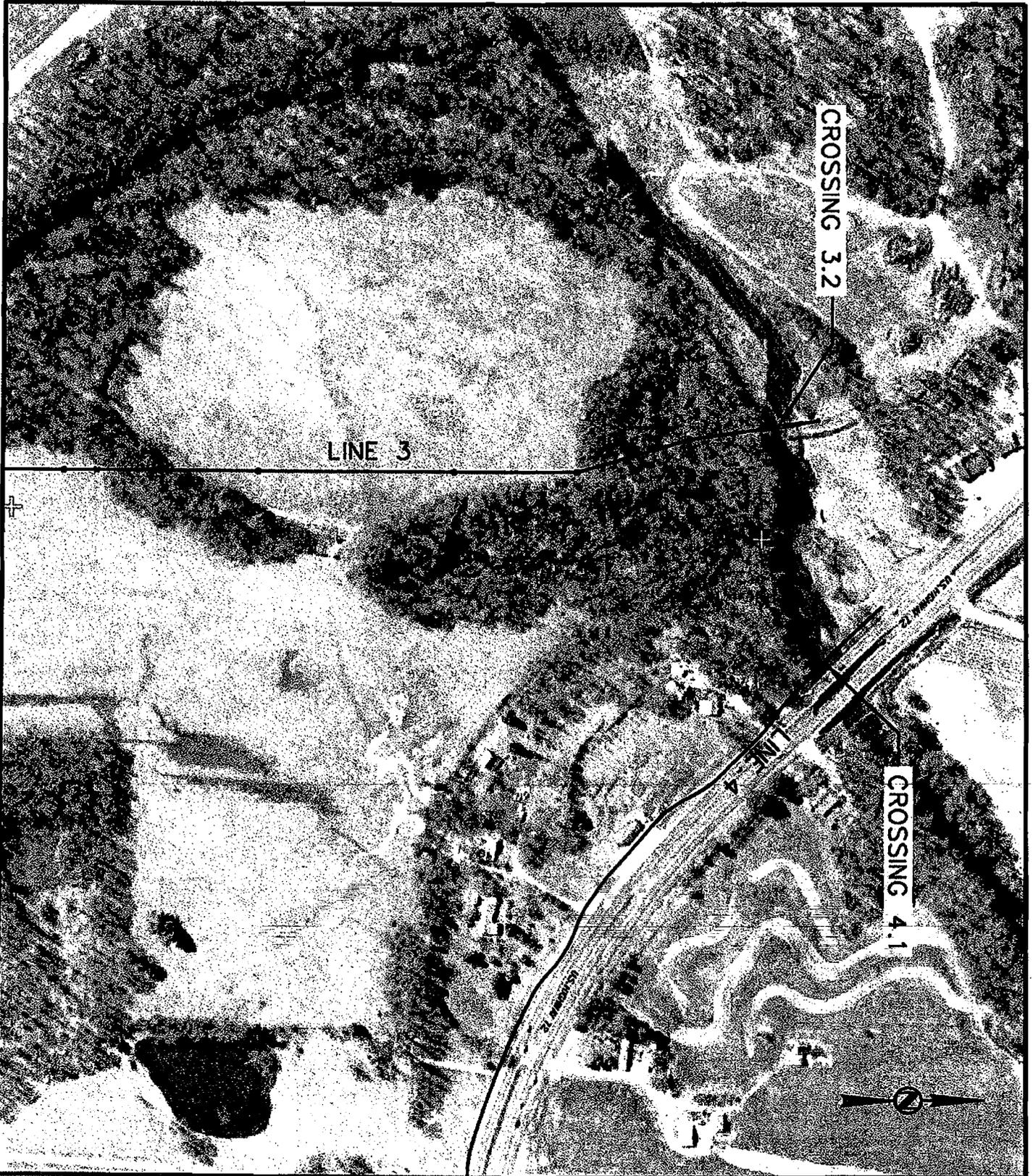


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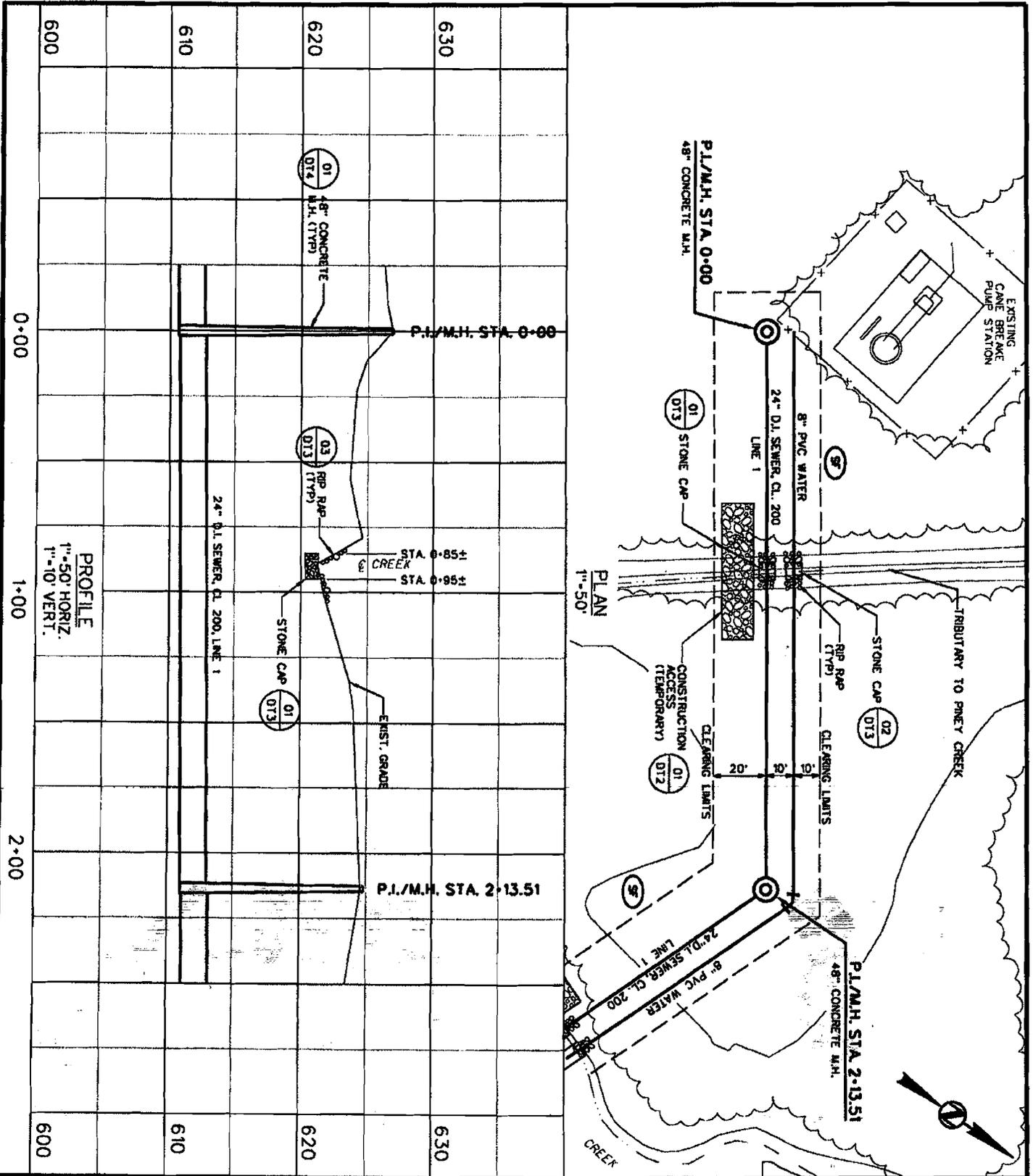


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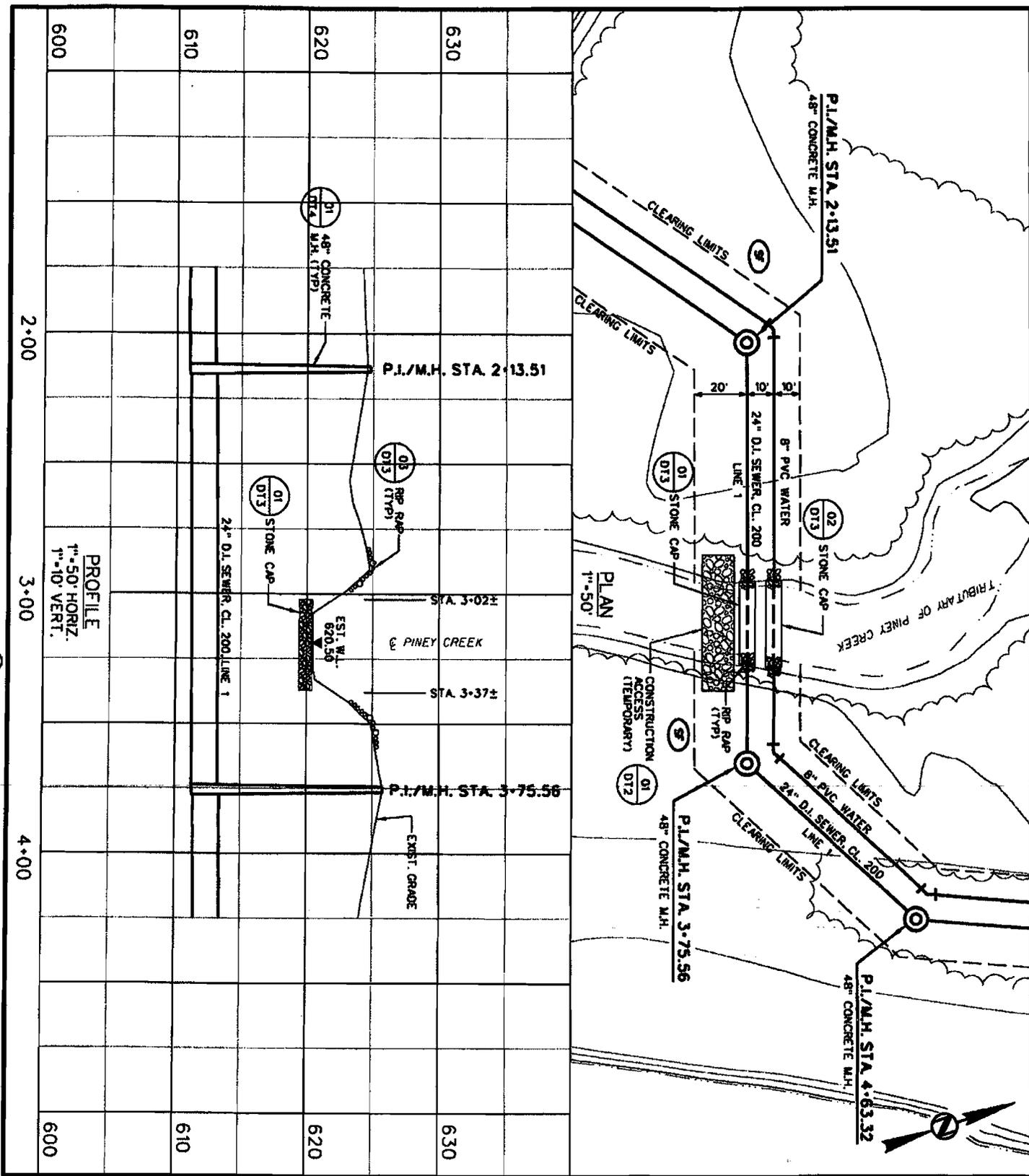


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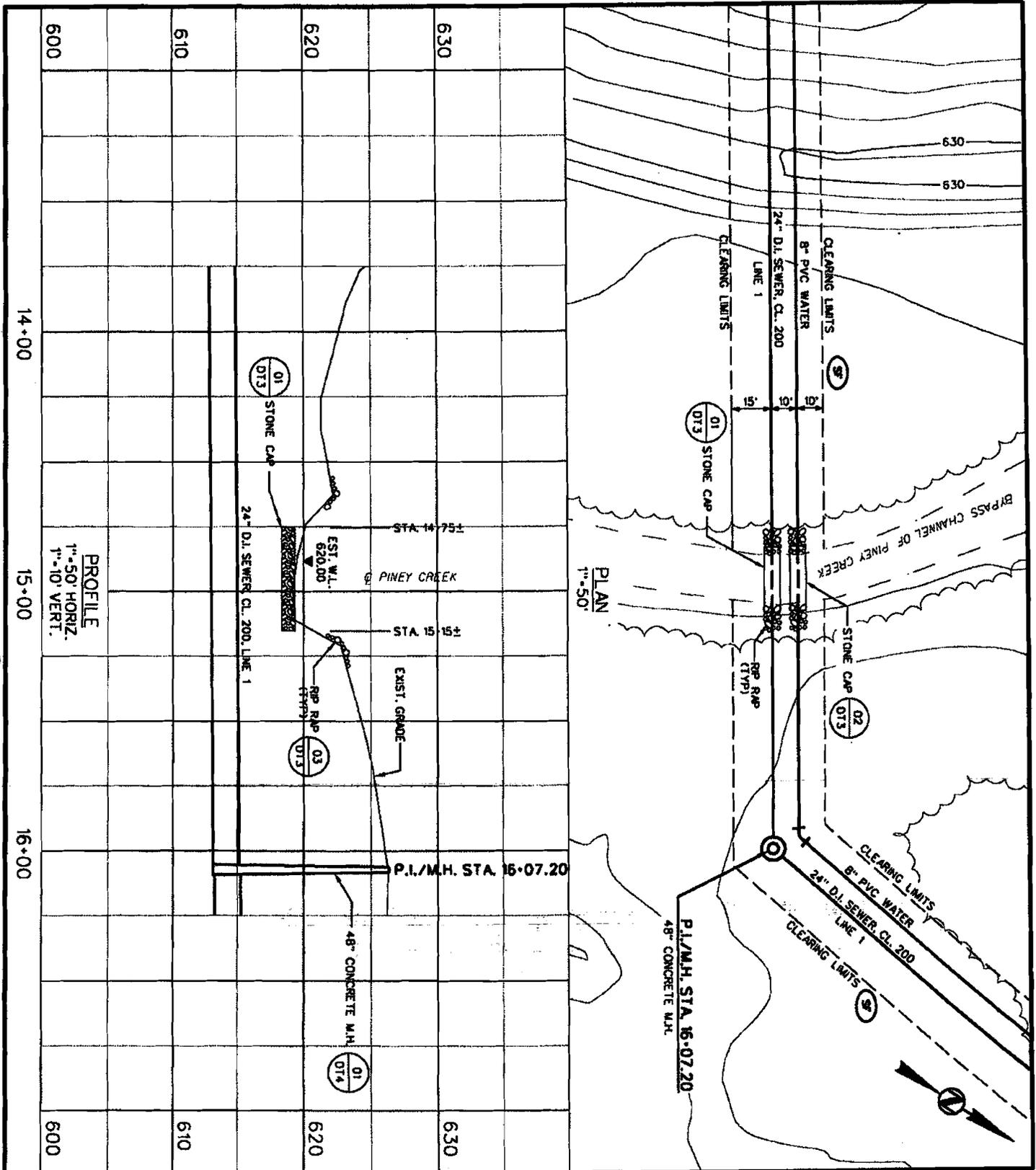


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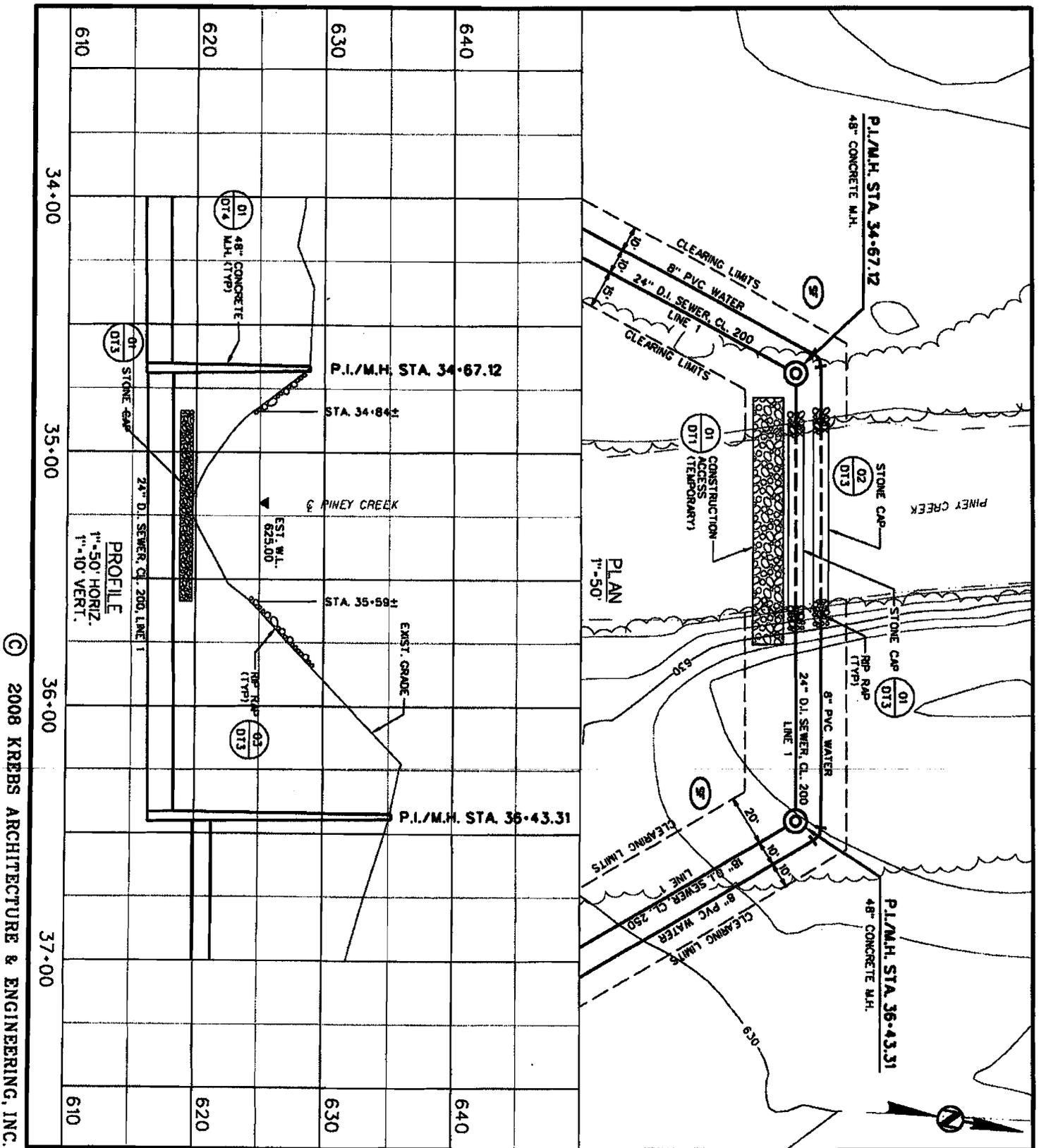


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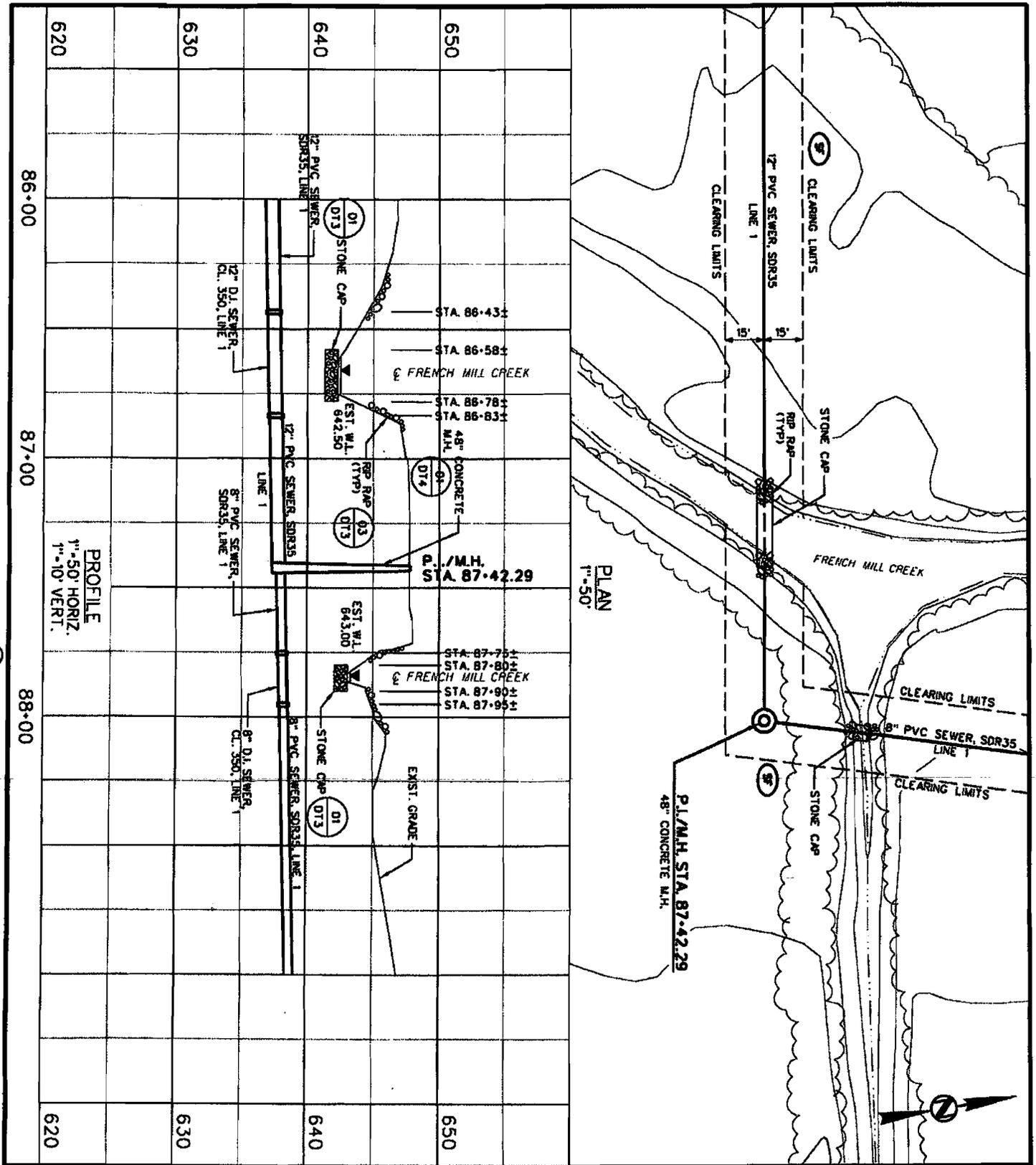


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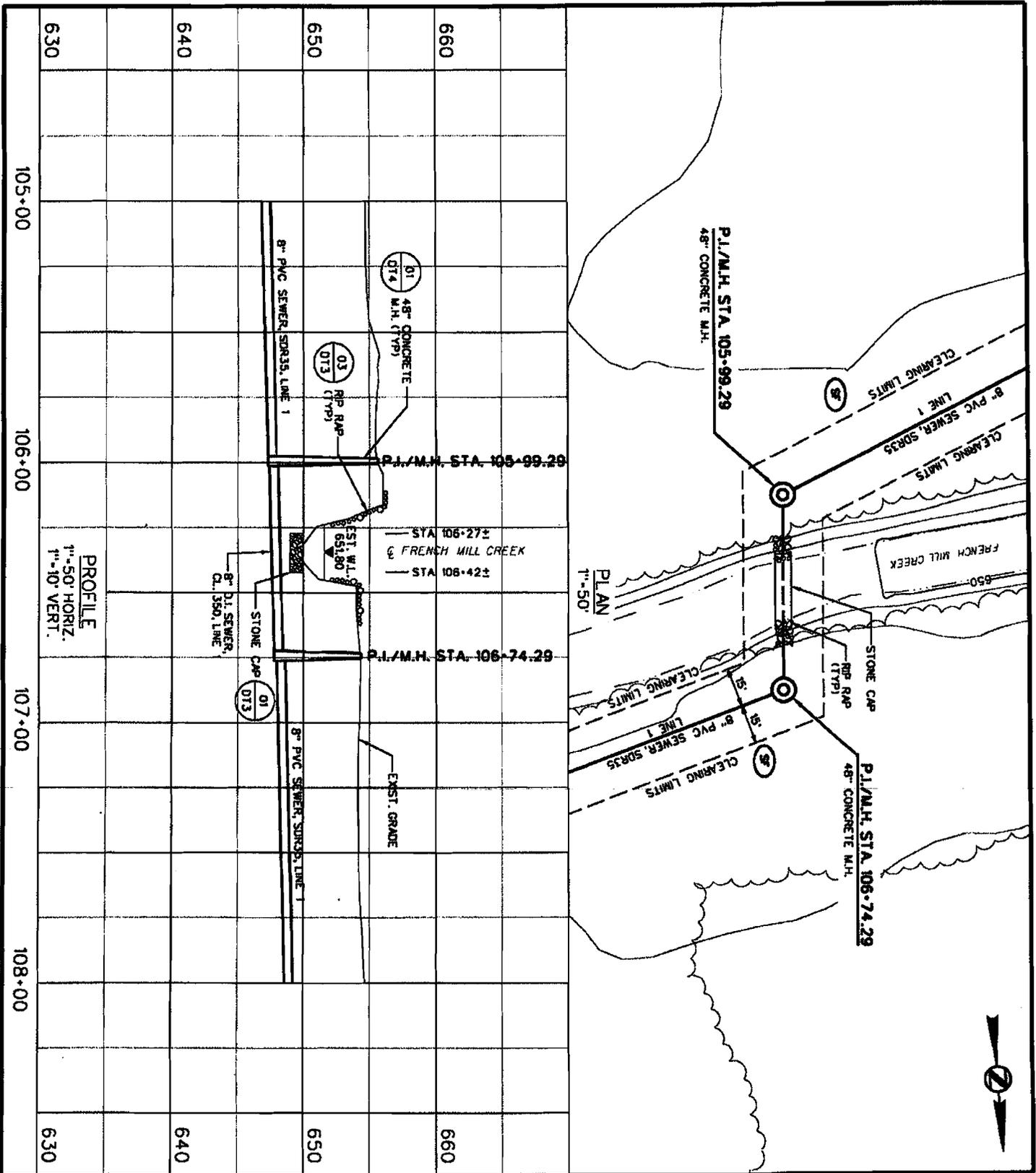


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SHEET NO.	1.5	PROJECT NO.	07034
		SCALE	AS NOTED
		DATE	06-11-08

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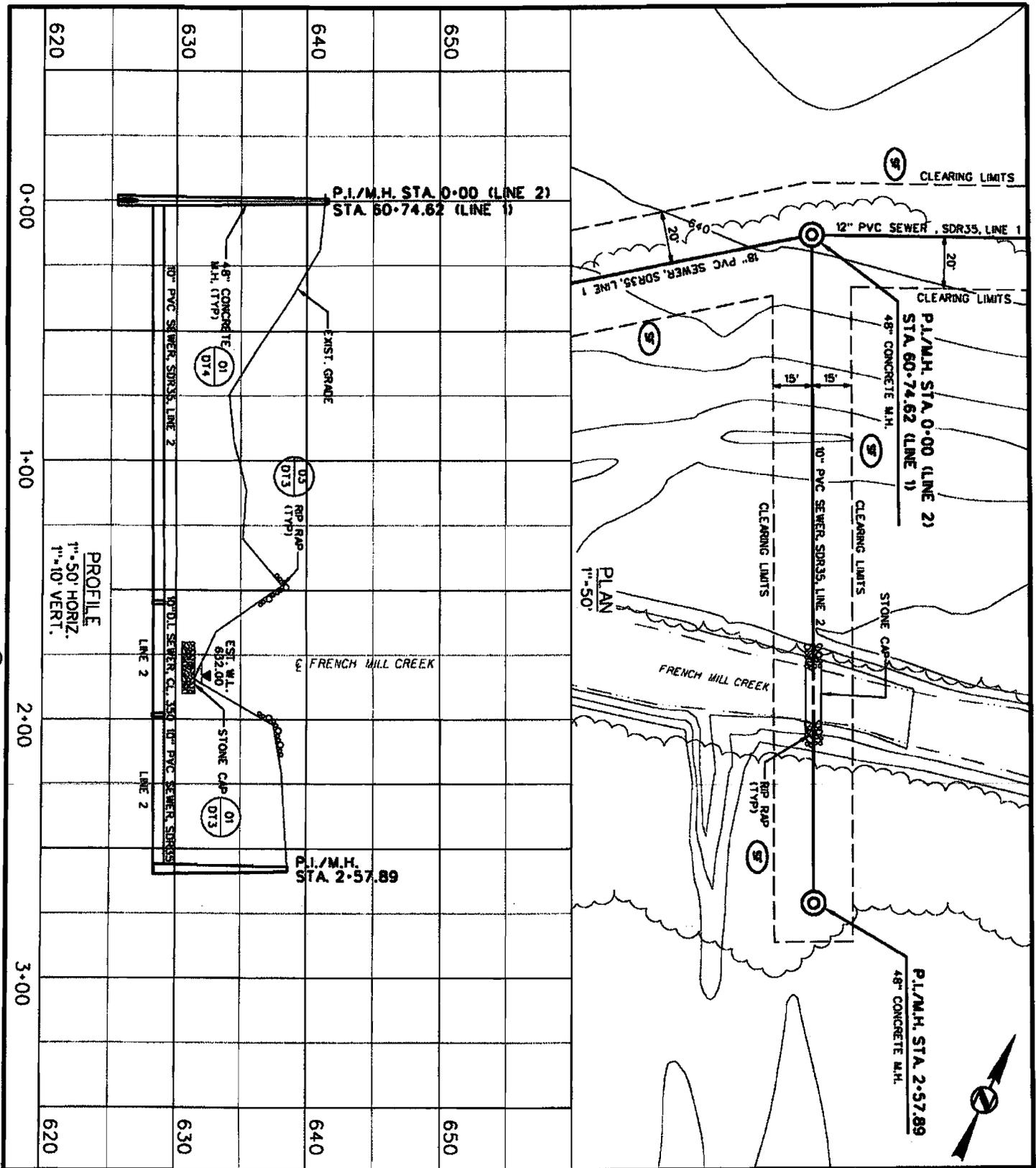


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SHEET TITLE		CREEK CROSSING	
SHEET NO.	PROJECT NO.	07034	
1.6	SCALE	AS NOTED	
	DATE	06-11-08	

CITY OF ATHENS UTILITIES
 FRENCH MILL AND PINEY CREEK
 INTERCEPTOR
 ATHENS, AL

ARCHITECTURE
KREBS
 ENGINEERING

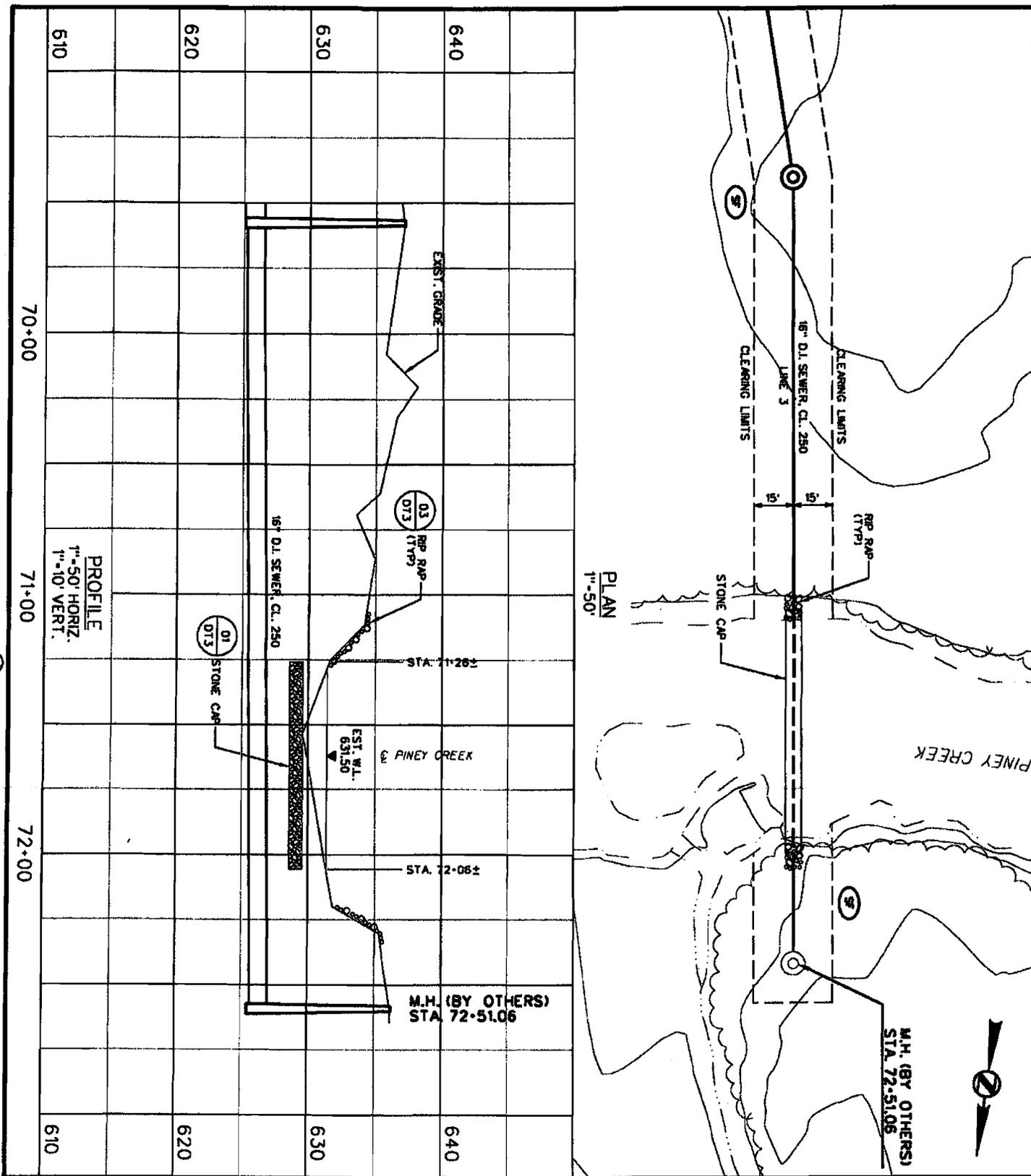


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SHEET TITLE	
CREEK CROSSING	
SHEET NO.	PROJECT NO. 07034
2.1	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES
 FRENCH MILL AND PINEY CREEK
 INTERCEPTOR
 ATHENS, AL

ARCHITECTURE
KREBS
 ENGINEERING

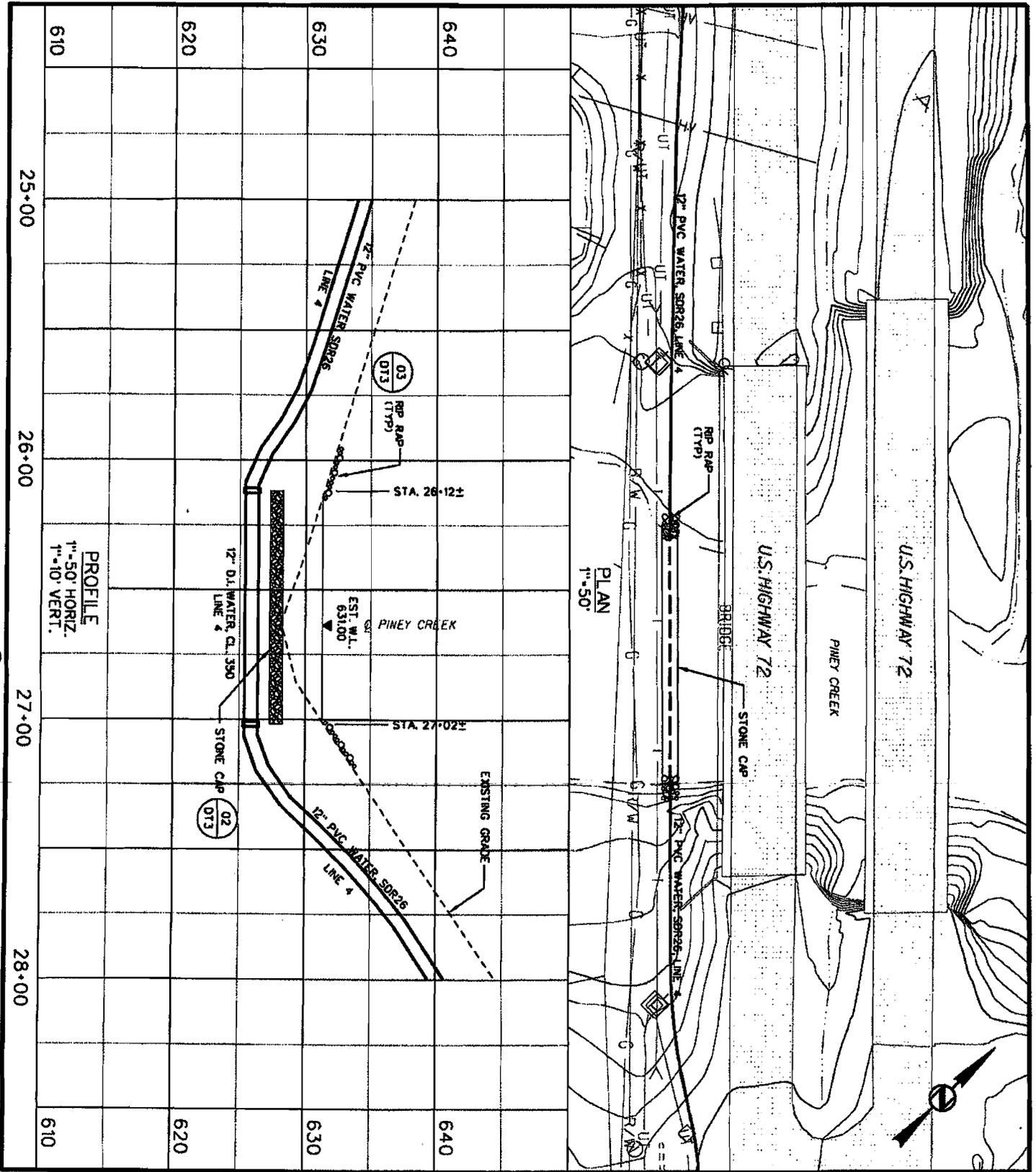


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SHEET TITLE	
CREEK CROSSING	
SHEET NO.	PROJECT NO. 07034
3.2	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES
 FRENCH MILL AND PINEY CREEK
 INTERCEPTOR
 ATHENS, AL

ARCHITECTURE
KREBS
 ENGINEERING

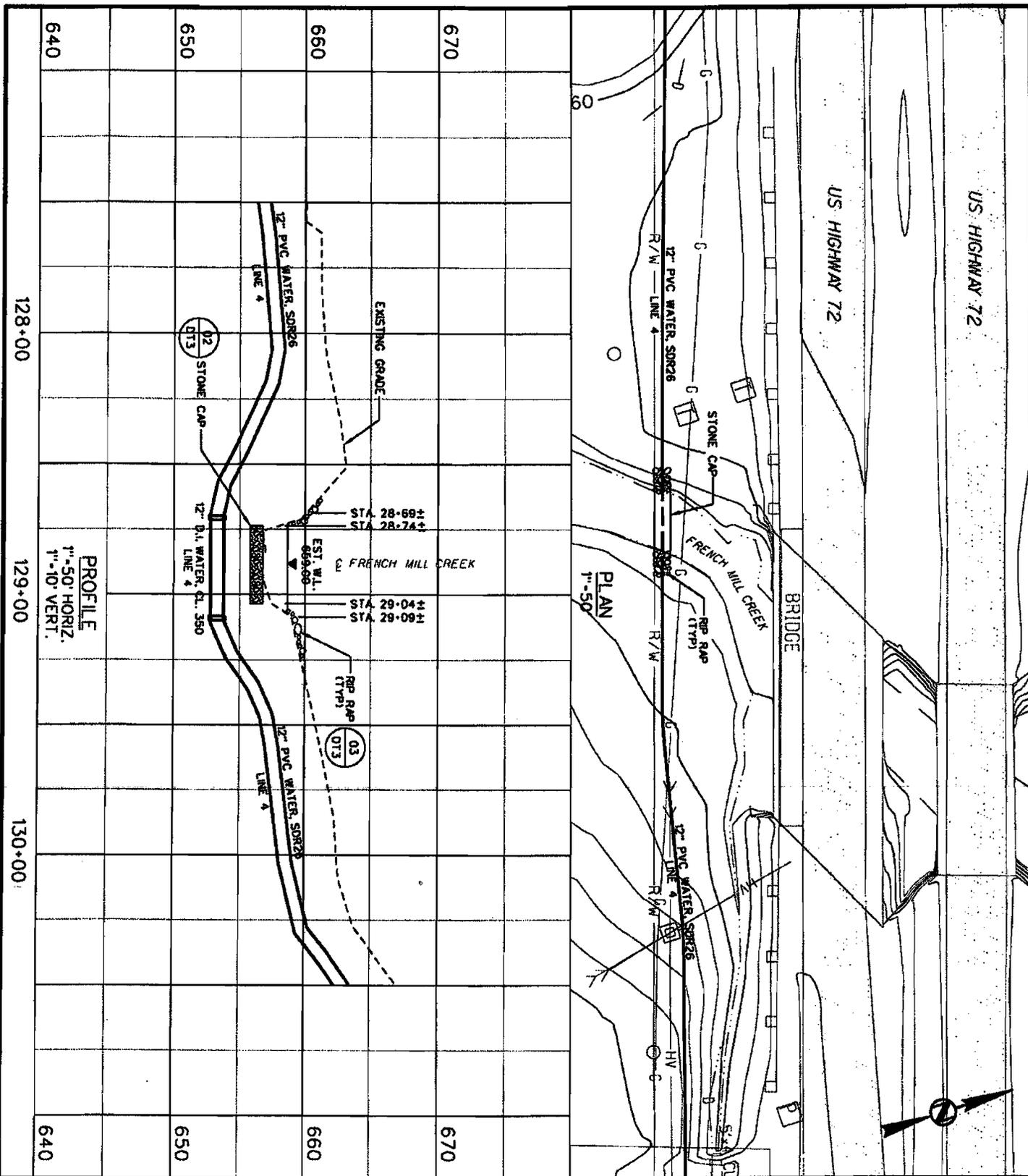


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SHEET TITLE		CREEK CROSSING	
SHEET NO.	PROJECT NO.	07033	
	SCALE	AS NOTED	
	DATE	06-11-08	
4.1			

CITY OF ATHENS UTILITIES
 U.S. HWY 72 WATER MAIN
 ATHENS, AL

ARCHITECTURE
KREBS
 ENGINEERING



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SHEET TITLE	
CREEK CROSSING	
SHEET NO.	PROJECT NO. 07033
4.2	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES

U.S. HWY 72 WATER MAIN

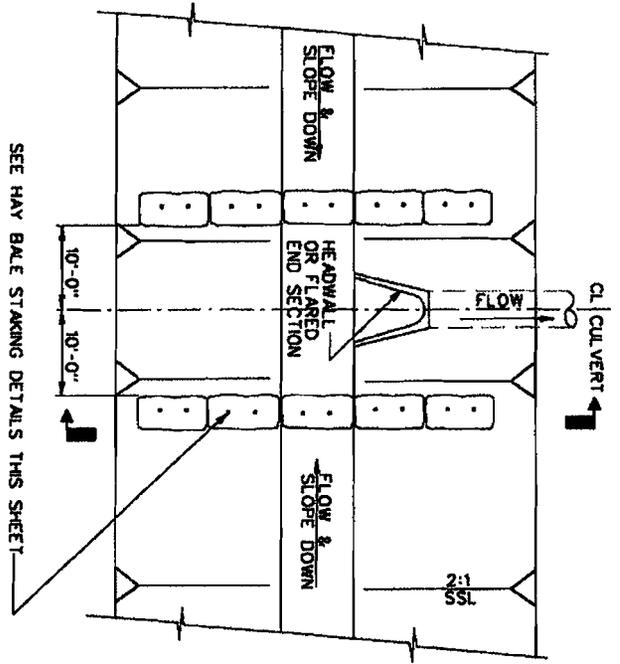
ATHENS, AL

ARCHITECTURE

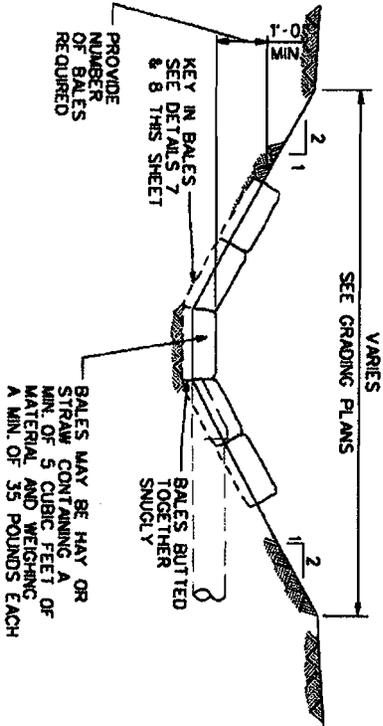
KREBS

ENGINEERING

SHOWN WITH FLOW FROM BOTH DIRECTIONS. FLOW FROM ONE DIRECTION SIMILAR



PLAN

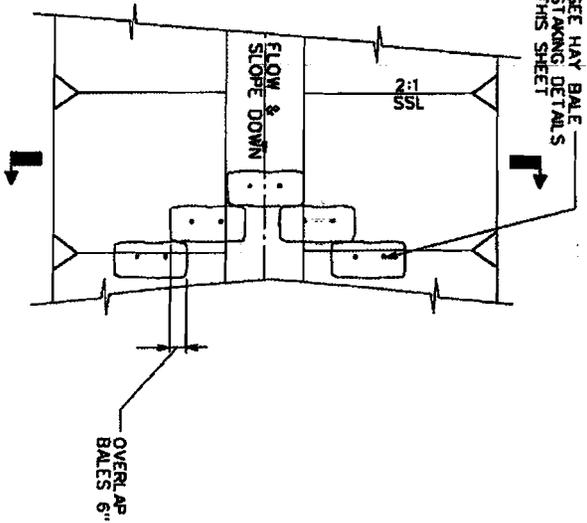


SECTION

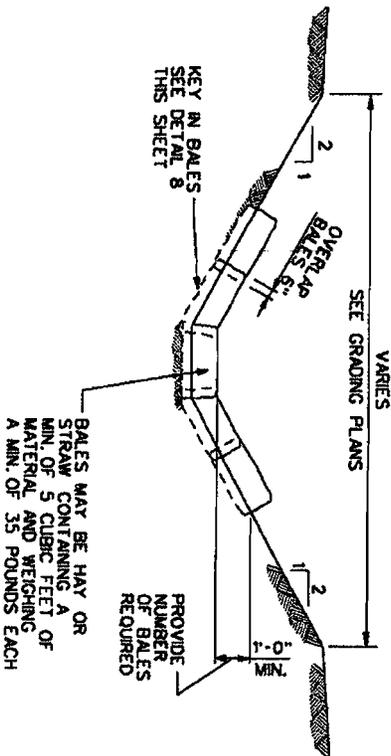
(CIP)

01 CULVERT INLET PROTECTION NO SCALE

SEE HAY BALE STAKING DETAILS THIS SHEET



PLAN



SECTION

(HBCD)

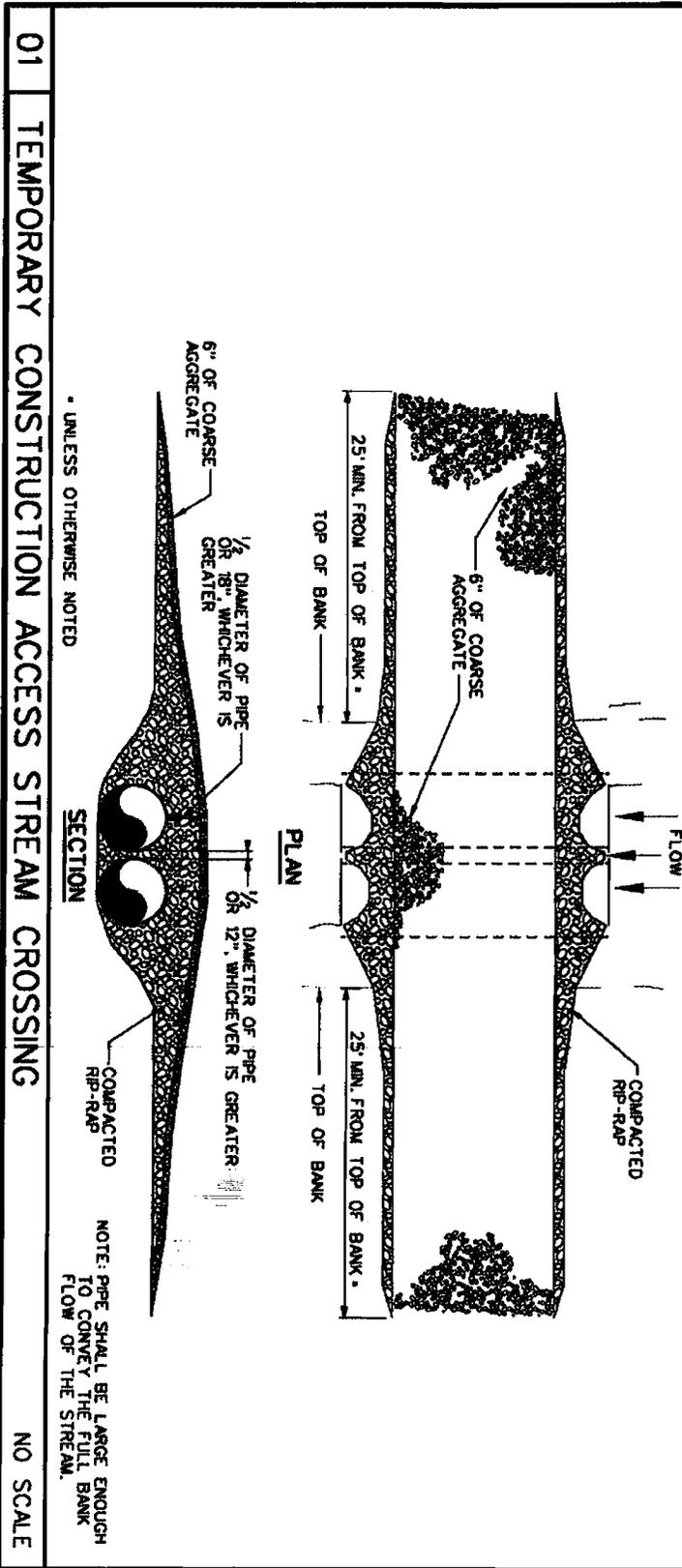
02 HAY BALE CHECK DAM NO SCALE

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SHEET TITLE	
DETAILS	
SHEET NO.	PROJECT NO. 07034
DT1	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES
 FRENCH MILL AND PINEY CREEK
 INTERCEPTOR
 ATHENS, AL

ARCHITECTURE
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• UNLESS OTHERWISE NOTED

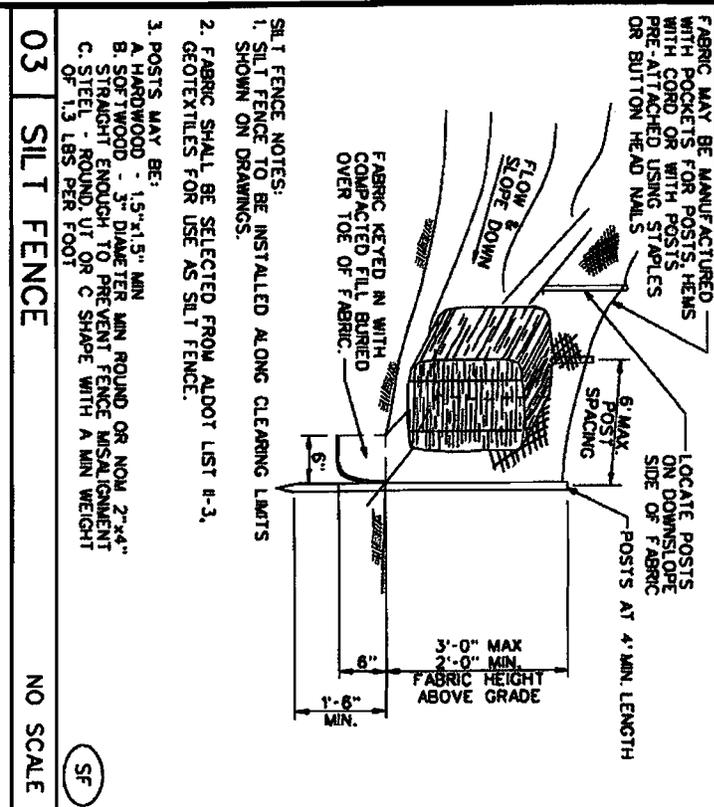
SECTION

COMPACTED RIP-RAP

NOTE: PIPE SHALL BE LARGE ENOUGH TO CONVEY THE FULL BANK FLOW OF THE STREAM.

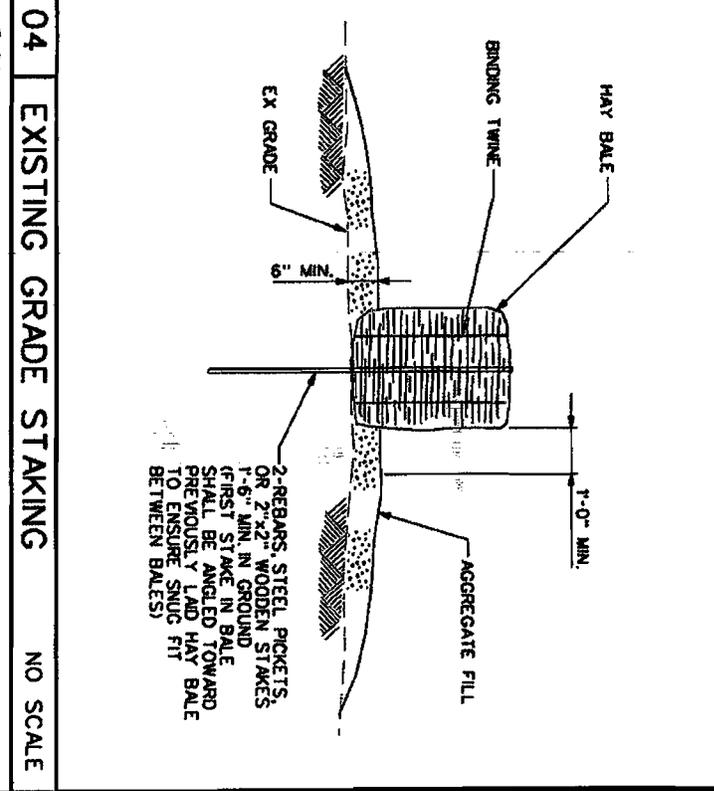
01 TEMPORARY CONSTRUCTION ACCESS STREAM CROSSING

NO SCALE



03 SILT FENCE

NO SCALE



04 EXISTING GRADE STAKING

NO SCALE

- SILT FENCE NOTES:
1. SILT FENCE TO BE INSTALLED ALONG CLEARING LIMITS SHOWN ON DRAWINGS.
 2. FABRIC SHALL BE SELECTED FROM ALDOT LIST #1-3, GEOTEXTILES FOR USE AS SILT FENCE.
 3. POSTS MAY BE:
 - A. HARDWOOD - 1.5"x1.5" MIN
 - B. SOFTWOOD - 3" DIAMETER MIN ROUND OR NOM 2"x4" STRAIGHT ENOUGH TO PREVENT FENCE MISALIGNMENT
 - C. STEEL - ROUND, UT OR C SHAPE WITH A MIN WEIGHT OF 1.3 LBS PER FOOT

(SF)

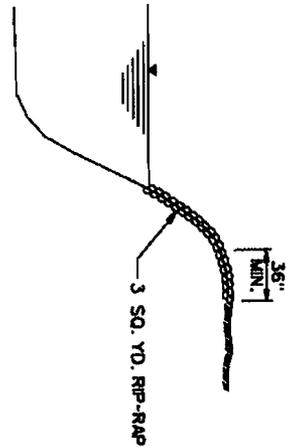
- 2-REBARS, STEEL PICKETS, OR 2"x2" WOODEN STAKES 1'-6" MIN. IN GROUND (FIRST STAKE IN BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID HAY BALE TO ENSURE SNUG FIT BETWEEN BALES)

SHEET TITLE	
DETAILS	
SHEET NO.	PROJECT NO. 07034
DT2	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES
 FRENCH MILL AND PINEY CREEK
 INTERCEPTOR
 ATHENS, AL



NOTE:
RIP-RAP SHALL BE PLACED WITHIN
LIMITS SHOWN ON DRAWINGS. ALL
STONE TO BE PLACED ON WELL
COMPACTED OR UNDISTURBED EARTH.



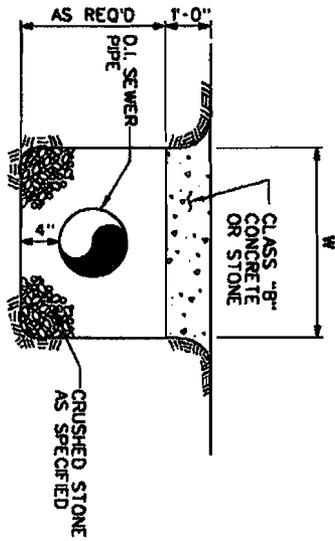
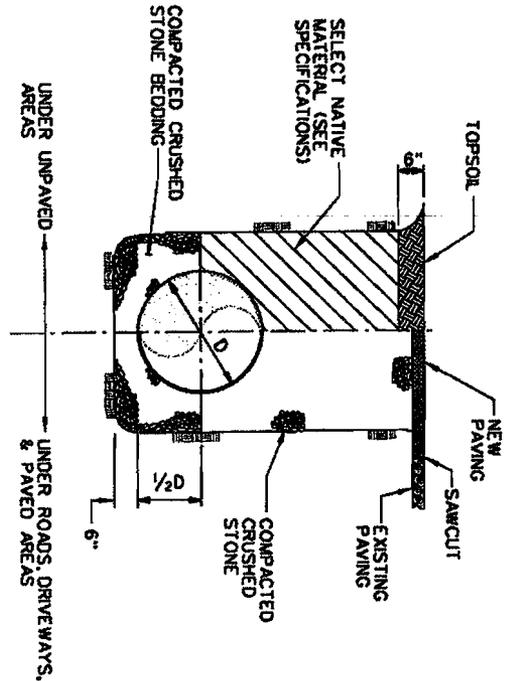
03 TYPICAL RIP-RAP DETAIL

NO SCALE

04 BEDDING AND BACKFILL

NO SCALE

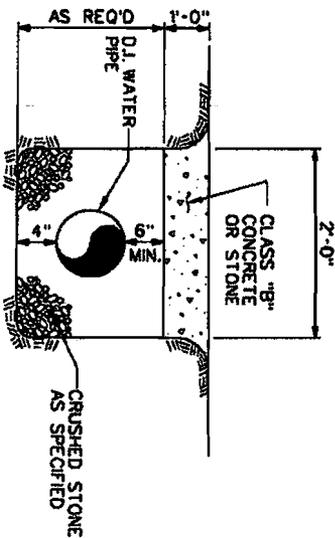
NOTE: DETAIL IS TYPICAL OUTSIDE
OF STREAM CROSSINGS.



PIPE DIA.	W (FT.)
≤ 12"	2
18" TO 24"	3

01 TYPICAL SEWER STREAM CROSSING

NO SCALE



NOTE: LENGTH OF D.I. PIPE TO MATCH LENGTH
OF CAP SHOWN IN PROFILE.

02 TYPICAL WATER STREAM CROSSING

NO SCALE

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SHEET TITLE	
DETAILS	
SHEET NO.	PROJECT NO. 07034
DT3	SCALE AS NOTED
	DATE 06-11-08

CITY OF ATHENS UTILITIES
FRENCH MILL AND PINEY CREEK
INTERCEPTOR
ATHENS, AL

ARCHITECTURE
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ENGINEERING



Environmental Group

"A DBE Firm Specializing in Streams, Wetlands, Protected Species, Environmental Assessments, and Storm Water Compliance"

September 25, 2007

JS07-122

City of Athens Utilities

CARE OF:

Paul B. Krebs & Associates, Inc.
2100 River Haven Drive, Suite 100
Birmingham, AL 35244-1218

**RE: Athens SE Area Water & Sewer
Protected Species / Biological Assessment
Piney Creek and French Mill Creek
Limestone County, Alabama**

ATTENTION: Nina Williams

Ms. Williams:

AST Environmental Group (AST) was contracted by Athens Utilities to perform a protected species / biological assessment consisting of 10 survey reaches on Piney Creek, Piney Creek tributaries, and French Mill Creek in Limestone County, Alabama in order to determine if protected gastropods were present at each location. Specifically, the protected species / biological assessment was conducted for the following aquatic species listed by the United States Fish and Wildlife Service (USFWS) as potentially occurring in the Project area:

- E - Slender campeloma snail (*Campeloma decampi*)
- E - Armored snail (*Marstonia pachyta* / *Pyrgulopsis pachyta*)

AST understands that Athens Utilities is proposing to install a series of water and sewer pipelines which will require open-trench crossings of the afore mentioned creeks and tributaries. Each survey reach was comprised of a 12-foot wide construction zone where anticipated stream impacts include significant bed and bank alteration prior to pipeline installation. Each survey reach also included buffer zones originating at the margins of each 12-foot wide construction zone and extending 30 feet upstream and 50 feet downstream.

Four survey reaches on Piney Creek Proper were assessed as part of this project. One survey reach was assessed on a constructed diversionary channel connected to Piney Creek, and one tributary to Piney Creek was determined to not have suitable habitat for the target species and therefore was excluded from further examination. Four survey reaches on French Mill Creek were also assessed as part of this project. *See attached Project Location Map and Site Photographs.*

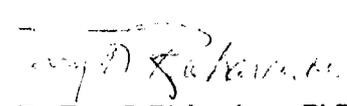
AST personnel performed the stream assessments in August and September 2007. Jeff Selby (USFWS Federal Collection Permit TE100626-4) was the lead biologist and was assisted by Terry D. Richardson, Ph.D. and Michael McConnel throughout the survey. Surveys were completed by examining the stream substrata, aquatic vegetation and peripheral roots and vegetation for the presence of the two target species. An 800 micron kick net was used to assist with faunal examinations. Tabular results for the assessment are included in Table 1.

If you have any questions or comments, please contact me at (256) 476-7355 or Terry Richardson at (256) 443-9165

Sincerely,

Thompson Ag & Environmental, LLC
dba **AST Environmental Group**


Jeff Selby, MS
Member/Senior Biologist


Dr. Terry D. Richardson, PhD
Member/Principal Ecologist

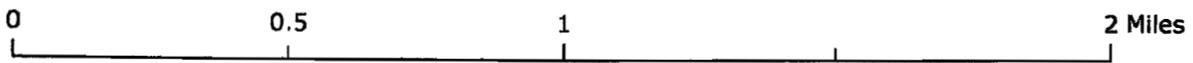
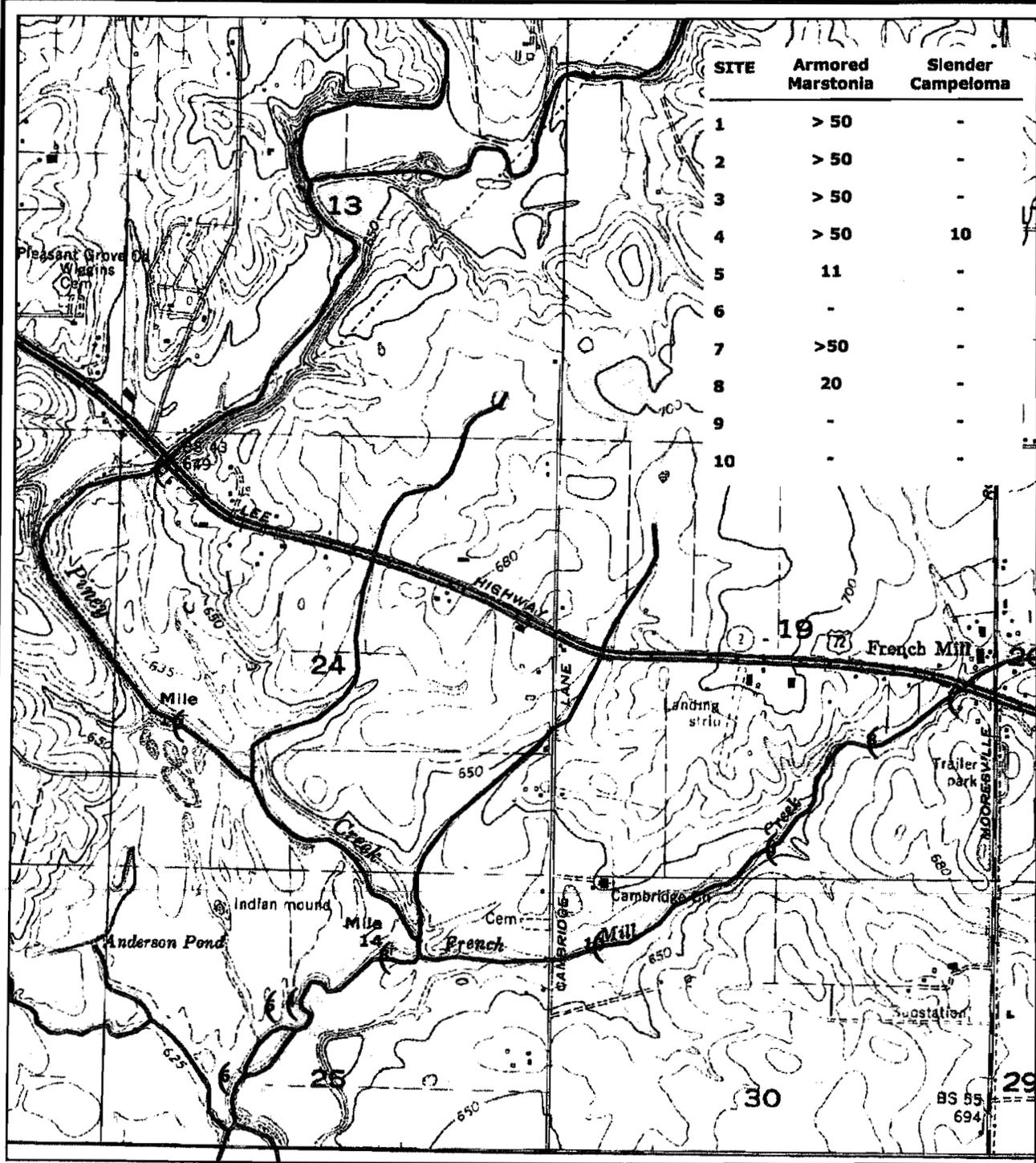
Attachments:

Project Location Map
Table 1
Site Photographs

Table 1. Protected Species Assessment - Piney Creek and French Mill Creek. Limestone County, Alabama.

TAXA	Piney Creek and Tributaries										French Mill Creek				
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
<i>Pygulopsis pachyta</i>	> 50	>50	>50	>50	11; 5r		>50					>50	20		
<i>Campeloma decampi</i>				10; 5r											
<i>Elernia laqueata</i>	>50	>50	>50	>50	>50		>50	>50	>50	>50		>50	>50	>50	>50
<i>Pleurocera purenellum</i>	>50	>50	>50	>50	>50		>50	>50	>50	>50		>50	>50	>50	>50
<i>Viviparus georgianum</i>			6	>25							12				
<i>Pseudosuccinea columella</i>														2	
<i>Physella gyrina</i>					2										
Valvatidae		>50		>25	5							1		1	

r = relic shell (in addition to number denoting live individuals)




SCALE = 1 : 20,000

SOURCE: USGS DRG 1:24,000
Athens [AL]

PROJECT LOCATION MAP
JS07- 122
Piney and French Mill Creeks
Limestone County, Alabama

AST Environmental Group

PHOTOGRAPH 1



Description: View of Piney Creek facing downstream- at reach 1.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 2



Description: View of Piney Creek facing upstream at reach 2.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 3



Description: View of Filamentous algae bloom at reach 2.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 4



Description: View of Piney Creek facing downstream- at reach 3.
Taken by Jeff Selby, 9-17-07.

PHOTOGRAPH 5



Description: View of Piney Creek facing downstream- at reach 4.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 6



Description: View of Tributary to Piney Creek facing upstream – at reach 5.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 7



Description: View of Tributary to Piney Creek facing upstream – at reach 6.
Habitat for target species not present at this location.
Taken by Jeff Selby, 8-31-07.

PHOTOGRAPH 8



Description: View of French Mill Creek facing upstream- at reach 7.
Taken by Jeff Selby, 9-1-07.

AST Environmental Group
JS07-122

SITE PHOTOGRAPHS
Piney & French Mill Creeks
Limestone County, AL

PHOTOGRAPH 9



Description: View of French Mill Creek facing downstream- at reach 7.
Taken by Jeff Selby, 9-1-07.

PHOTOGRAPH 10



Description: View of French Mill Creek facing upstream – at reach 8.
Taken by Jeff Selby, 9-1-07.

PHOTOGRAPH 11



Description: View of French Mill Creek facing downstream – at reach 9.
Taken by Jeff Selby, 9-1-07.

PHOTOGRAPH 12



Description: View of French Mill Creek facing downstream – at reach 10.
Taken by Jeff Selby, 9-1-07.
