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CULTURAL RESOURCES INVESTIGATION:  
SURVEY OF PORTIONS OF THE STATE ROAD COULEE PROJECT  
LA CROSSE, WISCONSIN

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REPORTS OF INVESTIGATIONS NUMBER 11  
MISSISSIPPI VALLEY ARCHAEOLOGY CENTER

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By: Robert F. Boszhardt  
and  
James P. Gallagher

REPORTS OF INVESTIGATIONS NUMBER 11  
MISSISSIPPI VALLEY ARCHAEOLOGY CENTER  
AT  
THE UNIVERSITY OF WISCONSIN-LA CROSSE

Final Report Submitted in partial fulfillment of Contract DACW-37-83-M-1095  
for the St. Paul District, U.S. Army Corps of Engineers

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James P. Gallagher  
Principal Investigator

May, 1984

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## MANAGEMENT SUMMARY

A Phase I cultural resources investigation of a small tract of land along Pammel Creek at the mouth of State Road Coulee in La Crosse, Wisconsin was conducted for the St. Paul District Corps of Engineers. The purpose of the study was to ascertain the presence or absence of cultural resources in compliance with several federal legislative acts which collectively protect cultural resources. The St. Paul District plans to alter the Pammel Creek drainage within the project area in order to alleviate flooding from State Road and Ebner Coulees, which are drained by Pammel Creek. The overall flood control project is being undertaken in conjunction with the City of La Crosse.

The Phase I study at the mouth of State Road Coulee was contracted to the Mississippi Valley Archaeology Center as part of a larger project, which also involved Phase II testing of an Oneota village (47Lc61) at the south end of the City of La Crosse. This report describes only the Phase I survey at the mouth of State Road Coulee. A report on the investigations at 47Lc61 is available as a separate volume (Boszhardt, Theler, and Gallagher 1984).

The Phase I field work consisted of several different techniques which allowed examination of subsurface landforms. This approach was deemed necessary due to excessive historic sedimentation at the mouth of State Road Coulee. Cutting bank profiles along the Pammel Creek drainage proved to be the most effective field technique for examining these deposits. Soil coring and minimal shovel testing were employed to supplement the bank cuts; however, systematic survey of the subsurface deposits away from the creek was not feasible due to the depths of the historic overburden. Fortunately, the survey area is narrow, and the results obtained from the creek bank cuts may be extrapolated to the entire project area with some degree of assurance. However, the exact extent of the cultural resources located was not determined.

The field investigations resulted in the location of two distinct landforms, each of which contained prehistoric cultural remains. These have been reported to the Wisconsin Archaeological Codification File and designated 47Lc176. The first is a former wetland covered by 1-2 meters of historic alluvium. The overlying alluvium contained historic debris; however, the contexts of these materials suggests their random deposition within flood deposits. At its shallowest depth, the surface of the former wetland was found to contain cultural materials attributable to the Oneota Culture. The only evidence of disturbance to these deposits is rodent burrowing. The wetland setting of these materials, the association of large quantities of charred corn, and the undulating surface of the wetland horizon strongly suggest the presence of buried agricultural (ridged) fields at this location.

The second landform located within the project area consisted of a sandy knoll which either bordered the wetland or was completely surrounded by it. This knoll contained only a small area of undisturbed surface from which one undiagnostic prehistoric artifact was recovered.

The significance of the cultural resources located in the surveyed area can only be established through further study. If they are in fact sealed Oneota ridged agricultural fields, this would be only the second known example in the Upper Midwest. The other example is at the Sand Lake Site (47Lc44) which is situated in a setting very similar to the mouth of State Road Coulee. These finds may begin to reveal a heretofore unrecognized pattern of Oneota subsistence practices -- wetland agriculture.

It is recommended that a Phase II study be conducted throughout the study area prior to flood control construction activities. The Phase II study should be undertaken in such a manner that it would identify the extent of the wetland cultural deposits, their relationship to those located on the sandy knoll, and permit determination of the site's eligibility for inclusion to the National Register of Historic Places. Such investigations will necessitate deep controlled excavations; however, the information gained may be extremely significant.

In addition, because the study has located the presence of buried cultural deposits, it is also recommended that the entire flood control easement under consideration be resurveyed. An earlier survey (Vehik 1975) consisted of only walkover inspection and should be considered as inadequate for identifying the presence or absence of cultural resources in this area.

All artifactual materials and the original field records pertaining to this project are housed at the Mississippi Valley Archaeology Center in La Crosse. The artifacts remain the property of the federal government, and will be turned over to the St. Paul District Corps of Engineers upon request. A copy of the field records accompanies the original copy of this report.

## INTRODUCTION

In response to federal legislation requiring cultural resources investigations on federally funded construction projects, the St. Paul District Corps of Engineers sponsored a 1975 cultural resources inventory of the State Road-Ebner Coulee flood control project in La Crosse, Wisconsin (Vehik 1975). This project intends to deepen and enlarge the drainages of Ebner and State Road Coulees (Pammel Creek) to alleviate flooding problems. Project modifications since the 1975 survey necessitated a resurvey of the flood control project area. In May of 1983, the St Paul District contracted the Mississippi Valley Archaeology Center to perform this followup cultural resources survey.

The project is located in the SW $\frac{1}{4}$ , SW $\frac{1}{4}$ , Section 10, T15N, R7W (Shelby Township) in La Crosse County, Wisconsin (Figure 1). Specifically, the project area is bounded on the north and west by Pammel Creek as it bends to the south, and on the south by Pammel Creek Road (Figure 2). The maximum width of the survey area is 60 meters N-S, and it narrows to only 20 meters wide at the Ward Avenue and Drive In Road bridges which form the SW and NE ends of the area respectively.

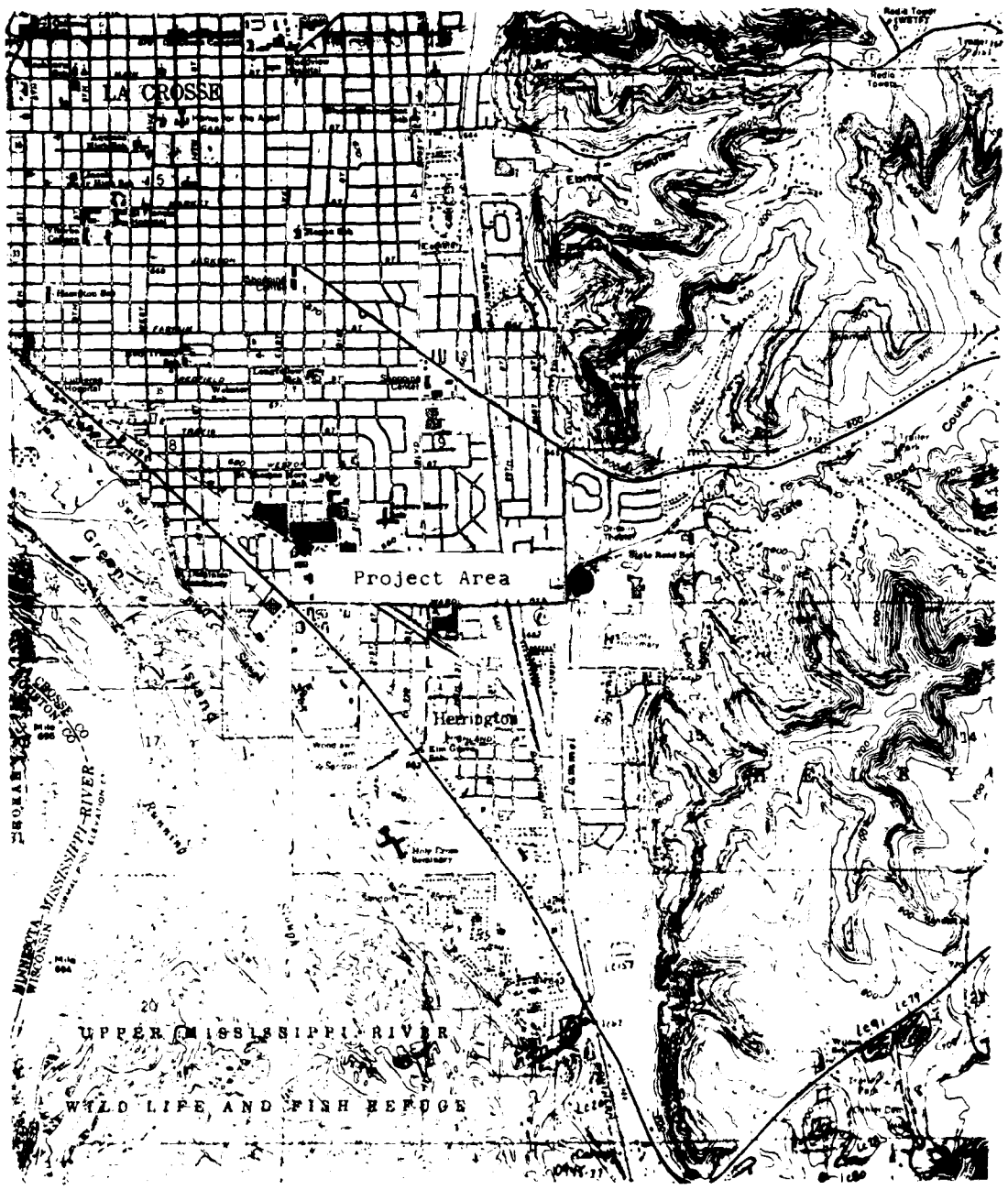


Figure 1: Location of Project Area (U.S.G.S. La Crosse Quadrangle).

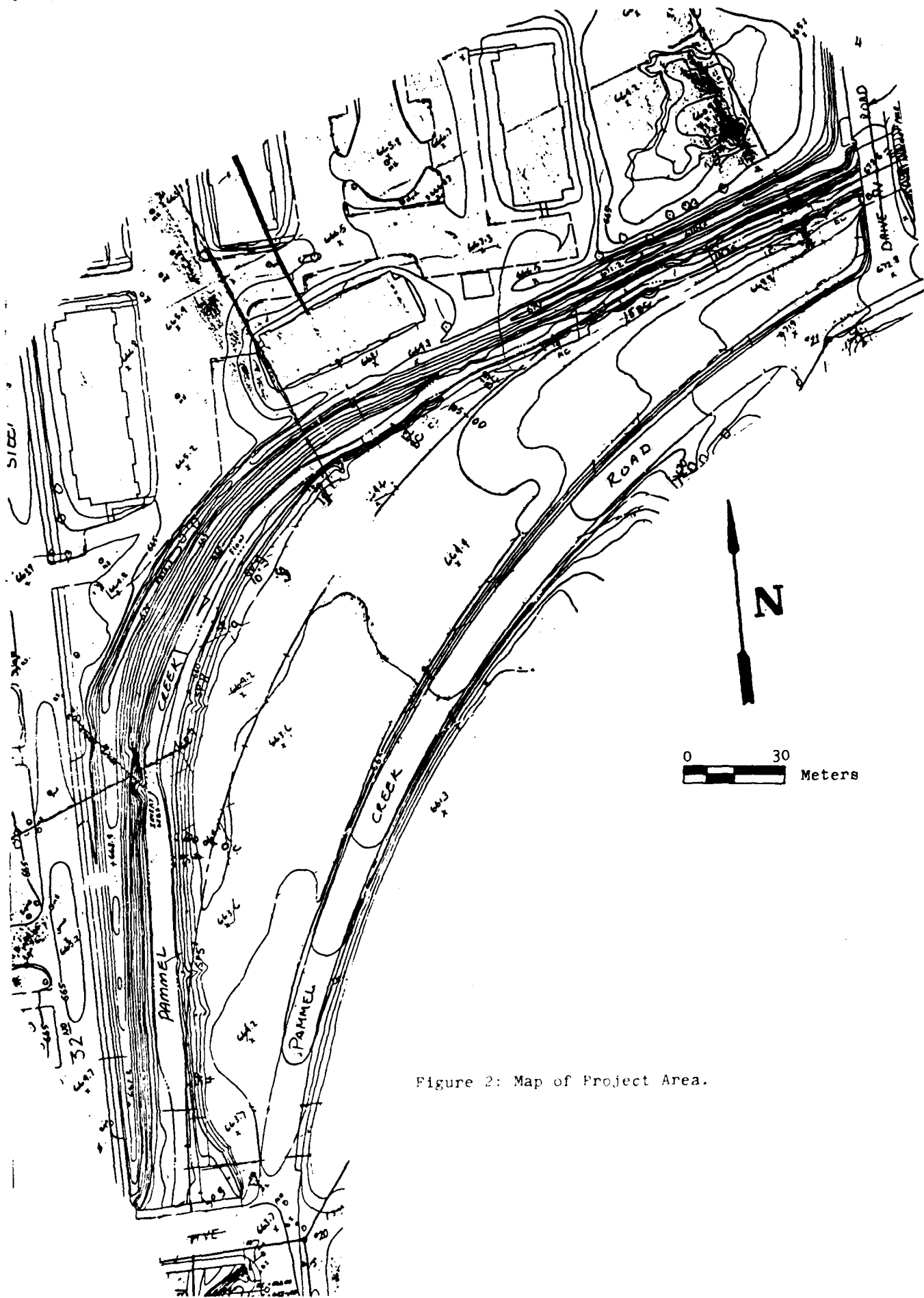


Figure 2: Map of Project Area.

This area is situated at the mouth of State Road Coulee which is a fairly typical "driftless area" valley or "coulee," as they are referred to locally. The valley has cut deeply into sedimentary bedrock, forming 400 foot high bluffs on either side at its mouth, where it meets the trench of the Mississippi River. A large Pleistocene terrace formerly separated Pammel Creek from the Mississippi floodplain; however, the creek has been channelized historically to allow drainage to the Mississippi.

In the La Crosse area much of the previous archaeological work has concentrated on Pleistocene terraces (where urban development has been intensive). These studies have begun to reveal an intensive Oneota settlement of this area with several large villages known. Although the physical setting of State Road Coulee is a common one, very little archaeological work has been done in environments similar to that found in the study area. One study of a setting comparable to the one considered in this project was conducted in 1982 at the mouth of Sand Lake Coulee to the north of La Crosse (Boszhardt 1983, Gallagher, Boszhardt, and Stevenson 1983). That research identified intensive Oneota use of the coulee mouth for specialized activities, including agriculture. Woodland artifacts were also recovered at the mouth of Sand Lake Coulee, but little is known of the Woodland activities conducted there.

Within the general La Crosse area, Oneota sites have also been found in rock shelters, and mounds containing Oneota vessels have been identified. Far less is known about other archaeological manifestations, although diagnostic artifacts indicating the presence of Paleo-Indian to the historic groups have been located.

As stated in section 4.02 of the project scope of work, the basic goal of this study was to conduct a Phase I survey of the specified area. Section 3.03 of the scope of work defines the goals of a Phase I survey as determining the number and extent of cultural resources within the project area for purposes of proper management. This study has partially succeeded in accomplishing these goals. The survey did locate a prehistoric site (47Lc176) which is described in terms of a probable second example of Oneota wetland agriculture. However, because the cultural deposits of this site are deeply buried, determination of the precise number and extent of the resources in the entire project area was not possible. Geomorphological information obtained during the survey allows the possibility of additional (buried) cultural resources. This information is important in pointing out the inadequacy of the original walkover survey not only in the project area, but of any portions of the State Road Ebner Coulee flood control project that might be covered with historic sediments.

Field work was conducted on June 7-8 and August 2 and 4 by the principal investigator, the field supervisor, and a field crew of five. Analysis of the materials was conducted during the months of June, July, and August by the principal investigator, and field director, assisted by a laboratory supervisor and seven laboratory assistants. Approximately 400 work hours were spent on the project. All of the artifactual materials and pertinent records are housed at the Mississippi Valley Archaeology Center on the campus of the University of Wisconsin-La Crosse.

## ENVIRONMENTAL SETTING

The survey area is located within the "Driftless Area", a region of southwestern Wisconsin, northeastern Iowa, and southeastern Minnesota which was not affected by direct glacial action. The Driftless Area does not contain glacial drift as do surrounding regions of the upper Midwest. Its mature dendritic drainages have cut deep into bedrock unlike the poorly drained lands of glaciated regions.

Specifically, the survey area is situated at the mouth of a fairly typical "Driftless Area" drainage which is called State Road Coulee. This coulee is a relatively small, steep walled, and narrow valley that formed by down-cutting into bedrock formations consisting of Prairie du Chien dolomitic limestone underlain by Trempealeau formation sandstone. These formations act as natural aquifers which release groundwater into the valleys through numerous springs. Interestingly, each of these bedrock formations contain sources of lithic material which are known to have been utilized by pre-historic peoples for stone tool manufacture. The Prairie du Chien formation contains chert nodules, and the Trempealeau sandstones contain layers of siltified sandstone. Although these materials are the most common lithic types found at archaeological sites in the La Crosse area, few quarry/workshop sites are known, and none have been located in State Road Coulee itself.

The bedrock forms the base of an irregular upland topographic zone. At State Road Coulee, the upland ridges rise to 400 feet above the valley floor, and are capped with a mantle of aeolian loess which forms the primary soil parent material. Early vegetation records indicate that the uplands supported a prairie/oak opening floral community with more mesic species such as maple, basswood, birch, and occasional pines inhabiting north and east-facing slopes. The south and west facing slopes were more prairie like. It is interesting to note that historic fire maintenance has allowed reforestation of the upland slopes.

Pammel (1928) reported:

I shall never forget the numerous prairie fires which annually started in the region of La Crosse. Dozens of these fires could be seen from our house for a number of weeks during the spring season. There were long lines of fire up the hills and down, and these of course destroyed everything in their path. Consequently, many of the bluffs were not covered with trees, and they were prairies on a hillside, largely due to the fact that these annual fires destroyed the young tree growth. Later when the communities became more stable, these fires did not occur so frequently... It may be noted that when fires ceased to do their destructive work, some of these slopes recovered themselves with a forest of trees and shrubs and one could see the gradual encroaching of paper birch, hazel, and oak on these bluffs. For instance, at the mouth of State Road Coulee the east slope of the bluffs was quite bare in the early days, but later since the fires ceased, the trees have practically covered the entire east slope. (1928:13)

State Road Coulee is a tributary valley of the Mississippi River trench, which contains two distinct physiographic zones: Pleistocene terraces and the Holocene floodplain. At La Crosse, the Mississippi trench is relatively wide (5-10 miles) and, consequently, vast quantities of Pleistocene outwash sand and gravel were deposited. Subsequent down cutting by the Mississippi has left a series of terraces well above the present level of the river. The City of La Crosse, for example, is built upon a terrace which stands 30 feet above the present floodplain. The dry, loose sand of the terraces was formerly subject to wind movement and dune activity. Early records document very sparse arboreal vegetation, with the terraces primarily covered with prairie flora.

Below the terraces lies the present floodplain of the Mississippi River. This setting consists of bottomland forests, marshes, and open water lakes and sloughs. The landforms of the lowland floodplain are, for the most part, Holocene in age; however, in this wide section of the Mississippi trench, a few examples of Pleistocene terrace outliers remain surrounded by the floodplain.

The mouth of State Road Coulee is separated from the Mississippi floodplain by the southern end of the La Crosse terrace. Interestingly, the mouth of State Road Coulee is lower in elevation than the terrace. This swale follows the base of the bluffs to the north and south of the coulee, and is thought to represent a former channel of the La Crosse River (Martin 1965:156). This low area represents a unique setting at the junction of the bluffs and the terrace. The distinctiveness of the bluff swale was noted by the Government Land Office (G.L.O.) surveyors, who in 1846 described Shelby Township as follows:

There are three distinct classes of land in this township Viz: 1st the Upland which consists of high hills nearly bare of timber and terminating towards the Mississippi abruptly in sandstone cliffs - some 200 feet high; with many fine springs in the ravines which sink in the sandy bottom west of them...(Brown 1846 - emphasis ours).

The G.L.O. surveyors also illustrated and described the State Road Coulee drainage (Pammel Creek) as emptying into a "marsh" in the SE<sup>1</sup>/<sub>4</sub> of Section 9 where it "sank" (Figure 3), rather than continuing to the Mississippi. This wetland would have been immediately west of the survey area. This phenomenon was typical of small sized non glacial drainages that were blocked by Pleistocene outwash deposits in the La Crosse area until historic alterations upon the landscape (Boszhardt 1983, Gallagher, Boszhardt, and Stevenson 1983). A cabin is also illustrated on the G.L.O. records in the vicinity of the project area. This cabin may correspond with the early Nagel farmstead (Hays et. al. 1981).

Near the end of the last century the project area became part of a large farm owned by the Pammel family. It is fortunate that Louis Hermann Pammel (later professor of Botony at Iowa State College in Ames) recorded the environment of the Pammel farm, including two published accounts of the wetland at the mouth of State Road Coulee. In a 1907 publication summarizing

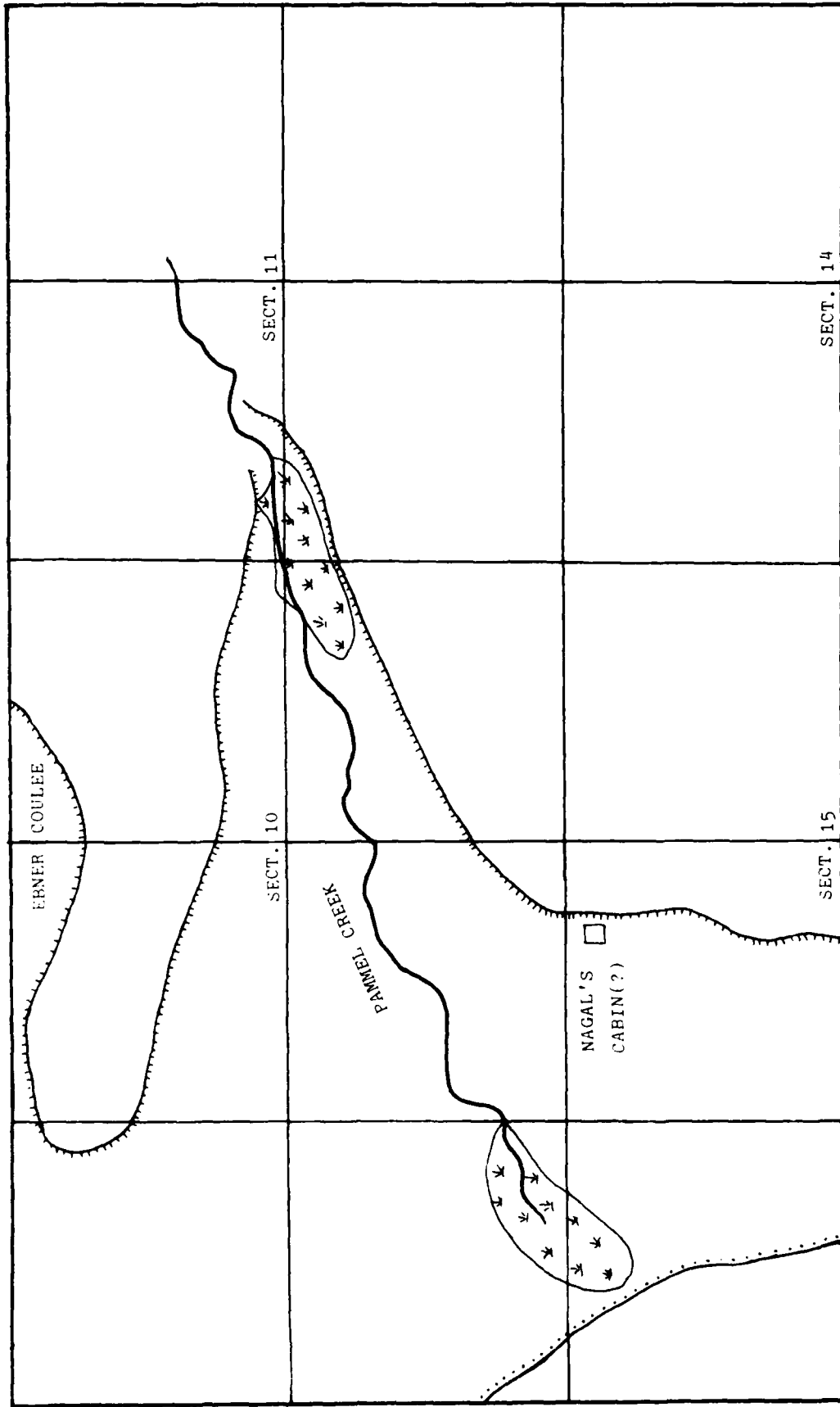


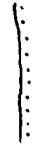


FIGURE 3:

- BLUFF EDGE 
- MARSH 
- TRAIL 

**FACSIMILE OF GENERAL LAND OFFICE  
SURVEY PLAT OF STATE ROAD COULEE**

**IN T15N R7W (1847)**

the vegetative communities in western Wisconsin and adjacent regions, Pammel wrote:

Away from the streams only a very small number of ponds or lakes occur. The one described here occurs in State Road Coulee' and is of comparatively recent origin. The present small creek in State Road Coulee' once had its course along the west side of the bluffs, but by the accumulation of sedimentary material a few miles south cut through an alluvial floodplain, the water sinking away in large part in the loose sandy soil of the mouth of this small valley, joining, however, the old channel in time of high water. The accumulation of water from springs at the base of the hills forms a small lake with a marsh of some size at the lower end. (1907:84-85)

In his 1928 reminiscences, Pammel more clearly described the State Road Coulee wetland as follows:

The mouth of State Road Coulee consisted of about 400 acres of rich and fertile land. This area had received the silt from the adjacent hills and at one time was more or less of a bayou or lake which connected northward with an old bayou that came from the La Crosse River basin. Even during my youthful days on the farm at State Road Coulee, there was a pond below the hill on the poor farm. This had no outlet, although there is much evidence that the water from State Road Coulee may have found its way to the bayou of the Mississippi River below the bluffs (1928:19).

Pammel recorded the following species of plants from the wetland at State Road Coulee: duckweed, sedge, water-thyme, pondweed, mare's tail, buttercup, spike-rush, sweetflag, marsh marigold, skunk cabbage, blue flag, giant reed, jack-in-the-pulpit, jerusalem artichoke, and wild leek (1907:84, 1928). The 1894 Mississippi River Commission map (Chart No. 172) shows Section 10 as a wetland; however, this area has been dramatically altered since that time. Pammel noted that his father had "conceived the idea of straightening the stream" (1928:23). It is interesting to note that in doing so, Pammel's father cut through a small hill (apparently the original location of the Nagel farm house), and in the process found shells, arrows and pottery indicating a pre-historic site.

The precise location of the hill is unknown; however, the G.L.O. plotting of what was probably Nagel's cabin would place the site in the NE<sup>1</sup>/<sub>4</sub>, NW<sup>1</sup>/<sub>4</sub>, of Section 15, or within 1500 feet of the survey area. According to early topographical maps, this location stands at a similar elevation to the La Crosse terrace located to the west and north, although separated by the bluff base swale.

Subsequent to the initial channeling of the wetland by Pammel's father, other historic alterations have drastically changed the area, so that by the 1930's the wetland was not indicated on U.S.G.S. maps. Presently no evidence of the wetland exists on the landscape surface. Instead, the mouth of State Road Coulee has been developed into residences and the corporate headquarters of the Trane Company. The project area itself represents one of the few remaining undeveloped tracts of land on what was formerly the Pammel farm.

## SURVEY METHODS

Originally the strategy for the resurvey of the tract at the mouth of State Road Coulee planned for shovel testing the entire area with a 15 meter interval between each shovel test. However, soil coring of the area indicated that approximately one meter of historic alluvium lay on top of the original wetland surface. The depth of the historic alluvium precluded shovel testing as a feasible survey technique.

Fortunately, the channelized creek along the north and west edges of the project area was suitable for excavating bank profiles which allowed both detailed examination of the soil stratigraphy and identification of cultural resources. Furthermore, the context of the recovered materials was also identifiable permitting preliminary evaluation of the nature of the cultural deposits.

A total of 16 bank cuts, each approximately 1 meter wide, were excavated into the channelized bank at about 30 meter intervals. Figure 4 shows the locations of the bank cuts in the project area. Attempts were made to excavate the cuts to the original land surface; however, at several locations the overlying historic sediments were over 1.5 meters thick, and the wetland surface was not encountered during excavations. In places where the overlying historic alluvium was exceptional, the cuts were supplemented with soil coring to determine the depth of the original wetland surface. Although the overlying alluvium frequently contained historic artifacts, the contextual significance of these materials is questionable due to their occurrence in flood deposits. While in situ historic cultural materials were looked for, the historic sediments were not screened, although they were examined for in situ cultural deposits. All soils not immediately recognizable as historic alluvium were screened through 1/4-inch mesh hardware cloth.

Because of the narrow width of the project area, the bank cuts were deemed adequate for assessing the presence or absence of cultural materials. However, the horizontal extent of these deposits was not determinable due to the depth of the overlying alluvium. Portions of the project area away from the creek were investigated by excavating two shovel test holes (Figure 4). Coring with a 3-inch diameter soil auger was not possible due to extremely compact ground conditions.

## LABORATORY METHODS

Standard laboratory methods were used in the processing and analysis of the materials recovered in the survey. These included washing, cataloguing, stylistic and functional analysis of artifacts, water flotation of matrix samples, and microscopic sorting of heavy and light fractions. The materials recovered from this field work are curated at the Mississippi Valley Archaeology Center under the catalogue numbers 83.632 - 83.635 and 82.674 - 82.695. Identifiable charred floral remains were sorted and were sent to Leonard Blake of the Department of Anthropology at Washington University (St.

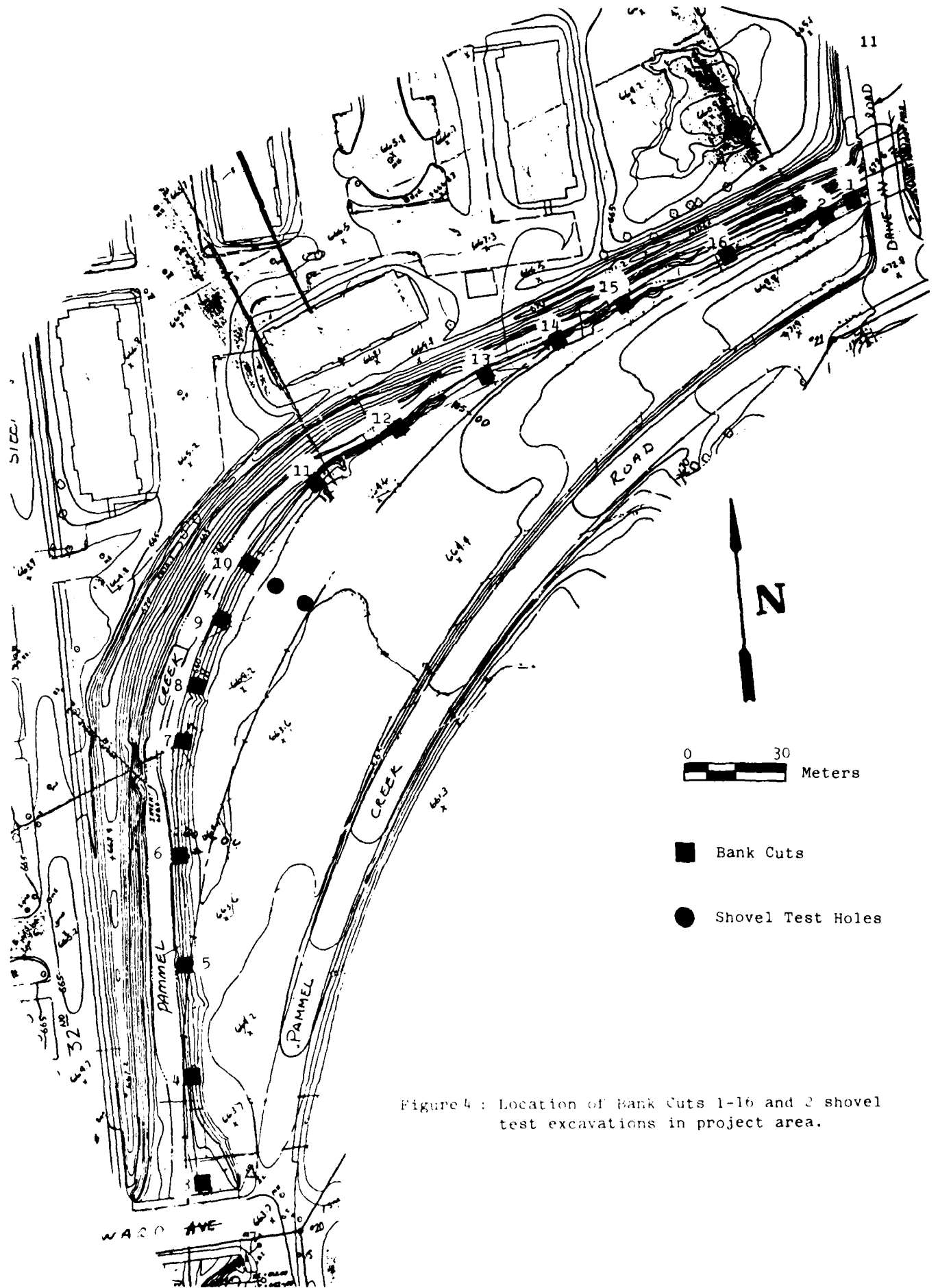


Figure 4 : Location of Bank Cuts 1-16 and 2 shovel test excavations in project area.

Louis) for identification. One carbon sample has been assayed at the University of Wisconsin Radiocarbon Laboratory.

#### PREVIOUS INVESTIGATIONS

A records review of reported sites in the Wisconsin Archaeological Codification File (WACF), housed at the State Historical Society of Wisconsin, indicated that no known sites exist either within the immediate vicinity of the project area or along the entire Ebner-State Road Coulee flood control project, except near the southern end in Sections 21 and 22 of T15N T7W (Figure 1). The sites reported from near the present mouth of Pammel Creek include several Oneota habitation areas: 47Lc61, (Hays et. al. 1981; Boszhardt, Theler, and Gallagher 1984), the north end of 47Lc20 (Stoltman 1973; Gallagher et. al. 1981; Sasso 1984), and 47Lc157 (Stevenson 1983). In addition, other portions of the Overhead Site (47Lc20) also contained archaic and Woodland components including a Middle Woodland (Hopewellian) mortuary area (Gallagher et. al. 1981). These sites typify much of the known pre-historic settlement, subsistence, and burial practices along the Mississippi River edge of the La Crosse terrace. An historic farmstead (47Lc62) is also reported along the south side of Pammel Creek at the north end of 47Lc20 (Hays et. al. 1981). The only previously reported site to be affected by the flood control project is 47Lc61, and recent investigations at that site are reported in a separate volume (Boszhardt, Theler, and Gallagher 1984).

Although no sites have been reported from the upper ends of the Ebner - State Road Coulee flood control project, the entire project easement has been surveyed (Vehik 1975). It is unfortunate that the original survey consisted only of walkover inspection. Despite the fact that the walkover survey included inspection of the channelized creek segments, subsurface inspection was minimal. In light of the geomorphological setting of this area, it is not surprising that the walkover survey did not locate archaeological sites. It is important to note here that historic alluviation in the valley bottoms of these coulees appears to have been extensive, and therefore, intensive subsurface investigations would have been a more appropriate survey technique.

As part of Vehik's survey the same area considered in this report was walked over. " On the east side between the berm [dredge spoil along the west side of Pammel Creek] and Pammel road is a small field, again covered with grass, but with one area which has been recently scraped. No archaeological or historical materials were found in this area. There are a lot of bottle glass fragments, however" (clarification ours). Realizing the limitations of walkover inspection, Vehik recommended monitoring of new construction within the Ebner - Miller Coulee portion of the overall project, and along the State Road - Pammel Creek portion, although only from U.S. Hwy 14/61 to the Mississippi floodplain in the latter segment.

## RESULTS

The resurvey of the small field between Drive In Road and Ward Avenue located a prehistoric site of Oneota cultural affiliation. Cultural materials were recovered in Bank Cuts 1 and 2 at the northeast end of the field near Drive In Road Bridge. In addition, a single chert flake was recovered from Bank Cut 10, and historic artifacts were located in Bank Cuts 1, 3, and 15. The locations of the prehistoric materials have been reported to the WACF and designated 47Lc176 (Appendix A).

The use of the bank cuts to create stratigraphic profiles allowed preliminary evaluation of both natural and cultural deposits. Table 1 presents brief descriptions of the stratigraphy of the 16 bank cuts excavated along Pammel Creek. It can be seen from this table that widely varying soil types were located in the project area. For example, in Bank Cuts 1, 2, 3, 4, 5, 6, 7, and 8 finely laminated light alluvium was encountered overlying a dark silt horizon, while in Bank Cuts 9, 10, 11, 12, 13, 14, 15, and 16 coarse sand was found with no underlying dark silt.

The dark silt horizon almost certainly represents soils which developed when this area was a wetland. As noted earlier, Pammel reported that a wetland existed here as late as the turn of the century. Thus, the light alluvium overlying the wetland soils has been deposited wholly within the historic period. This interpretation is confirmed by the fact that only historic materials were recovered from the very base of the alluvium to the present surface.

The recovered historic artifacts include a seeded and threaded clear glass bottle (148 cm. below the surface in Bank Cut 3), a brass shell casing ("Remington Express 410") at 100 cm below the surface in Bank Cut 1, and a brick from Bank Cut 15 at 1 meter below the surface. These materials are rather difficult to date precisely; however, in general they indicate an age no earlier than the mid-1800's. In no instance were materials from the historic alluvium located in contexts which could be considered as being in situ. Instead, these materials seem to have been randomly deposited during episodes of alluvial sedimentation.

The dark silt horizon was found to contain prehistoric materials including Oneota ceramic sherds. These were all recovered from Bank Cuts 1 and 2 at a depth of about 1 meter below the present surface. Table 2 lists the prehistoric artifacts recovered from Bank Cuts 1 and 2. Again the bank cut profiles allowed a preliminary evaluation of the contexts of these materials.

Bank Cut 1 The surface of the wetland was found to undulate within the 1 meter wide profile of Bank Cut 1. This surface, and geomorphological setting are similar to those of the Sand Lake Site (47Lc44) where Oneota ridged agricultural fields were discovered on a wetland surface sealed beneath prehistoric alluvium (Boszhardt 1983; Gallagher, Boszhardt, and Stevenson 1983). The similarities suggested that the State Road Coulee wetland surface might also have been ridged by the Oneota for agricultural purposes. Given this possibility, Bank Cut 1 was expanded to 5 meters wide.

Table 1: Stratigraphic Summary of Bank Cuts 1 - 16.

<u>Bank Cut 1</u>	
0-100 cm	laminated lenses of light silt/fine sand
100 + cm	dark silt
<u>Bank Cut 2</u>	
0-73 cm	Laminated lenses of light silt/fine sand
73 + cm	dark silt
<u>Bank Cut 3</u>	
0-100 cm	laminated lenses of light silt/fine sand
100-150 cm	black sandy loam with gravel
187 + cm	dark silt
<u>Bank Cut 4</u>	
0-140 cm	laminated lenses of light silt/fine sand
140-188 cm	gleyed alluvium
188-200 cm	dark sand
200 + cm	dark silt
<u>Bank Cut 5</u>	
0-172 cm	laminated lenses of light silt/fine sand
172-181 cm	sand
181 + cm	dark silt
<u>Bank Cut 6</u>	
0-175 cm	laminated lenses of light silt/fine sand
175 + cm	dark silt
<u>Bank Cut 7</u>	
0-185 cm	laminated lenses of light silt/fine sand
185 + cm	dark silt
<u>Bank Cut 8</u>	
0-160 cm	laminated lenses of light silt/fine sand
160 + cm	dark silt
<u>Bank Cut 9</u>	
0-100 cm	laminated lenses of light silt/fine sand
100-137 cm	dark sand
137 + cm	light sand
<u>Bank Cut 10</u>	
0-30 cm	laminated lenses of light silt/fine sand
30-70 cm	dark sand
70 + cm	light sand
<u>Bank Cut 11</u>	
0-30 cm	laminated lenses of light silt/fine sand
30 + cm	light sand
<u>Bank Cut 12</u>	
0-35 cm	laminated lenses of light silt/fine sand
35-38 cm	dark sand
38 + cm	light sand

Table 1 (continued)

Bank Cut 13

0-95 cm laminated lenses of light silt/fine sand  
95-115 cm reddish sand  
115 + cm light sand (to at least 190 cm)

Bank Cut 14

0-110 cm laminated lenses of light silt/fine sand  
110-160 cm light sand  
160 + cm black sandy loam

Bank Cut 15

0-110 cm laminated lenses of light silt/fine sand  
110 + cm light sand

Bank Cut 16

0-67 cm laminated lenses of light silt/fine sand  
67-96 cm dark sandy loam  
96-166 cm light sand (to at least 241 cm)

Table 2: Cultural Materials Recovered from Prehistoric Contexts in Bank Cuts 1 and 2

Bank Cut 1 (original 1-meter wide cut)

2 chert flakes  
1 mammal bone  
1 freshwater mussel shell  
1 fire-cracked rock (909.0 g.)

Bank Cut 2

1 chert flake  
undecorated shell-tempered ceramic sherds  
1 mammal bone

The expansion of the bank cut was conducted with more control than was the initial excavation. Specific zones were identified from which artifacts were removed by excavating with trowels rather than shovels. In addition, matrix samples were collected for flotation and fine screening in order to recover small materials with special emphasis on floral remains.

Figures 5 and 6 illustrate the profile resulting from the expansion of Bank Cut 1. In this profile it can be seen that the wetland surface (Zone E) dips to the west. The greater depth of the wetland surface in Bank Cuts 3, 4, 5, 6, 7, and 8 further attest to the wetland dipping in that direction. Furthermore, Figures 5, 6, and 7 illustrate that the surface of the wetland does in fact undulate in a series of ridges and swales. Although these ridges and swales are not as well defined as those at the Sand Lake Site (Figure 8), it should be remembered that the wetland surface at State Road Coulee was exposed until historic times before being sealed (a period of at least 200 years), whereas the Sand Lake ridges were sealed while they were still in use. The lengthy exposure of the State Road Coulee wetland may have resulted in distortion of the original ridged surface.

Prehistoric materials were recovered from Soil horizons D, E, G, H, and I during the expansion of Bank Cut 1 (see Table 3). Zone E (the top of the wetland surface) contained the greatest amount of cultural materials including Oneota ceramics, lithic debitage, bone, shell, and charred floral remains. The presence of abundant charred corn kernels and possible squash and beans, the undulating surface of the wetland, and the similar site setting to that of the Sand Lake Site strongly suggest that the State Road Coulee wetland was utilized by Oneota peoples for agricultural purposes. A sample of charred corn (*Zea mays*) from Zone E of Bank Cut 1 yielded a radiocarbon date of A.D. 1550  $\pm$  60 (Wis 1584).

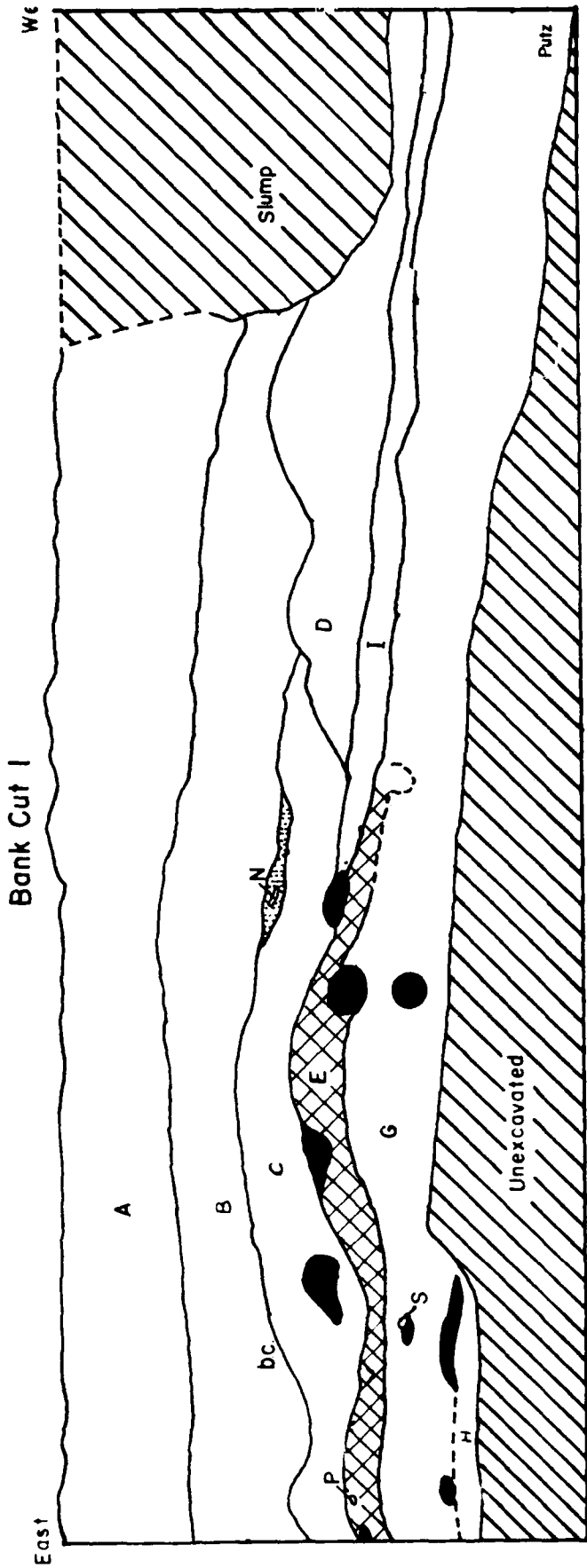
Zone D of Bank Cut 1 is intriguing in that it consists of mottled dark silts and light alluvium. This zone produced only prehistoric artifacts, and is somewhat similar to mottled ridges at the Sand Lake Site that appear to represent rebuilding of the ridges during periods of alluviation. It is interesting that a band of light alluvium (Zone I on Figures 6 and 7) underlies the mottled Zone D. This indicates that some alluviation must have occurred prehistorically.

Prehistoric artifacts also were recovered from beneath Zone E of Bank Cut 1; however, these were all clearly contained within well defined rodent burrows. The absence of any light alluvium in any of these rodent runs suggests that the disturbance occurred prior to historic sedimentation. Rodent burrowing was the only contextual disturbance observed in the prehistoric horizons of Bank Cut 1.

Of the 56 ceramic sherds recovered from expanded Bank Cut 1, all but 6 are shell-tempered, and indicative of Oneota origin. The greater proportion of Oneota ceramics suggests that this was predominant group responsible for the cultural horizons at this site. Shell tempered Oneota sherds were recovered from Zones D and E, and from the rodent burrows beneath Zone E.



Figure 1. Profile of soil cut after expansion. Note light historic alluvium overlying dark soil.  
100 ft scale.



- A-Zone: Historic alluvium; light yellowish brown fine sand (10Yr6/4)
  - B-Zone: Historic alluvium; laminated light yellowish brown fine sand (10Yr6/4) and brown silt (10Yr5/3)
  - C-Zone: Very fine brown sand (10Yr5/3)
  - D-Zone: Prehistoric cultural horizon (possible ridge); mottled very dark greyish brown fine sand (10Yr3/2) and yellowish brown silt (10Yr5/4)
  - E-Zone: Prehistoric cultural horizon (probable ridged wetland surface); black sandy silt (10Yr2/1)
  - G-Zone: Wetland soils; very dark greyish brown silt (10Yr5/4)
  - L-Zone: Prehistoric alluvium; yellowish brown silt (10Yr5/4)
  - H-Zone: Wetland soils; gleyed red sand (2.5Yr4/6), dark grey sand (10Yr4/1), and brownish yellow sand (10Yr6/6)
  - b.c. Bullet casing "Remington Express 410"
  - N Nail
  - P Oneota pottery sherd
  - S Shell in rodent burrow
- Gravel lens
  - Rodent burrows

Figure 6: Profile map of expanded Bank Cut 1.



Figure 7: Possible Oneota agricultural ridges at State Road Coulee Bank Cut 1. Note undulating surface of dark wetland silts. Overlying alluvium is Historic.



Figure 8: Example of Oneota agricultural ridges at the Sand Lake Site. Overlying alluvium is prehistoric in age.

Table 3: Cultural Materials Recovered from Expanded Bank Cut 1 (5 meters wide)

Zone B

coal cinders

Zone C

1 brass casing "Remington Express 410"

Zone D (possible mottled ridge)

1 retouched chert flake

24 chert flakes

1 silicified sandstone flake

5 undecorated shell-tempered ceramic sherds

3 undecorated grit-tempered ceramic sherds

2 mammal bones

1 fish bone

fragments of freshwater mussel shells

charred floral remains including corn kernels and possibly beans

fire-cracked rock (45.9 g.)

Zone E (top of wetland soil horizon; probable ridges)

55 chert flakes

1 shell-tempered rim sherd

2 decorated shell tempered body sherds

36 undecorated shell-tempered body sherds

4 freshwater mussel shells

46 mammal bones (burned and unburned; 1 canid tooth, 1 distal end of a large mammal humerus)

5 fish bone

charred floral remains including corn kernels and possibly squash seeds

fire-cracked rock (238.7 g.)

Rodent burrows beneath Zone E

2 biface fragments

3 chert cores

14 chert flakes

1 silicified sandstone flake

1 chert chunk

1 grit-tempered (cord-roughened) body sherd

6 undecorated shell-tempered body sherds

40 mammal bones (1 beaver mandible, 1 large mammal phalanx, 1 phalanx (human?),

2 canid premolars)

3 turtle bones

3 fish bones

charred floral remains, including corn kernels

fire-cracked rock (67.8 g.)

Zone G

2 chert flakes

11 mammal bones

charred floral remains

Zone H

4 chert flakes

2 undecorated grit-tempered ceramic sherds

2 mammal bones

Zone I

1 chert flake

Zone E produced the only decorated Oneota sherds. One of these is a small rim which exhibits small tool notching on the top of the lip. A second sherd is from the neck-shoulder area, decorated with 3 horizontal trails forming rows which are filled with horizontal lines of punctates (Figure 9). This decorative style is also represented on Oneota sherds from the Pammel Creek Site (47Lc61), the Overhead Site (47Lc20), and the Bird Bluff Site (47Lc158). Beneath this decoration area, are the tops of a series of vertical trails that appear to have extended over the shoulder. A third decorated sherd from Zone E is a small fragment with a portion of a trails or punctate. While the shell-tempered ceramics document Oneota activity, the sample of decorated sherds is too small to permit affiliation to any Oneota phase.

Woodland activity is also suggested by the presence of grit tempered sherds from Zones D and H, and from a rodent burrow beneath Zone E. All of these sherds are small and undecorated, preventing a relative estimation of the age of the Woodland component. However, their apparent association with Oneota sherds in Zone D suggests that these sherds are of the contemporaneous Late Woodland manufacture. Brown (1982:108) points out an alternative explanation for the presence of both grit and shell tempered ceramics. Recent studies have apparently demonstrated different functional capabilities of differing ceramic tempers, and therefore, the grit tempered sherds may not necessarily represent a different cultural group such as Woodland.

Analysis of preserved floral remains from Bank Cut 1 was undertaken by Leonard Blake of Washington University in St. Louis. Identified specimens from various zones are listed in Table 4. As can be seen from this table, charred cultigen remains dominate the assemblage. These include both corn (Zea mays) and the common bean (Phaseolus Vulgaris), and were concentrated in the undulating surface of the wetland (Zone E). These further support the possibility that the wetland was ridged by the Oneota for agricultural purposes. Corn was also recovered from Zone D (a possible later episode of ridging) and from Zone G in rodent burrows which lead from Zone E. Blake was able to identify two kernals as representing the Eastern Eight Rowed race. In addition, many of the kernals were found to have been charred after removal from the cob. The few non-cultigen remains which were identified are of species which would have been common at the site environs.

The faunal assemblage from the prehistoric zones of Bank Cut 1 is intriguing in its variety. Recovered faunal remains include freshwater mussel shells, fish, turtle, and a variety of mammals including beaver, canid, large mammal (possibly white-tailed deer), and possibly a human phalange. While the mussels and fish were almost certainly obtained from the Mississippi floodplain, the beaver and turtle may have been locally available from the Pammel Creek wetland. It is interesting that many of the larger mammal bones have tooth marks. These marks appear to have been produced by larger mammals such as canids (probably dogs) rather than rodents.

Due to the excessive thickness of the historic alluvium (up to 2 meters) in Bank Cuts 3, 4, 5, 6, 7, and 8, the wetland was reached at the southwest end of the project area only by probing with a 1-inch diameter soil core below the base of the bank cut excavations. Although no prehistoric materials were found during the probing, it cannot be concluded that prehistoric cultural deposits do not exist there.

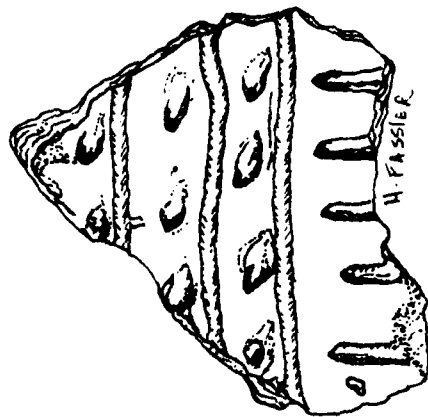


Figure 9 : Decorated shell-tempered sherd from Zone E of Bank Cut 1.

Table 4: Identified floral remains from Bank Cut 1 at 471.c176.

Zone E (possible ridged field surface)

- 14 measurable corn kernels (Zea mays); (2 Eastern Eight Row race)  
additional corn kernel fragments
- 1 whole common bean (Phaseolus vulgaris)
- 4 halves of beans
- 8 fragments of halves of beans
- 1 basswood (?) seed (Tilia americana)
- 1 uncarbonized seed (modern)

Zone D (possible mottled ridge)

- 3 measurable cor kernels (Zea mays)
- uncarbonized chenopodium sp. seeds (modern)

Zone G (rodent burrows leading from Zone E)

- 6 measurable corn kernels (Zea mays)
- 1 basswood (?) seed

As noted earlier, Bank Cuts 9, 10, 11, 12, 13, 14, 15, and 16 exposed coarse sands which do not overlie a buried wetland surface. These bank cuts were located in the central portion of the project area (Figure 4), and represent a geomorphological situation very different from that described above. The coarse sand is characteristic of Pleistocene outwash sands that make up the terraces in this region. The sands in the central bank cuts were covered with historic alluvium to varying depths (see Table 1). For example, in Bank Cuts 10 and 11, the surface of the sand was 30 cm below the present surface, while in Bank Cuts 9 and 14 the sand was reached at depths of 100 and 110 cm respectively. The sloping surface and limited extent of the sand in the project area both suggest the presence of an outlier knoll of Pleistocene outwash which was at least partially surrounded by the wetland. The knoll may have become separated from the La Crosse terrace to the west from later Pleistocene flooding and/or runoff from State Road Coulee, or by sand dune activity. This knoll is intriguing given Pammel's account (1928) of his father cutting a ditch through a sandy knoll to straighten the creek -- especially since Pammel's father recovered prehistoric artifacts from the ditch.

A single chert flake was recovered during excavation of Bank Cut 10. The flake was located in the top 40 cm of sand, which consisted of a dark organically stained natural A-horizon. Traces of this A horizon were also observed at the top of the sand in Bank Cuts 9, 12, and 16; however, Bank Cut 10 contained the best example of the natural surface of the sandy knoll, and was the only one that produced a prehistoric artifact.

An attempt was made to trace the extent of the sandy knoll to the south, away from Pammel Creek. The surface of the knoll along the creek is obscured by a mantle of historic alluvium, and away from the creek the extent of the sand is not visible on the surface. Two shovel test holes were excavated to the south of Bank Cut 10, at 15 meter intervals. Although both of these shovel tests encountered the sand, no evidence of the natural A-horizon was found. The absence of the A-horizon in these shovel tests suggests that this may be the scraped area referred to by Vehik (1975:E-2).

#### EVALUATION AND CONCLUSION

A second Phase I survey was conducted at a selected portion of the State Road - Ebner Coulee flood control project. In contrast to the original walkover survey, the resurvey employed techniques which allowed examination of subsurface stratigraphic deposits. This was necessary due to the excessive historic sediments overlying the original land surface. This methodology resulted in the location of a prehistoric site (47Lc176) which was not identified during the initial walkover survey.

This study has partially fulfilled the stated goals of the project. The study has determined the presence of cultural resources; however, the deeply buried nature of the site prevented determination of its extent. Additionally, due to the methodology employed during this study, preliminary evaluation of the site condition was possible.

47Lc176 has been reported based on the recovery of prehistoric materials from Bank Cuts 1 and 2 and Bank Cut 10. Materials in Bank Cuts 1 and 2 were found in undisturbed contexts, at the surface of a wetland soil horizon that is sealed by a meter of historic alluvium. This situation is similar to that of the Sand Lake Site, where Oneota ridged agricultural fields were located. The recovery of Oneota ceramics, charred corn, and the apparent ridged surface of the State Road Coulee wetland in Bank Cut 1 strongly suggests that this site also represents an Oneota agricultural field. A single radiocarbon date of A.D. 1550  $\pm$  60 (Wis 1584) from the sealed wetland cultural horizon at 47Lc176 is slightly later than three dates of A.D. 1450  $\pm$  70 (Wis 1479), A.D. 1460  $\pm$  70 (Wis 1480), and A.D. 1480  $\pm$  90 (Wis 1477) from the Sand Lake Site.

The surface of the wetland was identified at other portions of the project area (Bank Cuts 3, 4, 5, 6, 7, and 8); however, a greater depth of historic alluvium precluded excavation to that surface, and it remains unknown if cultural resources are located there.

An undiagnostic prehistoric artifact was recovered from Bank Cut 10 in a different geomorphological setting. This artifact was recovered from an apparently small remnant of a natural A-horizon on a sandy knoll. This knoll appears to have been at least partially surrounded by the wetland. A similar situation exists at the mouth of Sand Lake Coulee where a prehistoric site (47Lc41) occurs on outlier sandy knolls adjacent to the Oneota wetland ridged agricultural fields (47Lc44).

#### RECOMMENDATIONS

This study has demonstrated the existence of a potentially significant prehistoric site within the State Road - Ebner Coulee project area. The buried nature of these cultural deposits indicates that additional resources might be located not only in other portions of this project area, but also throughout all of the upper reaches of the entire flood control area. Because specific construction plans are not yet available, it is difficult to identify adverse affects to the single known archaeological site, or to other areas that might contain cultural resources. Therefore, several different options for recommended additional archaeological investigations are presented. Selection of one of these options will depend on specific construction plans.

(1.) If the final plans for the flood control project do not call for disturbance of the surveyed area, then no additional cultural resources investigations will be necessary within this portion of the flood control project.

(2.) If construction plans do call for disturbance of either the site area or of any other portion of the surveyed area, then additional cultural resources investigations will be required. Such work would need to determine more precisely the extent of the cultural resources and the effects of the planned construction, in addition to evaluating the eligibility of the site for the National Register of Historic Places. This type of work would involve Phase II testing in the form of controlled excavations. Test excavations would be necessary in the wetland portion of the known site, on the sandy knoll, and at the southwest end of the survey area.

The Phase I resurvey described in this report found that the wetland cultural deposits extend at least from the Drive-In road bridge to a point approximately 30-45 meters west, between Bank Cuts 2 and 16 (see Figure 4). The project area in this section is only 20 meters wide, from Pammel Creek to Pammel Creek Road.

Excavations in the wetland portion of the known site would need to evaluate the condition of the cultural deposits in more detail. These excavations should be aimed at determining the nature of the deposits (i.e., whether they do in fact represent Oneota ridged agricultural fields), as well as defining their extent.

In order to determine whether or not the wetland cultural horizons actually do represent ridges, it will be necessary to excavate a fairly large area. The most efficient approach would be to utilize the existing 5-meter wide Bank Cut 1 profile as a guide. It is recommended that a 5 x 5 meter unit be excavated using Bank Cut 1 as the northern boundary. The excavation should be conducted in a controlled manner, by natural stratigraphic levels. This approach should identify more precisely the nature of the historic artifacts in the overlying alluvium, which appear to be randomly deposited by flooding. Furthermore, the unit would expose a large enough portion of the wetland surface to reveal any natural or cultural ridges. A larger sample of prehistoric cultural materials also would be obtained, allowing better functional and cultural/phase interpretation of the site.

Additional excavation units would be needed to identify the extent of the wetland cultural deposits. The bank of Pammel Creek offers the easiest means of exposing the deposits, although only along the present course of the creek. Because the western interface of the wetland and the sandy knoll was not found, it is recommended that the approximately 30-meter long section of creek bank between Bank Cuts 2 and 16 be cut clean. The resulting profile would reveal the edge of the wetland on the east side of the sandy knoll, as well as offering more information on the nature of the wetland cultural deposits. It is also recommended that a single 2 x 2 meter unit be excavated away from the creek bank, closer to Pammel Creek Road. This excavation would determine the southern extent of wetland cultural deposits.

As pointed out in this report, deeply buried sections of the wetland surface were detected through soil coring in the bases of Bank Cuts 3, 4, 5, 6, 7, and 8; however, the excessive depths at the southwest end of the project area made even this technique ineffective in determining whether or not cultural deposits were present. Therefore, additional studies should be undertaken in that portion of the project area. Again, the Pammel Creek bank is the most efficient location for conducting such investigations. It is recommended that Bank Cuts 3 - 8 be reexcavated to the wetland surface, which ranges from 160 to 200 cm below the present surface.

If cultural resources are identified at the southwest end of the project area, it will be necessary to determine the extent and nature of these deposits. Their north-south distribution could be ascertained from the bank cut excavations, although an additional wider cut might be needed between Bank Cuts 8 and 9 to define the western edge of the sandy knoll. Excavation units to the east of the creek, near Pammel Creek Road, would be needed to determine

the extent of the deposits in that direction. Due to the length of the southwest portion of the project area (150 meters N-S), at least three 2 x 2 meter excavation units should be placed away from the creek in this area.

Excavations also should be undertaken in the vicinity of Bank Cut 10, where a small remnant of an undisturbed A horizon was discovered on the sandy knoll. One chert flake was recovered from the Bank Cut 10 excavation; however, it remains to be determined whether or not significant remains are located there. The undisturbed natural A-horizon appears to be small in extent. Therefore, 2 x 2 meter excavation units should be sufficient to determine the presence or absence of undisturbed remains, and to possibly recover diagnostic artifacts or subsistence remains that could clarify the relationship of the cultural deposits on the sandy knoll to those of the wetland.

It is estimated that all of the additional field work recommended in (2) could be conducted in a two-week period with a crew of six persons and a field director. Laboratory analysis would require an additional six weeks. The estimated cost for this Phase II work is \$12,000.

(3): This study has demonstrated the existence of buried cultural deposits in the State Road-Ebner Coulee flood control project area. If construction plans call for disturbance of areas outside of the tract surveyed in this study, additional cultural resources investigations will be necessary. Although the entire project area was surveyed once before, the methods employed were not adequate for identifying buried cultural resources. Therefore, it is recommended that resurvey be conducted along any portion of the flood control project area that might have been buried by historic alluvium. These areas would include all of the upper reaches of the flood control project to the east of the Pleistocene terrace edge, corresponding to the depression that runs along the base of the bluffs and the mouths of the coulees. Resurvey should employ methods that would allow examination of subsurface strata, similar to those undertaken during this study. Cutting bank profiles along existing creek channels would be the most efficient method for conducting the resurvey. Because the extent of the flood control project within this geomorphological setting is not known, no time or cost estimate for a resurvey is included here.

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Wisconsin. The Wisconsin Archeologist 54(1):2-35.

Vehik, Susan

1975 Appendix E, Environmental Impact Assessment, State Road Coulee, Ebner  
Coulee, La Crosse, Wisconsin. University of Wisconsin-La Crosse  
River Studies Center.

APPENDIX A

TYPE OF SITE:

Mounds     Village     Campsite     Garden Beds     Cache  
 Petroglyphs     Worksite     Cemetery     Other:  
 Quarry     Cave or Rockshelter     Other:

47Lc176

CODE NUMBER

Name of site	County	Township and range	Location in section	Present owner
State Road Coulee SIXX Site	La Crosse	Shelby T15 R7W	SW $\frac{1}{4}$ , SE $\frac{1}{4}$ Sec. 10	City of La Crosse
Reported by: WVAC	Date X 7/83			

Geographical

Location At drive in road bridge crossing channelized Pammel Creek

DESCRIPTION OF SITE: Materials recovered from eroded cuts beneath bridge and in excavated bank cuts for 20 meters to the W on the S side of the creek. Materials inc. shell tempered sherds, lithics, bone, charred floral remains from a wetland surface sealed beneath 1 meter of historic alluvium. Surface may represent prehistoric ridged fields such as the Sand Lake Site (47Lc44)

CULTURE: Oneota

REFERENCES: Wisconsin Archeologist Series Vol. No. Page  
 WVAC Report of Investigation #11. In preparation

SPECIMENS FROM SITE

IN POSSESSION OF: Mississippi Valley Archaeology Center

REMARKS: In addition, one flake was recovered from a natural sand hill approximately 70 meters to the south west

WISCONSIN ARCHEOLOGICAL CODIFICATION FILE

APPENDIX B

SCOPE OF WORK  
CULTURAL RESOURCES INVESTIGATION  
OF SITE 47LC61 AND SURVEY OF PORTIONS OF THE  
STATE ROAD AND EBNER COULEE PROJECT,  
LA CROSSE, WISCONSIN

1.00 INTRODUCTION

1.01 The Contractor will undertake a cultural resources investigation of Site 47LC61 and survey of portions of the State Road and Ebner Coulee flood control project, La Crosse, Wisconsin.

1.02 This cultural resources inventory partially fulfills the obligations of the Corps of Engineers (Corps) regarding cultural resources, as set forth in the National Historic Preservation Act of 1966 (Public Law (P.L.) 89-665), as amended; the National Environmental Policy Act of 1969 (P.L. 91-190); Executive Order (E.O.) 11593 for the "Protection and Enhancement of the Cultural Environment" (Federal Register, 13 May 1971); the Archaeological and Historical Preservation Act of 1974 (P.L. 93-291); the Advisory Council on Historic Preservation "Regulations for the Protection of Historic and Cultural Properties (36 CFR Part 800); the Department of the Interior guidelines concerning cultural resources (36 CFR Part 60); and the applicable Corps regulations (ER 1105-2-50).

1.03 The laws listed above establish the importance of Federal leadership, through the various responsible agencies, in locating and preserving cultural resources within project areas. Specific steps to comply with these laws, particularly as directed in P.L. 93-291 and E.O. 11593, are being taken by the Corps " . . . to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance." A part of that responsibility is to locate, inventory, and nominate to the Secretary of the Interior all such sites in the project area that appear to qualify for listing on the National Register of Historic Places.

1.04 Executive Order 11593 and the 1980 amendments to the National Historic Preservation Act further direct Federal agencies " . . . to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered." In addition, the Corps is directed to administer its policies, plans, and programs so that federally and non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved and maintained for the inspiration and benefit of the people.

1.05 This cultural resources investigation will serve several functions. The report will be a planning tool to aid the Corps in meeting its obligations to preserve and protect our cultural heritage. It will be a comprehensive, scholarly document that not only fulfills federally mandated legal requirements but also serves as a scientific reference for future professional

studies. It will identify sites that may require additional investigations and that may have potential for public-use development. Thus, the report must be analytical in nature, not just descriptive.

## 2.00 PROJECT DESCRIPTION

2.01 The State Road and Ebner Coulee flood control project is located in La Crosse County in west-central Wisconsin on the east side of the city of La Crosse. The plan of improvement for local protection consists of channel deepening and enlarging downstream from Hagen Bridge to the mouth and includes 12,300 feet of concrete-lined rectangular and trapezoidal channel, 700 feet of riprap channel, two overflow spillways, a drop structure, a stilling basin, three new street bridges, and a new railroad bridge. The upper 5,400 feet of rectangular channel is designed for standard project flood (SPF) protection and the remaining 7,600 feet of channel is designed for 100-year protection.

2.02 Site 47LC61 was discovered during a field investigation conducted by the Center for Research Archaeology, La Crosse, Wisconsin, in October 1980. This site is located in the NW 1/4, NW 1/4, SW 1/4, Sec. 22 T15N R7W. The cultural material recovered from this site includes both lithic and ceramic artifacts. The majority of the ceramic material is undecorated, shell-tempered ware. The few sherds which are decorated have been identified as Allamakee Trilled Ware which is characteristic of the Orr Phase of the Oneota culture (ca. A.D. 1400). No diagnostic lithic material was recovered from this site. A southern unit of this site contained a diversified faunal assemblage consisting of various species of mammals and reptiles and some freshwater mussels. The site boundaries encompass only about 50 square meters. However, other localities may have been missed because of the 15-meter testing interval that was used.

2.03 Although the areas to be impacted by this proposed flood control project were previously surveyed for cultural resources, project modifications have resulted in some changes to the proposed areas of impact. One of these areas is located between Pammel Creek and Pammel Creek Road and is bounded by 96th Avenue and Drive-In Road. This area has not been previously surveyed.

## 3.00 DEFINITIONS

3.01 For the purpose of this study, the cultural resources investigation will involve Phase II testing. A literature and records search and review and a Phase I survey will not be conducted at this time.

3.02 "Cultural resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archaeology, or culture of an area.

3.03 "Phase I cultural resources survey" is defined as an intensive, on-the-ground survey and testing of an area sufficient to determine the number and extent of the resources present and their relationship to project features. A Phase I cultural resources survey will result in data adequate to assess the

general nature of the sites present; a recommendation for additional testing of those resources which, in the professional opinion of the Contractor, may provide important cultural and scientific information; and detailed time and cost estimates for Phase II testing.

3.04 "Phase II testing" is defined as the intensive testing of those sites that may provide important cultural and scientific information. Phase II testing will result in data adequate to determine the eligibility of the resources for inclusion on the National Register of Historic Places, a plan for the satisfactory mitigation of eligible sites that will be directly or indirectly impacted, and detailed time and cost estimates for mitigation.

#### 4.00 SURVEY AND TESTING SPECIFICATIONS

4.01 Phase II testing will be conducted at Site 47LC61 as shown on Map A (inclosed).

4.02 A Phase I cultural resources survey will be conducted in the area bounded by Pammel Creek and Pammel Creek Road and 96th Avenue and Drive-In Road as shown on Map B (inclosed).

#### 5.00 PERFORMANCE SPECIFICATIONS

5.01 The Contractor will use a systematic, interdisciplinary approach in conducting the study. The Contractor will provide specialized knowledge and skills during the course of the study to include expertise in archaeology and in other social and natural sciences as required.

5.02 The extent and character of the work to be conducted by the Contractor will be subject to the general supervision, direction, control, review, and approval of the Contracting Officer.

5.03 Techniques and methodologies that the Contractor uses during the investigation shall be representative of the current state of knowledge for their respective disciplines.

5.04 The Contractor must keep standard records that shall include, but not be limited to, field notebooks, site survey forms, field maps, and photographs.

5.05 The recommended professional treatment of recovered materials is curation and storage of the artifacts at an institution that can properly insure their preservation and that will make them available for research and public view. If such materials are not in Federal ownership, the consent of the owner must be obtained, in accordance with applicable law, concerning the disposition of the materials after completion of the report. The Contractor will be responsible for making curatorial arrangements for any collections that are obtained. Such arrangements must be coordinated with the appropriate officials of Wisconsin and approved by the Contracting Officer.

5.06 When sites are not wholly contained within the project limits, the Contractor shall survey an area outside the project limits large enough to include the entire site within the survey area. This procedure shall be done in an effort to delineate site boundaries and to determine the degree to which the site will be impacted.

5.07 The Contractor shall provide all materials and equipment as may be necessary to expeditiously perform those services required of the study.

5.08 Should it become necessary in the performance of the work and services, the Contractor shall, at no cost to the Government, secure the rights of ingress and egress on properties not owned or controlled by the Government. The Contractor shall secure the consent of the owner, his representative, or agent, in writing prior to effecting entry on such property. If requested, a letter of introduction, signed by the District Engineer, can be provided to explain the project purposes and request the cooperation of landowners. When a landowner denies permission for survey, the Contractor shall immediately notify the Contracting Officer and shall describe the extent of the property to be excluded from the survey.

5.09 The Contractor will test the site areas sufficiently to determine the existence of cultural materials and/or features, their condition (in situ or disturbed), the horizontal and vertical distribution of the remains, and, if possible, the cultural affiliation of the site(s).

5.10 Recommendations on the significance of the site(s) according to the National Register of Historic Places criteria will be included in the Contractor's report. These recommendations will include a detailed justification for the significance or non-significance of the site(s), including what research questions the site(s) can answer.

5.11 The on-the-ground examination will involve an intensive survey and shovel testing of the area to determine the number and extent of cultural resources present. This includes standing structures as well as historical and prehistorical archaeological sites.

5.12 The Contractor's survey will include surface inspection in areas where surface visibility permits adequate recovery of cultural materials and subsurface testing in all areas where surface visibility is limited or obscured. Subsurface investigation will include shovel testing, coring, soil borings, cut bank profiling or some other appropriate testing method. If field methods vary from those required, they must be described and justified in the report.

5.13 The required survey grid or transect interval is 15 meters (50 feet) and testing interval is 15 meters (50 feet). However, this interval may vary depending upon field or site density/size conditions. If the recommended interval is not used, written justification should be presented in the technical report for selection of an alternate interval. All subsurface tests will be screened through 1/4-inch mesh hardware cloth and will be recorded on

appropriate testing forms. All subsurface testing forms will be included in the appendix to the Contractor's report. The Contractor will also indicate the locations of all subsurface tests on USGS and/or project maps and key these with the testing forms in the appendix.

5.14 The Contractor will recommend appropriate mitigative measures, including time and cost estimates, where warranted.

5.15 All testing will employ standard archaeological techniques, including formal test pits. All material will be screened through 1/4-inch mesh screen.

5.16 The tested areas will be returned as closely as practical to pre-survey conditions by the Contractor.

#### 6.00 GENERAL REPORT REQUIREMENTS

6.01 The Contractor will submit the following types of reports, which are described in this section and in section 9.00: field report, field notes, draft contract report, final contract report, and a completed National Register form(s), if appropriate.

6.02 The Contractor's technical report will include, but will not be limited to, the following sections, as appropriate to the study.

a. Title Page: The title page will provide the following information: the type of investigation undertaken; the cultural resources that were assessed (archaeological, historical, and architectural); the project name and location (county and State); the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Management Summary: This section will include a concise summary of the study, which will contain all essential data for using the document in the Corps of Engineers management of the project. This information will minimally include: why the work and budget, summary of the study (field work; lab analysis), study limitations, study results, significance, recommendations, and the repository of all pertinent records and artifacts.

c. Table of Contents

d. List of Figures

e. List of Plates

f. Introduction: This section will identify the sponsor (Corps of Engineers) and the sponsor's reason for the study; an overview of the testing and survey project, with the site(s) located on USGS quad maps. This section will also provide an overview of the cultural resource study to be undertaken; define the location and boundaries of the study areas (with regional and area-specific maps); define the study area within its cultural, regional, and environmental context; reference the scope of work; identify the institute

that did the work, the number of people involved in the study, and the number of person-days/hours spent on the study; identify the dates when the various types of work were completed; identify the repository of records and artifacts; and provide a brief overview or outline of how the study report will proceed and an overview of the major goals that the study/study report will accomplish.

g. Previous Archaeological and Historical Studies: This section will provide a brief summary and evaluation of previous archaeological and historical studies of the study area including the researchers, date, extent, adequacy of the past work, study results, and cultural/behavioral inferences derived from the research.

h. Environmental Background: This section will include a brief description of the study area environment, including the following categories: geology, vegetation, fauna, climate, topography, physiography, and soils, with reference to prehistoric, historic, ethnographic, and contemporary periods. Any information available on the relationship of the environmental setting to the area's prehistory and history will also be included. This section will be of a length commensurate with other report sections.

i. Theoretical and Methodological Overview: This section will include a description or statement of the goals of the Corps of Engineers and the study researcher, the theoretical and methodological orientation of the study, and the research strategies that were applied in achieving the stated goals.

j. Field Methods: This section will describe the specific archaeological activities undertaken to achieve the stated theoretical and methodological goals. The section will include all field methods, techniques, strategies, and rationale or justification for specific methods or decisions. The description of the field methods will minimally include: a description of field conditions, topographic/physiographic features, vegetation conditions, soil types, stratigraphy, testing results with all appropriate testing forms to be included as an appendix, and the rationale for eliminating uninvestigated areas. Testing methods will include descriptions of test units (size, intervals, stratigraphy, depth) and the rationale behind their placement.

k. Laboratory Methods: This section should explain in detail the laboratory methods employed and the rationale behind the method selected. This section should also contain references to accession numbers used for all collections, photographs and field notes obtained during the study, and the location where they are permanently housed.

l. Analysis: This section will describe and provide the rationale for the specific analytic methods and techniques used, and describe and discuss the qualitative and quantitative manipulation of the data. Limitations or problems with the analysis based on the data collection results will also be discussed. This section will also contain references to accession numbers used for all collections, photographs, and field notes obtained during the study, and the location where they are permanently housed.

m. Investigation Results: This section will describe all the archaeological resources encountered during the study, and other data pertinent to a complete understanding of the resources within the study area. This section will include enough empirical data that the study results can be independently assessed. The description of the data will minimally include: a description of the site; amounts and type of material remains recovered; relation of the site or sites to physiographic features, vegetation and soil types; direct and indirect impacts to the site(s); analysis of the site and data (e.g., site type, cultural historical components and information, cultural/behavioral inferences or patterns); site condition; and location and size information (elevation, complete quad map source, legal description, address if appropriate, and site size, density, depth, and extent).

n. Evaluation and Conclusions: This section will evaluate and formulate conclusions concerning location of the site(s); size, condition, distribution, and density in relation to other sites in the area; and significance in relation to the local and regional prehistory, protohistory, and history. This section will also discuss the potential and goals for future research; the reliability of the analysis; relate results of the study and analysis to the stated study goals; identify changes, if any, in the research goals; synthesize and compare the results of the analysis and study; integrate ancillary data; and identify and discuss cultural/behavioral patterns and processes that are inferred from the study and analysis results.

o. Recommendations: This section will discuss the significance of the site(s) in relation to the research goals of the study and the National Register of Historic Places criteria; make recommendations as to the eligibility or potential eligibility of the site(s) to the National Register; recommend future mitigative or Phase II testing priorities and needs, as appropriate; and make suggestions with regard to the Corps of Engineers planning goals. These recommendations will include a time and cost estimate for mitigation or Phase II testing, if necessary. If it is the Contractor's assessment that the site(s) is (are) or is not significant, the methods of investigation and reasoning which support that conclusion will be presented. Any evidence of cultural resources or materials which have been previously disturbed or destroyed will be presented and explained. If certain areas are not accessible, recommendations will be made for future consideration.

p. References: This section will provide standard bibliographic references (American Antiquity format) for every publication cited in the report. References not cited in the report will be listed in a separate "Additional References" section.

q. Appendix: This section will include the Scope of Work, resumes of all personnel involved, all correspondence derived from the study, all State site forms, and all testing and any other pertinent report information referenced in the text as being included in the appendix.

6.03 The location of all sites and other features discussed in the text will be shown on a legibly photocopied USGS map and will be bound into the report. All maps will be labeled with a caption/description, a north arrow, a scale bar, township, range, map size, and dates, and the map source (e.g., the USGS quad name or published source) and will have proper margins.

6.04 All sites identified in the course of the study, including find spots and known sites, will be presented on State site forms as an appendix to the report. Data should also be provided about the present condition of the sites (disturbance by natural or manmade processes) and content of any collections from the sites. Known sites all have their State site forms updated as necessary. All State site forms will be submitted to the State Archaeologist.

6.05 Failure to fulfill these report requirements will result in the rejection of the Contractor's report by the Contracting Officer.

#### 7.00 FORMAT SPECIFICATIONS

7.01 The Contractor shall submit to the Contracting Officer the photographic negatives for all black and white photographs that appear in the final report.

7.02 All text materials will be typed, single-spaced (the draft reports should be space-and-one-half or double-spaced), on good quality bond paper, 8.5 inches by 11.0 inches with 1.5-inch binding and bottom margins and 1-inch margins on the top and other margin, and will be printed on both sides of the paper.

7.03 Information will be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective, or advantageous to communicate the necessary information.

7.04 All figures and maps must be clear, legible, self-explanatory, and of sufficiently high quality to be readily reproducible by standard xerographic equipment, and will have margins as defined above.

7.05 The final report cover letter shall include a budget of the project.

7.06 The draft and final reports will be divided into easily discernible chapters, with appropriate page separation and heading.

#### 8.00 MATERIALS PROVIDED

8.01 The Contracting Officer will furnish the Contractor with the following materials: access to any publications, records, maps, or photographs that are on file at the district headquarters.

#### 9.00 SUBMITTALS

9.01 The Contractor will submit reports according to the following schedules:

a. Field Report: The original and one copy of a field report will be submitted after completion of the field work. The field report will summarize the work, project/field limitations, methodology used, time used, and survey results.

b. Project Field Notes: One legible copy of all the project field notes will be submitted with the draft contract report.

c. Draft Contract Report: Seven (7) copies of the draft contract report will be submitted on or before \_\_\_\_\_ days after contract award but no later than June 1983. The draft contract report will be reviewed by the Corps of Engineers, the State Historic Preservation Officer, the State Archaeologist, and the National Park Service. The draft contract report will be submitted according to the report and contract specifications outlined in this Scope of Work.

d. Final Contract Report: The original and 15 copies of the final contract report will be submitted 60 days after the Corps of Engineers comments on the draft contract report are received by the Contractor. The final contract report will incorporate all the comments made on the draft contract report.

e. National Register Forms: An original and one copy of a completed National Register Nomination Form(s) will be submitted with the final contract report.

9.02 Neither the Contractor nor his representative shall release any sketch, photograph, report, or other material of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer prior to the acceptance of the final report by the Government. After the Contracting Officer has accepted the final report, distribution will not be restricted by either party except that data relating to the specific location of extant sites will be deleted in distribution to the public.

9.03 All materials, documents, collections, notes, forms, maps, etc., which have been produced, gathered, or acquired in any manner for use in the completion of this contract shall be made available to the Contracting Officer upon request.

#### 10.00 METHOD OF PAYMENT

10.01 Requests for partial payment under this fixed price contract shall be made monthly on ENG Form 93. A 10-percent retained percentage will be withheld from each partial payment. Upon approval of the final reports by the Contracting Officer, final payment, including previously retained percentage, shall be made.

STANDARD FORM 18, MARCH 1971 GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1.16-201		REQUEST FOR QUOTATIONS (THIS IS NOT AN ORDER)		1	
1 AMENDMENT NO. Amend #1	2 DATE ISSUED 83 Mar 25	3 REQUISITION/PURCHASE REQUEST NO. NCSPD-ER-R-76	4 CERTIFIED FOR NATIONAL DEFENSE UNDER BDSA REG 2 AND/OM DMS REG 1 RATING		
5 ISSUED BY DEPARTMENT OF THE ARMY ST. PAUL DISTRICT, CORPS OF ENGINEERS 1135 U.S. Post Office & Custom House St. Paul, Minnesota 55101 R.C. Lindberg 612-725-7618			6 DELIVER BY (Date) AS SOON AS POSSIBLE		
7 DELIVERY <input checked="" type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)			8 DESTINATION (Consignee and address including ZIP code)		
9 INFORMATION CALL (Name and tel. no.) (No collect calls) NAME AND ADDRESS INCLUDING ZIP CODE Dr. Jim Gallagher Miss. Valley Arch. Center 1725 State St. LaCrosse, WI 54601			Corps of Engineers 1135 P.O. Bldg. St. Paul, MN. 55101		

10 PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE ON OR BEFORE CLOSE OF BUSINESS 83 April 5 SUPPLIES ARE OF DOMESTIC ORIGIN UNLESS (Date)

OTHERWISE INDICATED BY QUOTER. THIS IS A REQUEST FOR INFORMATION AND QUOTATIONS FURNISHED ARE NOT OFFERS. IF YOU ARE UNABLE TO QUOTE, PLEASE SO INDICATE ON THIS FORM AND RETURN IT. THIS REQUEST DOES NOT COMMIT THE GOVERNMENT TO PAY ANY COSTS INCURRED IN THE PREPARATION OR THE SUBMISSION OF THIS QUOTATION OR TO PROCURE OR CONTRACT FOR SUPPLIES OR SERVICES.

## SCHEDULE

11 ITEM NO.	12 SUPPLIES/SERVICES	13 QUANTITY	14 UNIT	15 UNIT PRICE	16 AMOUNT
	<p>Request for quotations covering archaeological testing at site 47LC61 &amp; Survey for the State Road &amp; Ebner Coulee Project, LaCrosse, WI. was forwarded 22 March 1983 to you for a quotation on this project.</p> <p>The attached sheet includes changes to be incorporated in the specifications prior to submitting your bid on the original mailing.</p> <p>Please return this amendment with the your bid on the original mailing.</p> <p>Please advise earliest date of delivery _____</p>				

17 PRICES QUOTED INCLUDE APPLICABLE FEDERAL, STATE, AND LOCAL TAXES

DISCOUNT FOR PROMPT PAYMENT \_\_\_\_\_ % 10 CALENDAR DAYS \_\_\_\_\_ % 20 CALENDAR DAYS \_\_\_\_\_ % 30 CALENDAR DAYS \_\_\_\_\_ % \_\_\_\_\_ CALENDAR DAYS

**NOTE: Reverse must also be completed by the quoter.**

18 NAME AND ADDRESS OF QUOTER (Street, city, county, State, including ZIP Code)	19 SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION	20 DATE OF QUOTATION
	21 SIGNER'S NAME AND TITLE (Type or print)	22 TELEPHONE NO. (Include area code)

#### 11.00 Addendum to Scope of Work

11.01 The following paragraphs amend the scope of work for "Cultural Resources Investigation of Site 47LC61 and Survey of Portions of the State Road and Ebner Coulee Project, La Crosse, Wisconsin."

11.02 The intent of the testing portion of the original contract was to gather sufficient data to determine the eligibility of site 47LC61 to the National Register of Historic Places. An advanced construction schedule for a portion of this project now makes a separate testing-mitigation approach infeasible. Through coordination with the State Historic Preservation Office (SHPO), it is now intended that the testing-mitigation phases be combined so that data recovery is completed with no further work required at this site prior to construction. For the purposes of this project, the Corps and the SHPO have agreed that the site would likely be eligible to the National Register and that data recovery is warranted and is the most expedient approach to handling this mitigation within the project's time constraints.

11.03 The required reports, as referenced in section 6 above, should be altered so that recommendations for future research goals, designs, etc., are carried out as a part of the present study. Thus the report will become a mitigation document which presents a detailed analysis of site 47LC61.

11.04 The site boundaries listed in section 2.02 of this scope of work are incorrect. These boundaries describe feature 1 of site 47LC61, in which a dense artifact concentration was located. Although not listed in the 1980 report, the following shovel tests in the present study area contained a light scatter of artifacts:

- II - 6,7,10,11, & 12
- III - 3,5, & 7
- IV - 1,2,4,6, & 8-12
- V - 1-5, 6-10, & 12
- VI - 1-9, & 11-12
- VII - 1-4, 6-8, & 10-12

Of this material, that in the eastern half (rows I-IV) appeared to be extensively disturbed (1980 report, p. 22). Thus, site testing should focus on the western half of the park area as described in the 1980 report.

11.05 The St. Paul District may find it necessary to exercise an option to modify the present scope of work to include additional survey work in upland fill areas which have not yet been identified. Costs for any additional survey work will be negotiated at a later time and therefore should not be entered into the present survey and testing as contingency costs. The St. Paul District makes no guarantee that any additional work will be undertaken.

APPENDIX C

GENERAL INFORMATION:

Name: James Patrick Gallagher

PII Redacted

Present Position and Academic Rank: Associate Professor, University of Wisconsin-La Crosse; Executive Director, Mississippi Valley Archaeology Center at the University of Wisconsin-La Crosse.

EDUCATION:

B.S. Anthropology, Saint Louis University, 1964

M.A. Anthropology, Southern Methodist University, 1969

Ph.D. Southern Methodist University, 1977

Dissertation Title: Ethnoarchaeological and Prehistoric Investigations in the Ethiopian Central Rift Valley.

PROFESSIONAL EXPERIENCE: TEACHING

University of Oklahoma, teaching assistant, 1966-67

Trinidad Jr. College, Trinidad, Colorado, director of archaeology field school, 1968

Southern Methodist University, teaching assistant, 1969

Southern Methodist University, Instructor, University College, 1970, 1972

EI Centro College, Dallas, Texas, Instructor, 1972-1977

University of Wisconsin-La Crosse, 1977 - Present

RESEARCH

Archaeologist, Illinois State Museum (J. Caldwell), summer 1963

Archaeologist, Wisconsin State Museum excavations at Aztalan (J. Freeman), summer 1964

Research Assistant, University of Oklahoma Spiro Mound Project (J. Brown), 1964-66

Archaeologist, University of Oklahoma (R. Bell), summer 1965

Ethnographer, one semester ethnographic project in Kiowa Apache material culture (A. Ricciardelli) 1964, University of Oklahoma

Archaeologist, excavations at Roc de Combe, France (F. Bordes) 1966

Research Assistant, Southern Methodist University Nubian Prehistoric Project (J. Shiner), 1967-68

Field Director, archaeology field school, Trinidad Jr. College, Trinidad, Colorado, 1968

Archaeologist, excavations at Peche de l'Aze, France (F. Bordes), 1969

Archaeologist, excavations at Ksar A'Quil, Lebanon (J. Tixier), 1969

Field Director, Southern Methodist University Ethiopian Prehistoric Expedition (F. Wendorf), 1971-72

Principal Investigator, Ethiopian Ethnoarchaeology Project, 1971-72

Field Director, Egyptian Predynastic Project (F. Hassan), 1978

Principal Investigator, archaeological excavations at the Valley View Site, 1978, 1979

Principal Investigator, La Crosse Area Archaeological Survey I, 1979

Principal Investigator, Overhead Site excavation, 1980

Principal Investigator, La Crosse Area Archaeological Survey II, 1980 & 1981

Principal Investigator, Quail Cave excavation, 1981

Principal Investigator, Sand Lake Coulee Project, 1982

Principal Investigator, La Crosse Area Archaeological Survey III, 1982

Principal Investigator, excavations at the Dahl Site, 1982

#### CULTURAL RESOURCE MANAGEMENT PROJECTS

1977

Archaeological survey of the proposed Chippewa River Crossing, Buffalo Co., Wis., Dairyland Power Cooperative, La Crosse.

Archaeological survey of the Holmen Industrial Park. Village of Holmen, Wis.

1978

Archaeological survey of the Alma-Tremval and Alma-Crystal Powerline transmission route (81 miles). Dairyland Power.

Archaeological survey of sewer and water pipe line routes in Medary Township. City of La Crosse.

Archaeological survey of by-pass route in the City of La Crosse. City of La Crosse.

Timber Coulee Creek Survey, Vernon County. Wisconsin Department of Natural Resources.

Archaeological Survey of Lake Marinuka, Galesville, Wi. Lake Marinuka Protection and Rehabilitation District.

An archaeological inspection of the Pigeon Creek Bridge area, Trempealeau Co. Westbrook Associates.

1979

Archaeological survey of transmission line routes and substation location in Vernon County. Dairyland Power.

An archaeological inspection of a proposed waste water treatment facility near Dorchester, Clark County, Wis. ETC Engineering Inc.

An archaeological survey of Copeland Park. City of La Crosse.

An archaeological inspection of the Gillett St. viaduct and approaches. City of La Crosse.

An archaeological inspection of a proposed powerline route near Mauston, Juneau Co. Dairyland Power.

An archaeological inspection of a waste water treatment site at Alma, Buffalo Co. ETC Engineering.

An archaeological survey at Brice Prairie, La Crosse Co. Dairyland Power.

An archaeological inspection at Coon Valley, Vernon County. ETC Engineering.

An archaeological survey of Pine Creek, Trempealeau Co. Westbrook Associates.

An archaeological inspection of a bridge crossing site on the Little Baraboo River, Sauk Co. Westbrook Associates.

An archaeological survey of a portion of the Little Grant River, Grant Co. Wisconsin Department of Natural Resources.

An archaeological survey in St. Croix County. Dairyland Power.

An archaeological survey of the proposed right-of-way for County Highway A in Monroe Co. Donahue and Associates.

An archaeological survey of a sewage disposal site at Stoddard, Vernon Co. ETC Engineering.

1980

Thunderbird Hills Archaeological survey, La Crosse, WI. Neitzel Engineering Co.

An archaeological survey of the Washco Substation, Washington County, Wis.  
Dairyland Power Cooperative.

An archaeological survey of the Comfort Substation in Northern Wisconsin.  
Dairyland Power Cooperative.

An archaeological survey of the proposed County Highway B project,  
La Crosse County.

An archaeological survey of the proposed Genoa, Wisconsin-Lansing, Iowa  
transmission route. Dairyland Power Cooperative.

An archaeological inspection of the Fairchild Site. Dairyland Power  
Cooperative.

The Potosi substation and transmission route. Dairyland Power.

An archaeological survey of the Pammel Creek area. La Crosse, Wi.  
U.S. Corps of Engineers.

Phase II excavations at Pammel Creek. U.S. Corps of Engineers.

Phase II testing at sites along the proposed transmission line at Elk River,  
Minnesota.

An archaeological survey of the Hannibal power line route. Dairyland Power.

1981

An archaeological survey at Viola, Wis. ETC Engineering.

Cultural resources investigation at Steuben, Wis. substation site.  
Dairyland Power

A cultural resources investigation at Wittenburg Park, City of La Crosse.

CTH 'OS' archaeological survey, La Crosse County.

An archaeological survey of the Sherco Benton Power Line, St. Cloud,  
Minnesota. Northern States Power Co.

A Phase I and Phase II study of the proposed Holmen sewer line and treatment  
site. Village of Holmen, Wis.

Riceford transmission line and substation, Riceford, Minnesota. Dairyland  
Power.

Root River Channelization Project, Houston Co., Minnesota. U.S. Corps of  
Engineers.

Archaeological testing of the southern end of Goose Island, Vernon Co., Wi.  
U.S. Corps of Engineers.

An archaeological inspection of a dredge spoil site in Trempealeau, Wis.  
U.S. Corps of Engineers.

Archaeological excavations (Phase I & II) of the proposed wastewater treatment site at Coon Valley, Wis. Village of Coon Valley.

#### OTHER

Participant, summer seminar and field study in Egyptian civilization and culture, Ain Shams University, Cairo, 1975

Director, Center for Research Archaeology, La Crosse, Wisconsin, 1977-1981

Board of Advisors, Institute for Minnesota Archaeology

#### HONORS AND AWARDS

Fellow, Institute for the Study of Earth and Man, Southern Methodist University, Dallas, Texas

#### MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Wisconsin Archaeological Survey  
 Wisconsin Archaeological Society  
 Society for American Archaeology  
 Association of Iowa Archaeologists  
 Minnesota Archaeological Society  
 Society of Africanist Archaeologists in America  
 Iowa Archaeological Society

#### PUBLICATIONS AND PAPERS PRESENTED

1965 Gallagher, J.P., Michael Davis, and Fred Schneider, "Plains Indian German Silverwork in the Anadarko, Oklahoma Area". Papers in Anthropology, 6:22-40, University of Oklahoma, Norman.

1973 Gallagher, J.P., "Preliminary report on archaeological research near Lake Zuai, Ethiopia" Annales d'Ethiopie, 9:64-80, Ethiopian Archaeological Institute, Addis Ababa.

1973 Gallagher, J.P., "Ethiopian Ethnoarchaeology" paper presented at the Conference of Africanist Archaeologists, April 16, 1973, Southern Methodist University, Dallas, Texas.

n.d. Gallagher, J.P., "Ethnoarchaeology in south central Ethiopia", Proceedings of the VIIth Pan African Congress of Prehistory and Quaternary Studies, in press, Addis Ababa.

1974 Gallagher, J.P., "Preparation of hides with stone tools in south central Ethiopia", Journal of Ethiopian Studies, 13 (1):177-182, Institute of Ethiopian Studies, Addis Ababa.

- 1977 Gallagher, J.P., "Ethiopian Research", Nyame Akuma, 11:11-14.
- 1977 Gallagher, J.P., "Contemporary Stone Tools in Ethiopia: Implications for Archaeology", Journal of Field Archaeology, 4:407-414.
- n.d. Hassan, Fekri A., T.R. Hays, and J.P. Gallagher, "Recent Excavations of Predynastic Sites in the Nagada-Khattara Area, Upper Egypt", in press, Nyame Akuma.
- 1979 Gallagher, J.P., "Excavations at the Valley View Site, a fortified Oneota village near La Crosse, Wis.", paper presented at the 1979 meeting of the Society for American Archaeology, Vancouver, B.C.
- 1979 Gallagher, J.P., "The Valley View Site, An Orr Focus Village near La Crosse", paper presented at the Midwest Archaeological Conference, October 13, 1979, Milwaukee, Wis.
- 1979 Gallagher, J.P., Katherine Stevenson, and James Theler, "The Valley View Site (47Lc34), an Orr Phase Oneota Site at La Crosse, 1979 Excavations and Analysis." Technical report on file, State Historical Society of Wisconsin, Madison.
- n.d. Gallagher, J.P. and Katherine Stevenson, "Oneota Subsistence and Settlement in Southwestern Wisconsin", Minnesota Anthropological Papers I, (in press).
- 1980 Gallagher, J.P., "La Crosse Area Archaeological Survey, 1979 Season". Technical Report on file, State Historical Society of Wisconsin, Madison.
- 1980 Gallagher, J.P. and Katherine Stevenson, "Oneota Subsistence and Settlement in Southwestern Wisconsin". Paper presented at the Midwest Archaeological Conference, Oct. 5, Chicago.
- 1980 Fekri Hassan, T.R. Hays, J.P. Gallagher, et al, "Towards a Model of Agricultural Developments in Predynastic Egypt". Paper presented at the International Symposium on the Origin and Early Development of Food Producing Cultures in North-Eastern Africa, Poznan Poland, Nov. 15.
- 1980 Gallagher, J.P. and Katherine Stevenson, Preliminary Report on excavations at the Valley View Site (47Lc34), an Oneota Village near La Crosse, Wisconsin Archaeologist, vol. 61 #4.
- 1980 Fekri Hassan, T.R. Hays, J.P. Gallagher, et al, "Agricultural Developments in the Nagada, Egypt region during the Predynastic Period". Paper presented at the annual meeting of the American Research Center in Egypt, 13-15 April, San Francisco. Published in Nyame Akuma, vol. 17, 1980.
- 1980 Gallagher, J.P. and Katherine Stevenson, "The Overhead Site - - a Multicomponent Site on the Mississippi River at La Crosse." Paper presented at the Midwest Archaeological Conference, Oct. 4, Chicago.
- 1981 Gallagher, J.P., Katherine Stevenson, et al, "The Overhead Site". Technical Report on file at the State Historical Society of Wisconsin.

1982 Gallagher, J.P., Roland Rodell, and Katherine Stevenson, "The 1980-1982 La Crosse Area Archaeological Survey". Reports of Investigations Number 2, Mississippi Valley Archaeology Center, La Crosse, Wisconsin.

1982 Gallagher, J.P. and Robert Boszhardt, "The Dahl Site". Reports of Investigations Number 1, Mississippi Valley Archaeology Center, La Crosse, Wisconsin.

## VITAE

ROBERT F. BOSZARDT

PII Redacted

AREA OF INTEREST: Prehistoric Adaptations and Cultural Change in the Upper Mississippi River Valley and Western Upper Great Lakes.

ACADEMIC HISTORY: University of Wisconsin-Waukesha Center, 1972-1974.  
University of Wisconsin-Milwaukee, Bachelor of Arts,  
Anthropology, 1977  
University of Wisconsin-Madison, Master of Arts,  
Anthropology, 1982

MEMBERSHIP IN PROFESSIONAL SOCIETIES AND ORGANIZATIONS

The Iowa Archaeological Society  
The Galena Historical Society  
Wisconsin Archaeological Society (Advisory Council)  
Iowa Historical Society  
La Crosse Area Archaeological Society

PAPERS PRESENTED

- 1981 The Prairie Phase, an "Early Woodland" Manifestation in the Upper Mississippi River Valley. Midwest Archaeological Conference, Madison, Wisconsin. Junior participant with Dr. James Stoltzman and James L. Theler. Paper delivered by Dr. James Stoltzman.
- 1981 Preliminary Report on an Archaeological Survey of Pool 12, Upper Mississippi River. Midwest Archaeological Conference, Madison, Wisconsin.
- 1981 Report and Discussion of Archaeological/Geomorphological Interpretations of Pool 12 in the Upper Mississippi River Valley. Wisconsin Archaeological Society, November meeting, Waukesha, Wisconsin.
- 1982 The La Crosse Area Archaeological Society's Excavations at the Dahl Site. La Crosse Area Archaeological Society, September meeting, La Crosse, Wisconsin.

PUBLICATIONS

- 1977 Radiocarbon Dates for Wisconsin, 1976, A Second Compilation. The Wisconsin Archaeologist, 58(2):84-150.
- 1982 Wisconsin Radiocarbon Update: 1981, The Wisconsin Archaeologist, Vol. 63 (2).

TECHNICAL REPORTS

- 1981 Archaeological Investigations on Private Lands in the Lowland Floodplain near Prairie du Chien, Wisconsin. State Historical Society of Wisconsin. Section of Comprehensive Report on Archaeological Investigations of the Prairie du Chien locality, Crawford County, Wisconsin, prepared by Dr. James B. Stoltzman, James L. Theler, Constance Arzigian and Jeff Behm.

- 1981 Preliminary Investigations: Archaeological and Sediment Geomorphology, Navigation Pool 12, Upper Mississippi River. Great Lakes Archaeological Research Center, Reports of Investigations No. 115 (3 volumes). Senior author with Dr. David Overstreet.
- 1982 Archaeological Investigations in the Lowland Floodplain of Navigation Pool 10 near Prairie du Chien, Crawford County, Wisconsin. Master's Thesis, University of Wisconsin-Madison, Department of Anthropology.
- 1982 Archaeological Investigations at The Dahl Site (47Lc148), Mississippi Valley Archaeology Center, Inc. Reports of Investigations No. 1. Senior author with Dr. James P. Gallagher.

#### ARCHAEOLOGICAL FIELD/LABORATORY EXPERIENCE

- 1973 Crew member, Archaeological Field School, Hixton Quarry Site, University of Wisconsin-Waukesha. Dr. David F. Overstreet, Director.
- 1974 Crew member, Byron Power Plant Project, First and Second Phase Testing, University of Wisconsin-Milwaukee. Robert Birmingham, Director.
- 1975 Crew member, Apostle Island Survey, Beloit College. Dr. David F. Overstreet, Director.
- 1975 Crew member, Marina Site Excavation, Madeline Island, Wisconsin, Beloit College. Robert Birmingham, Director.
- 1975-1976  
Lithic Analysis, Apostle Island Survey, Beloit College. Dr. David F. Overstreet, Director.
- 1976 Crew member, Jones Bluff Survey (Alabama River), Office of Archaeological Research, University of Alabama. C. Oakly and M. Watson, Directors.
- 1976 Crew member, Subassistant, Phipps Bend Excavations (Tennessee), Office of Archaeological Research, University of Alabama. Robert Lafferty, Director.
- 1976 Crew member, Rock River Survey (Rock Island County, Illinois), University of Wisconsin-Milwaukee. Robert Birmingham, Director.
- 1977 Crew member, Historic Site Survey, Fox River Watershed, Waukesha County, Wisconsin. Dr. David F. Overstreet, Director.
- 1977-1979  
Research Assistant, the Great Lakes Archaeological Research Center, Waukesha, Wisconsin. Project participation included:
- Archaeological Inventory and Evaluation of Weston, Unit 3 Power Plant, Marathon County, Wisconsin.
  - Archaeological Inventory of the Sanitary Sewer Collection System and Waste Disposal Treatment Facility: Town of Norway Sanitary District No. 1, Racine County, Wisconsin.
  - Archaeological Inventory and Evaluation of the Proposed Sewage Treatment Facilities at Mukwanago, Waukesha County, Wisconsin.
  - An Archaeological Inventory and Evaluation: The Proposed Waukesha County Technical Institute Expansion Project.
  - An Intensive Archaeological Survey, Milan-Big Island Phase II Study, Rock River, Illinois.
  - Archaeological Inventory and Evaluation: Brillion, Wisconsin Wastewater Treatment Facilities.

- Archaeological Inventory and Evaluation of Butte des Morts Utility District, Menasha (West).
- Cultural Resource Inventory of the Chippewa River in Sawyer County, Wisconsin.
- Cultural Resources Reconnaissance, Loves Park, Illinois, Interim 2, Flood Feasibility Study.
- Archaeological Inventory of the Proposed Areas of Modification, Black River Falls Mine, Jackson County, Wisconsin.
- Archaeological Inventory of the Sand Hill Estates and Hillside Homes Community, Oneida, Outagamie County, Wisconsin.
- Archaeological Inventory of the Proposed Stabilization Ponds, Lift Station and Interceptor Route, Mellen, Wisconsin.
- Archaeological Inventory of the Cherryland Airport Extension, Door County, Wisconsin.
- Archaeological Inventory of the Proposed Realignment of County D, Florence County, Wisconsin.
- Cultural Resource Evaluation of the Sturgeon River Wilderness Study Area, Ottawa National Forest.
- Archaeological Inventory of the Proposed Outagamie Airport Industrial Park Site.
- Cultural Resource Evaluation of Two Chequamegon National Forest Wilderness Study Areas: Flynn and Round Lakes.
- Archaeological Inventory and Evaluation of the Proposed Wastewater Treatment Facilities at Cambellsport, Fond du Lac County, Wisconsin.
- Archaeological Inventory and Evaluation of the Proposed Dredging Deposition Areas at Muskego, Wisconsin.
- Initial Archaeological Inventory of Chequamegon National Forest in Northwestern Wisconsin.
- Archaeological Inventory and Evaluation of the Proposed Wastewater Treatment Facilities at Columbus, Wisconsin.
- Archaeological Inventory of the Proposed Wisconsin Public Service Corporation Ash Disposal Site, Brokaw, Marathon County, Wisconsin.
- Cultural Resource Inventory and Evaluation of the Proposed Expansion of the Wastewater Treatment Facilities at Monroe, Green County, Wisconsin (Field Supervisor).
- Archaeological Inventory of the Proposed Electrical Power Service Line from Prairie du Chien to Indian Isle, Crawford County, Wisconsin, Field Supervisor.
- Archaeological Inventory and Evaluation of the Proposed Wastewater Treatment Facilities at Friesland, Columbia County, Wisconsin.
- Archaeological Inventory of the Proposed Hidden Harbor Development at Fish Creek, Door County, Wisconsin.
- Salvage Excavations at the Convent Knoll Site (47Wk327), a Red Ochre Cemetery at Elm Grove, Waukesha County, Wisconsin.
- Archaeological Excavation at the Mile Long Site (47Wl110), Lake Delevan, Walworth County, Wisconsin.
- Archaeological Inventory and Evaluation of the Proposed Wastewater Treatment Facilities at Boscobel, Grant County, Wisconsin.
- Archaeological Inventory of the Proposed Wastewater Treatment Facilities at Palmyra, Jefferson County, Wisconsin.
- Archaeological Recovery at 11R1337, an Early Middle Woodland Shell Midden in East Moline, Illinois.

- Cultural Resources and Assessment: Butternut and Franklin Lakes, Nicolet National Forest.
  - Archaeological Survey of the East Shore of Lake Winnebago: 1979.
  - Archaeological Survey of the Green Bay Coastal Corridor (Field Supervisor).
  - A Cultural Resource Survey of Proposed Undertakings Nicolet National Forest, Wisconsin.
- 1980 Research Assistant, University of Wisconsin-Madison, Laboratory of Archaeology. Project participation included:
- Archaeological Investigations in the Prairie du Chien Locality, Crawford County, Wisconsin.
  - Supervisor, University of Wisconsin-Madison, Field School in Archaeology.
  - Archaeological Investigations on Private Lands in the Lowland Floodplain of the Upper Mississippi River near Prairie du Chien, Wisconsin.
- 1981 Research Assistant, the Great Lakes Archaeological Research Center, Waukesha, Wisconsin. Project participation included:
- Archaeological Testing of an Early Logging Camp (47Fr142) Forest County, Wisconsin.
  - A Cultural Resource Survey at Kinickinic State Park, Pierce County, Wisconsin.
  - Archaeological Survey of Pool 12, Upper Mississippi River Valley (Field Supervisor).
  - Archaeological Testing of Two Prehistoric Sites (47Fr141, 47Fr143), at Oak Lake in Northcentral Wisconsin.
- 1982 Field Director. Archaeological Investigations at The Dahl Site (47Lc148), La Crosse County, Wisconsin.
- 1982 Co-Field Director. Archaeological Survey and Excavations at the Sand Lake Site (47Lc44), La Crosse County, Wisconsin.
- 1982 Field Director. La Crosse County Archaeological Survey, 1982.