

**SIUE 2018 FIELD SCHOOL**

**INVESTIGATIONS**

**AT 11MS99**

**Interim Report**

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November 2018

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## ABSTRACT

The SIUE archaeology field school took place on the SIUE campus in the summer of 2018. Our excavations focused on an area at the southern end of 11MS99 where SIUE field school excavations in 2009, 2013, 2014, and 2016 revealed prehistoric features including pits, posts, and structures. Although our primary research interest is in the Middle Woodland occupation of the site, we have also encountered Mississippian features at the south end of the site, including pits and two wall trench structures. In 2018 we excavated 12 square meters of “new” ground, revealing a pit feature and several possible post features. The pit feature appeared to be Mississippian in age. We also re-opened approximately 30 square meters to excavate Feature 257, a Mississippian wall trench structure previously identified in the 2016 excavation. Several posts identified below the probable floor of the wall trench structure most likely predate the Mississippian period.

## ACKNOWLEDGMENTS

This report is dedicated to former SIUE Vice Chancellor Kenn Neher, who died in 2017, barely one year after his retirement. Without his support, our fieldwork at the Gehring site would not have been possible. Kenn, we were shocked and saddened by your loss, and we miss you. Thanks to current Vice Chancellor Rich Walker for his continued support of our work, and of all archaeological investigations on campus. Thanks to outgoing Anthropology Chair Jen Rehg and incoming Anthropology Chair Cory Willmott for their assistance. Thanks as always to Sheryl Myers for her invaluable help with the graphics in preparing this report. Huge thanks to Jacob Province (BS 2014, and alum of the Gehring 2013 and 2014 field schools) for helping supervise the excavation. Finally, the greatest thanks go to the field school students of 2018. While 16 students were about six more than I ever wanted, I could not have asked for a better team.



## INTRODUCTION

The Anthropology Department of Southern Illinois University Edwardsville (SIUE) conducted an archaeological field school on the SIUE campus in Edwardsville Township, Madison County, Illinois, between May 14 and July 6, 2018. Field school investigations consisted of excavations at the southern end of 11MS99. Julie Zimmermann, Professor of Anthropology, acted as field director and instructor of record, and Jacob Province assisted in supervising the excavation. Sixteen SIUE students (Jenna Clendenen, Payne Gray, Christy Juenger, Jay Kemp, Amber Laurent, Kyle McGee, Matt McKay, Jake Mehallow, James Parker, Megan Paszkiewicz, Angel Pereda, Clara Riechmann, Jonathan Rose, Gabby Silva, Chris Snyder, and Kelly Sopek) enrolled full-time in the course and acted as field crew.

The primary goal of the SIUE archaeology field school is to teach students standard archaeological field methods. In addition, the field school offers research opportunities to SIUE anthropology faculty and also to students, who are encouraged to do original research for their senior projects. Perhaps most importantly, the field school provides a means for recording endangered archaeological sites, which are rapidly disappearing due to development in Madison County. 11MS99, for example, has been severely impacted by decades of deep plowing and removal of artifacts by private collectors. The field school provides us with the opportunity to document archaeological resources on campus with the goal of protecting them, or excavating them if determined necessary. Another goal of the field school is community outreach, to share what we do with and to educate the public.

The field school achieved all of these goals. All students completed the course successfully and gained excavation experience. In terms of research, the data recovered from 11MS99 provide information about the Middle Woodland and Mississippian occupations at the Gehring site and more generally of the American Bottom. Several senior projects utilizing data recovered during the field school investigations at Gehring will be pursued in the 2018-19 school year (e.g., Riechmann 2019; Sopek 2019). In terms of the third goal, in 2012 SIUE removed 11MS99 from agricultural production to conserve it, as a result of our field school research. Finally, we hosted approximately 140 visitors on site this summer. Since the summer of 2013, we have given site tours to approximately 500 visitors.

This report summarizes results of the SIUE field school undertaken at 11MS99 on the SIUE campus in the summer of 2018. Our excavations at 11MS99 have focused on an area at the southern end of the site where Middle Woodland and Mississippian features were identified during the 2009, 2013, 2014, and 2016 field schools. Our 2018 excavations removed 12 square meters of “new” ground, revealing a pit feature that probably dates to the Mississippian occupation and several possible post features. We also re-opened approximately 30 square meters to excavate Feature 257, a Mississippian wall trench structure previously identified in the 2016 excavation. Several possible posts identified within the excavation of Feature 257 appeared to be superimposed by the basin of the structure, and therefore probably predate Feature 257.

This report will begin with a description of the project setting and a summary of previous investigations in the area. The bulk of the report will focus on our excavation methods and results. As of this writing, analysis of the artifacts collected is still ongoing. When the analysis of these artifacts is complete, a final report will be written which will compare our findings with data from the greater American Bottom. Certainly, it is clear that the people who inhabited 11MS99 from the Late Archaic period through the Mississippian period were engaged in the social arena of the greater American Bottom.

## SETTING AND PRIOR RESEARCH

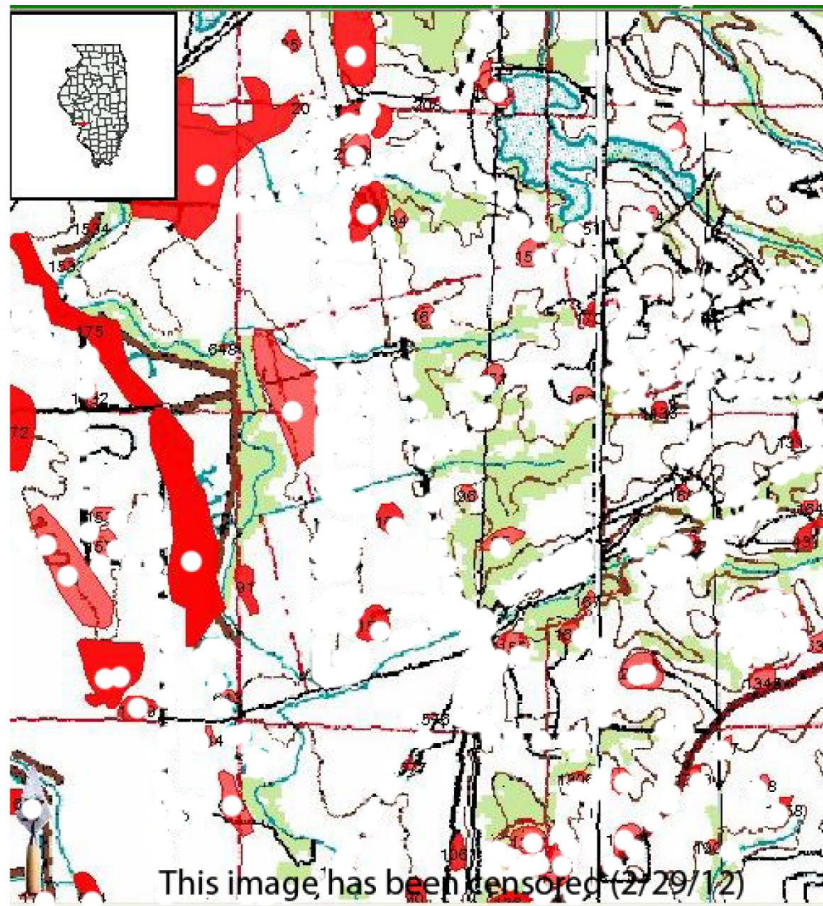
The archaeological record of the American Bottom is rich. Although best known as home to Cahokia, largest archaeological site north of Mexico, thousands of archaeological sites have been recorded in the American Bottom and in the adjacent uplands. In the uplands, these include sites dating from the Paleoindian period through the historic period; in the floodplain, sites date from the Early Archaic through historic periods. The region was attractive to prehistoric and historic settlers alike for its rich resources in both floodplain and uplands, including both forest and prairie habitats (e.g., see White et al. 1984).

The area located around modern Edwardsville, including the SIUE campus, exemplifies the American Bottom in the richness of its natural resources and in the corresponding richness of its archaeological record. The SIUE campus is situated along the bluff edge and bluff base of the northern American Bottom, just south of where Cahokia and Indian Creeks exit the uplands and then merge. Cahokia Creek would have meandered along the base of the bluff on the western edge of campus on its way south to Cahokia, a distance of just ten miles (16 km), and from there on to the Mississippi River beyond. The gentle slope of the bluff here would have given inhabitants easy access to resources of both floodplain and upland. The 1815 GLO map shows that most of what is now the SIUE campus was forested at that time, although prairie was located nearby on both the floodplain and in the uplands (Illinois Secretary of State 2009; see Figure 1). In the early 1800s a backwater lake was located in the American Bottom just 3.5 miles (six km) west of the bluff that crosscuts the campus, and the Mississippi River itself was approximately twice that distance. Through time the exact boundaries of forest and prairie would have shifted, the river and creeks would have meandered, and floodplain lakes would have swelled and shrunk, but local resources would have been abundant regardless of these fluctuations.



**Figure 1.** 1815 GLO map (Illinois Secretary of State 2009).

The richness of the local natural resources has produced an equally rich archaeological record. Munson and Harn (1971) surveyed portions of the SIUE campus as part of a larger archaeological survey of the American Bottoms and Wood River terrace in 1963. Sites reported on campus by Munson included 11MS94, 11MS95, and 11MS96 on the bluff; and 11MS99 in the floodplain below (Figure 2). Archaic period components were recorded at 11MS96 and (albeit with a question mark) at 11MS95. Middle Woodland components were recorded at 11MS94 and 11MS99. A Late Woodland component was reported at 11MS95, and Mississippian components were recorded at 11MS94 and 11MS99.



**Figure 2.** Location of previously recorded sites on the SIUE campus (<http://arch.museum.state.il.us/archsites/>).

Of these, 11MS99 was clearly the largest site, covering at least forty acres, and it seems to have had the densest concentration of artifacts. The site lies on the floodplain near the base of the bluff, on a terrace just east of Cahokia Creek. Munson named 11MS99 the Gehring site after Wilbur Gehring, then a tenant farmer of SIUE but formerly owner of the site. Munson described 11MS99 as a Havana village (Ms<sup>V</sup>266) and mound (Ms<sup>O</sup>267) and also a Bluff camp yielding Late Bluff rim sherds (Munson and Harn 1971:7, 13). On the IAS site form Munson also indicates a Mississippian presence at the site; other artifacts he collected included one Marion Thick sherd, and both straight and expanding stemmed points. On the site form Munson further indicates that his surface collection of 11MS99 was “arbitrarily” divided into three parts. The

northern part apparently lay to the north of an old street car trace that is referred to as a levee on a sketch of the site included with the site files. Today this street car trace or “levee” is used as a road to access utilities which have impacted the northern part of the site to an unknown extent (Booth 2014). The central and southern parts of the site lay to the south of the street car trace in a cultivated field. The central part of the site was highest in elevation, a relatively broad terrace closest to Cahokia Creek; the southern part of the site appears on the sketch map as a narrow finger ridge extending to the south. On the site form Munson noted that Middle Woodland artifacts were found on all parts of the site (northern, central, and southern), whereas Late Woodland and Mississippian artifacts were found only in the central part of the site. Munson’s artifact counts indicate that the greatest number of artifacts was collected in the central part of the site, which is not surprising giving that this relatively high and broad part of the site was used repeatedly throughout its history.

Review of Illinois Archaeological Survey (IAS) site files indicates that additional surveys were conducted on campus by Ken Williams and Ernest Evans in 1969. They reported a number of new sites on campus, including 11MS157, 11MS161, 11MS169, and 11MS170 in the uplands; 11MS165 on the bluff edge; 11MS168 on the slope of the bluff; and 11MS159 and 11MS160 on the floodplain. Most of these sites seem to have been small with light artifact densities, except for 11MS159, which was recorded as a possible village dating to the Woodland period. Woodland components were also reported at several other sites (11MS160, 11MS165, 11MS168, and 11MS170). No Archaic or Mississippian components were recorded by Williams and Evans.

In the early 1970s, SIUE professor Sid Denny conducted field school excavations at 11MS99 for two or three seasons. He referred to the site as the Keller Site because it was farmed by Vernon Keller at that time. Apparently no report of Denny’s excavation was ever written. Maher (1996) interviewed Denny in March of 1994 and reports that all of Denny’s excavation notes and maps were lost at that time, although he was able to examine some of Denny’s artifacts. In July of 2003 Julie Zimmermann (then Assistant Professor Julie Zimmermann Holt) transferred nine boxes of artifacts labeled MSV-99 from the SIUE Anthropology Lab to the SIUE University Museum. Presumably, these were artifacts from the Denny excavation. At that time the ISM declined to accept the collection for curation because no field notes could be found to accompany them. More recently, we have received an inventory of documents given by Denny to the SIUE Lovejoy Library Archives. This inventory lists documents from “MS99 Keller Site.” The documents are excavation forms from the 1970 excavation; these have been copied and are currently on file in the SIUE Anthropology Department. Four sheets of color slides from Denny’s excavations have remained on file in the SIUE Anthropology Department and have been digitally scanned. These slides also appear to be from the 1970 excavation, and show excavation of trenches with a road grader.

Zimmermann (then Zimmermann Holt) interviewed Denny on-site on May 20 of 2009. Denny indicated that in his first field season or two, he excavated test units on 11MS99. In his last field season he excavated two or three trenches with a road grader in the central part of the site. These trenches were perhaps 100 m long running north to south with perhaps 10 m between the trenches; the road grader and trenches were approximately 3 m wide.

In one trench, probably the one located farthest to the west, Denny observed a structure at the base of the plowzone which he described as a “small brush structure” (personal communication, May 2009). The structure was roughly rectangular and approximately 5 x 12 feet in plan view with a basin approximately 2.5 feet deep. (Note that Denny described the trenches in metric measurements and the structure in English; his terminology is used here.) He

said the structure contained no wall trenches, but randomly placed posts were noted, and few artifacts were recovered. At first Denny thought this was a Middle Woodland structure, but he said later discussions with personnel at Cahokia Mounds State Historic Site made him think that the structure dated to the Mississippian period. In the middle trench Denny observed a cluster of three or four pits (personal communication, May 2009). One of these contained Havana artifacts, while the others contained Mississippian artifacts such as Powell Plain and Ramey incised jars (which Denny described as “Fairmount Phase”). The trench farthest to the east contained no features.

The completed forms from Denny’s excavation are difficult to decipher since they don’t include an overall site map. (Although one slide from Denny’s fieldwork shows a student drawing a large map, no site maps were found among his notes.) The notes suggest the presence of one or two living surfaces below the plowzone. For example, one form (labeled 24 in the upper right hand corner) contains the comments, “Plow depth ranged from 25 to 40 cm. Under plow depth black band of undisturbed loamy soil grading into a lighter sandy brown soil. 2 possible occupation levels. Artifacts found in both soil types under plow zone. All pottery identified from both soil types (levels) as Mississippian.” Another sheet (labeled 25 in the upper right hand corner) contains the comments, “Black soil band under plowzone extended through all four pits on the walls. Possible depressed area where people threw refuse, not a midden, span of time used probably short.” It is not clear in these comments if “pits” refers to pit features or excavation units.

Although feature descriptions in these notes are very brief, they might provide some context to the artifacts recovered. It is also possible to identify several of the features in the slides. Feature 11 appears to have been a shallow pit feature, and about 2 m northeast of Feature 11, Feature 9 was labeled as a burnt corn concentration (sheet 15). Feature 8 was a shallow pit (sheets 16 and 62). Feature 4 was a bell-shaped pit (sheet 74). Feature 7 was circular in plan view, and was presumably a pit (sheet 77). Its surface was “covered w/large quantities of shell temp pottery (Cahokia Red shell temp plain and Ramey Incised), 1 reworked proj point drill, burned clay & rock” with “very little charcoal” (sheet 77). A sketch suggests it was found in association with a line of posts.

As part of his dissertation investigating the “Hopewell occupation” of the American Bottom, Maher (1996) examined artifacts from Denny’s excavation and surface collection, but apparently the artifacts were without specific provenience. Maher (1996: Tables D.5 and D.6) provides a list of the Middle Woodland ceramics he identified in Denny’s collection; he suggests that there was an equal number of Mississippian sherds in the assemblage (apparently dating to the late Stirling phase), as well as a “substantial collection of Early Woodland Marion Thick pottery” (1996:640). Maher (1996:640) reports that Denny provided him with photographs from his excavation which “revealed the presence of pottery-filled pits (Figure D.15); a pit with a carbonized corn cob remains (Figure D.15), and midden-filled pits and post molds (Figure D.16) [sic].” Maher’s Figures D.15 and D.16 are included among Denny’s color slides now curated in the SIUE Anthropology Department.

Maher (1996) also conducted limited excavations at 11MS99, focusing on the purported mound. IAS site forms indicate that this “mound” was 80 feet in diameter and 3 feet high, and as Maher notes, the IAS site forms also indicate that previous owner Wilbur (or Wilber) Gehring dug a hole in the landform “many years ago [before 1969], but never found anything.” The IAS site forms indicate that a notched hoe was found near the possible mound, but was not necessarily associated with it. Terry Norris (personal communication, September 2016) reports

that he and Ken Williams found a stone pipe fragment on the possible mound during a general surface collection prior to Denny's first field school on the site in 1970. Norris states that the pipe fragment was approximately 10-12 cm long and 5-6 cm wide, larger and bulkier than a Middle Woodland styled platform pipe and more similar to a Mississippian style pipe. The stone was dark and possibly a fine grained sandstone.

Maier (1996) excavated in the possible mound to determine its cultural affiliation. He notes that at the time of his excavation in 1994, the purported mound was only 50 cm high and difficult to locate due to decades of plowing. Maier placed two transects of "soil probe cores" across the mound, and also excavated three 1 x 2 m units on the mound. All excavated sediments in these units were screened through half-inch mesh. No artifacts were recovered in two of the three units, and artifacts in the third were recovered from the plowzone only and were not culturally diagnostic. Maier reports that the stratigraphy in the excavation units was often disturbed and gave no indication of mound construction techniques (such as basket loading). Flotation samples were taken from supposed mound fill, but produced few plant remains. A hazelnut shell was submitted for radiocarbon dating and produced a date of  $2475 \pm 45$  BP, suggesting a Late Archaic or Early Woodland affiliation (Maier 1996:659). However, Maier concludes that "the mound at Gehring remains an enigma" (1996:659). That is, the near absence of artifacts and lack of definitive evidence for mound construction could indicate that this was not a mound at all, but instead was a natural geomorphological feature, perhaps a remnant of a sand ridge.

The observations and collections of avocational archaeologist Keith Probst are probably as important as those of professional archaeologists in understanding 11MS99. Probst collected 11MS99 and other sites in Madison County between 1967 and 1973, keeping a log of his finds in which he recorded artifact numbers, artifact descriptions, and site locations (Zimmermann 2016). In 2007 and 2008 Probst permitted Julie Zimmermann, Brad Koldehoff, and Ken Farnsworth to examine his collection, photocopy his log, and photograph selected artifacts. In his log, Probst referred to 11MS99 as a "Hopewell" site, and our examination of his collection from 11MS99 confirms that it is predominantly composed of Middle Woodland artifacts. Middle Woodland lithic artifacts he collected include blades, blade cores, Snyders points (several of which were reworked into scrapers), North points, Manker points, a Norton point, celts, and a hoe. Middle Woodland ceramic types identified in the Probst collection include Havana plain, Hopewell rocker stamped, Netler stamped, and Sisters Creek fingernail punctate. A drilled bear canine from the site is also surely Middle Woodland, and a galena fragment and a quartz crystal are probably Middle Woodland. (One Snyders points was also made of quartz; this was found in the northern part of the site.) Early Woodland and Mississippian artifacts were also common. Early Woodland artifacts included 11 Kramer points (one of which was reshaped into a drill), and a probable limestone tube pipe (broken and unfinished) also appears to be Early Woodland. Mississippian artifacts include Cahokia points, Madison points, a Cahokia cordmarked jar rim with a red-slipped interior (Moorehead phase), a celt, and a Cahokia style discoidal. Two marine shell disk beads in the Probst collection are probably also Mississippian. The Probst collection from 11MS99 also includes a Dalton point (turned into a scraper), a variety of Late Archaic point types (Matanzas, Riverton, Adena, Copena, Etlely, and Motley), a Late Woodland Mund point, artifacts dating to the Terminal Late Woodland or Emergent Mississippian period (a Late Woodland arrow point and Late Bluff rim sherds), and an historic period ceramic pipe.

While revisiting 11MS99 in 2008, in 2009, and in 2013, Probst pointed out that the majority of Middle Woodland artifacts came to the surface only after the sand ridge in the

southern part of the site was deep plowed for horseradish production. This observation suggests that prior to deep plowing, the site had been stratified. Probst also suggests that as much as five feet of sediment have been removed from this ridge (due to plowing and erosion) since the early 1970s.

There are surely other privately held artifact collections from 11MS99 which would prove informative if they could be located. Probst collected the site for a relatively brief period, and during that period he regularly observed footprints from other artifact collectors. Footprints from a collector were observed in Zimmermann's first visit to the site with Probst in March of 2008. Footprints of collectors were observed on-site every time it rained during the field school in May and June of 2009. Zimmermann observed on June 1 of 2009 that a collector had been digging on-site, at the edge of an erosion gully at the southern end of the site. In addition, in May and June of 2009 a total of approximately 20 people actively surface collecting were observed firsthand by field school faculty and students and reported to SIUE police. One collector reported that she had been told about the site by her employer, a local lawyer, who had collected the site for years with his family. A family caught collecting and stopped by SIUE police in summer of 2009 reported that they had been given permission to collect by Craig Keller (the current tenant farmer); they reported that they had collected the site for years and had seen many other collectors out there. It would be beneficial to examine the collections of these and other individuals, but unfortunately none have been forthcoming as of this writing. During the 2011 SIUE field school, looters damaged a feature that was being excavated, but it is unknown if they stole any artifacts (Vogel et al. 2013). During field school excavations since 2013, we have not observed any collectors, nor have we observed evidence that the site has been visited by collectors. This could be in part a result of the police protection which began in 2009, and the installation in 2009 of IHPA signs forbidding artifact collection on site. Moreover, because the site is no longer plowed (since approximately 2012), it is less attractive to collectors.

Julie Zimmermann (formerly Zimmermann Holt) directed the SIUE Anthropology Department's archaeology field school at 11MS99 in 2009, 2013, 2014, and 2016 (Zimmermann Holt 2013, 2015; Zimmermann Holt and Belknap 2010; Zimmermann 2017). In 2009, a surface collection was conducted over the southern and central portions of 11MS99, as well as ca. 85 acres of agricultural field adjacent to the central and southern portions of the site. Based on results of this surface survey, and an interest in the Middle Woodland occupation of the site, excavations directed by Zimmermann have been focused at the southern end of 11MS99. These investigations have revealed artifacts and three pit features suggesting occupation throughout the Middle Woodland period. Middle Woodland artifacts recovered suggest participation in the Hopewell Interaction Sphere, perhaps more intense participation than is typically interpreted at Middle Woodlands sites in the American Bottom (see Zimmermann et al. 2018). Possible "Hopewellian" goods recovered in our excavations included Hopewell pottery, a figurine, mica, obsidian, and copper awl. Several posts ca. 20 cm in diameter are also believed to date to the Middle Woodland period. These posts, along with mud dauber nests, suggest the presence of one or more Middle Woodland structures at the site.

Excavations directed by Zimmermann at the southern end of the site have also revealed Mississippian features, including two wall trench structures and at least five pits. Features located inside the wall trench structures might be contemporary with the structures, or might predate them (Zimmermann Holt 2013, 2015; Zimmermann 2017). Several other pits excavated in the vicinity of these features might date to the Late Woodland period (Zimmermann 2017). These extended into the wall of our excavation unit in 2016, and excavation of them was

completed by Carol Colaninno of SIUE's STEM Center, who directed her NSF REU field school in the summer of 2017 at 11MS99 (Colaninno and Zimmermann 2018). Colaninno's excavation revealed another pit feature, which was excavated by Colaninno and students in the summer of 2018 and is probably Mississippian in age.

Gregory Vogel, then Assistant Professor of Anthropology, directed the SIUE archaeology field school at 11MS99 in the summers of 2010, 2011, and 2012 (Vogel and Clemons 2011; Vogel et al. 2013). Vogel conducted extensive remote sensing at 11MS99, and his excavations focused on ground-proofing the remote sensing results in the central portion of the site. Pit features excavated by Vogel and students in the central part of the site are believed to date to the Middle Woodland, Late Woodland, Emergent Mississippian, and Mississippian periods. Structures were excavated probably dating to the Mississippian and historic periods. The presumed Mississippian structure was a wall trench structure. A Mississippian burial probably dating to the Moorehead phase was found in the summer of 2012; it contained copper, a shell-tempered ceramic discoidal, and red-slipped, shell-tempered pottery (Vogel 2012). After determining that this feature was a burial, it was immediately reported to the IHPA and reburied without further excavation.

Investigation of the stratigraphy at 11MS99 included excavation of deeper units by Zimmermann (then Zimmermann Holt) and students in the southern portion of the site in 2009 and in the central portion of the site by Vogel and students in subsequent field seasons. Vogel also took sediment cores across the site. His stratigraphic analysis suggests potential for deeply buried cultural deposits at 11MS99. However, based on Vogel's recommendations, our excavations since 2009 have mostly been limited in depth to investigation of features found at the base of the plowzone. If there are more deeply buried cultural deposits at the site, we don't have time to reach them in the course of a typical field school season because our field methods do not include use of heavy machinery. We realize, however, after discovery of the Mississippian wall trench structure Feature 257 in 2016, that there could be culturally buried deposits at the site. That is, Mississippian features superimpose and may have sometimes buried earlier features. Thus, our excavations in 2018 were deeper than those in 2013-16 to make sure we had reached culturally sterile sediments. The shallow depth of Mississippian features demonstrate that Probst was correct: the southern end of the site has lost as much as 5 feet of topsoil (see Zimmermann Holt 2013, 2015; Zimmermann 2017).

Finally, 11MS99 has been the subject of recent CRM compliance work. Because the road which separates the northern and central portions of the site was scheduled to be improved, in May of 2014 several backhoe trenches were dug cross-cutting the road, and shovel tests were conducted just north and south of the road (Booth 2014). These investigations found nothing of archaeological significance. The road improvements were completed in summer of 2015.

Based on our recommendations, and because a burial was confirmed in the summer of 2012, SIUE has stopped leasing the southern and central portions of 11MS99 for agriculture. In fall of 2015 we seeded the southern and central portions of the site with a conservation planting. After several years without plowing, the undergrowth on the site by that time was extremely dense, including small trees. Because of this, the site had to be cleared with a construction grader, which left extreme ridging across parts of the site, particularly the central portion. However, while the disturbance at the surface of the site was extreme, we saw no evidence that clearing caused impact below the level of the existing plowzone. That is, clearing did not appear to pull up artifact concentrations which would have suggested disturbance of intact features. After the site was cleared, we planted an annual crop of winter wheat to hold the soil and



discourage weeds, along with a permanent planting of non-native perennial grasses, timothy and redbud. Non-native grasses were chosen because these were cheaper; however, they also have a shallower root system than native grasses, and so might be less destructive to archaeological deposits. We hand-broadcasted native wild flowers (black-eyed Susan, gray-headed coneflower, and partridge pea) the following January after a light snowfall; the purpose of the wild flowers was to provide food for native wildlife. During the summer of 2016, the tenant farmer accidentally plowed about four acres in the central part of the site, unfortunately in the vicinity of the Mississippian burial identified in 2012. The plowed portion of the site was again planted with timothy and redbud that fall, and again native wildflowers black-eyed Susan, gray-headed coneflower, and partridge pea were hand-broadcasted in February of 2017 after a light snowfall. As of this writing, the site is well-stabilized with these plants, preventing further erosion of archaeological deposits. Undesirable weeds are also present at the site, but we don't have the budget to control them. Further regrowth of trees has been prevented by mowing in September, after birds are finished nesting for the year. We will continue to mow the site every September, or possibly burn the grasses periodically.

## FIELD METHODS AND RESULTS

Excavation was begun on Wednesday, May 16, and completed on Monday, July 2. Our goals in 2018 were to expand on our previous excavation in order to better understand Middle Woodland occupation of the site, and to excavate Feature 257, a Mississippian wall trench structure identified during our 2016 excavation (Zimmermann 2017). (Note that the south wall of Feature 257 was labelled Feature 262 in 2016, but here we will refer to the entire wall trench structure as Feature 257.) Toward the first objective, we excavated a new area measuring 12 square meters hoping to locate additional Middle Woodland features, particularly structural posts. Toward the second objective, we reopened approximately 30 square meters in order to excavate Feature 257. The wall trenches of Feature 257 were identified and mapped in 2016, but we didn't have time to excavate them that field season. After mapping the wall trenches and associated features in 2016, Feature 257 was covered with black plastic sheeting, and then the units containing the feature were backfilled (see Zimmermann 2017).

Site datum coordinates for our excavations in the southern portion of the site can be found in Table 1 (see Zimmermann Holt and Belknap 2009; Zimmermann Holt 2013). Please note that our coordinates are on a different grid system than the grid later established by Vogel in the central part of the site (Vogel and Clemons 2011; Vogel et al. 2013). Unit coordinates and sizes for the 2018 excavation can be found in Table 2. Unit coordinates refer to the southwest corner of the unit. Please note that Units FA and FB were originally intended to be 2x2 m, so paperwork completed in the field for these units lists the north coordinate as N417. However, since we ultimately didn't have time to excavate the south half of Units FA and FB, I have simply listed them here as 1x2 m units and adjusted the north coordinate to N418. Previously excavated units were reopened this year to excavate Feature 257, but those units are not listed here since Feature 257 was not excavated according to unit boundaries. A listing of units that contained Feature 257 can be found in Zimmermann (2017:31; also see Zimmermann 2017: Table 2).

Table 1. Site Datum Coordinates (Zone 15S)

| SIUE grid coordinates | X (UTM) | Y (UTM) |
|-----------------------|---------|---------|
| N419 E396             | 759095  | 4297430 |
| N399 E396             | 759096  | 4297408 |

*Methods.* All sediments were removed by hand (using shovel and trowel). The plowzone in all new units (FA-FD) was removed in one natural level, screened through ¼ inch mesh, and described using standard nomenclature (Munsell colors and USDA textures). Sediments below the plowzone in Units FA-FD were removed in arbitrary 10 cm levels and described using standard nomenclature. Some levels below the plowzone were screened in entirety through ¼ inch mesh, but others were screened at rates of less than 100% because they were high in clay content (breaking both screens and spirits) and because they contained very few artifacts. Possible cultural features identified in Units FA-FD were drawn and photographed in plan view and then bisected. The first half of each feature was excavated, usually as a single stratum. The profile of the feature was then photographed and drawn. Any distinct strata visible in profile were excavated separately in the second half of the feature, with 10 l flotation samples taken

from each. If strata were too small to yield a 10 l sample, smaller samples were taken. All feature sediments not saved for flotation were screened using ¼ inch mesh.

Table 2. Unit Coordinates.

| Unit name | SIUE grid coordinates | Unit size |
|-----------|-----------------------|-----------|
| FA        | N418E400              | 1x2 m     |
| FB        | N418E402              | 1x2 m     |
| FC        | N419E400              | 2x2 m     |
| FD        | N419E402              | 2x2 m     |

The backfill covering Feature 257 was removed, and since it was previously screened, we did not screen it again. Under the backfill was black plastic sheeting; this was removed to reveal the *in situ* wall trenches. Below the first layer of black plastic sheeting, previously excavated pit features which intersected with the wall trenches (Features 204, 224, 259, and 269) had been lined with black plastic sheeting and backfilled; this backfill and black plastic sheeting were also removed before further excavation of Feature 257. The excavation of Feature 257 proceeded following feature excavation procedures described above, but with some variation due to the size and complexity of the feature. Feature 257 was bisected east to west, and the south half of the feature was excavated first. A north-facing profile was drawn showing the full width of Feature 257, including the interior sediments and both east and west wall trenches. The southern ends of the east and west wall trenches were also bisected north to south. Thus, a profile was drawn of the south end of the east wall looking west, and a profile was drawn of the south end of the west wall looking east. The southern wall trench was bisected near its center facing east, and the west end of the south wall trench was also bisected east-west with the profile drawn facing north. In the north half of Feature 257, a bisection profile was drawn near the center of the north wall trench looking west. Flotation samples were taken from each wall trench in the vicinity of the bisections made near the center of the walls. The wall trenches in the north half were excavated using trowels, and posts noticed within the wall trenches were mapped in plan view. In the interior area enclosed by the wall trenches, separating the south half of Feature 257 from the north half, we removed sediments with shovels and trowels in 10 cm arbitrary levels, looking for evidence of *in situ* house basin and looking for features that might have been in or below the floor of Feature 257. All possible features identified within Feature 257 were excavated using the methods described for feature excavation above. Arbitrary 10 cm levels within the area enclosed by the wall trenches were screened through ¼ inch mesh, but they were screened at rates of less than 100% if they were especially high in clay content and low in artifact content.

*Results, Units FA-FD.* The plowzone in Units FA-FD ranged between 20 and 30 cm deep, and was typically described as a 10YR 4/3 brown sandy loam or clay loam. According to the USDA (2009), the soil at 11MS99 is classified as an Onarga sandy loam. The most common artifacts found in the plowzone of Units FA-FD were chert and ceramics (Table 3). Most noteworthy, however, is presence of hematite, given that only one or two pieces of hematite have been identified in previous excavations. The plowzone in Units FC and FD yielded more artifacts than Units FA and FB. This is unsurprising, given that Units FC and FD were 2x2 m units, while Units FA and FB were 1x2 m units. However, as we discuss below, we discovered during excavation that the north half of Units FC and FD were previously excavated. Given this, it

might seem surprising that the north half of these units contained artifacts; however, as noted above, the site was cleared with a construction grader in 2015, disturbing sediments at the surface of the site. Because of this, any units we excavated prior to 2015 will feature a plowzone containing artifacts.

Table 3. Plowzone Artifact Summary.

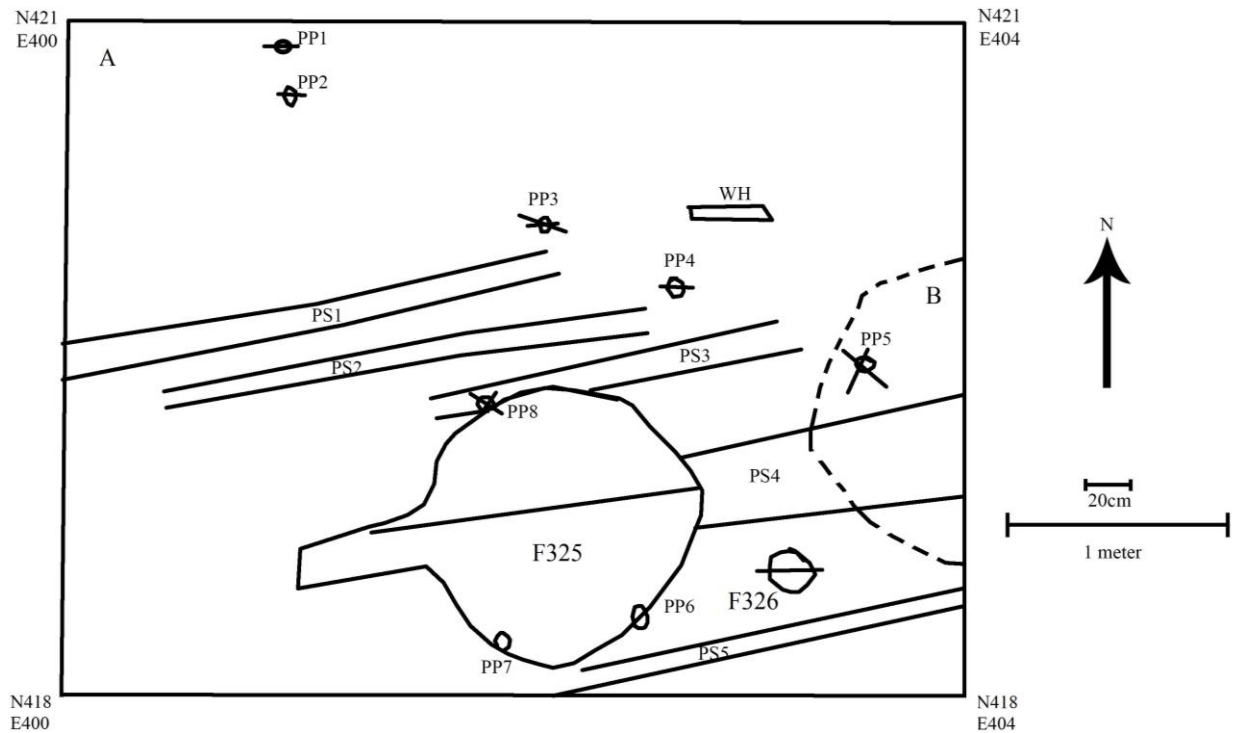
| Unit | Chert | Sherds | FCR | FCR (g) | GST <sup>1</sup> | Bone | Burnt clay | Ochre | Hematite | Historic |
|------|-------|--------|-----|---------|------------------|------|------------|-------|----------|----------|
| FA   | 46    | 92     | 25  | 80.17   | 0                | 0    | 23         | 3     | 11       | 0        |
| FB   | 73    | 118    | 14  | 81.71   | 1                | 1    | 23         | 0     | 4        | 0        |
| FC   | 87    | 60     | 18  | 134.46  | 0                | 2    | 8          | 13    | 4        | 0        |
| FD   | 100   | 119    | 16  | 119.59  | 1                | 1    | 7          | 0     | 2        | 1        |

<sup>1</sup>GST = Ground Stone Tool

The subsoil immediately beneath the plowzone in units FA-FD was mostly a 10YR 4/6 dark yellowish brown clay loam. There was also a patch of 10 YR 5/3 brown sandy loam extending into the east wall of Units FB and FD, as can be seen in the plan view at the base of the plowzone, and in the profile drawn of that wall (see Photo 1 and Figures 3-4). Features 325 and 326, several possible posts and a wooden stake were also identified at the base of the plowzone (see Figure 3). Features and possible posts will be described below, in numerical order. As can be seen in Figure 3, we also discovered a wall trench in the northern half of Units FC and FD. This was determined to be the backfilled southern wall trench of previously excavated Feature 212 (see Zimmermann Holt 2013 and 2015). The wooden stake was found at the base of the plowzone in Unit FD in association with a small piece of plastic sheeting (which we use to cover excavation units) and small nail with orange flagging (which we use to mark features during mapping), confirming that the north half of Units FC and FD were previously excavated.

Two explanations for this are possible – either we mislabeled the north coordinates of units this field season or we mislabeled them in 2013/14. To determine which explanation was correct, we measured the distance from the west end of the south wall trench of Feature 212 to the west end of the northern wall trench of Feature 257. Unfortunately, we did this on Monday, July 7, after the excavation units were backfilled and the features were no longer plainly visible, but the estimate of the distance was approximately 8.8 m. Measuring the distance between these two points in the 2016 site report (Zimmermann 2017: Figure 3) indicates the distance between the two wall trench structures is 9.8 m. This indicates that there is a one meter error in our previously produced maps, and the coordinates on new Units FA-FD were correct. Review of Zimmermann’s field notes from the 2013 and 2014 field seasons indicates that the one meter error was made in 2013 and discovered in 2014 (as stated clearly in Zimmermann’s 2014 field notes, pp. 4-5 and 12). The one meter error should have been corrected in maps made for the 2014 field report (Zimmermann Holt 2015), but unfortunately it was not. Because of this oversight, the error was forgotten about and repeated in the 2016 field report (Zimmermann 2017). The correction is made here with Figure 5. The correction affects placement not only of Feature 212 and all associated features, but also pit Features 206-207 and 209-211, which were all identified in the 2013 field season and located in the same mislabeled excavation block (see

Zimmermann Holt 2013). All of these features have been shifted one meter south in the maps produced for this report (see Figure 5). This further indicates that the north half of Units DE and DF, which were excavated in the 2016 field season, were re-excavations of the south half of Units BL and BK, which were excavated in 2013.



**Figure 3.** Units FA-FD, plan view at base of plow zone.

A = Subsoil (10YR 4/6 dark yellowish brown clay loam)

B = Subsoil (10 YR 5/3 brown sandy loam)

F325 = Feature 325

F326 = Feature 326

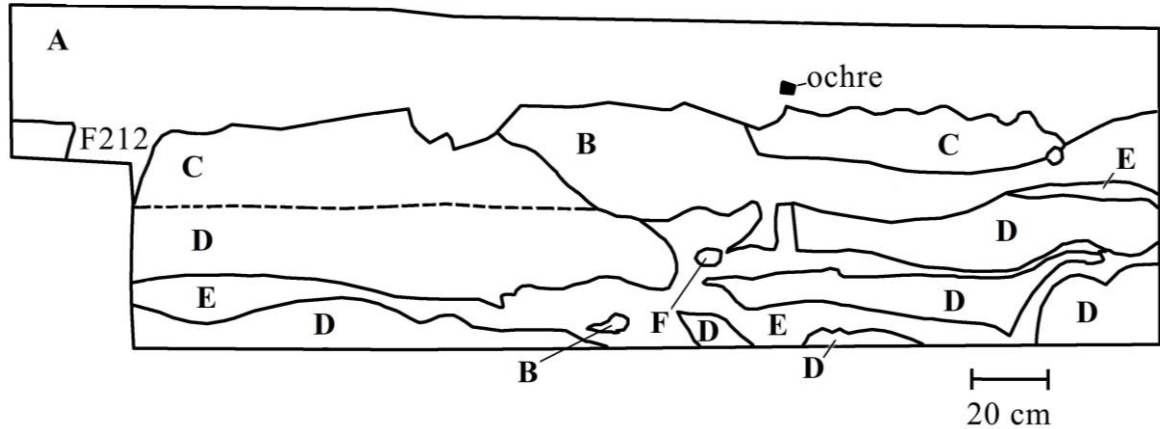
PP = Possible post

PS = Plow scar

WH = Wooden hub

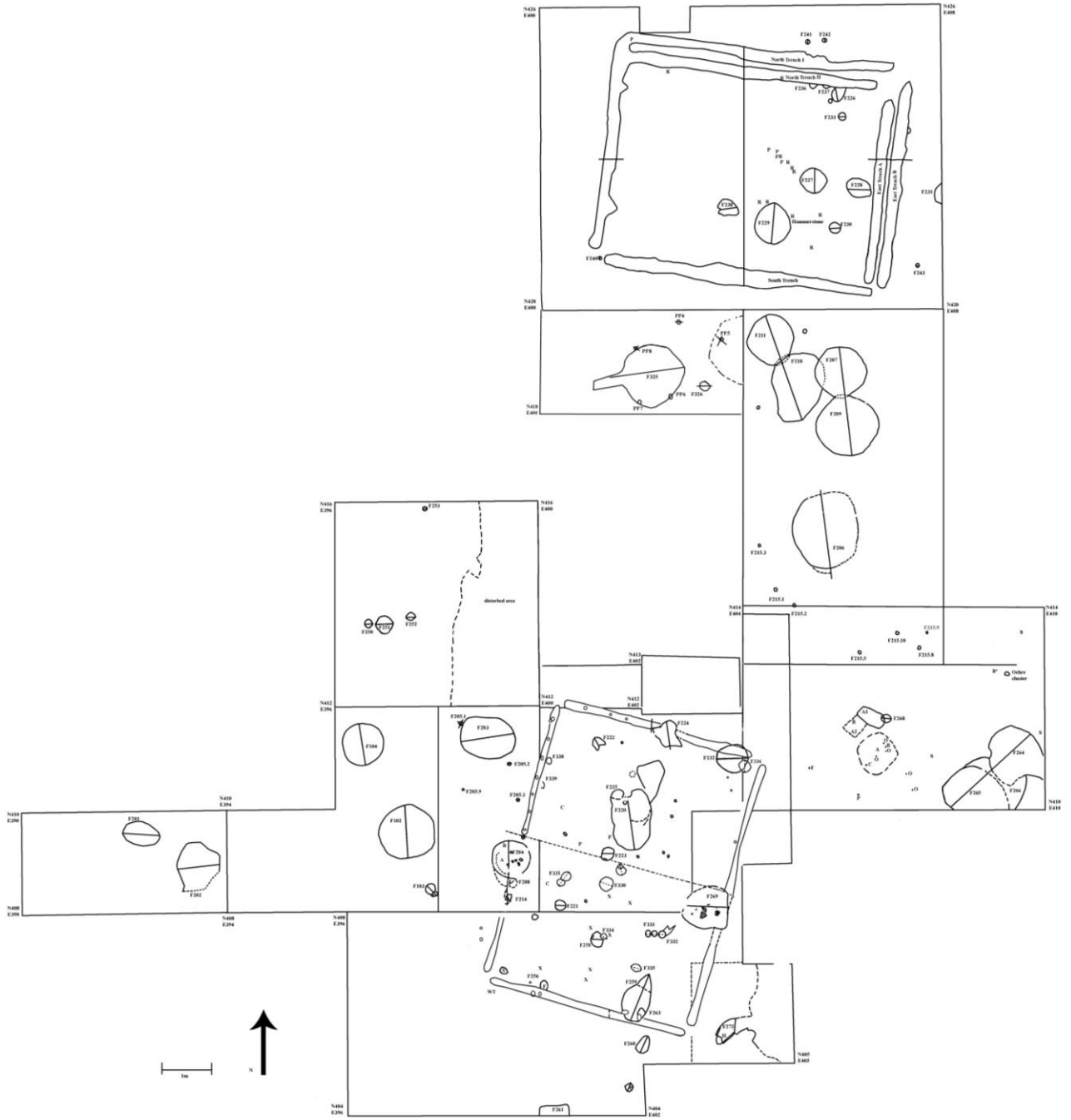


**Photo 1.** Units FB and FD, profile facing east.



**Figure 4.** Units FB and FD, profile facing east.

- A = Plowzone (10YR 5/3 brown silt loam)
- B = Subsoil (10YR 4/3 brown sandy loam)
- C = Subsoil (10YR 4/6 dark yellowish brown clay loam)
- D = Subsoil (10 YR 5/4 yellowish brown loamy sand)
- E = Lamellae (7.5YR 4/4 brown sandy clay)
- F = Subsoil (10YR 4/6 dark yellowish brown clay loam)



**Figure 5.** All features, plan view.

After the features, possible posts, and wooden stake found at the base of the plow zone in Units FA-FD were excavated, we resumed excavation of the subsoil in order to be certain that there were no buried features in Units FA-FD, and to better understand the nature of the sandy loam deposit. Our concern with buried features resulted from the discovery of Feature 257 buried below what looked like sterile subsoil during the 2016 field season. In excavating the subsoil in Units FA-FD, one possible feature (Feature 328) was found in strat B level 3, but this was determined upon excavation to be bioturbation. It will be further described with other features below.

We were interested in the sandy loam subsoil in Units FA-FD because Features 210 and 211, which were identified in 2013 (see Zimmermann Holt 2013), were filled with a sandy loam. As noted above, the subsoil below the plowzone was mostly a clay loam; it is thought that this is a redeposited loess. However, a patch of 10 YR 5/3 brown sandy loam was also noted at the base of the plowzone; this extended into the east wall of Units FB and FD (Photo 1; Figures 3-4). This deposit of sediment was similar to Features 210 and 211, which were located immediately east of Units FB and FD. Features 210 and 211 were very difficult to define, given how light they were in color, and they contained very few artifacts. During excavation in 2013, we weren't entirely sure that Features 210 and 211 were cultural, but finally concluded that they were probably pits predating the Mississippian period that filled with mostly sterile sand during a flood (Zimmermann Holt 2013:44). Our excavation of the subsoil in Units FA-FD in 2018 leads us to conclude that Features 210 and 211 were more likely natural than cultural deposits. The deposit of sandy loam in Units FB and FD expanded to the south as we excavated deeper, underlying the clay loam subsoil. Examination of Figure 4 indicates that by approximately 50 cm below ground surface, both the clay loam and sandy loam developed into a loamy sand characterized by extensive lamellae development. The transition from sandy loam to loamy sand was sharper than the more gradual transition from clay loam to loamy sand, so perhaps the sandy loam is a flood deposit as we hypothesized with reference to Features 210 and 211. The profile of Units FB and FD (Figure 4; Photo 1) is not suggestive of cultural deposition, so we have concluded that it is unlikely that Features 210 and 211 were cultural features. They are included in Figure 5, but will be removed from future site plans.

Examination of Table 4 shows that very few artifacts were found in the subsoil in Units FA-FD. In level 2, most are probably the result of plow disturbance, and in levels 3-6, most are likely the result of bioturbation. It should be noted that the counts of artifacts in Table 4 are not directly comparable between different proveniences because the volume of sediment screened per level varied for several reasons. First, Strat B Levels 2-5 were supposed to be arbitrary 10 cm levels while Strat B Level 6 was supposed to be an arbitrary 20 cm level; however, these measures are only approximate because students were just learning to excavate arbitrary levels and sometimes they dug too deep. Second, only 50% of the sediments were screened in Strat B Level 3 due to its high clay content. Finally, only 50% of each unit was excavated beginning with Strat B Level 4: because we were primarily interested in looking at the stratigraphy, we decided to excavate only partial units beginning with Level 4. Thus, two one-meter wide trenches were excavated running north to south, one from E400.5 to E401.5 (in the center of Units FA and FC) and the other from E403 to E404 (in the east half of Units FB and FD). Units FC and FD were not excavated where the wall trench was located; that is, the backfilled wall trench was pedestalled. The profile created by the eastern trench is visible in Figure 4 and Photo 1. It should be noted that although the north half of Units FC and FD were previously excavated, as discussed above, the original excavation of this area in 2013 and 2014 only encompassed the



plowzone and Feature 212. Thus, the subsoil excavated this field season and depicted in Figure 4 and Photo 1 were *in situ*, not backfill.

Table 4. Strat B Artifact Summary.

| Unit/Level | Chert | Sherds | FCR | FCR (g) | Hematite | Bone | Burnt clay | Ochre |
|------------|-------|--------|-----|---------|----------|------|------------|-------|
| FA/2       | 5     | 3      | 4   | 97.05   | 1        | 0    | 5          | 0     |
| FA/3       | 1     | 0      | 0   | 0       | 0        | 0    | 0          | 1     |
| FA/4       | 0     | 1      | 0   | 0       | 0        | 0    | 0          | 0     |
| FB/2       | 4     | 20     | 2   | 3.27    | 1        | 0    | 0          | 0     |
| FB/3       | 0     | 1      | 0   | 0       | 0        | 0    | 0          | 0     |
| FB/4       | 0     | 1      | 0   | 0       | 0        | 0    | 0          | 0     |
| FB/5       | 0     | 0      | 0   | 0       | 0        | 2    | 0          | 0     |
| FC/2       | 0     | 1      | 0   | 0       | 0        | 0    | 0          | 1     |
| FD/2       | 8     | 17     | 1   | 5.16    | 0        | 0    | 5          | 0     |
| FD/3       | 0     | 0      | 2   | 74      | 0        | 0    | 0          | 0     |
| FD/5       | 1     | 0      | 0   | 0       | 0        | 0    | 0          | 0     |
| FD/6       | 1     | 0      | 0   | 0       | 0        | 0    | 0          | 0     |

Our discussion of features is usually done in numerical order. However, first we will discuss (in numerical order) features and possible features which were located in new Units FA-FD, since we have just described those units. Then we will discuss Feature 257 (the wall trench structure), and all possible features located within it. Measurements and descriptions of features are summarized in Table 5. A summary of artifacts from all features is found in Table 6.

Table 5. Feature Data.

| Feature | Length (cm) | Width (cm) | Depth (cm) | Plan        | Profile             | Interpretation        |
|---------|-------------|------------|------------|-------------|---------------------|-----------------------|
| 256     | 7           | 7          | 32         | circular    | vertical            | post in wall trench   |
| 257     | 586         | 428        | 35         | rectangular | rectangular         | wall trench structure |
| 263     | 16          |            | 15         | circular    | vertical            | posthole              |
| 325     | 120         | 118        | 12         | circular    | belled              | storage pit           |
| 326     | 23          | 20         | 12         | circular    | inslanting          | posthole              |
| 329     | 20          | 18         | 30         | circular    | vertical            | posthole              |
| 330     | 30          | 28         | 20         | circular    | vertical/inslanting | posthole              |
| 331     | 20          | 20         | 22         | circular    | vertical/inslanting | posthole              |
| 333     | 22          | 12         | 18         | oval        | vertical/inslanting | posthole              |
| 334     | 13.5        | 13         | 20         | circular    | vertical/inslanting | posthole              |
| 335     | 22          | 15         | 11         | oval        | inslanting          | posthole              |
| 336     | 20          | 18         | 10         | circular    | vertical            | posthole              |
| 338     | 16          | 16         | 9          | circular    | inslanting          | posthole              |
| 339     | 12?         | ?          | 2          | circular?   | basin?              | unclear               |
| 343     | 12          | 12         | 9          | circular    | vertical/irregular  | posthole              |
| PP1     | 10          | 10         | 40         | circular    | inslanting          | modern                |

Table 6. Feature Artifact Summary, Screened Sample.

| Feature        | Chert | Sherds | FCR | FCR    |                 | Ochre | Bone | Burnt           |      |          |
|----------------|-------|--------|-----|--------|-----------------|-------|------|-----------------|------|----------|
|                |       |        |     | (g)    | LS <sup>1</sup> |       |      | SS <sup>1</sup> | clay | Hematite |
| 256            | 1     | 0      | 2   | 10.87  | 0               | 0     | 0    | 1               | 3    | 0        |
| 257 (interior) | 69    | 112    | 2   | 0.49   | 0               | 0     | 16   | 9               | 19   | 2        |
| 257 (trenches) | 49    | 82     | 66  | 545.84 | 3               | 0     | 3    | 30              | 37   | 0        |
| 263            | 1     | 0      | 0   | 0      | 0               | 0     | 0    | 0               | 0    | 0        |
| 325            | 54    | 143    | 11  | 36.29  | 0               | 2     | 5    | 7               | 21   | 2        |
| 326            | 1     | 0      | 0   | 0      | 0               | 0     | 3    | 0               | 0    | 0        |
| 327            | 1     | 0      | 0   | 0      | 1               | 0     | 0    | 0               | 1    | 0        |
| 331            | 1     | 0      | 0   | 0      | 0               | 0     | 0    | 0               | 0    | 0        |
| 334            | 1     | 1      | 0   | 0      | 0               | 0     | 0    | 0               | 0    | 0        |
| 336            | 0     | 1      | 0   | 0      | 0               | 0     | 0    | 1               | 0    | 0        |
| PP1            | 1     | 0      | 0   | 0      | 0               | 0     | 0    | 0               | 1    | 0        |

<sup>1</sup>LS = Limestone

<sup>2</sup>SS = Sandstone

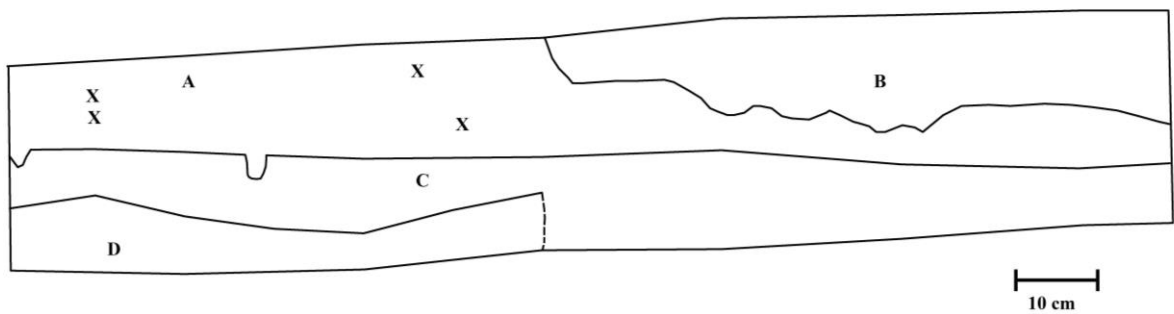
Feature 325 was a circular pit, approximately 120 cm in diameter and just 12 cm deep due to truncation by plowing (Table 5; Figure 3; Figures 5-6; Photos 2-3). The walls of the pit were slightly belled at the bottom. However, this is not apparent in the profile that was drawn because unfortunately we bisected it through a plow scar. Because of this, the profile drawn does not clearly show the profile of the pit itself, but instead illustrates the extent of the plow scar. The feature fill was dark, homogenous, and loose, a 10YR4/2 dark gray brown loam with charcoal flecking. Given how severely truncated the feature is, it is almost certainly Mississippian in age. (Our past excavations at the south end of 11MS99 indicate that Mississippian features are nearly removed by plowing, but Middle Woodland features are still largely intact because the site was stratified and they were more deeply buried.) Preliminary assessment of ceramics from Feature 325 supports this interpretation; most ceramics seem to be shell-tempered. Although at least one Middle Woodland sherd was recovered from Feature 325, it was probably brought into the pit by plowing (although plow scars were screened separately). Besides ceramics, Feature 325 also contained chert, FCR, burnt clay, bone, ochre, hematite, and sandstone (Table 6).



**Photo 2.** Feature 325, plan view.



**Photo 3.** Feature 325, profile facing north.



**Figure 6.** Feature 325, profile facing north.

- A = Feature 325 fill (10YR 4/2 dark gray brown loam with charcoal flecking)
- B = Plowscar (10YR 4/4 dark yellowish brown sandy clay loam)
- C = Subsoil (10YR 4/6 dark yellowish brown clay loam)
- D = Subsoil (10YR 5/4 yellowish brown sandy loam)
- X = Charcoal

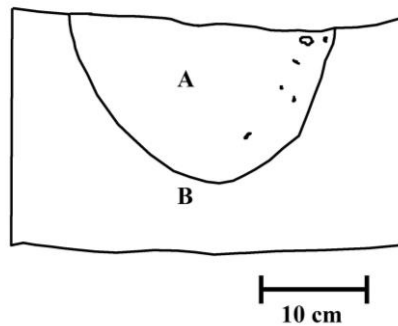
Feature 326 was a circular feature, approximately 23 cm in diameter and 12 cm deep (Table 5; Figures 3 and 7; Photos 4-5). It is consistent in diameter with postholes (in particular Features 103 and 221) which are thought to be Middle Woodland structural posts (see Zimmermann et al. 2018). It was filled with a 10YR 3/3 dark brown sandy loam flecked with charcoal and ochre. Several larger pieces of ochre (one as large as 4 cm in diameter) and one chert flake were recovered from Feature 326 (Table 6).



**Photo 4.** Feature 326, plan view.



**Photo 5.** Feature 326, profile facing north.



**Figure 7.** Feature 326, profile facing north.

A = Feature 326 fill (10YR 3/3 dark brown sandy loam)

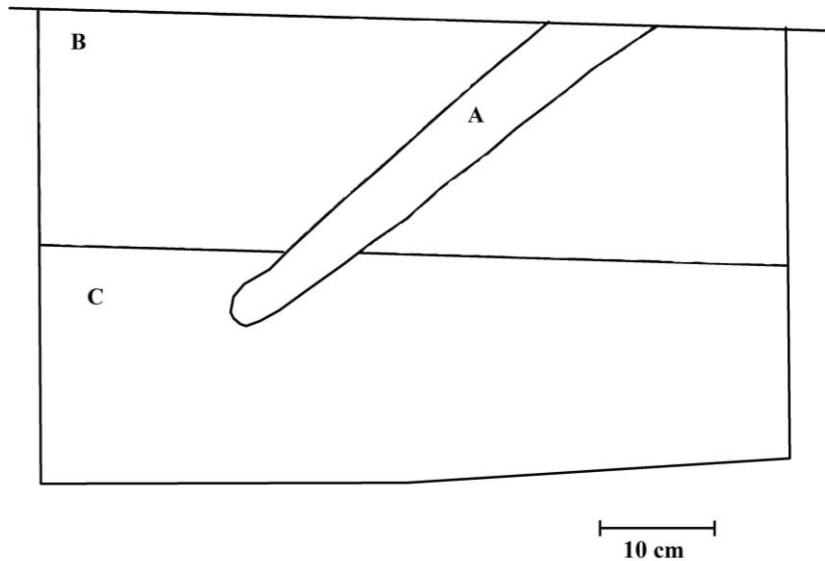
B = Subsoil (10YR 4/3 brown silty clay loam)

Seven possible posts were investigated in Units FA-FD (see Figure 3). These were bisected and most of them turned out (as usual) to be bioturbation, most likely caused by horseradish production. We will only discuss one of those possible posts, PP1, because it appears in Table 6 (it contained a chert flake and a piece of burnt clay). PP1 was circular in plan view,

approximately 10 cm in diameter; and in profile it was inslanting sharply to the west at a 45 degree angle, suggesting a post approximately 40 cm long below the plowzone (Table 5; Figures 3 and 8; Photo 6). Given the strange angle of this possible post, how clear its boundaries were, and how dark it was (it was a 10YR 3/1 very dark gray loam), we hypothesized that it must be modern in origin. Furthermore, holding a large iron rod used to stake our excavation shelters against the feature indicated a perfect fit. Thus, PP1 was a hole created by a shelter stake during excavation of Feature 212. The flake and burnt clay happened to fall into this hole sometime during the last several years as the hole filled in naturally. Note that the wooden stake with black plastic and small nail with orange plastic found approximately 2 meters southeast of PP1, as well as the backfilled south wall trench of Feature 212, are additional reminders that the north half of Units FC and FD was previously excavated.



**Photo 6.** PP1, profile facing north.



**Figure 8.** PP1, profile facing north.

- A = PP 1 fill (10YR 3/1 very dark gray loam)
- B = Subsoil (10YR 4/4 dark yellowish brown loam)
- C = Subsoil (10YR 4/3 brown loam)

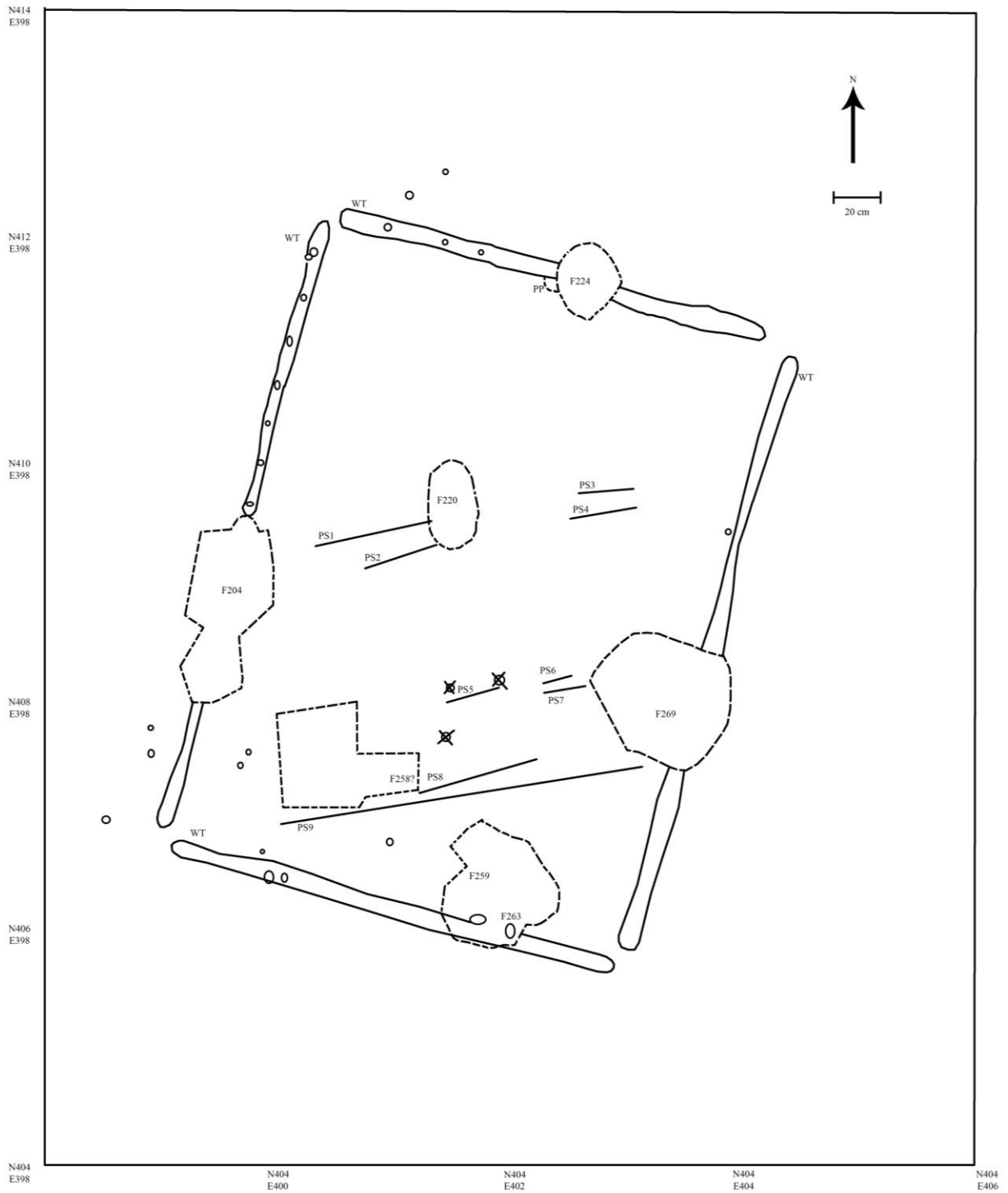
*Results, Feature 257.* Before discussing the archaeological results, we should note that the use of black plastic sheeting to cover Feature 257 before backfilling was successful in preserving the base of our 2016 excavation. However, the backfill in pit features that intersected with the wall trenches (Feature 204, 224, 259, and 269) underwent a strange transformation, turning vivid blacks and oranges, with some glaying. Presumably, the black sheeting that lined these pits and black plastic sheeting on the house floor caused the backfill in between them to hold water, which in turn caused the discoloration. This taphonomic peculiarity did not affect our investigation of Feature 257, because *in situ* sediments below the black plastic were unaffected.

The overall dimensions of Feature 257, measured from the outside of the wall trenches, was 5.86 by 4.28 m (Table 5; Figures 9-10; Photo 7). The dimensions of each wall trench are presented in Table 7. First I will describe the wall trenches, then the interior space bounded by the wall trenches. For additional photos of Feature 257 taken during the 2016 field season, please see Zimmermann (2017).

Table 7. Feature 257, wall trench data.

| Wall  | Length<br>(cm) | Width<br>(cm) | Depth<br>(cm) |
|-------|----------------|---------------|---------------|
| North | 384            | 14            | 26            |
| South | 398            | 14            | 22            |
| East  | 534            | 14            | 35            |
| West  | 544            | 12            | 29            |

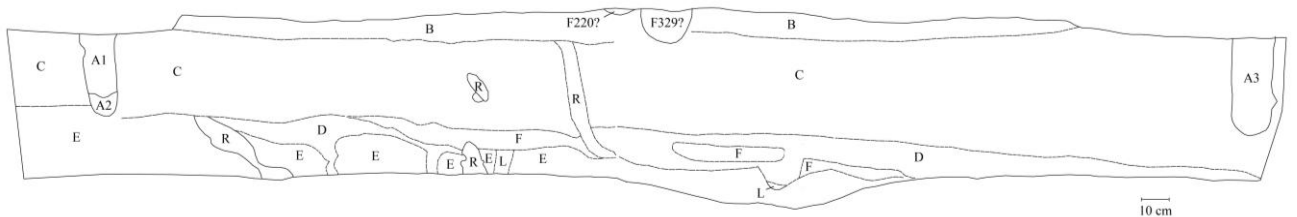




**Figure 9.** Feature 257 and associated features, plan view.



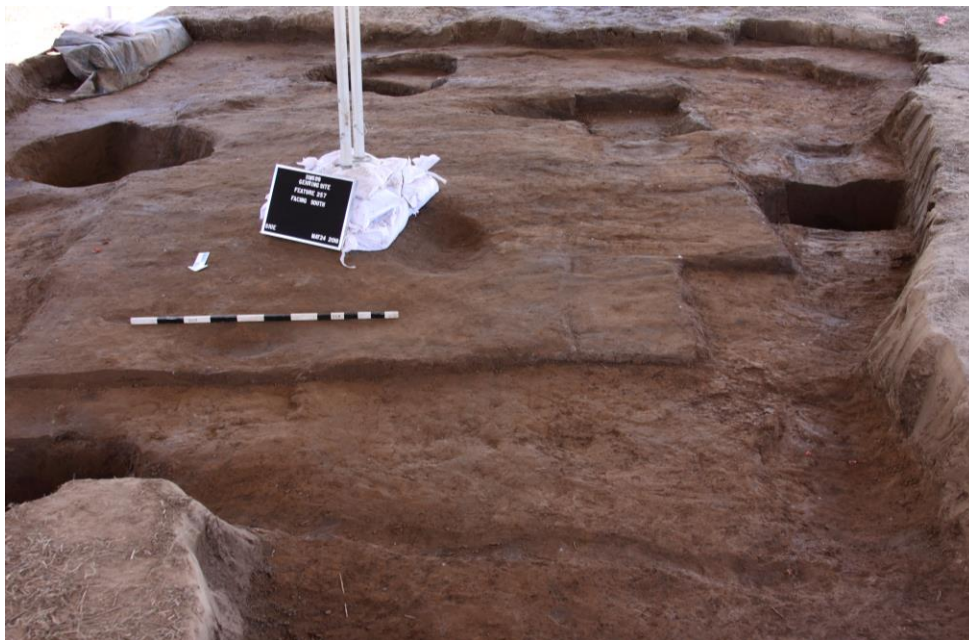
**Photo 7.** Feature 257, bisection profile facing north, east and west wall trenches visible.



**Figure 10.** Feature 257, profile facing north.

- A1 = West wall trench fill (10YR 5/6 yellowish brown mottled with 10YR 4/2 dark yellowish brown silty clay loam)
- A2 = West wall trench fill (10YR 3/2 very dark grayish brown silt loam with flecks of burnt earth and charcoal)
- A3 = East wall trench fill (10YR 3/2 very dark grayish brown silt loam mottled with 10YR 4/6 dark yellowish brown silty clay loam)
- B = Disturbed layer (10YR 4/4 dark yellowish brown silty clay loam)
- C = Subsoil (10YR 4/6 dark yellowish brown silty clay loam)
- D = Subsoil (10YR 5/4 yellowish brown silt loam)
- E = Subsoil (10YR 5/3 brown loamy sand)
- F = Subsoil (10YR 5/4 yellowish brown with 10YR 6/6 brownish yellow very clay loam)
- L = Lamellae (10YR 4/4 dark yellowish brown sandy clay loam)
- R = Roots and rodent runs (varied colors and textures)
- F220 = Probable feature fill (10YR 3/3 dark brown silt loam)
- F329 = Probable feature fill (10YR 3/3 dark brown silt loam)

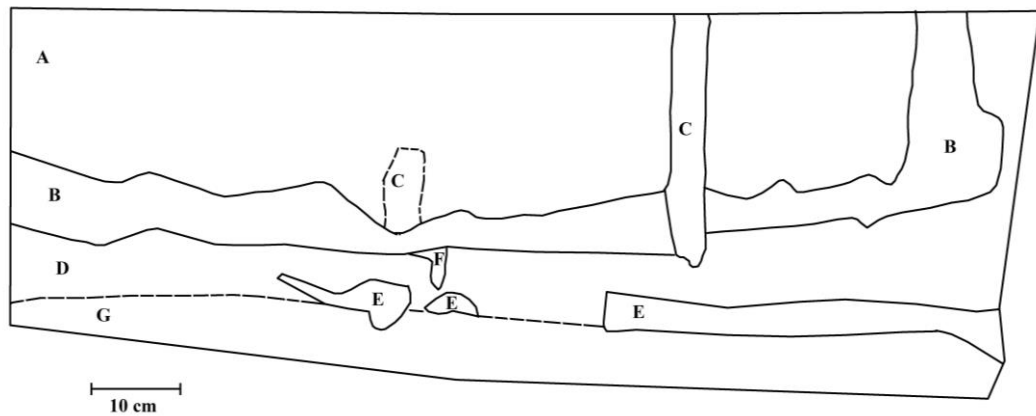
The west and north wall trenches were the most difficult to see (Photo 8). As discussed in Zimmermann (2017:31-35), we missed the central portion of the west wall trench in the 2013 excavation, or rather, we saw the west wall trench during excavation of Middle Woodland pit Feature 204, but we thought it was a post (Feature 208). South of Feature 208, another small feature (Feature 214) was thought to be bioturbation, but it was also part of the wall trench. The north end of the west wall trench was missed during the 2014 excavation because the sediment encountered at the base of the plowzone appeared to be sterile subsoil. Knowing the wall trench was present in 2016, and again this field season, we nevertheless continued to have difficulty defining the west wall trench in plan view. Examination of the east facing profile of the south end of the west wall trench (Figure 11; Photo 9) shows clearly why we had such difficulty recognizing it: the west wall trench was largely filled in with subsoil (a mix of 10YR 5/6 and 8.75YR 5/6 yellowish brown clay loam). At the bottom of the trench was a layer of a more organic sediment (a 10YR 3/1 very dark gray silt loam). This pattern of deposition –the bottom of the trench contained an organic sediment, but the trench was mostly filled with subsoil above that – is also evident in the profile made at the center of the west trench facing north (Figure 10 and Photo 10), where the organic layer was described as a 10YR 3/2 grayish brown silt loam with flecks of burnt earth and charcoal, and the layer above that was a 10YR 5/6 yellowish brown mottled with 10YR 4/2 dark yellowish brown silty clay loam. Two possible posts were evident in the profile drawn at the south of the west wall trench (Figure 11; Photo 9). The north end of the west wall trench was not profiled, but multiple posts were sketched in plan view as the north end of the trench was excavated. The posts observed in the west wall were approximately eight cm in diameter and spaced every 30 or 40 cm. The west wall trench produced very few artifacts, just one small piece of FCR from the south end and from the north half seven sherds, five flakes, two pieces of FCR, two pieces of limestone, one bone fragment, and one piece of burned clay.



**Photo 8.** Feature 257, west and north wall trenches in plan view (view facing south).



**Photo 9.** Feature 257, south end of the west wall trench, profile facing east.



**Figure 11.** Feature 257, south end of the west wall trench, profile facing east.

- A = Wall trench fill (10YR 5/6 yellowish brown mottled with 8.75 YR 5/6 strong brown silt loam)
- B = Wall trench fill (10YR 3/1 very dark gray silt loam)
- C = Probable posts (10YR 5/4 yellowish brown mottled with 10YR 4/2 dark grayish brown silt loam)
- D = Subsoil (10YR 5/4 yellowish brown sandy loam)
- E = Lamellae (7.5 YR 3/4 dark brown sandy clay loam)
- F = Bioturbation? (10YR 5/4 yellowish brown silt loam)
- G = Subsoil (10YR 7/3 very pale brown loamy sand)

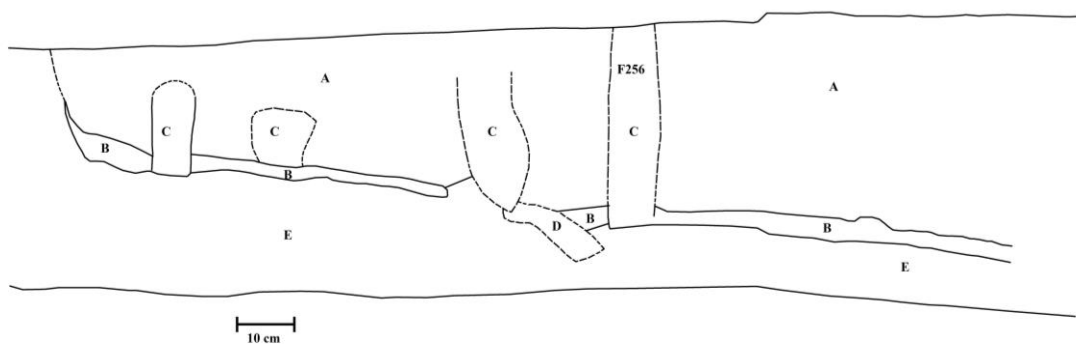


**Photo 10.** Feature 257, center of the west wall trench, profile facing north (close-up of Photo 7).

The south wall trench was profiled at its west end facing north (Photo 11 and Figure 12). The pattern of deposition was the same as described for the south end of the west wall: the trench was largely filled with subsoil (a 10YR 4/4 dark yellowish brown sandy clay loam), but at the bottom of the trench was a thin organic layer (a 10YR 3/2 very dark grayish brown sandy loam). A profile facing west drawn near the center of the south wall trench (Photo 12 and Figure 13) shows the organic layer at about the same depth and slightly darker in color (a 10YR 3/1 very dark gray silt loam). However, the upper layer here was considerably darker with less subsoil (a 10YR 3/2 very dark gray mottled with 10YR 4/3 brown silt loam). Further east, a profile facing east was drawn with the profile of adjacent Feature 263 (Photo 13 and Figure 14). Here, the lower organic layer was absent, and the trench fill again contained less subsoil (a 10YR 4/2 dark grayish brown flecked with charcoal). Note that the south wall trench here appears less deep because it was superimposed and truncated by Feature 259 (see Zimmermann 2017). Four posts were noted while profiling the west end of the south wall trench (Photo 11 and Figure 12); these range from six to ten cm in diameter (about eight cm on average), and are spaced around 20 cm to 35 cm apart. The south wall trench contained a small number of artifacts: 16 flakes, ten sherds, 16 pieces of FCR, and six pieces of burned clay.



**Photo 11.** Feature 257, west end of the south wall trench, profile facing north.

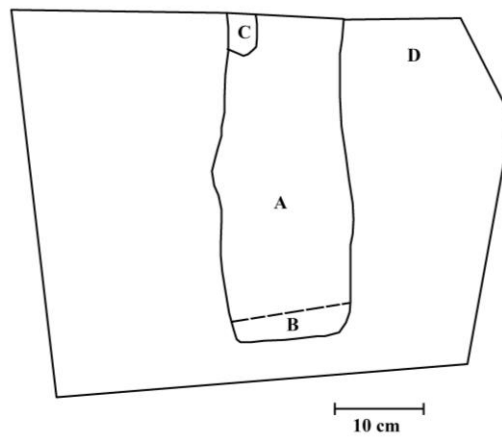


**Figure 12.** Feature 257, west end of the south wall trench, profile facing north.

- A = Wall trench fill (10YR 4/4 dark yellowish brown sandy clay loam)
- B = Wall trench fill (10YR 3/2 very dark grayish brown sandy loam)
- C = Probable posts (10YR 4/2 dark grayish brown loam)
- D = Rodent run (10YR 3/1 very dark grey loam)
- E = Subsoil (10YR 4/6 dark yellowish brown clay loam)



**Photo 12.** Feature 257, center of the south wall trench, profile facing west.

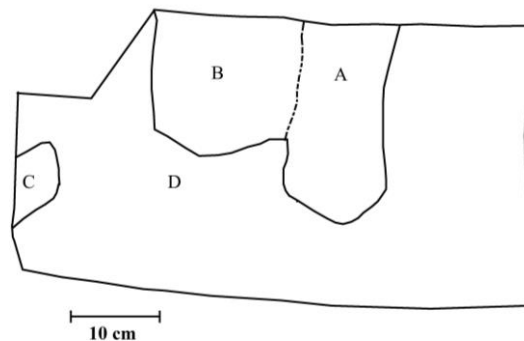


**Figure 13.** Feature 257, center of the south wall trench, profile facing west.

- A = Wall trench fill (10YR 3/2 very dark grayish brown mottled with 10YR 4/3 brown silt loam)
- B = Wall trench fill (10YR 3/1 very dark gray silt loam)
- C = Wall trench fill (10YR 4/3 brown clay loam)
- D = Subsoil (10YR 4/3 brown clay loam)



**Photo 13.** Feature 257, south wall trench, profile facing east.



**Figure 14.** Feature 257, south wall trench, profile facing east.

- A = Feature 257 fill (10YR 4/2 dark grayish brown silt loam mottled with subsoil and charcoal)
- B = Feature 263 fill (10YR 4/2 dark grayish brown silt loam flecked with charcoal)
- C = Feature 327 fill (10YR 3/2 very dark grayish brown mottled with 10YR 4/3 brown silt loam flecked with calcined bone, ochre/burned earth, and charcoal)
- D = Subsoil (8.75YR 4/6 strong brown-dark yellowish brown clay loam)



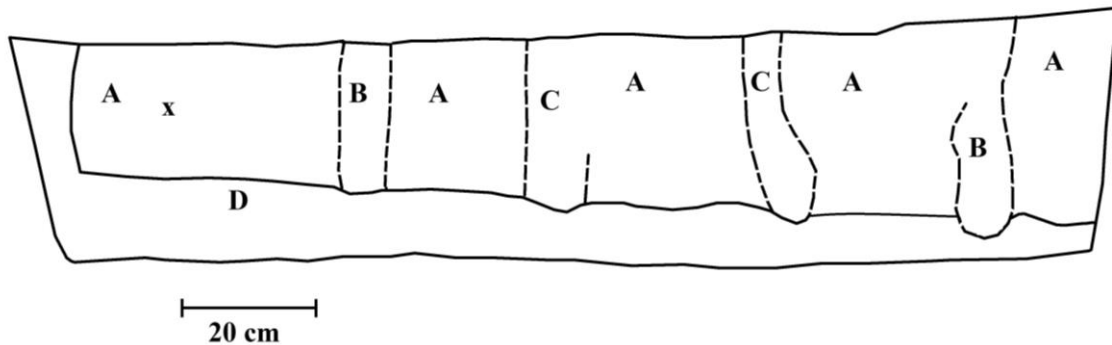
In contrast to the west and south walls, the fill in the east wall trench was darker, more homogenous, and contained more artifacts (Photo 14). A profile drawn at the south end of the east wall trench facing west (Photo 15 and Figure 15) and a profile drawn at the center of the east wall trench facing north (Photo 16 and Figure 10) show that the trench fill was a 10YR 3/2 very dark grayish brown silt loam with light mottling of 10YR 4/6 dark yellow brown silty clay loam. The profile drawn at the south end of the east wall trench facing west (Photo 15 and Figure 15) also shows four posts, each six cm to nine cm in diameter, or about eight cm in diameter on average, and spaced 30 cm apart. Posts were not noticed in plan view while excavating the north half of the east wall trench, probably because the trench fill was so dark. The north half of the east wall trench contained a greater quantity of artifacts: 55 sherds, 13 flakes, 25 pieces of FCR, 14 pieces of burned clay, 13 bone fragments, one ochre fragment, and one piece of limestone. The south half of the east wall trench contained 19 sherds, 14 flakes, ten pieces of burned clay, seven bone fragments, and five pieces of FCR.



**Photo 14.** Feature 257, south and east wall trenches in plan view (view facing northeast).



**Photo 15.** Feature 257, south end of the east wall trench, profile facing west.



**Figure 15.** Feature 257, south end of the east wall trench, profile facing west.

- A = Wall trench fill (10YR 3/2 very dark grayish brown silt loam mottled lightly with 10YR 4/6 dark yellowish brown silty clay loam)
- B = Probable posts (10YR 3/2 very dark grayish brown silt loam mottled lightly with 10YR 4/6 dark yellowish brown silty clay loam; flecked with charcoal)
- C = Probable posts (10YR 3/2 very dark grayish brown silt loam very lightly mottled with 10YR 4/6 dark yellowish brown silty clay loam)
- D = Subsoil (10YR 4/6 dark yellowish brown silty clay loam)
- x = calcined bone



**Photo 16.** Feature 257, center of the east wall trench, profile facing north (close-up of Photo 7).

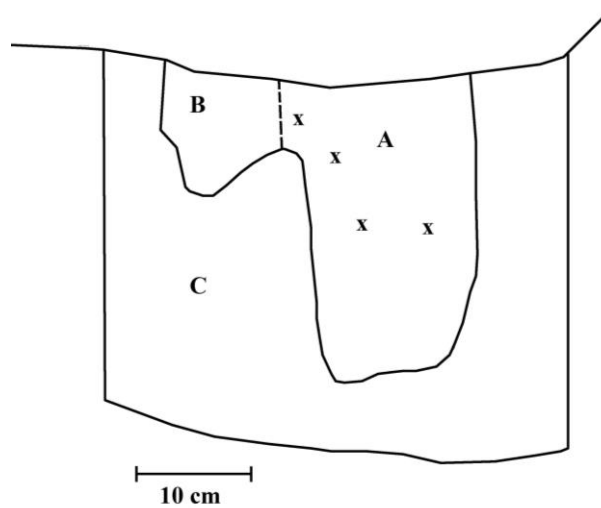
The north wall trench of Feature 257 was also missed during the 2014 excavation – it too appeared to be buried beneath a layer of subsoil (Photo 17). It was discovered during the 2016 field season underneath what appeared to be subsoil underneath Feature 232 (Zimmermann 2017:31-35). That is, Feature 232 superimposed Feature 257, but there was a layer of sediment between them that looked like subsoil. A profile drawn at the center of the north wall facing west (just west of previously excavated Feature 224) indicates the trench here was filled with a 10YR 4/3 brown sandy clay loam, flecked with charcoal (Figure 16 and Photo 18). Several posts were noted in plan view as the north wall trench was excavated, all in the west half of the trench (Figure 9 and Photo 19). These appear to be about six cm in diameter and are spaced 30 or 50 cm apart. The north wall trench contained a small number of artifacts: 19 sherds, 19 flakes, 17 pieces of FCR, seven bone fragments, six pieces of burned clay, and two pieces of ochre.



**Photo 17.** Feature 257, north and east wall trenches in plan view (view facing southwest).



**Photo 18.** Feature 257, center of the north wall trench, profile facing west.



**Figure 16.** Feature 257, center of the north wall trench, profile facing west.

- A = Wall trench fill (10YR 4/3 brown sandy clay loam)
- B = Probable post (10YR 4/3 brown sandy clay loam)
- C = Subsoil (10YR 4/6 dark yellowish brown clay loam)
- x = Charcoal



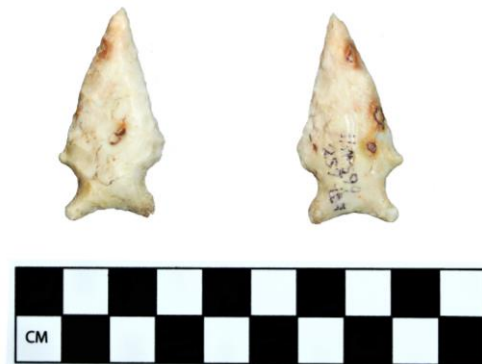
**Photo 19.** Feature 257, west end of north wall trench, posts visible in plan view.

Turning to the interior of the structure, our goal during excavation was to look for the floor of the structure, and also to look for features that might have been in the floor of the structure, thus contemporary with it, or buried below the floor of the structure, thus predating it. Ordinarily the space delineated by the wall trenches might be referred to as the basin of a house, but since we were possibly below the floor of the house, it seems more appropriate to refer to this space as the interior. John Kelly of Washington University visited the excavation and suggested that a house this large should have wall trenches approximately 50 cm deep (John Kelly, personal communication, July 18, 2018). Given that our deepest wall trench was 35 cm (Table 7), this suggests that the actual floor of the house basin was long plowed away. However, if this were true, then it seems that the wall trenches should have been immediately visible at the base of the plowzone. Instead, the north and west wall trenches appeared to be buried under a layer of sterile subsoil. This could be due to intentional filling of the abandoned house basin during the Mississippian period, or it could be that we simply missed the north and west wall trenches during the 2013/14 excavations because subsoil was the primary component of the fill in those trenches. I will describe the stratigraphy of the interior, and the features identified there, then return to the question of where the house floor was located in the Discussion section.

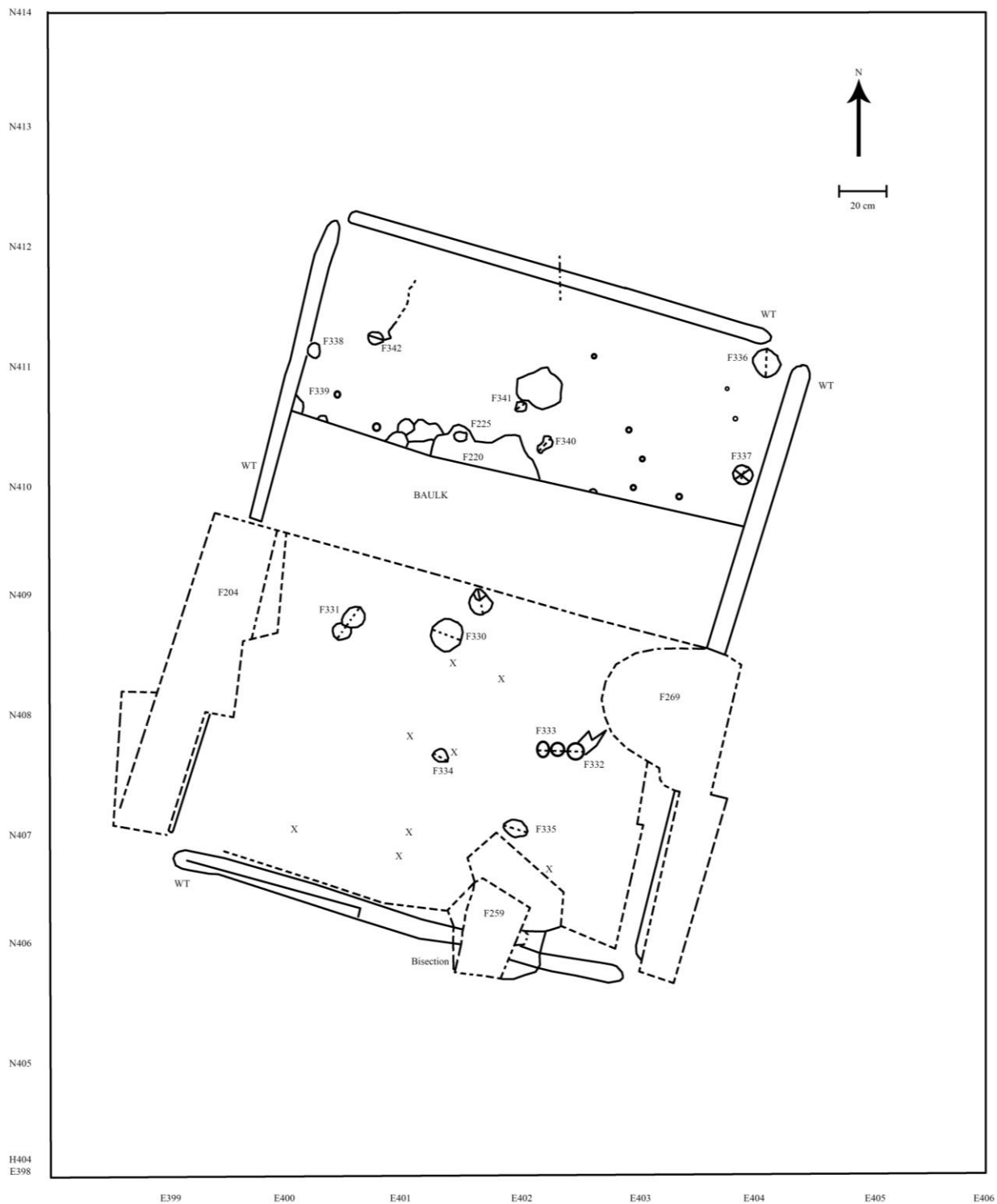
Our excavation in the interior of Feature 257 reached a maximum depth of approximately 70 cm below the base of the plowzone. We did not excavate the entire interior of the structure this deep; instead, we excavated a strip one meter wide (north to south) to expose the profile shown in Figure 10 and Photo 7. The excavation in the rest of the interior of Feature 257

concluded at approximately 50 cm below the base of the plowzone. The plowzone is not shown in Figure 10 and Photo 7, because it was removed during previous excavations, but the base of the plowzone was approximately equal to the surface of the excavation shown in the center of the profile. No obvious stratigraphic changes were observed in the interior of the structure until a loamy sand was reached nearly 60 cm below the base of the plowzone (Zone E on Figure 10). However, we did see or thought we saw a subtle change in the sediments at about the depth where the wall trenches became more readily visible. On the profile in Figure 10, this appears as the transition from Zone B to Zone C. We have described Zone B as a disturbed layer, a 10YR 4/4 dark yellowish brown silty clay loam, which extended approximately 5 to 10 cm below the base of the plowzone. That is, Zone B might be of anthropogenic origin, but the strata below that are most certainly subsoil with no convincing evidence of cultural activity. However, we want to make clear that Zone B also looked like subsoil, except for the occurrence of artifacts and features in association with it.

Artifact density was low within the interior of Feature 257 (see Table 6). Most artifacts were found in Strat A Level 1 (roughly the equivalent Zone B on Figure 10), but we should point out that deeper levels were screened at rates of 25% or 50% (because most sediments were so clayey). Again, whether artifacts in Strat A Level 1 were present as a result of anthropogenic activity or natural activity (bioturbation, gravitoturbation, etc.) is unclear. Artifacts found below Strat A Level 1 were almost certainly the result of bioturbation; these included a cigarette filter found in the south half perhaps 15 cm below the plowzone. Several root and rodent disturbances are visible in the profile in Figure 10; these and other rodent disturbances extended deeply within the interior of Feature 257. Somewhat of a mystery is a spear point found in Strat A Level 1 (again, approximately the equivalent of Zone B in Figure 10) in the north half of Feature 257. This spear point clearly pre-dates the Mississippian period. The mystery is whether it is an older point curated by the Mississippians who built Feature 257, or an older point that was buried *in situ* by the construction of Feature 257. This spear point (Photo 20) is made of heat-treated Burlington chert, but it is unidentified to type as of this writing. It is bifacial and heavily reworked, with corner-notches that border on side notches, and a concave base that borders on an expanding stem. At 4.4 cm long and 1.9 cm wide and ca. 8 mm thick, it is too small to be an Early Archaic Kirk-Stilwell point, and too large to be a Late Archaic Riverton-Trimble point. It is the right size and bears some resemblance to a Middle-Late Woodland Steuben-Lowe point, except for the concave base. Tentative identifications include Middle Archaic Jakie (Ray 2016) or Late Archaic Whale-tail (McElrath et al. 2009).



**Photo 20.** Spear point (bag 257-109) from Feature 257, Stratum B, north half.



**Figure 17.** Feature 257 and features defined at base of Strat A Level 1, plan view.



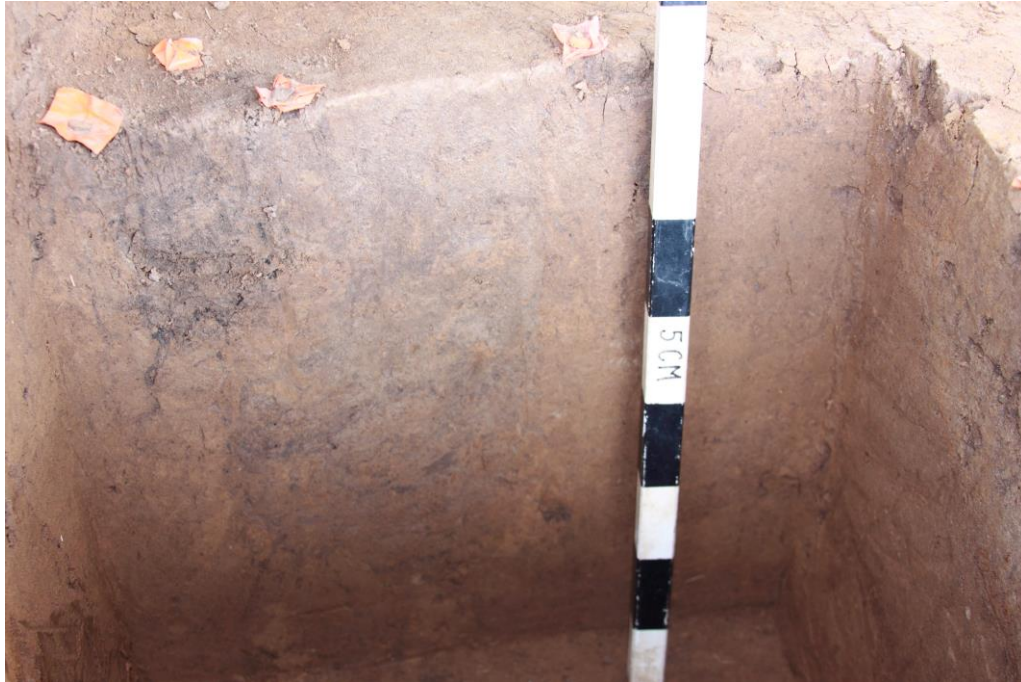
Multiple features were observed at the base of Strat A Level 1 within Feature 257 (see Figure 17). In the south half of the structure, these included Features 329-335; in the north half, these included Features 336-342. Within Zone B in Figure 10 (again, roughly the equivalent of Strat A Level 1), two features can be observed. One of these is remnant of Feature 220, which was excavated and backfilled in 2014 (see Zimmermann Holt 2015), and the other is associated with Feature 329. In the south half of Feature 257, Features 343 and 344 were observed in Strat A Level 3, and Features 345 and 346 were observed in Strat A Level 4. Newly excavated features will each be described in numerical order below. For descriptions of previously excavated features within the area demarcated by the wall trenches of Feature 257, please see Zimmermann Holt (2015) and Zimmermann (2017).

Feature 256 was named during the 2016 field school (Zimmermann 2017). It was a post in west end of the south wall trench of Feature 257. It was approximately seven cm in diameter and 32 cm deep with a vertical profile (Figure 12 and Photo 11). It was described as a 10YR 4/2 dark grayish brown loam. It contained a small number of artifacts (burnt clay, FCR, chert, and bone).

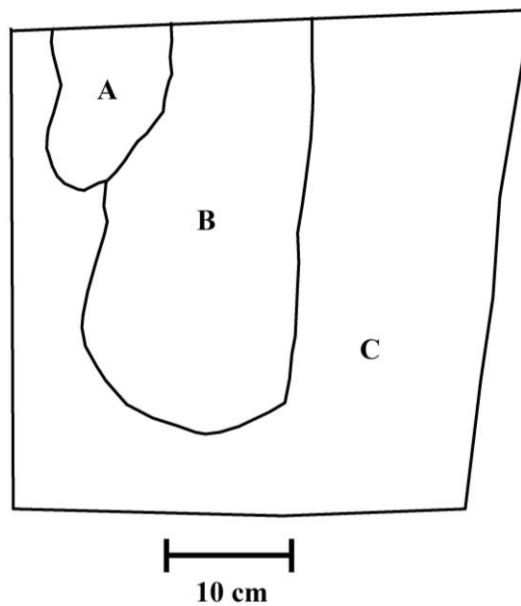
Feature 263 was also named during the 2016 field school (Zimmermann 2017), and it too was a post in association with the south wall trench of Feature 257. Feature 263 was not in the wall trench, however, but immediately north of it (Figure 9). Given its association with the south wall trench, it probably was a structural post for Feature 257. It was approximately 16 cm in diameter and 15 cm deep, with vertical walls but a basin-shaped floor (Photo 13 and Figure 14). Its fill was a 10YR 4/2 dark grayish brown silt loam with charcoal, and it contained just one chert flake.

Feature 328 was a possible post that disappeared quickly when troweled. It did not contain any cultural materials and was probably bioturbation.

Feature 329 appears to be a posthole. It was circular in plan view and approximately 20 cm in diameter (Figure 17), with a vertical profile 30 cm deep (Photo 21 and Figure 18). Examination of the profile suggests that this post was superimposed by a smaller post (or perhaps a natural disturbance), which was about 9 cm in diameter and 12 cm deep. Feature 329 was first noticed higher up within Strat A Level 1 near the east-west bisection of Feature 257, as suggested by Figure 10 (in which Zone B is the rough equivalent of Strat A Level 1). However, when first noticed Feature 329 was larger and amorphous in plan view; we were unable to define it clearly until the base of Strat A Level 1, at which depth features 330-335 were also defined. Feature 329 was a 10YR 4/3 brown silt loam mottled with 10YR 3/2 silt loam and 10YR 4/6 clay loam; the smaller post or bioturbation superimposing it was darker and looser, a 10YR 3/2 very dark grayish brown silt loam with charcoal flecks. Feature 329 did not contain any artifacts.



**Photo 21.** Feature 329, profile facing east. Feature 330 is visible to southwest.

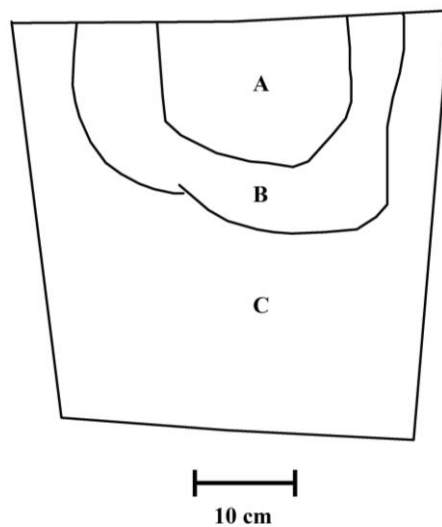


**Figure 18.** Feature 329, profile facing east.

- A = Feature 329 disturbance? (10YR 3/2 very dark grayish brown silt loam with charcoal flecks)
- B = Feature 329 fill (10YR 4/3 brown silt loam mottled with 10YR 3/2 very dark grayish brown silt loam and 10YR 4/6 dark yellowish brown clay loam)
- C = Subsoil (8.75YR 4/6 strong dark yellowish brown clay loam)



**Photo 22.** Feature 330, profile facing south. Feature 229 is visible to northeast.



**Figure 19.** Feature 330, profile facing south.

- A = Feature 330 fill (1.25Y 4/4 dark yellow brown-olive brown silt loam)
- B = Feature 330 fill or leached subsoil (2.5Y 4/3 brown clay loam with flecks of 7.5YR 7/8 strong brown clay)
- C = Subsoil (8.75YR 4/6 strong brown-dark yellowish brown clay loam)

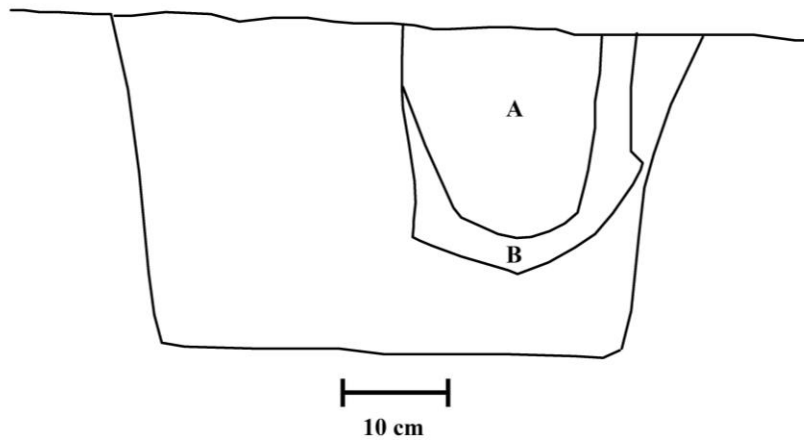
Feature 330 was encountered at the base of Strat A Level 1 of Feature 257, about 20 cm southwest of Feature 229. It was approximately 30 cm in diameter and circular in plan view (Figure 17); it was approximately 20 cm deep and vertical to inslanting in profile (Figure 19 and Photo 22). In profile, two zones were suggested: an inner zone that was 1.25Y 4/4 dark yellow brown to olive brown silt loam, and an outer zone of 2.5Y 4/3 brown clay loam with flecks of 7.5YR 7/8 strong brown clay. It is not sketched in the profile, but the photo suggests an accumulation of the 7.5YR 7/8 clay below the base of the inner zone (Figure 19; Photo 22). The flecks and concentration of 7.5YR 7/8 suggest iron accumulation within the leached zone. It was not clear if the outer zone were actually part of the feature, or if the outer zone were instead surrounding matrix (non-feature sediment) that was developing (leaching) in reaction with the feature. The fill in Feature 330 is very different from the fill in Feature 229, but the fill in Feature 330 is similar to the fill observed in Feature 225 (see Zimmermann Holt 2015). Similar “leached” sediment was found below one posthole in the east wall trench of Feature 257 (see Photo 15), but there were patches of similar sediment in the north half of Feature 257’s interior (e.g., Feature 342) which were clearly bioturbation. Thus, sediments of this type are seen in both bioturbation and cultural features within Feature 257. We believe Features 225 and 330 are postholes, but what has caused their fill to develop in this way is unclear. No artifacts were recovered from Feature 330.

Feature 331 was identified at the base of Strat A Level 1 of Feature 257, approximately 55 cm west of Feature 330. The plan view suggests two circular features overlapping one another, approximately 14 and 20 cm in diameter (Figure 17). In the profile that was drawn (Figure 20), the smaller circle to the southwest is not shown, and there is no mention of it in the excavators’ notes. However, it is visible to the left in Photo 23; examining the photo, the smaller of the two circles appears to have been about 5 cm deep. The larger circle was about 22 cm deep with a vertical to inslanting profile (Figure 20 and Photo 23). Very much like Feature 330, it appears to have two zones, of which the outer zone is leached. The inner zone of Feature 331 was described as 1.25Y 4/4 dark yellow brown to olive brown silt loam, and the outer zone was described as a 2.5Y 4/3 brown clay loam with flecks of 7.5YR 7/8 strong brown clay. The flecks of 7.5YR 7/8 (which truly looked orange) suggest iron accumulation within the leached zone. Again, it is not clear whether the outer “leached” zone is really part of the feature, or if it is non-feature matrix developing in reaction to the feature. The shallower feature visible in the left of Photo 23 appears to have had fill similar to the inner zone of Feature 331. It is not clear if these are two separate features, or one feature. Feature 331 as profiled (Figure 20) suggests a posthole, so perhaps the shallower circle was a shallower post. One chert flake was recovered from Feature 331.

Feature 332 was identified at the base of Strat A, Level 1 in the south half of Feature 257. Although at surface it was identified as a possible posthole (Photo 24 and Figure 21), upon excavation it was determined to be a rodent run, or perhaps a posthole heavily disturbed by a rodent, especially in the north half of the feature. The northwest side was clearly attached to a rodent run which is just visible in the upper right hand corner of Photo 24. No cultural material was recovered.



**Photo 23.** Feature 331, profile facing northwest.



**Figure 20.** Feature 331, profile facing northwest.

- A = Feature 331 fill (1.25Y 4/4 dark yellow brown-olive brown silt loam)
- B = Feature 331 fill or leached subsoil  
(2.5Y 4/3 brown clay loam with flecks of 7.5YR 7/8 strong brown clay)
- C = Subsoil (10YR 3/4 dark yellowish brown clay loam)

Feature 333 was identified at the base of Strat A, Level 1 just west of Feature 332, and approximately one meter west of Feature 257's east wall trench. It should be noted that the base of Strat A, Level 1 in this part of Feature 257 was about 15 cm higher in elevation than the area where Features 329-331 were identified. There is some discrepancy between the plan view and profile drawn for Feature 333. The plan view (Figure 17) suggests three small circular features in a row, but only two were named on the plan view (Features 332 and 333) and only two are shown in profile (Photo 24 and Figure 21). In profile, Feature 333 appears to be approximately 22 cm in diameter, with an inslanting profile approximately 18 cm deep. Unfortunately, when Feature 333 was redefined during excavation, the map was not corrected to show one oval feature approximately 22 cm long by 11 cm wide rather than two smaller circular features, each 11 cm in diameter. The profile suggests two zones for Feature 333: an upper zone consisting of 10YR 3/3 dark brown silty clay loam with a lens of 1.25Y 4/4 olive brown silty clay loam; and a lower zone of 7.5YR 4/3 dark reddish brown silty clay loam. Although this profile might suggest rodent disturbance, the rodent disturbance noted during excavation of Feature 332 did not seem to extend to Feature 333. No artifacts were recovered from Feature 333, which appears to have been a posthole.

Feature 334 was identified at the base of Strat A Level 1 near the center of the south half of Feature 257. It was circular in plan view, approximately 13 cm in diameter (Figure 17); and it was vertical or slightly inslanting in profile, approximately 20 cm deep (Figure 22 and Photo 25). Two zones were described in its fill (Figure 22): the upper zone was a 10YR 4/3 brown silty clay mottled with 10YR 3/2 very dark grayish brown; and the lower zone was more difficult to define, a 10YR 4/3 brown silty clay. Feature 334 was a possible posthole, containing one chert flake and one sherd. Its placement could suggest it was a structural post for Feature 257. Although it wasn't a very large post, it was slightly bigger in diameter than posts identified in the wall trenches of Feature 257.

Feature 335 was identified at the base of Strat A Level 1 in the south half of Feature 257, approximately 1.1 m west of the east wall trench and 90 cm north of the south wall trench. In plan view, Feature 335 looked like a single feature that was oval in shape, approximately 22 by 15 cm (Figure 17). In profile, however, two inslanting features were suggested, each 10-11 cm wide and 10-11 cm deep (Photo 26 and Figure 23). The fill in each was the same, a 10YR 4/1 dark gray loamy sand mottled with subsoil, a 10YR 4/4 dark yellowish brown silty clay. Thus, Feature 335 could be remnant of one or two postholes. It contained no artifacts.

Moving to the north half of Feature 257, Feature 336 was identified at the base of Strat A Level 1 in the northeast corner of the structure, several centimeters from the east end of the north wall trench. Feature 336 was circular in plan view – according to the plan view drawn (Figure 17), it appears to be 24 cm in diameter, but according to the profile, it was 18 cm in diameter (Figure 24 and Photo 27). The profile is probably the more accurate of the two. The profile also indicates that the feature was 10 cm deep with vertical sides, and with one zone present, a 10YR 3/3 dark brown sandy loam. Feature 336 contained one sherd and one bone fragment. It was most likely a posthole.

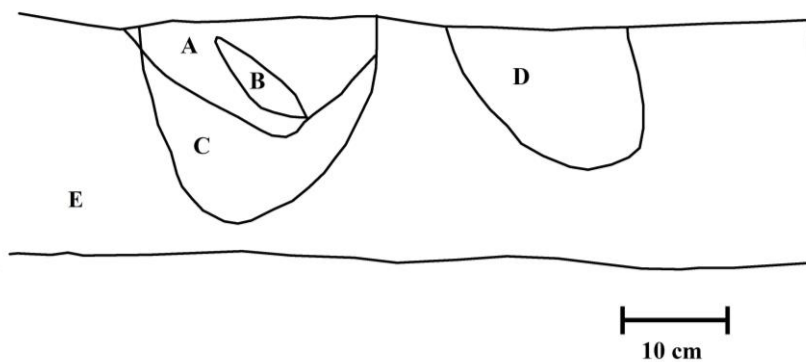
Feature 337 was identified at the base of Strat A Level 1 in the north half of Feature 257 along the east wall (Figure 17). It was investigated and found to be bioturbation, diving in a manner suggestive of a rodent burrow.

Feature 338 was identified at the base of Strat A Level 1 in the north half of Feature 257 next to the western wall trench. It was circular in plan view, and approximately 16 cm in diameter (Figure 17). It was inslanting in profile, and approximately 9 cm deep (Figure 25 and

Photo 28). Its fill was described as a 10YR 3/3 dark brown loam. It didn't contain any cultural materials, and it was thought to be a posthole.



**Photo 24.** Features 332 and 333, profile facing north.

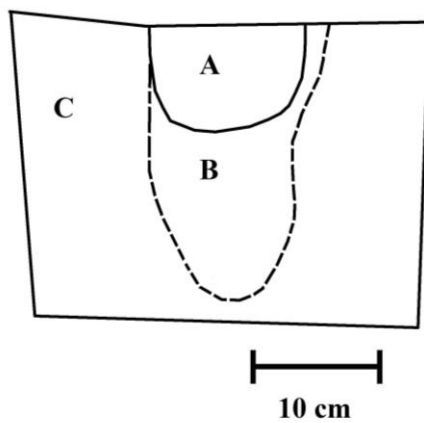


**Figure 21.** Features 332 and 333, profile facing north.

- A = Feature 333 fill (10YR 3/3 dark brown silty clay loam)
- B = Feature 333 disturbance? (1.25Y 4/4 olive brown silty clay loam)
- C = Feature 333 (7.5YR 4/3 dark reddish brown silty clay loam)
- D = Feature 332 (10YR 3/3 dark brown silty clay loam)
- E = Subsoil (8.75 YR 4/6 strong brown clay loam)



**Photo 25.** Feature 334, profile facing north.



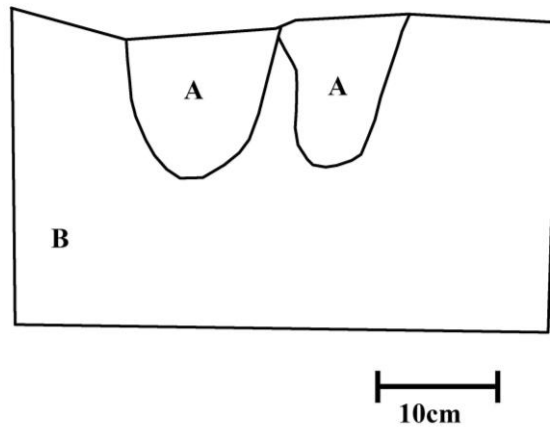
**Figure 22.** Feature 334, profile facing north.

- A = Feature 334 fill (10YR 4/3 brown silty clay mottled with 10YR 3/2 brown silty clay)
- B = Feature 334 fill (10YR 4/3 brown silty clay)
- C = Subsoil (10YR 4/4 dark yellowish brown sandy clay loam)





**Photo 26.** Feature 335, profile facing north.

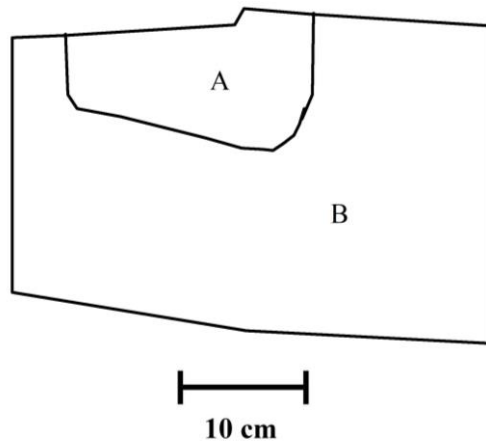


**Figure 23.** Feature 335, profile facing north.

A = Feature 335 fill (10YR 4/1 dark gray loamy sand mottled with subsoil)  
B = subsoil (10YR 4/4 dark yellowish brown silty clay)



**Photo 27.** Feature 336, profile facing northeast.

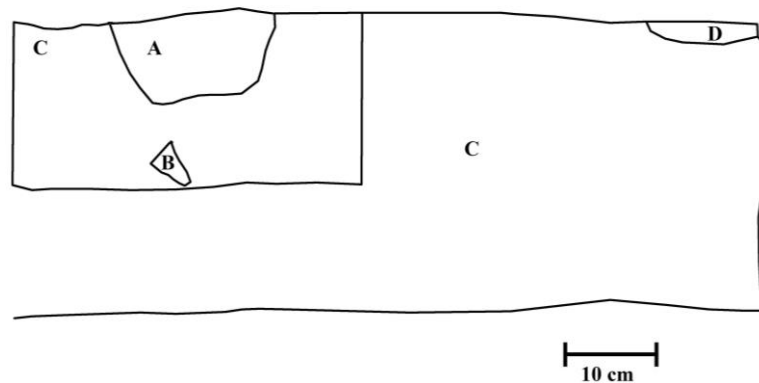


**Figure 24.** Feature 336, profile facing northeast.

- A = Feature 336 fill (10YR 3/3 dark brown sandy loam)
- B = Subsoil (10YR 4/4 brown clay loam)



**Photo 28.** Feature 338, profile facing east.



**Figure 25.** Features 338 and 339, profile facing east.

- A = Feature 338 fill (10YR 3/3 dark brown loam)
- B = Bioturbation (10YR 3/3 dark brown loam)
- C = Subsoil (10YR 4/3 brown clay loam)
- D = Feature 339 fill (10YR 3/3 dark brown loam)

Feature 339 was identified at the base of Strat A Level 1, approximately 35 cm south of Feature 338 and apparently intersecting with the west wall trench of Feature 257. It is unclear whether Feature 339 superimposed the wall trench, or vice versa, but Feature 339 appears to have been circular in plan view, approximately 12 cm in diameter (Figure 17). In profile it might be described as basin-shaped, but it was only about two cm deep (Figure 25 and Photo 29). It was described as a 10YR 3/3 dark brown loam. A few small flecks of charcoal were observed in it, but no artifacts were recovered. In sum, it was difficult to conclude whether Feature 339 was cultural or natural. When excavated, Feature 339 extended into the baulk for Feature 257's E-W profile, but the rest of the feature was overlooked when the baulk was finally removed.



**Photo 29.** Feature 339, profile facing east.

Features 340, 341, and 342 were all defined in the north half of Feature 257 at the base of Strat A Level 1 (see Figure 17), and all were determined upon excavation to be natural, not cultural features. All three had irregular profiles that indicated bioturbation. Feature 342 is of interest because it showed similar soil development to that seen in Features 330 and 331 in the south half of Feature 257. That is, Feature 342 consisted of a patch of 10YR 3/3 dark brown silt loam surrounded by 10YR 7/3 very pale brown (a leaching zone?) surrounded by 6.25YR 5/8 yellowish red-strong brown (indicating an accumulation of iron). However, while Features 330 and 331 appeared to be postholes, Feature 342 was clearly bioturbation based on its irregular shape.

In the south half of Feature 257, Features 343 and 344 were observed in Strat A Level 3, and Features 345 and 346 were observed in Strat A Level 4 (Figure 26). Feature 327 was initially discovered while excavating Feature 263 (Photo 13 and Figure 14), but it is also mapped in Figure 26 because the top of the feature became visible in Strat A Level 3. Although Feature 263 did contain cultural materials (a flake, bits of charcoal, burnt clay, and a small bone fragment), upon further investigation it was found to be a rodent run, irregular and diving deeply.

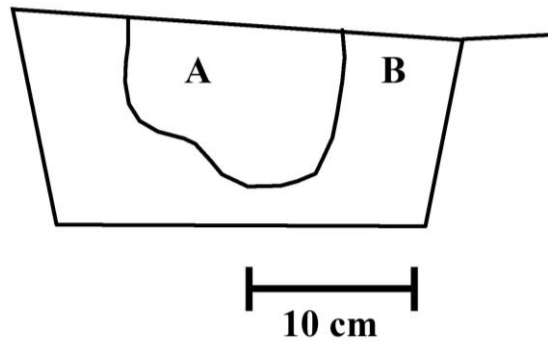


**Figure 26.** Feature 257 (south half) and features defined in Strat A Levels 3 and 4, plan view.

Feature 343 was identified in Strat A Level 3 near the center of Feature 257. It was approximately 12 cm in diameter and circular in plan view (Figure 26); in profile it had vertical sides with an irregular base and it was approximately 9 cm deep (Figure 27 and Photo 30). The fill in the feature was described as a 10YR 4/4 dark yellowish brown sandy loam. Although charcoal was observed in the feature, it contained no artifacts. Feature 343 might be have been a posthole.



**Photo 30.** Feature 343, profile facing northeast.



**Figure 27.** Feature 343, profile facing northeast.

A = Feature 343 fill (10YR 4/4 dark yellowish brown sandy loam)  
B = Subsoil (10YR 4/3 brown silty clay loam)

Feature 344 was identified within Strat A Level 3, and Features 345 and 346 were identified within Strat A Level 4. All three of these features were circular in plan view but determined to be bioturbation due to the irregularity of their profiles. Feature 345 was of note

because it contained evidence of leaching and iron accumulation (see description of Feature 342 above). Feature 346 contained similar leached sediment, and given that these features were quite close to each other (Photo 31), it wouldn't be surprising if they connected at a deeper level. (And who wouldn't want that?) Please note in Photo 31 that Feature 346 is still visible in the floor of the excavation.



**Photo 31.** Features 345 and 346, profile facing northeast.

## DISCUSSION

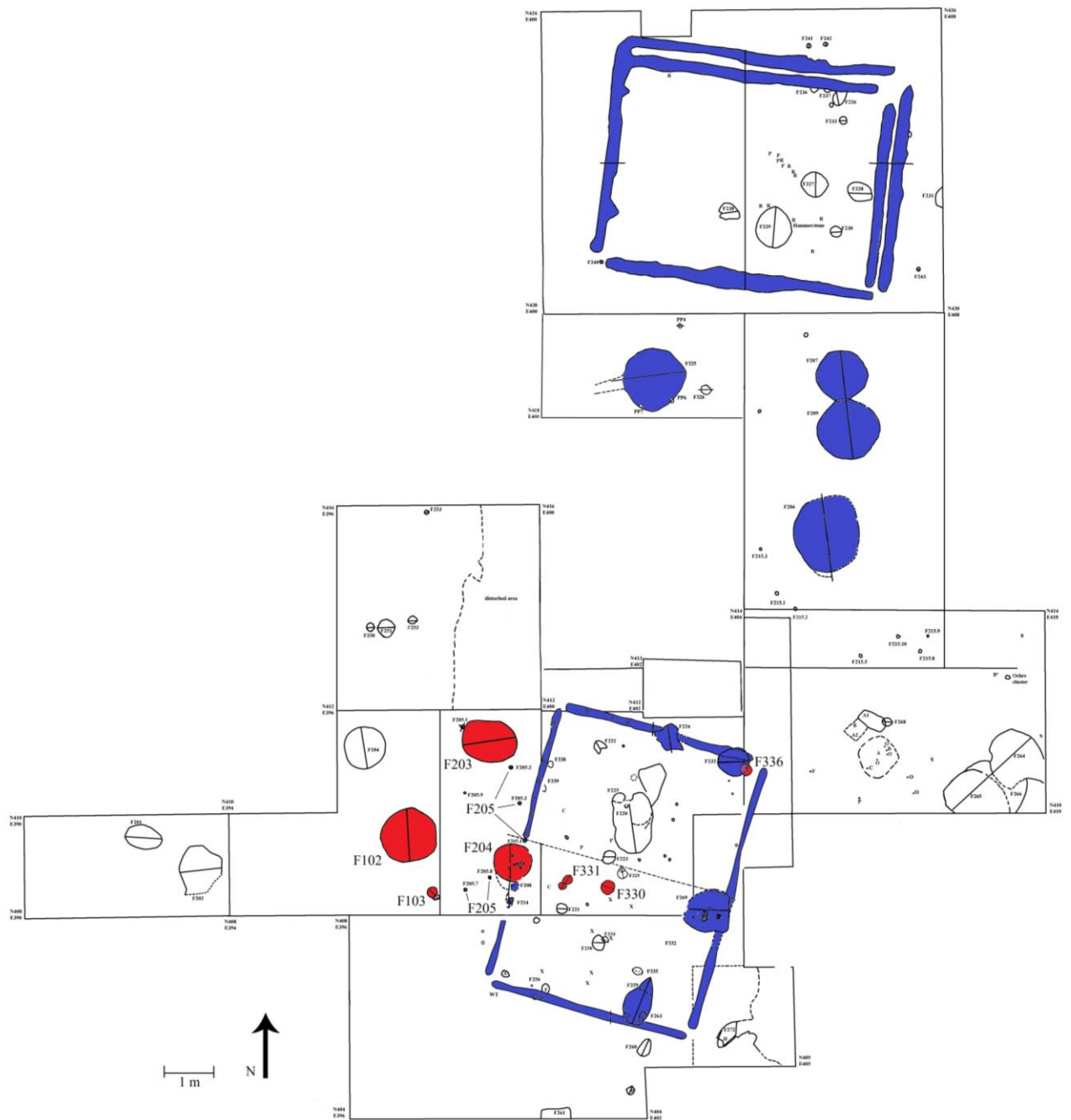
Our 2018 excavations have revealed additional information about Mississippian, Middle Woodland, and Archaic components at 11MS99 (Figure 28). We will discuss each of these components in turn. However, we should reiterate that analysis of artifacts from these features is not yet completed as of this writing, so this discussion is tentative.

Excavation of Units FA through FD revealed a Mississippian pit, Feature 325. It was located in proximity to Mississippian wall trench structure Feature 212 and Mississippian pit Features 207 and 209 (Figure 28). Feature 325 contained both Mississippian and Middle Woodland sherds. This is not surprising, given that Mississippian people dug the pit on a Middle Woodland site, and also given that Feature 325 was heavily disturbed by plowing. However, the most convincing evidence that Feature 325 is Mississippian in age is that it was severely truncated by plowing, as are other Mississippian features in this area. Although it was 1.2 m in diameter, it was barely 10 cm deep.

More importantly, excavation of Units FA through FD revealed or rather reminded us of an error made in the grid during the 2013 field season, demonstrating that Mississippian wall trench structures Features 212 and 257 were one meter closer to each other than previously thought (Zimmermann 2017): they were approximately 9 m apart (Figure 28). Given the few artifacts found in both structures, we are not sure of their relative ages, or to which phase of the Mississippian period either dates. Given that the wall trenches of Feature 257 seemed to be buried under a layer of what looked like sterile subsoil, we might hypothesize that it was older than Feature 212. Alternatively, it is also possible that Feature 257 was missed in earlier excavations not because it was buried, but because subsoil was used as fill in the wall trenches and made them difficult to see. Comparison of wall trench fill might also suggest that Feature 257 was older than Feature 212: given that the fill in the wall trenches of Feature 212 was generally darker and apparently richer in organic content, it might have been constructed later in time, after more intensive use of the site during the Mississippian period. Four pit features (Features 224, 232, 259, and 269) appear to superimpose the wall trenches of Feature 257 and thus postdate it. The superimposition of features over Feature 257's wall trenches is seen as additional evidence that it is older than Feature 212. There were no features superimposing Feature 212's wall trenches.

Like Feature 212, Feature 257 contained internal features. In the north half of Feature 257, roughly on the center line of the wall trench structure, Feature 220 appeared to be a Mississippian style post pit with insertion ramp, or possibly a deeper pit superimposing a more shallow pit (see Zimmermann Holt 2015:31-34). We think that the latter explanation is more likely. Examination of Photo 32 clearly shows the deeper pit in plan view, while the shallower pit to the south that it superimposed is not clearly visible. The deeper pit that was initially identified as Feature 220 thus appears to be a pit internal to Mississippian wall trench structure Feature 257, perhaps similar to pit Features 227 and 238 in wall trench structure Feature 212 (see Zimmermann Holt 2015). Like those pits, the deeper pit originally identified as Feature 220 contained organic fill yet few diagnostic artifacts (Photo 33). The shallower feature subsequently identified south of the deeper pit in Feature 220 contained few if any artifacts other than a sizeable deposit (379 g) of ochre at its base.





**Figure 28.** Gehring site map with Middle Woodland features in red and Mississippian in blue.



**Photo 32.** Feature 220, plan view facing south (2014 excavation).



**Photo 33.** Feature 220, profile facing east (2014 excavation).

Southwest of Feature 220, Feature 223 is also apparent in Photo 32 (and see Figure 28). Just southeast of Feature 223, Feature 329 may also be visible in Photo 32, although we did not identify it during the 2014 excavation. Our excavation in the 2018 season demonstrated that Feature 329 was a deep post; it appears to be the center post of the wall trench structure. Feature 223, in contrast, disappeared almost immediately upon excavation, as did Feature 222 in the northwest quarter of Feature 257 (see Zimmermann Holt 2015). Other posts identified at the base of the plowzone within the probable floor of Feature 257 were Features 221 and 225. These were initially thought to be Middle Woodland, but our 2018 excavations have demonstrated that this is unlikely since they were identified at a slightly higher elevation than Feature 257's wall trenches were.

This raises the question of where the floor of wall trench structure Feature 257 was located. John Kelly (personal communication 2018) visited the excavation and suggested that the floor of Feature 257 was already plowed away, because a Mississippian house of this size should have deeper wall trenches (50 cm rather than the 35 cm observed). We believe he is probably correct. We were unable to see clear evidence of any remaining house basin in our bisection of Feature 257's interior, although it did seem like the sediment encountered at the base of the plowzone was lightly disturbed. At the base of this disturbed layer, the wall trenches became more clearly visible.

Several possible posts, Features 330, 331, and 336, were encountered stratigraphically below this disturbed layer and below the floor of wall trench structure Feature 257. Thus, they probably predate the Mississippian period. Given that the site has long been known as a Havana village because of the intensity of its Middle Woodland occupation (Munson and Harn 1971), we might hypothesize that these posts are Middle Woodland in age (hence, they are shaded red in Figure 28). We would argue further they are most likely Middle Woodland in age given their proximity to Middle Woodland pit Features 102, 203, and 204 (Figure 28). The diameters of Features 330, 331, and 336 (20-30 cm) are consistent with the size of posts identified in circular post structures identified at other Middle Woodland sites (see Fortier 1993). Features 330 and 331 appear to form an arc with Feature 103, previously identified as a probable Middle Woodland post (Zimmermann Holt and Belknap 2010). Together, they could form the northern wall of a circular post structure that would have been located south of pit Features 102, 203, and 204. We would note, however, that while those pits all date to the Middle Woodland period, they do not appear to have been contemporaneous based upon differences in their ceramic contents (Zimmermann et al. 2018). Namely, Feature 102 appears to be the oldest of the three pits, dating to either the Cement Hollow or Holding phase, while Feature 203 appears to date more securely to the Holding phase. Both of those pits contained strong evidence of participation in the Hopewell Interaction Sphere. Feature 204 appears to be the latest of the three pits, with little evidence of Hopewellian materials in it, and probably dates to the Hill Lake phase.

Finally, our 2018 excavation demonstrated that two possible pit features excavated in 2013, Features 210 and 211, were likely not cultural features. Previously, we had speculated that these might have dated to the Late Archaic period based on their depth and paucity of artifacts (Zimmermann Holt 2013:40-44). However, our 2018 excavations in Units FA through FD, immediately west of Features 210 and 211, encountered sandy deposits that suggest that Features 210 and 211 were also natural sandy deposits. Thus, although we have encountered Archaic period artifacts in our investigations at the Gehring site, we have not excavated any features

dating to the Archaic period. Comparison of Figures 5 and 28 shows that Features 210 and 211 and the sand deposit mapped west of them have been removed from the latter site plan.

## CONCLUSION

In 2018 we re-mapped and then excavated the wall trenches of Mississippian wall trench structure Feature 257. Feature 329 most likely functioned as a center post for Feature 257, and Features 221 and 225 were posts that might have also functioned within Feature 257. Feature 220 appears to have been a pit that might also have served a function within Feature 257; it superimposed a shallower pit, the age of which is unknown.

We also excavated pit Feature 325 which appears to date to the Mississippian period. It was located in proximity to Mississippian wall trench structure Feature 212 and Mississippian pit Features 207 and 209. Perhaps it was used in association with those features. Feature 212 lies approximately 9 m north of Feature 257, and it is believed that Feature 257 is the earlier of the two structures.

Below the floor of Feature 257, we encountered three posts, Features 330, 331, and 336. Stratigraphy suggests that they predate the Mississippian period; parsimony suggests that they are Middle Woodland in age. Thus, while we did not encounter significant evidence of Hopewellian activities in our 2018 excavation, we did uncover likely evidence of Middle Woodland lifeways. Given the rarity of Middle Woodland structures (see Fortier 1993), the discovery of probable Middle Woodland posts is significant. We hope in future to find more such posts that will more clearly provide evidence of a Middle Woodland structure or structures at Gehring.

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