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A Cultural Resources Survey of the
Walnut Bend Revetment
Lee County, Arkansas

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U.S. Army Corps of Engineers
Memphis District

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October 1984

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ABSTRACT

On 27 September 1984, an intensive cultural resources survey was conducted by the Environmental Branch of the U. S. Army Corps of Engineers, Memphis District Staff Archeologist, Mr. Jimmy McNeil, and Civil Engineer, Mr. David McNutt. A failure in the Walnut Bend revetment was surveyed.

The Walnut Bend area is located in Township 1N, Range 5E, Section 3, SW 1/4 of the SW 1/4 of the SW 1/4 and Section 4 NE 1/4 of the SE 1/4 of the SE 1/4 of the Latour, Arkansas-Mississippi Quadrangle Map. The area covers approximately 4.5 acres adjacent to the Mississippi River.

The proposed work includes repair and maintenance of the existing revetment. Maintenance may include grading, replacing the concrete skirt, and riprapping the top bank.

A literature search did not locate any prehistoric, historic, or architectural sites within the project right-of-way. However, a pedestrian survey discovered a prehistoric buried site, 3LE131.

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Map 2	Enlarged view of the Walnut Bend Project area.

Drawings

Drawing 1	Exaggerated site boundry lines and the maintenance area.
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Introduction

An intensive survey for cultural resources was conducted by Memphis District Archeologist, Mr. Jimmy McNeil, and Civil Engineer, Mr. David McNutt, on 27 September 1984, within the Walnut Bend revetment right-of-way as directed by the U. S. Army Corps of Engineers, Memphis District. The study was performed as required by the National Environmental Policy Act of 1969 (Public Law 91-190), Protection and Enhancement of Cultural Historic and Cultural Properties (36CFR 800), and the National Historic Preservation Act of 1966 (Public Law 898-665).

Project Description

The Walnut Bend revetment is located in Lee County, Arkansas, Township 1N, Range 5E, Section 3 SW 1/4 of the SW 1/4 of the SW 1/4 and Section 4 NE 1/4 of the SE 1/4 of the SE 1/4 at river mile 679R, ranges 147-150, on the Latour, Arkansas-Mississippi Quadrangle. The project will affect only the proposed revetment maintenance and repair area (Maps 1 and 2). Equipment will be brought in by boat.

Environmental Setting

The project lies within the Mississippi River meander belt where alluvial deposits are more than 200 feet thick over unconsolidated material. Elevations range from 148 feet to 175 feet with a slope ranging from 1 to

3 percent. The higher elevations are mainly natural levees along present or old streams (Gray 1974:2). The elevations and slopes do not apply to the man-made levees. Drainage is by bayous, sloughs, and man-made ditches.

The climate is generally warm during the summer and mild during the winter. Occasionally, there will be extremes in heat and cold temperatures. A great deal of the woodlands area in the county has been cleared. However, small areas of trees may be found near the edge of bayous and along the Mississippi River. Primarily, the trees are willow, oak, cottonwood, hackberry, and sycamore. Underbrush consists of cane, honeysuckle, blackberry and wild grape.

Fauna in the area are not plentiful. Mammals include: rabbit, squirrel, raccoon, deer, possibly mink, muskrat, and beaver. Numerous cottonmouths, rattlesnakes, and other reptiles are reported in the area.

Previous Research

Enough work has been conducted in the general area of the project, by such researchers as Phillips, Ford, and Griffin (1951), to isolate and date major cultural periods. However, little survey research has been conducted in the immediate vicinity of the project. The most recent intensive survey work in this area was conducted by American Resources Group, LTD (1980) and McNeil (1983).

Results of the Records Search

The Arkansas Archeological Survey and the National Register of Historic Places were consulted and no prehistoric, historic, or architectural cultural remains were recorded within the project area.

Survey Methodology and Results

The Walnut Bend revetment project area is approximately 4.5 acres in size. The area is presently in partial cultivation but badly overgrown with weeds. The survey limits extended 60.96 meters behind top bank and 213.36 meters along the river edge. The surface behind top bank had poor visibility. Thus, shovel cuts were dug every 30 meters within the project right-of-way. No artifacts were found in the shovel cuts. The area of failure provided a clean view of the subsurface stratigraphy. The general area profile was: surface sandy clay deposit to approximately 30 cm deep; 30 cm - 170 cm was brown sandy clay alternating with light brown sand (each varve about 10 cm to 15 cm thick); 170 cm to unknown was blocky grayish brown clay.

However, site 3LE131 was discovered at the southern end of the project. A cultural strata was discovered at approximately 65 cm below the surface. The cultural strata ranged from 15-20 cm thick. This level produced three pieces of shell tempered pottery. A large amount of burned clay was also discovered within the cultural level. The burned clay level is approximately

15 cm thick and 122 cm long. The site could be seen to extend approximately 30 meters along the river bank. An old river run intersects the Mississippi River just north of the site. The old river run comes from west of the Mississippi River, this is considered to be one boundary of the site. From the north/south side center along the top bank, the old river run is 40 meters west of top bank. It is unknown how far south of the old river run the site extends. Shovel cuts within the site area produced no artifacts.

The survey methodology used does not eliminate the possibility of encountering deeply buried sites. Therefore, it is recommended that any site encountered during construction be protected from further damage, by stopping construction until its significance can be determined by the Environmental Resources Branch, Memphis District, U. S. Army Corps of Engineers in conjunction with the Arkansas Historic Preservation program.

Preservation and Avoidance Measures

The site and associated river bank is in immediate danger of destruction by flooding and erosion. In order to preserve the site the erosion must be stopped. This can be accomplished by building a stone and concrete revetment. This work will entail grading the bank to a 3 on 1 slope, placing segmented concrete mats along the river edge and out into the river, and covering the exposed bank slope with stone riprap.

However, such work will destroy part of the site. In order to preserve the site (instead of destroying the site by construction or scientific excavation) a plan was developed that would avoid the site but still provide protection against erosion.

An exaggerated site boundary (Drawing 1) was laid out. No equipment, clearing, or other work will be allowed to occur within this marked off area. Construction could proceed as planned outside the marked off area. Thus 80 percent of the bank failure could be repaired as planned. The eroded area just beneath the site is to be graded to a 2 on 1 slope to within approximately one meter of the site and top bank. However, grading will be done in such a manner that it will not cause further caving of the river edge site area. Here also, concrete matting will cover the river edge and bottom. Stone riprap will then be placed over the concrete and on the graded slope to reach top bank. The concrete mat will stop bottom bank erosion and caving, while the riprap will help stop top bank (and site) erosion. The only effect on the site will be a positive one - that of stopping site loss through erosion.

Using the above plan the site will both be avoided, by the construction, and protected from erosion. Thus, the site will be preserved intact as it is presently.

Recommendations

It is recommended that the maintenance project be allowed to proceed as planned. Thus, this year's erosion will be stopped and further damage to archeological site 3LE131 will be avoided.

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American Resources Group, LTD.

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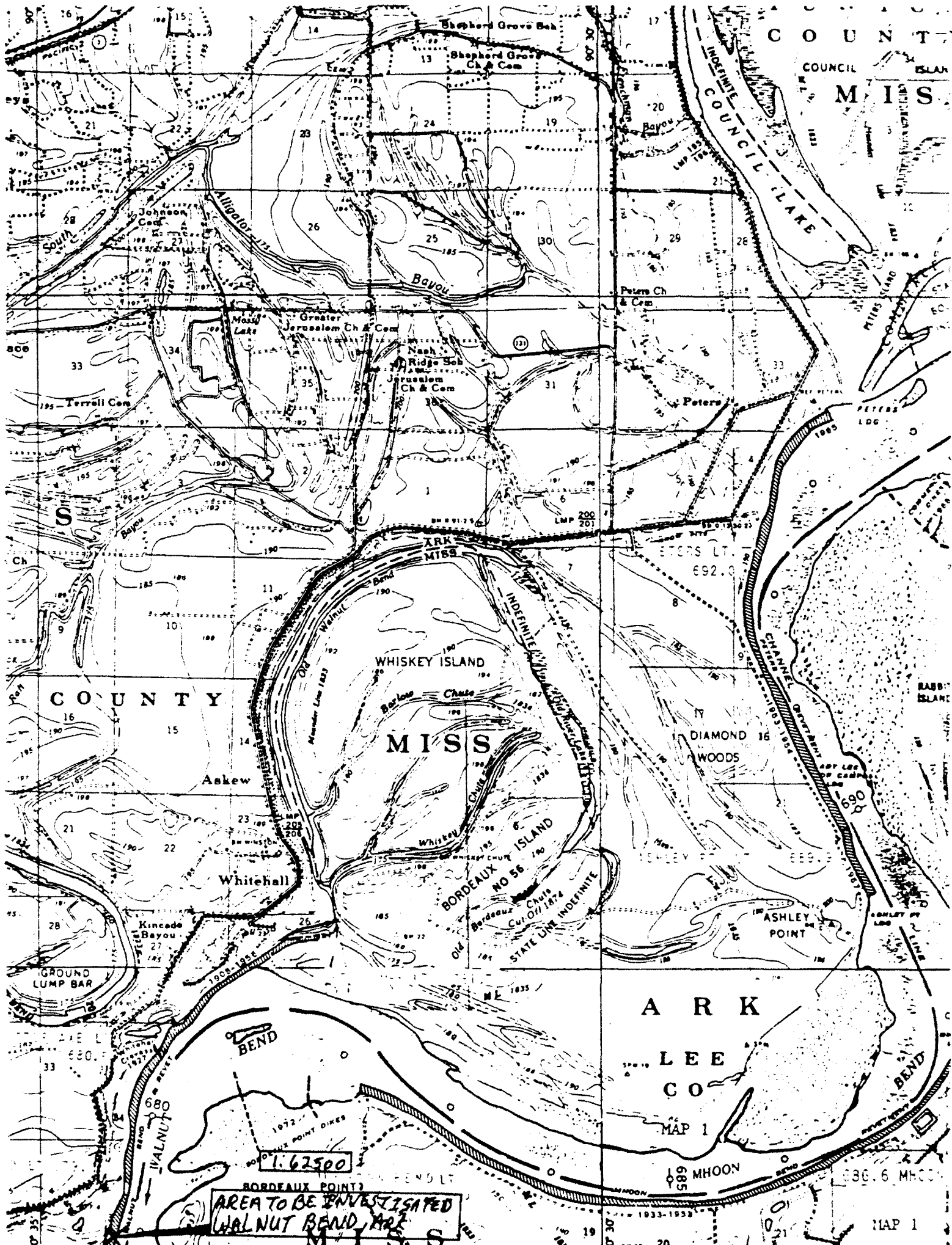
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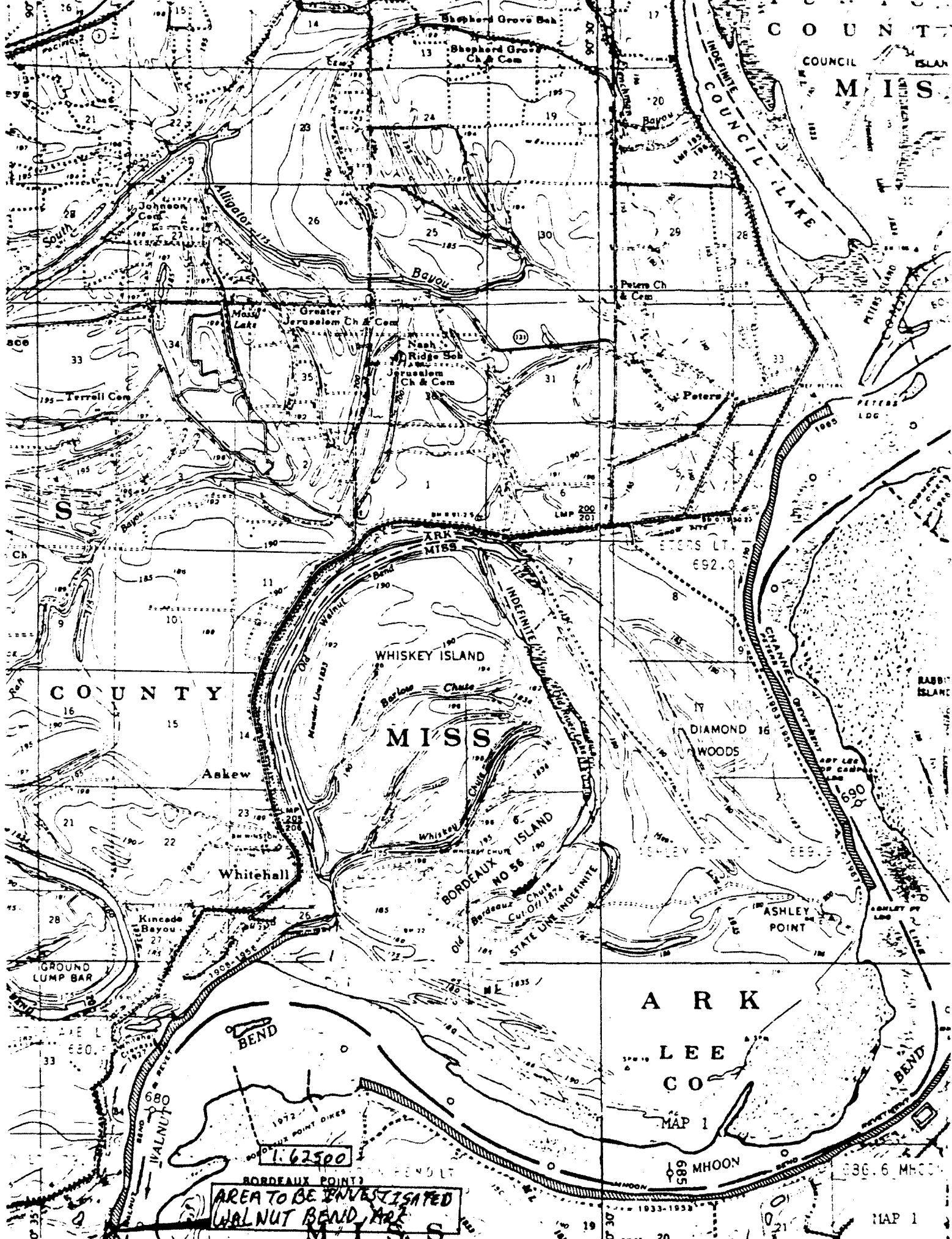
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WALNUT BEND, ARK

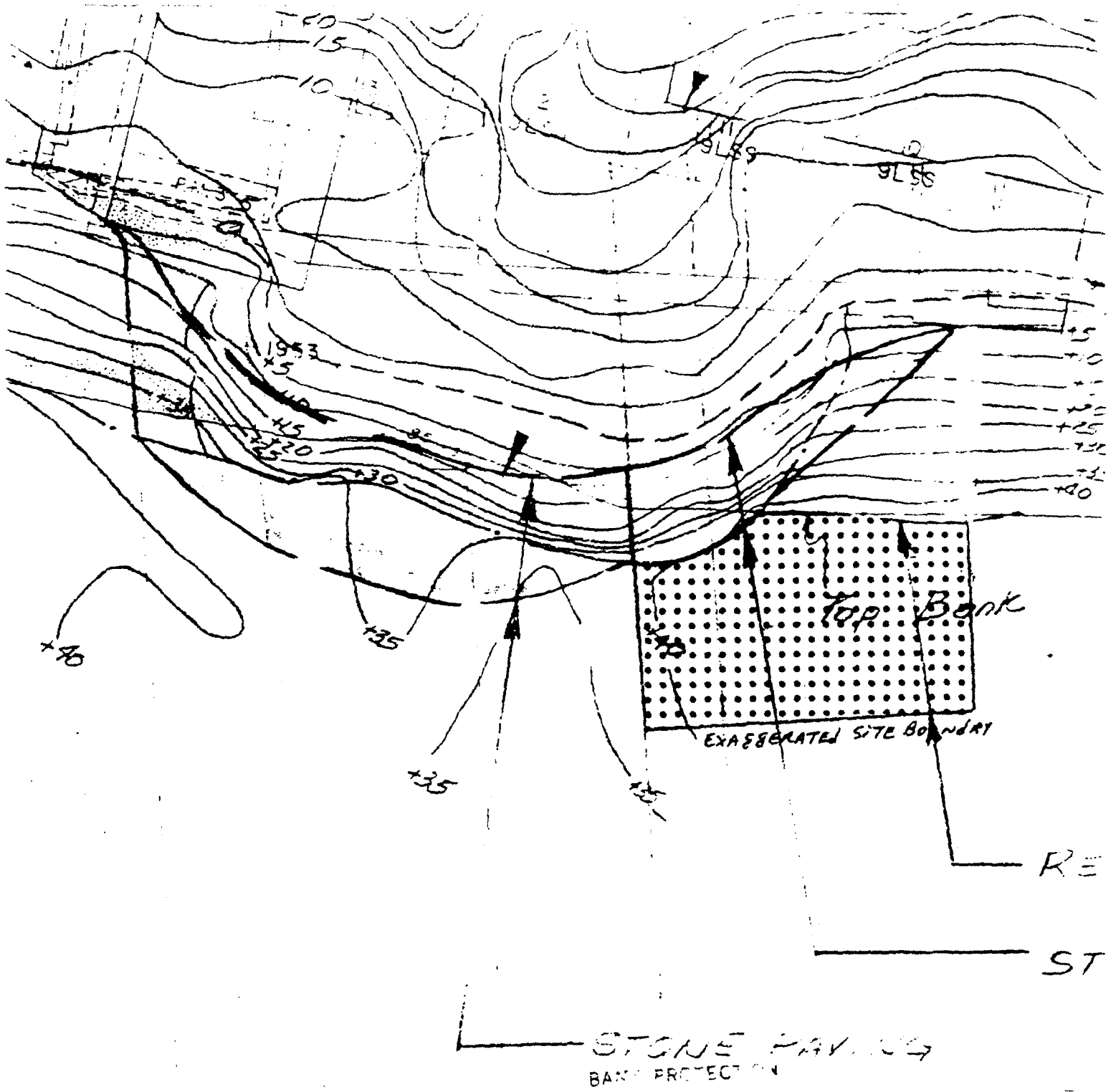
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MISSISSIPPI RIVER

REVETMENT MAINTENANCE
WALNUT BEND, ARK.

BEFORE CONSTRUCTION PLAN

MILE STAKE

148+00

150+00

151+00

151+50

152+00

Drawing 1