# BORROW PITS AND ARCHAEOLOGICAL SITES: CASE STUDIES AND A REPORT ON THE ARMES SITE (40DV444)

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## ABSTRACT

*Borrow pits -- sites used for the extraction of topsoil, clay, sand, rock, and similar materials -- represent a serious threat to archaeological sites in Tennessee. While regulated on state and federal projects, similarly substantial quantities of these materials are removed at the county, municipal, and private level with no archaeological oversight. The nature of this threat is demonstrated through a series of case studies, including the reporting of materials recovered from a borrow site by an avocational archaeologist, and several potential avenues to pursue solutions to this problem are proposed.*

## Introduction

One of the most critical, least recognized, and under regulated current threats to Tennessee's urban archaeological resources is the commercial "dirt mining" business. Topsoil, clay, rock, and other materials are mined on a large scale in urban areas, primarily for landscaping at large developments, sale to private landowners with yards needing a "boost," and as fill material for various types of construction projects.

Through the presentation of several case studies, this article addresses two primary goals: (1) outlining the general threat of soil mining to archaeological sites; and (2) describing the potential for the creation of "false" archaeological sites resulting from distribution of excavated soils. Finally, the significance of this threat is demonstrated through the presentation of information salvaged from a "dirt mine" by a local amateur archaeologist, Mr. Roger Armes.

"Borrow" or "barrow" pits are not a new phenomenon. Topsoil, clay, and rock have been mined for fill and landscaping purposes for over a century in Tennessee. Perhaps the best known variety of this type of mining is the "borrow pit" for road construction projects -- massive quantities of fill in the hundreds of thousands of cubic yards are required for bridge, levee, and road construction projects at the municipal, county, state, and federal levels. Currently, only the Tennessee Department of Transportation and Federal Highways Administration contractually require archaeological clearance for borrow areas. Construction projects requiring borrow materials at the level of the municipality or county generally remain unmonitored and uncontrolled. The amount of destruction as a result of these local governmental activities cannot be accurately estimated, but they are almost certainly matched by similar impacts at the level of private business.

Over the past several years, commercial dirt mining has become an increasingly large business, particularly in urban areas. As large cities grow, available borrow material becomes increasingly scarce, material transportation over long distances grows increasingly cost-prohibitive, and local residents discourage the passage of these trucks through neighborhoods for obvious reasons.

As a result, undeveloped locales within urban areas, including primarily floodplains and steep hills, are primary targets for borrow sites. A flat-topped, but discouragingly steep hill in the midst of an urban area can be converted into prime flat commercial or residential property by the removal of clay and rock. Due to flood controls, urban floodplains cannot usually be filled to provide areas for construction, but in many cases the removal of alluvial topsoil (providing a larger flood control area) is unregulated and in some cases encouraged. Unfortunately, these areas are also among the most common areas for large well-preserved prehistoric sites. While looting and erosion comprise the greatest regulatable threats to archaeological sites in Tennessee, dirt mining may well comprise a more substantial danger because it is often entirely unregulated. In order to illustrate this threat, the authors have compiled a series of short case studies.

### Case Study: Sevierville Hill Civil War Site (40Kn142)

In 1991, the senior author worked with Charles Bentz of the UT Transportation Center and a private construction firm to resolve the fate of an important Civil War site in Knoxville, Tennessee. Laws and guidelines require that borrow pits serving as sources for materials to be used on federal aid projects be certified by the Tennessee Division of Archaeology and State Historic Preservation Officer prior to use. The site location was owned by the construction firm and was slated for use as a borrow area in order to convert a steep sided hill into prime flat residential property in the heart of Knoxville. Converting the property was to require removal of over half a million cubic yards of soil and rock -- an unusually large amount of fill to be removed from a single location. At that time, the owner was working on construction of a federal aid state highway project, and would be able to dispose of virtually the entire amount of fill in a single sale for that project. The presence of a National Register eligible Civil War site on the property placed an expensive stumbling block in the path of this plan.

In most circumstances, the firm would have been forced to use another site for borrow on this project. However, since the owner indicated that if the site was not approved for use on the state highway project, they would use the site for fill for borrow on unregulated county and municipal projects (thereby ensuring that the site would be totally destroyed without any archaeological investigation) the consulting parties determined that a compromise of some sort was better than a total loss of this important resource. In consultation with Mr. Bentz and the landowner, a compromise was reached which represented an acceptable expenditure by the landowner for archaeology.



While the archaeologists would have preferred to see a greater expenditure of money and effort on salvage of the data from the site, the choices were quite simple: (1) reach a monetary cost acceptable to the landowner and salvage some critical information from a Civil War winter encampment; or (2) stick to the strictest interpretation of the laws and force the landowner to dispose of the borrow -- and the site -- on unregulated local projects with a corresponding loss of all archaeological data. The end result was the recovery of some interesting and exciting new information about Civil War sites in Knoxville which is slated to be published as a Miscellaneous Paper in the Tennessee Anthropological Association series.

While this case study has a *reasonably* acceptable outcome, the major point is that most borrow pits of this type are completely unregulated at the level of the local or county government. In this instance, the economic interests of the landowner permitted a compromise to be reached which salvaged portions of the site. In many other instances, archaeologists never even hear of the borrow site until far too late, and still have no regulatory authority to halt, relocate, or even salvage information. The important data at Sevierville Hill could have been entirely destroyed without any violation of laws, rules, or regulations if the borrow had been sold locally to private individuals or firms, or to the city or county government. While this study had a positive outcome, there are many, many others which do not. How many similarly important sites are destroyed unnoticed by the archaeological community?

### Case Study: Creation of False Sites and Burial Grounds

Topsoil mining is not only destructive through the excavation of archaeological sites, it also has the potential to introduce another serious problem -- the false archaeological site. Mining of topsoil at major archaeological sites for reuse as landscaping materials on subdivisions or other developments has the potential to create midden deposits. A foot of rich midden from Archaeological Site A can become an equally rich two foot midden on a yard in Subdivision B in the course of a few truckloads.

For example, during the tenure of the senior author as Assistant Staff Archaeologist at the Hermitage, topsoil was purchased to landscape the yard area after installation of a new HVAC system. Staff Archaeologist Larry McKee and then assistant Kevin Smith were flabbergasted to encounter a new Mississippian site in the Hermitage yard on their way to the excavations in Rachel's Garden. The distribution of surface material suggested an intensively occupied farmstead or perhaps even a hamlet, and the large size of ceramic sherds and unbroken faunal remains indicated that this "site" had not been substantially plowed or otherwise impacted in the last 800 years. In this instance, or course, the deposits were readily recognizable as the result of freshly spread topsoil. However, after a few years of settling, growth of vegetation, and other similar factors, the deposit could easily have become a remarkably well preserved small Mississippian site in surface collections or even shovel testing. Such results at the Phase I

survey level could easily result in legislated requirements for much more extensive (and expensive) testing, the results of which would probably produce the conclusion that "this small Mississippian site has been substantially deflated and contains no intact subsurface features."

At the time of our discovery of the "new site" at the Hermitage, the source of the topsoil was identified only as "dirt from some site the State had excavated." Subsequent investigations indicated that the material came from the Hooper Village (40Dv234), a major Mississippian village site destroyed through a failed housing development and later topsoil mining -- only the stone-box cemetery area was professionally examined (DuVall and Dowd 1988; Smith and Moore 1994a). Since the ultimate disposition of other truckloads of this material remains unknown, how many small isolated Mississippian sites were created from the tons of midden removed from this major village?

An additional potential problem resulting from the unrecorded disposition of these materials is the creation of false human burial grounds, as defined under Tennessee Cemetery statutes (T.C.A. 46-4-101 et seq.). Topsoil from the Hooper site contained fragments of human bone and broken stone slabs from graves disturbed by years of intensive plowing, looting and vandalism. While the intact and partially intact stone-box Mississippian graves at the Hooper site were excavated by professional archaeologists, the number of scattered human skeletal elements and fragments of stone slabs transported from the site in loads of topsoil was certainly substantial. As a result, some concerned landowner in a subdivision in the Nashville area may eventually discover clear evidence for disturbed stone box graves in his or her yard. Hypothetically, an inspection of a swimming pool excavation in such a yard by a well-qualified archaeologist could yield clear evidence of human burials in the form of scattered human remains and stone slab fragments along with a substantial "disturbed" midden. Without records that topsoil from the Hooper site was used to landscape the backyard of this hypothetical house, the authors suspect that this situation could create a relatively costly and frustrating experience for the landowner.

The Hermitage case study provides but a single example of the potentially devastating effects of topsoil mining and sale on our ability to interpret the prehistoric distribution of settlements. In this one instance, two archaeologists "happened" to be on hand to witness the distribution of several inches of Mississippian midden from a dozen or so truckloads of material -- dozens and perhaps hundreds of other truckloads went to other undesignated locations which were not witnessed nor recorded by archaeologists. We cannot even begin to estimate how many tons of midden from other sites are annually trucked from these commercial topsoil operations to residential and commercial landscapes throughout Tennessee. The potential effects of these operations on our ability to create site locational models are obvious.

## Report on the Armes Site (40Dv444)

In closing, we present a detailed report on artifacts recovered from the Armes site (40Dv444) during its destruction through topsoil mining. The two significant components of this site would have disappeared without the last-minute efforts of local avocational archaeologist



Roger Armes, and the importance of the information Mr. Armes recovered underscores the threat of unregulated topsoil mining.

In this and perhaps most instances, the owner of site 40Dv444 was unaware of the presence of an archaeological site prior to initiation of commercial topsoil removal. The site was unrecorded, and was in what most archaeologists might have considered a fairly unlikely location for a substantial archaeological site in the region -- an elevated saddle between two large "dry" knolls in northeastern Davidson County. By the time these "dirt mining" activities were reported to the Tennessee Division of Archaeology by Mr. Armes and other concerned local residents, the majority of topsoil (i.e. midden) and upper levels of subsoil (i.e. intact cultural features) had been removed. Without Mr. Armes' efforts to recover a quick sample of artifacts (literally as the bulldozer operator took a lunch break) this site would have disappeared into the multitude of "indeterminate prehistoric open habitation sites."

Based on our limited available information, the Armes site appears to have consisted of two primary components: (1) an Early Woodland component located atop the knoll north of the saddle (along with at least two probable fragmentary stone box graves); and (2) a smaller Mississippian period component located within the saddle proper. Field observations suggest that the Early Woodland component was not represented by substantial deep feature concentrations. For example, despite the fact that the fragmented remains of two probable stone box interments were identifiable, no remnants of deep pit features (or any other features for that matter) were evident in visual inspections of the stripped area by Division of Archaeology personnel. These observations strongly suggest that the Early Woodland component was predominantly a short-term occupation site, although probably utilized over several centuries.

The Mississippian component would undoubtedly have been completely overlooked without the efforts of Roger Armes, who identified the Mississippian farmstead (or perhaps small hamlet) prior to the last pass of the bulldozer. At the time of Mr. Armes visit to the site during his lunchbreak from work, an approximately ten foot long, one foot wide strip of midden four inches in depth was all that remained of this component. Prior to the return of the bulldozer operator from his lunch break for the last pass to widen the access road, Mr. Armes retrieved a moderate sample of artifacts from the midden deposit.

Subsequent examinations of the site area suggest that Mr. Armes observed the remnants of a Mississippian midden associated with either a farmstead (the most likely alternative) or a small hamlet with a very limited number of structures. The steeply sloping topography of the area limits the size of the potential habitation area, and strongly indicates a site with a very few structures at best.

## Artifact Descriptions

Traditional interpretations generally portray small Mississippian settlements as the residence of common folk, as opposed to the materially wealthy mound-village settlements of the chiefly elite. However, recent investigations of these types of settlements along the Cumberland River indicate that the "common folk" had access to many, if not most, of the cultural items generally attributed to chiefly interaction networks (Smith and Moore 1994b). As is demonstrated below, the assemblage recovered from the Armes site very clearly underscores the fact that families living in farmsteads and hamlets had access to a wealth of material culture.

### Ceramics

The ceramics from the Armes site would fit comfortably with a sample of artifacts from a residential structure in a large palisaded village of the Thruston phase (ca. A.D. 1250-1450). A minimum of ten ceramic vessels is represented in the sample, including three Matthews Incised jars, one additional jar, one plain pan or plate, one hooded bottle, one fish effigy bowl, one double lug jar, one noded bowl probably representing a gourd or shell effigy, and one fabric-impressed pan.

Matthews Incised, variety Matthews (n=2; Figure 1)

A minimum of two vessels exhibiting Matthews Incised motifs are present in the sample, including both coarse and fine shell tempered examples. The vessel tempered with finely crushed shell appears to have exhibited a strap handle (missing), and is broken along the incised motif. The second vessel exhibits an "excised" or "pushed" variant of the variety Matthews motif which is believed to be most characteristic of the A.D. 1300-1450 time frame in the Middle Cumberland Valley.

Matthews Incised, variety Manly (n=1; Figure 1)

A single fragment of a probable jar with coarse shell tempered paste exhibited two parallel punctated arches.

Fine Shell Tempered Plain (n=2; Figure 2)

Two rim sherds from different vessels exhibiting strap handles and containing finely crushed shell temper were assigned to this category. It should be noted that these vessels may have also sported incised decorations on the shoulder, but the sample did not permit determination of the presence or absence of this element. These sherds are generally referable to the broadly defined Bell Plain supertype.




**Figure 1.** Matthews Incised sherds from 40Dv444; left, variety Manley; center and right, variety Matthews.

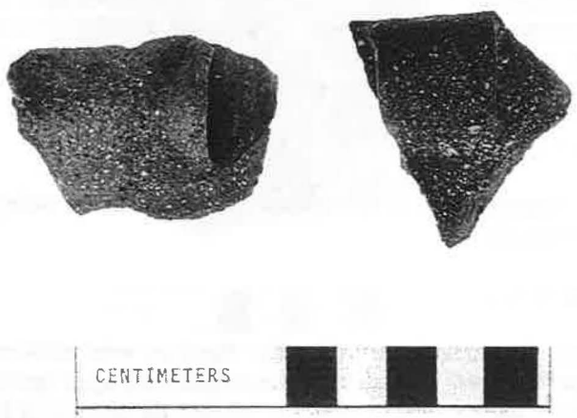


**Figure 2.** Strap handles from 40Dv444.

Fine Shell Tempered Modeled (n=1; Figure 3)

Several mendable fragments of a fish effigy bowl exhibiting finely crushed shell temper were recovered from the site. These elements are reported singularly in sherd counts because of the fresh breaks exhibited on mended sherds. Again, this vessel is referable to the Bell Plain supertype.

Mississippi Plain (n=19; Figure 4)

Nineteen sherds exhibiting coarse-shell tempered paste and plain surfaces were identified in the sample, including a minimum of three vessels. Included in the identifiable sample are singular fragments from a hooded water bottle and a jar with a double rim lug. In addition, three sherds (two rim and one basal) were identified which may derive from the same vessel. While the three sherds might be referable to the Kimmswick Plain type, they are interpreted herein as deriving from outslanting wall, flat-bottomed bowl forms (approximating plates) which occur in some frequency on local sites dating to the A.D. 1300-1450 time frame.

Kimmswick Fabric Impressed (n=3)

Three sherds (1 rim and 2 body) were assigned to this category based on profile and the presence of fabric marked exteriors.

Ceramic Disc (n=1; Figure 5)

A singular example of a ceramic sherd modified into the form of a small disc was represented in the sample. Although tentative at this point, modified ceramic sherds of this type appear to represent a chronological marker for the A.D. 1250-1450 time frame in the region, lending additional support for the placement of the site.

Ceramic Trowel (n=1)

A single large fragment of a ceramic trowel of the "mushroom variety" (Smith 1992) was recovered from the sample.

Figurine Fragments (n=2)

Two fragments of ceramic human (?) effigy figurines were recovered from the sample. Although one of the fragments is admittedly questionable, the other represents the body of the figurine with the head and appendages missing. Despite the absence of these critical features, sockets for the arms are clearly visible and the buttocks are clearly defined on the base. To the authors' knowledge, this artifact class has not previously been recovered from a farmstead or hamlet.



Figure 3. Fish effifgy bowl fragments from 40Dv444.

Figure 4. Double-rim lug from 40Dv444.

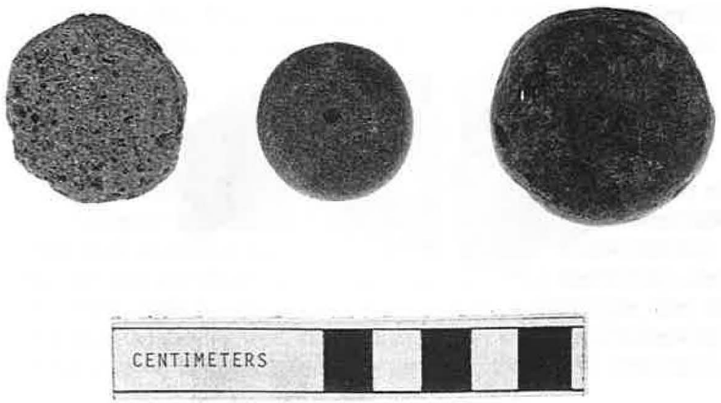


**Figure 5.** Ceramic and stone discs from 40Dv444.


**Figure 6.** Celt and ovate knife from 40Dv444.



### Lithics

A moderate number of stone artifacts were collected from the Mississippian farmstead area, including 12 hammerstones, 12 bifaces, three end scrapers, six drills, two Madison points, two discs, two lanceolate knives, one ovate knife, one celt, and one possible unfinished gorget fragment (Figures 5 and 6). Each of these artifacts (with the possible exception of the gorget) represents items expected to be associated with a domestic dwelling. Both discs (42.8 mm diameter and 21.9 mm thick; 31.2 mm diameter and 13.5 mm thick) were relatively small, circular artifacts of ground limestone that favorably compare with similar type discs recovered from Mississippian sites within the study area (Moore and Smith 1993; Smith 1992; Smith and Moore 1993). The moderate-size celt was made of locally available limestone. The possible gorget consists of a broad, but thin fragment of black shale (at least 100 mm long and 56 mm wide) that had been flaked into an oval shape. No grinding was visible on this specimen.

Nineteen Motley and three Adena points were recovered from the knoll just north of the saddle (Figures 7 and 8). These points support the presence of an Early Woodland component spatially discrete from the Mississippian habitation. Measurements for these points are presented in Table 1.

### Bone Artifacts

Despite the small sample size, a remarkable series of modified bones were recovered, including deer antler manufacturing residue, portions of one (or possibly two) antler tine flakers, two fragments of a deer bone pin, and one astragalus cube (Table 2 and Figure 9). While the first two artifact types are commonly represented on many types of Mississippian sites in the region, the bone pin and astragalus cube are rare. Similar to the ceramic figurines, the authors are unaware of any previous records of astragalus cubes from farmsteads or hamlets in the region.

## Concluding Remarks on the Armes Site

While the identification of the Early Woodland component is interesting in its own right, the greatest contribution of Mr. Armes to local archaeology was the identification of a Mississippian farmstead in an "unexpected locality." Predictive modeling for archaeological sites is an imprecise science at best, and guesswork at worst, but realistic considerations force us to use these types of models on a daily basis. Prior to Mr. Armes identification of this farmstead, few if any such Mississippian sites had been identified in similar saddles in the Nashville region. With this location in mind, subsequent professional archaeological surveys have identified at least two of these farmsteads in relatively similar locations. Although the Armes site is now lost, recent investigations have indicated a potential new pattern of Mississippian farmstead location in the northern portion of the Central Basin, centering on the Brick Church Pike Mound group (40Dv39). For as yet undetermined reasons, individual families (perhaps relating to the Brick Church Pike Mound group) were settling on these highly dissected upland saddles above lower level streams. Since our available data suggest that the

**Table 1.** Measurements of Motley and Adena Points from the Armes Sites (40Dv444)

| Total Point Type | Max Length | Max Width | Prox Haft Thick | Dist Haft Width | Blade Base Width | Haft Width | Length |
|---|---|---|---|---|---|---|---|
| Motley | 73.8 | 29.3 | 11.1 | 16.8 | 12.4 | 29.3 | 13.5 |
| Motley | 60.4 | 13.9* | 8.8 | 17.2 | 10.8 | 13.9* | 15.5 |
| Motley | 62.3* | 33.0 | 7.0 | 18.1 | 10.1 | 33.0 | 14.2 |
| Motley | 45.7* | 28.3* | 7.7 | 16.9 | 9.8 | 28.3* | 12.2 |
| Motley | 55.7 | 29.5 | 9.2 | 20.4 | 7.9 | 29.5 | 12.6 |
| Motley | 45.6* | 32.4* | 8.0 | 21.6 | 12.9 | 32.4* | 16.1 |
| Motley | 43.5 | 28.9 | 8.8 | 18.0 | 12.6 | 28.9 | 12.7 |
| Motley | 55.3 | 34.8* | 8.7 | 17.4 | 11.2 | 34.8* | 12.9 |
| Motley | 60.5 | 32.3* | 10.6 | 18.5 | 12.8 | 32.3* | 13.2 |
| Motley | 61.7 | 32.8 | 8.6 | 19.9 | 14.0 | 32.8 | 13.9 |
| Motley | 45.4* | 27.6 | 8.3 | 10.8 | 10.9 | 27.6 | 9.9 |
| Motley | 48.0 | 28.8* | 7.5 | 13.8* | 11.1 | 28.8* | 12.6 |
| Motley | 54.3* | 36.4 | 9.7 | ** | 13.1 | 36.4* | 5.4 |
| Motley | 64.7 | 35.4* | 9.2 | 15.0* | 13.9 | 35.4* | 16.9 |
| Motley | 56.9 | 35.6* | 7.3 | 18.8 | 12.4 | 35.6* | 14.1 |
| Motley | 55.2 | 33.7 | 8.1 | 19.1 | 15.6 | 33.7* | 11.7 |
| Motley | 47.8 | 28.7* | 8.4 | 18.7 | 13.8 | 28.7* | 15.4 |
| Motley | 61.4* | 33.9 | 8.4 | 16.6 | 13.1 | 33.9 | 12.5 |
| Motley | 53.9* | 27.5 | 8.1 | 20.3 | 11.9 | 27.5 | 12.3 |
| Adena 67.2 | 35.1 | 11.7 | 27.6 | 23.8 | 35.1 | 21.2 | |
| Adena 69.6 | 27.1 | 7.5 | 20.8 | 17.6 | 27.1 | 18.5 | |
| Adena 60.8* | 30.6 | 10.1 | 22.0 | 20.9 | 30.6 | 15.0* | |

*=broken.
**=missing.




**Figure 7.** Selected Motley points from 40Dv444.


**Figure 8.** Adena points from 40Dv444.

Brick Church Pike Mound group did not include a large and substantive resident population, we might hypothesize that the supporters of this (apparently) largely ceremonial center were widely distributed in small farmsteads and hamlets, but were circumscribed in their ability to expand outside of a region controlled by this polity.

Unfortunately, two human burials were exposed and largely destroyed by heavy equipment. At the time of this writing, topsoil mining activities have been terminated at the Armes site under the provisions of Tennessee Cemetery statutes. Had no burials been identified at the site, topsoil removal could have legally continued despite the urgings of the Division of Archaeology or other professional archaeologists. Borrow material from 40Dv444 was distributed to a number of projects in a Nashville suburb, with ramifications potentially similar to those previously described for the Hooper site.

## Discussion and Conclusions

In closing, commercial topsoil mining represents a substantial threat to archaeological resources in Tennessee. Existing cultural resource laws require an archaeological clearance for borrow material only at the state and federal level. Contractors are routinely encouraged to utilize existing local borrow pits as well as steep hillsides which are unlikely to contain significant archaeological sites. If a proposed borrow area for a state or federal project is likely to contain signficant archaeological resources and cannot be relocated, then the contractor is required to fund an archaeological investigation. In terms of county, municipal, and private borrow pits, however, there are no applicable cultural resource preservation laws which require prior clearance for use.

Lest this article simply become yet another accounting of site destruction, some potential solutions to these problems should be offered. A number of possible solutions can be proposed, including the application of state cemetery statutes, passage of new state legislation, and closer interaction between archaeologists and local planning commissions.

Tennessee cemetery statutes can be a powerful tool for preservation under the right circumstances. Current interpretations of the statutes can require private landowners to sponsor archaeological investigations on potential borrow sites with known human interments or a high potential for burials. Unfortunately, this tool only works in those few instances where the archaeological community is aware of the proposed borrow action. The Tennessee cemetery statutes were not designed as preservation laws, and they function only incidentally as such. While this tool may prove useful in some instances, its general applicability is limited.

The most idealistic, and hence least likely, solution is passage of a law restricting the rights of private property owners to mine topsoil and other materials without appropriate archaeological survey and clearance. Private property rights remain a constitutional directive, and recent court decisions concerning wetlands and similar restrictions by state and local



**Table 2.** A List of Faunal Elements Recovered from the Armes Site (40Dv444).

| |
|---|
| **White-tailed deer** (*Odocoileus virginianus*): antler beam portion, manufacturing residue, scored; antler beam fragment; 2 tine portions (1 worked, 1 possibly worked) (flakers?); right distal radius epiphysis; metapodial bone pin or awl head (parallel transverse striations); distal bone pin portion (deer metapodial?); left proximal metacarpal; distal metatarsal; right distal tibia; left tibiotarsal, superior trachlea inferior portion abraded flat -- well polished from handling; 3 first phalanges, digit 3 or 4; 1 third phalange, digit 3 or 4. |
| **Turkey** (*Meleagris gallopavo*): left distal ulna; left distal tibiotarsus. |
| **Box turtle** (*Terrapence carolina*): plastron fragment. |
| **Whelk** (species unidentified): whole specimen, probably a modern intrusion. |


**Figure 9.** Ground and polished deer astragalus cube from 40Dv444.

governments make it unlikely that passage of such a restrictive law for archaeology will happen. In the current political environment, passage of laws which limit the rights of private landowners (without compensation by the governmental agency that is restricting the land use) will be highly controversial, and probably result in limited success.

Perhaps the most productive avenue for introducing some oversight and regulation of borrow pits in urban areas is to generate interest from county and municipal governments. City and county planning commissions can be powerful allies in preserving important resources. Many types of construction-related activities require permits or approvals from these bodies, and with proper guidance these commissions can serve as a means to identify and evaluate threats to important known archaeological sites.

For example, grading permit applications for certain types of construction activities in Nashville-Davidson County are reviewed by a number of agencies, including the Metro Historical Commission. In cooperation with the metropolitan government, the Division of Archaeology is currently working to incorporate known important site locations into computerized city tax maps. This process will ultimately "red flag" any particular city lot under review that contains a significant archaeological site. Further consideration toward approval of the grading permit or other action would then be coordinated with the Division of Archaeology.

If county or municipal planning bodies are unwilling to deny or condition construction-related permits on the basis of archaeological sites, they may be amenable to require consultation with appropriate local or state archaeologists as a matter of course. The introduction of even this minimal level of oversight gives the archaeological community the ability to at least salvage information from important sites being destroyed as a result of these activities.

What's left after the final swipe? The answer to that question will be determined by the future actions of archaeologists. We must make concerted and systematic efforts to educate the public, the private sector, and local governments about the importance and non-renewable nature of archaeological sites. Ideally some businessmen will, once educated, express their altruism by attempting to preserve or at least evaluate archaeological resources within their project areas. The majority of contractors will undoubtably continue to view archaeology as an unwarranted expense. In these cases, archaeologists will need to exercise judicious use of existing regulatory processes. What's left after the last swipe does poor justice to the cultural resources of Tennessee, which would be best served by preventing the first swipe.

**Acknowledgements**

The authors wish to thank Mr. Roger Armes for his efforts to salvage information from the site which bears his name. Not only did he save some important data on material culture, his reporting of this site contributed to the identification of a previously unsuspected locale for Mississippian period farmsteads in the Nashville area. We also express our appreciation to Dr. Emanuel Breitburg for his analysis of the 40Dv444 faunal material.



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