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ANALYSIS OF A MIDDLE MISSISSIPPI STRUCTURE AT THE DENMARK
SITE (40MD85)

by

Christian Roesler

A Thesis

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Abstract

Originally thought to be a vacant ceremonial center, magnetometer surveys and subsequent excavations have demonstrated that the Denmark site in Madison County, Tennessee is a town-size settlement. Targeted excavation based upon this magnetometry data revealed what is now referred to as Structure 1. After analyzing function, construction, and location, Structure 1 has been hypothesized to be a residence, one building within a cluster of buildings, possibly representing an extended family compound. Excavations confirm that Structure 1 is of wall trench construction, however determining its above ground architecture has been problematic. Structure 1 has also been found to be similar to contemporaneous buildings at other sites in the western Tennessee region. While household archaeology and settlement patterning have been studied throughout the prehistoric southeastern United States information is minimal in the western Tennessee area at the town and household scales. Structure 1 provides much needed insight into the settlement of this region.

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1. Introduction

Denmark is a Middle Mississippi period (ca. A.D. 1150-1300) town site with three mounds located in Madison County, Tennessee along Big Black Creek, a tributary of the Hatchie River (Figure 1). Mainfort (1992) hypothesized that Denmark was a vacant ceremonial center due to the presence of mounds, but lacked high densities of artifacts surrounding them suggesting adjacent long-term occupation. However, Hadley's (2013) research, including a magnetometry survey, revealed a multitude of subsurface magnetic signatures interpreted as structures and man-made features. Targeted excavation of the anomaly with the clearest magnetic signature revealed the building now known as Structure 1 (Figure 2). Structure 1 is one of 70 probable wall-trench buildings detected in the magnetometry data leading Hadley (2013) to conclude that Denmark was a small town rather than a sporadically-used ceremonial center (Figure 3). Because little has been published about prehistoric sites in western Tennessee not much is known about individual structures and overall settlement patterns of the region. This study was undertaken to determine the function, construction, and location of Structure 1 and to understand its use, architecture, and context within the site. Structure 1 is also compared to other contemporaneous sites in the region with buildings to examine the level of variability in the construction of wall trenched structures.

Research Questions

Four questions shaped my research: (1) How Structure 1 was used; (2) How Structure 1 was constructed; (3) If Structure 1 was it part of a "neighborhood" cluster or "compound"; and (4) If Structure 1 was similar to other such buildings in the region during the Mississippi period. In turn, these general questions can be formulated into a

number of testable hypotheses which will be discussed further below. Multiple research methods were employed during this study: excavation of the building's remnants and associated artifacts, study of Denmark's settlement patterning, and comparison of Structure 1 to other buildings in the western Tennessee region including those discovered at Ames, Chucalissa, Jonathan Creek, Pinson, and Shelby Forest.

Hypotheses

Four sets of hypotheses structured my investigations. Hypothesis Set 1 looks at functional aspects of Structure 1. Hypothesis Set 2 considers the structure's architectural plan. Hypothesis Set 3 examines the intrasite location of Structure 1, and Hypothesis Set 4 analyzes Structure 1 with respect to buildings at other contemporaneous, regional sites:

Set 1: Function

H₀: Nothing can be said about building use given the current dataset.

H₁: Structure 1 was a residential structure.

H₂: Structure 1 was a public structure used for secular or religious purposes.

H₃: Structure 1 was used for both domestic and communal purposes.

Set 2: Construction

H₀: Construction technique cannot be determined given the current dataset.

H₁: Structure 1 was of bent pole construction.

H₂: Structure 1 was of rigid roof construction, indicative of a hipped or gabled roof.

H₃: Structure 1 was a composite of both bent pole and rigid roof construction.

Set 3: Location

H₀: Nothing can be said about the intrasite location of Structure 1 given the current dataset.

H₁: Structure 1 was not part of a cluster of buildings.

H₂: Structure 1 was part of a cluster of buildings.

H₃: Structure 1 was part of a cluster of buildings representing an extended family group.

Set 4: Regional Context

H₀: Nothing can be said about Structure 1 when comparing it to other buildings in the regional area given the current dataset.

H₁: Compared to other buildings in the region, Structure 1 was similar in function, construction, and location.

H₂: Structure 1 was unique to other structures in the region.

2. Background and Setting

This chapter introduces the environmental background of the geographical area in which the Denmark site is located, and the Mississippi period, the time period in which Denmark was occupied, as well as provides information on previous research performed at and about the site.

Environmental Background

Denmark is located on the cusp of the Mississippi Valley Loess Plains and Southeastern Plains and Hills ecoregions (Griffith et al. 1998). The Loess Plains are characterized by “gently rolling, irregular plains, 250-500 feet in elevation with loess up to 50 feet thick” (Griffith et al. 1998), though the loess thickness decreases eastward. Deciduous oak-hickory forests predominate in the upland areas, whereas hardwoods such as oak, tupelo, and bald cypress are common in the floodplains and bottomlands.

The Plains and Hills are similar in physiography. The region is marked by irregular plains and “some low hills with broad tops” (Griffith et al. 1998). General elevations are between 400-650 feet and local relief is between 100-200 feet (Griffith et al. 1998). Oak-hickory, as well as oak-hickory-pine, forests are common with varying bottomland hardwoods of sycamore, sweetgum, tupelo, oak, and cypress (Griffith et al. 1998). Smith (1996:98) noted oak-hickory dominance in the upland forests of the Mississippi River tributaries, a change that had taken hold by 3000 B.C. when the climate became warmer and dryer.

Quaternary ferruginous sand is common (Griffith et al. 1998), which may explain the amount of iron-bearing sandstone that has been recovered at both the Denmark and

Ames sites (Guidry 2013; Hadley 2013). Regarding Ames, Goddard (2011:13) noted “small veins of iron-bearing sandstone deposits eroding out of the hillsides”.

Cultural History of the Mississippi Period (ca. A.D. 1000-1600)

While there is no line in the sand that firmly delineates the transition from the Woodland period to the Mississippi period, the consensus is the Mississippi period was established by A.D. 1000 and remained active until A.D. 1600, well after European contact. Hallmarks of the Mississippian culture include shell tempered pottery, wall trench structures, palisades and other protective barriers, platform mounds and associated plazas, locations on or near water sources, intensive cultivation of domesticated crops, ranked societies, and religious societies evidenced in elaborate iconography (Dye 2012; Griffin 1967; Hally and Mainfort 2004; Milner and Schroeder 1999; Steponaitis 1986). These broad generalizations do not describe all sites at all stages of their existence but evidence of these features is widespread across the southeastern United States during the Mississippi period.

The term “Mississippi” was coined by William H. Holmes (1886, 1903, 1914) to classify ceramic vessels from the Mississippi River Valley. He postulated that those living along the Middle Mississippi Valley were sedentary, practiced extensive agriculture, and constructed permanent earthworks, including mounds (1914:424). The name Holmes gave these prehistoric people “for convenience of treatment” (1886:369) has stood the test of time, as has his general descriptions.

Like Denmark, other Mississippian communities were settled on or near major rivers and their tributaries. Rivers provided a source of food as well as transportation,

trade, and protection, hence a location on water was necessary for the resources it afforded. Riparian environments afforded balance between wetlands, from which fish and semiaquatic food sources were taken, and dry land, which was required for settlements and agricultural activities. Mississippians took advantage of their riverine, terrestrial and swampy locales. Milner (2006:xix) believes site longevity and size were directly related to location.

Though Mississippian people are known for their part in the rise of agriculture, specifically that of maize cultivation, their diet was quite varied. It ranged from domesticated and undomesticated plants to foraged nuts and seeds to wild game, fish, and fowl. In prehistoric western Tennessee, important game included white-tailed deer, turkey, and rabbit. Ducks, geese, fish, and turtles were also important, though more seasonal in nature (Smith 1996:99).

Even with a varied diet, agriculture was important. Griffin (1967:189) went as far as to say that “dependence on agriculture” was the foundation of Mississippian culture. Steponaitis (1986:388) agrees with Griffin’s assertion that agricultural dependence was of utmost importance, though he takes it a step further by specifying maize agriculture as the “most revolutionary change” adopted by the Mississippians. Milner (2006) and Schroeder (2004) concur that maize was one of the most important plants grown but both stop short of calling it the reason why the Mississippian culture rose as it did.

Mississippian social organization has been described as chiefdoms in which regional populations were subject to a hierarchy of chiefs culminating in a paramount chief to whom tribute was given. The highest chief was thought to be semi-divine and, in some cases, descended from the Sun (Hally and Mainfort 2004:273). Knight (1986)

touched on this hierarchy when he theorized that religious organization revolved around three cult institutions (chiefly, communal, and priestly authority) that placed chiefs at the apex of his socio-politico-religious construct.

Previous Research

Denmark was possibly first reported by Haywood (1823) but the description of the site location is problematic. Haywood (1823:146) describes a site “Seven miles southwest of Hatchy river” with “three mounds enclosed by an intrenchment (sic) 10 feet deep and 30 feet wide.” There are no known sites seven miles southwest of the Hatchie River, but if the orientation is flipped from southwest to northeast, the directions lead directly to Denmark.

William Myer (1971), Special Archaeologist with the Bureau of American Ethnology, included Denmark in his archaeological map of the southeastern United States (Figure 4) though he did not mention the site by name in his book. The site was officially recorded by the Tennessee Division of Archaeology in 1983. At that time, site investigators suggested that Denmark was of extreme importance, most likely because the site was “the only demonstrably Mississippian mound complex in the coastal plain” aside from the Obion site (Tennessee Division of Archaeology, State of Tennessee Site Survey Form, May 1983). Several years later, other sites within the Denmark mound complex were identified by their small concentrations of artifacts and recorded with the state. Because of these meager findings Mainfort (1992:205) proposed “that none of these localities represent domestic habitation.”

In 1990, salvage excavations were performed on Mound B, the platform mound, due to looting but no evidence of construction was found, mostly likely because excavations took place around the looter's trenches which were dug into the side of the mound (Mainfort 1992:204). Looting also occurred on the conical mound, Mound C, the same year almost destroying it but no excavations were undertaken.

Intensive investigations were not conducted until 2011 when Hadley (2013) began his Master's thesis research. The site was topographically mapped, LIDAR elevation data was also obtained (Figure 5), and a large-scale magnetometry survey was performed. The magnetometry data showed a large number of possible cultural features. In an effort to ground truth one of the more conspicuous anomalies a targeted excavation was undertaken. This excavation revealed a wall trench building, Structure 1, which is the focus of this thesis project.

3. Methods and Results

Investigation of Structure 1 consisted of several complimentary techniques: excavation, artifact analysis, and cross-sectioning of a portion of one wall trench and its associated post molds. The exposure of all components associated with Structure 1 allow a better understanding of the building's function and design.

Excavation

Originally excavated to ground truth an interpreted wall trench structure seen in magnetometry data, part of the north wall of Structure 1 was revealed in a window opened within in a larger, 2 m x 2 m test excavation unit on the eastern side of the building. This window was originally opened in an effort to locate the structure (Scott P. Hadley, Jr., personal communication 2014). Even though the 2 m x 2 m unit had been opened directly over the magnetic anomaly, no visual evidence of the structure was confirmed until the window was excavated. At that time, several post molds and a section of the wall trench (Figure 6) were identified and the unit was expanded. Though not clear at the time, this expansion revealed the entirety of the footprint of the structure (Hadley 2013:32). After removal of the uppermost layer of the plow zone, dark brown soil (10YR 3/2) was distinguishable from the surrounding soil (Figure 7). In addition to excavation of the window, and in an effort to expose more features, excavation of the northwest corner of the structure revealed a semi-subterranean floor (Figure 8). Multiple architectural features were exposed below the dark soil, which contained heavy amounts of ash flecking, charred remains, and daub. Structure 1 is believed to have been burned and this burned fill covered the semi-subterranean foundation, concealing features that positively identified the existence of the building. At the time research for this thesis project began,

several post molds had been exposed as well as two hearths situated in the center of the structure (Figures 9a and 9b).

A total of 41 post molds were identified, 39 of which were excavated and numbered (Figure 10). One post mold, identified as number 30, was only partially excavated because the soil staining that originally identified the post mold disappeared a few centimeters below the surface. Post mold patterning is inconsistent, especially along the north wall (the long axis of Structure 1) where only seven posts have been identified. The opposing, south wall contains 13 post molds. The east and west walls have seven and 12 post molds, respectively. It should be noted that wall trench visibility was also inconsistent, more so than the post molds. The only section where the wall trench was continuously evident was in the window that was excavated when Structure 1 was first uncovered. Smallest post mold diameter is 8 cm, largest is 20 cm, and the average is 12.2 cm. Regarding depth, the most shallow post mold is 16 cm, the deepest is 43 cm, and the average is 30.2.

The two unnumbered post molds are located on each side of post mold number 7 and are two of the features originally uncovered in the window that confirmed the presence of Structure 1. Over the course of the multi-year Denmark project they became filled in and covered, and were therefore not studied further.

Three of the corners in Structure 1 are open, meaning wall trenches stop short and there are no post molds in the open spaces. The southeast corner is the exception as it contains one post mold. Archaeologists have speculated that corners are left open because they are used as entryways (Lewis and Kneberg 1946:51, Webb 1952:44) or because walls are prefabricated prior to raising. These independently-built walls would have been

slipped into their respective trenches and lashed together at each of the four corners as a means of stabilization (Pauketat and Alt 2005:225).

Radiocarbon samples were obtained from charred wood at the bottom of a post and *in situ* under a piece of broken pottery on the structure's floor (Figure 11). They produced nearly identical uncalibrated conventional radiocarbon assays of 690 ± 30 B.P. (Beta 363966) and 700 ± 30 B.P. (Beta 320578), respectively. These dates firmly place Structure 1 in the Middle Mississippi period at ca. cal 1290 A.D.

In addition to the previously mentioned hearths (2) and post molds (41), two other features were identified in the interior of Structure 1. Feature 10, circular in shape, and located in the central portion of the structure immediately adjacent to the north wall, is interpreted to be a shallow pit. Amorphous Feature 13, in the southeastern quadrant of the building, is a concentration of burned and charred material. Neither feature was excavated, but soil and radiocarbon samples were taken from Feature 10 in anticipation of future research.

Artifact Analysis

Over 300 artifacts including ceramic sherds (n=217), clay (n=3), daub (n=17), lithic flakes/fragments (n=46), sandstone (n=49), and one mica flake have been found in and around Structure 1. Ceramic tempering includes grit, grog, and shell. The majority of sherds are plain with no surface treatment, though two appear to be fabric impressed and two sherds may have been coated with a red slip but much of the red coloring is missing and results are inconclusive (Ron Brister and Lindsay Plunk, personal communications 2014) (Figure 12). The majority of the lithic material are complete or broken flakes. One

lithic has tentatively been identified as a Madison projectile point (Eric Albertson, personal communication), which was widely used during the Late Woodland and Mississippi periods (Justice 1987:224, 227). Three possible scrapers have also been conditionally identified. Of the 49 sandstone rocks recovered, only one may have been shaped into a tool. The remaining 48 sandstone rocks are unmodified fragments. A complete list of artifacts can be found in Appendix B.

The testing of wood remains and cross-sectioning of trenches and post molds can be useful in the identification of the above-ground construction plan of Structure 1. Some wood types are more suitable than others depending on the construction method. For example, pine is extremely pliable when living but becomes inflexible when dried, and is therefore unsuitable for bent pole construction (Blanton and Gresham 2007:43). The cross-sectioned excavation of post molds and wall trenches can reveal their orientations, which will also provide information on construction. Bisection of these features is “essential” when attempting to determine if a wall was built with bent pole or rigid construction (Alt and Pauketat 2011:112).

Cross-Sectioning

In addition to identification of above-ground construction, cross-sectioning of a portion of the east wall trench and its associated post molds was undertaken as a means to gain a better understanding of the subsurface construction. While cross-sectioning did reveal the posts to be set vertically in the trench, no other information was gleaned from this excavation. Though slightly visible at the surface, the trench disappeared below surface. Also, no evidence of subterranean bracing was detected.

Some structures excavated by Lewis and Kneberg (1946:50-51) at Hiwassee Island included subsurface horizontal wedges placed on both the outside and inside of the vertical posts as a means of providing additional support. This method of bracing may have been necessary only in sandier, less compact soils (Reed 2007:20).

4. Analysis and Discussion

Other Regional Sites

What do other Mississippi period settlements and buildings look like? Are they arranged in similar fashion? Do they contain similar features or artifacts? What does Structure 1 look like as compared to other structures of the same time period in the same regional area? To answer these questions, buildings at Ames, Chucalissa, Jonathan Creek, Pinson, and Shelby Forest are analyzed and then compared to Denmark's Structure 1.

Ames. Ames is a multi-component (Woodland and Mississippi periods), four-mound site in Fayette County, Tennessee located on the North Fork of the Wolf River. Guidry (2013) studied a series of overlapping structures (Figure 13) located in an open, flat area south and east of the mounds. These buildings represent three different building episodes. The youngest in the series, also called Structure 1, is coeval (ca. A.D. 1290) with Denmark's Structure 1. Ames' Structure 1 is also of wall-trench construction though slightly larger at roughly 7 m x 7 m, than Denmark's Structure 1, which is approximately 6 m x 4.5 m (Hadley 2013:33). Wall-trenches and square-to-rectangular building shapes are common elements of Mississippian architecture (Griffin 1967; Hally and Mainfort 2004; Schroeder 2004; Smith 1996; Steponaitis 1986).

Chucalissa. Overlapping architecture is also evident at Chucalissa (Figure 14), a Late Mississippi period site on the Chickasaw Bluffs overlooking the Mississippi River in extreme southwestern Shelby County, Tennessee. A total of six wall-trench buildings were partially uncovered in Unit 6SW less than 50 feet from the large, platform mound. Buildings I and III are typical wall trench structures with open corners, measuring

approximately 3.9 meters a side. Three other structures, IV, V, and VI, were much more fragmentary in nature, but based upon the width of the visible trenches, these buildings are believed to be the same size as I and III (Lumb and McNutt 1988:51).

Though still constructed as an open-cornered, wall-trench building, Structure II was anomalous in size as compared to those previously discussed. Trenches were not only wider and deeper, they were much longer, almost twice the length of I, III, IV, V, and VI, at approximately 7.6 meters. This makes Chucalissa's Structure II on par with Ames' Structure 1, and slightly larger than Structure 1 at Denmark, though Structure II is much closer to the mound than either of the structures at Ames and Denmark.

Jonathan Creek. The Jonathan Creek site, located in southern Kentucky near the banks of the Tennessee River, was a heavily fortified, town-scale settlement. Radiocarbon dates (Schroeder 2011:131) show Jonathan Creek was occupied at about the same time as Denmark, (ca. A.D. 1230-1260). Extensive excavations confirm the presence of many wall-trench structures of varying types and sizes (Figure 15). Webb (1952:54) identifies three distinct wall-trench styles: Type A has no interior support posts, Type A^I includes two or three large interior posts, and Type A^{II} are pit houses whose foundations were slightly subterranean (Figure 16). Type A is most similar to Denmark Structure 1. Trench depths in Type A buildings range from 1.2' to 2.3' (.37 m to .98 m). Floor plans are generally rectangular in shape though there are square buildings as well. Sizes range from 13' x 16' to 25' x 32' (approximately 4 m x 6 m to 8 m x 10 m) (Webb 1952:44). The diversity of building types and sizes indicate considerable variability within the site.

Webb also examines the uniform placement of posts along the outer wall of the trenches. Such placement is “typical” and a “very significant” identifier of the above-ground construction of these buildings (Webb 1952:45). The base of the trees were placed in the trench and the more slender, more pliable tops were bent over and lashed to trees on the opposite side, inserted in their trench and bent over in the same fashion. The placement of these posts along the outer wall of the trench insured they would stay in place during both the construction and lifetime of the structure.

Pinson. Described as “one of the largest and most complex archaeological sites in the southeastern United States” (Mainfort 1986:5), the Pinson Mounds site near Jackson, Tennessee is located about 20 miles from Denmark. Excavation of a house structure begun by Fischer and McNutt (1962) in 1961 was expanded two years later by Morse (1986) and his field school participants. During the 1961 test excavations, a burned rectangular structure measuring about 6.5 m x 5.5 (21.3 ft x 18.2 ft) was partially uncovered (Figure 17). Constructed using the wall trench method, posts approximately 9.1 cm to 12.2 cm (0.3 ft – 0.4 ft) in diameter were spaced about 21.3 cm to 30.5 cm (0.7 in – 1 ft) apart along the interior face of the trenches. No evidence of sub-surface horizontal bracing was detected. Wall trenches stopped short and did not extend into the three uncovered corners. One post mold was visible in the southeast corner, and a single, circular fireplace about 67 cm (2.2 ft) in diameter was located in the center of the building (Fischer and McNutt 1962:4-5).

Morse and crew completely exposed the structure in 1963 and confirmed Fischer’s and McNutt’s earlier findings regarding size, construction method, and post location (Figure 18). Artifacts recovered during the 1961 project seemed to date the

structure to the Early and Middle Woodland periods (1000 B.C. – A.D. 500) but radiocarbon testing done several years later dated it to approximately A.D. 1000, placing it within the Early Mississippi period (Morse 1986:109).

Shelby Forest. Site 40SY488 in Shelby Forest was found in the early 1980s during an archaeological survey of state-owned land, but was not excavated until 1994 when plans were made to repair an old dam immediately adjacent to the site. Originally recorded as an historic cemetery, 40SY488 revealed its prehistoric past due to daub and lithic material eroding out of an overturned tree trunk (Barker 1994:1). Further investigation revealed the cemetery to be located 80 meters to the west of the prehistoric site (Barker 1994:8). Excavations exposed the footprint of a large rectangular feature as well as one wall trench running along the north side of the feature. Measuring approximately 6.5 m x 3.8 m, the feature was identified as a structure floor. The floor was distinctive from the surrounding soil due to its dark red color, which was determined to be a burned layer. The floor also appeared to have been dug into the surface, representing semi-subterranean construction (Barker 2005:6).

The single wall trench is distinct from the soil around it due to its mottled gray-brown color and it runs nearly the length of the exposed northern side of the structure. The trench's maximum width is 30 cm and its rounded base reaches a depth of 20 cm below the burned clay floor (Barker 1994:10).

Within the structure several smaller features were identified, most notably two hearths. Feature 3 is a circular-to-oval shaped hearth with a curb around the exterior. Though the hearth is located near the center of the structure, the exact shape and length could not be determined as the western portion had been previously destroyed by farm

equipment. The second hearth, Feature 5, is parallel to Feature 3 along the long axis of the structure but is closer to the north side. Feature 5 is more round in shape than Feature 3, but it does not include a curb (Barker 1994:17).

Denmark, Regional Sites, and Pan-Mississippian Archaeology

Structural remains at five sites (Ames, Chucalissa, Jonathan Creek, Pinson, and Shelby Forest) were discussed above. Each of these sites are located in the western Tennessee region and date to the Mississippi period, with the exception of Pinson, whose major occupation dates to the Middle Woodland period. All of the structures are of wall-trench construction and are located in off-mound areas but are there other similarities? What observations regarding architecture and community plans have been made throughout the Mississippian world of the southeastern United States?

Denmark and Ames. Ames's Structure 1 was most likely in use at the same time as Structure 1 at Denmark. A radiocarbon sample from a wall post in the Ames structure returned a date ca. A.D. 1290 (Guidry 2013:21). Two radiocarbon samples from the Denmark building were determined to date to ca. A.D. 1280-1290.

Building size, trench width, and post diameters are also similar between the two structures. The Ames structure has been measured at approximately 7 m x 7 m, whereas Denmark's Structure 1 is slightly rectangular at 6 m x 4.5 m (Hadley 2013:33). At Ames, trench widths vary from 16-40 cm. Trenches associated with Structure 1 at Denmark are slightly smaller, ranging from 15-30 cm (Guidry 2013:78). Post widths at each structure average 11 cm. It must be noted that post measurements for the Ames building come from Trench F (west side of structure) only. Trenches A (north) and D (east) are believed

to have been used in previous building episodes and the bases of posts in trench E (south) were not easily identifiable, possibly due to the blending of post and trench fill (Guidry 2014:47).

Denmark and Chucalissa. Like Structure 1 at Denmark, at least three of Chucalissa's six wall-trench buildings, Structures I, II, and III, also have open corners. No additional information can be ascertained from the remaining three structures, Structures IV, V, and VI, as they are evidenced only by their fragmented, singular wall trenches. Sizes of each building have been estimated at 3.9 m² (Structures I, and III-VI) and 7.6 m² (Structure II). This puts them on par with the structure at Denmark.

Lumb and McNutt (1988:51) speculate that Structure II at Chucalissa was more than a "mere domestic" building due to its size and proximity to the large, flat-topped temple mound. If Structure II was, in fact, a "big man's" house, the location of the structure may have migrated south in later building episodes to the area that was eventually built up to become the mound.

Denmark and Jonathan Creek. A plethora of structures were uncovered during the intensive, multi-year excavations at Jonathan Creek, many of which were found to be open-cornered and wall-trenched. Variants of these building types are subterranean (Type A^{II}), include large, interior posts (Type A^I) or, like Denmark's Structure 1, have no interior posts (Type A). Type A buildings are mostly rectangular in shape, though there are also square structures, and building sizes range from 13' x 16' to 25' x 32' (approximately 4 m x 6 m to 8 m x 10 m).

Webb (1952:44-45) also points out that posts are “uniformly” placed against the “outside face of the trench wall” and that this construction element is not only “typical” but also “very significant”. By placing posts near the outer edge of the trench, they are given extra support as they are bent over and inward and lashed to posts on the opposite wall creating the roof of the structure. This bent pole-type construction is also evident below ground. Cross-sectioned excavation of wall-trenches and post molds reveal that some posts tilt inwards.

Post placement of this type does not appear to be the case at Denmark. Trench visibility was highly erratic and soil staining was light making it hard to determine the placement of most of the post molds within the trenches, but post molds in the trench segment visible in the original window opened along the north wall were nearer to the center. A second window was opened at the north end of the east wall in which four post molds were cross sectioned. This window was excavated specifically to ascertain trench depth and post mold orientation. Unfortunately, trench visibility was non-existent, but post mold orientation was discovered to be vertical, rather than tilted (Figure 19).

Denmark and Pinson. The Pinson structure shares a similar footprint with Denmark’s Structure 1; both are roughly the same size, have three open corners with the fourth corner containing a single post mold, and both were burned. The building at Pinson also contained interior post holes, a feature not seen in Structure 1. No discussion was undertaken by Fischer and McNutt nor Mainfort or Morse regarding the possible above-ground construction of the Pinson structure.

Denmark and Shelby Forest. Though the entirety of the structure at Shelby Forest was not uncovered a significant portion was excavated and several features directly associated with the structure were also identified (Figure 20). The building's size, features, and age closely resemble those of Structure 1 at Denmark. Only one wall trench was visible. Situated along the north wall of the structure, the trench measured 2.83 m in length, approximately 15 cm in width, and about 20 cm deep. After cross-sectioning, the trench was determined to have straight sides and a rounded base. Previous research on Structure 1 has confirmed trench widths ranging from 15 to 30 cm (Guidry 2013:78), but determining trench depth has been problematic as the window opened along the eastern wall did not reveal this information.

Like Denmark, the Shelby Forest structure contains two hearths. An oval shaped hearth, Feature 3, is located near the center of the structure. Though this feature is only partially intact due to previous disturbance, it still retains its curb, a rim built up about 15 cm from the base. Another hearth, Feature 5, is located much closer to the north wall of the structure. This hearth is circular in shape and lacks a curb. Differences in size, location, and shape led Barker (2005:7-9) to speculate the hearths at 40SY488 served two different purposes. No such study has been undertaken of the hearths in Structure 1, as they are being preserved for future research.

A radiocarbon date from the Shelby Forest structure was obtained from a burned post in the northeast corner. This sample produced an uncorrected date of 810 +/- 70 B. P. (Barker 1994:33 and 2005:14). This structure is slightly older than Denmark's Structure 1, but is still firmly within the Middle Mississippi time period.

As we have seen, structures at Ames, Chucalissa, Denmark, Jonathan Creek, Pinson, and Shelby Forest share similar features. Wall trench structures are not anomalous to this region, though; they are one of the identifying features of the Mississippi period.

Denmark and Pan-Mississippian Archaeology. Lacquement (2007b:50-51) used three specific criteria for determining a structure's function: size, location, and internal features. For a structure to qualify as domestic it must be less than 37 m², be located away from earthworks, and contain no specialized interior features like clay floors or clay seats. Structure 1 appears to fit all of Lacquement's criteria for a domestic building. Measuring at about 27 m², Structure 1 is located in an off-mound area. Structure 1 does feature two hearths, which is curious, but not unprecedented (see Barker 1994:17, 2005:7). No other features potentially categorized as specialized were identified in Structure 1.

There is ongoing debate regarding the architecture of open-cornered buildings. Some believe these buildings to be of bent pole construction, others favor a more rigid construction supporting a hipped or gabled roof (Guidry 2013; Lacquement 2007). Structure 1 appears to have at least three open corners. Lewis and Kneberg (1946:51) suggest these corner gaps were used for ventilation and building access, whereas Alt and Pauketat (2011:118) contend they were points at which the separate, non-load-bearing walls were joined together. Further excavation of the floor in Structure 1 did not reveal interior building supports, which are associated with the heavier construction of rigid roof structures, but the lack of visible supports is not definitive confirmation of the above-ground construction.

The lack of a significant amount of daub in Denmark's Structure 1 could be an indicator of bent pole construction. Bent pole structures would not have eaves, therefore the building's exterior would be completely exposed to rain run off (Lacquement 2007:63). The experimental bent pole structure built by Blanton and his team of volunteers included daub walls. Within a two month period, daub was already cracking and coming off, presumably due to multiple factors, the greatest of which was exposure to the elements (Blanton and Gresham 2007:45). Displaced daub would leave very little trace archaeologically as it would have naturally degraded and essentially dissolved in the subtropical climate of western Tennessee. This is a possible explanation for the low amount of daub found in Structure 1.

Post holes in Structure 1 are limited to those found in the four outer walls. A lack of interior post holes may be an indication of the bent pole construction method (Blanton and Gresham 2007:33). Smaller, more flexible poles could be bent and woven together to create a sturdy roof (Blanton and Gresham 2007:33, Lewis and Kneberg 1946:51). This type of construction would be quite durable, and therefore preclude the need for additional roof supports in the form of interior posts.

A window was excavated at the north end of the east wall in Structure 1 for the purpose of exposing subsurface wall trench and post mold features. Trench features were nonexistent, but post molds were found to be vertical in orientation. Vertical posts may indicate a different type of above-ground construction since posts leaning inward are thought to be evidence of bent pole construction (Blanton and Gresham 2007:34, Brennan 2007:75, Lewis and Kneberg 1946:50). Buildings constructed using a rigid post (also called rigid roof) method would have had separate, hipped or gabled roofs

supported by vertical, rigid posts. This is a heavier construction type than the alternate bent pole method, therefore roof supports would be necessary.

Several post molds near the central portion of the western wall of Denmark's Structure 1 are noticeably larger than other post molds along the same wall. These larger posts could have supported beam(s) that ran the length of the structure as a means of reinforcing a rigid roof. Ames' Structure 1 trenches A and H had the same characteristics. Post mold visibility along the opposing, eastern wall of Denmark Structure 1 is erratic, making identification of all post molds impossible, therefore determination of a pronounced difference in the post mold diameters along that side of the structure is also impossible. The inclusion of horizontal beams attached to opposing wall plates in an experimental structure built at Cahokia were instrumental in countering "the outward forces placed on the walls by the heavy roof" (Brennan 2007:76-77) making the open-cornered, separate roof, rigid wall, narrow-poled building more stable (Iseminger and Williams 1998). The use of above-ground roof supports would leave no in-ground features, making it impossible to determine if such supports were used, unless physical remains of the structure were preserved archaeologically. No such evidence persists in Structure 1.

Community Plan

Buildings, neighborhoods, and communities are built according to plans. These plans follow rules, rules that Lewis and Stout (1998) refer to as architectural grammar. These "common design themes, construction patterns, and developmental trends" (Lewis and Stout 1998:xi) make up this architectural grammar. At the root of this grammar is culture. The various components of culture, such as language, politics, and religion,

prescribe how group members conduct their lives and operate within their societies, and this includes assigning meaning to all spaces, and generally speaking, “spaces that are designed to be used for long intervals tend to be more architecturally complex and show a greater investment of time and effort in their construction” (Lewis and Stout 1998:3). For Mississippian towns, the architectural grammar is designed much like Figure 21 in which there are “distinct public, ritual, and domestic areas” (Gougeon 2007:138); a palisade surrounds and protects the settlement. In the center of the settlement can be found mound(s) with associated plaza(s), and smaller buildings in the buffer zone between these monumental structures and palisade. Lewis and Stout concentrated their research at the site level, however this thesis narrows that focus to a single structure and its placement within a neighborhood at a particular site.

Gougeon’s (2007:147) analysis of Mississippian architecture identified habitation zones that included clusters made up of residential structures, associated outbuildings, and activity spaces he termed positive outdoor spaces. He also asserted these positive outdoor spaces had a definite shape; a partial enclosure surrounded by the buildings within the cluster. Figure 22 tentatively identifies potential clusters at Denmark.

These clusters and their associated outdoor spaces can be considered part of the architectural grammar of Mississippian society. Gougeon succinctly interprets architectural grammar as the rules that govern architectural elements used in the creation of the built environment (2007:136). These architectural elements must correspond to overarching architectural patterns in very specific ways. For example, most modern buildings contain permanent or semi-permanent climate control systems; HVAC, radiators, window units. In many cases, climate control is a non-negotiable architectural

element that fits with our cultural standards of hygiene and safety, not to mention personal comfort.

Household clusters, possibly representing extended family compounds, have been documented at different sites throughout the Mississippi, and the immediately preceding Woodland, periods. At the Range site, located approximately 12 miles southwest of Cahokia, Kelly (1990) identified 28 distinct occupational episodes during six cultural phases spanning 500 years, from the Late Woodland to the Early Mississippi periods. The community organization of one such early phase episode can be seen in Figure 23, in which eight interpreted clusters are identified. Hally and Kelly (1998) recognize four such clusters at the Late Mississippian King site in northwest Georgia (Figure 24).

Hally and Kelly (1998:57) suggest that buildings surrounding a common outdoor space were made up of extended, matrilineal family households. As daughters married individuals outside their group, they would set up household in their mother's, or grandmother's compound. These structures included residences for each nuclear family, and roofed but open-sided "sheds" or raised corncribs under which "cooking and other domestic activities were carried out" (1998:55).

Summary

The function of Structure 1 was inferred from its size, artifact and feature assemblage, as well as its intrasite placement. The building's construction could not be ascertained from wall trench and post mold features, therefore determining the above ground construction of Structure 1 was not possible. Remnants of wall or roof materials may have also aided in determining construction method but no structural remains were

uncovered, other than a small amount of daub. There was also evidence of burning but no large fragments of burned materials were identified. Building aggregation has been noted at some Mississippian sites (Gougeon 2007; Hally 2008; Mickelson and Goddard 2011; Pauketat 2000) and Structure 1 appears to be a part of a cluster of buildings. Further examination of Denmark's community layout clarified this observation. Finally, Structure 1 was compared to other buildings at contemporaneous sites in the region to determine its similarity or uniqueness in regards to the previously mentioned attributes of function, construction, and location.

5. Conclusions and Future Research

The purpose of this study was to learn more about Structure 1, its place within the community plan of the Denmark site, and its regional context within the greater western Tennessee region during the Mississippi period. Several complimentary research methods were utilized including examination of magnetometry data, excavation, artifact analysis, and regional comparative analysis. This information will now be synthesized in an effort to evaluate each of the four sets of hypotheses stated at the beginning of this thesis.

Hypothesis Set 1: Function

Structure 1 was most likely used as a residence, confirming H₁ of Set 1. The building's location in a non-mound area of the site is the primary evidence for its function. The structure's size is also an indicator of its use. At approximately 27 m², Structure 1 is similar in size to houses at Ames, Chucalissa, Jonathan Creek, Pinson, and Shelby Forest. The few artifacts associated with Structure 1 are ordinary in nature. A majority of the ceramic sherds are undecorated, and most lithics are flakes in various stages of the knapping process. Of 217 sherds, only two are decorated (fabric impressed) (Figure 25) and one may have been covered with a red slip, and of 46 lithics, one projectile point, and three possible scrapers have been identified.

Hypothesis Set 2: Construction

Ethnographic evidence of both bent pole and rigid roof construction confirm the use of both types of structures and experimental archaeology corroborates the durability of the buildings mentioned in these earlier historical accounts. An illustration in le Page du Pratz's *The History of Louisiana* (1774:338) shows the burial ceremony of a Natchez

leader, Stung Serpent (Figure 26). The structure in which the deceased was interred was that of a straight-walled, hipped roof construction. Two photographs, Figures 27a and 27b, show the construction of an open corner, bent pole structure at Chucalissa in 1955.

Determining the above ground construction of Structure 1 has been problematic. Other than 17 pieces of daub no construction materials remain. Structure 1 was burned, but no structural remains were preserved as a result of the fire. Evidence is not absolute, but Denmark's Structure 1 could have been of a vertical-walled, hipped or gabled roof construction due to the orientation of the wall post molds and the size of several post molds near the center of the western exterior wall. This conclusion tentatively confirms H₂ of Set 2, but fails to refute H₁.

Hypothesis Set 3: Location

Based upon the magnetometry data, Structure 1 does appear to be part of a cluster of buildings, confirming H₂ of Set 3. Whether or not that cluster consisted of extended family structures is not known, though it would not be unusual for family members to live in such close proximity.

Hypothesis Set 4: Regional Context

Archaeological traces of contemporaneous buildings at the Ames, Jonathan Creek, Pinson, and Shelby Forest sites substantiate many similarities to Denmark's Structure 1, confirming H₁ of Set 4. All are located in off-mound areas, utilized the wall trench construction method, and are roughly the same size. Buildings also included similar artifact assemblages and interior features, most notably the house at the Shelby Forest site which contained two hearths.

Future Research

Several avenues of further research on Structure 1 remain. Dating, radiocarbon and/or archaeomagnetic, of burned material from each hearth can be performed, as well as analysis of floral and faunal remains contained in each hearth. Radiocarbon dates of ca. A.D. 1280-1290 have been obtained from carbonized material found in Structure 1, but dates and remains from the hearths may provide additional information on the age of the building as well as how the hearths were used.

Forty one post molds have been excavated in Structure 1 and soil from 39 of them was bagged and saved. The flotation method was used to recover artifacts and floral materials from the soil of 11 randomly selected post molds. Analysis of floral material may reveal the type of trees used in the construction of Structure 1.

Soil samples, as well as burned material from Feature 10 were recovered but have not yet been analyzed or tested. Soil samples can be processed via flotation in an effort to identify artifacts, as well as floral and faunal remains. Radiocarbon dating of the burned material may be useful, as well. Information obtained from these remains may resolve the ambiguity of Feature 10, and clarify the hypothesis that Structure 1 was used as a residence.

The opening of test pits over magnetic signatures interpreted as structures, specifically those signatures located near Structure 1, could supply carbonized material necessary for radiocarbon dating. If these buildings are found to be contemporaneous with Structure 1 it may be said the buildings are, in fact, part of recognized neighborhood compounds.

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Appendix A. Figures

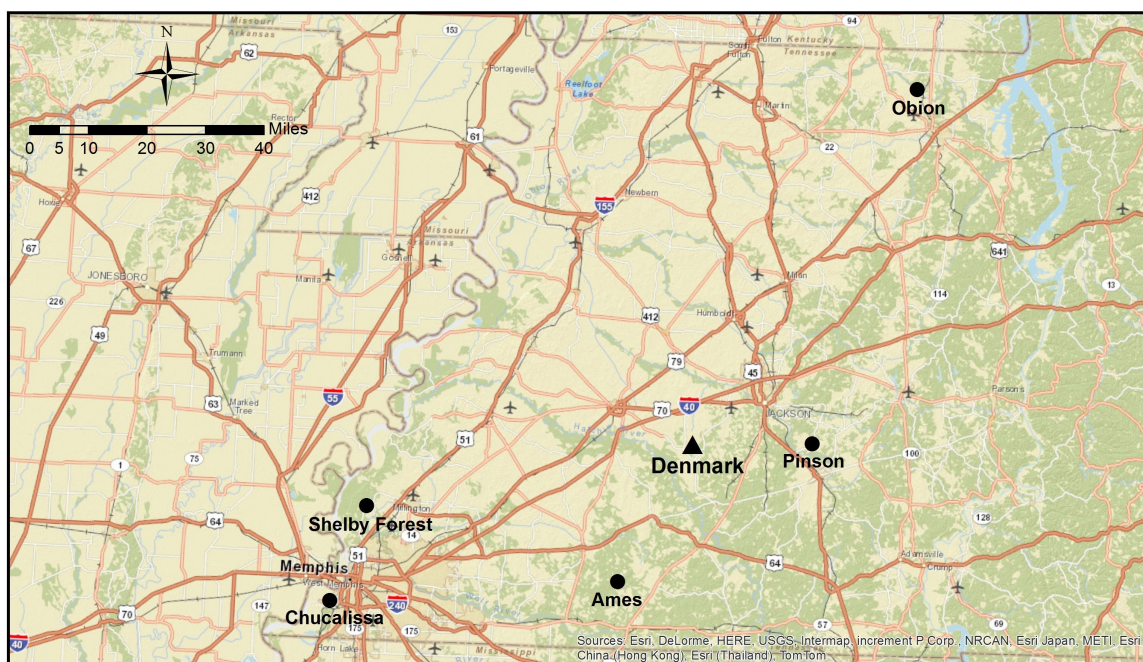


Figure 1. Denmark and other sites with Mississippian sites with structural remains in western Tennessee. Not pictured: Jonathan Creek site in southwestern Kentucky; its location was submerged after the building of the Kentucky Dam.



Figure 2. Magnetometry data showing location of Structure 1.

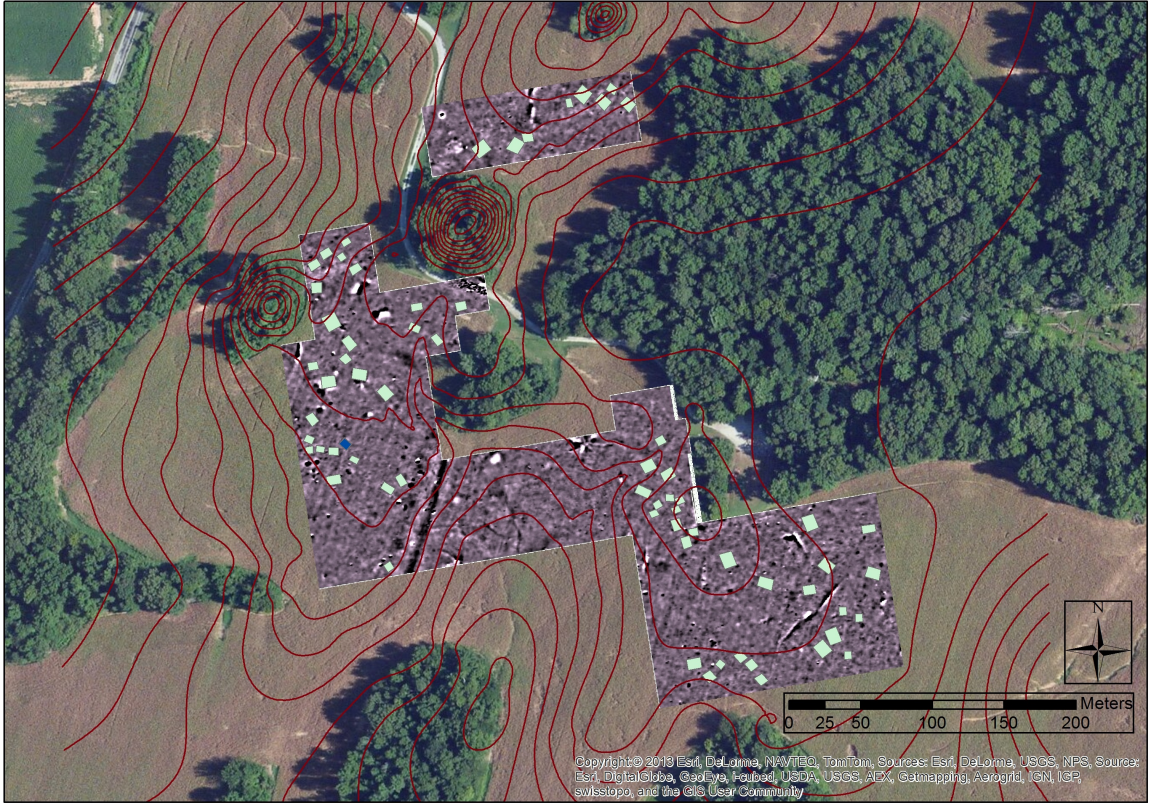


Figure 3. Aerial photograph of the Denmark site overlain with contour lines and magnetometry data. Interpreted structures have been highlighted (Structure 1 in blue).

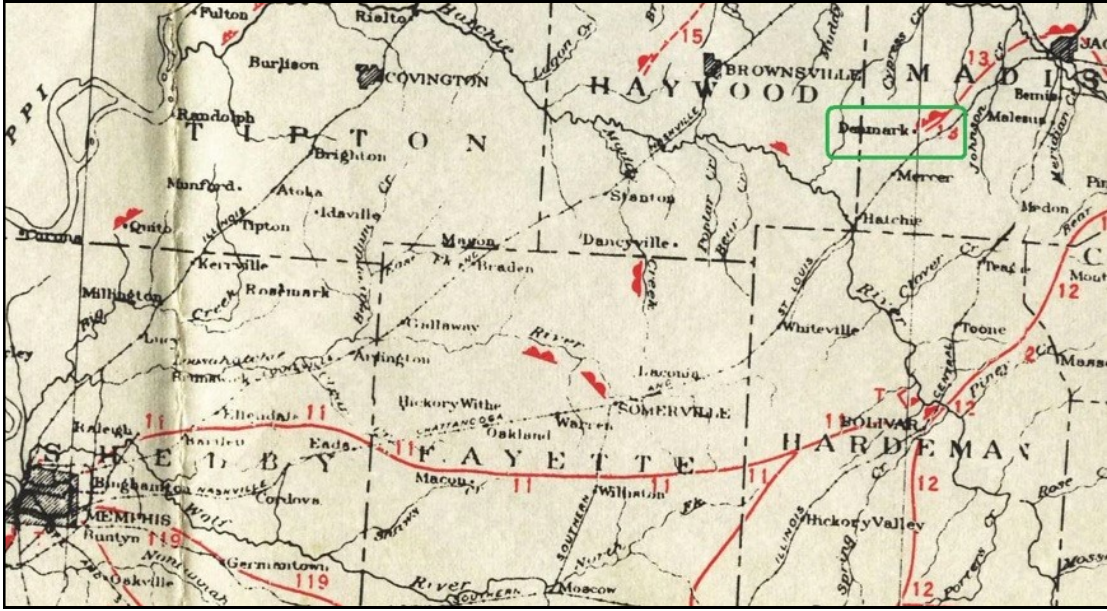


Figure 4. Detail of Myers' map of west Tennessee including the Denmark site.

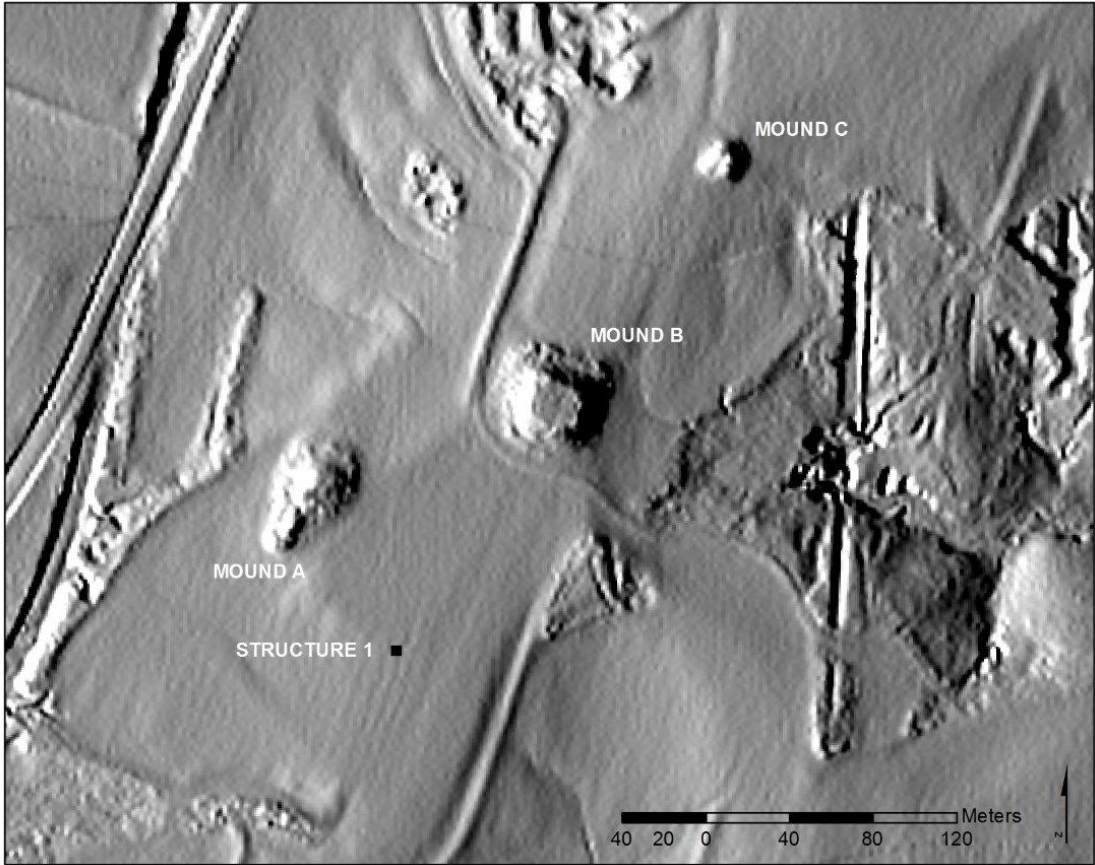


Figure 5. LIDAR image of Denmark highlighting the locations of Mounds A, B, and C, as well as Structure 1.



Figure 6. Original window confirming presence of wall trench in Structure 1.



Figure 7. Rectangular footprint of Structure 1 showing darkened soil determined to be burned fill.



Figure 8. Northwest corner of Structure 1 showing a semi-subterranean foundation.



Figure 9a. Feature 11 (incorrectly identified as Feature 2 in photo), round hearth uncovered in Structure 1.



Figure 9b. Bisection of Feature 12, square hearth uncovered in Structure 1.

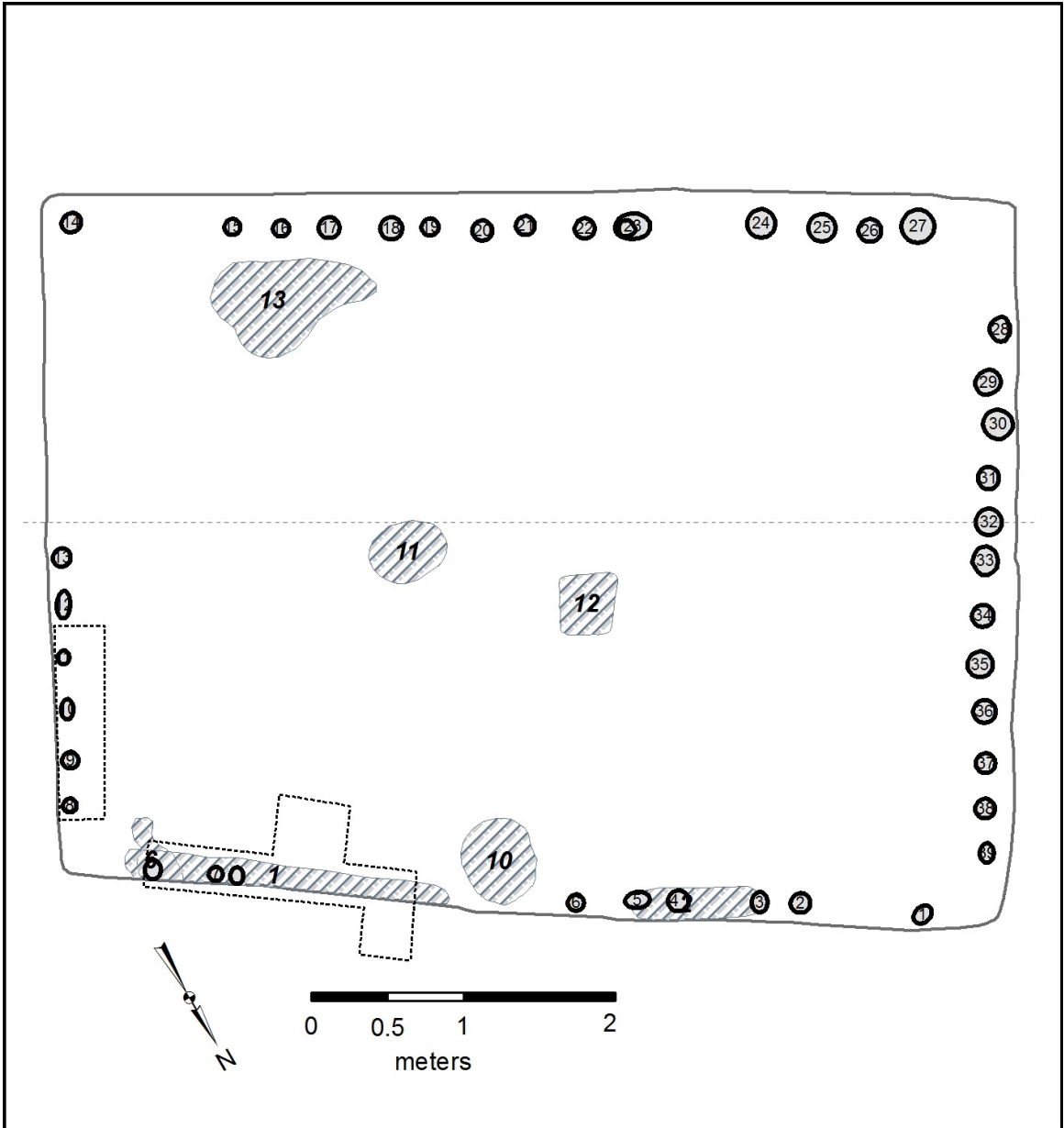


Figure 10. Digitized feature map of Structure 1.



Figure 11. *In situ* pottery sherds and charred material used to obtain a radio-carbon date.



Figure 12. Pottery sherds, two with possible red slip (17-1 and 17-2), found in Structure 1.

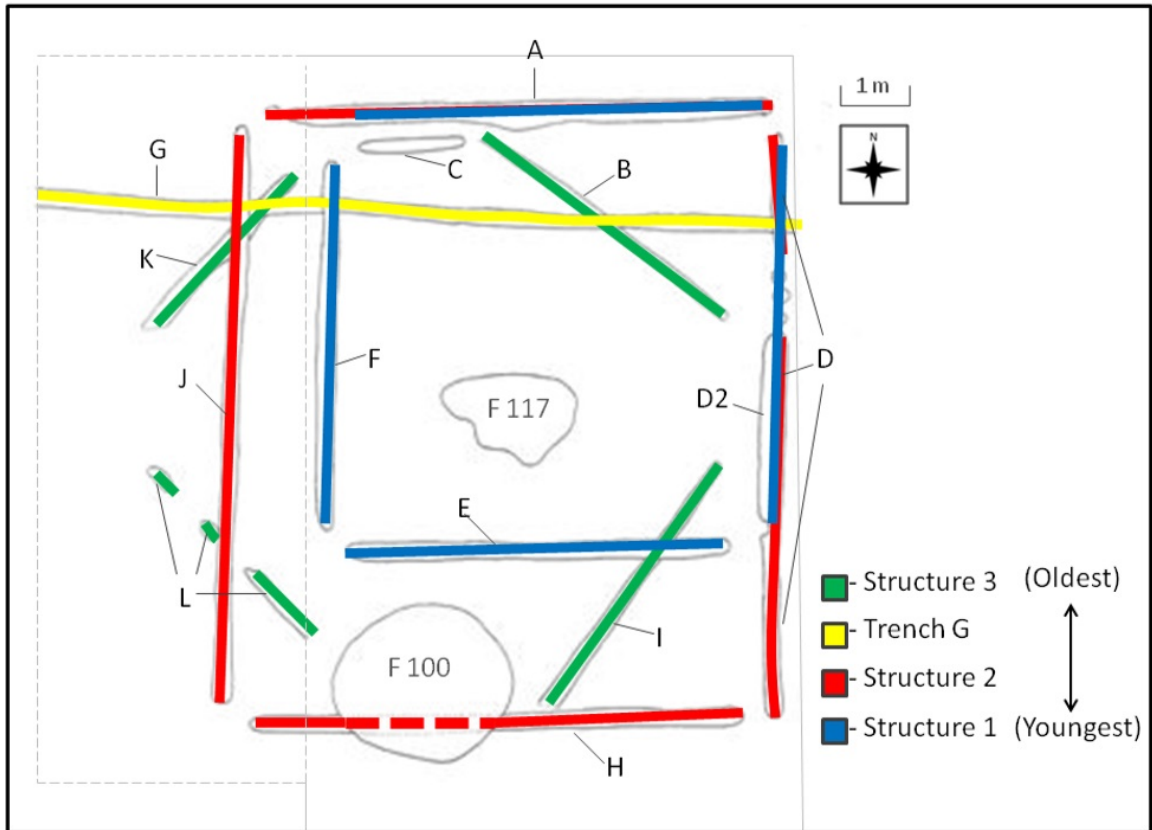


Figure 13. Graphic representation of overlapping structures at the Ames site (Guidry 2013:Figure 8).

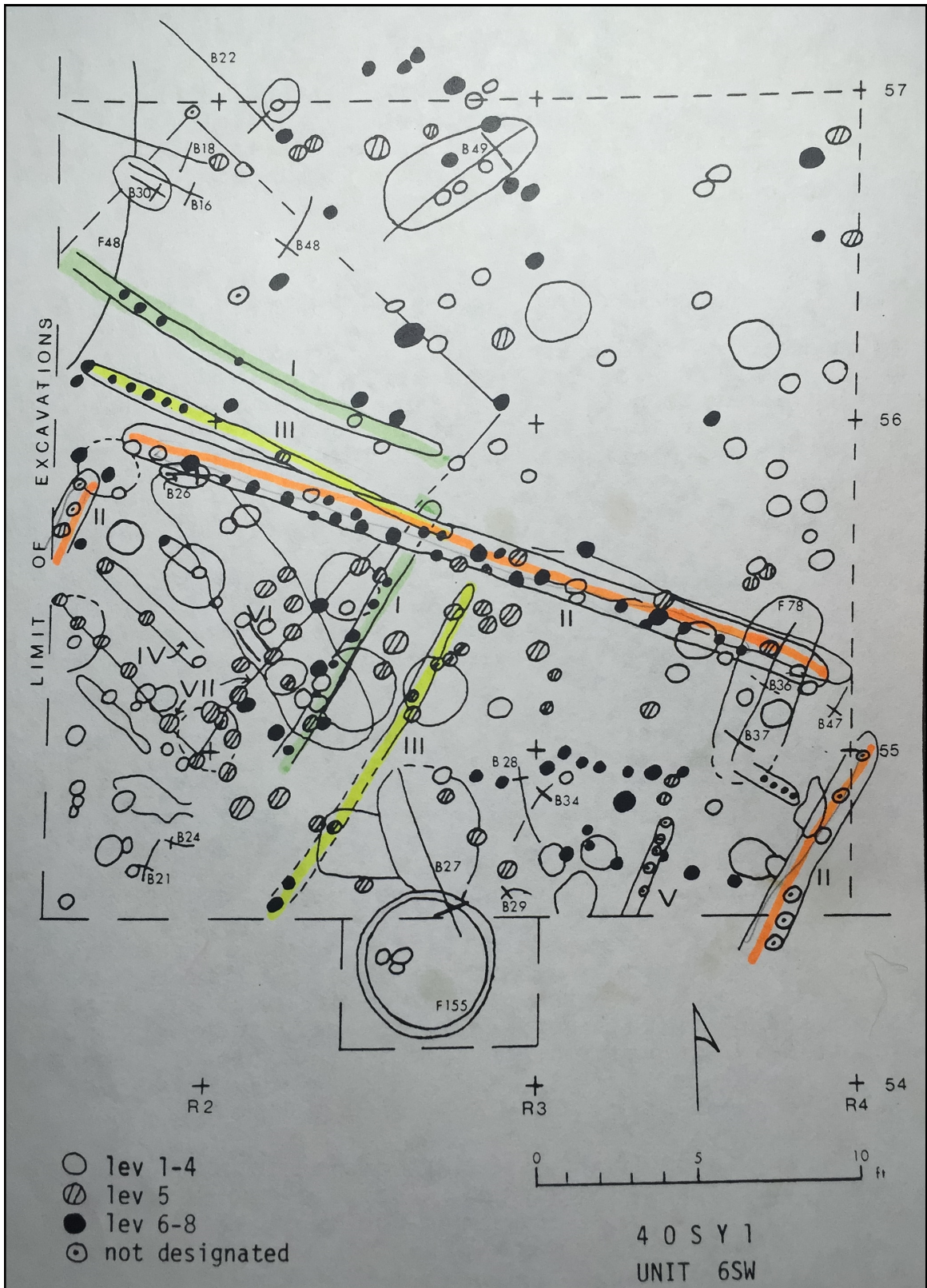


Figure 14. Unit 6SW at Chucalissa. Wall trenches for Structure I are highlighted in green, Structure II in orange, and Structure III in yellow (Lumb and McNutt 1988:Figure 7).

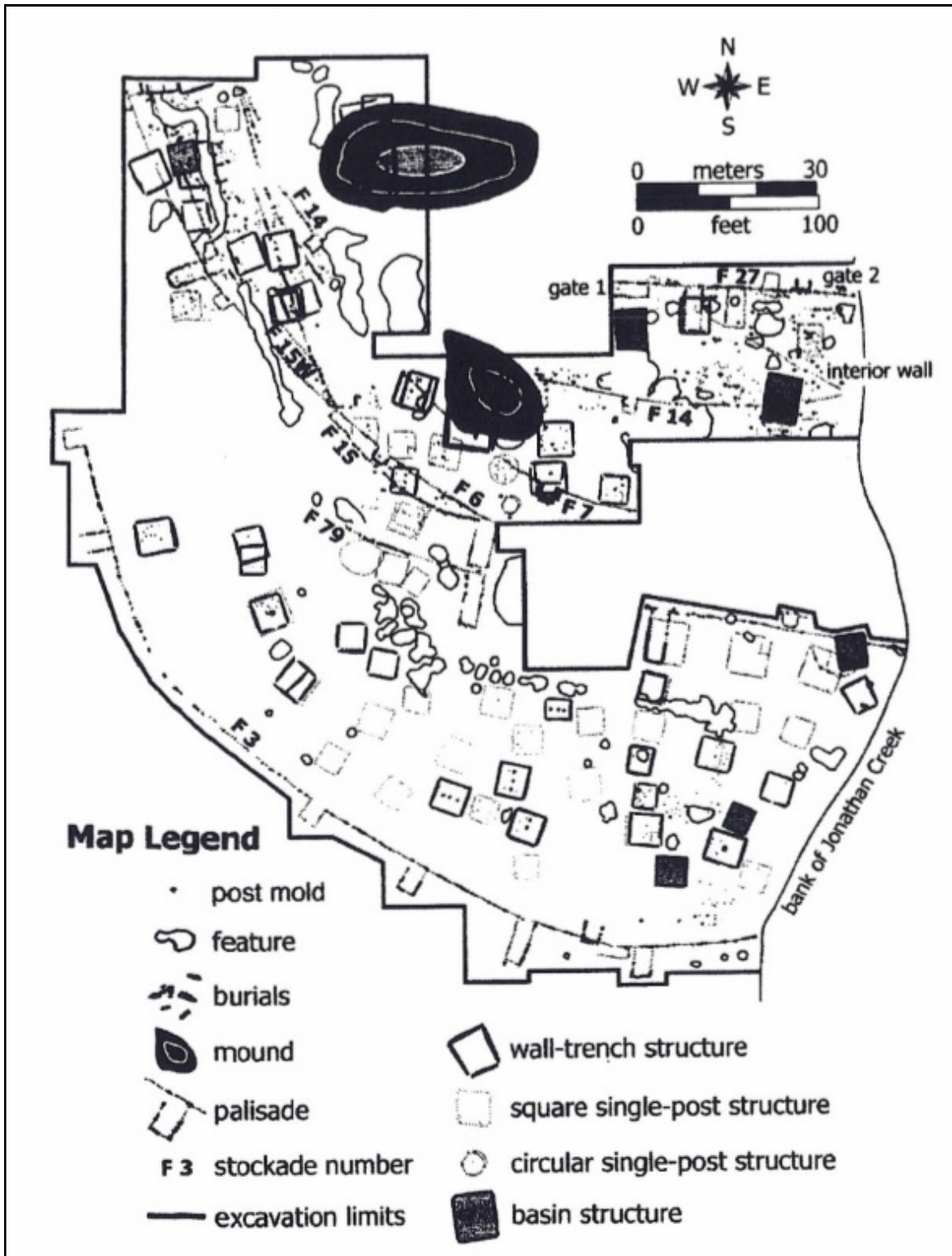


Figure 15. Plan of Jonathan Creek site (Schroeder 2011:Figure 6-3).

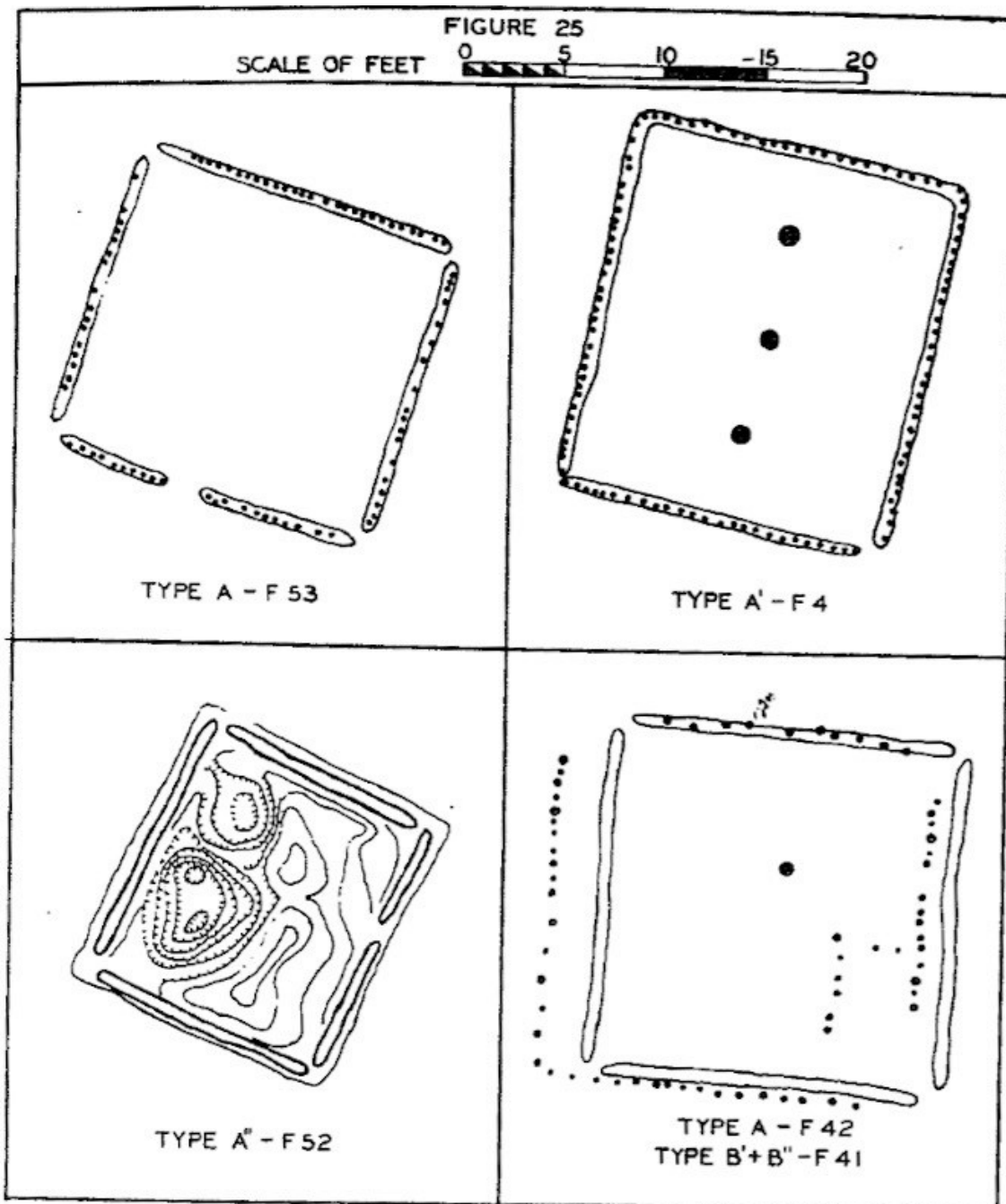


Figure 16. Three types of wall trench structures at the Jonathan Creek site as identified by Webb (1952:Figure 25)

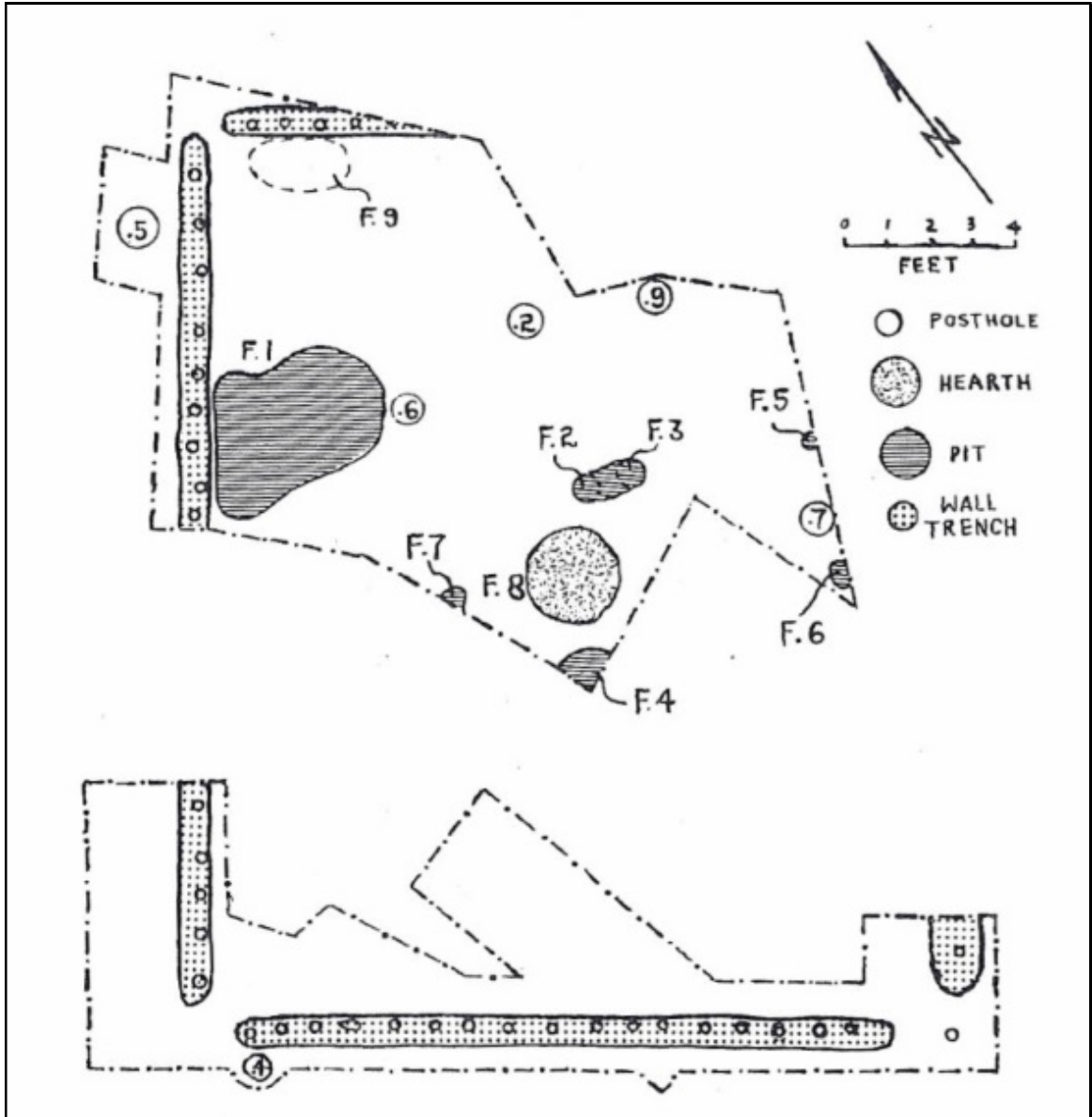


Figure 17. Map of partially excavated structure at Pinson Mounds (Fisher and McNutt 1962:Figure 3).

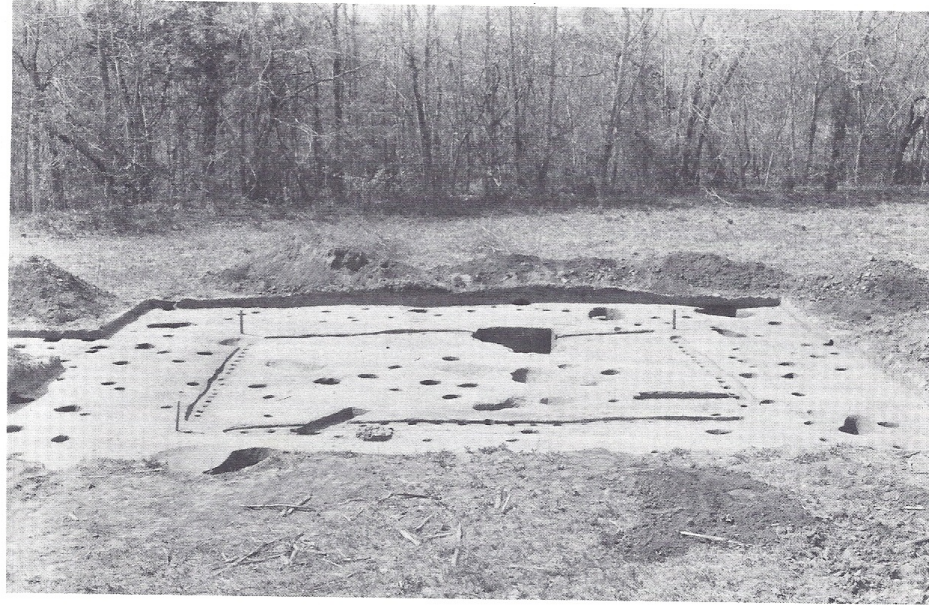


Fig. 95. Mound 14 sector. Excavation area.

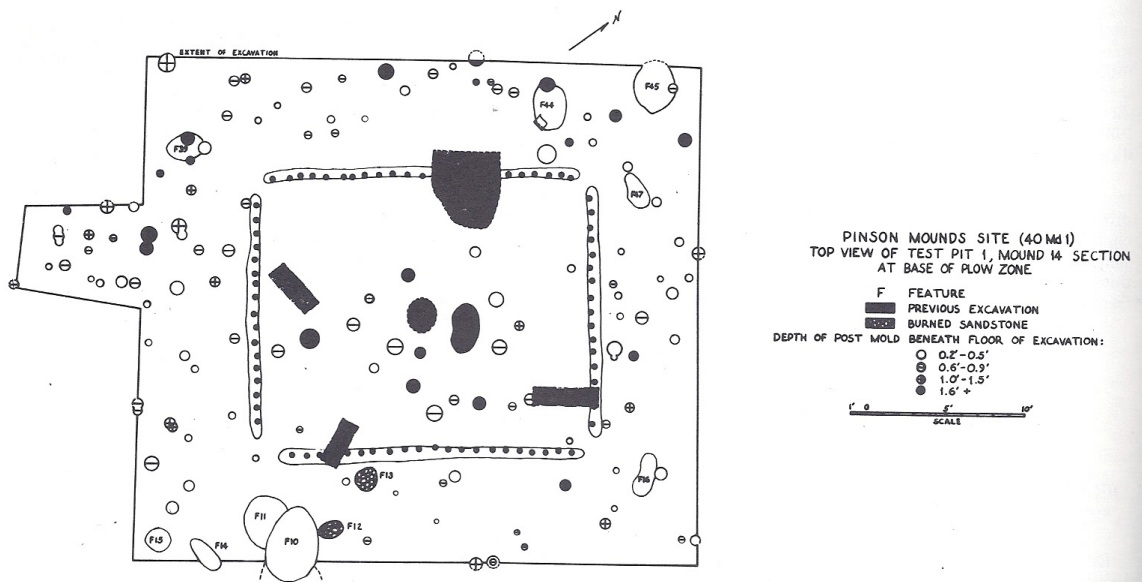


Fig. 96. Mound 14 sector. Plan view, Test Pit 1.

Figure 18. Photograph and sketch of a Mississippian house excavated in the Mound 14 sector at Pinson Mounds (Morse 1986:Figures 95, 96).



Figure 19. Window confirming vertical orientation of four post molds along the north end of the east wall in Structure 1.

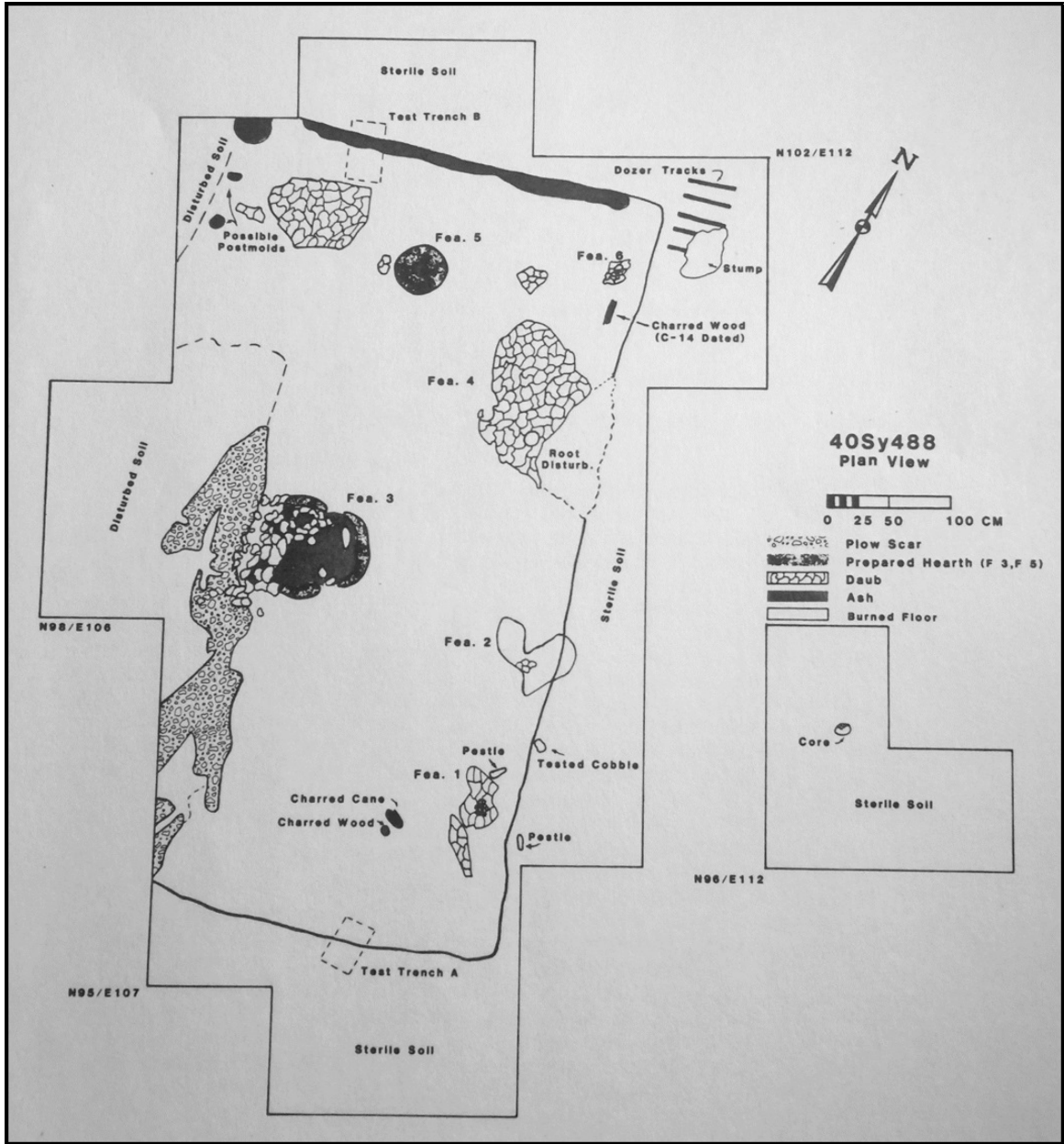


Figure 20. Plan of 40SY488, Shelby Forest site (Barker 1994:Figure 5).

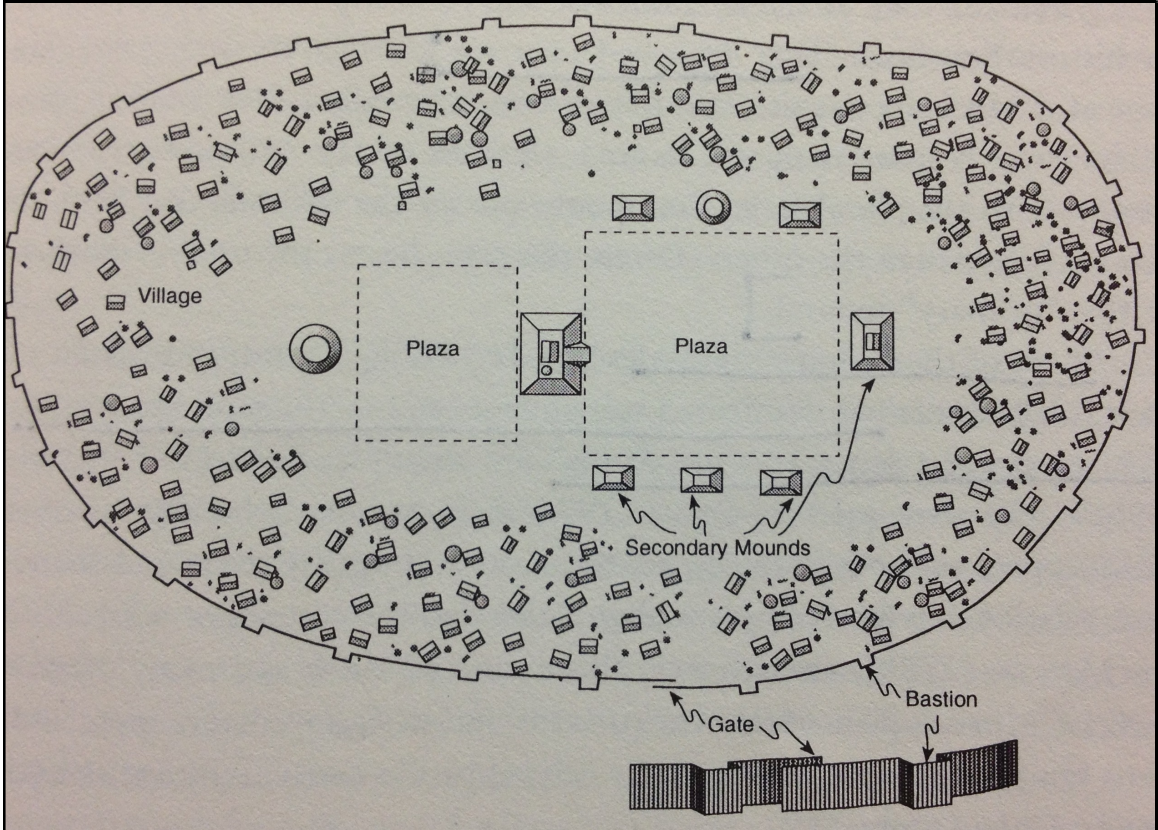


Figure 21. Key elements of Mississippian architectural grammar (Lewis and Stout 1998:Figure 1.2).

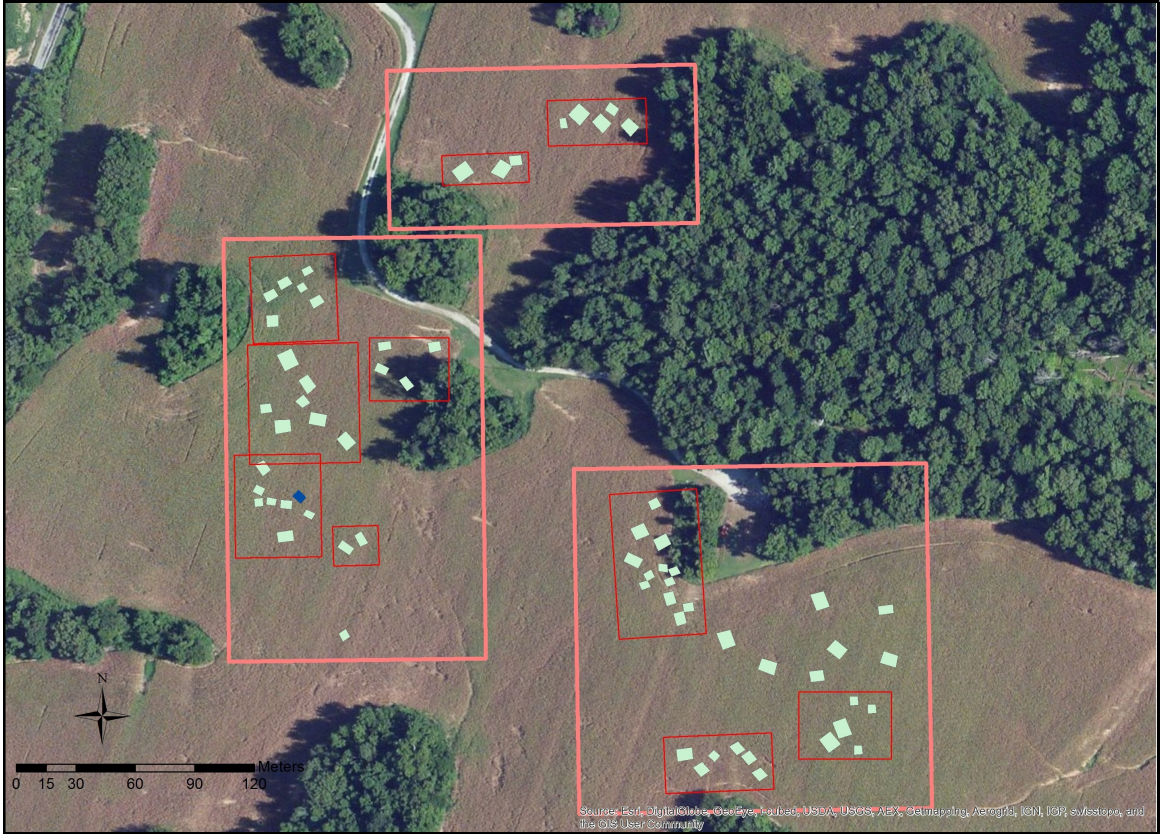


Figure 22. Map of interpreted structures (from magnetometry data) showing possible household clusters.

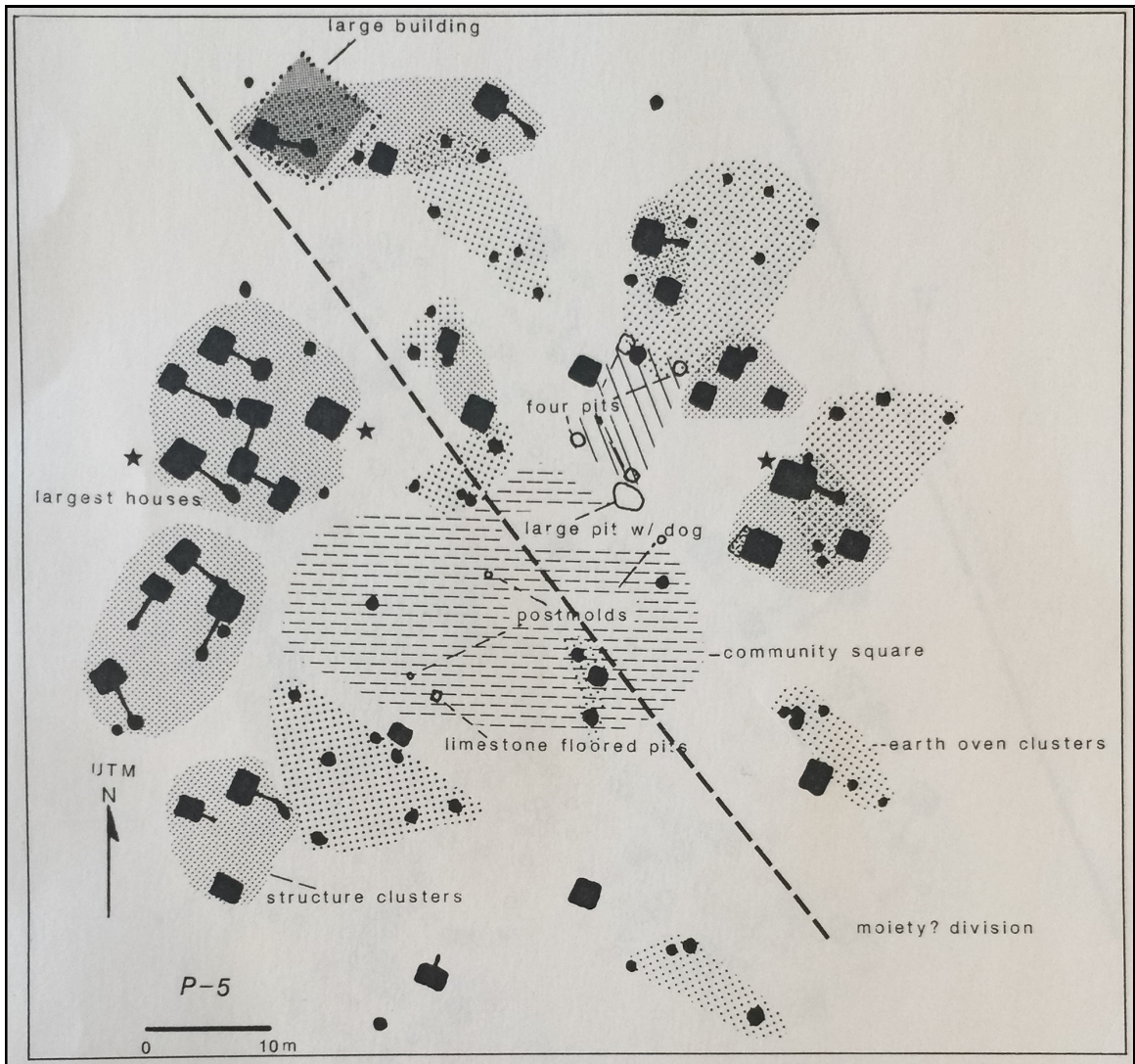


Figure 23. Eight household clusters identified at the Range site during the Late Woodland period (Kelly 1990:Figure 25).

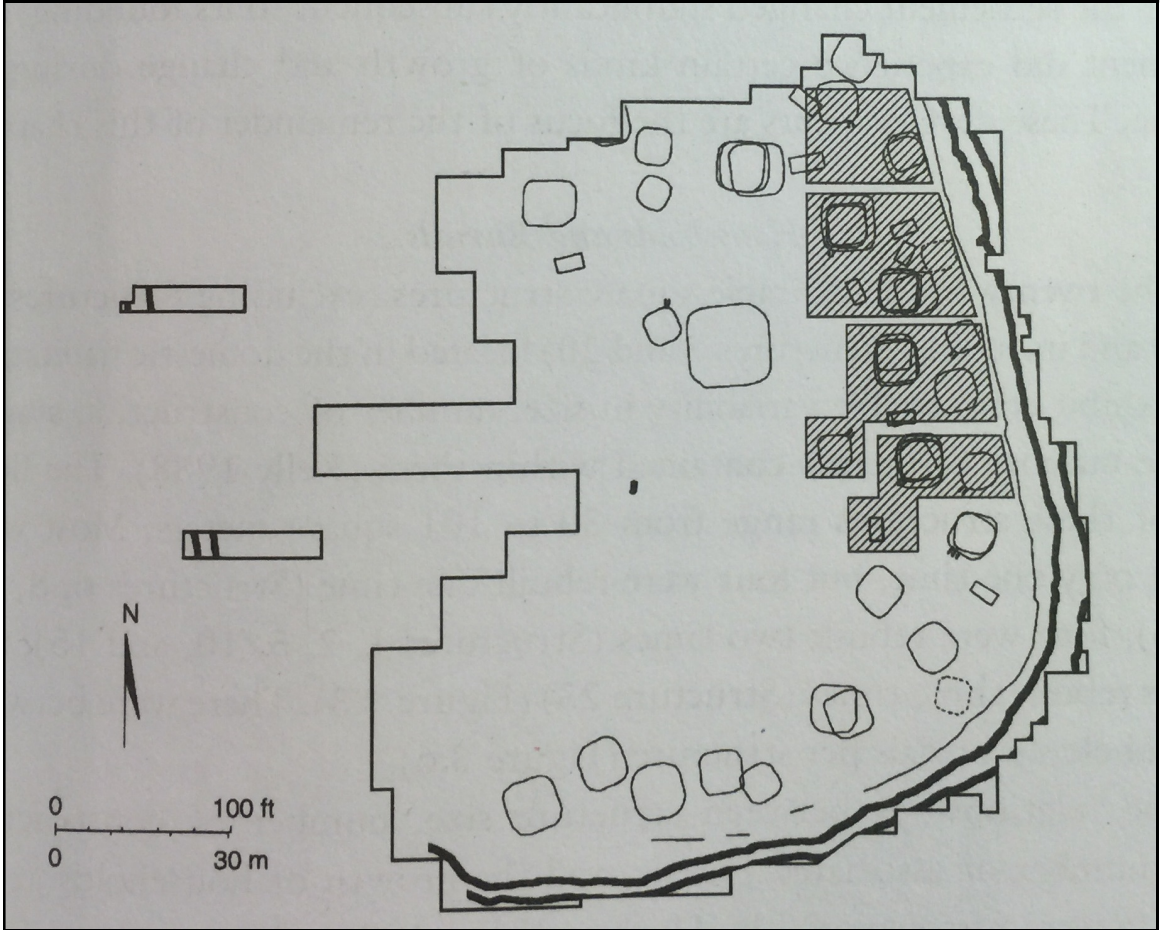


Figure 24. Four interpreted extended family household clusters at the King site (Hally and Kelly 1998:Figure 3.7).



Figure 25. Fabric impressed pottery sherd *in situ*. Note vertical orientation in ca. 5 cm deep of floor deposit.



Figure 26. Illustration in le Page du Pratz's, *The History of Louisiana*, showing the burial ceremony of the Stung Serpent. The temple in which the deceased was interred was a rigid roof structure (le Page du Pratz 1774:338).



Figure 27a. Beginning of construction of an open corner, bent pole structure at Chucalissa in 1955. Courtesy of the C. H. Nash Museum at Chucalissa.



Figure 27b. Completed construction (pre-thatching) of the same open corner, bent pole structure at Chucalissa in 1955. Courtesy of the C. H. Nash Museum at Chucalissa.

Appendix B. Artifact Catalogue

Catalog #	Block	Unit #	Provenience	Depth	Type	Lithic Stage/ Surf. Treatment	Temper	Body/ Rim	Count	Notes
8-1	2		GSC	Lvl. 1	Sandstone				3	Fine-grained
8-2	2		GSC	Lvl. 1	Lithic	Primary Flake			3	
8-3	2		GSC	Lvl. 1	Ceramic	Plain	Shell		3	
9-1	2		GSC	Lvl. 1	Lithic	Secondary Flake			3	
9-2	2		GSC	Lvl. 1	Sandstone				2	Fine-grained
9-3	2		GSC	Lvl. 1	Daub				1	
9-4	2		GSC	Lvl. 1	Ceramic	Plain/Unidentified	Shell	Body	10	Some burned
10-1	2		GSC	Lvl. 1	Lithic	Hand Tool			1	Possible scraper
10-2	2		GSC	Lvl. 1	Lithic	Flake			2	
10-3	2		GSC	Lvl. 1	Sandstone				3	Fine-grained
10-4	2		GSC	Lvl. 1	Ceramic	Unidentified			5	
10-5	2		GSC	Lvl. 1	Daub				1	
11-1	2		GSC	Lvl. 1	Lithic	Biface			1	Possible Madison point
13-1	2	1	SE Corner	Lvl. 2	Ceramic	Plain	Shell/Grog	Body	6	
13-2	2	1	SE Corner	Lvl. 2	Lithic	Flakes			2	
14-1	2		GSC	Lvl. 1	Ceramic	Plain	Shell/Grog	Body	16	Some burned
14-2	2		GSC	Lvl. 1	Sandstone				1	Fine-grained
14-3	2		GSC	Lvl. 1	Lithic	Secondary Flake			1	
16-1	2	1		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	5	Ceramic A (broken)
17-1	2	1		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	5	Ceramic B (broken)
18-1	2	1		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic C (broken)

Catalog #	Block	Unit #	Provenience	Depth	Type	Lithic Stage/ Surf. Treatment	Temper	Body/ Rim	Count	Notes
19-1	2	1		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic D
21-1	2	1		Lvl. 2	Lithic	FCR			1	
23-1	2	2	Feat. 6	Lvl. 2	Ceramic	Unidentified	Shell/Grog	Body	1	Burned
24-1	2	2		Lvl. 2	Lithic	Flake			1	
26-1	2	2		Lvl. 2	Ceramic	Plain	Shell/Grog	Rim	1	Ceramic E/Burned
27-1	2		GSC	Lvl. 2	Lithic	Flakes			4	
27-2	2		GSC	Lvl. 2	Sandstone				7	Fine-grained
27-3	2		GSC	Lvl. 2	Ceramic	Plain/Unidentified	Shell/Grog	Body	26	Small/Mixed Sherds
27-4	2		GSC	Lvl. 2	Daub				3	
29-1	2	7		Lvl. 2	Sandstone	Tool (?)			1	Fine-grained
31-1	2	6		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic F
32-1	2	6		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic G
34-1	2	6		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic H
35-1	2	7	SE Quad	Lvl. 2	Daub				1	Stick Impression
36-1	2	7	SE Quad	Lvl. 2	Mica				1	Small Flaking
37-1	2	6	NE Quad	Lvl. 2	Sandstone	Flake			1	
38-1	2	7	SW Quad	Lvl. 2	Ceramic	Plain/Unidentified	Shell/Grog	Body	1	Ceramic J
40-1	2	4	SE Quad	Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic K
41-1	2	7	NE Quad	Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic L
42-1	2			Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic M
43-1	2		West 1/2 Str. 1 GSC	Lvl. 1	Lithic	Flakes			13	
43-2	2		West 1/2 Str. 1 GSC	Lvl. 1	Lithic	Flake Tools			2	Scrapers (?)
43-3	2		West 1/2 Str. 1 GSC	Lvl. 1	Sandstone				21	Size varies sm.-lg.

Catalog #	Block	Unit #	Provenience	Depth	Type	Lithic Stage/ Surf. Treatment	Temper	Body/ Rim	Count	Notes
43-4	2		West 1/2 Str. 1 GSC	Lvl. 1	Daub				2	
43-5	2		West 1/2 Str. 1 GSC	Lvl. 1	Ceramic	Varied	Shell/Grog	Body	30	Small/Mixed Sherds
43-6	2		West 1/2 Str. 1 GSC	Lvl. 1	Ceramic	Plain	Shell/Grog	Rim	1	
43-7	2		West 1/2 Str. 1 GSC	Lvl. 1	Ceramic	Fabric Impressed	Grog	Body	1	
44-1	2			Lvl. 2	Ceramic	Unidentified	Shell/Grog	Rim	1	Burned
45-1	2			Lvl. 2	Ceramic	Plain	Shell/Grog	Body	6	
46-1			S. of Mound A	Surface	Ceramic	Plain	Shell/Grog	Body	4	Eroding out of mound
47-1	2	15		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic N
48-1	2	11		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	3	Ceramic O
49-1	2	11		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	6	Ceramic P (broken)
50-1	2	12		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	3	Ceramic Q
51-1	2	12		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic R
52-1	2	12		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic S
53-1	2	15		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	3	Ceramic T
54-1	2	15		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic U
55-1	2	15		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic V
56-1	2	14		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	3	Ceramic W
57-1	2	15		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	1	Ceramic X
60-1	2	28		Lvl. 2	Ceramic	Fabric Impressed	Shell/Grog	Body	1	Ceramic Y (Vertical in Floor)
61-1	2	26		Lvl. 2	Ceramic	Unidentified	Shell/Grog	Body	2	Ceramic Z (Horizontal on Edge)
62-1	2	26		Lvl. 2	Ceramic	Plain	Shell/Grog	Body	2	Ceramic AA

Catalog #	Block	Unit #	Provenience	Depth	Type	Lithic Stage/ Surf. Treatment	Temper	Body/ Rim	Count	Notes
63-1	2	26		Lvl. 2	Ceramic	Unidentified	Shell/Grog	Body	2	Ceramic AB/Burned
64-1	2	25		Lvl. 2	Sandstone	FCR			1	Fine-grained
65-1	2	25		Lvl. 2	Ceramic	Unidentified	Shell/Grog	Body	1	Ceramic AC
66-1	2	25		Lvl. 2	Ceramic	Unidentified	Shell/Grog	Rim (?)	2	Ceramic AD
67-1	2	28		Lvl. 2	Lithic	Flake			1	
69-1	2	28		Lvl. 2	Lithic	Flake			1	
70-1	2	28		Lvl. 2	Ceramic	Unidentified	Shell/Grog	Body	1	Burned
80-1	2	2		Lvl. 2	Ceramic	Plain	Shell/Grit	Body	5	
81-1	2	2		Lvl. 2	Ceramic	Plain	Shell	Body	5	
82-1	2	2		Lvl. 2	Ceramic	Unidentified	Shell/Grog		2	Burned
83-2	2	2		Lvl. 2	Daub				1	
84-1	2	2		Lvl. 2	Ceramic		Shell/Grit/Grog	Body	6	
85-1	2	2	GSC	Lvl. 2	Ceramic		Grog	Body	1	
85-2	2	2	GSC	Lvl. 2	Lithic	Primary Flake			1	
85-3	2	2	GSC	Lvl. 2	Lithic	Debris			1	
85-4	2	2	GSC	Lvl. 2	Daub				1	
85-5	2	2	GSC	Lvl. 2	Sandstone				2	Fine- to medium-grained; small size
85-6	2	2	GSC	Lvl. 2	Clay				2	
99-1	2			Lvl. 2	Daub				1	
100-1	2			Lvl. 2	Sandstone				1	Course-grained; unmodified
101-1	2			Lvl. 2	Ceramic	Plain	Shell/Grit	Body	2	
102-1	2			Lvl. 2	Ceramic	Plain	Shell	Body	1	

Catalog #	Block	Unit #	Provenience	Depth	Type	Lithic Stage/ Surf. Treatment	Temper	Body/ Rim	Count	Notes
109-1	2		Backfill piles	Lvl. 1	Lithic	Tertiary flake			1	Sandstone
109-2	2		Backfill piles	Lvl. 1	Lithic	Primary Flake			1	Large size w/cortex
109-3	2		Backfill piles	Lvl. 1	Lithic	Secondary Flake			1	Medium size
109-4	2		Backfill piles	Lvl. 1	Lithic	Tertiary flake			1	Very small size
109-5	2		Backfill piles	Lvl. 1	Ceramic		Grog	Body	1	
109-6	2		Backfill piles	Lvl. 1	Ceramic		Shell	Body	4	
109-7	2		Backfill piles	Lvl. 1	Ceramic		Grog	Rim (?)	1	
109-8	2		Backfill piles	Lvl. 1	Ceramic		Grog	Body	3	
109-9	2		Backfill piles	Lvl. 1	Ceramic		Shell/Grog		3	
109-10	2		Backfill piles	Lvl. 1	Lithic	Secondary flake			2	Small- & large size
109-11	2		Backfill piles	Lvl. 1	Lithic	Tertiary flake			1	
109-12	2		Backfill piles	Lvl. 1	Daub				6	
109-13	2		Backfill piles	Lvl. 1	Sandstone				5	
110-1	2		SW Quad	Lvl. 2	Ceramic		Shell/Grog	Body	6	
110-2	2		SW Quad	Lvl. 2	Ceramic		Shell	Body	4	
110-3	2		SW Quad	Lvl. 2	Ceramic		Grog	Body	2	
110-4	2		SW Quad	Lvl. 2	Lithic	Tertiary flake			1	Chert
110-5	2		SW Quad	Lvl. 2	Sandstone				1	
110-6	2		SW Quad	Lvl. 2	Clay				1	