Archaeological Monitoring of Construction
of a Six-Inch Force Main Sewer over Lookout Creek,
Chattanooga, Hamilton County, Tennessee

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Management Summary

The Jeffrey L. Brown Institute of Archaeology, University of Tennessee at Chattanooga, conducted archaeological monitoring of trenching activities associated with the construction of a six-inch diameter force main sewer pipeline crossing Lookout Creek, Chattanooga, Hamilton County, Tennessee at Mile 0.7 above the left bank of the Tennessee River. The sewer main extended from the Lora Lee Knitting Mill off Cummings Highway north and west across Lookout Creek for a total extant of about 4130 feet / 1260 meters. The monitoring was conducted for the Hamilton County Engineering Department and was required by the Regulatory Branch of the U. S. Army Corps of Engineers and the Tennessee Historical Commission.

The Institute performed continuous monitoring of approximately 1880 feet / 570 meters, more or less, of the proposed route of the sewer beginning near the Lora Lee Knitting Mill and running north to the crossing of Lookout Creek. Portions of the sewer trenching on the north/west bank of the creek were also monitored, but coverage of this 2250 feet / 685 meters (more or less) of proposed sewer line on the north/west riverbank was not continuous; this segment of proposed sewer largely followed an existing roadbed. Monitoring on the north/west bank focused on the vicinity of an historic homestead and Civil War battleground.

Opportunistic surface collections from the trench spoil yielded 32 fragments of aboriginal lithics from the Lora Lee tract. In addition, one aboriginal ceramic fragment and four pieces of a mineral specimen were recovered. No cultural materials were collected from the trenching north/west of Lookout Creek.

In no portion of the observed sewer trench were significant aboriginal or historic features encountered.
Introduction

At the request of the Hamilton County Engineering Department, through their engineering consultants Piedmont Olson Hensley, the Jeffrey L. Brown Institute of Archaeology, University of Tennessee at Chattanooga (hereafter, the Institute), prepared a technical proposal and budget to perform archaeological monitoring of construction of portions of a six-inch force main sewer crossing Lookout Creek near Tiftonia. A prior archaeological survey of portions of the route indicated that the sewer would pass through sensitive prehistoric localities as well as near historic-period habitations (Council 1994). Passing through the federally-controlled pond of Nickajack Lake as it extends up Lookout Creek from the nearby Tennessee River, the proposed sewer route was reviewed by the Regulatory Branch of the U. S. Army Corps of Engineers and the Tennessee Historical Commission. These agencies concurred with the Institute that archaeological monitoring of part of the proposed route was necessary to mitigate potential impacts on cultural resources, consonant with public law.

The six-inch force main sewer extended from the Lora Lee Knitting Mill off Cummings Highway north and west across Lookout Creek for a total extent of 4130 feet (1260 meters), more or less (see Figures 1 and 2). The Institute had performed a pedestrian survey and systematic sub-surface reconnaissance of approximately 1880 feet / 570 meters, more or less, of the proposed sewer beginning near the Lora Lee Knitting Mill and running north to a crossing of Lookout Creek at Mile 0.7. An additional 2250 feet / 685 meters, more or less, of proposed sewer line on the north/west riverbank was not surveyed; this segment of proposed sewer largely followed an existing roadbed. Historical documentation, however, indicated that at least one locality might contain historic features potentially impacted by the proposed pipeline routing. Following the recommendations of the survey report (Council 1994), the Institute monitored trench excavation on the south/east bank of Lookout Creek and also monitored trenching activities around the site of the historic Morris Homestead on the north/west bank of the creek.

Dr. Nicholas Honerkamp (Ph.D. Florida 1980), Director of the Institute of Archaeology at UT-Chattanooga, served as principal investigator and project administrator. R. Bruce Council (M.A. Florida 1975) was co-principal investigator and project director, assuming direct responsibility for day-to-day operations in the field and laboratory.
Figure 1. Vicinity map, Lookout Creek Force Main Project. Detail from 7.5 minute topographic quadrangle map, Chattanooga, 105-SE, U.S.G.S./T.V.A., edition of 1969, photorevised 1976. Project area is circled.
Figure 2. Detail map, proposed routing of Lookout Creek Force Main Project. A - Lora Lee Knitting Mill, start of field survey. B - Lookout Creek, end of field survey. C - air release valve location. D - End of proposed sewer, Parker Lane.
Cultural and Environmental Background

Portions of the following section are recited verbatim from the Phase I survey report (Council 1994), to which reference should be made.

The southern half of the proposed force main passed through a relatively flat parcel of ground known as Cummings Bottom. This gently-sloping terrain is drained by Lookout Creek which, somewhat elevated by Nickajack Lake, now ponds over low-lying flats that were formerly dry or only seasonally flooded. Soils in the project area east of Lookout Creek are either Hamblen silt loams or Whitwell loams, both deep, well-drained soils of moderate or good agricultural potential. At elevations near 660' ASL, the flat bottom lands would have been periodically inundated by flood events or peak seasonal rainfalls. Low hills dominate the terrain west and north of Lookout Creek. Soils on the west bank of Lookout Creek at the proposed sewer crossing are Dewey silt loams with only marginal agricultural suitability largely due to grades of 12 to 25% (Jackson 1982). North and west of Lookout Creek the terrain is dominated by low hills.

Routing of the force main did not intersect any recorded archaeological sites. However, there are several recorded historic archaeological sites in the vicinity of the project area. Cummings Bottom was a likely location of aboriginal occupations from all cultural periods given the proximity of water, aquatic and terrestrial food resource areas, and lithic procurement areas (Lookout Mountain). With the exception of Civil War sites, however, systematic survey of the area has not occurred. Major aboriginal sites are, however, well documented in surrounding areas, namely Moccasin Bend and Williams Island.

A fuller discussion of adjacent recorded archaeological sites and cultural significance of the Lookout Creek locality appears in the Phase I survey report (Council 1994).

Field Methodology

Trenching activities associated with sewer construction were continuously monitored on the Lora Lee tract, that portion of the sewer lying south and east of Lookout Creek. Excepted from this was approximately 100m immediately adjacent to the Lora Lee Knitting Mill; this stretch was excavated without archaeological personnel being present.

A backhoe equipped with a one-foot wide (30cm) bucket excavated a trench about five feet (1.5m) in depth. Spoil was stacked along one side of the trench. This spoil was surface collected, as was the backfilled trench line. Excavation was monitored continuously.

Nominal soil descriptions and apparent stratigraphy were noted and recorded in narrative-style field notes. On the Lora Lee tract, linear coordinates of surface collections were given in meters south from a 0+00 point roughly 15m south of the south/east bank of Lookout Creek, at or near the proposed crossing point. Five field specimens were collected on the Lora Lee tract south and east of Lookout Creek; four are surface collections of aboriginal artifacts and one is a mineral specimen.

Artifact collections were cleaned and cataloged at the Institute laboratory on the campus of the University of Tennessee at Chattanooga. Field notes and collections are currently curated at this facility.

Results of Monitoring

Aboriginal lithic artifacts are widespread throughout the Lora Lee tract, but none of the aboriginal lithics are diagnostic as to period affiliation. A complete inventory of
artifacts appears in Table 1. With the exception of a few items such as chopping tools and perforators, most of the lithic tools consisted of simple utilized or retouched flint flakes. No stylistically-diagnostic projectile points were recovered.

Anthroposols or culturally-modified soils of aboriginal association were not observed in any sections of the monitored trench. Scattered river pebbles and cobbles at sub-surfaces depths of over one meter are suggestive of Archaic-period activities in the area. Several fragments of a bluish-gray siltstone nodule were noted on the Lora Lee tract at a depth of 1.2m BS, and may represent material procurement for ground-stone artifact production. The probable origin of this siltstone is the Silurian Rockwood Formation, present in strata in Lookout Mountain and in the low hills west of Lookout Creek.

The area west of the Lora Lee Knitting Mill plant site displayed truncated soil profiles associated with plant construction. Large mounds of graded spoil are present west of the proposed sewer route, and probably represents residual fills from the grading of the plant site proper. The field north of the knitting mill has apparently been maintained in crops or pasture since before the Civil War, and has been plowed intensively for a long period of time. It is not clear if topsoil has been borrowed off this property, but A horizon soils are shallow and poorly developed.

The proposed sewer route north and west of the Lookout Creek crossing was not continuously monitored, and the route was largely confined to unpaved roadways and powerline easements. Near the location of the air release valve (point C, Figure 2), the remains of an historic-period homestead are present. Historic maps (discussed in Council 1994) indicate that this homestead was associated with the Morris family at the time of the Civil War. The cut-stone foundations of the large house are still present on the site, although the structure itself has been moved and rehabilitated. The Morris homestead was also in the battleline between Federal and Confederate forces on the night of October 28, 1863. For these reasons, the sewer construction near the Morris house was monitored, resulting in the inspection of approximately 150' / 45m of trench southeast of the locality, and 650' / 200m southwest along the power line corridor. The former section was largely highly-eroded residual orange-brown clays and chert. Southwest of the Morris cabin site was low-lying bottom land periodically inundated in times of high water. At least two prior stream channels existed prior to the current track of the tributary to Lookout Creek.

The large flat area straddling the northeast-to-southwest trending ridge at the Morris homestead site appears to be a result of modern land-altering activities. Soil profiles in this area have been truncated, and a large chert borrow pit is also present in the area. This platform may be associated with the high-tension electric power lines running over the site. Although historic-period artifacts were observed around the site, no collections were made from the sewer trenching activities proper. Yard features and ancillary structures may be present around the house foundations, but these would seem to be north of the force main. Historic ceramics, glass and metal artifacts were observed on the grounds of the homestead, but were not collected as these materials were outside the sewer easement.
Table 1. Artifact classifications and frequencies, Lookout Creek Force Main Monitoring.

<table>
<thead>
<tr>
<th>Field Specimen</th>
<th>Provenience</th>
<th>Artifact Type</th>
<th>Frequency</th>
<th>Weight</th>
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<tr>
<td>1</td>
<td>Uncontrolled surface collection, 5+00 to 3+00</td>
<td>flint utilized/retouched flake</td>
<td>1</td>
<td>2.1g</td>
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<td></td>
<td></td>
<td>flint scraper</td>
<td>1</td>
<td>11.0g</td>
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<td></td>
<td></td>
<td>flint debitage</td>
<td>4</td>
<td>3.7g</td>
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<tr>
<td></td>
<td></td>
<td>flint cortical flake</td>
<td>2</td>
<td>4.5g</td>
</tr>
<tr>
<td>2</td>
<td>Uncontrolled surface collection, 3+00 to 1+50</td>
<td>limestone-tempered plain pottery (aboriginal)</td>
<td>1</td>
<td>6.7g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flint utilized/retouched flake</td>
<td>1</td>
<td>3.0g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flint perforators</td>
<td>2</td>
<td>1.9g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flint debitage</td>
<td>3</td>
<td>26.3g</td>
</tr>
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<td>3</td>
<td>Uncontrolled surface collection, 1+50 to 0+00</td>
<td>flint chopping tools</td>
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<tr>
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<td>Mineral specimen, 1+25</td>
<td>blue-gray siltstone</td>
<td>4</td>
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<td></td>
<td>flint utilized/retouched flakes</td>
<td>4</td>
<td>10.0g</td>
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</table>

Note: horizontal coordinates in meters south of Lookout Creek.
Conclusions

No historic or aboriginal features were encountered in the sections of sewer trench monitored during construction of the Lookout Creek Force Main Sewer. The Lora Lee tract south and east of Lookout Creek may contain discrete aboriginal occupations, but these postulated sites were not intersected by the sewer trenching. Archaeological remains of the antebellum Morris homestead appear to be well north of the force main easement.

Acknowledgments

The author appreciates the cooperation of the crew of Mayse Construction Company during the monitoring activities. Mr. Ledford, caretaker at Reflection Riding, was hospitable and helpful. Mr. Greg Lane, inspector for Piedmont Olson Hensley, provided valuable assistance. Dr. Jonathan W. Mies, Assistant Professor of Geosciences, University of Tennessee at Chattanooga, identified mineral specimens recovered during the monitoring. The final report was edited by Dr. Nicholas Honerkamp, Director, Institute of Archaeology, UT-Chattanooga. Institutional support was provided by Kay Hobgood, principal secretary, Department of Sociology, Anthropology and Geography, UT-Chattanooga.

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