

III. PHASE I ARCHEOLOGICAL SURVEY

GAI conducted the Phase I archeological survey of the Bridge 4A project area from May 4 to 6, 1998. This work included a pedestrian reconnaissance, followed by subsurface survey to identify potentially significant archeological resources that could be affected by the project construction.

PEDESTRIAN RECONNAISSANCE

GAI performed a pedestrian reconnaissance of the project and vicinity to refine preliminary assessments for archeological resource sensitivity in the APE. In addition, this reconnaissance served to identify potential archeological surface features, and to delineate areas that could be excluded from further survey due to excessive slope, poor drainage, or disturbance. These locations were mapped, described in field notes, and documented through photos.

The preliminary inspection revealed a number of locations that could be omitted from further survey due to recent disturbance or poor drainage. The project corridor crosses the shallow valley of Tidbury Creek immediately below Derby Pond. The margins of the creek are low and marshy, and the roadbed supporting Bridge 4A and the roadway approaches on Route 13A consists of a prism that measures 1.0 meter deep or more, particularly north of the bridge (Photograph 1).



Photograph 1. Road prism along east side of Route 13A, northern terminus of the project corridor. Looking south.

Here, much of the road apron extends to the margins of the ROW, leaving few undisturbed or unfilled areas for testing except in locations where the road grade lies close to the natural grade. Such locations were present only in the southern portion of the survey corridor on the east side of Route 13A, between Stations 1+000 and 1+170. This area lay in an agricultural field (Figure 4; Photograph 2).



On the west side of Route 13A, from Bridge 4A north to Station 1+270, the APE consists of road fill prism fronting Derby Pond, and wetlands (Photograph 3). South of Bridge 4A and west of Route 13A, between Stations 1+000 and 1+100, areas inside the ROW exhibited disturbance from residential and recreational development: a paved parking lot adjacent to the south shore of Derby Pond, and south of this lot, a residential yard (Photograph 4). From Stations 1+270 to 1+290, areas on the west side of the road were poorly drained and stagnant. Low terrain and poorly drained soils flanking Tidbury Creek were also found east of Route 13A between Stations 1+175 and 1+280. An artificial pond centered at Station 1+230 and a gravel driveway north of the pond at Station 1+280, indicated recent disturbance (see Photograph 1). A second artificial pond lay 30 meters east of the project ROW at approximately Station 1+160.



Photograph 3. Eastern shoreline of Derby Pond and adjoining western margin of the project area at Bridge 4A, showing the artificial embankment. Looking northeast.

During reconnaissance east of Route 13A, the R. Lewis house (CRS K-2032) was noted 10 meters (33 feet) east of the project ROW at roughly Station 1+075 (see Figure 2). Reconnaissance revealed a group of vertical planks embedded in the Tidbury Creek bottom immediately east of the existing bridge. This roughly 5-meter (15.2-foot) line of planks lay 3 to 5 meters east of the existing project ROW, oriented at an approximate 45-degree angle from the ROW. The location and configuration of this group of planks corresponds to that of the previous bridge shown on the pre-1922 DeIDOT design map for Bridge 4A (see Figure 6); these planks may represent the remains of a wing wall of the pre 1922 bridge abutment. No other remains of this former bridge structure predating Bridge 4A were noted in the stream bed, and it is probable that most of the structure was demolished during construction of the existing bridge.

GAI also recorded a low berm situated at the eastern margin of the project ROW at Station 1+130. This berm extends east along the north bank of Tidbury Creek. It measured 27 meters in length, 7 meters wide, and a maximum of 1 meter high. The eastern terminus of this berm lay at a meander in Tidbury Creek where the stream turned north. GAI archaeologists noted fragments of stone rubble east of the berm in the stream.



Photograph 4. Recreational and residential land use south of Bridge 4A. Looking south.

During the reconnaissance, GAI archaeologists interviewed Mr. Sam Cronus, the current owner of the property adjacent to the project area at Tidbury Creek. Mr. Cronus provided information about the reported mill below Derby Pond at this location and associated features. Mr. Cronus stated that his residence, a modern dwelling located 35 meters (100 feet) east of Route 13A at Station 1+110, occupies the former millhouse location. According to Cronus, the millhouse had been destroyed by fire prior to his purchase of the property in 1962. Subsequently, he built his residence on the site of the former millhouse, completing its construction in 1969. He noted that during construction of the new house, the entire mill structure, including the foundations, were removed and replaced. Cronus also stated that in the 1970s the former tailrace for the mill (shown on the twentieth-century highway design plan--see Figure 6), had been filled with spoil from the pond he excavated north of his house at Station 1+160. GAI mapped the approximate location of the tailrace as indicated by Cronus (personal communication, 1998). This information suggests that few, if any, archeological deposits relating to the former mill structure survive at the location of the existing 1969 Cronus residence. During the interview, Mr. Cronus also stated that the rubble noted at the eastern terminus of the berm reflected construction spoil associated with work on Route 13A; he remembered contractors depositing spoil and debris along the berm during a prior construction project.

As a result of this reconnaissance, the sensitivity of the project area for archaeological resources was modified slightly. In general, the expectations with respect to drainage and topography were upheld; only the extreme northern and southern termini of the survey corridor encountered level, well-drained

terrain. These areas exhibited disturbance within the project ROW as a result of prior road construction, however, suggesting a lower likelihood of finding intact prehistoric resources. With respect to historic archaeological resources, the information derived from the pedestrian reconnaissance and interview with Sam Cronus suggested that the potential for locating intact resources related to the reported mill location was low, but moderate for historic archeological remains associated with the R. Lewis house.

SUBSURFACE SURVEY

Following the reconnaissance, GAI conducted shovel testing and limited test unit excavation along the east side of Route 13A from Station 1+000 to 1+170. Areas along the west side of the ROW either consisted of toad fill prism, were inundated by Derby Pond, or were disturbed by construction of recreational facilities and residential yards, and therefore omitted from subsurface survey. The tested areas bordered an agricultural field to the south, as well as locations along the APE margin fronting the reported former mill seat and the R. Lewis residence. GAI excavated 16 STPs, including 11 STPs at 15-meter intervals along the eastern margin of the APE east of Route 13A (STPs C2-C4 and C8-C15). GAI also excavated five STPs at close intervals (A1, A2, B1, B2, and C1) atop and alongside the berm, to examine the stratigraphy and possible cultural status of this feature. Based on its position on Tidbury Creek relative to the projected former millhouse and millrace, GAI concluded that this berm could represent a water diversion feature associated with the former mill. In addition, two 1x.5-meter test units (TUs 1 and 2) were excavated on the flanks of the berm to obtain more detailed cross-sectional data, and to determine if the berm represented an historic feature.

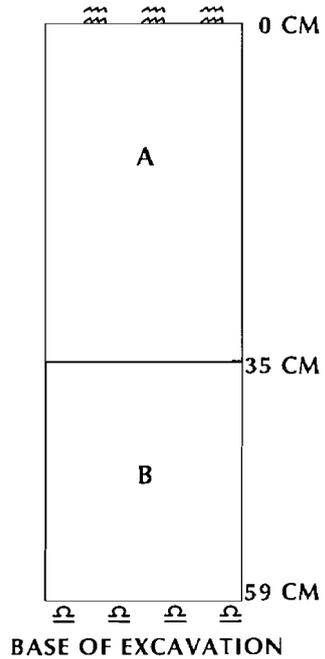
Hand-excavated STPs measured roughly 50 centimeters in diameter and followed natural soil stratigraphy. Each STP was excavated at least 10 centimeters into natural subsoil (where encountered) or to depths sufficient to ascertain the condition of the natural soil profiles. All excavated soils were screened through 1/4-inch mesh hardware cloth for systematic artifact recovery. A standard GAI Shovel Test Form was completed for each excavated STP, noting soil descriptions, depths of horizons, and the presence of cultural materials. TU's were also excavated stratigraphically by hand. Methods for screening and describing soils, and recording the excavation data followed the same procedures described above. All STPs and TUs were recorded on project plan maps that also depicted the project ROW, the locations of features, modern structures, and other relevant data.

In general, the shovel testing revealed disturbed or truncated stratigraphic profiles along the project ROW. Typically, STP profiles along the road exhibited a plowzone of dark grayish-brown sandy loam above truncated, often gleyed C-horizon soils of dark gray sand (Figure 7, STP C-2). In some instances, further disturbance or redeposited soil was noted as a result of road or driveway construction. Artifacts from these STPs came from the uppermost soil deposits and consisted of modern materials. A total of five items were recovered from four STPs (C-8, C-9, C-10, and C-11): one wire nail, one fragment of non-diagnostic brown glass, one plastic wrap fragment, and two pieces of Styrofoam. These items were interpreted as casual discard, and were not retained for laboratory processing. They do not constitute archeological resources.

STPs excavated at the berm that extends east of the project area exposed very dark grayish-brown sandy loam above yellowish-brown sand. The upper deposit probably represents fill or a mixture of fill and natural A-horizon topsoil. The lower stratum, encountered at 35 centimeters below surface, appeared to reflect B- or C-Horizon soils (Figure 5, STP A-1). Testing in the area north of the berm and adjacent to the road prism exposed a 43-centimeter thick deposit of dark grayish-brown sandy loam that probably constitutes mixed fill and A-Horizon soils. This material lay above light yellowish-brown sand that represents a B or C Horizon (Figure 7, STP C-1).

The test units on the berm generated similar stratigraphic data as the shovel tests. Test Unit 1, on the north flank of the berm, exposed a shallow, recent A horizon above a 34-centimeter thick deposit of brown loamy sand that probably represents a mixed fill and A/C Horizon. This material capped yellowish-

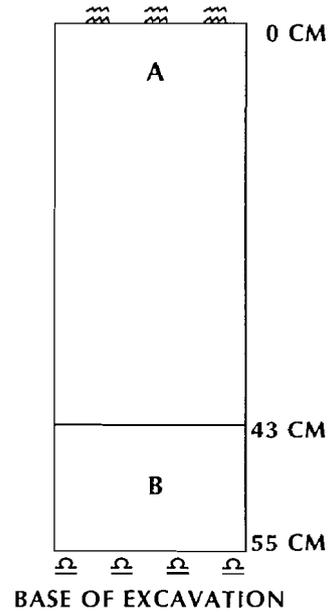
STP A-1



KEY

- A = 10YR 3/2 VERY DARK GRAYISH BROWN SANDY LOAM (FILL)
- B = 10YR 5/6 YELLOWISH BROWN SAND (B OR C HORIZON)

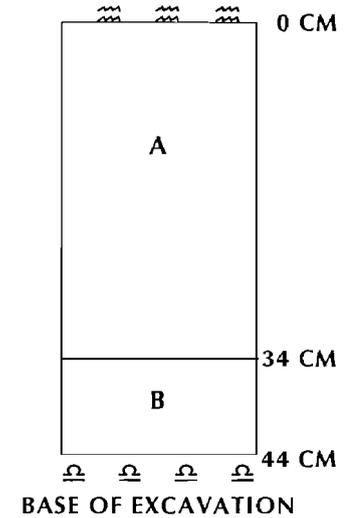
STP C-1



KEY

- A = 10YR 4/2 DARK GRAYISH BROWN SANDY LOAM (FILL AND/OR A HORIZON)
- B = 10YR 6/4 LIGHT YELLOWISH BROWN SAND (B OR C HORIZON)

STP C-2



KEY

- A = 10YR 3/2 VERY DARK GRAYISH BROWN SANDY LOAM (A OR Ap HORIZON)
- B = 2.5Y 4/1 DARK GRAY SAND (Cg HORIZON)

0 20 cm

FIGURE 7

BRIDGE 4A PROJECT
 REPRESENTATIVE STP
 PROFILES

brown sand that graded down to a mottled deposit of light yellowish-brown sand, grayish-brown sand, and yellowish-brown sand. These last two strata appeared to represent C Horizon soils (Figure 8).

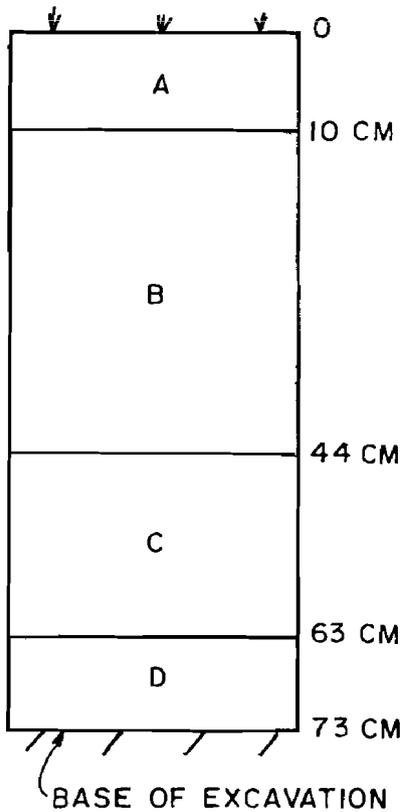
Test Unit 2, located at the berm's southeastern corner, encountered a 50-centimeter-deep deposit of light yellowish-brown sand containing concrete and stone rubble (Photograph 5). This stratum comprised a fill deposit that lay above a gray sand gleyed C Horizon. Probing of the adjacent area indicated that this deposit of rubble extended roughly 1.5-meters to the west (toward Route 13A) and continued east into the streambed where additional rubble deposits were visible. The total area covered by this rubble measures roughly 5x 5meters.



Photograph 5. Stone and concrete fill, exposed in Test Unit 2. Looking northeast.

The distribution of this rubble suggests a discrete deposition event. The stratigraphy within the berm exposed by shovel testing and TU 1 further indicates that the overall berm landform probably represents a natural levee. The rubble encountered at its eastern terminus may represent an attempt to enhance this natural landform with rubble spoil to divert the stream flow for the former mill site. However, no verification of this interpretation was found in the historic map data or in informant interviews. The rubble may instead relate to road construction activities in the 1970s, as reported by Mr. Sam Cronus.

TEST UNIT I



KEY

- A - 10YR 3/2 VERY DARK GRAYISH BROWN SANDY LOAM (A HORIZON)
- B - 10YR 4/3 BROWN LOAMY SAND (AC HORIZON)
- C - 10YR 5/6 YELLOWISH BROWN SAND (C1 HORIZON)
- D - 10YR 6/4 LIGHT YELLOWISH BROWN SAND MOTTLED WITH 10YR 5/2 GRAYISH BROWN SAND AND 10YR 5/6 YELLOWISH BROWN SAND (C2 HORIZON)

FIGURE 8

BRIDGE 4A PROJECT,
PROFILE OF TEST UNIT I