Volume 2005 Article 28

2005

Archeological Survey Of The Proposed State Highway 288 Access Road Bridges, In Harris And Brazoria Counties, Texas

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ARCHEOLOGICAL SURVEY OF THE PROPOSED STATE HIGHWAY 288 ACCESS ROAD BRIDGES, IN HARRIS AND BRAZORIA COUNTIES, TEXAS

Texas Antiquities Permit No. 3681

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Moore Archeological Consulting, Inc.
Report of Investigations Number 430

April 2005

ABSTRACT

On February 22, 2005 a crew from Moore Archeological Consulting, Inc. performed a shovel test survey of the proposed State Highway 288 Access Road Bridges Project in Harris and Brazoria Counties, Texas. This was performed for S&B Infrastructure and the Texas Department of Transportation (TxDOT) under Antiquities Permit Number 3681. The results will be subject to review by TxDOT, S&B and the Texas Historical Commission.

A total of 10 shovel tests were excavated in the Project Area which totaled approximately 2 acres. The Project Corridor was entirely within the existing, state-owned, right-of-way. No prehistoric or historic resources or features were found. The soils in all ten shovel tests were observed to contain disturbed and/or fill soils over truncated natural soils. All but one shovel test reached basal clay subsoils. No artifacts were observed or recovered. The recommendation of Moore Archeological Consulting is that this project should be allowed to proceed without further investigation.

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INTRODUCTION

On February 22, 2005, Moore Archeological Consulting, Inc. of Houston, Texas, conducted an archeological investigation of a proposed Texas Department of Transportation (TxDOT) access road bridge construction in Harris and Brazoria Counties, Texas (Figures 1-4). The investigation was performed for S&B Infrastructure and TxDOT (TAC Permit Number 3681) and will be subject to review by TxDOT, S&B and the Texas Historical Commission (THC).

The proposed Project Area consists of the construction of two bridges over Clear Creek and the requisite road segments to complete the access roads for SH 288. This amounts to 240 meters on the southbound access road and 260 meters on the northbound. All construction will take place within the existing ROW.

The proposed Project Area can be found on the Almeda (29095) USGS quadrangle map and consists of the construction of two bridges over Clear Creek and the requisite road segments to complete the access roads for SH 288. This amounts to 240 meters on the southbound access road and 260 meters on the northbound. All construction will take place within the existing ROW. Based on the PALM model developed by Jim Abbott for TxDOT (2001) it was determined that backhoe trenching was not necessary within the Project Area. The investigation instead focused on shovel testing as the primary means for determining the presence or absence of cultural resources.

The objective of the investigation was threefold: (A) to determine the presence or absence of cultural materials within the location proposed for the relief bridges; (B) to assess any potentially impacted archeological sites and provide recommendations regarding mitigation measures if any are necessary; and (C) to provide a report of the results of the survey to S&B, TxDOT, the COE and THC.

The archeological field crew excavated 10 shovel tests. Five were dug within each of the two corridors including extras dug on the north and south banks of Clear Creek. Project Archeologist for the fieldwork Joseph M. Sanchez and Crewmember Randy Ferguson conducted this investigation under the supervision of the Principal Investigator, Roger G. Moore and Project Archeologist, Douglas G. Mangum.

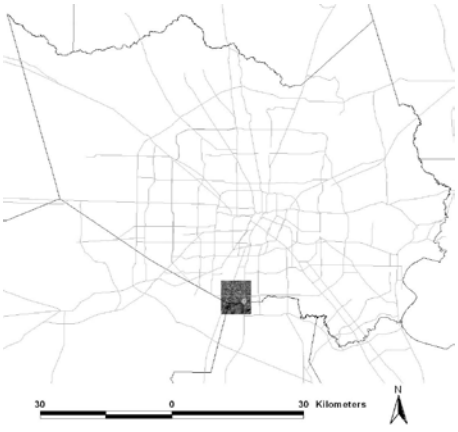

Figure 1 Project Area in Harris and Brazoria Counties

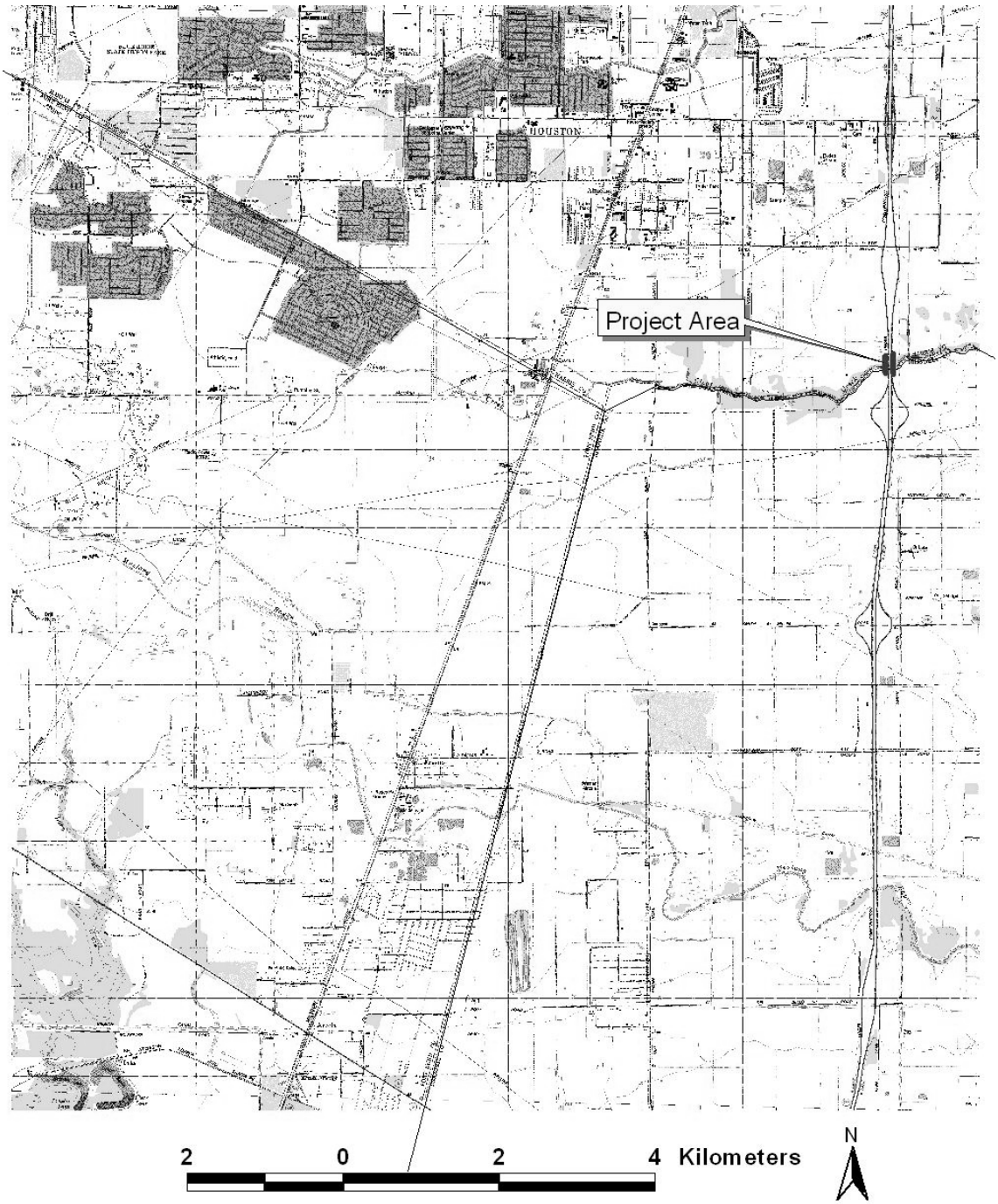

Figure 2: Project Area on the Almeda USGS Quadrangle (39095)

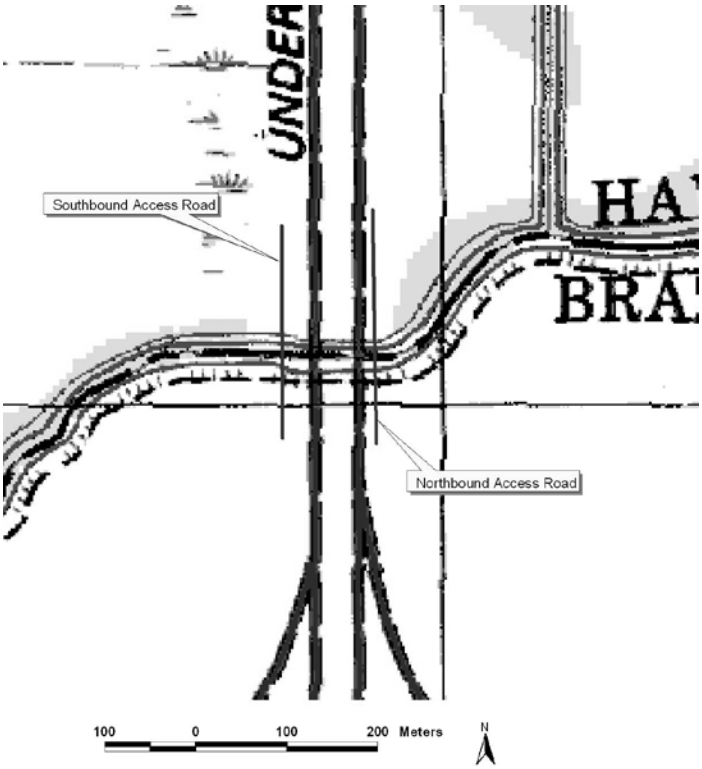

Figure 3: Project Area close-up on Almeda Quadrangle

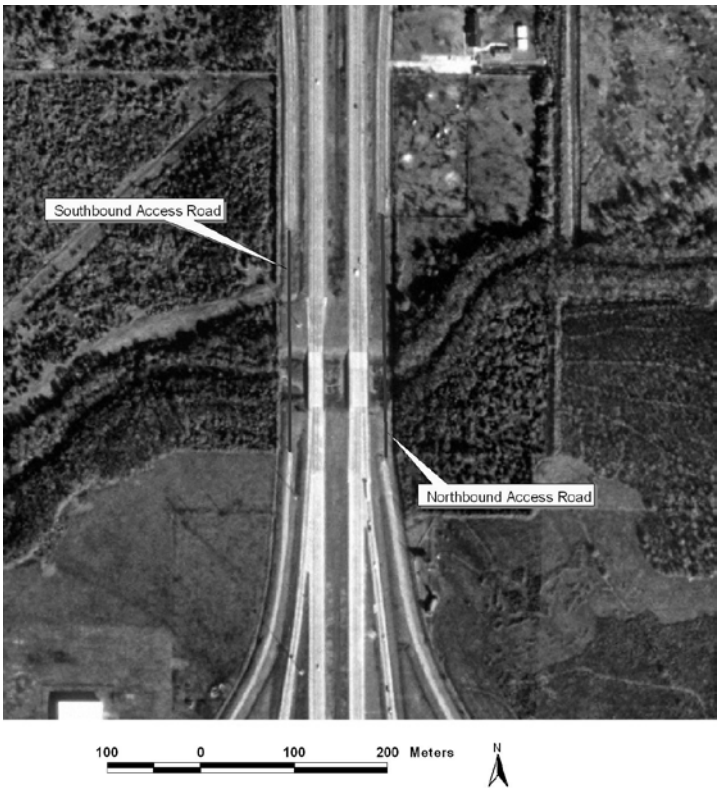

Figure 4: Project Area close-up on aerial photograph

ENVIRONMENTAL SETTINGS

Modern Climate

The modern climate of the Project Area can aptly be characterized as hot and wet for most of the year. The mean annual temperature for the region is about 20 degrees Centigrade, with mean rainfall of 117 centimeters. Summer temperatures average about 34 degrees Centigrade, with temperatures above 38 degrees common during July and August (Carr 1967; St. Clair *et al*. 1975). The average winter temperature is a mild 18 degrees Centigrade. Freezes are infrequent and of short duration, with an average of 271 frost-free days per year. Snow, sleet, and freezing rain are uncommon.

Rainfall varies from 7 centimeters in March to 11 centimeters in December, with July to December rainfall often supplemented by tropical fronts and storms. The rainfall records range from a low of 45 centimeters to a high of 185 centimeters. Prevailing winds are usually from the southeast, except during the winter months when 'Northers' sweep into the area.

Modern Flora and Fauna

Southeast Texas is within the Austroriparian biotic province near its western boundary with the Texan province (Blair 1950:98-101). This boundary, set by available moisture levels, is marked by pine-hardwood forests on the eastern Gulf coastal plain. The Project Area is situated within the pine-oak forest subdivision of the Austroriparian province and includes, within its western limits, portions of the coastal prairie (Tharp 1939).

Grasses within the coastal prairies and marshes vegetation area are described from a range-management perspective in Hoffman *et al.* (nd: 45). This 10,000,000-acre area consists of 9,500,000 acres of gulf prairies and 500,000 acres of gulf marshes. The regional vegetation of the coastal prairies is characterized as follows:

> "The principal grasses of the prairies are tall bunchgrass, including big bluestem *(Andropon gerardi)*, little bluestem, seacoast bluestem *(Schizachyrium scoparium*, var. *littorus)*, Indiangrass, eastern gamagrass *(Tripascum dactyloides)*, switchgrass, and gulf cordgrass. Seashore saltgrass is common on moist saline sites. Grazing pressures have changed the composition of the range vegetation so that the grasses now existing are broomsedge bluestem, smutgrass, threeawns, tumblegrass and many other inferior grasses. The other plants that have invaded the productive grasslands are oak underbrush, mcartney rose, huisache, mesquite, pricklypear, ragweed, bitter sneezeweed, broomweed, and many other unpalatable annual weeds" (Hoffman *et al.* nd: 45).

The dominant floral species of the pine-oak forest subdivision of the Austroriparian biotic province include loblolly pine *(Pinus taeda)*, yellow pine *(Pinus echinata)*, red oak *(Quercus rubra)*, post oak *(Quercus stellata)*, and blackjack oak *(Quercus marilandica)*. Hardwood forests are found on lowlands within the Austroriparian and are characterized by such trees as sweetgum *(Liquidambar styraciflua)*, magnolia *(Magnolia grandiflora)*, tupelo *(Nyssa sylvatica)*, water oak *(Quercus nigra)* and other species of oaks, elms, and

ashes, as well as the highly diagnostic Spanish moss *(Tillandsia usneiodes)* and palmetto *(Sabal glabra)*. Swamps are common in the region.

Blair (1950) and Gadus (Gadus and Howard 1990:12-15) define the following mammals as common within the Austroriparian province: white-tailed deer *(Odocoileus virginianus)*, muskrat *(Ondatra zibethicus)*, raccoon *(Procyon lotor)*, coyote *(Canis latrans)*, opossum *(Didelphis virginiana), Scalopus aquaticus, Pipistrellus subflavus, Lasiurus borealis, Sciurus niger, Sciurus carolinensis, Glaucomys volans, Geomys breviceps, Reithrodonomys fulvescens, Peromyscus leucopus, Oryzomys palustris,* cotton rat *(Sigmodon hispidus,)*, packrat *(Neotoma floridana)*, eastern cottontail *(Sylvilagus floridanus)*, and swamp rabbit *(Sylvilagus aquaticus.)*. Bison *(Bison bison)* may have been present on nearby grasslands at various times in the past (Gadus and Howard 1990:15).

Common land turtles include eastern box turtle *(Terrapene carolina)* and *Terrapene ornata*, while snapping turtle *(Chelydra serpentinia)*, mud turtle *(Kinosteron* spp.*)*, river cooter *(Chrysemys concinna)*, and diamondback terrapin *(Malaclemys terrapin)* comprise common water turtles. Common lizards include *Anolis carolinensis, Sceloporus undulatus, Leiolopisma laterale, Eumeces laticeps, Cnemidophorus sexlineatus,* and *Ophiosaurus ventralis*. Snakes and amphibians are also present in considerable numbers and diversity.

Within the immediate Project Area the landscape is mowed ROW. Along the inner edge of each ROW is the existing highway. On the outer edge is scrub/brush thicket.

Soils and Geology

The segment of the Texas Gulf Coast that encompasses the current Project Area is on soils laid down primarily over the last million to two million years. It sits on the Beaumont Formation, a band of alluvial deltaic soils running parallel to the coastline that was deposited during a series of glacial and interglacial intervals during the Middle to Late Pleistocene epoch. Downcutting and erosion processes during the most recent glacial period incised and widened many of the river drainages running through the Beaumont Formation. After the sea levels rose again during the Holocene, these river valleys then filled with alluvial soils and created broad, level floodplains. The Project Area is in deep, non-saline, prairie soils within an area classified as part of the Lake Charles-Bernard association.

The Project Area is depicted on sheet 129 of the *Soil Survey of Harris County, Texas* (Wheeler 1976) and sheet 1 of the *Soil Survey of Brazoria County, Texas* (Crenwelge, et al 1981). Two soils are shown in the immediate Project Corridor. These are Lake Charles clay and Bernard-Edna complex. Lake Charles is a somewhat poorly drained clayey soil of ancient origin. It has a low geoarcheological potential (Abbott 2001). The Bernard segment of the Bernard-Edna complex is a somewhat poorly drained clay loam soil of ancient origin. It is given a low geoarcheological potential (Ibid.). The Edna soils are poorly drained sandy loam soils of ancient origin. Though they are also classified as

having a low geoarcheological potential, they sometimes include small mound features that were used by Native Americans for campsites.

Hydrology

The major stream affecting the Project Area is Clear Creek. This is the stream for which the bridges will be built. There are no other natural streams within 1000 meters of the Project Corridor. Clear Creek is designated on the USGS quadrangle map as a perennial stream.

ARCHEOLOGICAL BACKGROUND

The project area is within the Southeast Texas Archeological Region, which has been recently summarized by Patterson (1995). Other recent prehistoric summaries equally pertinent to the prehistory of the Brazoria-Fort Bend County area include Ensor (1991), Fields (1986) and Moore and Moore (1991). The reader is referred to these works for detailed data on the prehistory of this region.

Previous investigations in Southeast Texas have demonstrated that prehistoric people occupied this area as early as 12,000 years ago. Throughout prehistory the inhabitants were nomadic hunter-gatherers. Ensor (1990) has proposed a prehistoric cultural sequence of periods for Southeast Texas: Paleo-Indian (10,000-8,000 BC), Early Archaic (8,000-5,000 BC), Middle Archaic (5,000-1,000 BC), Late Archaic (1,000 BC–AD 400), Early Ceramic (AD 400-800), and Late Ceramic (AD 800-1750).

Evidence for prehistoric occupation of Southeast Texas is scarce in the Paleo-Indian period and, indeed, is rather ambiguous through the Middle Archaic period (Patterson 1983; Aten 1983:156-157). However, although most previously recorded sites date to the Late Archaic and Ceramic periods, it is probable that older sites have been lost to erosion, channel cutting, and, particularly in the case of very early sites, to rising sea level. In cases where early-dating artifacts have been found, such as Wheat's (1953) finds of projectile points dating from the Paleo-Indian through Middle Archaic periods at Addicks Reservoir in western Harris County, the materials occur in deposits with poor contextual integrity.

Sites dating from the Late Archaic through the Ceramic periods are much more commonly found in the project vicinity. During the Late Archaic period, modern climatic conditions evolved, sea level rose and stabilized, and coastal woodlands expanded. Aten (1983) hypothesizes that an increase in population and the establishment of seasonal rounds, including regular movement from littoral to inland areas, occurred during the Late Archaic.

Aten (1983) has proposed that ceramics were introduced in the aboriginal artifact assemblage on the Upper Texas Coast in approximately AD 100. Ensor (1991) places the beginnings of the Early Ceramic period at AD 400, which may be more applicable for areas inland from the coastline. The Early Ceramic period is characterized by a continued growth in population levels. Ensor (1991) places the beginning of the Late Ceramic at AD 800 that coincides with the introduction of the bow and arrow. A plain sand-tempered pottery dominates throughout both parts of the Ceramic era. Story et al. (1990) have defined the Mossy Grove Cultural Tradition for Late Prehistoric cultures in Southeast Texas with sandy paste pottery being the principle diagnostic artifact type.

European settlement did not begin to seriously disrupt aboriginal habitation in the areas inland from the Upper Texas Coast until after the 18th century (Patterson 1995; 249). But European diseases, probably introduced by explorers and early traders, did begin to have impacts as early as 1528 (at least seven epidemics were recorded among the tribes of the

study area between 1528 and 1890 [Ewers, 1974]). During the eighteenth and nineteenth centuries, epidemic diseases, the mission system, and the fur trade acted to severely reduce, and in some cases exterminate, the indigenous populations.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS

An examination of the Texas Archeological Sites Atlas reveals only one previous archeological survey within one kilometer of the current Project Area. This was a survey conducted in 1981 by Heartfield, Price and Greene. This survey covered an area of approximately 190 acres. The survey area is north of Clear Creek and falls some 200 meters east of the current investigation. No sites were found during this survey. The Texas Archeological Sites Atlas also shows that there are no previously recorded sites within more than one kilometer of the project corridor.

METHODS

The pedestrian cultural resources survey covered 100% of the survey area. All areas of exposed soil were examined for surface exposure of cultural remains and features. Shovel testing was conducted in an attempt to identify buried cultural resources within the Project Area. The survey methodology was based on the existing. A single transect was established (Figure 5) in each ROW. Shovel tests were excavated along these transects at an interval of approximately every 100 meters (328 feet). All visible surfaces were examined for historic or prehistoric archeological materials.

The crew excavated all shovel tests in 10-cm (3.9”) arbitrary levels and screened the soils through .6 centimeter (1/4”) hardware cloth. Soils that were too compact or clayey to sieve through hardware cloth were broken up by hand. All materials were carefully examined for cultural artifacts. Location, size, depth, and all other information for each shovel test was recorded on standardized Moore Archeological Consulting shovel test forms. Shovel tests were immediately backfilled. The UTM locations of all shovel tests were recorded utilizing handheld, recreation-grade GPS units (Garmin E-Trex and Magellan GPS 315s). The location of each shovel test was then plotted on a USGS quadrangle map of the Project Area (Figure 5) utilizing ArcView 3.3. Backhoe trenching was determined to be unnecessary for this project based on the PALM model.

In addition to the excavations, a visual examination was made of the 90-meter wide APE. This was a combination of visual examination during the field survey and driving of all adjacent roads to the proposed route. The purpose of this reconnaissance was to determine the presence or absence of historic structures or structural remnants.

Photographs were taken of disturbed localities within the Project Area. Photographs were also taken of any feature that stood out (i.e. pimple mounds, structure remnants, etc…) and of any sites found. Photograph direction, subject, photographer name, and dates were recorded on a standard Moore Archeological Consulting photo log

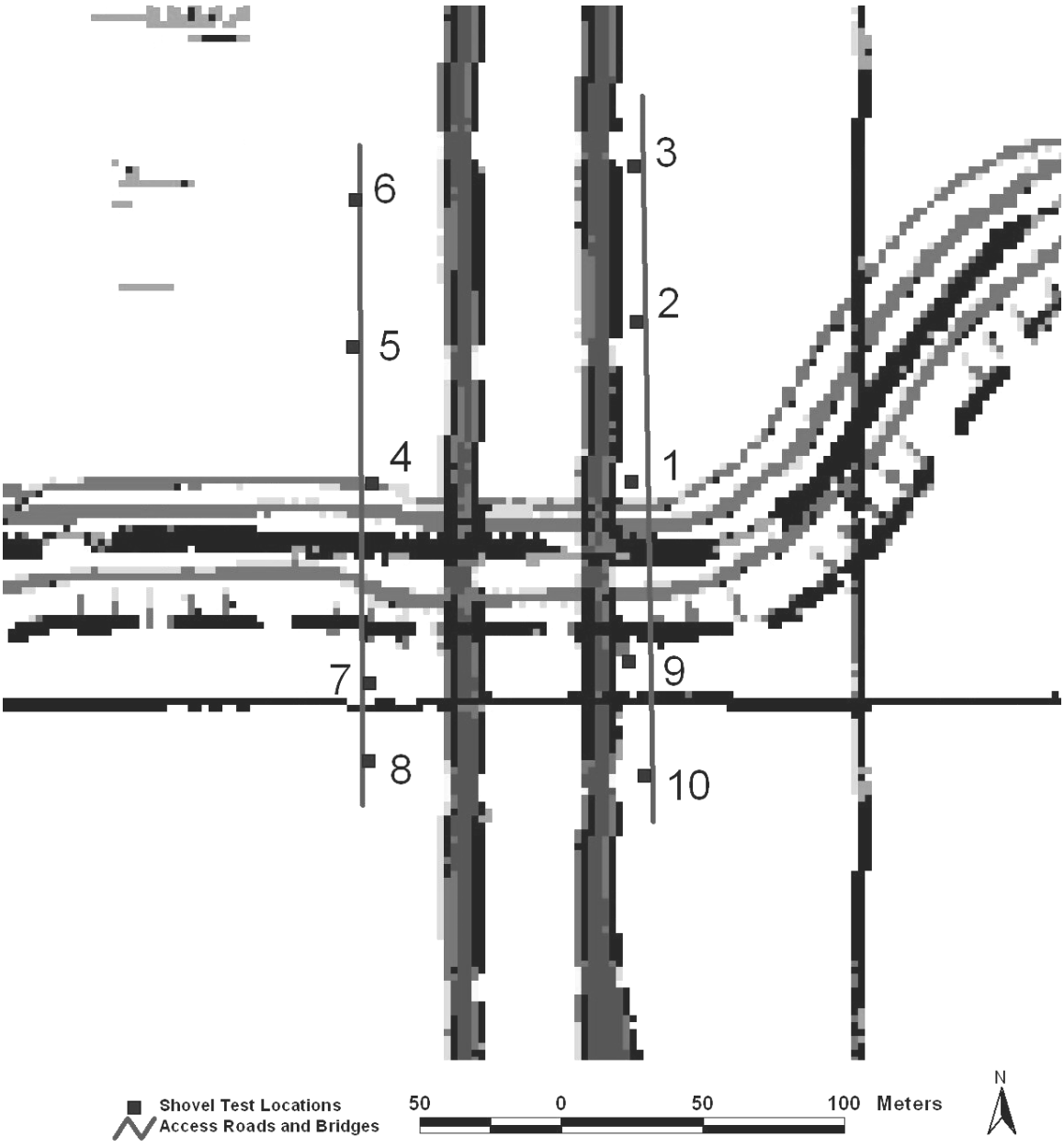

Figure 5: Shovel Test locations in Project Corridor

RESULTS

On February 22, 2005, a crew from Moore Archeological Consulting performed an archeological survey investigation of State Highway 288 in Harris and Brazoria Counties, Texas. The objective of the investigation is to determine the presence or absence of cultural materials within the location proposed for the project.

A total of ten (10) shovel tests were excavated within the Project Corridor. Because the project falls within existing ROW owned by the state, right-of-entry (ROE) access was not an issue. All ten shovel tests encountered either disturbed soils and/or fill soils between 8 and 88 centimeters in depth. Additionally the natural soils, when encountered, often appeared truncated. The fill was very evident in shovel tests 1, 4, 7 and 9, which were dug on the creek banks. These contained between 30 and 88 centimeters of fill. It appears that this area was previously significantly impacted at some point in the past. This appears to have involved a mixture of grading and filling. It is unknown as to when this prior impact may have occurred.

All but one of the shovel tests hit the basal clay subsoil. The one exception was shovel test 8 that was excavated to 84 centimeters below the surface through dense clay. At that depth it became too difficult to continue digging. The proximity of this shovel test to the end of the extant access road suggests that this is simply due to the same prior impact that brought the fill into the Project Corridor.

It was also noted that Clear Creek appears to have been straightened at the proposed crossing. It is likely that the fill was used to level areas around the new stream channel. It is highly unlikely, considering the level of impact observed during the investigation, that any previously unrecorded cultural deposits that may have been extant remain within the ROW for the proposed construction.

CONCLUSIONS AND RECOMMENDATIONS

No cultural materials or deposits were encountered during the course of this investigation. Additionally the level of impact within the ROW for the proposed construction is such that it is highly unlikely that any cultural resources remain within the Project Corridor. It is therefore recommended that no further archeological investigation is necessary prior to construction of the proposed bridges and access road segments.

Should archeological deposits or features be encountered during construction, it is advised that construction cease in the immediate area of the finds and the Archeology Division of the Texas Historical Commission should be contacted for further consultation.

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APPENDIX A: PHOTOGRAPHS

Photograph 1: West side of highway on north side of Clear Creek. Typical state of ROW.

Photograph 2: Southwest bank of Clear Creek from north bank.

Photograph 3: View of northeast bank of Clear Creek.

Photograph 4: View of sloped creek bank suggestive of modifications.

Photograph 5: View from sloped bank on south side of creek. Note concrete bank reinforcements.

APPENDIX B: SHOVEL TEST LOG

Shovel Test Log
State Highway 288 Bridges
Archeological Survey

No.	Recorder	Status	Depth	Description	Comment
1	Ferguson	Negative	0-46 46-72 72-88	Clay fill 10YR4/2 Dk Grayish brown SCL 10YR6/2 Lt brownish gray SC w/yellow mottles	CACO3 concretions, subsoil
2	Sanchez	Negative	0-9 9-30	grayish brown SiC, mixed fill Brownish Yellow SiC	CACO3 concretions, subsoil
3	Sanchez	Negative	0-46 46-57 57-66	grayish brown fill grayish brown SiC Yellowish Brown SiC	CACO3 concretions, subsoil
4	Sanchez	Negative	0-73 73-90	Clay fill Yellowish Brown SiC	CACO3 concretions, subsoil
5	Ferguson	Negative	0-8 8-23 23-37	disturbed clay 10YR3/1 Very Dk. Gray C 10YR5/2 Grayish Brown C	CACO3 concretions, subsoil
6	Ferguson	Negative	0-40 40-50	disturbed clay 10YR5/2 Grayish Brown C w/ Yellow Mottles	CACO3 concretions, subsoil
7	Ferguson	Negative	0-30 30-50	Clay fill - slope wash 10YR7/1 Lt. Gray C w/ Yellow Mottles	CACO3 concretions, subsoil
8	Sanchez	Negative	0-84	Clay Fill	Extremely hard packed at 80 cmbs.
9	Sanchez	Negative	0-84 84-94	Clay Fill Yellowish Brown SC	CACO3 concretions, subsoil
10	Ferguson	Negative	0-76 76-90	Clay Fill 10YR3/1 Very Dark Gray C	Few Orange Mottles, intact

Key
S= sand
C= clay
L= loam