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TITOLO TESI

The Archaeology of Cahokia's West Plaza. Excavations in the Merrell Tract.

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Abstract

With more than 100 earthen pyramids, Cahokia was the largest polity of pre-Columbian North America. Located a few kilometres from present day St. Louis (MO), it rose to be the greatest Mississippian settlement by the middle of the 11th century; until its abandonment at the end of the 14th century. Even though Cahokia is the largest Mississippian settlement, the archaeological investigations led at the site have interested only a small part of its extension. This dissertation focuses on the extensive excavations led in the Merrell Tract by the University of Bologna from 2011 to 2016. The investigations were carried out in one of the main public areas of the site, the West Plaza, and involved, for the first time at Cahokia, the employment of photogrammetry and GIS as methods of data management, recording and post processing. Along with the description of the results obtained during the University of Bologna's excavations, the author dedicated part of the work to the collection of data from previous excavations led in the area since 1920s. Through the comparative analysis of the data recovered, the author intends to propose new hypothesis concerning the settlement dynamics and use of space of the area and its contextualization in the wider picture of the history of this Mississippian centre.

Acknowledgments

These last three years have been far from the easiest of my life. Writing this dissertation has been really challenging as I tried to conciliate research, work and personal issues. Luckily, I had so many people whose support and help was essential to succeed.

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Once I began writing this dissertation, several moments of despair followed the hours passed staring empty pages. I survived all that thanks to the constant presence of Alessandra and Giulia. I am really thankful for the litres of good wine, the last-minute “support” dinners and for your friendship.

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Table of Contents

List of figures

List of tables

Introduction

Located in southern Illinois, a few kilometres from present day St. Louis (MO), Cahokia was the largest polity of pre-Columbian North America. It became the most prosperous Mississippian settlement by the middle of the 11th century reaching the acme of its greatness throughout the 12th century, to be then slowly depopulated by the end of the 14th. With its 120 earthen pyramids arranged in clusters around plazas, it reached an estimated population ranging from 10,000 to 15,000 individuals (Milner 2006; Pauketat and Lopinot 1997) spread on 16 km^2, growing to a size comparable to the 11th century city of London (Fowler 1997; Kelly 2000; Chappell 2002; Dalan et al. 2003; Iseminger 2010; Pauketat and Alt 2015). The size and monumentality of the settlement made this site an exemplary case in North America; multiple hints suggest that at Cahokia the egalitarian societies that had prospered for millennia in the Eastern Woodlands developed in the first ranked political system (Mehrer 1995; Roger and Smith 1995; Brown and Kelly 2015). Because of its complexity, Cahokia has been at the centre of a longstanding debate concerning the degree of its economic and political system and about its relationship with its hinterland (e.g. Blitz 1999; Cobb 1993; Rogers and Smith 1995; Emerson 1997; Welch 2006; Brown and Kelly 2015). At first, it was categorized as a chiefdom (Milner 2006) or a "Complex Chiefdom" (Pauketat and Emerson 1997: 3) a definition that implied the recognition of its complexity but still including it in a chiefdom rank due to the "lack of formal bureaucrats" (Pauketat and Emerson 1997). Other scholars attributed to Cahokia the role of capital of a state the extension of which would have encompassed the American Bottom region as a whole (O'Brien 1989; Zimmermann Holt 2009). Today, even though the attribution of neo-evolutionary labels is considered less relevant in the theoretical debate (Pauketat 2007), the common opinion is that Cahokia was a city that flourished detached from the state-making process. This interpretation is based on four main archaeological indicators: scale, site plan, monumentality, and socially differentiated hinterland (Kelly and Brown 2014; Brown and Kelly 2015; Pauketat, Alt and Kruchten 2015). Nonetheless, whatever Cahokia should be labelled, the focus is on the understanding of its complexities and the characteristics that made Cahokia an example of urban development among the Pre-Columbian societies in North America. This dissertation follows a different approach, less focused on this debate, but rather using

raw archaeological data as a starting point in order to provide new insights on the broader issues related to the site's development. Before extensive excavations at the site, scholars considered Cahokia as a big ritual centre with no residential areas (Young and Fowler 2000); this common view changed after the 1960s extended investigations carried out in 15A and 15B Tracts (Pauketat 1998; Valese 2012; Pauketat 2013). The archaeological record, in fact, unveiled the presence of a dense and continued occupation of the site from the Emergent Mississippian phase to the Sand Prairie phase, hence before the rise and until the demise of Cahokia (Wittry and Vogel 1962; Fowler 1997). Moreover, after the implementation of a huge salvage excavation project in 1977, that encompassed the entire American Bottom area, several Mississippian settlements were brought to light revealing a more complex picture of the Mississippian world than previously thought (Young and Fowler 2000). Those fieldworks sanctioned the importance of extensive investigation and the importance to focus on realities other than mound as well. Until 1970s, in fact, the main focus of the archaeological investigation at Cahokia were the earthen pyramids (Fowler 1997; Kelly 2000), excavations from which were recovered enormous quantities of artifacts, as for the case of the Beaded Burial at Mound 72 (Fowler et al. 1999), or the location of élite mound-summit structures, as the rectangular building excavated on top of Monks Mound (Reed 2009). Areas, such as the plazas, previously considered arid of information, on the contrary, revealed themselves to be rich in data that could help comprehend Cahokia's reality. So far, it has been estimated that the excavated surface of the site is less than one percent of its total extension (Dalan et al. 2003: 48). Although, other methods of non-invasive investigations (i.e. geophysical and magnetic survey, and surface collection) have been successfully applied, targeted extensive excavations are still, according to the author, the most efficient method of data collection and interpretation. The latest archaeological investigations of this kind have been carried out from 2011 to 2016 by the University of Bologna in the Merrell Tract, located in the central core of the site approximately 300 meters west of Monks Mound, the main Cahokia's earthwork. The researches in the area aimed at clarifying the settlement dynamics and the use of space and more specifically at understanding the transition from a residential area to a large open arena with public buildings during Cahokia's apogee. The location of the excavation was chosen for the proximity to the abovementioned 15B Tract, of which it can be considered a continuation. The

archaeological explorations undertaken by the Italian team have revealed hundreds of features spanning through the entire Cahokia's chronology from the Emergent Mississippian to the Sand Prairie occupation, in line with the results of the former investigations of the area. The main focus of this dissertation is to disclose in detail the results of the University of Bologna's investigations as well as for the method employed both during the work on the field and in the post-processing of the data. The choice of specific methods has had an essential role during these three years of researches. As coordinator of the archaeological operations, the author, decided to rely on informatic methodologies to manage and interpret the archaeological record at its best. The mapping of the stratigraphy was realized by means of photogrammetry, for the first time applied at Cahokia, elaborated and vectorized in a GIS environment. A Geodatabase was realized by the author to host the data recovered from the ongoing excavations as well as the archaeological record derived from the former excavations realized in the surrounding area. Henceforth, one of the main efforts at the base of this dissertation has been the systematic collection of the information concerning all previous investigations led in the West Plaza Area since 1920s. As for West Plaza Area, the author refers to the area located West of Monks Mound and surrounded by Mound 39, 77, 40, 41, 48, 47, 73, 42 and 76. This definition will be generally used also for the periods when this area was not a public space. All the collected data have been digitized and merged into the abovementioned GIS in order to obtain a complete set of data of the investigated area. Once integrated, the data from the different excavations have been compared to one another. The interpretation of the University of Bologna's archaeological record along with the exhaustive analysis of the data from former excavations have provided the key to reinterpret and formulate new hypothesis concerning the dynamics of occupation that interested the West Plaza area and the function of the unearthed structures. A further effort has been dedicated towards the contextualization of the data recovered from the University of Bologna's excavations in the wider picture of Cahokia's history, in order to provide a more complete understanding of the settlement dynamics that interested the area and, in a broader view, their implications on Cahokia's emergence and demise. The results obtained through these three years of researches suggest, in fact, a more complex picture in which landscape modifications, possibly related to the "creation" of Cahokia as known at its acme, were taking place already by the end of the Emergent Mississippian

phase. The chronological sequence of the public buildings, which stood in the area while it functioned as a Plaza, have been proposed on the basis of new findings that led to the reinterpretation of some of the previous investigation's data. The University of Bologna's investigations, additionally, yielded an important amount of new information concerning the last occupational phases of the area supporting the hypothesis that the performance of communal and domestic ritual even after the area was not anymore a public space. The dissertation will be organized as follows: the first chapter will be dedicated to an overview about the state of art of Cahokia's investigations, with a more detailed paragraph about the other main plazas of the site. In the second chapter an accurate description of the previous investigations led in the West Plaza area will be provided, starting from Warren King Moorehead's excavations of the 1920s' to the last testing of the Southern Illinois University-Edwardsville made at the slope of mound 48 in 1995. The results of the excavations of the 1960s' 15B and the 1970s' Merrell (Beloit College) Tracts will be described thoroughly, by chronological phase, as they constitute the major source of data concerning the West Plaza a

rea occupational sequence. The third chapter will be devoted to the University of Bologna's project; a detailed description of the methodological aspect concerning field operations, topography and data management will be given. In chapters three and four, the features located during the University of Bologna's (UNIBO) excavations will be described in detail. All the features will be presented as divided by chronological phases: Emergent Mississippian, Early Mississippian, Late Mississippian, Unaffiliated and Historic. The features will be arranged, for each period, as structures, non-structures and pit features. Tables of unexcavated features and post holes will be attached at the end of chapter seven. Detailed maps, excavation photographs and metric information will be provided. A synthesis of the material assemblage recovered from the excavations will be proposed in chapter 5. Since the analysis of the ceramic and lithic materials have been carried out respectively by M. Mattioli, F. Amato and S. Armenio, it has been possible to provide here a general description of the results. The excavation reports contain more detailed information, pictures and drawing of the single items. The same approach has been adopted for the description of the faunal and botanical remains, the analyses of which have been carried out respectively by L. Kelly and K. Parker. The final chapter will be focused on the interpretation of the data presented in the previous chapters.

Chapter 1 Cahokia in a nutshell

Cahokia was the main settlement of a Mississippian polity that flourished in the so-called American Bottom, an alluvial plain formed at confluence of the Mississippi and Missouri rivers (Dalan et al. 2003; Emerson 1997; Fowler 1997; Young and Fowler 2000; Iseminger 2010; Kelly and Brown 2014; Milner 2006; Pauketat and Emerson 1997; Pauketat 2004, 2009; Pauketat and Alt 2015).

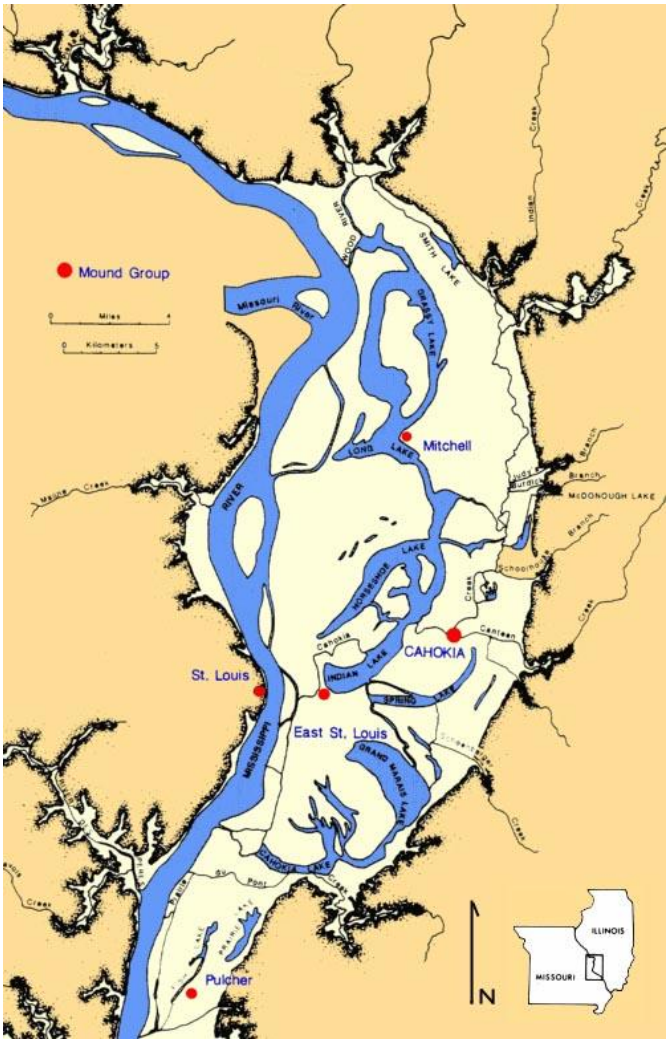


Figure 1.1 Map of the American Bottom showing rivers, lakes and streams as well as the location of Cahokia and other Mississippian towns, villages and farmsteads. Adapted from map by Mikels Skele.

The area was rich in fertile alluvial soils and wet areas hosting abundant animal and vegetal life, providing perfect conditions for human occupation that started since the tenth millennium BC with small groups of Paleoindian hunters and gatherers followed, from 8000 BC, by Archaic hunters and gatherers. The fertility of the soil allowed, from the

mid of the first millennium BC to ca. AD 800, the settlement of horticultural communities of the Woodland Tradition that based their sustenance on the Eastern Agricultural Complex (chenopod (*Chenopodium berlandieri*), maygrass (*Phalaris carolinana*), erect knotweed (*Polygonum erectum*) and little barley (*Hordeum pusillum*) combined to hunting and gathering activities (Fritz and Lopinot 2007). At the end of the ninth century, new forms of community organization and a rapid increase in sociopolitical complexity led to the growth of a series of Emergent Mississippian villages (AD 850-1050) nucleated especially on the south bank of the Cahokia Creek, on the Edelhardt meander scar known as "Helms Ridge" (Dalan et al. 2003). The rise of those villages was tied to technological innovations such as bow and arrow and the introduction of maize along with the EAC cultigens. They were composed by clusters of rectangular, single-post "pit houses" usually arranged around small *plazuelas*, whose centers were marked by central wooden posts, by groups of four pits located at the four cardinal directions and/or by large, communal single-post buildings (Kelly 1982, 1990a, 1990b).

Figure 1.2 The Emergent Mississippian Range Site (Kelly 1990 table 10.1).

Around the mid of 11th century, at the beginning of the Lohmann phase, a radical transformation of the landscape took place in a unique event labeled by Pauketat "Big Bang" (1994). The Emergent Mississippian communities were relocated in order to create a brand-new settlement, whose monumental epicenter was centered on Monks Mound, a huge earthen mound around which four plazas were placed at the cardinal direction following the Native American cosmological pattern of quadralateralism (Kelly 1996a; Kelly and Brown 2014). Along the erection of the massive Monks Mound, an earthwork

with a volume of 622,000 m^3, the construction of the southern Grand Plaza required an enormous effort to artificially level the natural landscape of ridges and swales over an area of 16 ha (Alt, Kruchten and Pauketat 2010). The monumentalization of the settlement continued through the later Stirling (AD 1100-1200), and Moorehead (AD 1200-1275) phases with the erection of more than hundred earthen mounds used as boundaries of the plazas and the settlement itself and as support for élite residences, charnel houses, mortuaries or sacred buildings. The construction of the earthen pyramids involved borrowing activities that resulted in large depressions scattered all over the site that were either filled or left as water and waterfowl reservoirs (L. Kelly 2001; Iseminger 2010). Recent researches conducted by Sarah Baires (2014) showed the presence of a long, elevated causeway that run along the N-S axis of the site connecting the Grand Plaza with Rattlesnake Mound located in the swampy area at the southern margin of the site (fig. 1.3). This causeway could have been used in funerary processions possibly as an earthen representation of the sacred Path of Souls (Lankford, Reilly and Garber 2011; Baires 2014). During the Lohmann phase, the residential areas were moved outside the central precinct and the dwellings, along with the mounds and the abovementioned causeway, were oriented following a preconceived plan, the so-called “Cahokia grid” (Fowler 1997).

Figure 1.3 LiDAR image of the Rattlesnake causeway (Baires 2014 fig. 2.5).

Furthermore, Melvin J. Fowler (1989: 198) suggested the existence of 11 mound clusters as separate "suburbs or subcommunities" which had their own occupational history; each related to a mound cluster and possibly gravitating around small open areas (Fowler 1997: 196-200).

At the acme of its life, Cahokia reached an area of approximately 13 km^2, with an estimates population ranging from 10,000 to 15,000 individuals (Milner 2006; Pauketat and Lopinot 1997), as proposed by Pauketat (2003) and Alt (2006a, 2006b, 2008) it was probably multiethnic due to migrations and population resettlements (Slater et al. 2014). It is possible to speak of a Greater Cahokia (fig. 1. 4) with a population probably surpassing the 30,000 individuals, since there were no boundaries between Cahokia and the two other large Mississippian towns, East Saint Louis (IL) and Saint Louis (MO) located to the West (Kelly 1994, 1996, 1997). Moreover, the whole American Bottom, studded with farmsteads and small villages defined by Emerson (1997a, 1997b) civic/ceremonial nodes, which, together with the upland villages of the "Richland Complex" (Pauketat 2003), formed an integrated region economically and politically gravitating around Cahokia (Pauketat 2008).

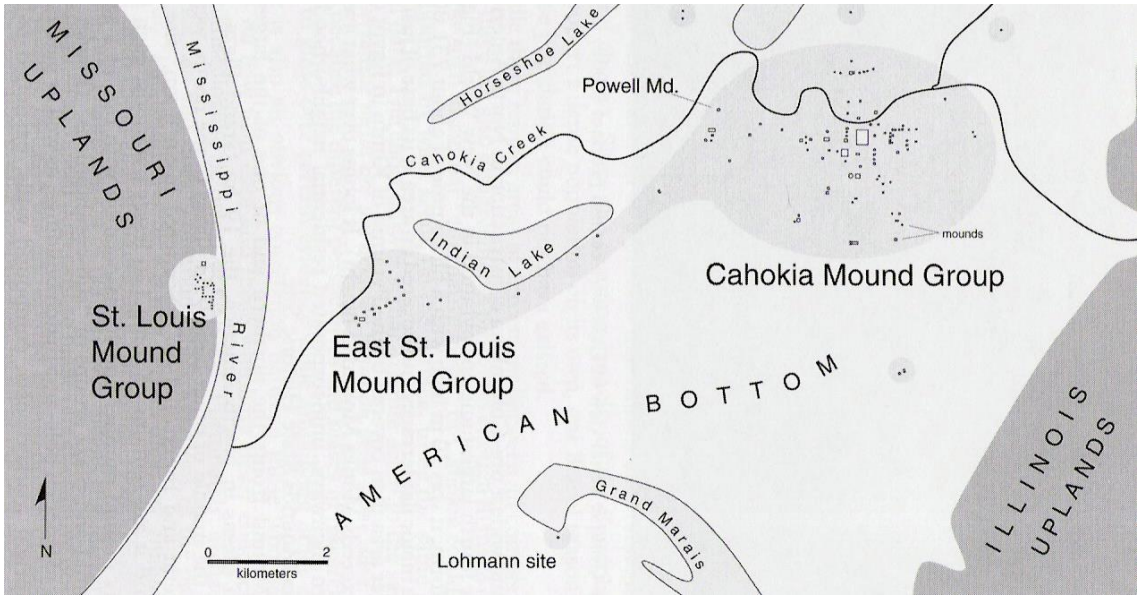


Figure 1.4 Map of the Greater Cahokia (Pauketat 2004 fig.4.1).

Another major change in the history of the settlement was marked by the construction, during the Late Stirling phase, of a 3 km bastioned stockade encircling Monks Mound, the Grand Plaza and adjacent mounds (Dalan 1989; Iseminger et al. 1990; Trubitt 2003). The stockade, which cut through the East Plaza leaving outside the North Plaza, broke the old

quadripartite arrangement of the site, isolating the central area of the settlement also known as “central precinct”. This reorganization of the public space probably reflected increasing internal factional competition that, finally, could have led to Cahokia's decline and to its abandonment at the end of 14th century (Kelly 2009). According to this new settlement’s arrangement during the Late Stirling phase, although the location of the residential areas did not change, the buildings showed to be no more oriented to the main grid addressing to local smaller mound or plazuelas as for the case of the ICTII (Collins 1990). During the later Moorehead phase, population started to decrease, the great constructions scattered through the site were thrown down and replaced by new residential areas. As shown by the extended excavations led in the West Plaza (Wittry and Vogel 1962; Valese 2012; Pauketat 2013) and at the 15A Tract in 1960s (Pauketat 1998) residential areas were moved back in the proximity of the Cahokia precinct, close to Monks Mound, where public areas were converted to residential use, as attested for the West Plaza Area. Starting from AD 1275, at the beginning of the Sand Prairie phase, only few constructions were built; its final abandonment coincided with the general depopulation - lasted until the arriving of French colonists in XVIIIth century – of a wider region known as the Vacant Quarter (Kelly 2009).

1.1 Brief description of the Cahokia’s Plazas

As suggested by Kelly (1996b) the quadripartite layout of the site, which involved the creation of the four plazas placed at the cardinal directions in a cross-shaped manner, being the cross one of the main symbols of the Mississippian iconography, was possibly set by the end of the Emergent Mississippian and the beginning of the Lohmann phase (Kelly and Brown 2014).

The main plaza, the Grand Plaza, located south of Monks Mound was built, as shown in the investigations led by R. Dalan (1993), by levelling the ridges and swales of the natural surface for an extension of 16 ha. It was delimited by Mounds 48, 50, 51, 54, 55, 57, 59 and 60 while within the plaza were Mounds 49 and 56. Excavations made in 1990s by Alt, Kruchten and Pauketat (2010) revealed that the plaza was clear of features, besides of large post pits that were found in the excavation trenches. As suggested by the investigations, the area would have been the theatre of public gatherings such as festivals,

games (possibly the chunkey, also performed by some historic Native American tribes – Pauketat 2009), rituals and possibly market activities (Iseminger 2010: 84).

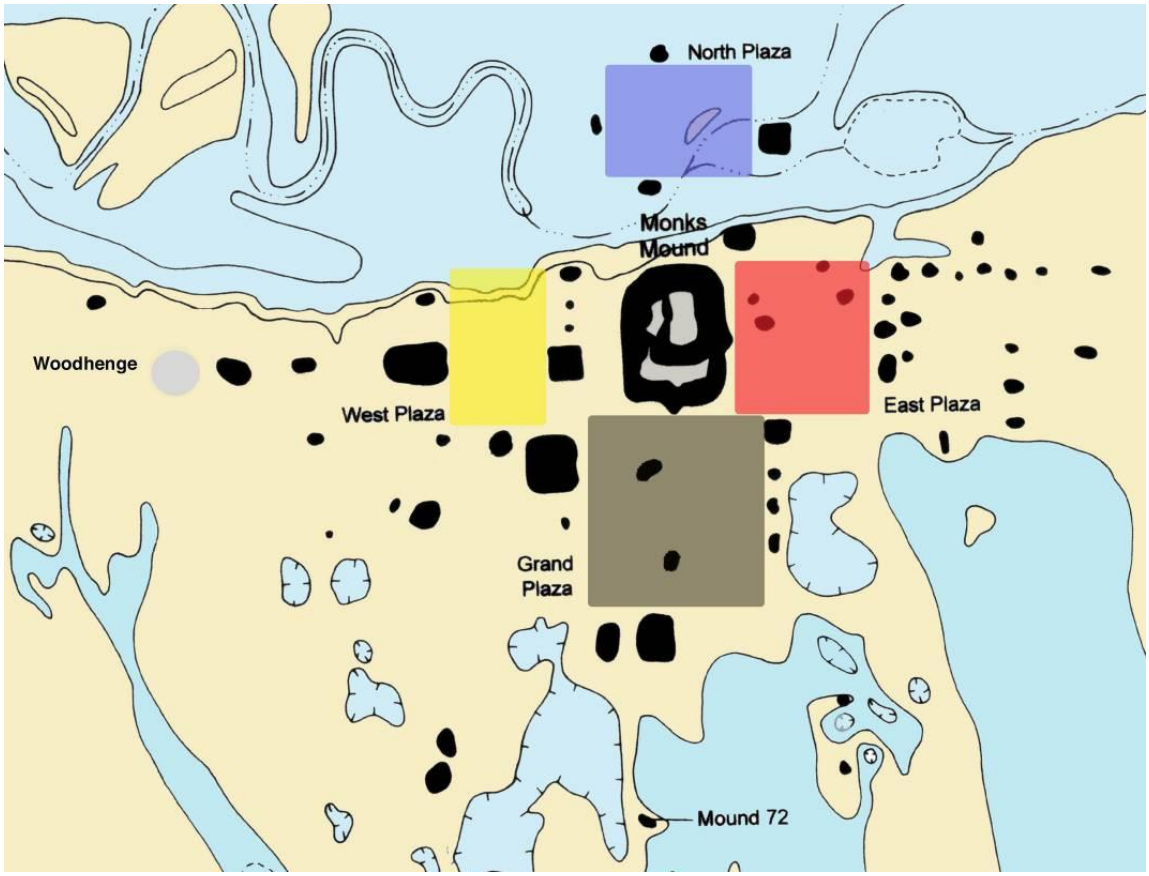


Figure 1.5 General map of Cahokia. The four plazas coloured in blue, black, yellow and red courtesy of J. Kelly.

The North Plaza, bordered by Mounds 5, 13, 14, 15 and 16 was located in the lowest zone of the settlement which is today a swampy area created by the presence of the Cahokia Canal. Since the area was possibly periodically flooded even during the Mississippian times, as the Canteen and the Cahokia Creeks ran in its proximity, the mounds were possibly built during a dry phase. As hypothesized by Byers (2006) and Kelly and Brown (2014), it is possible that the creation of the plaza in that specific location was tied to world renewal rituals, since during the floods the mounds would have symbolically risen from a "primordial sea". A different scenario, pictured by Iseminger (2010: 99), describes the Plaza as a port of entry for travellers and foreign traders arriving in dugout canoes (fig. 1.6). On the eastern side of Monks Mound, the analysis of the material retrieved from a controlled survey made by the University of Wisconsin-Milwaukee (Benchley 1974) confirmed the presence of an open space between Mound 36 and 51, the East Plaza. This

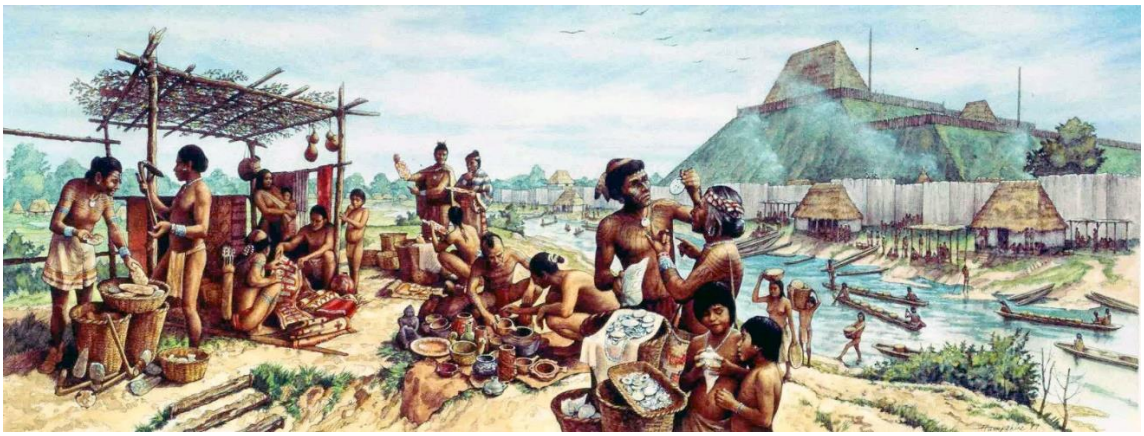


Figure 1.6 View from the North Plaza. Michael Hampshire, Cahokia Mounds State Historic Site.

open space was relocated after the erection of the Cahokia stockade that surrounded the core of the settlement; at its place the so-called Ramey Plaza was bounded by Mounds 19, 20, 21, 28, 29, 30, 31, 32, 33, 34 and 52. W. K. Moorehead in 1920s tested many of the mounds encircling the area (Kelly 2000) discovering a pre-mound burned structure below Md. 31 and some burials at the base of mounds 19 and 20. J. Caldwell, on behalf of the Illinois State Museum, tested mounds 30 and 31 before they were levelled after the construction of a discount store, locating other pre-mound structures (Iseminger 2010: 106). Still, the most stunning evidences of Cahokia's life came from the investigations led in 1950s by A. Spaulding (University of Michigan) followed by G. Perino (Gilcrease Foundation, Tulsa). During those excavations, a burned deposit was located on a terrace of Md. 34; this burned area yielded a great amount of material connected to the Southeastern Ceremonial Complex (SECC), such as fragments of engraved marine shells, negative painted pottery, arrowheads and shark teeth (Brown and Kelly 2000). The investigations in the area are still ongoing under the direction of J. E. Kelly and J. A. Brown. Since no detailed maps of the area were produced at the time, their researches focused on the relocation of the trenches made by Perino in 1956 and on the reinterpretation of the archaeological data; they were also able to locate and investigate a copper workshop, already described in 1950s. The results of their work have led to new insights concerning the role of Cahokia in the creation and diffusion of the Southeastern Ceremonial Complex (Brown and Kelly 2000).

TRADITION	PERIOD	CAHOKIA AREA PHASES
Paleoindian	**9500-8000 Be**	
Early Archaic	**8000-6000 Be**	
Middle Archaic	**6000-3000 Be**	
Late Archaic	**3000-600 Be**	
	3000- 2300	Falling Springs
	2300- 1900	Titterington
	1900- 1450	Mule Road
	1450- 1100	Labras Lake
	1100- 600	Prairie Lake
Early Woodland	**600-150 Be**	
	600- 300	Carr Creek
	500- 300	Florence
	300- 150	Columbia
Middle Woodland	**150 Be-AD 300**	
	150 BC- 50 BC	Cement Hollow
	50 BC- 150 AD	Holding
	150- 300 AD	Hill Lake
Late Woodland	**AD 300-750**	
	300-450	Rosewood
	450- 600	Mund
	600- 750	Patrick
Emergent Mississippian/ Terminal Late Woodland	**AD 750-1050**	
	750- 800	Sponemann
	800- 850	Collinsville
	850- 900	Loyd
	900- 950	Merrell
	950- 1050	Edlehardt
Mississippian	**AD 1050- 1400**	
	1050- 1100	Lohmann
	1100- 1200	Stirling
	1200- 1275	Moorehead
	1275- 1400	Sand Prairie
Oneota	**AD 1400- 1673**	
	1400- 1500	Groves
	1500- 1673	Vulcan
Historic	**AD 1673- Present**	
	1673- 1776	Historic & Colonial Indian
	1776- 1820	American Frontier
	1820- 1880	Rural & Urban
	1880- 1920	Urban & Industrial
	1920- Present	Recent

Table 1-1 Chronological phases, adapted from Iseminger 2010.

Chapter 2 The West Plaza: layout and previous excavations

The area located west of Monks Mound, as suggested by Kelly (1996b), functioned during Cahokia's apogee as the Western element of the quadripartite arrangement of plazas centered on Monks Mound. Its extension is delimited by a series of earthen platforms: the southern side is bounded by Mound 48, 47 and 73; the western and the eastern edges are marked by the presence of Mound 42 (also known as Merrell Mound), Mound 76, Mound 39 (Sawmill Mound), Mound 77, Mound 40 and Mound 41 while the northern edge of the area is delimited by the so called Edelhardt meander, where the Cahokia creek flows (Moorehead 1923; Fowler 1997; Kelly 2000).

The first scientific archaeological investigations in the West Plaza area were conducted by Moorehead during the 1920s (Kelly 2000). In the spring of 1922, Moorehead dug trenches and test pits in Mound 39, also known as Sawmill Mound because of the facility that stood on it in the 1800s and that blew up, killing several workers. Because of the difficulty to measure the too irregular distribution of the archaeological features, no detailed maps were made of the excavations (Moorehead 1929; Fowler 1997; Kelly 2000). Moorehead realized a test trench at the southern slope of the mound where eight burials with associated grave goods were located along with a number of disturbed burials scattered throughout the area. Among the features found, the extended burial, numbered 11 (fig. 2.1), was the better preserved: it yielded two ceramic vessels, which were placed near the right hand of the deceased, and a bowl located near the left knee. Moorehead recorded also the retrieving of a shell gorget and a bone knife. Two other trenches were made on the mound: one located on the east side (10.7 meters wide and 1.5 meters deep) and the other located at the centre (4.3 by 4.6 meters wide and 4.9 meters deep). However, no other burials were found, the test pits yielded a good amount of material: bits of pottery sherds, stone flakes, and a ceramic mammal-head effigy, an awl from a deer jaw, galena, and a human head effigy cut from a freshwater mussel shell. Furthermore, the archaeologist used an auger to probe (1.1 to 1.2 meters) the mound's stratigraphy discovering that there was a marked series of alternating bands of dark and yellow earth. The dark bands were 7.6 to 25.4 centimetres wide and the yellow bands were 30.5 to 61 centimetres wide. The layers were not even and a conically shaped deposit in the northwest corner of the mound could represent a slope of an earlier construction stage.

At the bottom of all the test trenches and probes made by Moorehead the presence of the widespread natural deposit of heavy black clay layer was attested.

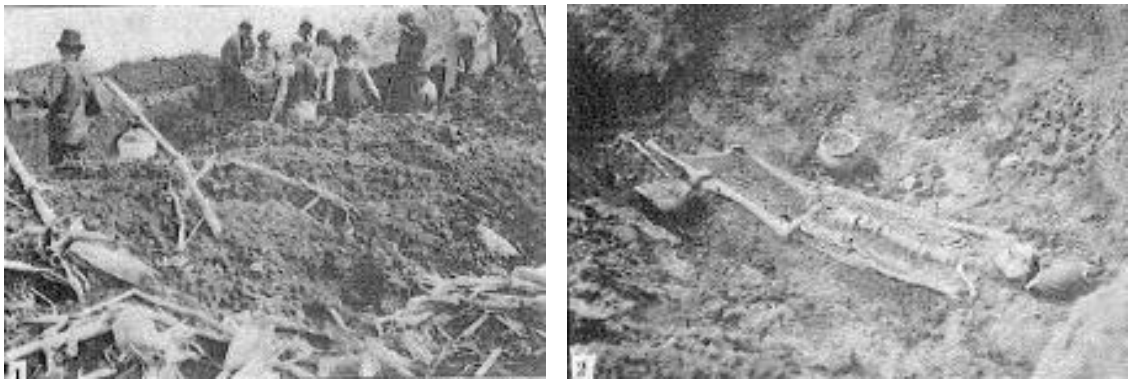


Figure 2.1 Historic pictures of Sawmill Mound's excavation and burial n°11 (Kelly 2000).

Moreover, Moorehead's proposed that a long, low platform existed between Mounds 39 and 77 directly to the south. On the basis of the good amount of archaeological data and the predominance of black and red pottery, Moorehead suggested that an extensive habitation area – he marked on a general map (fig. 2.2) as "village site" - once surrounded this mound, hypothesis that was later confirmed by the results of 1960s' excavations.

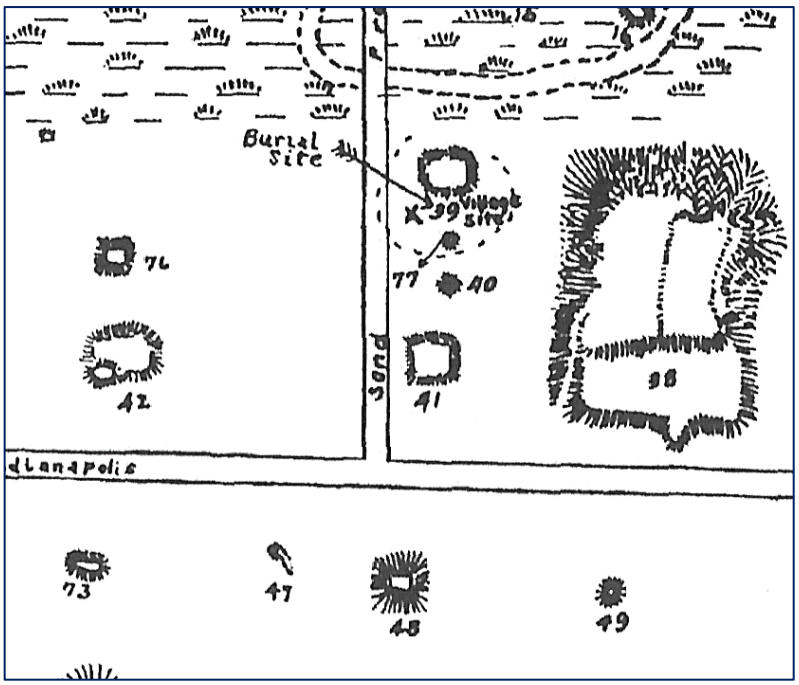


Figure 2.2 Detail of the West Plaza from general map made by Moorehead in 1923 (adapted from Fowler 1997).

In 1923, Moorehead investigated the small mound 77 located a few meters south of Mound 39. Although the shape he indicated in the 1923's field report is not very clear, he described it as small and conical mound. Mound 77 appears only on two previous maps

made by C. Thomas in 1894 and by the Ramey family in 1916. On the slope of the mound, he located a circular hard-clay lined pit of ca. 50 cm in diameter, at the base of which he found a 3.6 kg of burned galena, some pottery vessels (a bowl, a jar and a platter) and lithic tools such as hammerstones (Moorehead 1929: 39-40).

It is possible that the clay-lined circular pit described above could have been an offertory basin dedicated to the burials on the south side of the Sawmill Mound that Moorehead described in his 1923 report (Moorehead 1923: 12-14; Fowler 1997). The proximity of the Mound 77 to mound 39, to which was conceivably connected by a platform or terrace and the presence of burials, suggests that Mound 77 was possibly a conical or ridge-top mound and that their relationship could be compared to the one existing between other paired mounds at the site, such as Mounds 59 and 60.

Proceeding on the western edge of the plaza area, the Merrell Mound (Mound 42) is one of the best-preserved mounds in Cahokia. The shape of this platform mound is thought to be close at the one it had during Mississippian times; its excellent preservation could be attributed to the fact that it was never subjected to plowing activities since a house was built on its top for almost a century (fig. 2.3). Mound 42 was constituted by a main rectangular platform mound (79 meters by 122 meters) and an elevated oval platform secondary-mound, of 22.9 meters in diameter, built on its southwest corner. Unfortunately, the oval platform was leveled many years ago, making the entire surface relatively flat.

In 1969, E. Benchley (1974), of the University of Wisconsin-Milwaukee, ran some test excavations. Her research focused on the smaller mounds added during the Moorehead phase on the summit of flat-topped mounds, also known as secondary mounds. Only three examples of these earthworks exist in Cahokia: two were built on Monks Mound's terraces and a third was added at the top of Merrell Mound. In 1971, the University of Wisconsin-Milwaukee placed test units on the top of Mound 42 in order to define the stratigraphic relationship between the main and the secondary mound, as well as to verify the presence of possible associated buildings; they actually located a Moorehead/Sand Prairie structure on its summit but unfortunately, they could not clarify the relationship between the Merrell and its secondary mound.

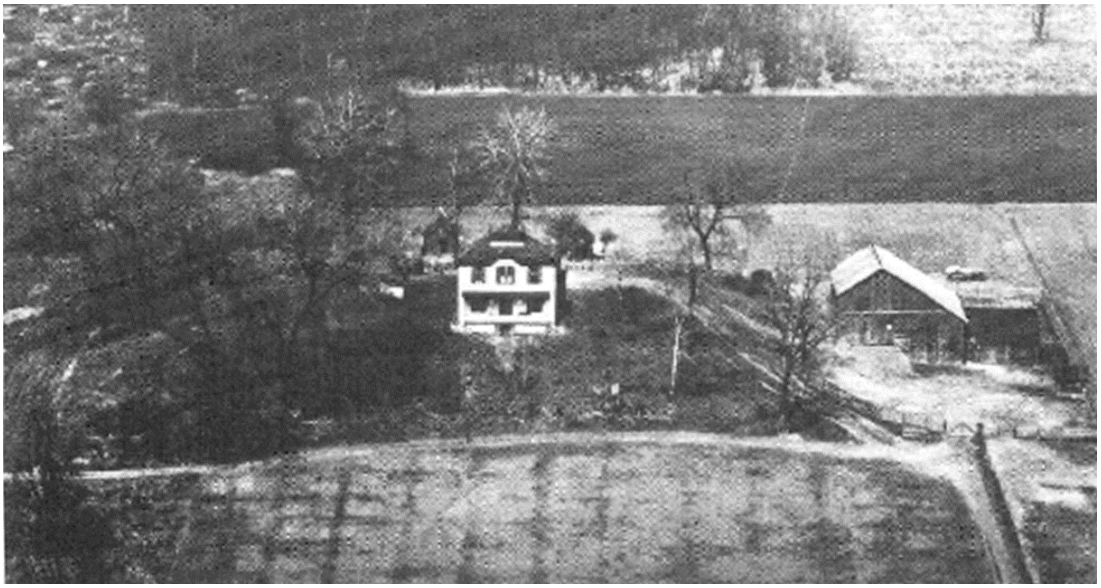


Figure 2.3 Mound 42 in the 1920 (Fowler 1997).

Delimiting the north-west corner of the West Plaza area was Mound 76. The location of this small circular mound was determined, as stressed by W. L. Wittry and J. O. Vogel (1962: 28), by the presence, already in the Mississippian period, of a wet area located at north; this resulted in a not perfectly squared Plaza with Md. 76 and its eastern paired, Md. 39, not being aligned. Moorehead mentioned excavations led on top of this mound in its 1923s' field notes (1923: 47); but there is a chance that the archaeologist was confusing Md. 76 with another one, since he reported the finding of a copper serpent (1929: 9) that was actually found in Mound 59 (Fowler 1997).

Hence, the first to investigate this mound were J. B. Griffin and A. Spaulding from the University of Michigan's Museum of Anthropology (UMMA) in 1950 (Kelly and Brown 2001); their effort was the first professional non-salvage work in the American Bottom, which implied a careful and controlled method of excavation, since Moorehead's works at Cahokia.

The tests were aimed at a better understanding of the ceramic stratigraphic sequence for the entire site; in their report (Buckles and Griffin 1950), they refer at the seven test pits, made on the mound surface and its proximity, as Excavation Unit 2. Unfortunately, the data retrieved from these tests were inconclusive since most of the units, except the one located on top of the mound, were excavated at a very shallow depth (fig. 24).

Six of the tests, located on the crest and slope of the natural levee, were "*in a probable village area*" (emphasis added, Buckles and Griffin 1950), as later proven by the 15B Tract

excavations, the ceramic samples retrieved were mostly from plow zone as the depth of the tests units, as mentioned before, was really shallow.

The seventh test unit was long 28.35 m and was placed on the mound surface. This test unit, deeper than the others, was cut into the mound fill until reaching the submound village fill; unluckily, it was impossible to differentiate between the two strata because "*the transition was horizontal and not vertical*" (Buckles and Griffin 1950). Even for this unit the results were inconclusive. From a review, made by Kelly and Brown in 2001, of the UMMA's profile map of Test Unit 7 it emerged that a massive area of fill was added to the natural levee slope in order to extend the surface upon which the mound was later constructed.

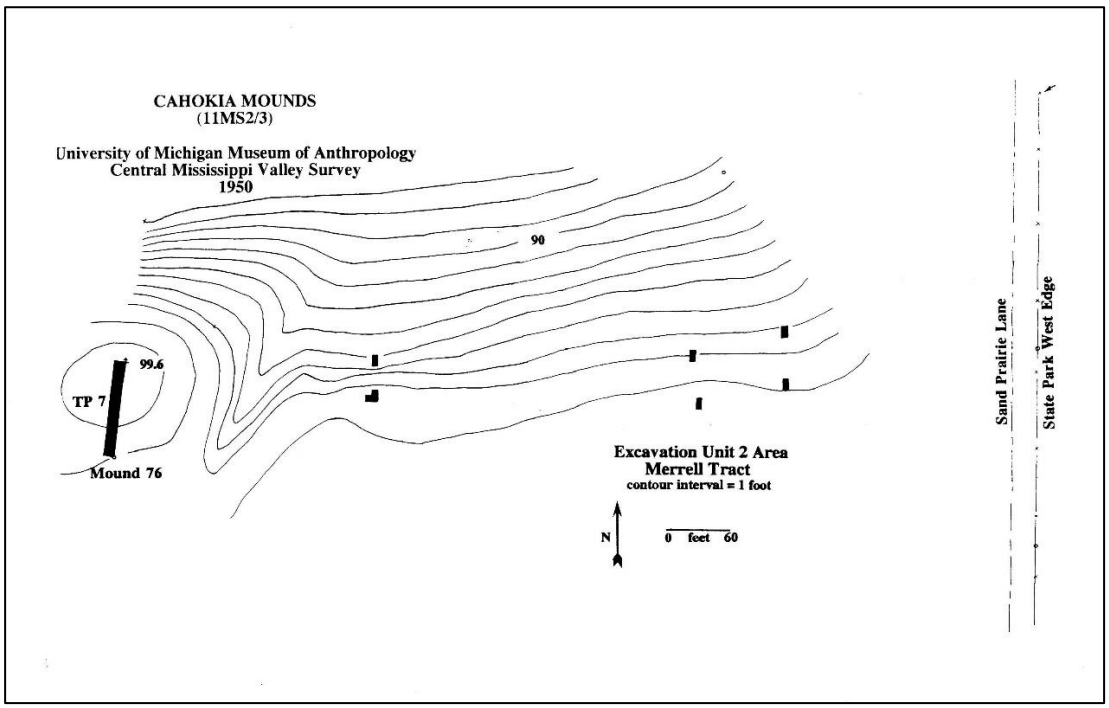


Figure 2.4 Map of the 1950's excavation in the West Plaza area (courtesy of J. Kelly).

Most scholars agree that the Trappist Monks did not build their house upon what we today call Monks Mound (whose name derives precisely from the now debated assumption) and that their settlement could have been located on Mound 48 (Bushnell 1904: 9). This was one of the largest earthworks of the site with its 112m north-south and 111 m east-west, although it was probably a low platform mound since today have a height of 7.5 meters, which is considered very close to the original (Fowler 1997). Moorehead and his workers in 1921 used the farmhouse, which stood on top of the

earthen pyramid, as their headquarter (1929: 33); the house is still visible in one of the air photographs that Lt. G. W. Goddard took in 1922 (Crook 1922).

The first investigations of Mound 48 date back to 1995 when a joint field school from Southern Illinois University-Edwardsville, under W. Woods, and the University of New Mexico, under R. Santley was carried out (Ringberg 1996). By the excavation of nine 2m square test units around the north, east, and south sides of the base of Mound 48 and several cores on its summit, a sequence of natural layers of clay and sand beneath the premound construction surface was detected.

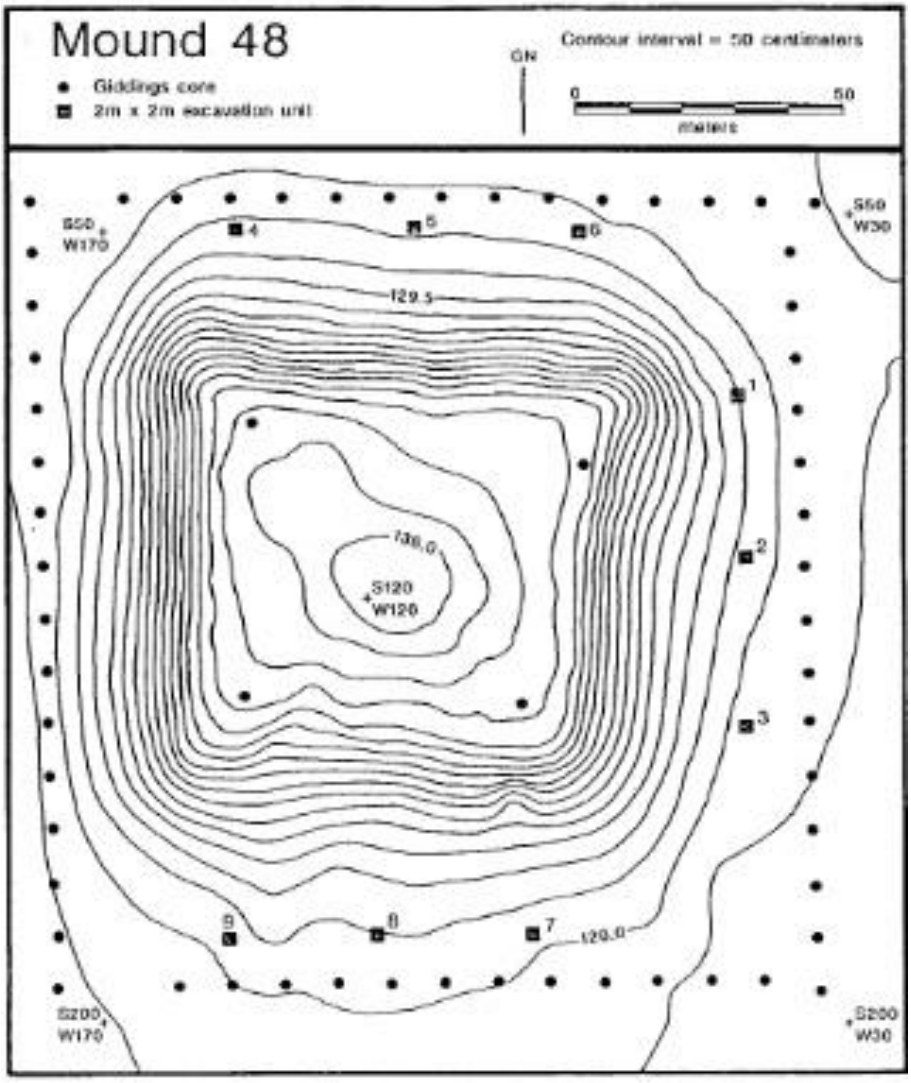


Figure 2.5 SIUE map with location of the test units (from Ringberg 1996).

Moreover, there was evidence of premound stripping of the surface; the stratigraphic analysis revealed that that the mound was built in a single event during the Lohmann phase and showed the possible existence of a ramp on the northeast corner. The three test pits made to the south of the mound showed the presence of pre-mound Emergent

Mississippian house basins, pit and post features, and a possible screen/fence trench. In Unit 9, the ceramic (bowls and beakers) and faunal evidence (mostly deer and fish) located in a midden deposit dated to the Moorehead phase suggests the presence of élite residences located on top of the mound, being the midden the result from the cleaning of the aforementioned buildings (Ringberg 1996: 100). Furthermore, the recovery of Sand Prairie phase ceramic material attests a long occupational sequence for mound 48.

2.1 The 15B Tract

Extensive excavations that changed the concept of what was Cahokia in the Mississippian time took place in 1960s'. During those years, an intense campaign of highway construction in the American Bottom area was under way; this meant that several archaeological sites were endangered since various of the major east-west and north-south interstate highways of the Federal highway system cut through the St. Louis area (First Annual Report: American Bottom Archaeology, July 1, 1961 – June 30, 1962). The improvement of the highway system involved the construction of interchanges and overpasses which required the buildup of thousands of cubic meters of fill to pass over the pre-existent highway, improvement that did not consider the presence of earthen platform or other features.

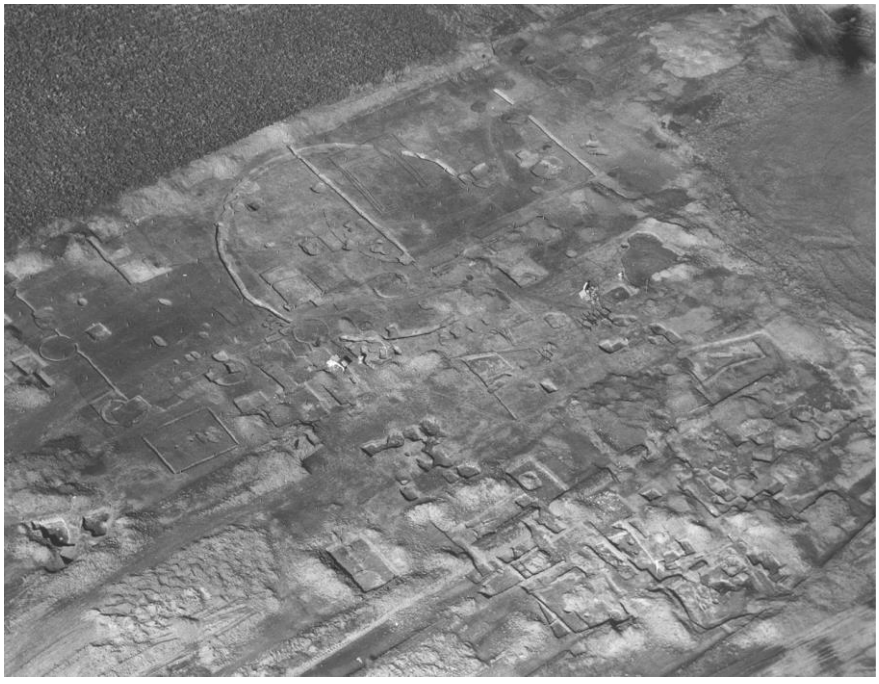


Figure 2.6 15B Tract, Cahokia. General Shot, Research and Collection Centre (Springfield, IL).

To face the issue, the Illinois Archaeological survey in cooperation with the U.S. Bureau of Public Roads, United States Department of Commerce and the Division of highways of the state of Illinois Department of Public Works and Buildings decided to establish an Archaeological Salvage Program for Interstate Highway areas. The cooperating institutions worked contemporary in different areas of the American Bottom: the Illinois State Museum Field Parties, under the direction of W. L. Wittry, dealt with the two major areas designated 15A and 15B tract, while the University of Illinois Field Parties, under the lead of D. Lathrap and C. Bareis, conducted the excavation of the area located north of the former Powell Mound and, for the same institution, James Porter directed the fieldworks at the Mitchell site, located seven miles north of Monks Mound.

The first extensive excavations, which did not include the earthen pyramids, were those to the west of Monks Mound. The tracts were named 15A and 15B and their excavation revealed the presence of hundreds of features, such as pits, houses and less common buildings as the Woodhenges in Tract 15A and the sequence of rotundas and compounds in Tract 15B. Before the discovery of these dense occupational areas, scholars thought that Cahokia was a vacant ceremonial center where people gathered only on ritual occasions. Scholars believed that very few people lived sedentary in the center, but the great number of houses and pits found during the 15A-15B excavations showed the contrary; Cahokia was something more complicated than previously thought (Young and Fowler 2000).

The 15B Tract's excavations were conducted in the area between stations 107/00 and 112/00 (F.A.S. Route 772) and lasted a period of 10 week from August 3 to October 11, 1960; Wittry in cooperation with R.J. Salzer, P. J. Munson and W. M. Hurley directed the fieldworks. As stated before, the realization of the salvage excavation in tract 15B was carried out in concurrence with a Highway Department's project, which concerned the relocation of Sand Prairie Lane to the west and the construction of an overpass that would carry traffic over I-55 and I-70 (Fowler and Young 2000).

The area to investigate was of almost 5,063.2 m^2, a great extension that implied the employment of a crew of 17 workers, including a foreman-steward, hired from the S.J. Groves and Sons Company to help the archaeologist in their work. To simplify their work the archaeologists set a grid with which they divided the area in smaller test units, each of them measuring 9x12m and differentiated by a number.

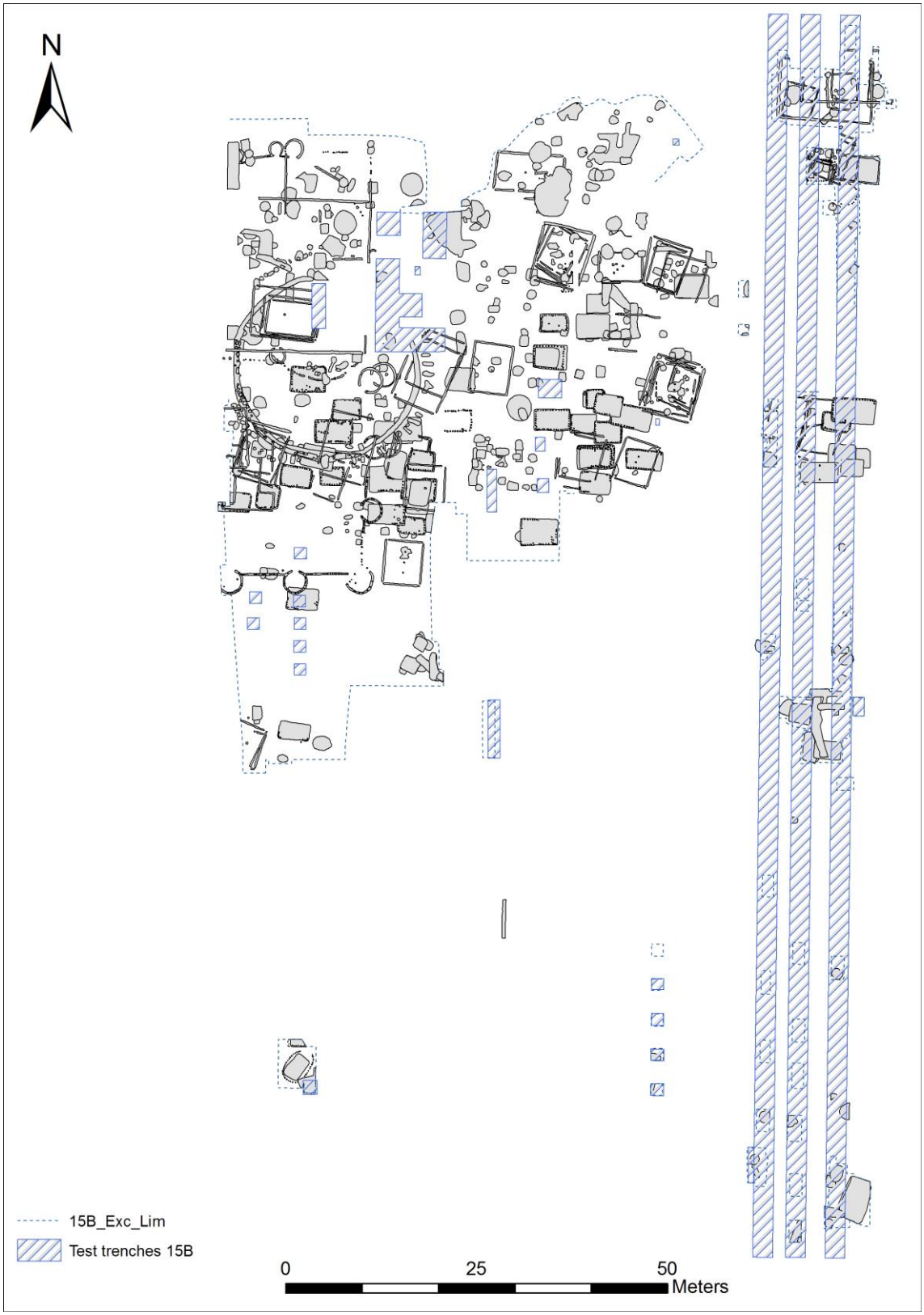


Figure 2.7 General GIS map of 15B Tract (I. Valese).

When a feature was located, they decided whether to expand the limits of the excavation, so that at the end of the fieldwork the excavation limits resulted irregular (Pauketat 2013). Since the time at their disposal was short and the surface to investigate was huge, Wittry decided to remove the uppermost part of the soil, the plow zone, with the assistance of an earthmoving machine called Caterpillar DW21 and as Fowler tells: "*Wittry lined the DW21 up at the east end of 15B and told the operator to lower the eight-foot blade and take off a foot of the plow zone. The operator had gone about 300 feet when Wittry yelled him to stop. The topsoil had rolled up like a carpet, revealing an astounding sight. The bare earth was full of features that were being scrambled into each other as the blade scraped across the top. There were house basins, pits of all sizes, walls extending under and over other walls, scattered artifacts and relics. Everything popped out before the eyes of the astonished Wittry and his helpers […] None of the men had ever seen anything like it before"* (Young and Fowler 2000: 82).

Hurley, Salzer and Munson were in charge of the documentation and mapping; they decided to record the features by dividing them by giving an F number for "features number" or an "H" number for "house number" (Young and Fowler 2000). They worked quickly as in an assembly line: the workers dug the features, collected the artifacts in bags and left them in the features they belonged, while the archaeologists mapped and collected the bags. Along with the time restrain, they had to face the problem of the looters coming during the night, so that each feature had to be excavated completely during the day to prevent artifacts' robberies.

In this way, Tract 15B excavations brought to light evidences of an intense occupation starting from the Emergent Mississippian phase (ca. AD 950-1050) to the Sand Prairie phase (AD 1275-1400), testified by the presence of houses and associated pits (Wittry and Vogel 1962; Kelly 1980, 1996b).

The 1960 excavation yielded a total of 583 features: 131 building and relative reconstructions, 281 pits, 13 burial pits, 119 post pits and post holes, 37 fill areas, middens, artefact concentrations and 2 modern looter's holes (Pauketat 2013). Some were recognized on the field and mapped however not excavated or partially excavated because of time restrain.

At the base of this dissertation was the work of collection and digitization of unpublished fieldnotes, maps and photos concerning the 15B Tract's excavations, that the author of

this thesis realized in 2011 before the publication of Pauketat's reanalysis of the 1960s data in the volume dedicated to the archaeology of the 15B Tract in 2013. The digitization of the maps and notes aimed to the realization of a GIS platform used to record the data concerning all the investigations realized in the West Plaza Area. Henceforth, the data exposed in the following paragraphs are both the results of a bibliographic research and of a direct study of the original data.

2.1.1 Emergent Mississippian features (850-1050 AD)

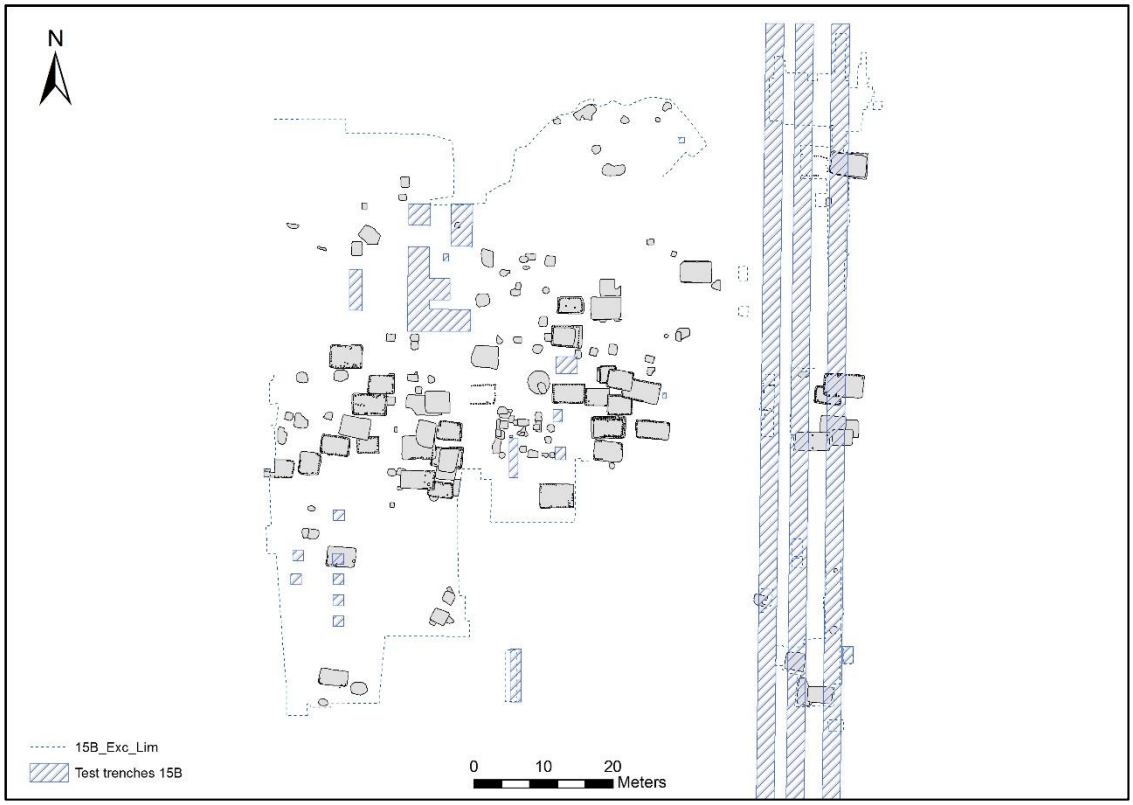


Figure 2.8 Detail GIS map of the 15B Tract's Emergent Mississippian features (I. Valese).

Among the features found in Tract 15B, 65 house buildings and 132 non-structure features are assignable to the Emergent Mississippian Phase (950-1050 AD) (Pauketat 2013).
As Wittry (1962), and later on Pauketat (2013), state, the continuous use of the area and the consequential superimposition of the features led to the mix of the ceramic materials; so that the attempt to make a rough chronological distinction between Merrell, Edelhardt and Mississippian pit features was not clear or easy, and most of them were not assigned to a specific phase.

The Emergent Mississippian dwellings had a rectangular outline, with walls made of rows of single posts, averaging 12 cm in diameter, set in holes spaced from 15 cm to 30 cm. These single-set-post houses were semi-subterranean having floors inside of a steep-sided basin as deep as 45 to 90 cm below the outside surface, but there are some other buildings which had shallow basins or even none. These buildings were probably used mostly for sleeping and storage.

The density of the Emergent Mississippian occupation of the area is reflected by the number of buildings and their reconstructions, often on the same location. The ceramic assemblage recovered from most of the semi-subterranean houses is attributable to the Merrell phase (Vogel 1975; Kelly 1980; Pauketat 2013), a chronology confirmed by the ceramics found in more than half of the pit features of Tract 15B. Only one building has been dated, based on the refuse content, to the subsequent Edelhardt phase; this house, whit a floor area of 17.4 m^2, is larger than the Merrell phase structures know in Cahokia and its hinterlands (Kelly 1980).

The continuous rebuilding of dwellings, during the Merrell phase, is characterized by a gradual increase of the floor area (Valese 2012), a trend that elsewhere in Cahokia is observed at the transition between the Merrell and the Edelhardt phase (Emerson and Jackson 1984; Kelly 1980; Pauketat 1998). The presence of a group of other large buildings could indicate the presence of dwellings of the Edelhardt phase in the 15B tract, unfortunately the ceramic assemblage retrieved from them do not give any information in order to establish an accurate chronology.

Regardless to which sub-phase the Emergent Mississippian structures can be assigned, there is no doubt that the dwellings uncovered in Tract 15B were larger than all other contemporary or even later Emergent Mississippian houses in the region and within Cahokia itself. Thereupon, Pauketat (2013) associate the unusual sizing of the buildings to different factors such as the higher status, larger family sizes, or different identities of the occupant of Tract 15B, compared to others in the region.

Most of the 113 Emergent Mississippian features found in 15B tract were storage-refuse pit and were dug with the primary purpose to store food, probably corn and/or meat and eventually filled with refuse. As for the house buildings, the majority of the pits are attributable to the Merrell phase and only two can be assigned with certainty to the Edelhardt phase.

As in other Emergent Mississippian settlements[1], a typical arrangement of four pits oriented at the cardinal directions in the center of plazuelas has also been attested in Tract 15B. At the southern excavation limit, at the center of the excavated area, a series of pits, dated to the Merrell phase, were set and oriented with the cardinal directions, surrounding a sequence of post pits that could have marked the center of the residential area (Valese 2012; Pauketat 2013). A sequence of dwellings, reconstructed at the same place, surrounded the area open area, interpreted as the central courtyard, in which the poles were sequentially erected and the pits were dug (Valese 2012; Pauketat 2013).

The pit features varied in shapes and profiles, both rectangular and oval pits are attested for the Emergent Mississippian features in Tract 15B, while their profiles differed as they had vertical walls, or belled shaped outline. Some of them had a lining of yellow sterile clay, a practice well recorded at the later Early Mississippian village sites of the upland. The estimated volume[2] for the Emergent Mississippian pits from Tract 15B reveals that they had more storage potential than that of contemporary features of the nearby Tract 15A (Pauketat 2013).

An uncommon layer of clay was located along the western limits of the 15B Tract. This montmorillonite clay was tested in seven test units of 1.5 m^2 and was indicated as “Blue Fill”, due to its blueish color, in Wittry and Salzer’s field notes. Its chronology has been dated back to the Merrell Phase, since in one of the test units a Merrell Phase house basin (H113) seems to be superimposed on the clay layer. Both the nature of the fill and its chronology are ambiguous, Pauketat (2013) suggests it could have been an artificial deposit aimed at levelling the area or, assuming it had regular shape, to constitute the platform of an early mound.

[1] The most striking example of this pattern is in the central courtyard of the Range Site as described by Kelly, 1980

[2] For the details of the statistics see Pauketat 2013

2.1.2 Early Mississippian Features (1050-1200 AD)

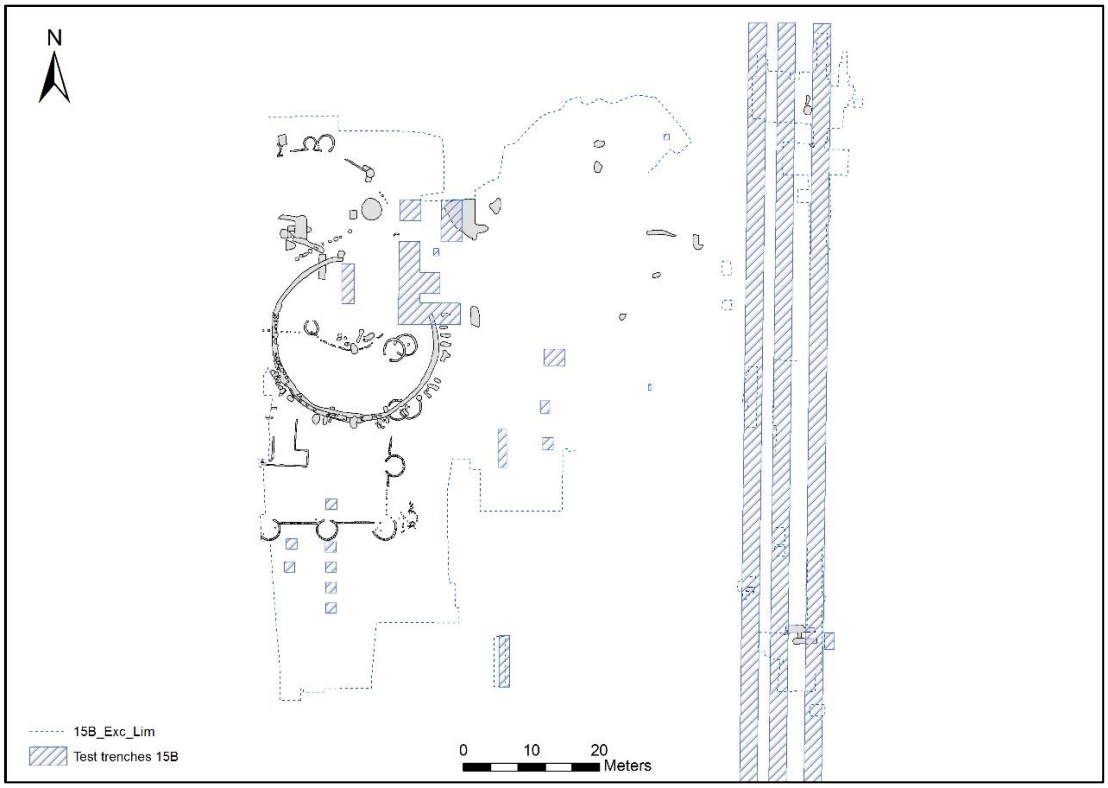


Figure 2.9 Detail GIS map of the 15B Tract's Early Mississippian features (I. Valese).

A total of 66 features (15 buildings, 40 post pits, 5 pits and 6 midden areas) dating to the Lohmann and Stirling/Early Moorehead phases have been unearthed in the 15B Tract.

The chronological period between the Lohmann and the Early Moorehead phases are represented in the West Plaza area by the presence of big structures, a possible mound (Kelly 1996b; Iseminger 2010; Pauketat 2013) and the lack of domestic buildings, only a few small structures have been located during the 1960s' excavations.

- F388

The first building to be constructed was F388 of which the only southern portion is preserved. The rotunda, so defined by Pauketat (1994, 2013), was composed - according to Wittry - by an alternation of post pits and wall trench segments, a characteristic objected by Pauketat that considers "the apparent wall trench segments, as defined in 1960, are a misreading of the originally continuous wall trench" due, according to the archaeologist, to the mottled soil on which the feature is located. This mottled sediment is interpreted as a possible residue of the basket loading used to build a Lohmann phase mound and that made the features on the field hard to detect.

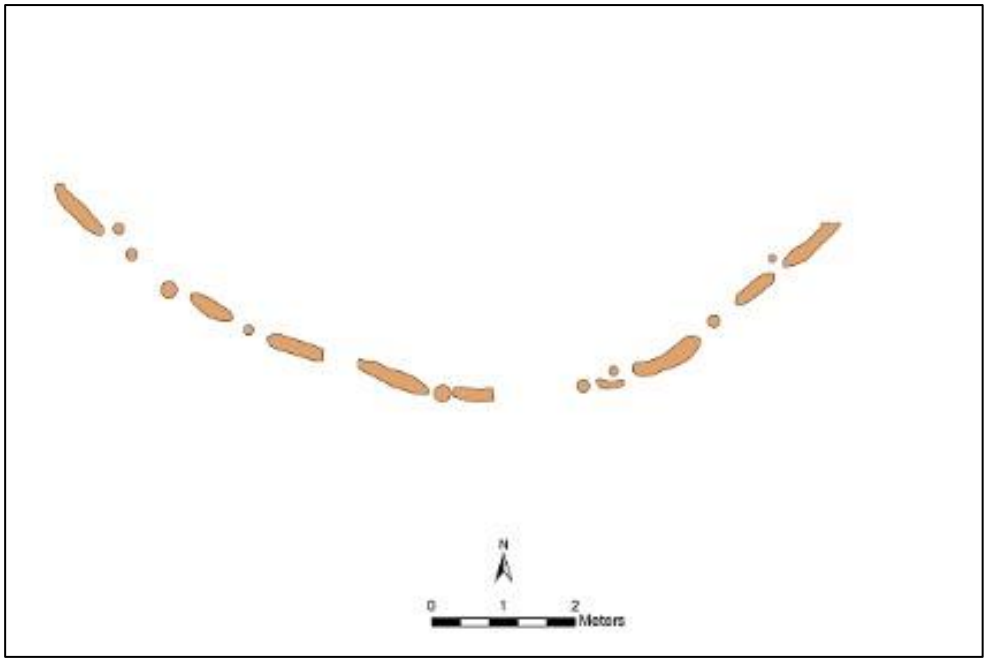


Figure 2.10 Map of the rotunda F388 (I. Valese).

The hypothesis of a mound in the 15B Tract was already suggested by Kelly (1996b) that noted, on the contour map prepared for the Merrell Tract, an elevated area to the west of the circular buildings located in the 15B Tract. Kelly proposed that the mound was built to cap the Lohmann buildings while Pauketat suggests that the rotundas could have been pyramid-summit constructions.


Figure 2.11 F388 during 1960s' excavation. Slide 10-9 and 8-32 kept at RCC.

The structure F388 might have had a 15 to 18 meters diameter including an area of 176.7 to 254.4 square meters (Valese 2012), or a diameter of 13m covering an area of 132.73msq according to Pauketat (2013). It seems to be raised in early Mississippian times

and maybe it could be dated to the Lohmann phase (Kelly 1996b; Valese 2012; Pauketat 2013), since it is superimposed on an Emergent Mississippian house basin and by a Moorehead phase structure.

- F238*/389*

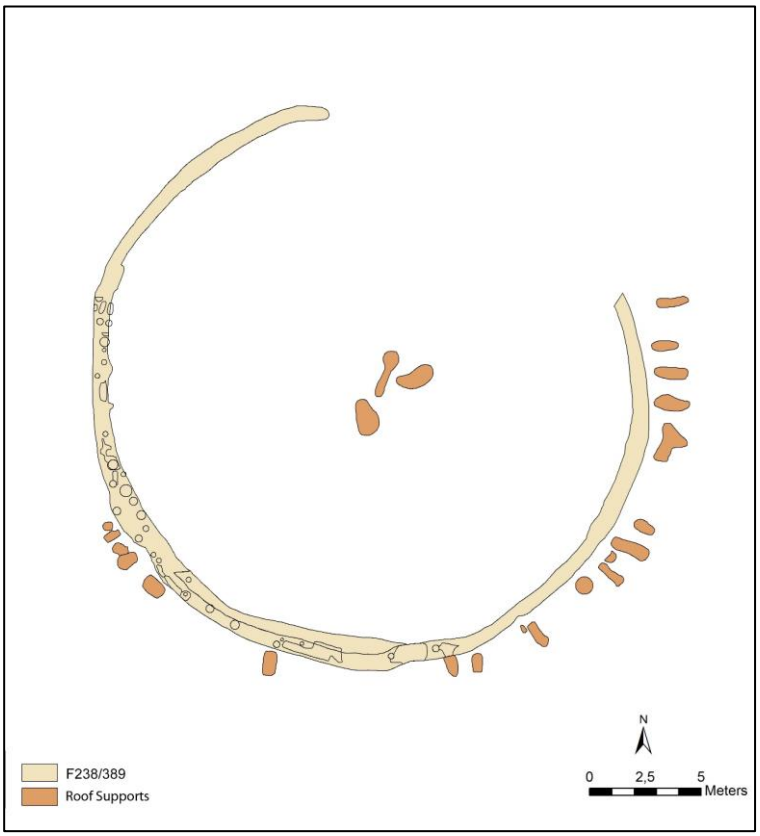


Figure 2.12 Map of the rotunda F238/389 (I. Valese).

The first rotunda was replaced by a larger circular building: F238-389; described by Munson (1960's field notes) as a large circular "Stair–Stepped" structure 4.1' deep below surface, with a series of posts or "rays" regularly spaced about 1.20m apart surrounding it. The building was partially excavated in two segments F238 and F389, each of different depths; the north-eastern portion of the building was not located on the field due to the presence of a midden layer that inhibited the delineation of the feature.

The rotunda, with its diameter of 24 meters, covering an area of ca. 430 m^2, and with wall trenches 60 centimetres wide is the largest circular wall-trenched building known at Cahokia. The three post pits (F359, 376, 383) located at the centre of the structure have been interpreted as roof supports (Kelly 1996b; Valese 2012; Pauketat 2013). Even if described in field notes as a single structure, Wittry himself, supported later by Kelly and

Figure 2.13 F238-389, detail. Slides from Research and Collection Centre (Springfield, IL).

Pauketat, stated that the compound was rebuilt almost once, in a first instance as a single post construction then replaced by wall-trenched structures. Despite the dimensions of the building no internal partitions or associated facilities have been unearthed, only the two pits, one of which yielded two human long bones, could have been associated to one of the construction episodes, according to Pauketat (2013).

- Compounds A and B/C

Other unique structures, called compounds, were found in the 1960s' excavations at 15B Tract; these buildings, according to the stratigraphic analysis, seem to date back to the Stirling Phase (ca. 1100-1200 AD).

The evidence suggests two contiguous wall trenched structures: a northern compound A, that appears to have had a circular shape, and a southward square Compound B/C. Both structures had the shape of walled enclosures with rounded bastions.

Compound A had a diameter of almost 25 meters enclosing an area of 491 m^2; at the northern and southern edges two complete open-back bastions have been recognized, additionally, at northwestern and eastern sides, the remains of other two, partially destroyed by the construction of later buildings, were located. The presence of another bigger open-back bastion, at northern side, suggests that the circular compound could have been rebuilt almost once (Valese 2012; Pauketat 2013). Regrettably, not enough information about the features located inside this building have been provided, so up to now it is not possible to associate any of them to this circular structure and to securely determine its function.

In the same Stirling phase a contiguous, but not necessarily contemporary (Kelly 1996b), Compound B was built. Unlikely Compound A, it was rectilinear, but, as the northern

building, it was a wall-trenched structure studded by circular bastions and rebuilt almost once (Valese 2012; Pauketat 2013). Unfortunately, the first construction episode of this compound was poorly preserved; only two well defined bastions and some posts pertaining to its eastern wall were located on the field, while two more were identified by Pauketat examining the 1960s' maps.

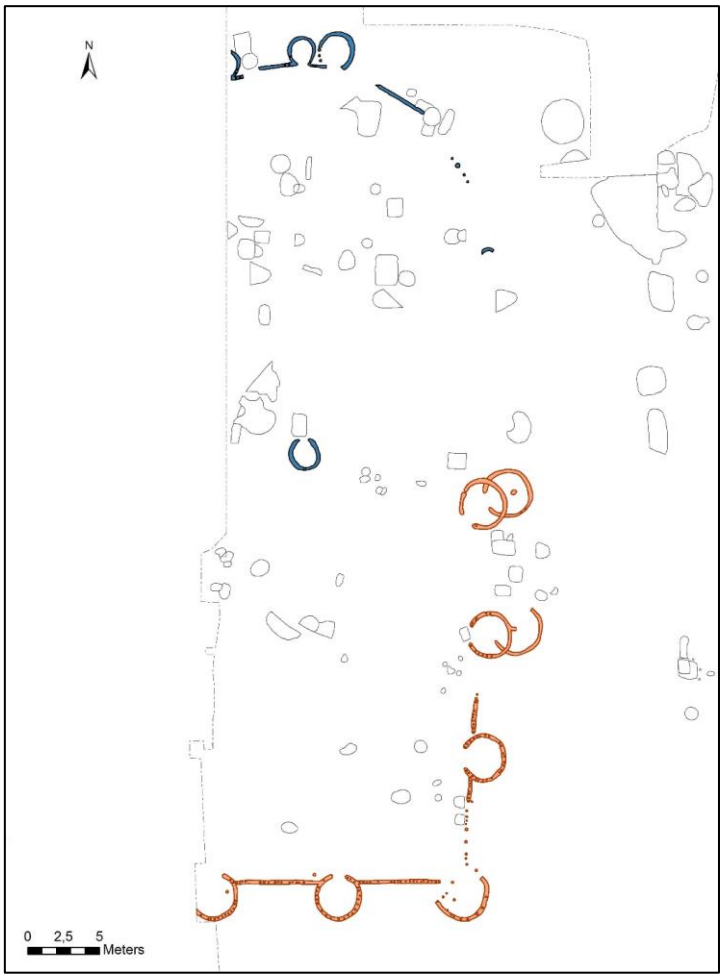


Figure 2.14 GIS map detail of bastioned compounds. Compound A in blue and compound B/C in orange (I. Valese).

Six preserved bastions belonged to the rebuilding of the structure named Compound C, the bastions were spaced at regular intervals in a range of approximately 7.8 to 8.3 meters and had a diameter between 2.60 and 3 meters, all of them had inward opening. The wall-trench curtain walls, connecting the bastions, averaged 20 cm. in width, and were dug to a depth of 60 cm, in which were set posts with a diameter ranged from 10 to 15 cm spaced from each other 20 to 30 cm (Wittry and Vogel 1962; Valese 2012; Pauketat 2013). As Alt and Pauketat (2010) observed, the unusual depth of this compound's wall trench

exceeded that of most of domicile wall trenches and is attributable to a function of support for a sturdy wall construction.

Compound B/C's well preserved eastern wall has a length of ca. 25 m, and is oriented approximately to the cardinal directions, while the partially exposed southern wall extends for 20 meters up to the limits of the excavation. The 1960's field notes report that Compound B/C walls' postholes were "filled with orange material" (Munson's field notes), defined by Wittry as an "orange-colored clay". Munson interpreted that orange material as some sort of wall plaster (Valese 2012; Pauketat 2013).

Within the perimeter of Compound B/C, two structures have been interpreted as associated buildings since their location almost at the center of the bastioned enclosure.

- L-shaped H114 and H123

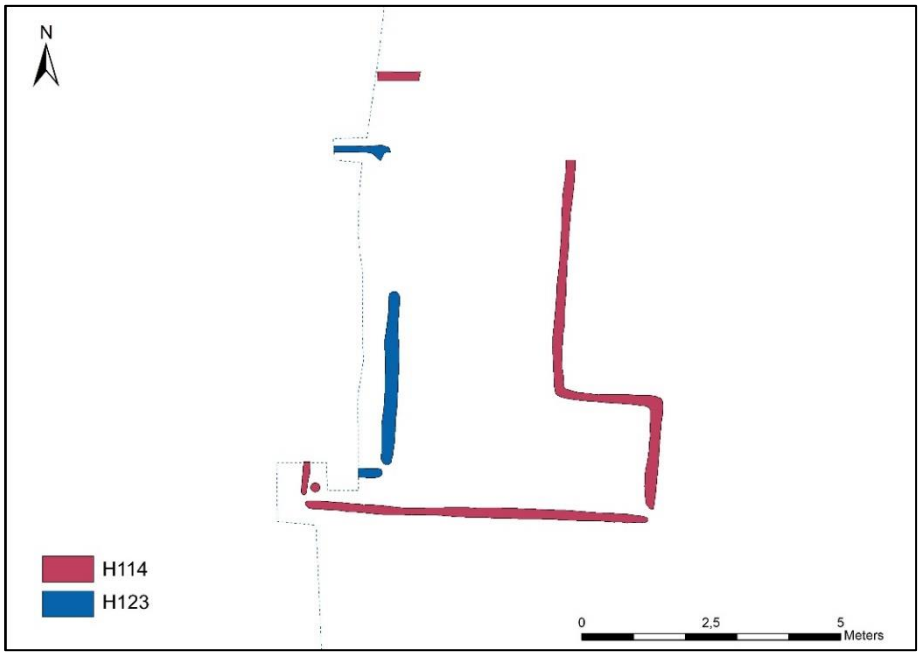


Figure 2.15 Detail of H114 and H123 (I. Valese).

During the 1960s excavations Wittry noticed the presence of the same orange material, recovered in the Compound's postholes, within the wall-trenches of H113. This building was only partially excavated, since the majority of its extension was located outside the limits of the excavation, and was interpreted by Wittry as the earliest building located in the area (1962 unpublished fieldnotes; Valese 2012). The archaeologist suggested that H123 could be considered the inner feature associated to the Compound as demonstrated

in one of the sketches kept at the Research and Collection Centre of Springfield, in which he reconstructed the compound as a rectangular building having H123 its centre (fig 6.10). Successively, Pauketat (Alt and Pauketat 2010; Pauketat 2013) suggested that another building could have been associated to the compound. The peculiar L-shaped structure H114, covering and area of approximately 46 m^2 and located within the perimeter of Compound B/C, according to the archaeologist could be associated to the first construction of the compound, hence preceding the construction of H123 as hypothesized by Wittry. This interpretation was based on a study led by S. Alt concerning L and T-shaped Mississippian buildings; the anteroom of these type of structures, which according to Alt was restricted in the greater Cahokia region to the Lohmann and Stirling phases, could have been a special alcove for the storage of religious/élite paraphernalia (Alt 2006). This function, according to Pauketat (2013) could be attributed as well to the L-shaped H114 located in the 15B Tract. The erection of H123, according to Pauketat (2013), would have taken place later, in concurrence with the Compound B/C rebuilding.

Contrarily, Kelly (personal communication) suggests a later, possibly Moorehead, chronology for both H114 and H123. An L-shaped building, as a matter of fact, was excavated at Loyd Site and it was dated to the Moorehead phase (Vermilion 2005).

Figure 2.16 H114, photo kept at RCC.

- F358 and other Early Moorehead “special” buildings

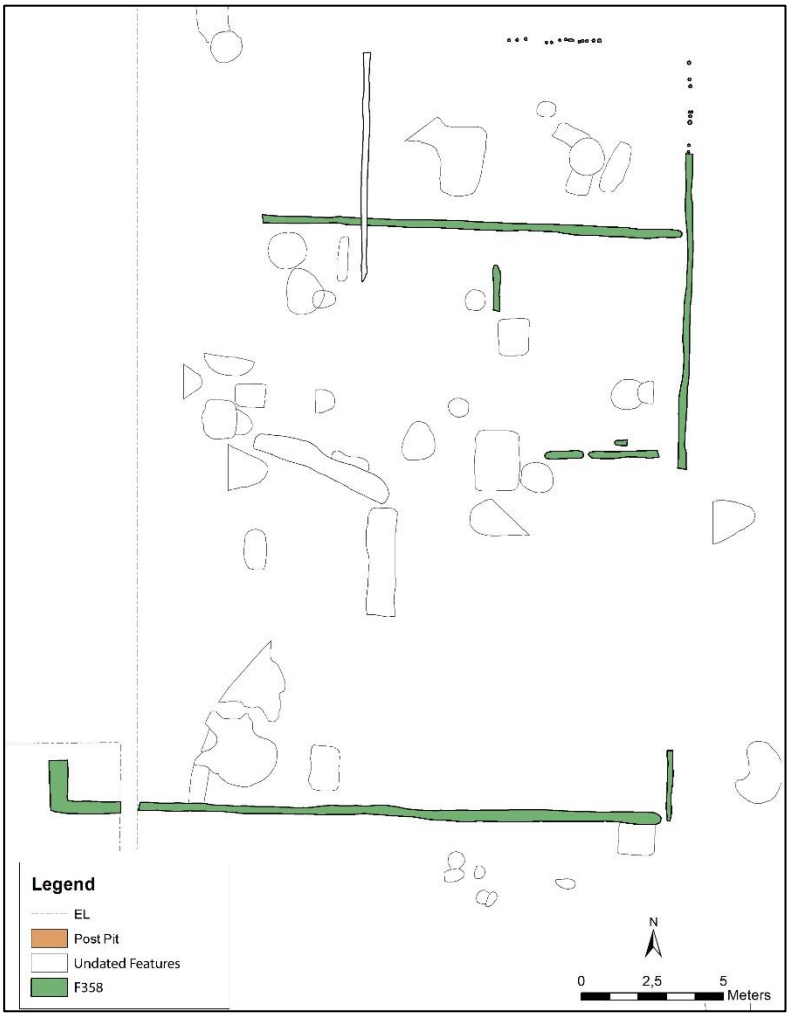


Figure 2.17 F358 map detail (I. Valese).

The Stirling compounds were replaced by a wall trench building numbered F358. Wittry’s excavations exposed the structure almost completely, revealing the northeastern and the southeastern corners. Stratigraphic analysis led to date Feature 358 to the late Stirling or to the early Moorehead Phase, and the presence of two post pits located at the mid-point between the north and the south wall suggests that this could have been a roofed structure with central support beams (Kelly 1996b; Pauketat 2013 and personal communication). Moreover, a series of unnumbered wall trenches scattered inside F358 lead to think it was broken into rooms, maybe each with some different purpose or, as Pauketat proposes, that another unnumbered building was located in the area and was not spotted on the field by the archaeologist in 1960. Depending on the interpretations of the maps we decide to follow, F358 still remains one of the biggest roofed building in Cahokia; the area it would have covered goes from about 520 m^2 up to 599 m^2. Along with

F358 and the possible “unnumbered building”, on the northeastern side of the 15B Tract excavation area, two other large superimposed structures have been found and have been attributed to the Early Moorehead phase. These open-cornered wall-trenched buildings, H10 and H20, enclosed respectively an area of about 105.9 and 88.4 m^2.

Figure 2.18 Detail map of H10 and H20 (I. Valese).

According to 1960’s field notes, no traces of roof-support posts or fireplaces have been found, while Pauketat (2013: 91) locates a hearth in the middle of the two structures that could have been associated to one of them. A small wall trench running along the southern wall of H10 could be associated to the building and was interpreted as an internal facility, possibly a bench (1960’s Field notes - House Log). Any effort to retrieve some other information about material recovered from these features was unsuccessful, but their size and location next to the swamp is a hint that they weren’t simple dwellings but more probably public buildings, in which maybe collective or religious act were performed (Kelly 1996b; Valese 2012; Pauketat 2013).

Pauketat (2013) has assigned two other small but peculiar structures to the Late Stirling-Early Moorehead phase. H21 differ for the presence of a south-facing portico and an inner partition, which as suggested by both Pauketat and Alt for other Late Stirling/Early

Moorehead structures located at Cahokia (F178 at ICTII in Collins 1990; H114 in Tract 15B, Pauketat 2013) could have had a special function as a shrine for ritual paraphernalia or a ritual bundle. A smaller structure located a few meters south, H6, could have been associated to H21 and used as a storage building.

Figure 2.19 Detail map of H6 and H21 (I. Valese).

2.1.3 Late Mississippian features (1200-1350 AD)

Figure 2.20 Detail map of Late Mississippian features of 15B Tract (I. Valese).

During the Moorehead phase, the area was again destined to domestic activities; according to Pauketat's (2013) analysis of the 15B Tract, 48 buildings, 67 pit features, 9 internal posts, 12 burials and 9 midden/fill areas can be attributed to the Late Moorehead and Sand Prairie phases. 15B Tract domiciles had a rectangular or almost square shape and were constructed of thicker poles set in wall trenches, some were also semi-subterranean and some were surface houses.

They had two main orientation, possibly the north-south oriented structures were built during the Late Moorehead phase while the northeast-southwest oriented dwellings appeared in the later Sand Prairie phase.

Some of Mississippian domiciles unearthed in 15B Tract had interior features such as storage and refuse pits (H35-49, H59) and wall trench supports for benches or racks (H55, and H57). Some others appear to be semi-subterranean (H59, H60, and H89) while in some cases they were accompanied by the presence of interior hearts or fireplaces (H43-

56 and H59). Rather than 15A Tract's Moorehead community pattern, in which domestic zones appear to have been widely spaced from one another, 15B Tract's houses focused mostly in the central area of the excavation and were grouped in almost 15 household clusters very close to each other. The size of the Late Mississippian houses in Tract 15B varies from 15 to 75 m^2, smaller structure that were part of the clusters could have been additional facilities such as storage buildings (e.g. H125).

The great part of these Late Mississippian structures of the 15B Tract were rebuilt repeatedly mostly in the same location by excavating new trenches outside the old perimeter of the house, resulting in an enlargement of the structure. This method of reconstruction became even more common in Sand Prairie phase structures.

Pertaining to the Late Mississippian phase are also 12 of the burials found in the 15B Tract excavations; the burials were located in pits, generally shallow, sometimes hard to define, and the bodies were laid both in flexed and extended position. It is liable that some of the burials were associated to specific houses since they were often placed in the corners or mid-sections of the floors or very close to the buildings on the outside. Pauketat suggests that this kind of burials can be interpreted as ritual offerings, along with the interment of whole artefacts, to commemorate the building on which they were placed.

2.2 The Merrell Tract Excavations

Between 1969 and 1972, Beloit College under the direction of R. J. Salzer conducted excavations on Merrell Tract with the original purpose to identify the presence of the western palisade wall in this area of the site (Salzer 1975; Kelly 1982).

Before the Merrell Tract was purchased by the State of Illinois, the owner of this 5.25-hectare field 300 m west of Monks Mound and immediately east of the Merrell Mound was G. Merrell, a major St. Louis druggist (Kelly and Koldehoff 1995).

The three field sessions, each of 15 weeks' duration, were conducted under the direction of Salzer and J. E. Kelly, at that time a graduate student from University of Wisconsin (Madison), as field supervisor (Salzer notes on file at RCC 1972).

The Tract was first plowed in order to provide a fresh exposure of artifacts on the surface, and then it was divided into a grid of 4413 two-and-one-half meter squares, in order to provide more control for an intensive surface collection made by Beloit College students.

The presence of less material controlled from surface in the southern portion of the Tract supported the selection of the excavation area, since the aim of the investigation was to locate the palisade wall, the archaeologists avoided the northern area of the tract adjacent to the densely occupied 15B Tract (Kelly 1996b).

Although, no evidence of the Western wall of the palisade was found, the results of this work indicated an occupational sequence comparable Tract 15B on the east.

This included the excavation of several Mississippian houses and pits and the definition of numerous Emergent Mississippian features.

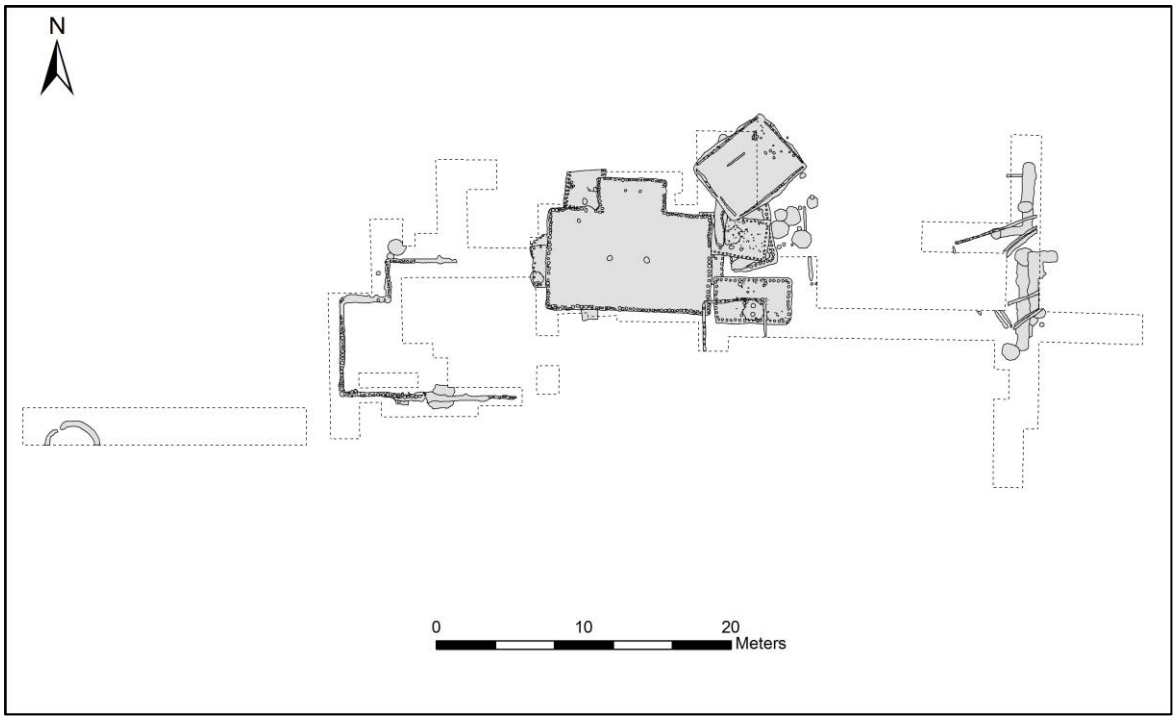


Figure 2.21 GIS general map of Merrell Tract – Beloit College excavations (I. Valese).

2.2.1 Emergent Mississippian occupation in the Merrell Tract

Figure 2.22 Emergent Mississippian features in the Merrell Tract's excavations (I. Valese).

The earliest Merrell Tract occupation consisted of a series of Emergent Mississippian pit houses dated to the Loyd, Merrell, and Edelhardt phases (Kelly 1980).

Of the twenty early pit houses, five (Features 302, 306, 318, 344, and 350) were fully excavated and another four (Features 194, 199, 323, and 324) were partly investigated. In addition, three Emergent Mississippian storage/refuse pits (Features 196, 346, and 352) were defined and excavated; while one pit (Feature 333) was partially excavated (Kelly 1982).

Among the seven houses excavated the earliest were dated to the Loyd Phase (Features 344 and 350), two of them were attributed to the Merrell Phase (Features 318 and 324); and finally, the Features 199, 302, and 306 were ascribed as Edhelardt Phase houses[3]. The remaining examples were only mapped in plan view, and preserved for future research. These structures were rectangular and semi-subterranean with individual posts placed adjacent to the basin wall. House basins ranged in area from approximately 7 to 18 m^2 and were a result of the inhabitants excavating through a clay lens to an underlying silt zone to facilitate drainage. Some of the structures had compact silty floor surfaces which exhibited staining by iron oxides, frequently, such floors yielded debris which was associated with activities performed in the structures.

[3] Loyd Phase 850-900 AD, Merrell Phase 900-950 AD, Edelhardt Phase 950-1050 AD

An analysis of the dimensions of the dwellings showed a size increase from the Loyd through the Edelhardt phase. Unfortunately, since the exposed area was of limited dimensions it was not possible to state if the Emergent Mississippian dwellings were organized around courtyards or if there was an orientational trend.

2.2.2 Early Mississippian occupation

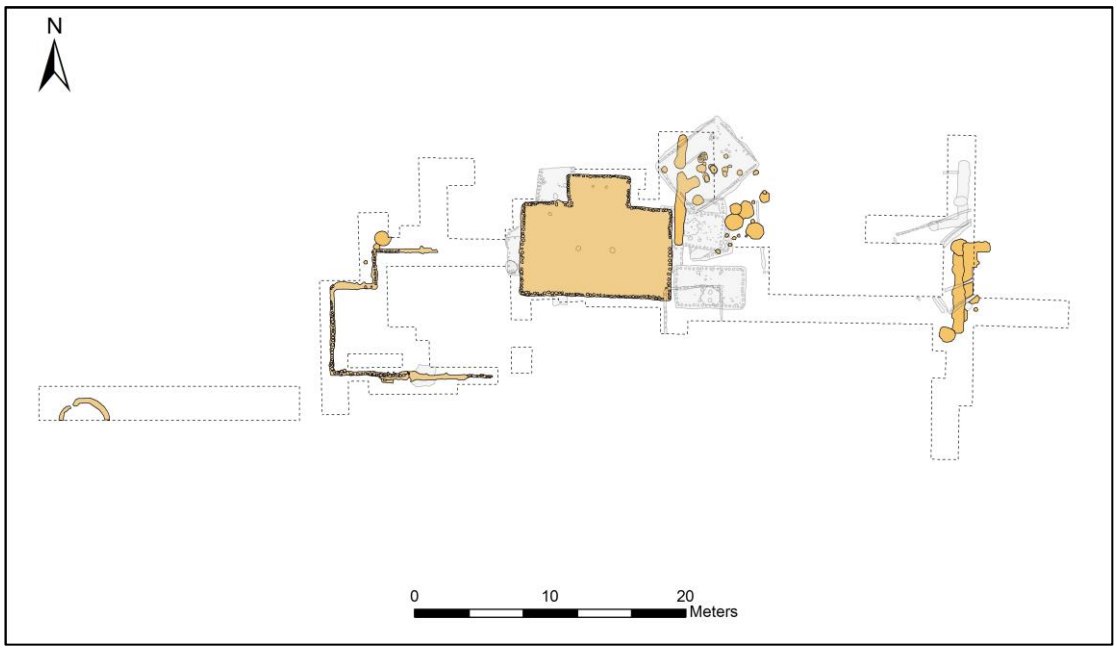


Figure 2.23 In orange, the Early Mississippian features from Merrell Tract – Beloit College (I. Valese)

During the excavations, evidences of an Early Mississippian occupation were brought to light. These early Mississippian features consisted of seven large post pits, two large T-shaped buildings and a circular structure (Kelly 1996b).

Seven post pits were identified and mapped in plan during the Merrell Tract excavations. They were separated in two groups at a distance of circa 20m. As stated by Salzer (1972), both sets seemed to be aligned with the Moorehead and Merrell mounds, to the east and west, respectively. Of the seven post pits located, four (Features 343, 305A north, 305A west; and 305 south) were completely excavated, two (Features 312 and 316) were partially excavated and one (Feature 345) was only mapped.

The Merrell Tract post pits had depths varying between 1.14 and 2.10 m below the surface, and they yielded very little material, which was used to suggest a chronologic affiliation. Even though, the intense occupation of the site from the Emergent

Mississippian to the Sand Prairie phase, and the superimposition of the features made the affiliation of the feature to each phase, made the effort challenging. Pottery sherds from the westernmost post pits, F343 and 312, were indicative of Lohmann phase while the easternmost post pits contained materials indicative of a Moorehead phase affiliation. The actual role of the post pits placed on the Merrell Tract is difficult to determine, although Salzer and Kelly later interpreted them as marker posts within the plaza landscape. Actually, the eastern Lohmann cluster may form the central posts for the West Plaza and since they were arranged to the cardinal points, they might have formed a quadripartite configuration. While the western Moorehead post could have been marking the centre of a later open area/plaza along with some of the later post pits found in 15B Tract.

Two peculiar buildings, F160 and 187, were identified during the course of the Merrell Tract investigation, but only one (F187) was fully excavated. First described at Aztalan by Wittry and Baerreis (1958), they are distinguished by a unique T-shape, consisting of a main rectangular room and an anteroom or alcove, centrally placed along one of the wall lengths. Both buildings had an east-west orientation. As described by Salzer (1972), the fills were similar to those of the palisade wall fills on the east side of Monks Mound, in that they contained the blue-grey clay flecks. Concerning building techniques, both structures had narrower wall trenches in the anteroom but they result to be deeper than those of the main room. Both had a possible entry on the west of the north wall of the main room, as suggested by the presence of a peculiar feature in both of the T-shaped buildings. The wall trenches in this area, in fact, were wider and suggested the possible presence of adjoining posts that may have supported an entry. If so, the presence of an entrance on the north wall would be unusual since the prevailing direction of the winds during the winter months. As suggested by the excavators, this peculiarity could support the ritual function of the unusual structures. The only associated features with the T-shaped buildings, were the two paired interior posts mapped and cross-sectioned within the anteroom of Feature 187. It is possible, as suggested by Salzer, they served as roof supports for the anteroom or as supports for a bench or platform in this portion of the building.

The excavation of F187 yielded several diagnostic rim sherds all pertaining to the Stirling phase, since no other Stirling phase feature have been located in the area, and since the

T-shaped building was superimposed on Lohmann phase post pits, the chronology should be acceptable. Unfortunately, no similar information was collected for F160 that was not excavated, but by the similarity of construction technique and orientation, it was attributed to the Stirling Phase as well. Since no floors were preserved and no associated features, other than the internal posts were found, there was no direct evidence of how they were specifically used. Their location within the plaza, yet peripherally in the east central portion of the area, may indicate the residence of a religious specialist or some type of store house (Salzer 1972). In the west trench of the Merrell Tract excavation area a north half of a circular structure was identified (Salzer 1972; Kelly 1996b); although not fully defined and excavated. The wall trenches were ranged from 12 to 15 cm in width, its estimated external diameter was of about 3.5m. Since this circular structure, possibly a sweatlodge, was located to the southwest of the T-shaped buildings, and a Stirling Ramey Incised rim was found in its wall trench, it has been suggested a possible association between it and the T-shaped structures.

2.2.3 Late Mississippian occupation

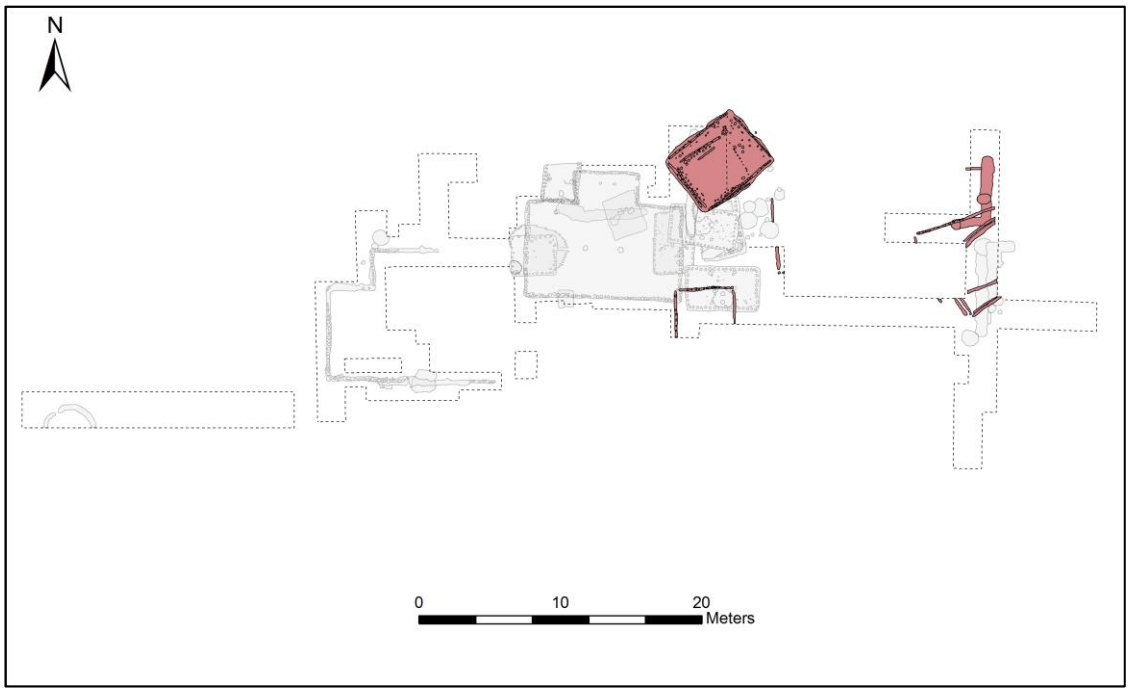


Figure 2.24 Late Mississippian features of the Merrell Tract highlighted in green (I. Valese).

A few wall trenches were located but not excavated on the field. They were numbered Feature 309 and on the basis of their orientation, similar to other houses on Tract 15B, were ascribed to the Moorehead phase.

A considerable Sand Prairie component represented by two structure groups was located in the Merrell Tract. The building groups were defined, mapped and excavated as well as two potentially additional households to the northeast of the tract (Kelly and Koldehoff 1995).

Possibly part of a larger residential area, both groups were characterized by large houses with at least two rebuilding episodes, a pattern also apparent on Tract 15B as well as for their orientation to the northeast-southwest. One of the groups (Features 348, 314, and 313) consisted of a house basin and associated external features, while no basins were preserved in the other set of structures (Features 341,342, and 303). The only feature associated with this latter group was a shallow external pit, while an isolated pit located some 20m west of the basined structure group, maybe associated to a household north of the excavation area. In Features 348-314-313 complex, the earlier structure's basin was later expanded for the rebuilding of the house. The final building episode, instead, involved the infilling of the earlier basins and the excavation of another smaller basin located inside the previous buildings. A highly abraded, decapitated frog effigy pipe was found in the northeast wall trench of the earlier building (F348). This, as argued by Kelly (1996b), could represents some type of ritual dedication of the dwelling, since its placement in a north-eastern trench is oriented toward the sunrise for the summer solstice. At the centre of each of the Sand Prairie buildings a hearth, with an adjacent, large, deep conical pit or post-pit was located. An internal storage pit was located in the southwest corner of the last structure (F313), as well as for a sequence of aligned single posts paralleled the walls of this small structure, interpreted as an interior facility, possibly a bench. A series of smaller pits were present within this sequence of structures, and outside the complex to the southeast were a series of storage pits and at least nine smudge pits, small, shallow pits filled with charred corncobs or other plant matter, thought to have been used in smoking hides.

As stated by Kelly (Kelly and Koldehoff 1995), in contrast with Moorehead phase houses, the size of the building is increased, however, when compared with the other Sand Prairie phase houses excavated in Tract 15B, the Merrell Tract houses result to be smaller.

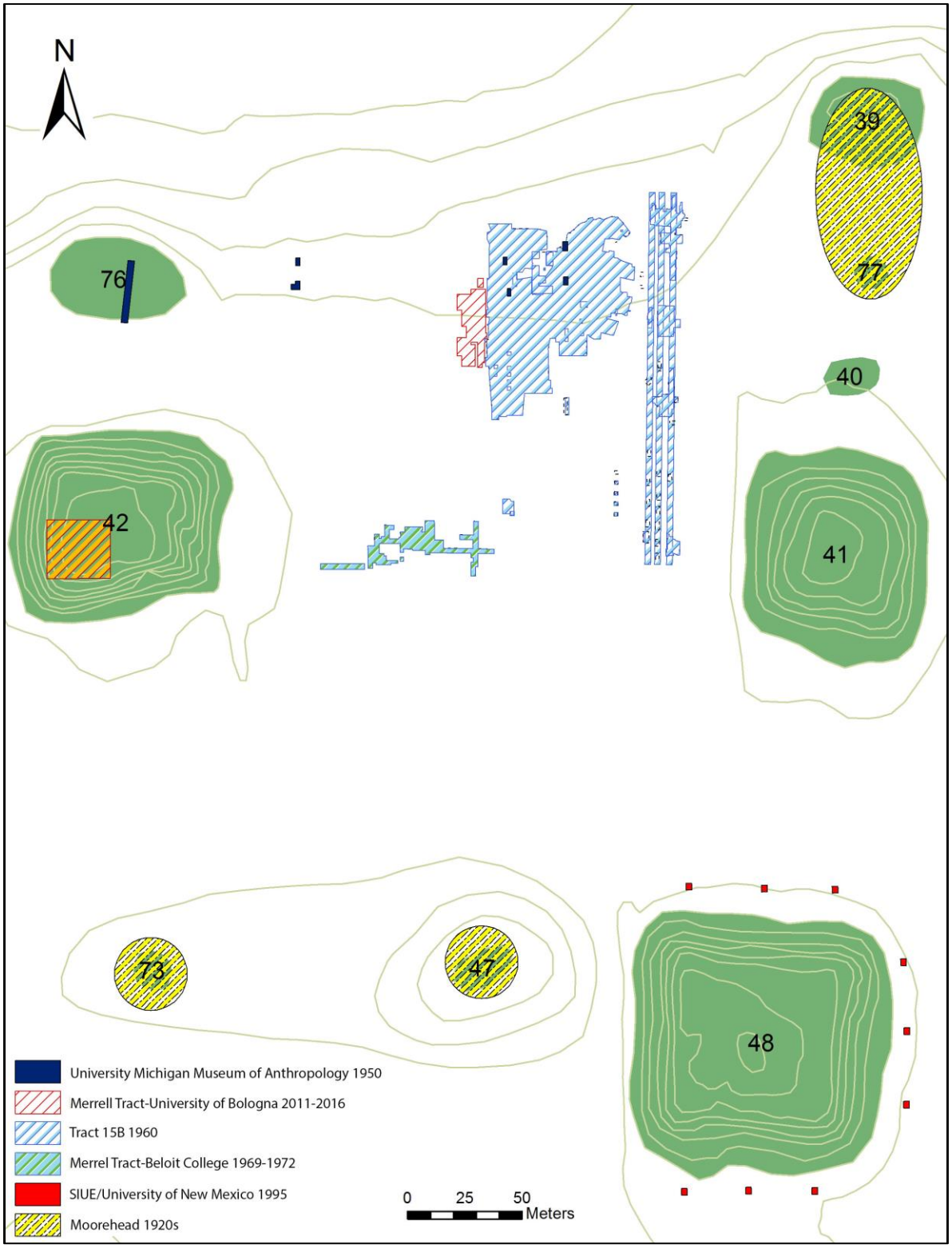


Figure 2.25 Map of the West Plaza Area indicating the location of the investigations led since 1920 (I. Valese).

Chapter 3 The Cahokia Project

The "*Cahokia Project: An Effort Toward the Integration of Different Scientific Traditions*" was born by an idea of M. Tosi and based on a research agreement signed by the two organizing institutions, the Department of History and Cultures of the University of Bologna (Italy) and the Department of Anthropology of the Washington University, St. Louis (MO, USA). The project, carried out in the context of the wider "*Cahokia Epicenter Project*", led by J. E. Kelly, has been directed by D. Domenici and J. E. Kelly, while the author acted as vice-director and coordinator of the fieldwork activities from 2013[4].

The six fieldworks were financed and received logistical support from multiple organizations: University of Bologna, Washington University in St. Louis, as well as from Italian Ministero degli Affari Esteri e della Cooperazione Internazionale (Direzione Generale per la Promozione del Sistema Paese – DGSP – Ufficio VI – Settore Archeologia), Cahokia Mounds State Historic Site, Cahokia Mounds Museum Society, Powell Archaeological Research Centre, Illinois State Museum Research and Collections Center, and Carisbo Foundation. Furthermore, the 2014's field season was co-funded by the National Geographic Society through a Young Explorer Grant conferred to the author of this dissertation who acted as Principal Investigator for the project "*Settlement dynamics and use of space in the Mississippian World. The Compounds: public buildings in Cahokia's West Plaza*".

The University of Bologna's investigations have been carried out in the Merrell Tract, more specifically in the north-central section of Cahokia's West Plaza. In line with the wider purposes of the Cahokia Epicenter Project directed by J. E. Kelly, the researches have been focused at clarifying the occupational sequence that interested the area and, more specifically, at understanding its transformation into a Plaza with public buildings during the phases of Cahokia's apogee. Since, as described before, the southern portion of the Merrell Tract had been already investigated during the 1970s by the Beloit College; the portion of the tract investigated by the University of Bologna will be referred to as Merrell Tract – UNIBO (acronym for University of Bologna) while the units excavated by the Beloit College will be named Merrell Tract – Beloit College in order to avoid confusion.

[4] Maurizio Cattani and Florencia Debandi, University of Bologna, coordinated the field activities from 2011 to 2013.

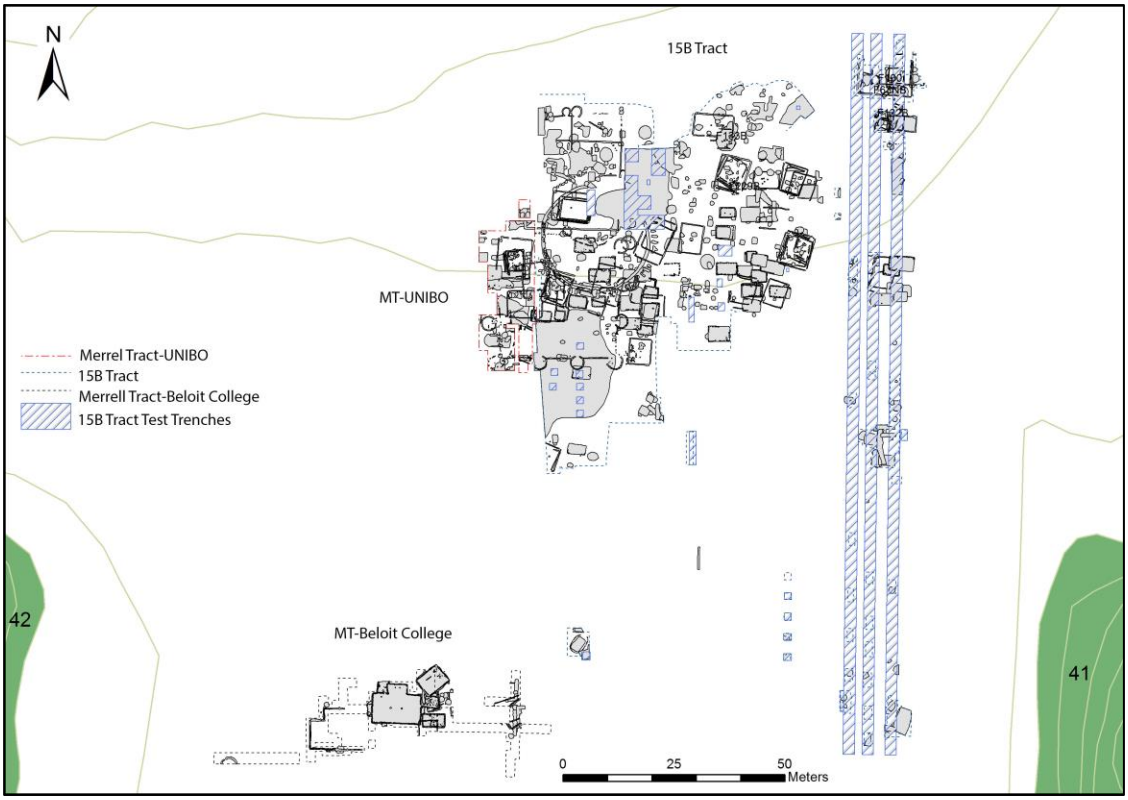


Figure 3.1 Detail of West Plaza Area with the location of Merrell Tracts and 15B Tract (I. Valese).

3.1 Methodology

According the tradition of field research carried out in Europe and especially adopted by the Italian team in several investigated contexts, the open-area excavation method (Francovich and Manacorda 2009) was chosen in order to evaluate the complete extension of eventual features. Cross-sections and test pits were realized wherever the complex matrix of the fill made the superimposition of the features hard to understand. During the six fieldwork seasons in the Merrell Tract, an area of 368.823 m^2 was uncovered. The approx. 30 cm disturbed plowzone was removed by shoveling and troweling, in order to expose the underlying undisturbed features. It is quite clear that, in most of the excavation area, plowing reached the ancient occupational levels, so that most of the original floors were destroyed by modern agricultural activities. Plowed soil was thus screened using ½-inch mesh, to recover otherwise lost, cultural material proceeding from the upper levels of the underlying disturbed features.

The features were excavated by zones, where present, and were cross-sectioned in order to draw profiles; the soil recovered from feature was screened either using ¼-inch mesh or collected for soil and flotation samples. Both kind of samples were labeled with

information concerning their provenance (feature number, unit number, level and zone) and stored in double plastic bags. The flotation samples were, then, processed by L. Kinsella at the Powell Archaeological Society laboratory, in order to obtain botanical samples (Heavy fraction and Light fraction).

The material collected from the field, both from plowzone and features, was stored in paper bags labelled with the indication of site (11 MS 2/3), tract (Merrell Tract), units (N and W), bag number (MT2-north-west-sequntial number), feature number, level, date and name of recorder. Once taken to the laboratory, after being washed, the material was subjected to preliminary sorting, counting a weighting and then recorded using the Inventory Sheet form, which refers to the general content of a bag.

Subsequently, the ceramic material was sorted by part of the vessel (rim or bodysherd), paste and surface treatment, and recorded using the Rim and Paste forms. As for the ceramic assemblage, the lithics was sorted by tools and debitage and by material (chert, sandstone, etc.) and recorded using the Lithic form.

As described in the following chapter, the information recorded on paper forms, concerning excavation data and laboratory analysis, was digitized in the form of databases.

3.2 Mapping strategy and data management

During the archaeological fieldworks led in the Merrell Tract, the University of Bologna's team aimed to a better and faster management of the archaeological record; to this end, techniques of photomapping were employed; as well as the production of vectorial maps and the realization of an intra-site Geographic Information System based on pre-constituted databases.

The grid used to map the features located during the excavations conforms to the Cahokia Site grid system and it is divided in 1 x 1 meter units named after the coordinates of their southwestern corner. The grid was set using a total station (TopCon GPT3107N) starting from the copper plates placed in 1970s after the realization of the UWM (University Wisconsin Milwaukee) map that has N0W0 a point placed southwest to Monks Mound (Fowler 1997). The points closer to the UNIBO's excavation, and used to set the excavations' control points, were N200 W250 and N200 W300.

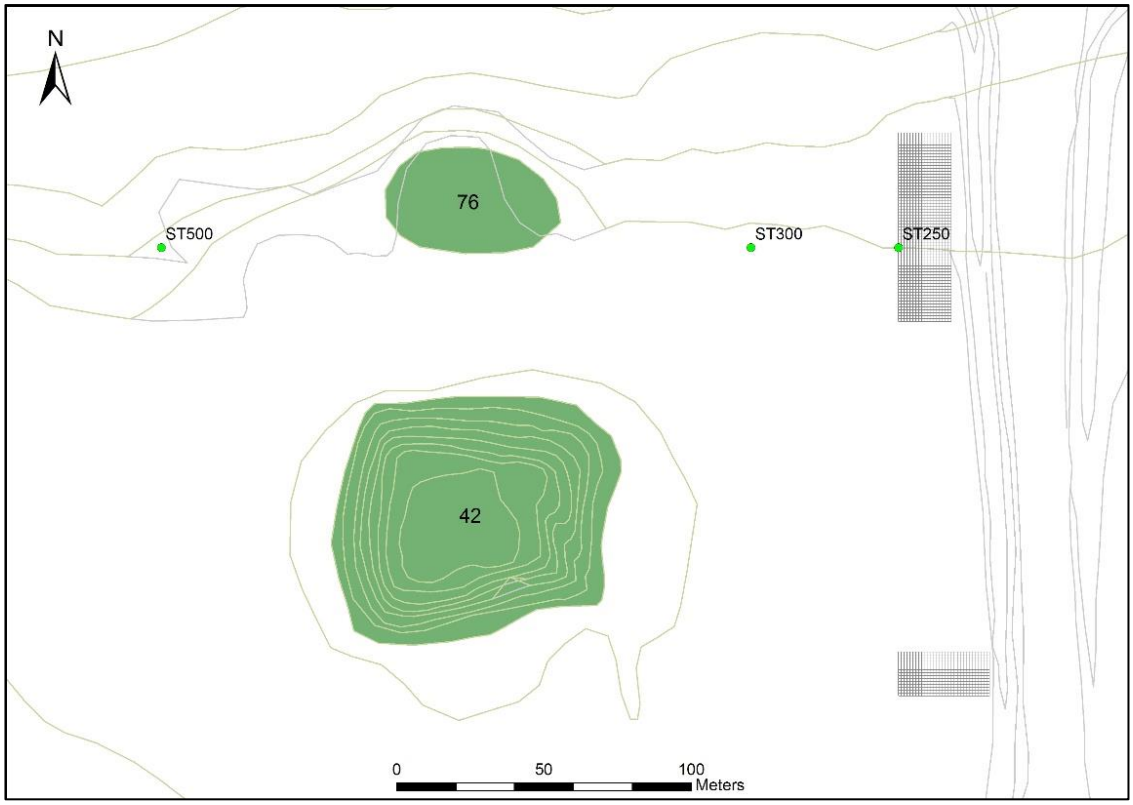


Figure 3.2 Location of Fowler's control points (N200 W300 and N200 W500) and UNIBO's (N200 W250) (I. Valese).

As stated before, the maps were realized using photogrammetry; the principles of photomapping rely on the process of drawing a map from a photographic base, in order to obtain a map with cartographic enhancements[5]. To obtain a metric image from a simple photo some expedients in the way of shooting and the rectification of imagery are required. The first step toward the rectification of an image begins on the field by placing markers or control points[6] on the ground whose positions have been recorded via total station or GPS; the number of control points should be no less than four per picture. The second step to obtain a good metric image is that the photo must be shoot from a zenithal position, in order to do so a telescopic pole is useful to have a wider area to photograph and to easily adjust the camera. The use of a Wi-Fi or NFC camera connected to an external device such as a tablet or smartphone[7] is considered, by the author, the best way to have more control of the shooting. Important is to draw a sketch of the documented area

[5] https://en.wikipedia.org/wiki/Photomapping

[6] The markers must be easily recognizable on the field to be better spotted on the picture, a simple way to obtain a good marker is to use common flashy coloured golf tees.

[7] In the University of Bologna's excavations, we used a compact Samsung WB50F camera and an Ipad or Iphone.

indicating the orientation of the image, the control points and their numeration as resulted by their recording via topographic device.

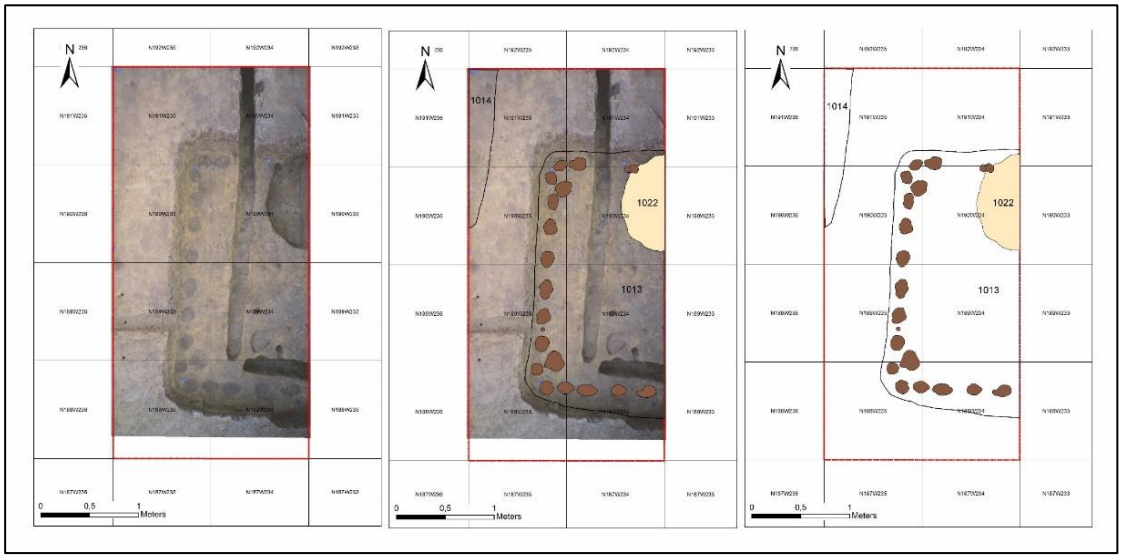


Figure 3.3 From the photometric image to the GIS map (I. Valese).

Once the work on the field is completed, the images must be processed via computer through a specific software; the University of Bologna provided the team with a software developed by GEOPRO named Photometric (2009 version). Every software has its own specifics but generally they are simple to use and they are based on a same workflow, which imply the upload of the image and the coordinates of the control points and the following correlation of the two. Once the control points' coordinates are associated to the markers on the picture, the software rectifies the photo creating a metric image on which is possible to obtain exact measurements. As for the case of extended area to document, this technique gives the opportunity to rectify two or more images unified in a single metric photomosaic. Consecutively, in order to obtain a detailed map from a metric image, this must be uploaded, georeferenced in a GIS platform and then vectorised.

A Geographic Information System is a digital structure in which data are stored in alphanumeric tables linked together, while maps of structures and objects are vectorised and organized into themes. In the GIS, each graphic object is geo-referenced and associated with an attribute field in alphanumeric tables. The platform can organize complex spatial data arranged in a series of separate layers, one for each kind of information – single sites, soil types, metric information, and so on – the relationships

between these layers can then be analysed and queried, in order to address questions about human land-use and the relationship with the surrounding environment (Renfrew and Bahn 2000). GIS, as D'Andrea (2002) claims, thanks to the navigation research and theming function, which improve the application, is an extremely effective tool for the study and the rapid publication of archaeological results. Moreover, it simplifies not only the consultation of databases available, but it also allows you to create maps by querying the alphanumeric database. The main feature of the tool is to "assist" the archaeologist in the interpretation of the stratigraphic context; the possibility to make queries is the first step to create map of distribution, this specific form of spatial analysis can highlight the correlation, statistically significant, of categories of objects concentrated in specific areas. The use of the GIS for archaeological excavations is an essential tool for the organization of the information collected on site and the information related to non-invasive analysis – geophysical survey, magnetic survey and remote sensing - that often precede and guide the research on the field. All the data can be managed through the System, which integrates in a model all the information related to the archaeological site, allowing the user to consider multiple aspects all at once, from the geoarcheological investigation, photointerpretation, study of individual classes of materials and of architectural complexes, identification and interpretation of the findings and functional areas, to statistical calculations. These features make the intra-site GIS a multi-functional application reflecting a variety of needs (Valese 2012).

Given that the Geographic Information System has become a valuable tool in the management of the archaeological datum, since the beginning, this information technology have been used to organize the spatial data retrieved from the Merrell Tract excavations. Before the University of Bologna, another GIS project was led in Cahokia by the Pennsylvania State University and directed by G. Milner (1990). This project had three main objectives: the first was to identify changes in the valley floor that would have caused the destruction or burial or sites, the second was to assess the availability of different resources in different areas while the third was to determine the factors that led the settlers to locate the site in determinate places. The work focused on a more extended area, which considered Cahokia's environs, they tried to identify when the areas were occupied through the analysis of geographical information about settlements location combined with the study of diagnostic artifacts held in museum collections.

The Pennsylvanian project had a more environmental setting thus all necessary information about Cahokia environment was collected; early historical maps and descriptions of the valley, modern maps, aerial photographs and hydrographic maps with the locations of rivers, creeks, and swamps, provided by the General Land Office, were plotted and converted to an electronic GIS format. Focusing first on one of the most important characteristics of the floodplain - the size, disposition, and nature of the wetlands - Milner obtained a model of natural landscape during Cahokia's heyday.

While University of Pennsylvania's GIS project had a topographical intent, the University of Bologna has been focused on the creation of an intra-site GIS aimed both to the management of the archeological record collected from the field and, as part of this research, a consistent part of the work has been dedicated to the creation of a wider GIS dedicated to former excavations led in the area.

The collection of data concerning past excavations has been useful to integrate the GIS intra-site, made during the fieldwork seasons, into a wider geodatabase dedicated to the entire West Plaza area. The huge amount of data between maps, field notes, photos, slides and books have been recovered at the Research and Collection Centre of Springfield (IL), the Powell Archaeological Society in Collinsville (IL) and at the Cahokia Mounds Museum (Collinsville, IL).

The implementation of the ArcGIS (10.2) geodatabase (a collection of geographic datasets of various types held in a common file system folder, a Microsoft Access database, or a multiuser relational DBMS[8]) consisted in the conversion of the existing paper cartography in vector format, its geo-referencing and the creation of databases containing the alphanumeric information that have been associated to the vectorised maps.

To consider a GIS functional, it must be supplied with alphanumerical information ordered into interrelated databases. As part of my research, a series of Access databases related to the geographic information uploaded in the GIS, in order to realize queries and maps of distributions, were designed by the author. The first series of databases concerned the GIS intra-site, and were dedicated to the real-time management of the data recovered from the University of Bologna's fieldworks. Databases dedicated to ceramic and lithic materials were inspired by the hardcopy forms provided by the Illinois State Museum; so

[8]http://desktop.arcgis.com/en/arcmap/10.3/manage-data/geodatabases/what-is ageodatabase.htm

that the main fields of the databases respect the information requested by the Bag checklist, Inventory sheet, Rim, Paste and Lithic forms. In order to have more information about the objects recovered on the field, an additional database dedicated to Diagnostic material has been crated. Those databases have proved to be useful, both during the archaeological season, to have more control on the artifacts while analysed in the lab, and in the post-processing phase, thanks to the creation of diagrams and maps of distribution. At the same time, the databases realized for the features recovered in past excavations led in the West Plaza area, have been useful not only to organize the different kind information but also to plan the University of Bologna's excavations.

Chapter 4 The Merrell Tract-UNIBO excavations' data

A detailed description of the features recovered during the excavations led from 2011 to 2016 in the Merrell Tract by the University of Bologna will be provided. The features will be organized by chronology and by typology (i.e. structures and pit features) and equipped with photos, profiles and maps.

4.1 The Emergent Mississippian phase (850-1050 AD)

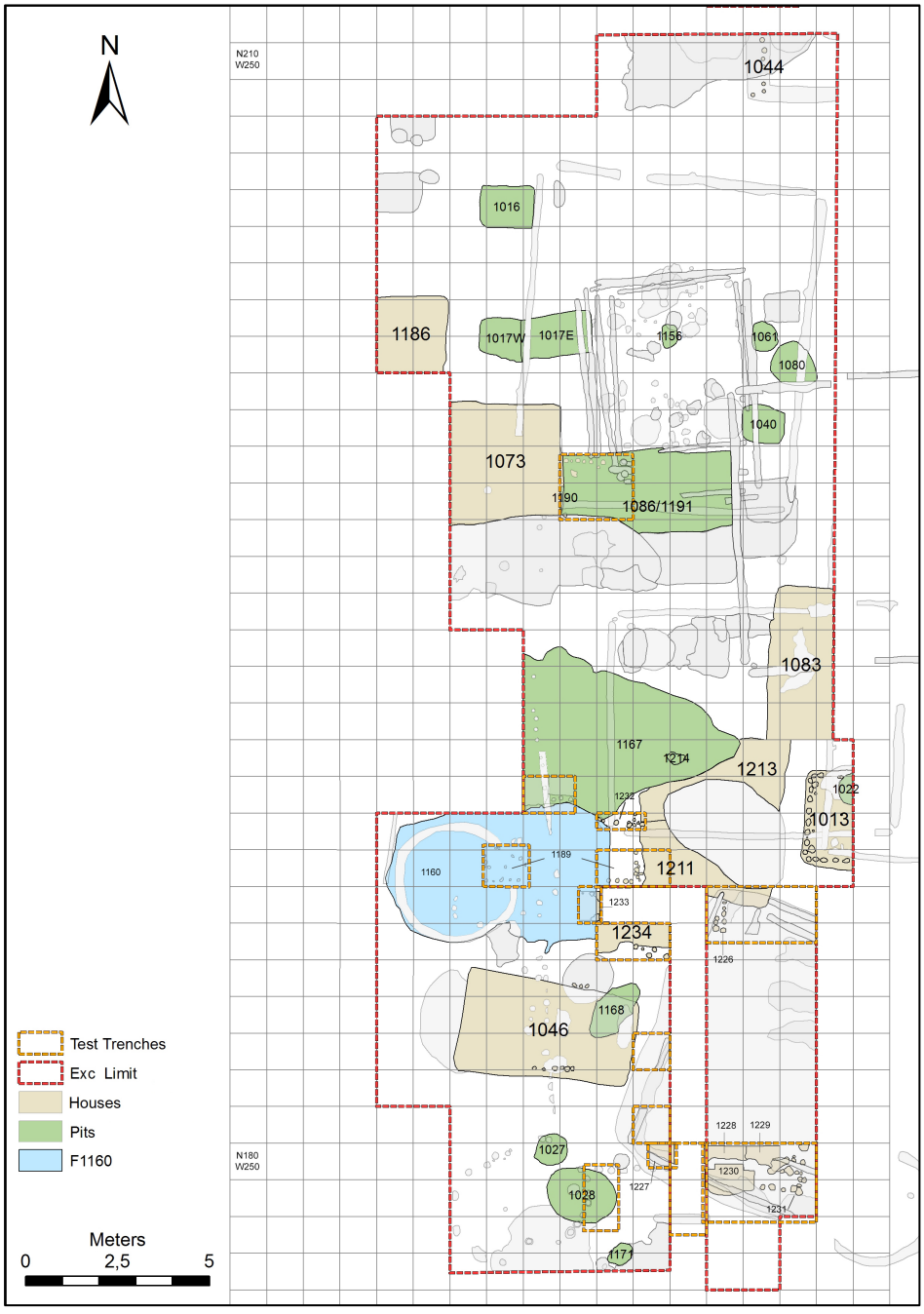


Figure 4.1 Emergent Mississippian phase features (I. Valese).

During the six years of excavation in the Merrell Tract, evidences of a dense Emergent Mississippian phase occupation have been recovered. Several house basins, representing clusters of single-post houses arranged around various open areas or courtyards, have been located in the tract along with pits and non-structure features.

4.1.1 Structures

The majority of features located in the Merrell Tract-UNIBO were attributable to the Emergent Mississippian phase. At least eight pit houses were partially excavated and mapped.

Feature Number: 1013/H107

Location: N188-191 W231-235

Orientation: E-W

Type: Emergent Mississippian House Basin

Topology: superimposed by F1009/H123, F1010/H114, F1011 and F1022. Possibly associated with F1022.

During 2012's fieldwork season, in order to georeference the maps of previous excavations carried out in the West Plaza area, the excavation of H107/F1013 was completed. This Emergent Mississippian house was already located, and partially excavated in 1960. Its western unexcavated edge was located and excavated in the Merrell Tract-UNIBO, allowing a precise joining between old maps of Tract 15B and our maps of the Merrell Tract.

This semi-subterranean house had a basin of a depth of ca. 28 cm, dug in part into the sandy sterile soil, which functioned as floor, and cut into the yellow clay sterile soil at its southwestern edge. The basin was filled by a dark-brown (10YR3/3) clayish soil containing small quantities of chert, pottery (especially in the lower levels, in proximity of the floor), and charcoal flecks; a small fragment of a burned log (16x4x2 cm) was recovered in the southwestern corner (fig. 4.2).

At least 37 posts sustained the roof; unfortunately, it is impossible to retrieve the exact number of postholes due to the presence of a bulk between the two excavation areas.

The 19 postholes, excavated in 2012, were filled with a dark-brown sandy soil; two of these posts, near the structure's corners, were shifted toward the interior of the house,

suggesting that they could have functioned as additional roof supports. Moreover, the presence of seven smaller postholes, filled with a grey clayish matrix, suggests the existence of some kind of internal structure.

Dimensions: 4.34 x 2.72 m covering an area of 11.80 m^2, depth of the basin 28 cm.

Figure 4.2 Detail of burned log found in the basin's fill of F1013 and two postholes of the house.

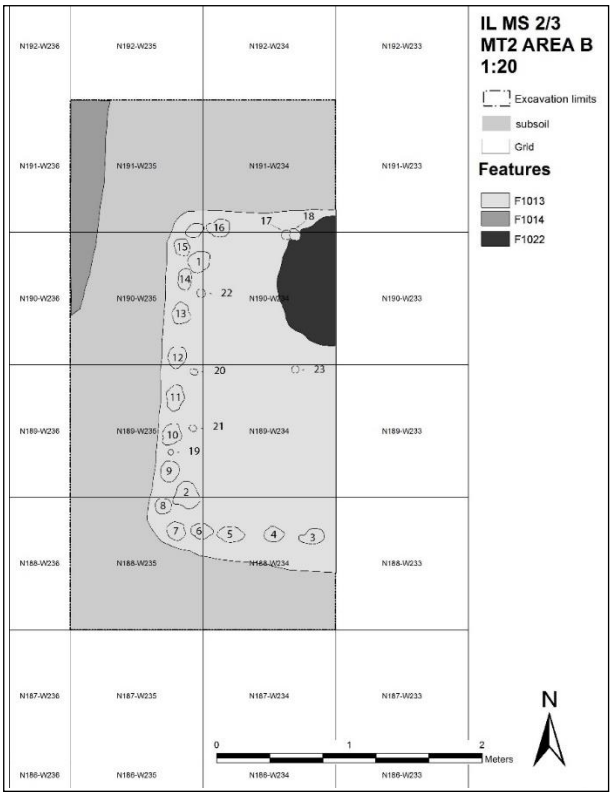


Figure 4.3 Numbered postholes of F1013 and table with depths of F1013 postholes, measured by probing.

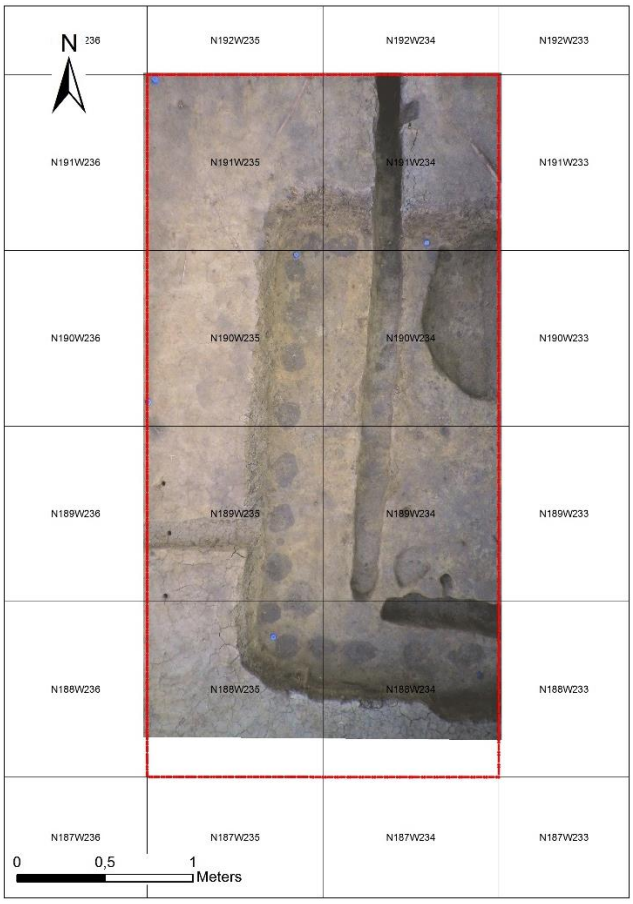


Figure 4.4 Photometric image of F1013/H107 and superimposed features.

POSTHOLE #	DIMENSIONS
Northern Corner	17 cm
Southern Corner	18 cm
1	12 cm
2	17 cm
3	17 cm
4	39 cm
5	17 cm
6	32 cm
7	30 cm
8	43 cm
9	32 cm
10	45 cm
11	52 cm
12	29 cm
13	26 cm
14	45 cm
15	11 cm
16	42 cm
17	7 cm
18	18 cm
19	9 cm
20	23 cm
21	27 cm

Table 4-1 Table showing F1013's postholes depths.

Feature Number: 1044

Location: N209-211 W236

Orientation: possibly E-W

Type: Emergent Mississippian House posts – no basin found

Topology: Superimposed by F1001/F358 and yellow silty soil (possibly backfilled sterile soil)

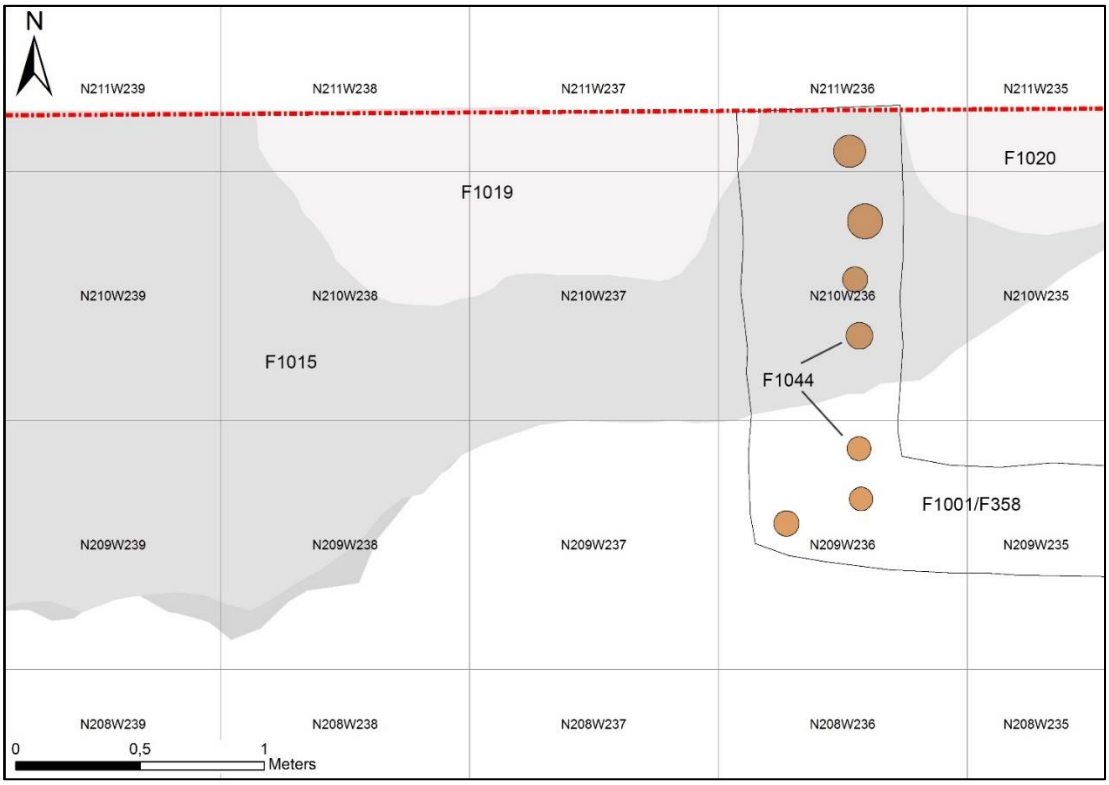


Figure 4.5 Map detail of F1044 and its superimposing features (I. Valese).

At the northern limits of the excavation area F1044 was found. This feature was composed by a sequence of seven post pits superimposed by the massive wall trench of the later F1001/F358. The posts were irregularly spaced (range of 24 cm ca.) and described an angle toward west, suggesting that the rest of the unpreserved building was located westward. No associated basin was found, so that the borrowing activities related to the construction of the later structure F1001/F358 must have affected the whole area, resulting in the demolition of the house basin. The finding of F1044 was almost fortuitous, since it was not only superimposed by F1001/358 but also by a 15 cm thick layer of what appeared to be sterile silty soil. This kind of silt is spread all over the excavation area and constitutes one of the sterile soil in which the features are usually dug into; its presence on top of

F1044 was probably the result of a later dumping or soil mixing due to the construction of the later features.

Dimensions: maximum diameter 13 cm, minimum diameter 9 cm. Since the posts were not completely excavated, the depth cannot be provided. The only post that was cross-sectioned was preserved only for a depth of 3 cm.

Figure 4.6 Photometric image of F1044.

Figure 4.7 F1044 in plan, sterile silty soil in profile.

Feature Number: 1046

Location: N182-185 W239-244

Orientation: E-W

Type: Emergent Mississippian House Basin

Topology: superimposed by F1030, F1049, F1165, F1168, F1220

Another basin, F1046, was located at 20 cm below plowzone; it was partially excavated in 2013 and tested again in 2015. The investigations revealed that the pit-house had a 30cm

deep basin filled with dark-brown soil, which yielded a good amount of Emergent Mississippian pottery sherds, burned clay and stumpwares. Six irregularly spaced posts (average distance 17.5cm ca.) were exposed on the silty sterile soil at its bottom, in the test pit realized in order to better define the nature of the feature.

During 2015 excavations, the features (F1049, F1165) that superimposed on F1046 were removed so that the western and eastern limits of the Emergent Mississippian structure were delineated exposing an estimated area of about 12.35 m^2. By the removal of the later features it was possible to identify another fill pertaining to the F1046 basin; this different zone was composed by brown loamy soil mixed with small flecks of burned clay, possibly the residue of an activity involving the use of fire. The portions of the basin that were excavated yielded a good amount of daub residues and burned clay. Since the basin of this house was dug into the silty sterile soil we can assume that the same soil was used as floor in which the posts to sustain the roof were located.

Dimensions: 4.74x2.70 m covering an area of 12.35 m^2; basin's depth 30 cm, average of the post holes' spacing: 17.5 cm.

Figure 4.8 Photometric image of F1046.

Feature Number: 1073

Location: N197-200 W242-244

Orientation: unknown

Type: Emergent Mississippian House Basin

Topology: superimposed by F1005, F1030 and F1087 superimposed on F1086/F1191

In 2013, during the expansion of the excavation area toward south an irregular fill was located and numbered F1073. This dark brown fill extended all over the southern portion of the excavation area and prevented the identification of other features' limits.

The feature was shovel and trowel scraped during the 2014's field season and it revealed to be composed by various superimposed features. New numbers of feature were assigned and F1073 was restricted to a rectangular feature, a portion of an Emergent Mississippian house basin (3.04 x 2.1 m), recovered in the western limit of the excavation. Although, this feature has not been excavated, is superimposed by F1005, F1030 and F1087 and it seems to superimpose on F1086. Other possible Emergent Mississippian basins or pits were part of what once was numbered F1073: F1087, F1094/1095, F1097 and F1099. Unfortunately, because of time restrain these features were nor excavated or tested.

Dimensions: 3.04x2.1 m

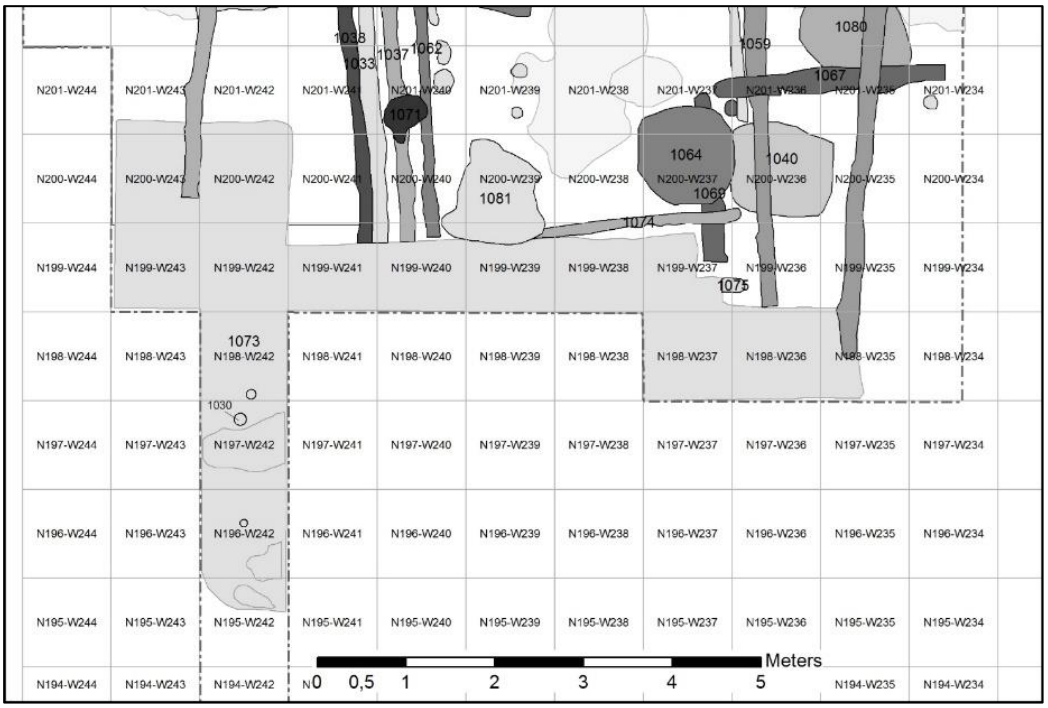


Figure 4.9 F1073 in 2013.

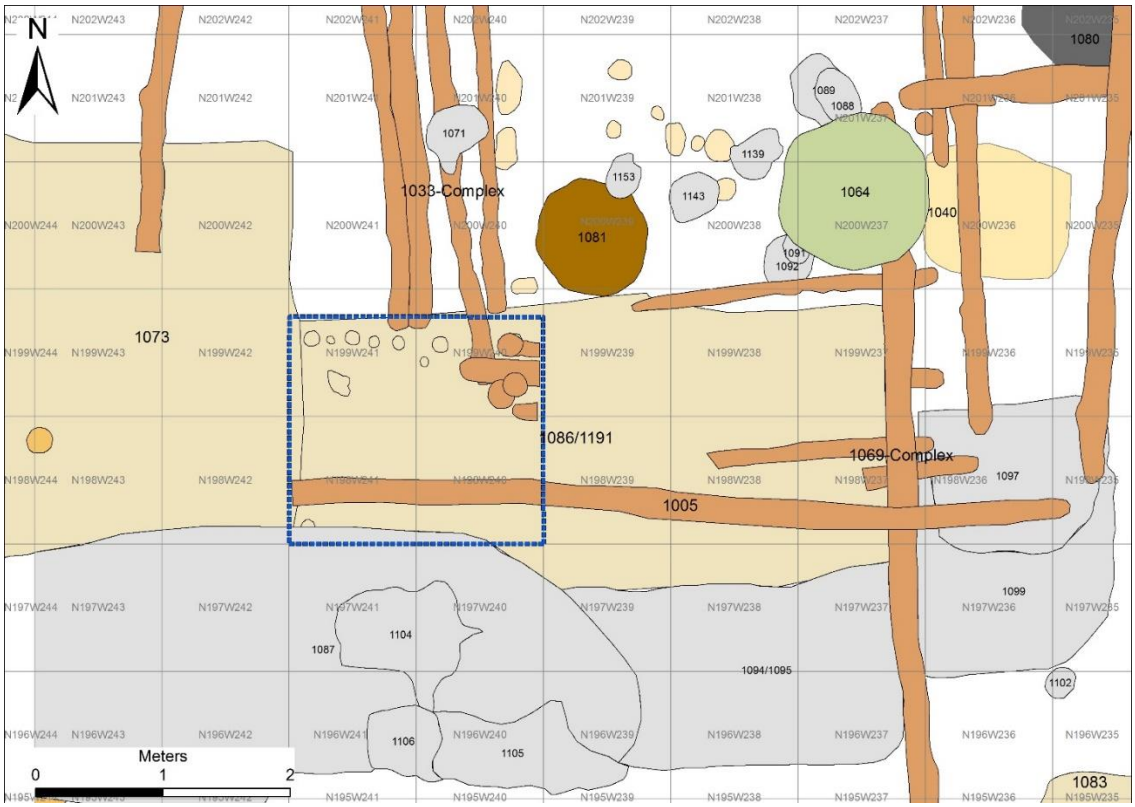


Figure 4.10 Map detail of F1073 in 2015 and location of F1086/F1191 (test pit location in blue).

Feature Number: 1086/1191

Location: N197-199 W237-241

Orientation: E-W

Type: Emergent Mississippian House Basin and post pits

Topology: superimposed by F1005, F1033-Complex, H129/F1069 and F1073. Adjacent to F1094/F1095

Part of what was F1073 was re-numbered as F1086/F1191 in 2014, and was later tested in 2015. The feature, located between N197-199 and W237-241 measuring 4.79 x2.3 m, was an Emergent Mississippian feature in which the later wall trenches' fill mixed up.

During 2015's fieldwork, in order to find the southern walls of the Mississippian structures present in the area, F1086 was tested revealing the presence of a shallow basin whose post pits were spotted on the silty sterile soil once the light brown fill (2.5Y4/4) was removed.

Dimensions: 4.79x2.3 m, maximum depth 22 cm. The posts were spaced in a range between 14 and 30cm, their diameter varied from 6 to 15 cm. Since the posts were not excavated dimensions concerning their depth cannot be provided.

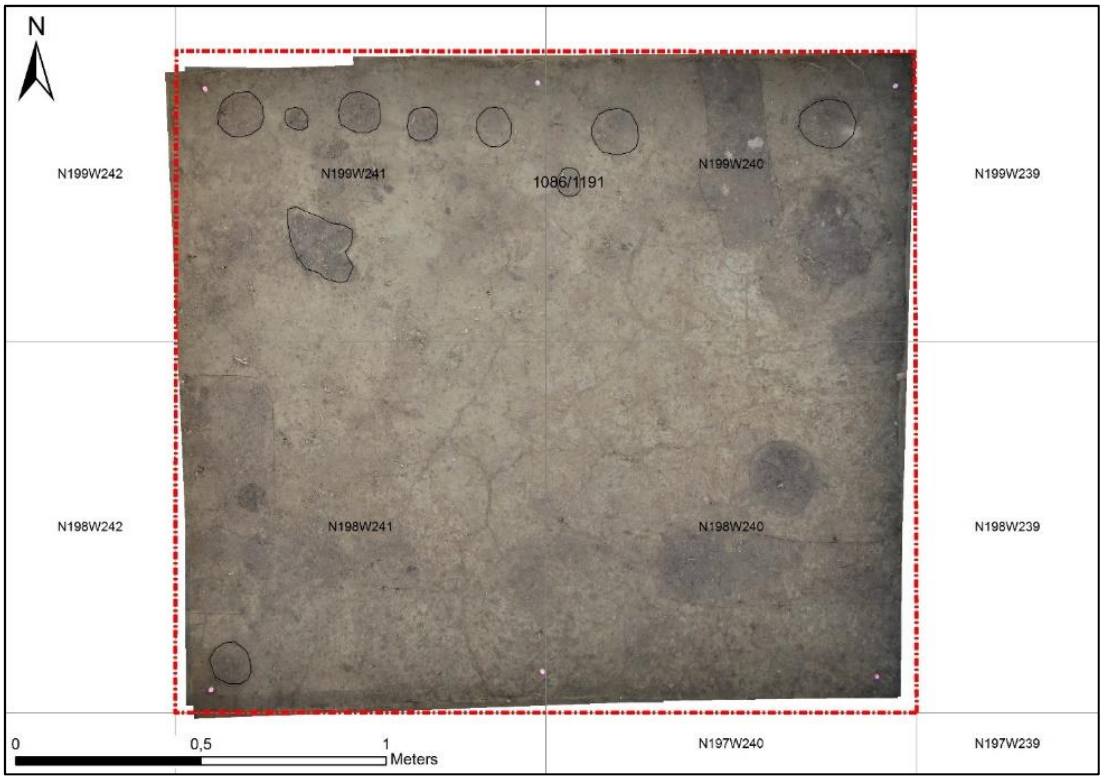


Figure 4.11 F1086/1191's postholes photometric image in GIS.

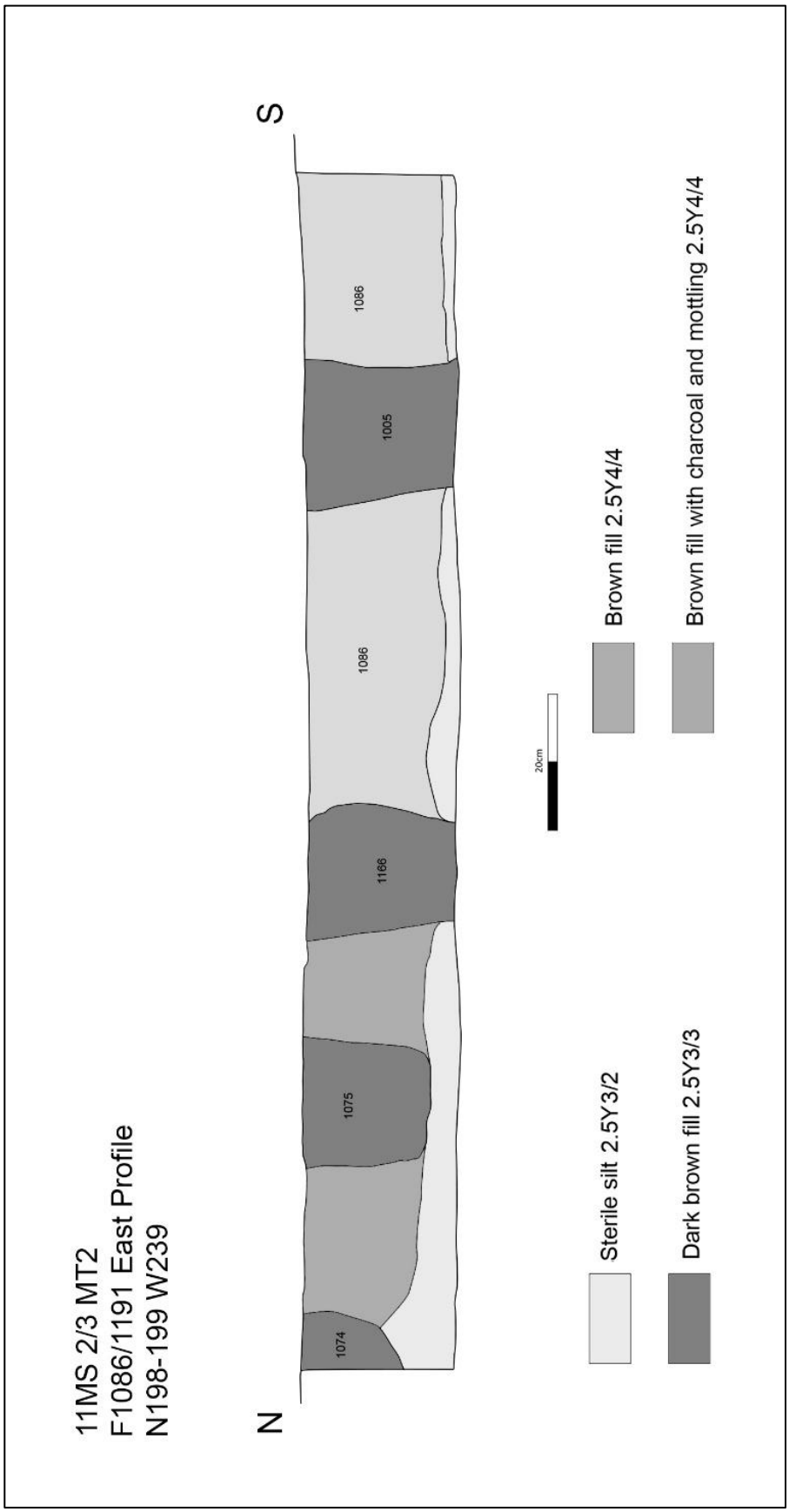


Figure 4.12 F1086/1191 East Profile.

Feature Number: 1167

Location: N189-194 W237-242

Orientation: E-W

Type: Emergent Mississippian features

Topology: superimposed by F1030, H123/F1100, F1160, superimposed on F1213

A similar context to F1073, was found after the enlargement of the excavation area in 2014, a similar irregular feature measuring 5.88x4.03 m, F1167, was uncovered. A test unit (TU N190/W241-242) realized in 2016, showed that F1167 was actually formed by the superimposition of several Emergent Mississippian basins and pits.

F1167 was characterized by a loamy matrix and a shallow burned layer was identified at the interface between the superimposed F1160 and the underlying postholes. All the new Emergent Mississippian features recognized in this TU were named as different zones of F1167.

The realization of this Test Unit revealed a much more complicated picture of the Emergent Mississippian phase occupation, since, aside from a series of postholes from an Emergent Mississippian house, we located other different fills, maybe pits or other house basins, cut into the yellow sterile clay that went down for at least other 40 cm.

Dimensions: max length 5.90 m, max width 4.54 m., excavated depth until sterile soil 25 cm.

Figure 4.13 Detail of the basin's fill of F1189 in Test Unit N188 W243.

Figure 4.14 F1167 detail of a photometric image from 2014's excavation.

Figure 4.15 F1167 map (I. Valese).

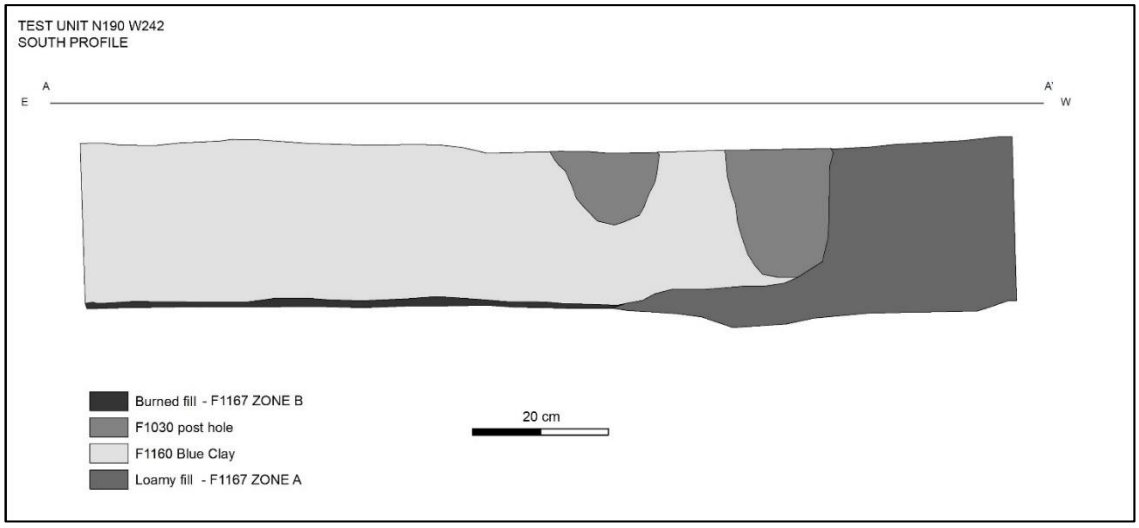


Figure 4.16 South profile of the Test Unit dug into F1167 (I. Valese).

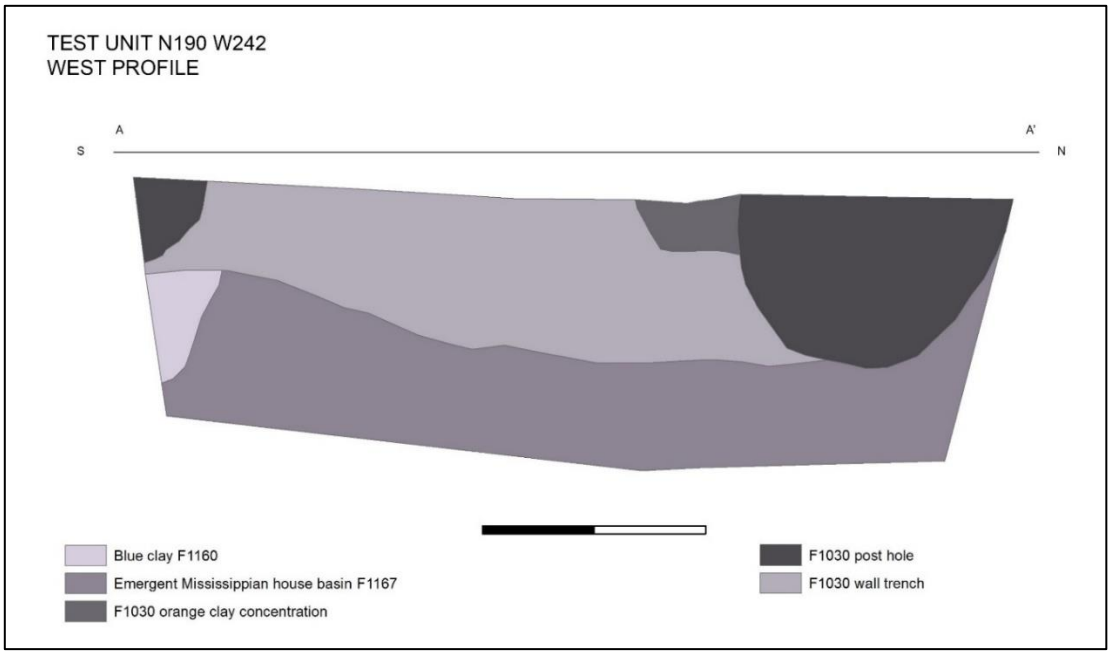


Figure 4.17 West profile of the Test Unit dug into F1167 (I. Valese).

Feature Number: 1189

Location: N188 W239-240 and N188 W243

Orientation: E-W

Type: Emergent Mississippian house

Topology: superimposed by F1030, F1160 and F1211.

In N188 W239/240 and N188 W243, two test trenches were made in order to investigate the nature of the clay layer F1160. By the removal of the clayish feature, dark brown loamy fill and a series of 33 postholes describing the western and eastern corner of a single Emergent Mississippian house named F1189 were found. The loamy soil constitutes the few centimetres of the basin's fill preserved, few materials were recovered. Since the area was densely occupied during the Emergent Mississippian times, it is possible that not all the 33 post holes spotted on the clayish sterile soil pertained only to F1189.

Dimensions: maximum depth of the basin 20 cm ca. The posts holes were mapped but not excavated. They were regularly spaced approximately at 22 cm and their diameter varied from 5 to 16 cm.

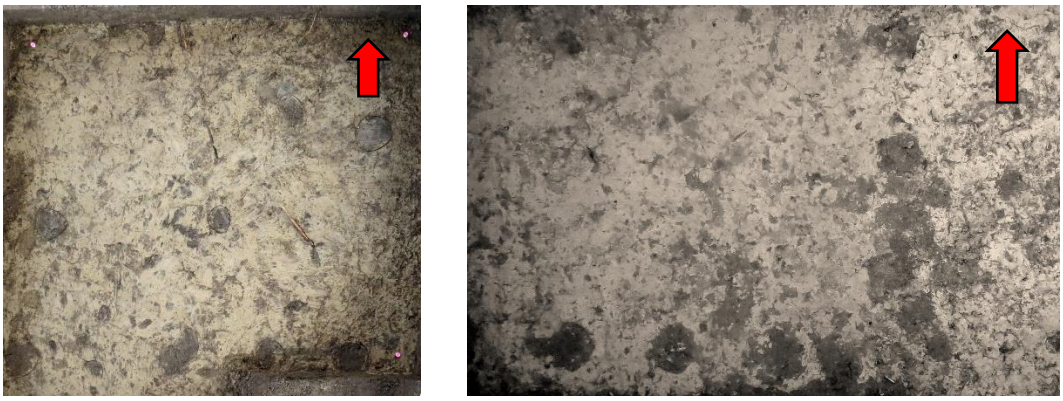


Figure 4.18 Photometric images of the test units in which F1189 was located.

Figure 4.19 F1189's map (I. Valese).

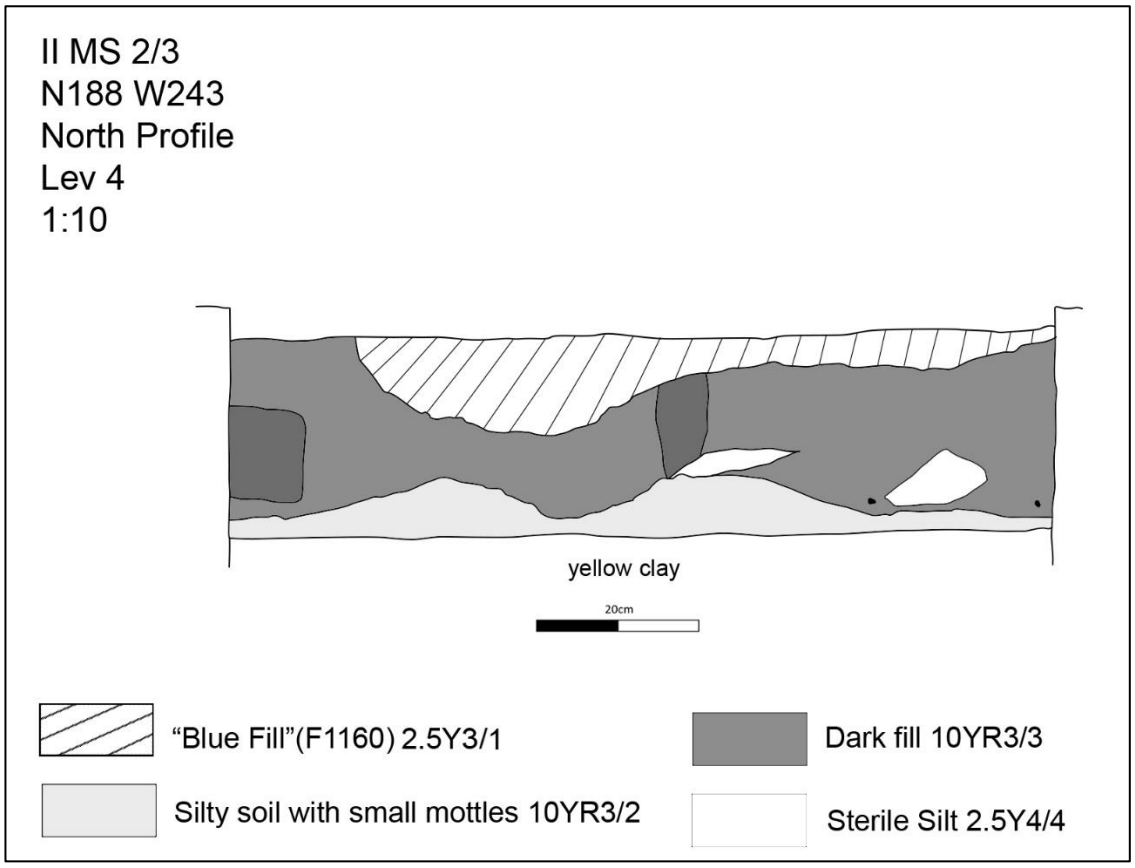


Figure 4.20 North profile of Test Unit in N188 W243 (I. Valese).

Feature Numbers: 1211 and 1213

Location: N187-189 W236-239

Orientation: E-W

Type: Emergent Mississippian houses

Topology: superimposed by F1100-H123, F1177 and F1193. Adjacent to F1213.

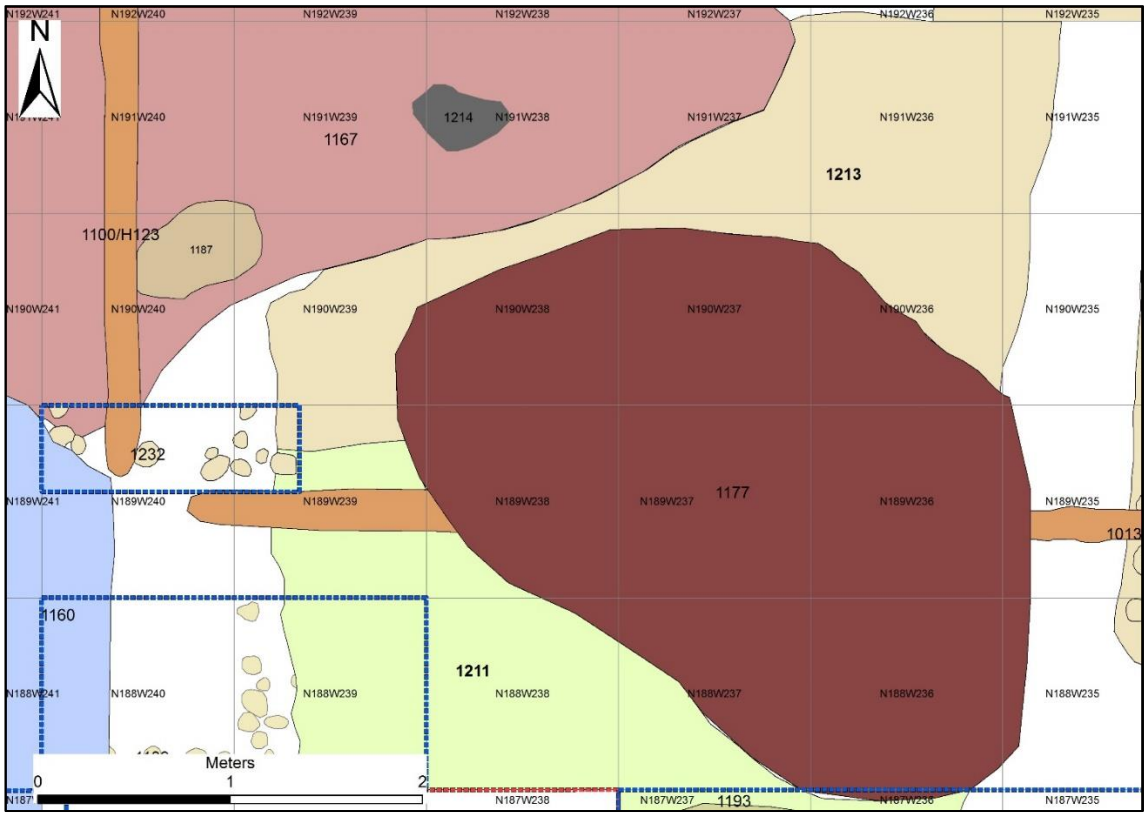


Figure 4.21 Map detail of F1211 and F1213 (I. Valese).

In the eastern portion of the excavation area another Emergent Mississippian feature, F1211, was identified after the removal of a baulk at N187. The feature extends towards north in N187-189 and W236-239. This feature was not excavated, although by trowel scraping a good amount of Emergent Mississippian ceramic material was recovered. Its silty-loamy fill (10YR 3/2) was characterized by the presence of small yellow clay lumps, charcoal and material concentrations. The house basin was superimposed by the later features F1100-H123, F1177 and F1193 while the relationship with the adjacent F1213 is unclear. The limits of this irregular feature, F1213, were not identified nor was it excavated completely. By trowel scraping, Emergent Mississippian pottery sherds were collected. F1213 is also superimposed by F1177 while the relationship with the adjacent F1211 and F1167 is not clear.

Dimensions: F1211: 3.85x1.83m; F1213: 3.86x1.87m

Figure 4.22 Detail of southeastern limit of F1211 and superimposed F1193's northern and western walls.

4.1.2 Non-structure features

Attributable to the Emergent Mississippian phase some features non-classifiable as structures or pits were located.

Feature Number: 1160

Location: N185-189 W240-246

Orientation: E-W

Type: anthropic clay layer

Topology: F1160 is superimposed on F1189, F1167, F1232 and F1233 and is superimposed by F1030, F1169 and F1192

F1160 is a layer of clay with a peculiar blueish shade (2.5YR3/0). It was spotted for the first time in 1960 and because of the colour, the excavators referred to this feature as "Blue Fill". It was superimposed by an Emergent Mississippian house (H113) and it extended with an irregular shape in the lower part of the excavation area. One of the hypothesis made about this fill was that it could have been part of an early mound destroyed in the later phases of the occupation (Pauketat 2013).

The same "Blue Fill" was located in the Merrell Tract-UNIBO excavations in 2013 and then explored since 2015. It emerged after removing the 30cm of plowzone from N185 to N189 and W240 to W246 covering an area of 19.17 m^2.

In order to understand its chronology and purpose, F1160 was tested in different locations: N188/W243, N188/W239-240, N190/W241-242, N189/W240 and N187/W241. The test trenches confirmed that this fill is of anthropic nature and that it was superimposed on Emergent Mississippian features, in particular on what seem be Emergent Mississippian House basins (F1189, F1167, F1211, F1232 and F1233).

Since F1160 extends outside the limits of the excavation, a regular grid of probes was made to have a better picture of its extension and depth.

From the information recovered from former and latest excavations F1160/"Blue Fill", more than a residue of a mound, seems a fill used to level the area probably during the Emergent Mississippian times since it superimposes on other Emergent Mississippian features. The clayish deposit appeared to be placed within an extensive but shallow depression in order to obtain a flat, horizontal surface. The specific purpose of these activities is still unclear, but it suggests that probably the end of the Emergent Mississippian occupation was already characterized by important activities related to

landscape modifications that started shaping the flat, open space that was going to be the West Plaza. Unfortunately, no more accurate data can be provided about its chronology, since the relationships between the F1160 and H113, the Emergent Mississippian house located in the 15B Tract, is uncertain so that the earliest feature that superimposes on the "Blue Fill" is the Compound B/C-F1030, whose chronology is placed in the Late Stirling phase.

Dimensions: area covered 19.17 m^2, maximum depth 20 cm ca.

Figure 4.23 F1160 South and West profile at N188 W240.

Figure 4.24 Probes realized in F1160.

Figure 4.25 Photometric image of the southern profile of TU-N190 W241-242.

Feature Number: 1031

Location: N177-179 W241-243

Orientation: E-W

Type: midden area

Topology: F1031 is superimposed by F1028/1070, F1030

Identified in 2012, F1031 has been investigated in part in 2015. It seems to be a shallow diffuse midden rather than a proper feature. The brown loamy soil that composed F1031 (10YR4/3) had a maximum depth of 7 cm. It was superimposed by a small post mold whose association is not clear. F1031 yielded a small amount of grog-tempered body sherds and chert debitage.

Dimensions: area covered 3.83 m^2, maximum length of 1.87 m and a maximum width of 2.57m. Maximum depth 7 cm.

Figure 4.26 View of F1031.

1960's excavation back dirt

Location: N189W234

Orientation: E-W

Type: back dirt

Located at N189W234 – N188W234 we detected the 1960's excavation limit. The cut of Wittry's fieldwork was very clear at 30 cm below soil and the fill was dug out by levels of 10cm each. The back dirt yielded a good amount of pottery sherds and chert; this material, being from a disturbed context, was not taken into consideration in the analysis.

4.1.3 Emergent Mississippian features located in Test Units

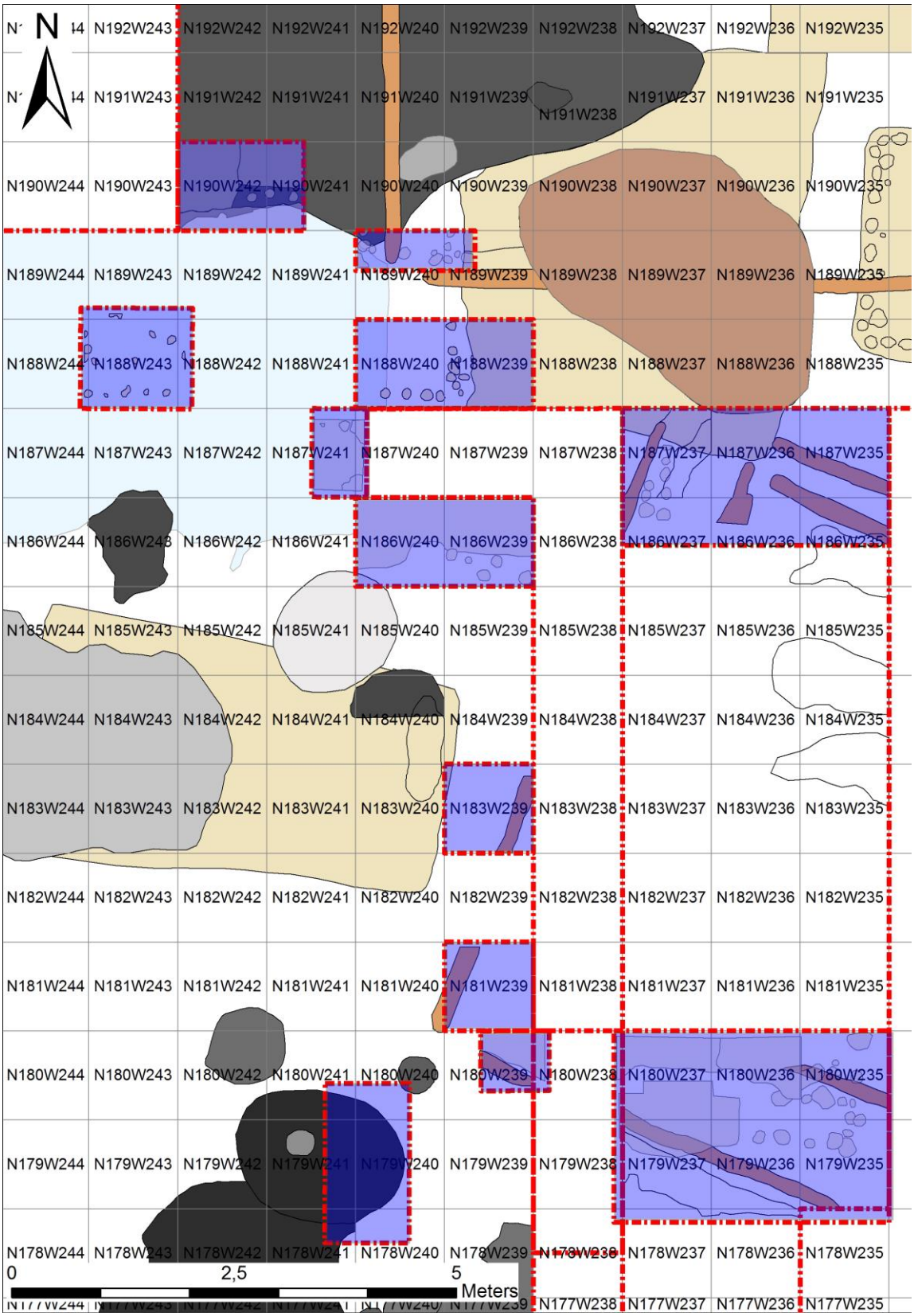


Figure 4.27 General map of the excavation area, Test Units indicated in blue (I. Valese).

Since most of the excavation area was characterized by the presence of mixed and superimposing fills, a series of test units was set in order to understand their nature. Mostly all of them revealed evidences of the Emergent Mississippian occupation, such as pits and house basins.

A first test unit was realized at TU- N180/W239 in order to better define the southern wall of the Mississippian structure F1193. After the removal of part of the Mississippian basin, an earlier feature was located at approximately 35 cm below soil. This earlier feature was numbered F1227 and has a depth, defined by probe, of 40 cm ca. This pit or house basins yielded a good amount of unworked and worked sandstone and had a sandy, brown fill.

Figure 4.28 TU-N180W239, detail of southern wall of F1193 and F1227.

Another shallow test unit located at TU- N186-187/W237 showed the presence of a series of postholes belonging to another Emergent Mississippian house numbered F1226. The relationship with the adjacent F1211 was undetermined.

Figure 4.29 Detail of F1226's postholes at N186 W237.

Shovel and trowel scraping in TU- N186/W239-240 showed the presence of multiple fills whose distinction was made impossible by the similarities in the matrix of the soils, for instance a single feature number was assigned (F1234).

Figure 4.30 Detail of F1234 in unit N186 W239.

A series of test pit was made in order to understand the chronology and the purpose of the clay layer F1160 (also named as “Blue Fill” during 1960s’ 15B Tract excavations).

Emergent Mississippian fill was located in TU- N187 W241 below F1160. In this specific location, the fill, more than a house basin seemed to be the result of different fills disturbed and mixed since no postholes were found once reached the sterile subsoil (F1233).

Figure 4.31 Figure 63 Image of F1233 located in TU-187 W241.

As for the others in TU- N189 W239/240 also, F1160 superimposes on Emergent Mississippian houses since another series of postholes was found once the yellow sterile clay soil was reached.

Figure 4.32 Image of the Emergent Mississippian postholes (F1232) recovered in TU-189 W239/240.

After the removal of part of the Sand Prairie house basin F1193, earlier features were identified in TU- N179-180/W235-237. At least four Emergent Mississippian features - F1227, F1228, F1229, and F1230 – were located. F1227, F1228 and F1229 were probably Emergent Mississippian pits or house basins cut into the yellow clay sterile soil and, by probe, ca. 40 cm of depth were estimated. While F1231 is a sequence of postholes belonging to a single or more Emergent Mississippian houses.

Figure 4.33 Detail of TU-N179/180 W235, in the image are shown the postholes of F1231 and the wall trench of F1193.

4.1.4 Pit features

At least 14 pit features unearthed in the Merrell Tract II were attributed to the Emergent Mississippian phase.

Feature Number: 1016

Location: N206-W243

Orientation: E-W

Type: storage pit

Topology: superimposed by F1005

F1016 was an E-W oriented subrectangular pit identified right under the plowzone at N206-W243 and adjoining squares. The pit had vertical walls and flat bottom. The later western wall trench of F1005 superimposed its eastern limit. It was filled by a homogeneous, yellowish brown (10YR3/4) sandy soil containing few pottery sherds and minor quantities of charcoal, chert, and burned clay. It could have been used as a storage pit.

Dimensions: 1.13x1.46 m (ca. 1.6 m^2), maximum depth of 47 cm.

Figure 4.34 F1016 during the excavation.

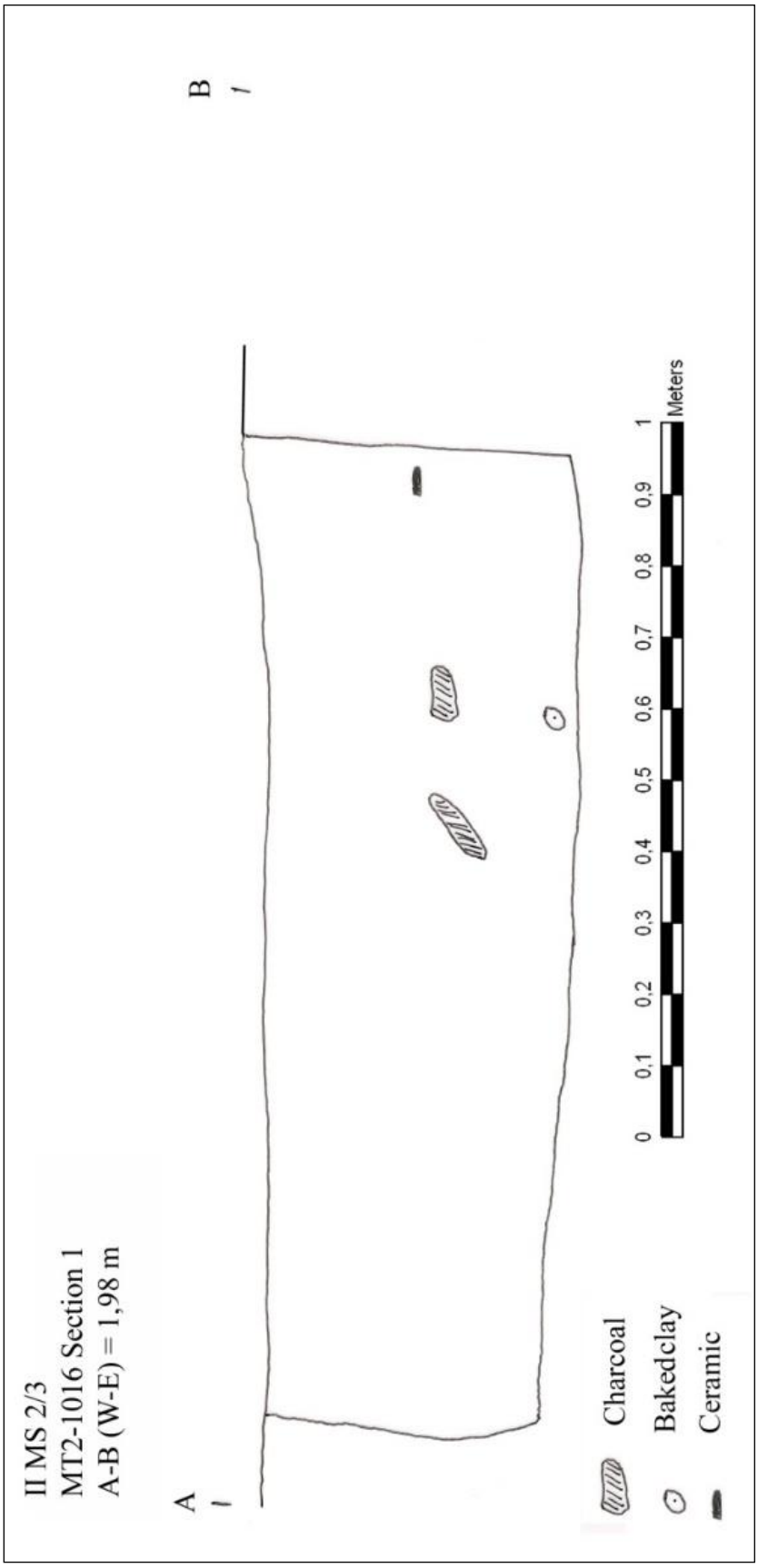


Figure 4.35 F1016 North profile (F. Debandi).

Feature Number: 1017E and 1017W

Location: F1017E – N202-203 W241-242; F1017W - N202-203 W243-244

Orientation: E-W

Type: refuse pits

Topology: F1017E was superimposed by F1005 and F1033-Complex west walls, while it was superimposed on F1017W.

Figure 4.36 Detail of the pottery concentration in F1017E's Zone B.

These two rectangular pits had been initially identified as a single feature and named F1017. A later wall trench superimposed them on their point of intersection. Once identified as two different pits, the two features were renamed as F1017W and F1017E (the separation of the materials was allowed by the fact that they were collected per square and the square limit was almost perfectly coincident with the pits' limit). They are similar in shape with almost vertical walls and flat bottoms, but slightly differed for orientation, since F1017W was oriented NW-SE, while F1017E was SW-NE oriented. The mutual stratigraphic relationship shows that F1017W was earlier than F1017E.

Three different zones were distinguished in the fill of F1017W: Zone A was composed by a 10 cm deep layer of dark brown silt (10YR 3/3) and yielded a good amount of chert, burned clay, small pebbles and pottery sherds. The second layer, Zone B, had maximum depth of 30 cm and had a fill matrix of black sandy silt (10YR2/1) containing chert, pottery, animal bones and clumps of sterile yellowish silt (2.5Y4/3). The lowermost shallow Zone C was composed by a yellow silty clay (2.5Y4/4) containing various clay lumps.

The fill of F1017E had a very similar matrix, with a dark brown (10YR 3/3) silty Zone A and a black sandy silt (10YR2/1) Zone B. It is worth noting that Zone B of F1017E was rich in cultural material such as pottery fragments, animal bones and water worn pebbles, possibly the result of a singular event of dumping, as the pottery fragments were laid intentionally. Some of the recovered vessels' fragments even seem to have intentional fractures as if they had been hit with a same striker and in the same manner.

Dimensions: F1017W length 1.13 m width 1.11 m. depth 52 cm. F1017E length 1.95 m; width 1.57 m; depth 48 cm.

Figure 4.37 Image of F1017E and F1017W after the removal of the southern halves.

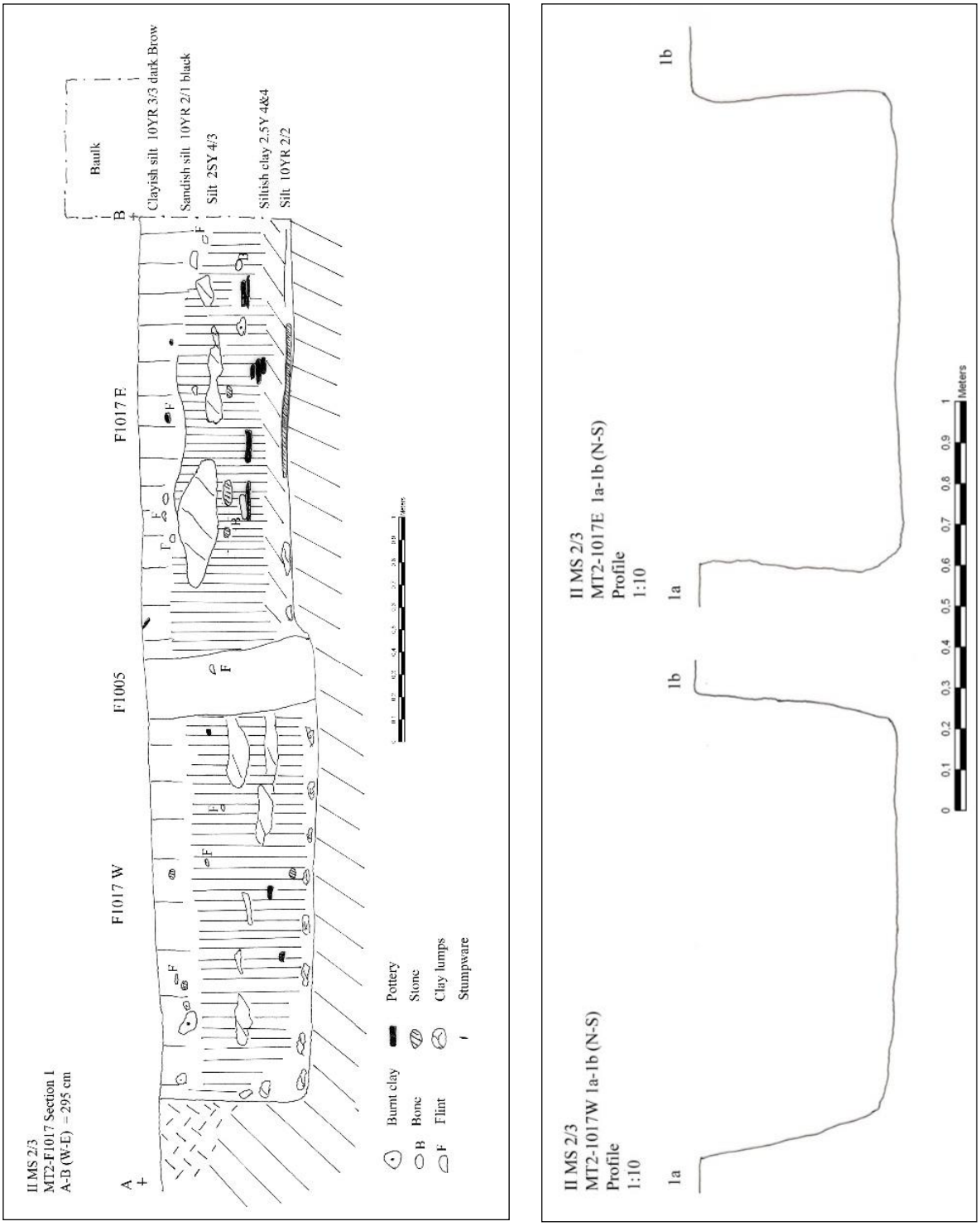


Figure 4.38 F1017E and F1017W's northern profiles.

Feature Number: 1022

Location: N190-191 W234

Orientation: -

Type: circular pit

Topology: Possibly associated with F1013

Once the floor of F1013 was reached, a round-shaped pit, F1022, was located. The pit was found at 55 cm below soil on the eastern limit of the excavation along the north side of the house basin, in proximity of its northwestern corner. Only the western half of the pit was completely excavated since the eastern half is located outside the Cahokia Mounds State Historic Site jurisdiction.

F1022 had a maximum depth of 22 cm and was filled with a brown (10YR4/3) clayish-silt soil with small amounts of clay and charcoal, a higher concentration of chert debitage was noticed in the upper part of the pit.

The pit could be contemporary with the F1013 basin, nevertheless, it must be noted that a posthole (posthole 18), probably related with an inner structure of F1013, cuts into the fill of the pit. This could mean either that F1022 is earlier than F1013 or that post pit 18 was located in a second phase of occupation of F1013, when F1022 had already been filled.

Dimensions: depth 22 cm, diameter 87 cm.

Figure 4.39 Image of F1013 during excavation and associated F1022.

Feature Number: 1027

Location: N180-181 W241-242

Orientation: -

Type: circular pit

Topology: Superimposed by F1030

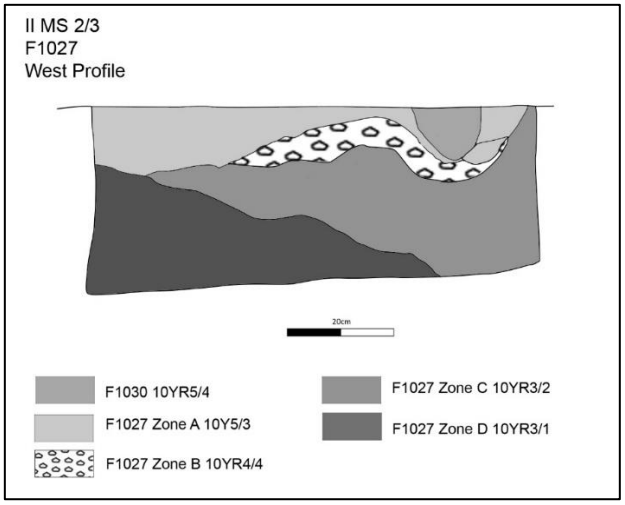


Figure 4.40 F1027 West Profile.

F1027 is a circular shaped pit with a diameter of 83 cm and vertical walls. The first 15 cm of clayish soil (10YR5/3) have been recognized as zone A; this zone was superimposed on a 6 cm deep loamy layer (named zone B- 10YR4/4) rich in burned clay mottles and shell fragments. Zone A was disturbed by the superimposition of one of F1030's posts, below these zones, a silty-loamy soil with clay mottles was distinguished as zone C. This third zone (10YR3/2) was 19 c^{m} deep and yielded chert debitage and pottery sherds. The last 22 cm of the pit were recognized as zone D (10YR3/1) a loamy fill with clay mottles.

Dimensions: depth 36 cm, diameter 82 cm.

Figure 4.41 Image of F1027's western profile.

Feature Number: 1028/1070

Location: N178-180 W240-242

Orientation: -

Type: circular storage pit

Topology: Superimposed by F1029, F1030. Superimposed on or adjacent to F1031

F1028-F1070 is a circular pit with a maximum diameter of 1.93 m, superimposed by F1029 and F1030. It is superimposed on F1031. F1028, stratigraphically earlier than F1030, showed to be 92 cm deep. The pit was filled with a series of dark loamy and sandy layers mixed with zones of sterile silt and yellow clay. Very few materials were recovered for this feature.

This huge pit could have been use as a storage facility opened ad filled more than once, maybe related to the entire Emergent Mississippian nearby household cluster. F1028-F1070, in fact, is located in an area clear of buildings that could be interpreted as a courtyard in which a small post pit was located a meter south.

Dimensions: depth 92 cm, diameter 1.93 m.

Figure 4.42 F1028/1070.

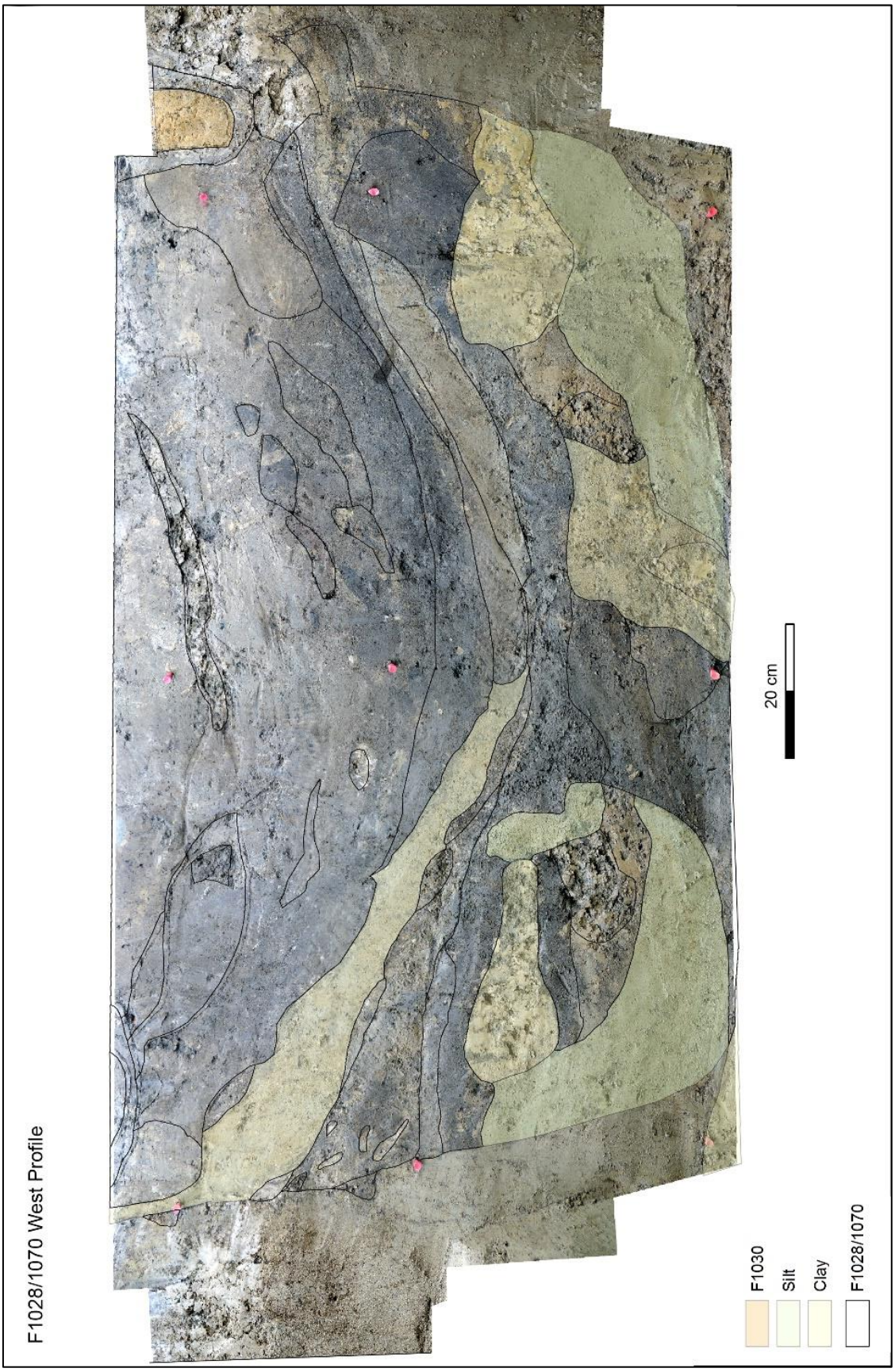


Figure 4.43 F1028/1070 West Profile (M. Mattioli, M. Valeri and I. Valese).

Feature Number: 1040

Location: N200-201 W235-236

Orientation: E-W

Type: rectangular pit

Topology: Superimposed by F1064 and F1033-Complex's east walls

F1040 is a rectangular pit with a slight bell-shaped profile. The northern half of the feature was excavated in 2013 while the southern in 2014.

The fill of F1040 was composed by two different zones: Zone A was mainly composed by light grey clay with mottles, while Zone B was composed by dark sandy fill.

The pit yielded a good amount of Emergent Mississippian material among which a big grinding tool and fragments of stumpware.

Dimensions: 1.16x 1 m; 50 cm of depth.

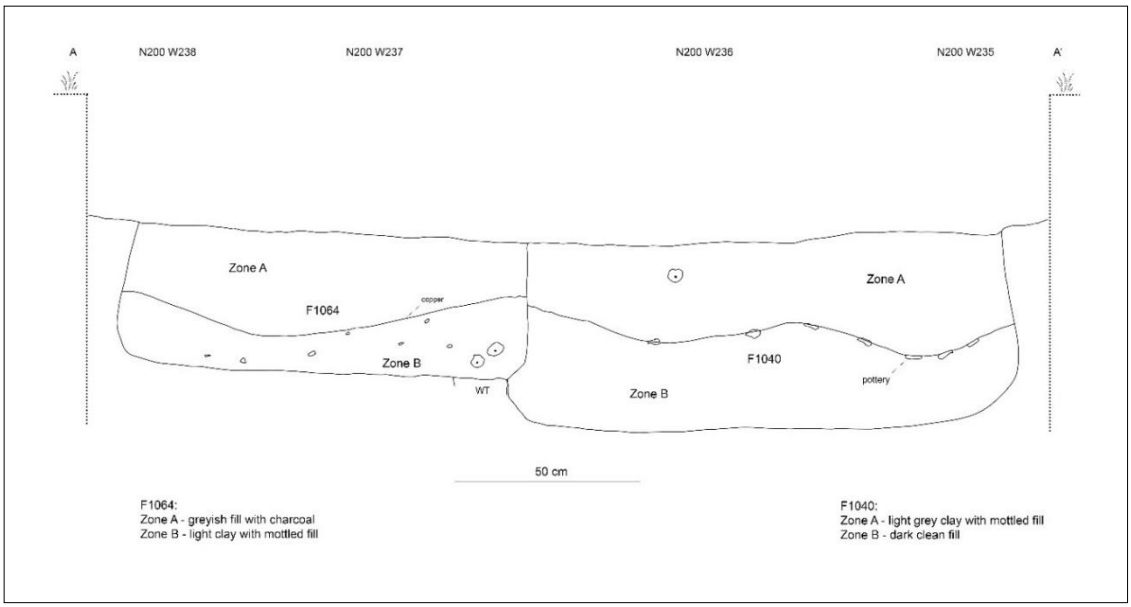


Figure 4.44 North profile of F1064 and F1040 (F. Debandi).

Feature Number: 1061

Location: N202-203 W236

Orientation: -

Type: circular pit

Topology: Superimposed by F1033-Complex's east walls

F1061 is a circular shaped pit feature, filled by dark loamy soil, which yielded a good amount of pottery sherds, some chert debitage and charcoal.

Dimensions: diameter of 81 cm; depth of 20 cm; area 0.46 m^2.

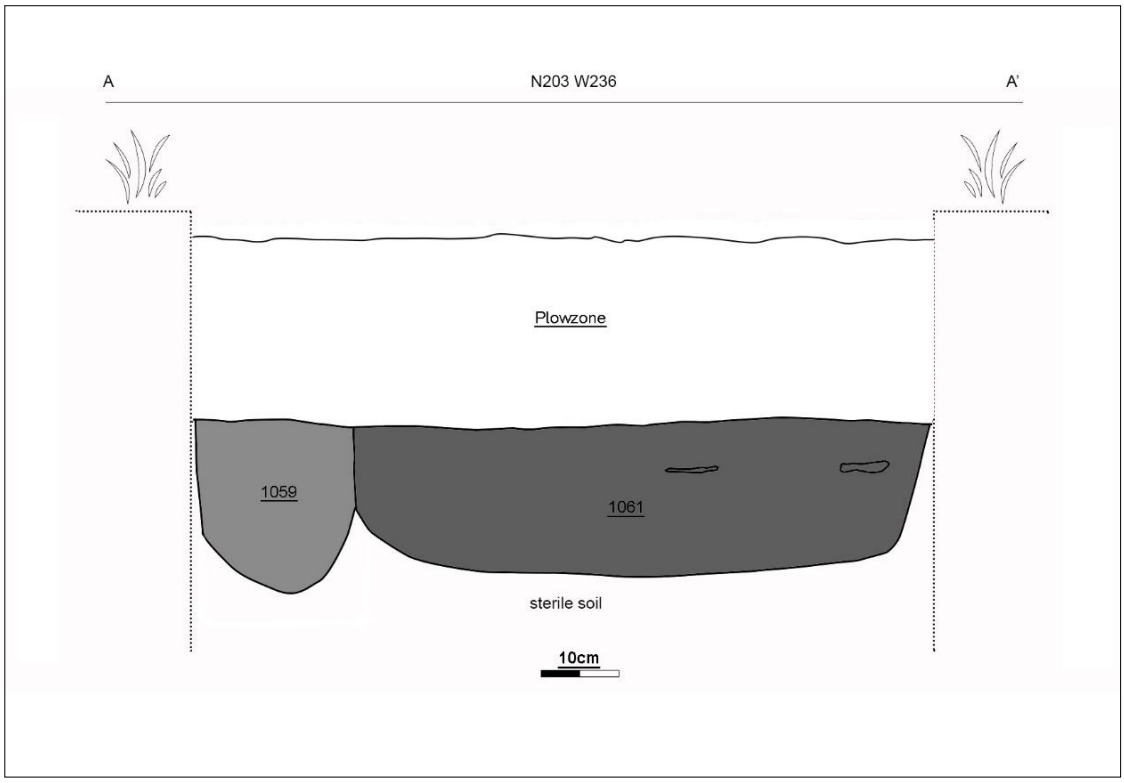


Figure 4.45 North profile of Southern half of F1059 and F1061 (I. Valese).

Feature Number: 1080

Location: N201-202 W235-236

Orientation: -

Type: circular refuse pit

Topology: Superimposed by F1005 and F1069/H129

F1080 is a circular pit with a diameter of ca. 1.20 m. During 2014 excavations, the western half of the pit was dug, revealing a bell-shaped profile with an irregular bottom. Its maximum depth reached 47 cm and it was composed by four irregular zones. Zone A was 7 cm deep and it was filled by sandy soil (10YR3/3) and yielded few pottery sherds and chert debitage. The second zone, Zone A-burned area, reached a maximum depth of 5 cm and its silty loamy fill (10YR2/2) was composed prevalently by charcoal and burned clay that deeps toward north. It seems that the burned material was discarded when still hot. Feature 1080 Zone-A burned deposit yielded a consistent amount of wood, nutshell, seeds, and maize and may reflect a single episode of discard from plant processing and cooking (Parker 2014; see chapter 5.4). The Eastern Complex cultivated cereal grains, erect knotweed and maygrass seeds were especially numerous in this fill, as were seeds from a wild edible plant, peppergrass which was also used, during historic times, to treat

a variety of ailments; the seed, in fact, has medicinal properties and has been used by herbalists for treatment of coughs and asthma. High peppergrass frequency in this deposit, accompanied by equally abundant Eastern Complex cultigens, implies that the seeds or the plants were used for a particular purpose. Furthermore, Tobacco seeds were recovered among the other botanical residues along with seeds of Morning glory, known to have psychoactive properties. These plants have been identified most often from ceremonial contexts including large unique structures and deposits such as the feature 1080, burnt zone, reflecting public ritual activity. Tobacco was an integral element in social and ritual activities, as both a smoking material and/or in religious offering.

Zone B was a 25-deep homogeneous silty-sandy fill (10YR3/4), with charcoal and clay lumps, which yielded pottery (two bad-preserved stumpware), chert debitage and a burned incomplete basalt hammer. At the bottom, Zone C was a 10 cm loamy soil (10YR4/3) with big clay lumps area that yielded no material.

Dimensions: maximum depth 47 cm; diameter 1.29 m.

Figure 4.46 Detail of F1080.

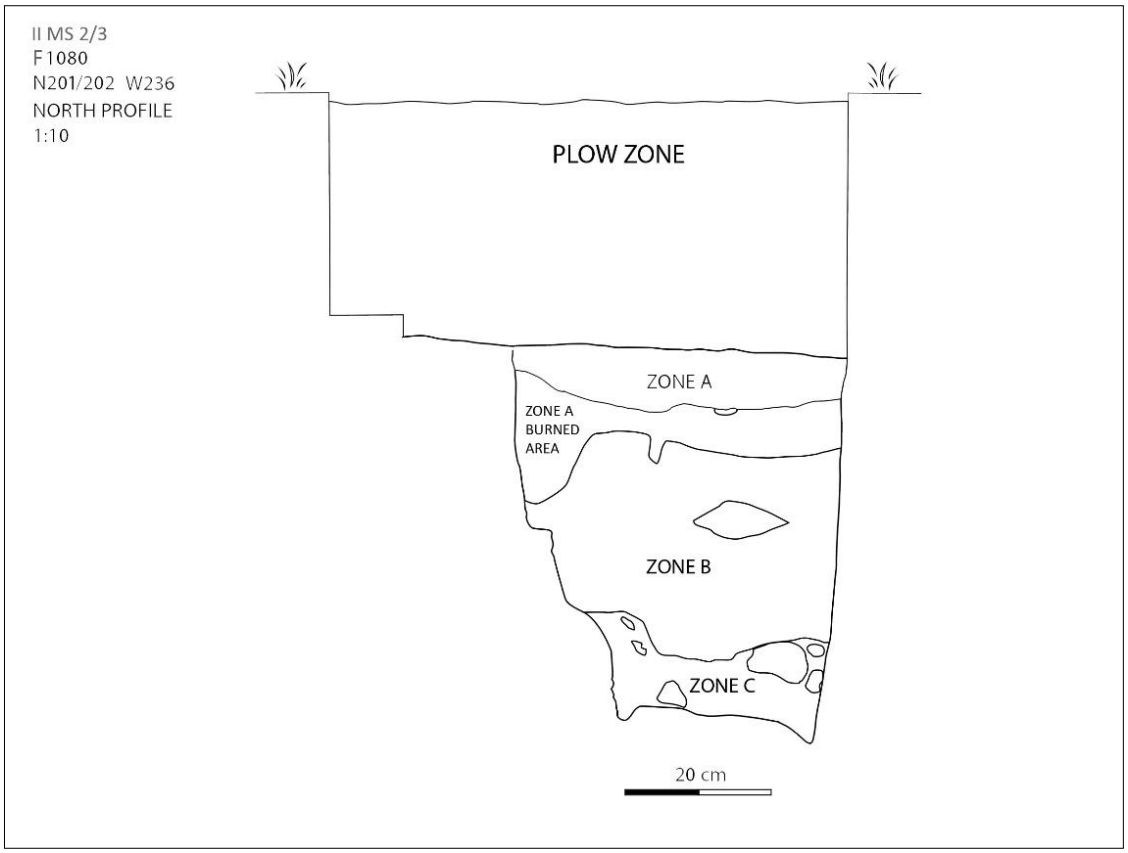


Figure 4.47 F1080 North profile (C. Deiana).

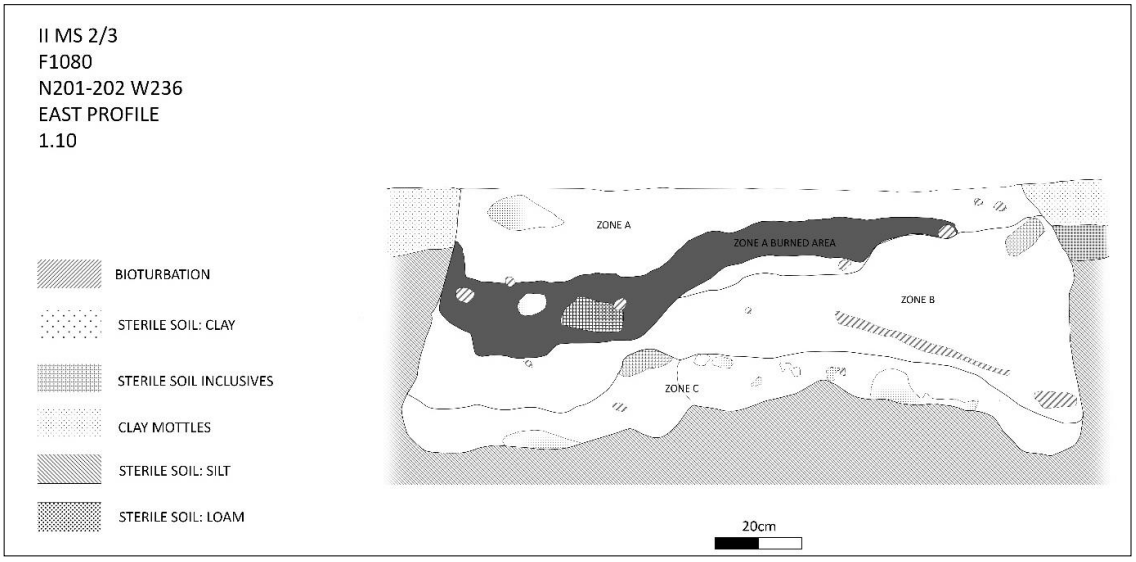


Figure 4.48 F1080 East profile (I. Valese).

Feature Number: 1156

Location: N202-203 W237-238

Orientation: N-S

Type: oval pit

Topology: Superimposed by F1158

F1156 is an oval pit filled with loamy soil (10YR4/4) with clay lumps and gumbo clay lumps. This pit yielded fragments of stumpware, chert debitage, a chert core a sandstone abrader and burned clay.

Dimensions: 44x41 cm; maximum depth 44 cm.

Feature Number: 1168

Location: N202-203 W237-238

Orientation: E-W

Type: irregular Emergent Mississippian feature

Topology: Superimposed on F1046, superimposed by F1220.

This irregular feature was identified in 2013 but better defined later during 2016's fieldwork. During this last fieldwork season the feature was shovel and trowel scraped, but not excavated completely because of time restrain. Its fill was composed by hard yellow clay mixed with sandy soil, which led to think it was a concentration of sterile soils mixed together; nevertheless, the recovery of Emergent Mississippian pottery material contests that hypothesis.

Dimensions: 1.83x0.84 m ca.

Feature Number: 1171/1197

Location: N177-178 W240

Orientation: E-W

Type: oval post pit

Topology: no superimpositions

The excavation of F1171-F1197 revealed the presence of two different zones that differ in the quantity of clay lumps mixed in the main sandy matrix. Zone A consisted in the upper fill area characterized by compact sandy soil (10YR 4/3) with sporadic clay lumps

and a small red ochre concentration; Zone B was a compact sandy fill (10YR 4/4) with much higher concentration of clay lumps.

By the shape of its profile, F1171-F1197 can be interpreted as a small post pit. Its cross-section showed the presence of an inner step, possibly the insertion/extraction ramp, and a conical bottom where the post was possibly set. This post pit was perhaps located in an Emergent Mississippian courtyard, unfortunately, since the exposed area was not wide enough, it cannot be stated if it was a central marker post of a common area or not.

Dimensions: maximum diameter of 95 cm and a maximum depth of 80 cm.

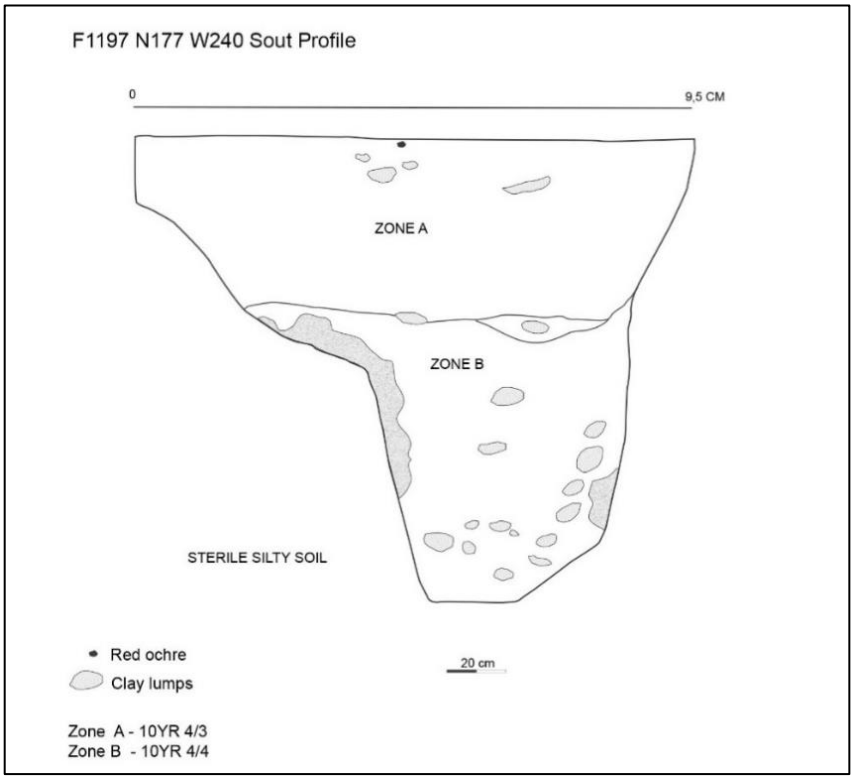


Figure 4.49 F1171/1197 North profile.

Feature Number: 1214

Location: N191 W237

Orientation: -

Type: burned area

Topology: Superimposed on F1167.

This feature was a shallow circular burned concentration, which yielded Emergent Mississippian pottery. Possibly related to the Emergent Mississippian feature on which is superimposed.

Dimensions: length 50 cm; width 33 cm; depth circa 5 cm.

4.2 The Early Mississippian occupation (1050-1200 AD)

Even if little diagnostic material attributable to the Lohmann and Stirling phases was retrieved in the features located in the Merrell Tract-UNIBO; thanks to stratigraphic superimpositions it was possible to speculate about the chronology of some structures that might have been built during the early stages of Cahokia's epicentre.

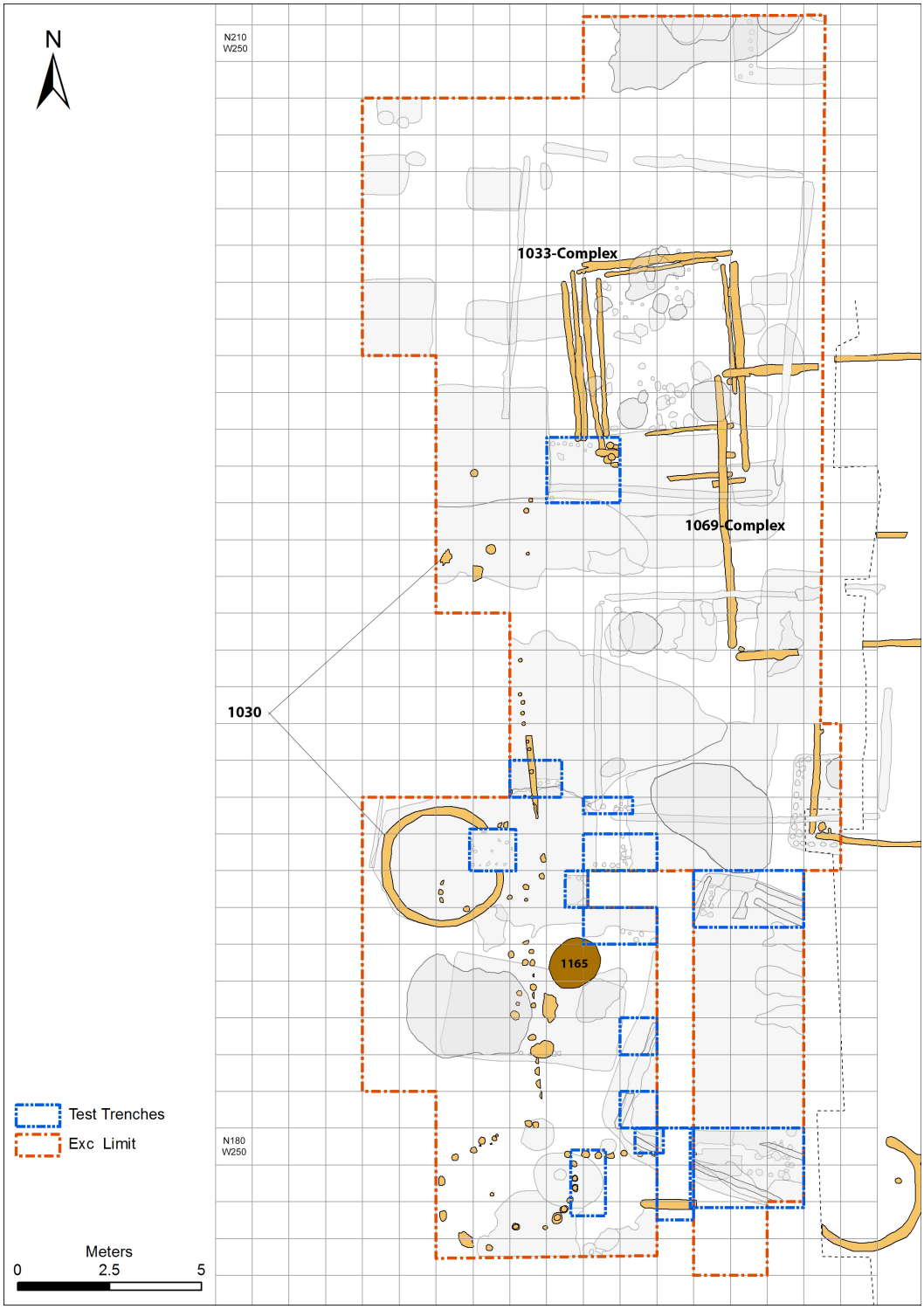


Figure 4.50 Early Mississippian features located in UNIBO excavations (I. Valese).

4.2.1 Structures

Feature Number: 1030

Location: N177-198 W237-246

Orientation: square

Type: bastioned building

Topology: F1030 superimposes on F1027, F1028/1070, F1031, F1046, F1073, F1087, F1160, F1167, while it is superimposed by F1026. Possibly associated with H114, F1029, F1030B, F1069, F1100/H123, F1165 and F1169.

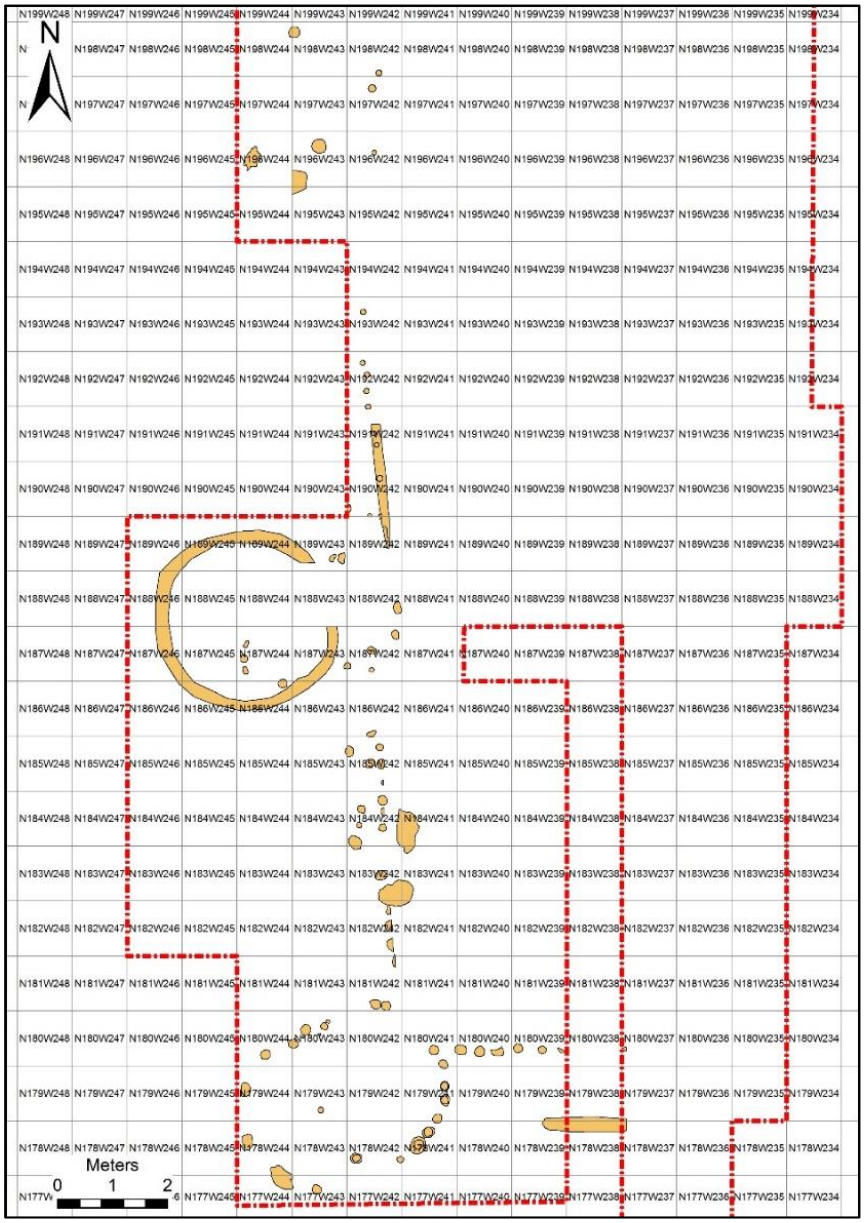


Figure 4.51 F1030, western side recovered in the Merrell Tract excavation (I. Valese).

The completion of the excavation of a bastioned compound, located in 1960 in the 15B Tract, was one of the main focuses of this project.

Since 2012, the team concentrated its efforts to understand shape and dimension of the building collecting a good quantity of data. At the end of the six archaeological seasons, the so-called compound, numbered F1030[9], the Merrell Tract excavations, revealed that it was a squared bastioned building with eastern and western wall slightly diverging outward.

A ca. 23 m-long southern wall (30 m ca. considering the corner bastions) was located; the same dimension of almost 23 m is attested in the 15B Tract excavation maps for the eastern wall. The northern part of this huge building was subjected to heavy alterations since the western wall was only preserved for a length of ca. 17 m and no traces of the northern wall was found both in the Merrell and 15B Tracts.

In the Merrell Tract, traces of three more bastions were found, which added to the already excavated portion of the structures makes a total of nine bastions, and five of their reconstructions, recovered on field.

Figure 4.52 One of the southern bastions of the compound excavated in the 15B Tract. Original picture kept at RCC, Springfield.

[9] H74, H83, H84, H86, H94, H105, H106 and H130 in Tract 15B.

At least 100 post holes (having a diameter included between 12 and 27 cm), a wall trenched bastion and small wall-trenched portions of the western wall were recognized. The postholes were easy to locate since, as mentioned in the 15B Tract's field notes[10], they were filled with orange coloured soil (10YR6/8) whose provenience is still unknown. Patrick Munson (1960's field notes and Pauketat 2013) interpreted what he and Wittry called "orange clay" as residues of plaster that covered the walls of the compound (fig. 4.53). Analysis are still ongoing and however some concentrations of this material, deposited as it drained from a vertical surface, along with the concentric layers of this material recovered in the excavation of some of the posts could support this theory, the presence of the material mostly inside the postholes would suggest something different.

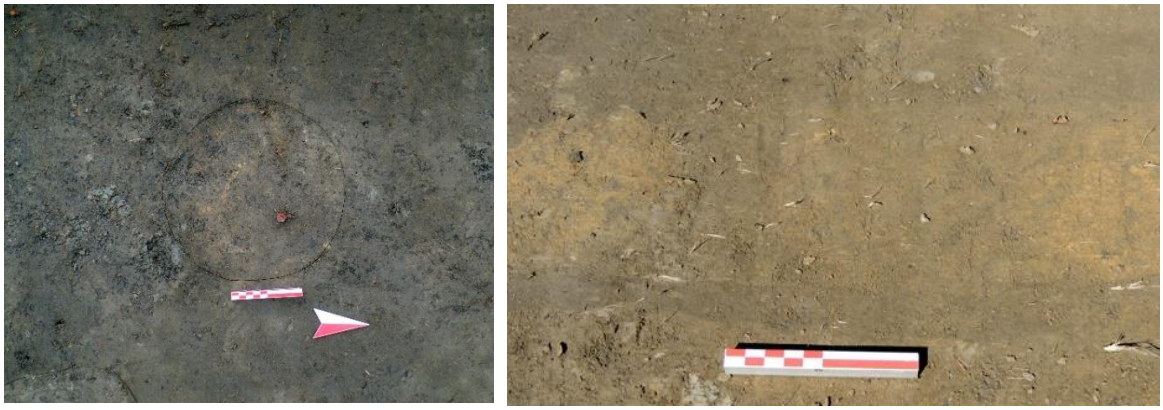


Figure 4.53 F1030's postholes, detail of the orange material.

Peculiar was the information recovered by the cross-sectioning of several posts, whose profiles showed a high variation in term of depth. De facto, the postholes supporting the bastions' wall reached a maximum depth of 40 cm while the posts from the western wall of the structure had a minimum depth of 5 cm to a maximum of 10 cm. Furthermore, the posts were not regularly spaced all over the structure; nonetheless, this particularity could be a result of the poor conditions in which the building is preserved. Heavy plowing activities and later construction episodes, in fact, affected the western part of the compound and possibly for the same reason only small portions of the wall trench were located. A segment of the wall trench was cross-sectioned at N189-191 and W242; it was composed by postholes filled with orangish soil (10YR6/8) and a general fill of loamy soil

[10] Kept at the Research and Collection Centre of Springfield, IL.

with “blue clay”[11] mottles (10YR3/4). The wall reached a maximum depth of 11 cm and a width of 25 cm, while the posthole had a maximum depth of 5 cm and a diameter of 13.

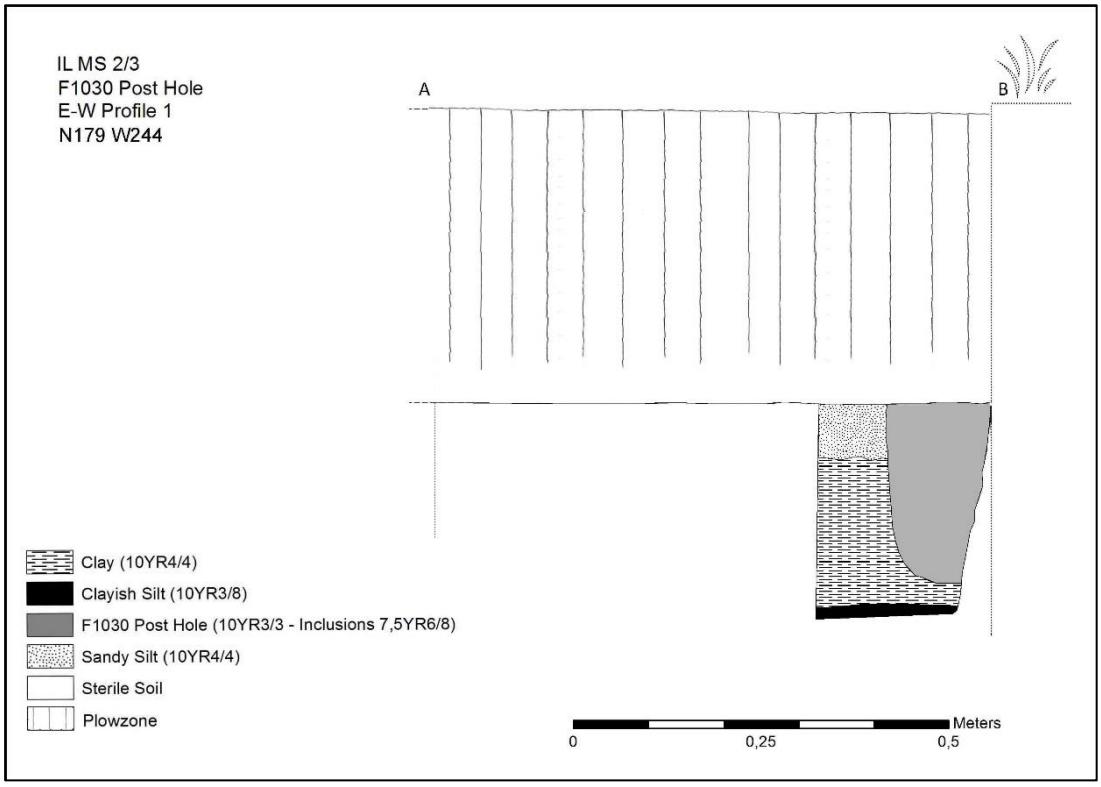


Figure 4.54 Southern profile of a posthole belonging to the southwestern corner bastion of F1030 (I. Valese).

The archaeological data recovered from the field suggests that the bastioned construction was rebuilt at least once. Two of the three bastions show this peculiarity; mainly the one located at N186-189 W242-246 was actually composed by the superimposition of two circular rooms, one in which only the orange postholes were preserved and another whose wall trench was located on the field. There is a possibility that the wall-trenched bastion unearthed was actually built with a different construction technique, since the posts located inside the trench were not totally filled with orange clay and they were bigger (30 cm ca. of diameter), deeper (9 cm below wall trench) and filled with a loamy soil (10YR4/3) with concentration of blue and orange clay. Supporting the theory of the multiple reconstruction for F1030, a double row of orange posts was located at N184-185 W242 indicating the presence of two parallel walls pertaining to the western edge of the

[11] See F1160 described before for comparison.

compound. Unfortunately, it was not possible to attribute each posthole to specific construction episodes nor to establish if the building was enlarged or reduced.

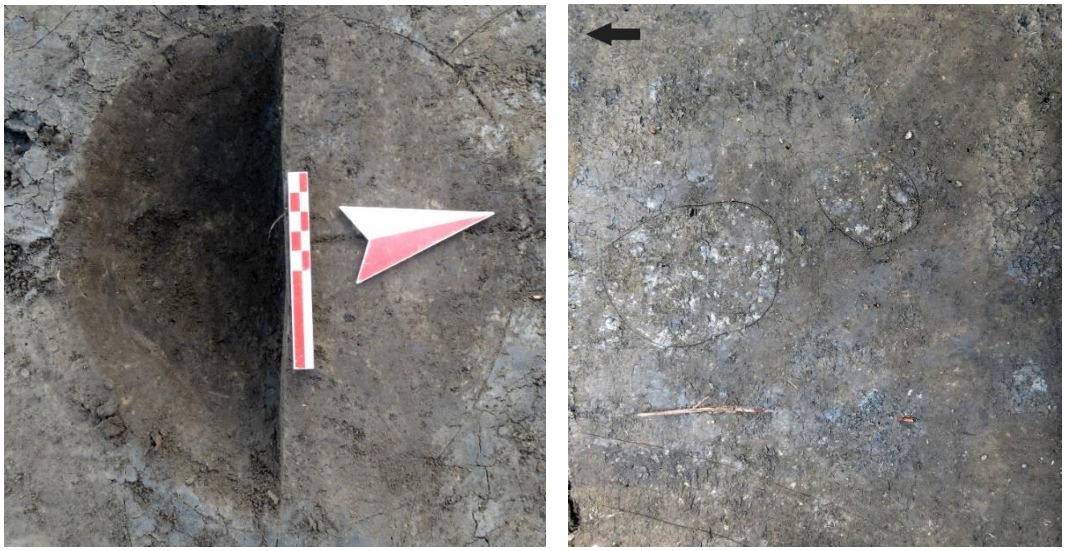


Figure 4.55 Postholes resulting from the excavation of the wall-trenched bastion.

In 2015, a topographic survey in order to clarify the matter of the diversity of the postholes' depth and the absence of F1030's northern wall was made. The survey revealed that the northern part of the excavation area was subjected to heavy modifications due to later borrowing activities, which possibly truncated the northern part of the west wall and obliterated the northern wall of the structure.

Given the dimensions of the compound F1030 it is possible that there was an associated internal structure; some buildings unearthed in the in the Merrell and 15B tract could have had that position: H123 as suggested by Wittry (1960), H114 as proposed by Pauketat (2013), H129/F1069 and F1033-Complex. Two other features could have been associated to F1030: a hearth F1029, located in the southwestern corner bastion, and F1165. As for the possibility of the presence of a hearth in association with F1030, Pauketat (2013) recorded the presence of another hearth inside the compound's bastion H86. While concerning the pit feature F1165, its association with the bastion rely on the thick layer of orange material lining the bottom of the feature (the material being identical to the one found in F1030's postholes).

Dimensions: total dimensions 23x23 m (30x30 m including the bastions). Western wall trench: maximum depth 11 cm; width 25 cm. Western wall's postholes: maximum depth 5 cm; diameter 13 cm. Wall trenched bastion's postholes: depth 9 cm; diameter 30 cm.

Bastions' postholes: maximum depth 40 cm; minimum depth 9 cm; diameter included between 12 and 27 cm. The depth of the compound perimetral wall was not recorded in the Tract 15B's field notes, but the depth of some of the bastions' wall was documented as included in a range between 60 and 76 cm below surface, while the depth of the orange posts was recorded of 91 cm below surface.

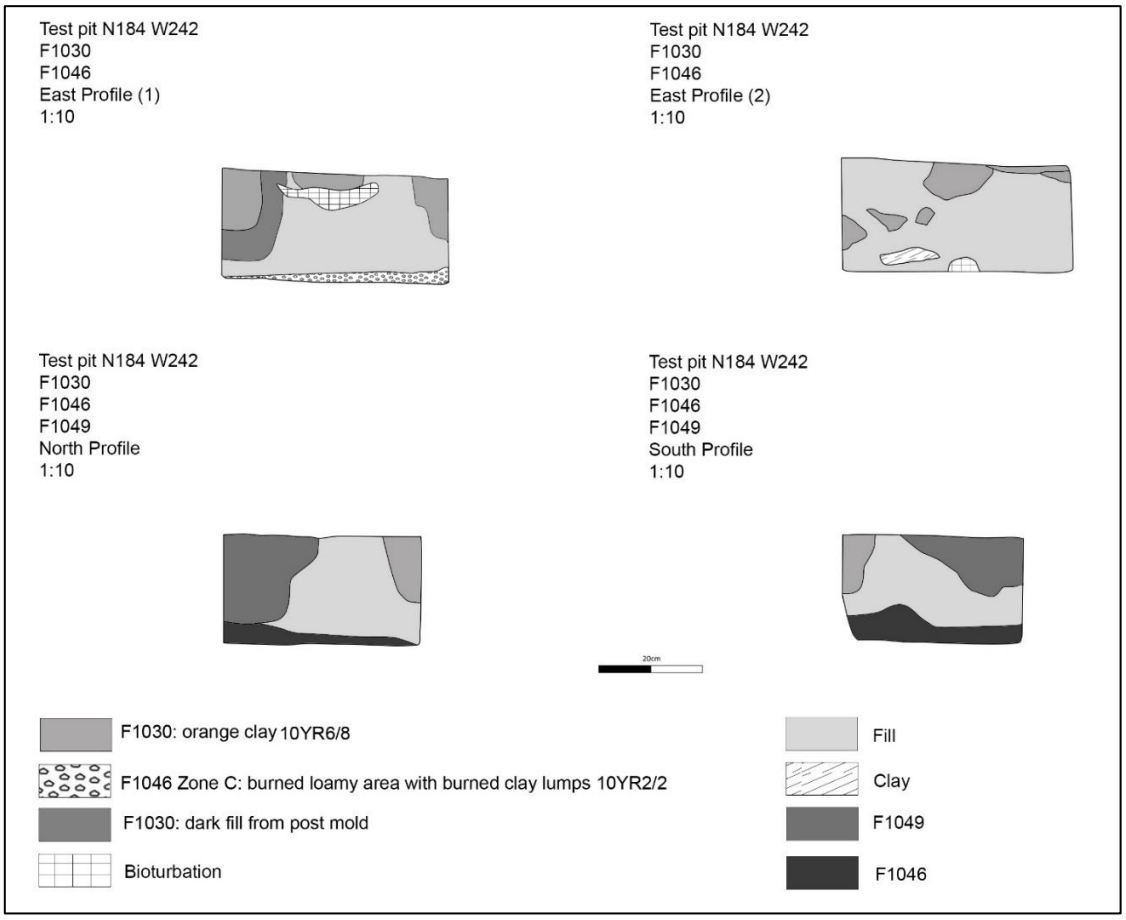
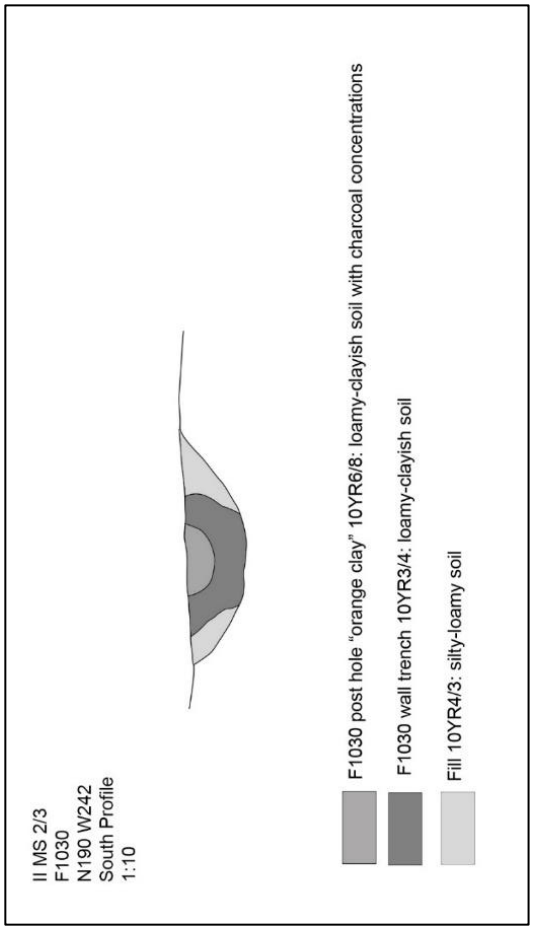


Figure 4.56 Profiles of F1030's western wall postholes.



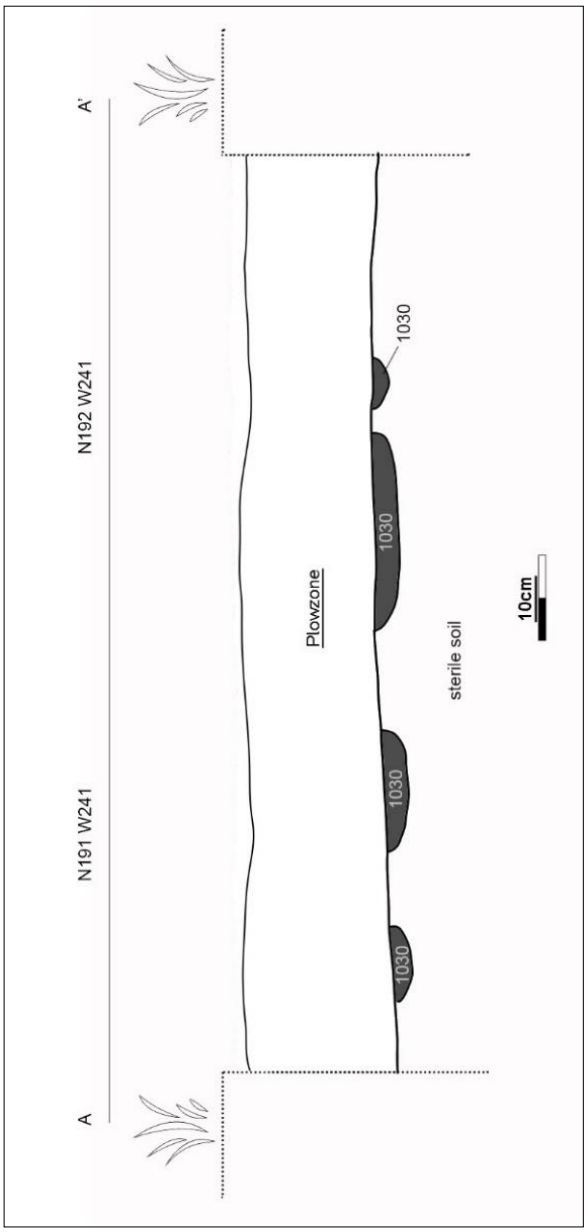


Figure 4.57 Cross-section and image of the portion of the wall trench of F1030.
Figure 4.58 Western profile of F1030's western wall shallow postholes.

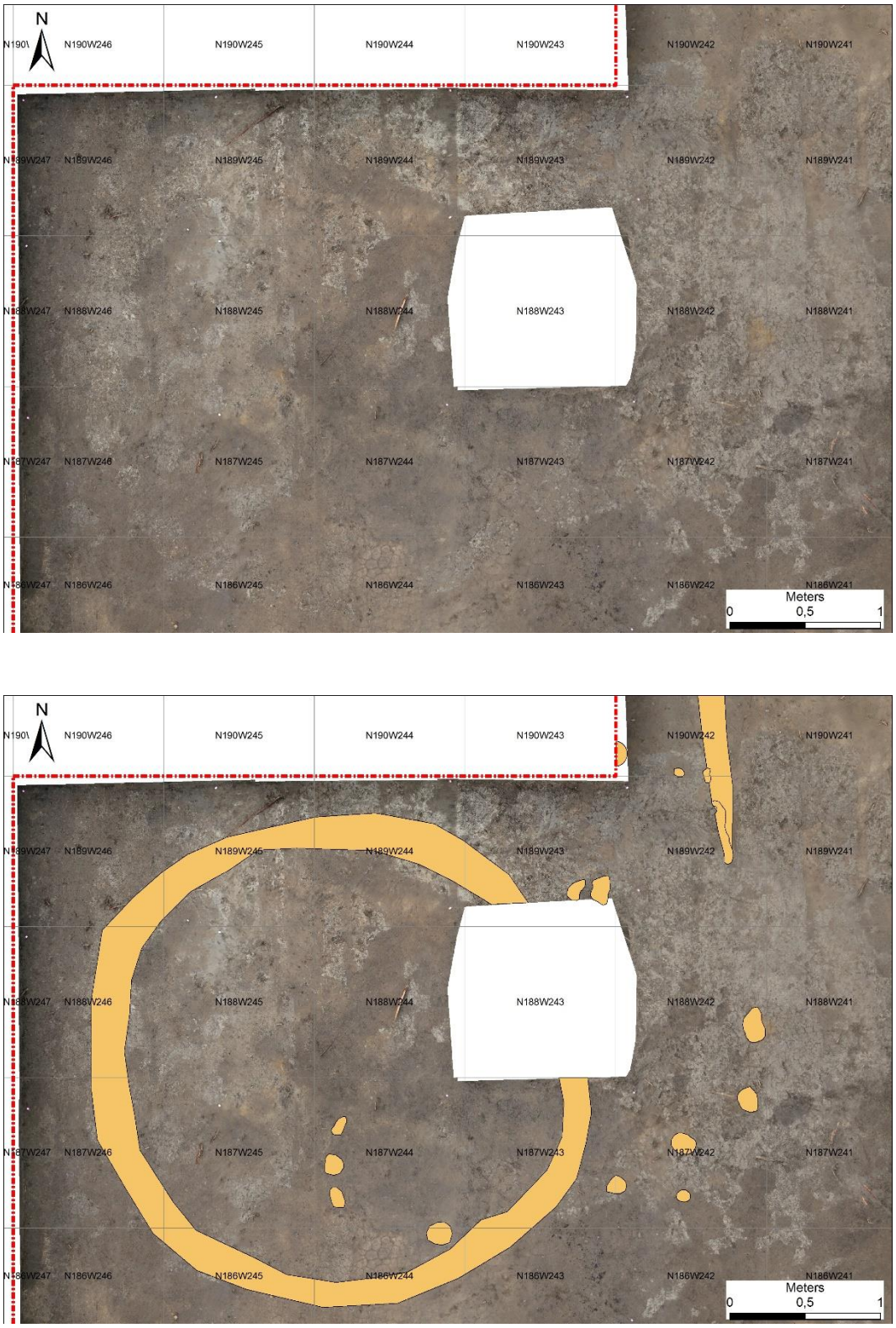


Figure 4.59 Photometric images processed in ArcGIS showing the wall-trench and the postholes of the two reconstructed bastions of F1030. Before and after the realization of the shapefile.

Feature Number: 1030B

Location: N178-179 W237-239

Orientation: E-W

Type: wall trench

Topology: F1030B is superimposed on F1170 and possibly associated with F1030

A segment of a wall trench was located in the southernmost units of the excavation area. The hypothesis that F1030B could be associated with the compound, located just one meter north, derives from the orange material mixed with the loamy soil that filled the trench. Probably, this wall pertained to one of the rebuilding episodes that concerned the bastioned building or a different structure by some means connected to it. No evidences of postholes were found in the trench during the excavation.

Dimensions: length 1.53 m; width 26 cm; depth 27 cm ca.

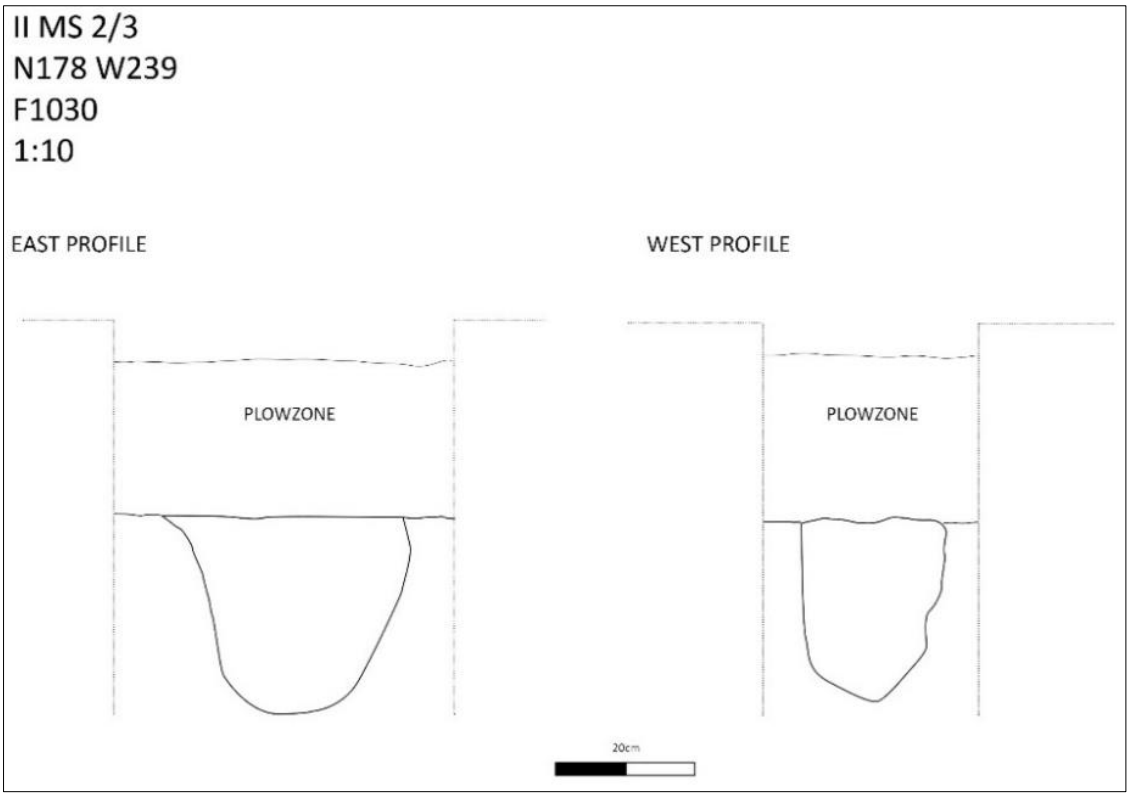


Figure 4.60 East and West profile of F1030B.

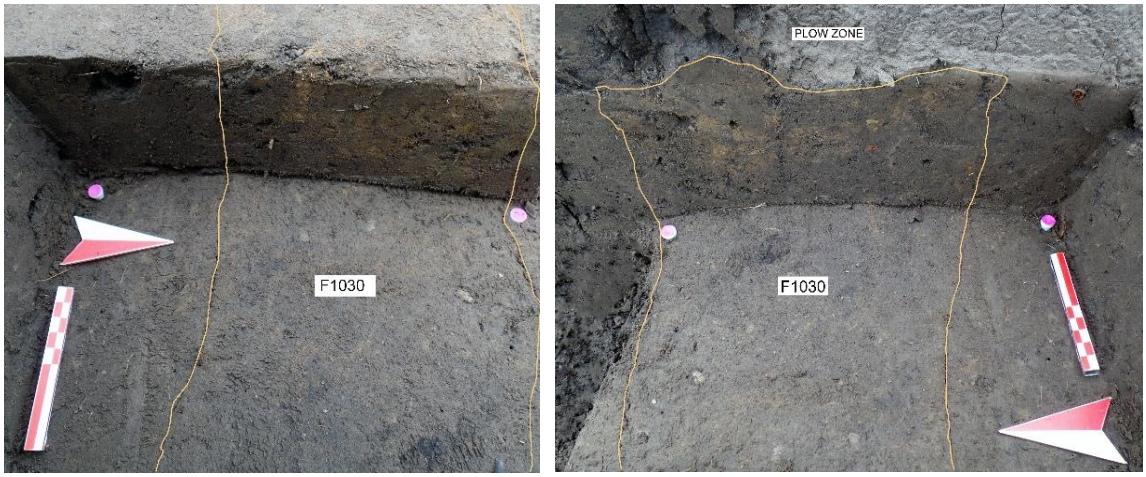


Figure 4.61 Details of F1030b's wall trench – East and West profile.

Feature Number: 1033-Complex

Location: N198-204 W236-241

Orientation: NW-SE

Type: sequence of wall-trenched buildings

Topology: F1033N-F1037N and F1063 are superimposed by F1034, F1136 and F1137. F1033N is superimposed on F1037N**.** F1033W superimposes on F1017E and F1086, superimposed by F1038 and F1134. F1037W is superimposed on by F1071 and F1134, it superimposes on F1086. F1038 superimposes on F1017E, F1033W and F1086. F1059 is superimposed by F1067 and is superimposed on F1061, F1040 and F1146. F1062 is superimposed on by F1058 and F1071, while is superimposed on F1086 and F1135. F1063 is superimposed by F1034 and F1033-1037N. F1074 superimposes on F1086 while is superimposed by F1069 and F1092. F1074 is adjacent to F1081. F1075 superimposes on F1086 and is superimposed by F1069. F1079 is superimposed by F1067 and is superimposed on F1040. F1096 is superimposed on F1069, F1097 and F1086. F1146 is superimposed by F1059 and is superimposed on F1040. F1166 is superimposed on F1069 and F1086. Possibly associated with F1030.

In the northern area of the excavation a complex sequence of wall trenches was found; these features were part of a building showing sign of multiple reconstructions. During the excavation, a number was assigned to each wall trench located on the field but since the walls have been interpreted as part of the same building that was subjected to different episodes of rebuilding, the feature number has been abbreviated in F1033-Complex. The northern edge of this complex was delimited by three wall trenches

numbered F1033N, F1037N and F1063; while four wall trenches that were dug next to each other (F1033W, F1037W, F1038, and F1062) defined the western side. The eastern side of the complex was marked by three walls named F1059-F1079 and F1146. Some of the walls superimpose on each other merging at some points, as in the case of F1033N with F1037N and of F1038 with F1033W, while some others, as for the case of F1059 and F1146, were completely dug inside the earlier trench.

The presence of multiple features superimposing on each other and the later phases of occupation of the area, at the same location of the southern walls of F1033 Complex, made difficult the recognition of the southern walls of which only segments were located on the field (F1074, F1075, F1096 and F1166).

Peculiar was the unearthing of numerous oval postholes (F1131, F1135, F1152) found inside the perimeter of the inner structure of F1033 Complex. Those postholes, since they were aligned with F1033 Complex's walls, could represent an earlier single-post construction or some sort of interior structure. It is hard to relate the wall trenches to the single construction episode; however, we could discern at least three buildings:

1- defined by F1062-F1063-F1074-F1079
2- defined by F1037 (Northern wall)- F1037 (Western wall)-F1146-F1166
3- defined by F1033 (Northern wall)-F1033 (Western wall)-F1038-F1059-F1075-F1096

Peculiar was the recovery of orange material inside postholes pertaining to the northern and western wall trenches of F1037N, F1037W and in F1063. As stated before, the same orange soil was found inside the F1030/Compound's postholes; hence, its presence inside the walls of this complex of structures could mean some sort of connection between them and the bastioned building. The attribution of this complex of structure to the Early Mississippian phase was due to the ceramic materials found inside the trenches.

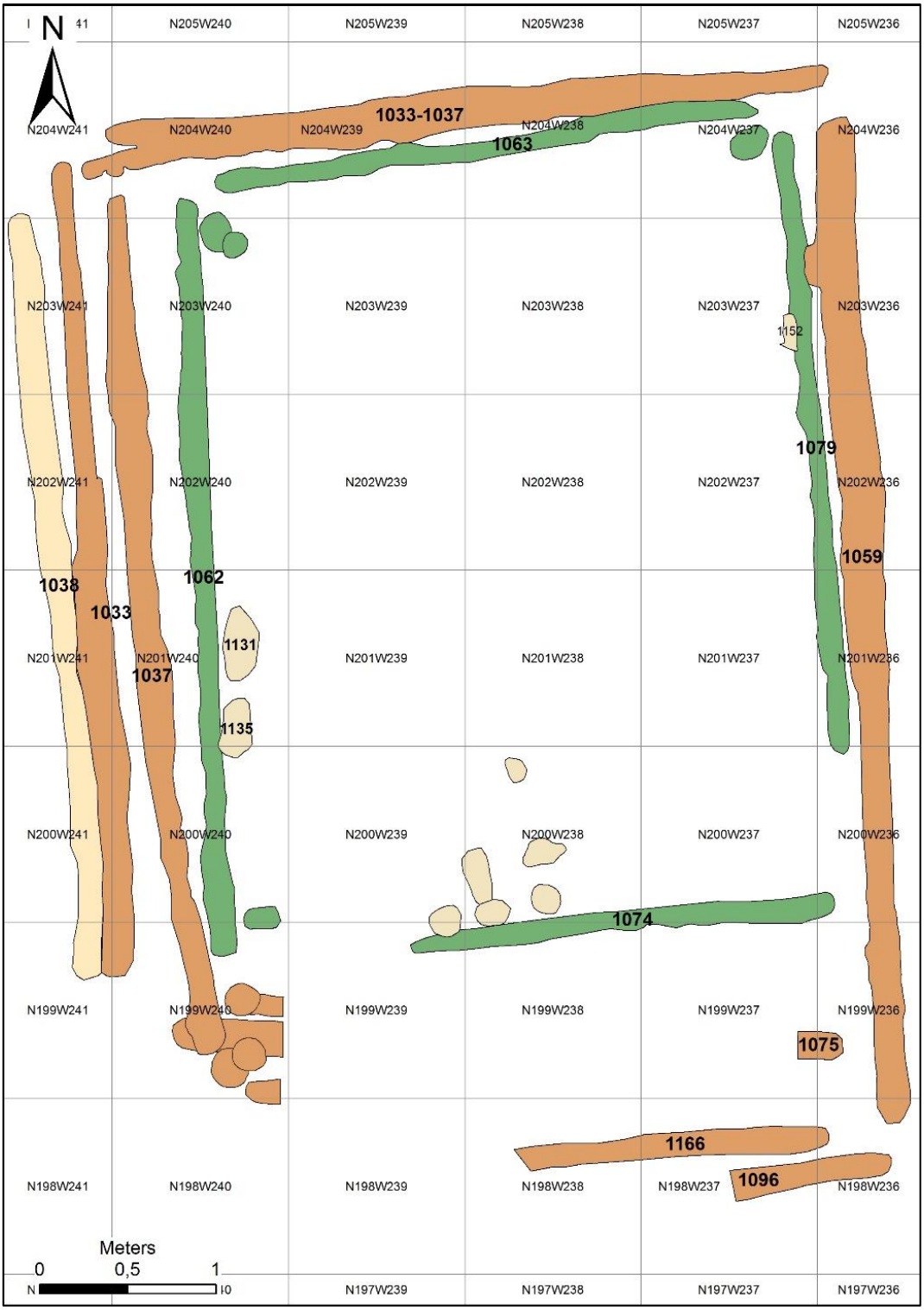


Figure 4.62 Map of F1033-Complex (I. Valese).

Figure 4.63 Detail of orange clay filled posthole of F1037W.

Dimensions:

Feature Number	Length (m)	Width (m)	Depth (m)
F1033 north wall	4.11	0.15	0.17
F1033 west wall	4.28	0.16	-
F1037 north wall	4.27	0.13	0.35
F1037 west wall	4.54	0.15	0.26
F1038	4.26	0.19	-
F1059	5.52	0.21	0.33
F1062	4.34	0.21	0.30
F1063	3.10	0.12	0.28
F1074	2.39	0.12	-
F1075	0.25	0.15	-
F1079	3.35	0.13	0.20
F1096	0.91	0.14	-
F1146	4.0	0.10	0.20
F1166	1.68	0.13	-

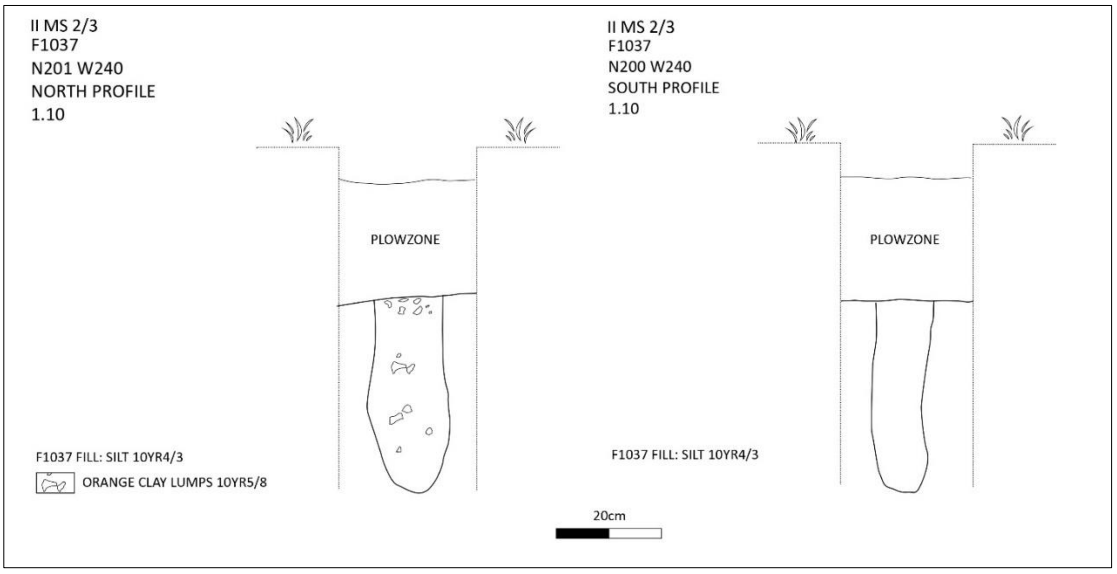


Figure 4.64 F1037W North and South profiles (C. Deiana).

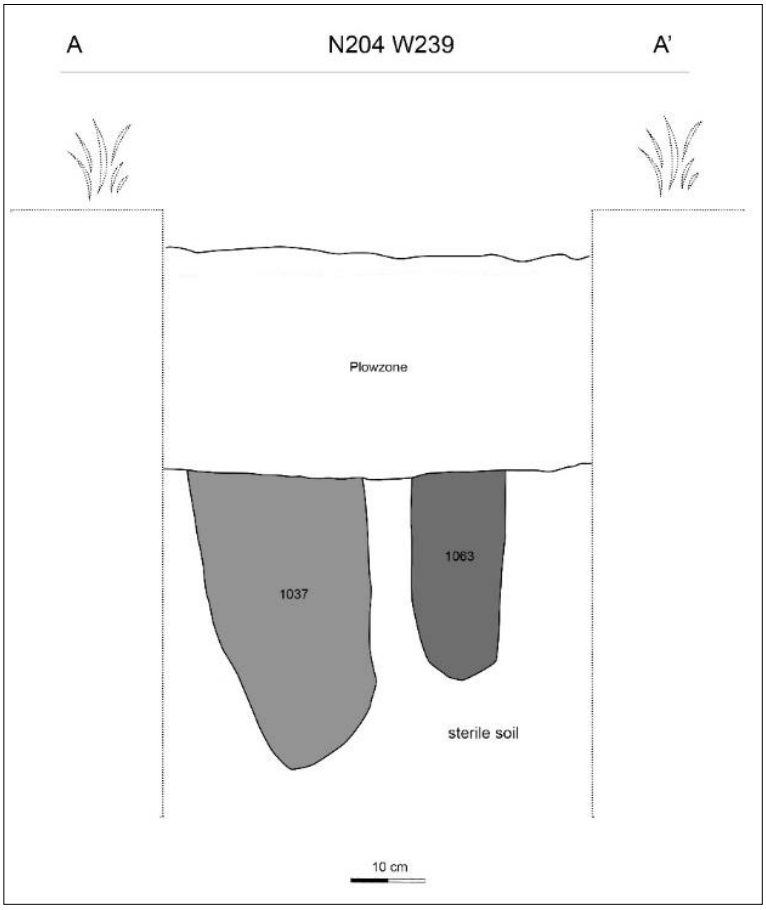


Figure 4.65 West profile of F1037N and F1063 (I. Valese).

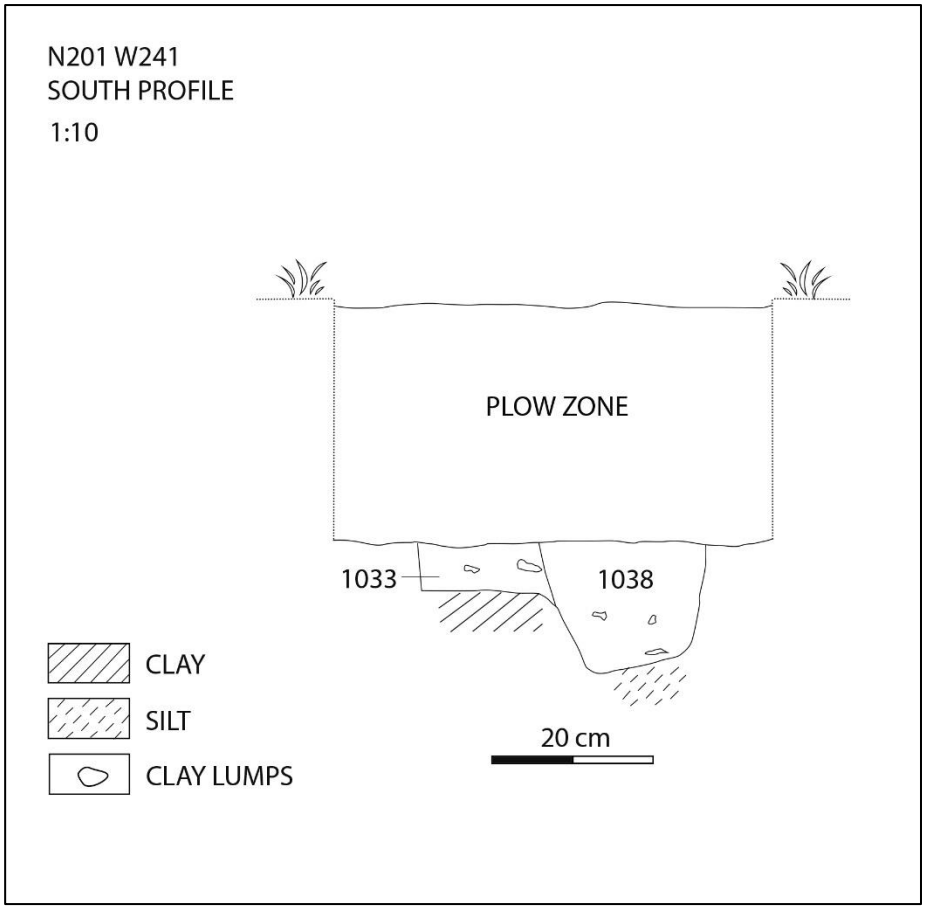


Figure 4.66 F1033W and F1038 North profile (C. Deiana).

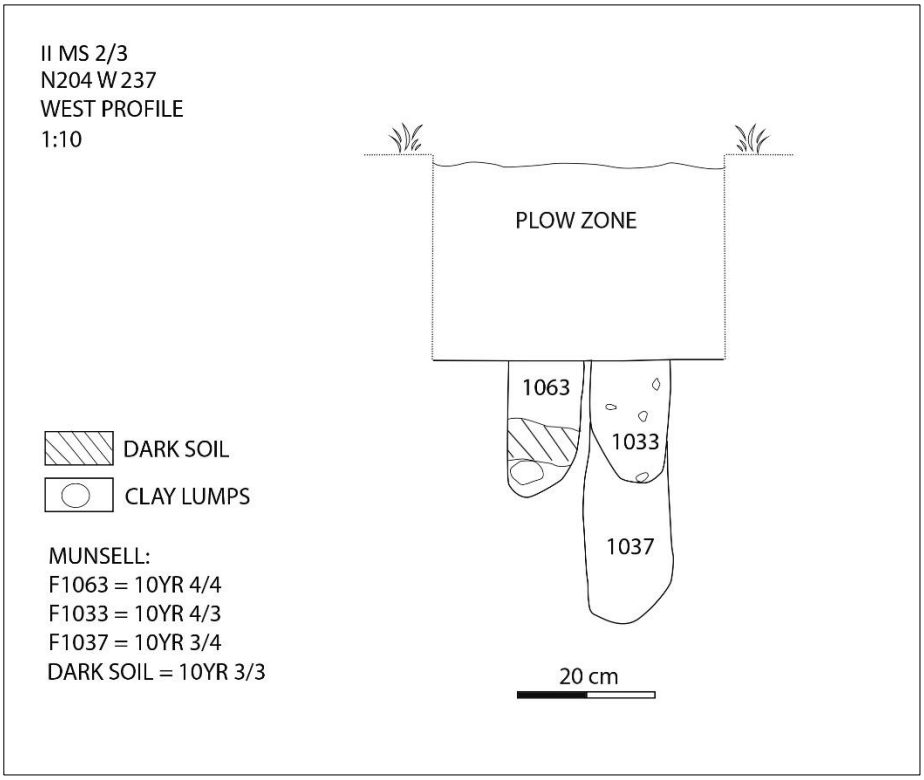


Figure 4.67 F1063, F1033 and F1037 West profiles (C. Deiana).

Feature Number: 1069 Complex (H129)

Location: N193-201 W234-237

Orientation: N-S

Type: wall-trenched structure

Topology: Superimposed on F1033-Complex, F1080, F1083, F1086, F1093, F1094/1095, F1099 and FF1108. Superimposed by F1005, F1064, F1100 (H123) and F1107. Superimposed on 15B Tract's F326, F327, F332, F333, F410, F411, F451, and H128.

In 1960, during the 15B Tract's excavations, H129 was located; two wall trenches, F1067 and F1069, found next to the Merrell Tract's eastern excavation limit pertained to the same structure. Therefore, we can refer to F1067 and F1069 as a unique building named by Wittry H129 or F1069 Complex. The building presented three open corners, two of which with corner posts, and a closed one at the northeast. A posthole identified along the northern wall of H129 can be associated with the structure.

The cross-sectioning of the wall trenches revealed a variance in terms of depth of the two walls located in the Merrell Tract: F1067 reached a maximum depth of ca. 37 cm while the western wall trench F1069 had a depth of ca. 1 m[12]. The wall-trenches' excavation revealed a brownish black clayish fill. H129 in Tract 15B was mapped but not excavated, so that no comparisons between in terms of wall trenches' depth can be made.

Dimensions: F1067 (northern wall) 2.62x0.27 m – depth min. 18 cm max 37 cm; F1069 (western wall) 1.89x0.24 m – depth ca. 1 m. Total dimension of H129: 5.86x7.71 m covering a projected area of ca 47.16 m^2.

[12] The high depth of the wall trench at that point could be related to the presence of a posthole.

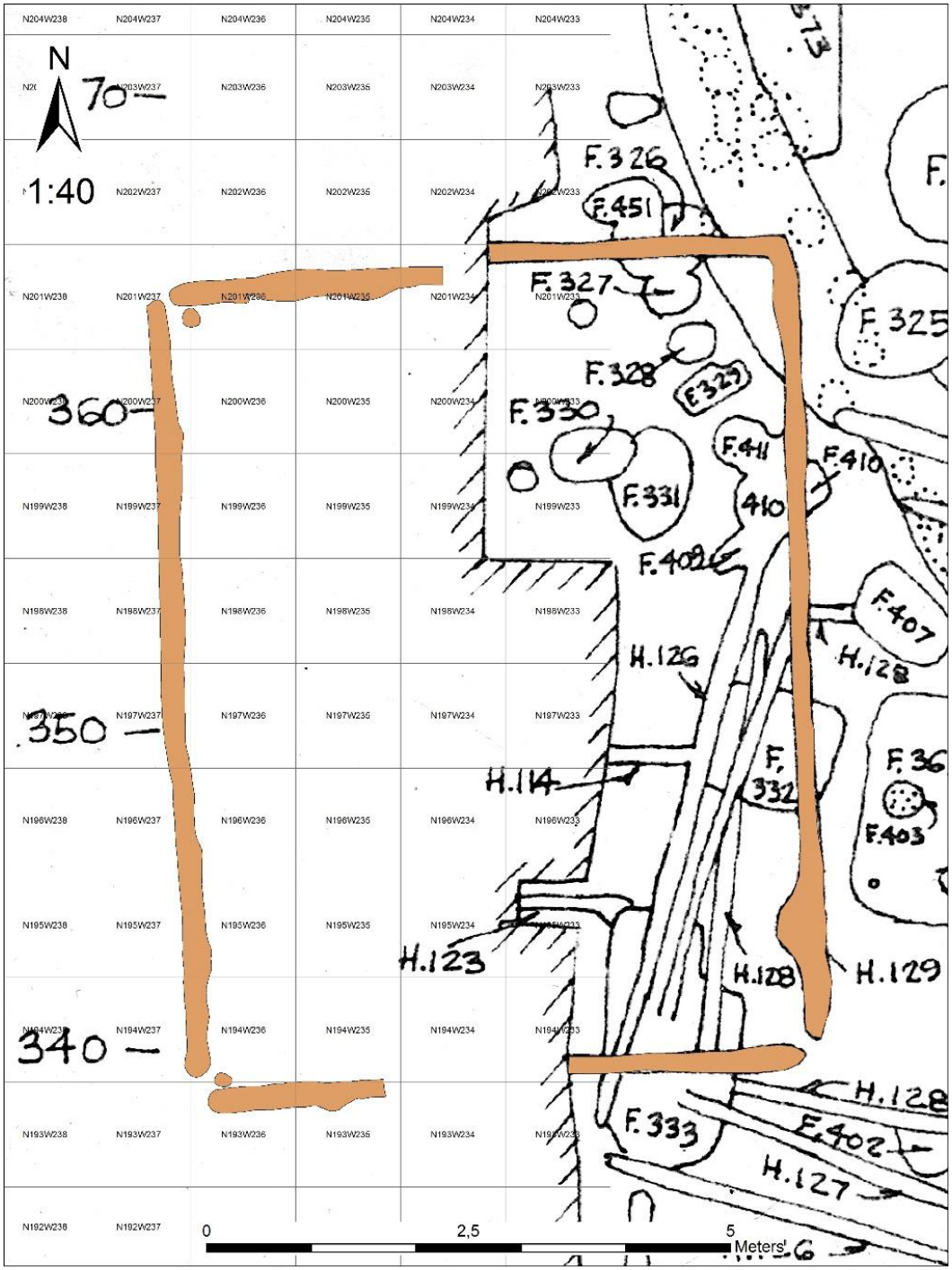


Figure 4.68 Total map of F1067-1069 Complex or H129 (I. Valese).

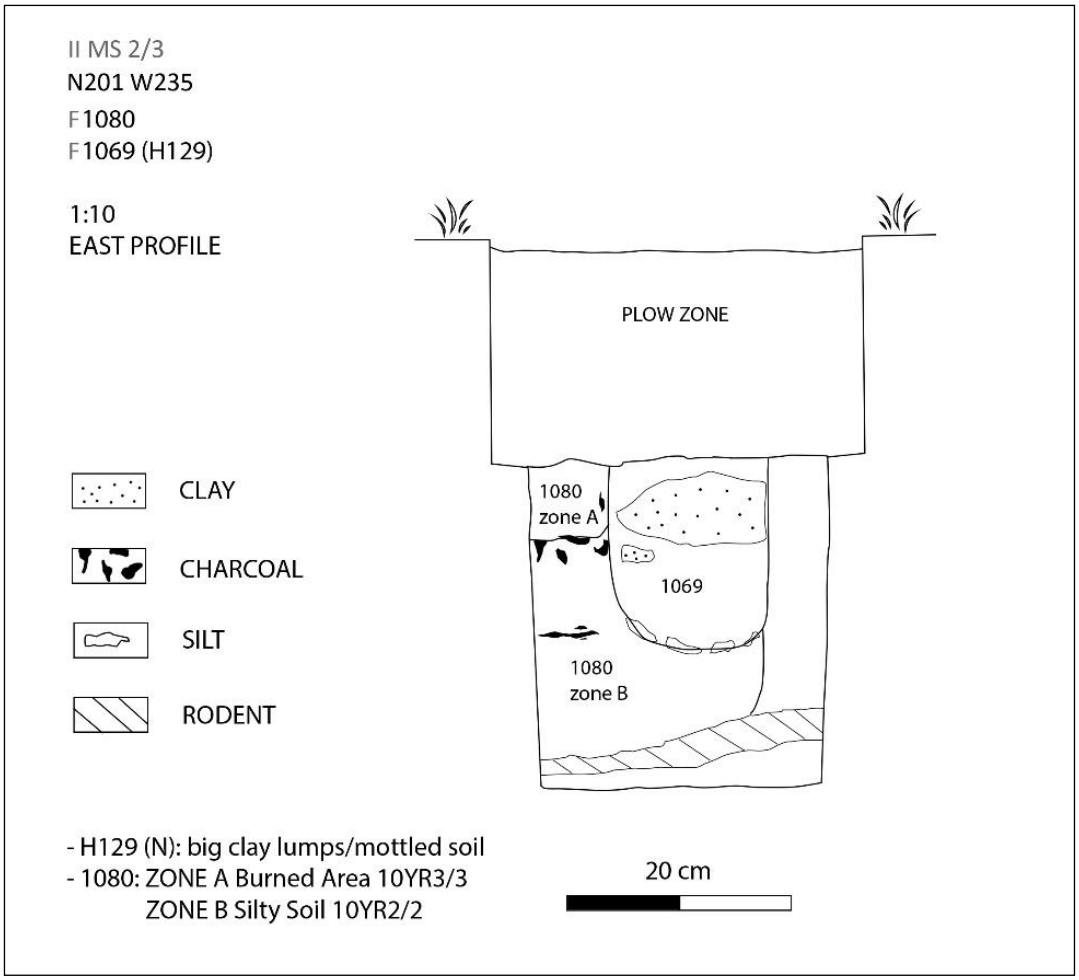


Figure 4.69 F1069 East profile with detail of superimposition on F1080 (C. Deiana).

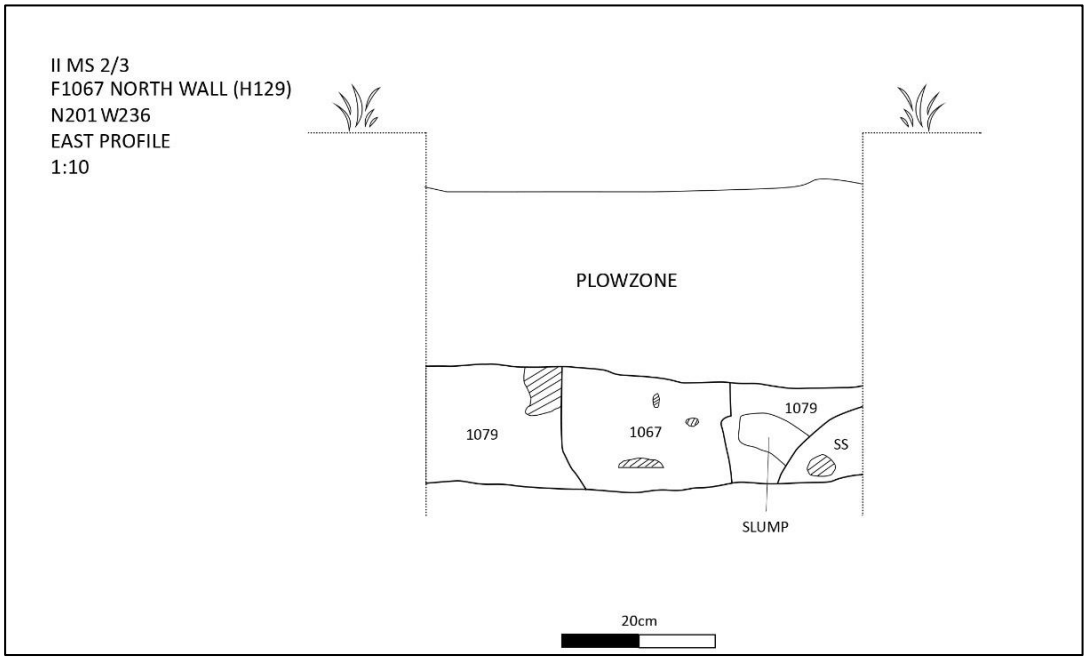


Figure 4.70 F1067 East profile, detail of superimposition between F1067 and F1079 (I. Valese).

Feature Number: 1010 (H114)

Location: N188-191 W234

Orientation: N-S

Type: L-shaped wall-trenched structure

Topology: Superimposed by F1009 (H123) and F1012. Superimposed on two Emergent Mississippian Houses F1013 (H107) and H108 (15B Tract)

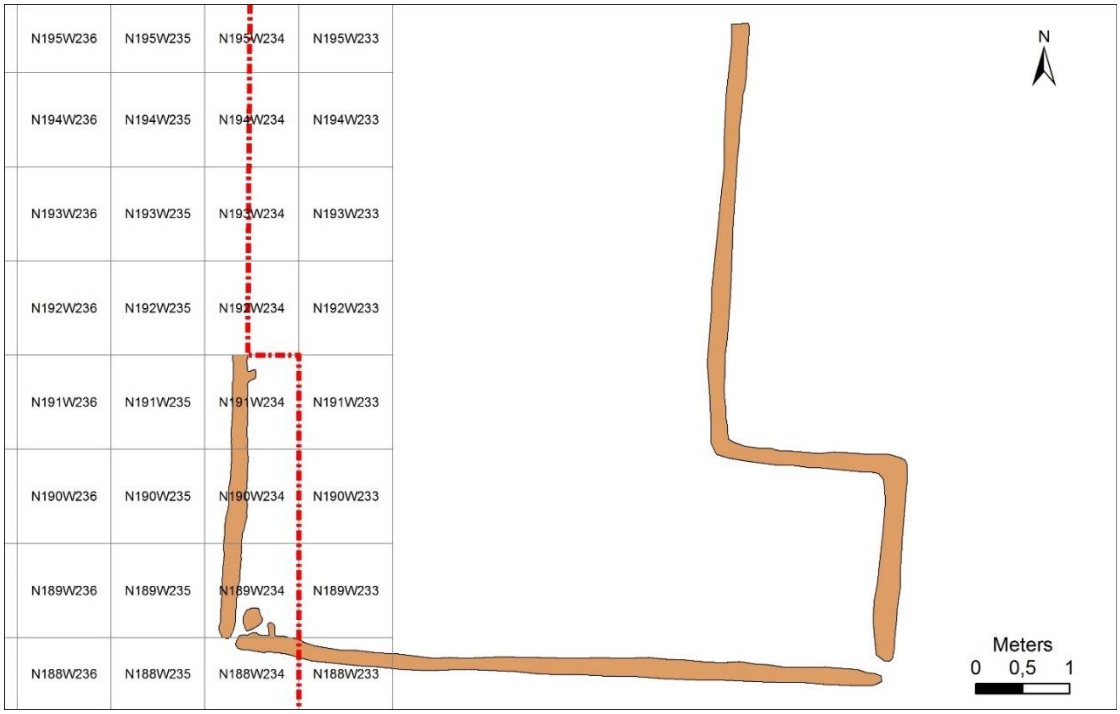


Figure 4.71 General map of F1010 (H114) (I. Valese).

The L-shaped F1009/1100 is another building already uncovered during Wittry's fieldwork; a portion of this structures was located and excavated in the Merrell tract.

About 70 cm of the western portion of the southern wall trench were located, thus reaching a total length of 6.52 cm, along with other 3 m of the western wall trench, whose northern limit was not excavated. The two wall trenches form an open corner associated with a corner post having a diameter of about 20 cm.

Both the wall trenches and the posthole were filled by a very dark brown sandy soil (10YR2/2) which yielded a small amount of pottery and chert along with light concentrations of clay and charcoal.

Dimensions: The 3 m segment of the western wall trench has a depth of about 40 cm and a width of 23 cm. The total length of the southern wall of F1010 (H114) is 6.18 m, while its width is about 17 cm, and has a depth of 46 cm. The depth of the wall trenches

indicated in 1960's field notes is of 60 cm below surface. Estimated area of 45.38 m^2. The trenches' depth recorded in 1960's field notes is 54 cm below surface.

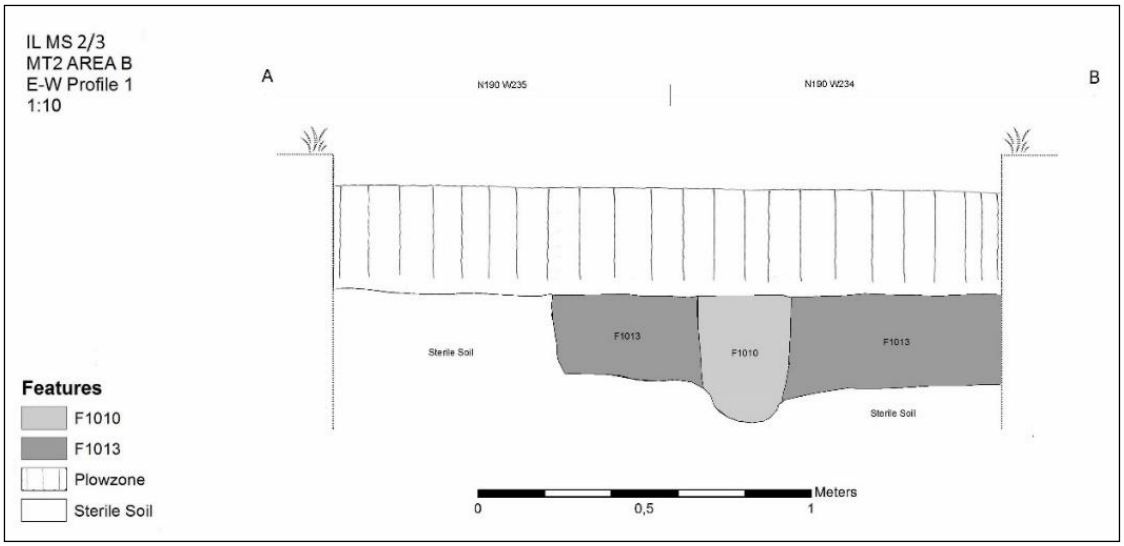


Figure 4.72 Profile of F1010 wall trench superimposing on F1013.

Feature Number: 1057

Location: N216 W235-236

Orientation: -

Type: postholes

Topology: Superimposed on F1056 and superimposed by F1082b.

F1057 is a series of five postholes identified at 80 cm below surface. The postholes were very fleeting and they are filled with a light-orange soil very similar to the one found in the postholes of F1030.

Dimensions: average diameter 8.6 cm.

Figure 4.73 Image of F1057's postholes.

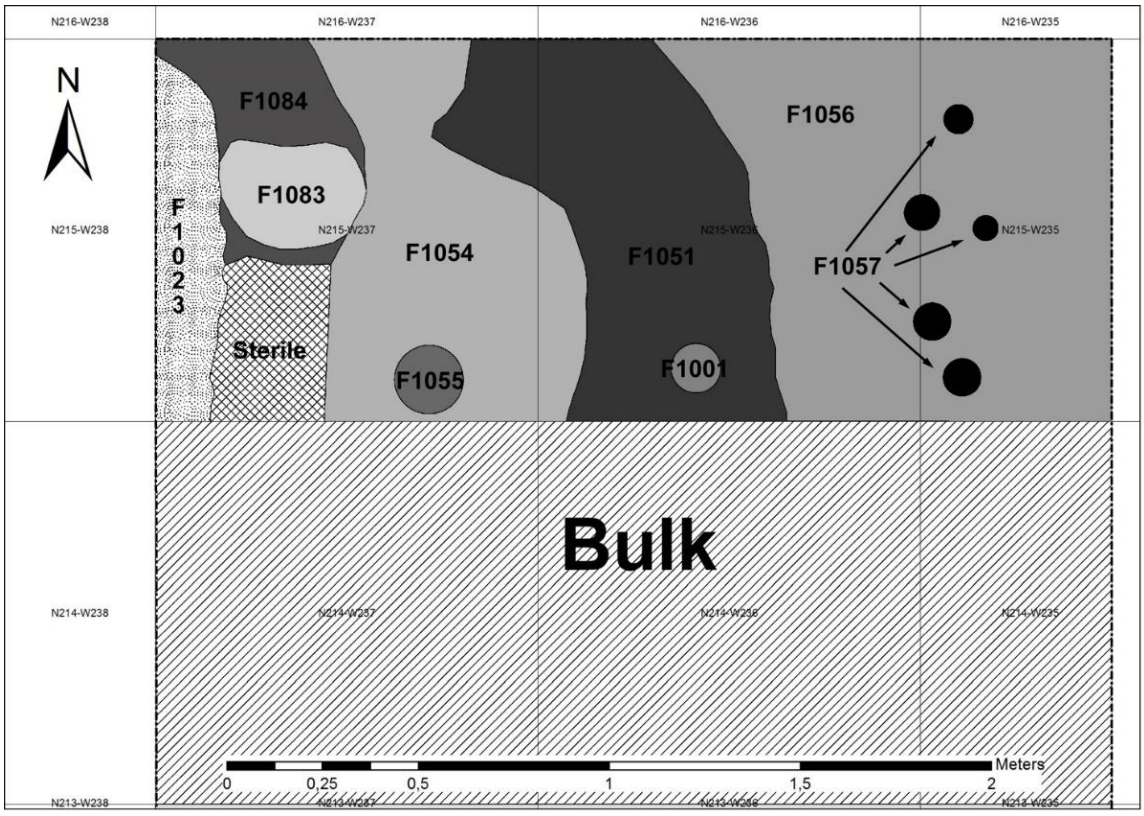


Figure 4.74 Unit C (north half), map of the top level 9 (M. Valeri).

Feature Number: 1174, 1175 and 1176

Location: N205-206 W234-235

Orientation: N-S

Type: possibly post pits

Topology: possibly associated with F238/389

Along the northern edge of the excavation area, between N205-206 and W234, F1174, F1175 and F1176 were located. These three features seem to have the shape of big circular postholes and resemble by shape to the big posts that encircle the circular Lohmann rotunda F238/389, furthermore the posts seem to be aligned with the others mapped by Wittry in 1960. Their fill can be described only by the portions that were trowel scraped as a brownish loamy soil (F1174- 10YR5/4, F1175- 10YR4/3 and F1176-10YR4/4). No further information can be given concerning these features, since they were not investigated because of time restraints.

4.2.2 Pit features

Feature Number: 1165

Location: N184-186 W240-241

Orientation: -

Type: circular pit

Topology: superimposed on F1046; possibly associated with F1030

The excavation of F1165 revealed the presence of two different zones. Zone A had a homogeneous mottled silty fill (10YR3/3) that did not contain any cultural material except from a charred wooden stick. Zone B was constituted by a 5cm deep layer of orange material (10YR5/6), which lined the bottom of the feature and its circumference. The orange soil found in this lower zone was similar to the fill found inside the postholes of F1030 and since F1165 was identified in proximity of the western wall of the compound F1030 it could have been associated with the building.

Dimensions: diameter of 1.4 m ca. and a maximum depth of 21 cm.

Figure 4.75 F1165's eastern half.

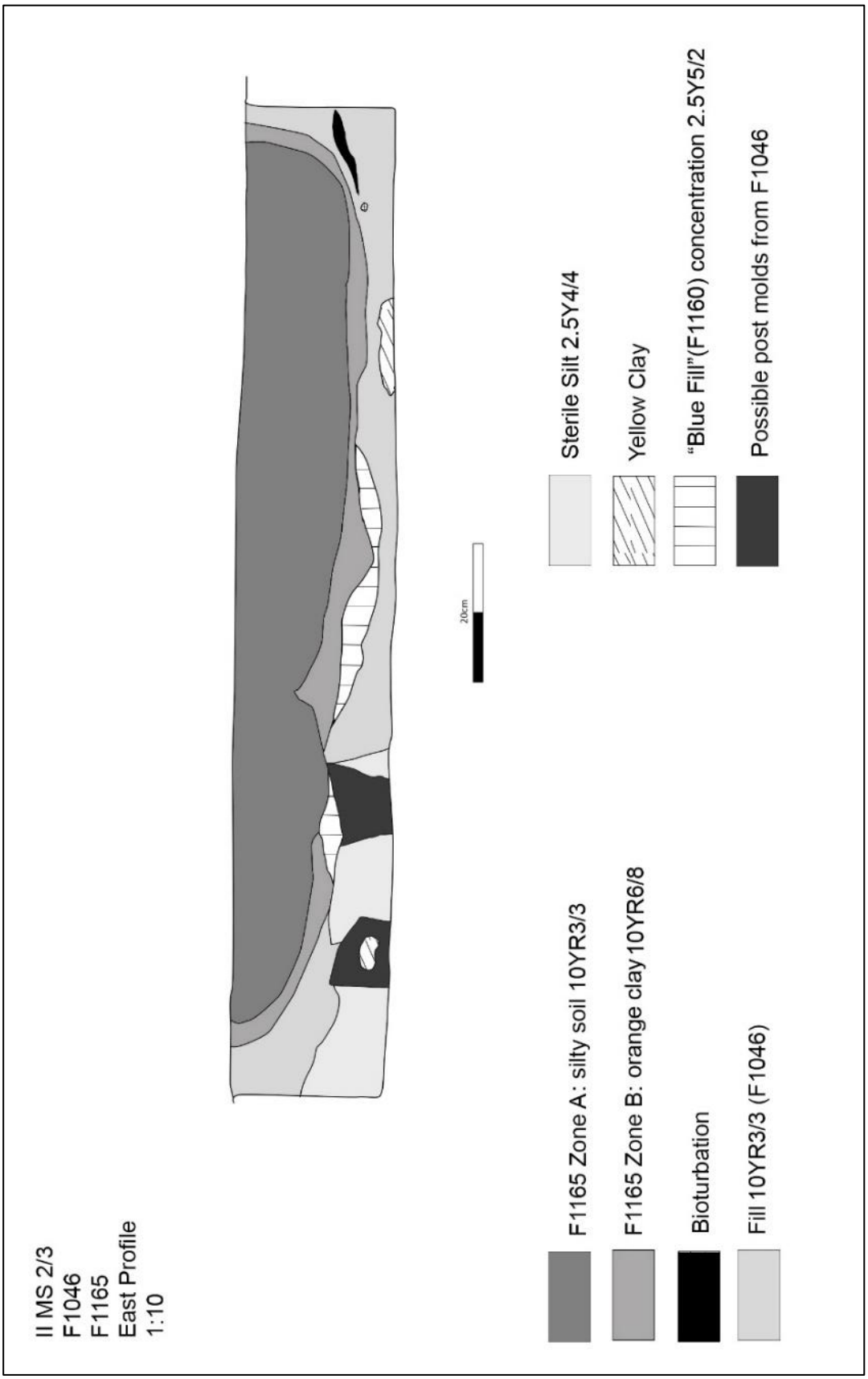


Figure 4.76 F1165's eastern profile (I. Valese).

4.3 The Late Mississippian Phase (1200-1350 AD)

The Late Mississippian phase within the Merrell Tract is represented by numerous pit features, rich in contents, and big wall-trenched structures differing in orientation and size.

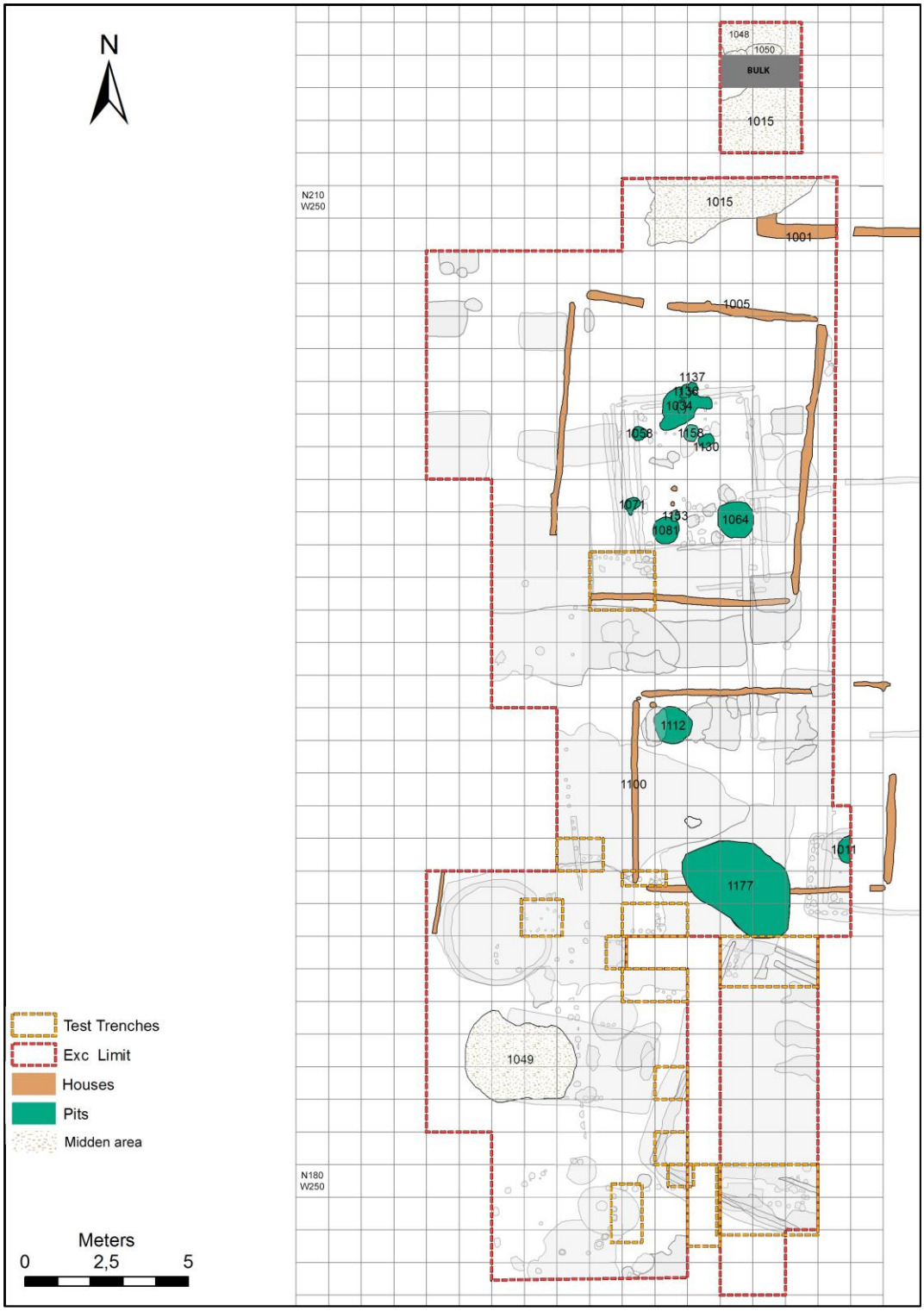


Figure 4.77 General map of Moorehead's features from UNIBO excavations (I. Valese).

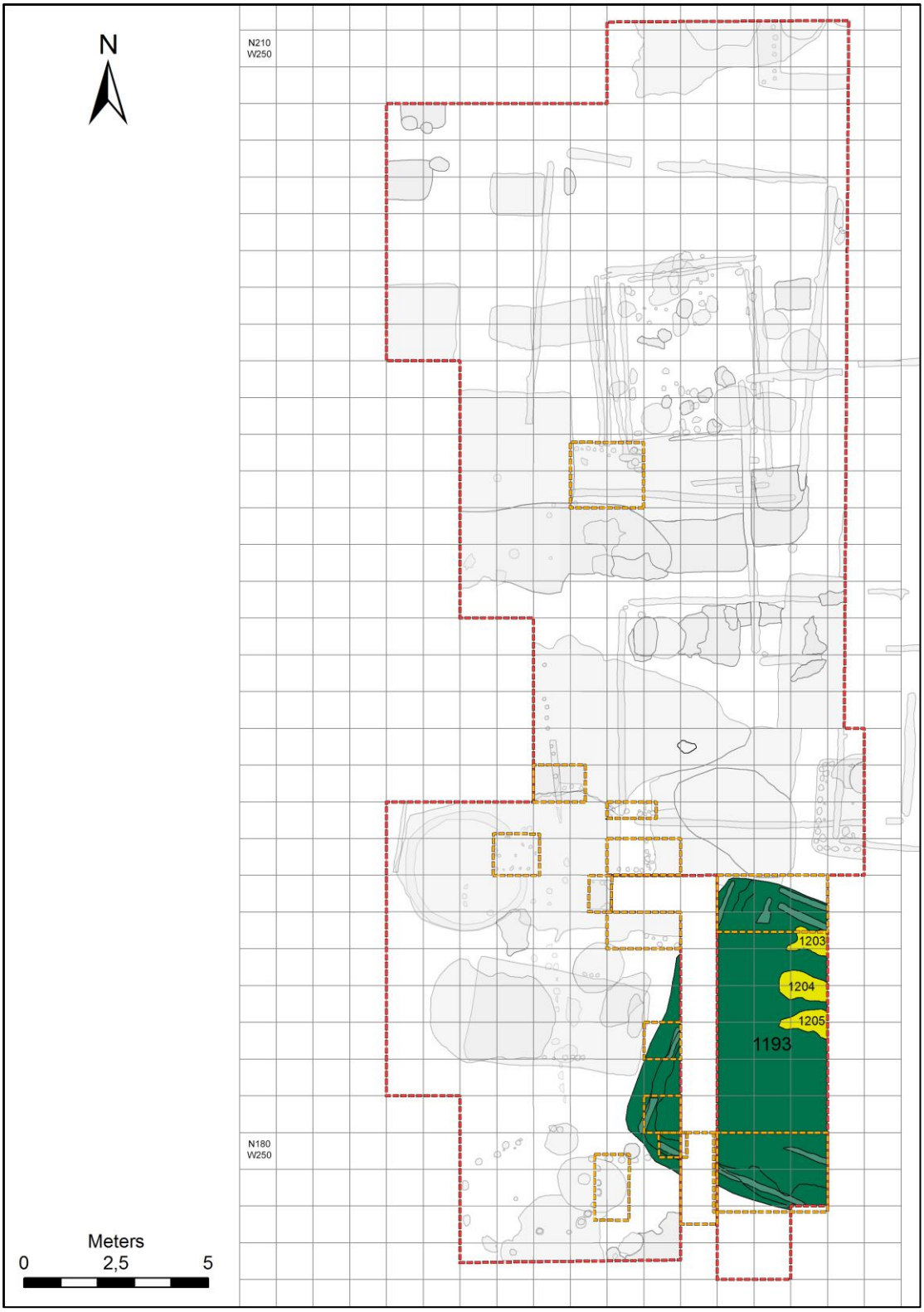


Figure 4.78 General map of Sand Prairie's features from UNIBO excavations (I. Valese).

4.3.1 Structures

Feature Number: 1001

Location: N209-215 W234-236

Orientation: N-S

Type: rectangular wall-trenched building

Topology: F1001 was superimposed by F1015, F1019c and F1020c. It was superimposed on F1044 and F1051

The portion of F1001 recovered in the Merrell Tract is represented by a large wall trench. First detected in 2009, in a 2x1 m test unit set by J. E. Kelly, the wall corresponds to the western corner of F358 excavated by W. Wittry in Tract 15B.

F358/F1001 was a Late Stirling/Early Moorehead phase large rectangular building that probably had inner partitions as the presence of internal walls seems to suggest[13].

In the Merrell Tract excavations, F1001 appeared as a continuous wall trench forming a right angle, even if the hypothesis that the two walls formed an open corner cannot be completely discarded; its cross-section showed vertical walls and a flat bottom. The feature's fill had a very compact greyish brown silt (2.5Y 4/3) matrix containing very few cultural material.

The wall trench was located in the northern part of the excavation and it was highly disturbed by later borrowing activities. Since the features superimposed on F1001 were rich in diagnostic material dating to the Late Stirling/Early Moorehead phase, this building has been interpreted as a Late Mississippian feature pertaining to the Late Stirling possibly Early Moorehead phase.

Dimensions: the portion of F1001/358 excavated in the Merrell Tract, resulted to be slightly smaller than the ones excavated in the 15B Tract. Dimensions recorded in the 15B tract were of ca. 45 cm of depth and ca. 60 cm of width while in the Merrell Tract the wall was approximately 40 cm wide and 34 cm deep. The structure covered a projected area of 546 m^2.

[13] Pauketat (2013), in its analysis of the 15B Tract, interprets these walls as part of a separate building superimposing on F358.

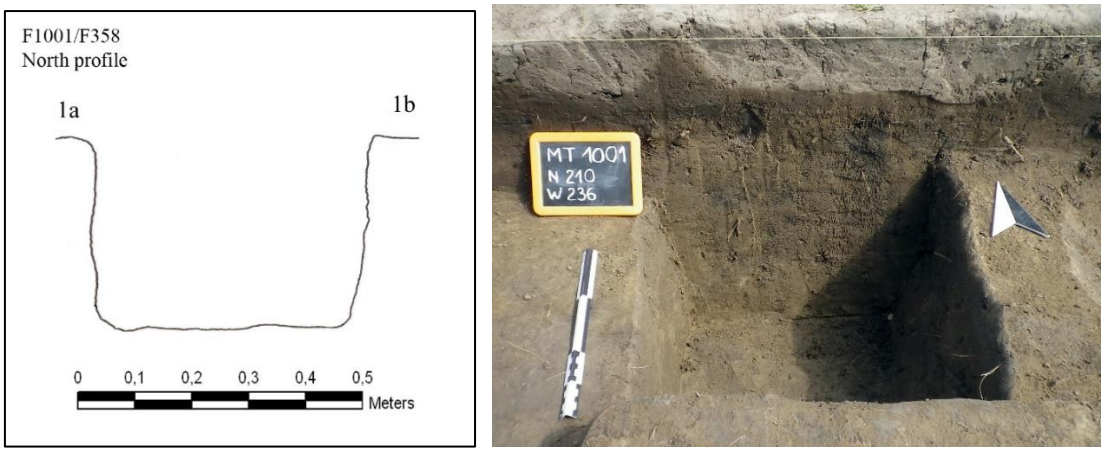


Figure 4.79 Drawing and picture of F1001's Northern profile.

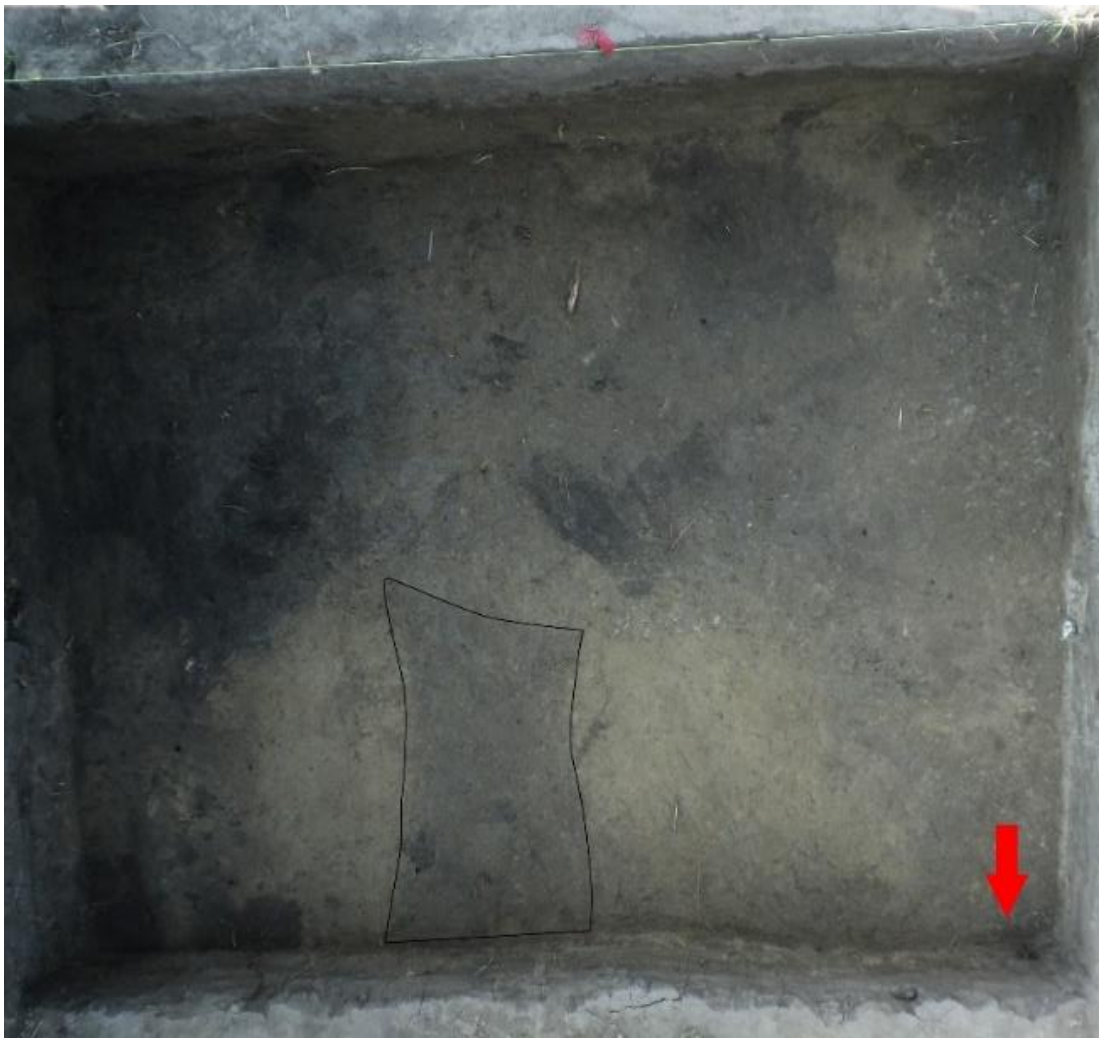


Figure 4.80 Detail of F1001 in the northern part of the excavation area.

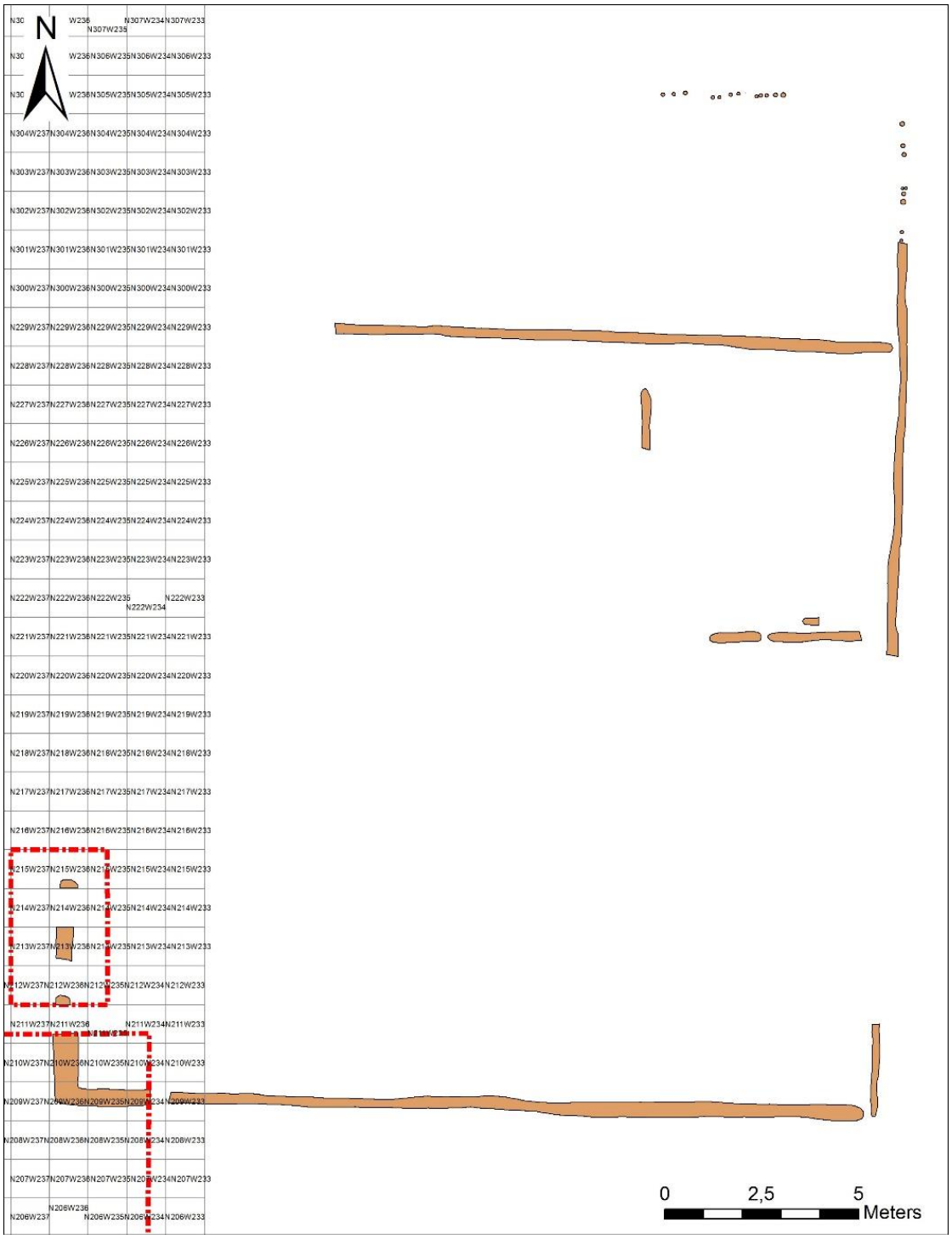


Figure 4.81 Map detail of F1001/358 (I. Valese).

Feature Number: 1005

Location: N196-207 W234-243

Orientation: N-S

Type: wall-trenched building

Topology: F1005 is superimposed on F1016, F1017E, F1017W, F1069 Complex, F1073, F1080, F1086, F1097, F1098, and F1099. F1005 was possibly associated with F1034, possibly F1064, F1081, F1132, F1136, F1137 and F1159

This structure, which can be dated to the Moorehead phase, is composed by four wall trenches with three known open corners, slightly oriented to NE-SW.

The excavation of the wall trenches revealed the presence of dark brown clayish silt (2.5Y 4/3) and sandy loamy soil (10YR3/3) containing few charcoal fragments and cultural material.

The western wall trench had vertical walls and an average depth of 30 cm; in its interior, some, irregularly spaced post pits with different depths (max 54 cm) were identified only after the sterile soil was reached.

The identification of the southern wall of F1005 and the southern portion of the western wall was very difficult due to the presence of earlier features in which the wall trenches were hard to detect. At the end of the fieldwork seasons, it was possible to trace ca. 3 m of this southern wall as a lighter fill showing up in N198 W236-241, while the southern part of the western wall was not located.

Some features excavated inside the limits of F1005 could have been associated to this building such as F1064,F1081, F1034 and F1132, their excavation added information about the possible activities performed inside F1005 and it helped defining the chronology of the structure.

Dimensions: The northern wall trench of this structure showed a 72 cm interruption: the NE side of the trench is 4.62 m long and 38 cm deep, while the NW side is 1.75 m long. The eastern wall trench is 8.36 m long and ca. 30 cm deep. The western wall is 7.12 m long. F1005 covers an area of 66 m^2 ca. placing it between the biggest structures of the West Plaza, after the compounds.

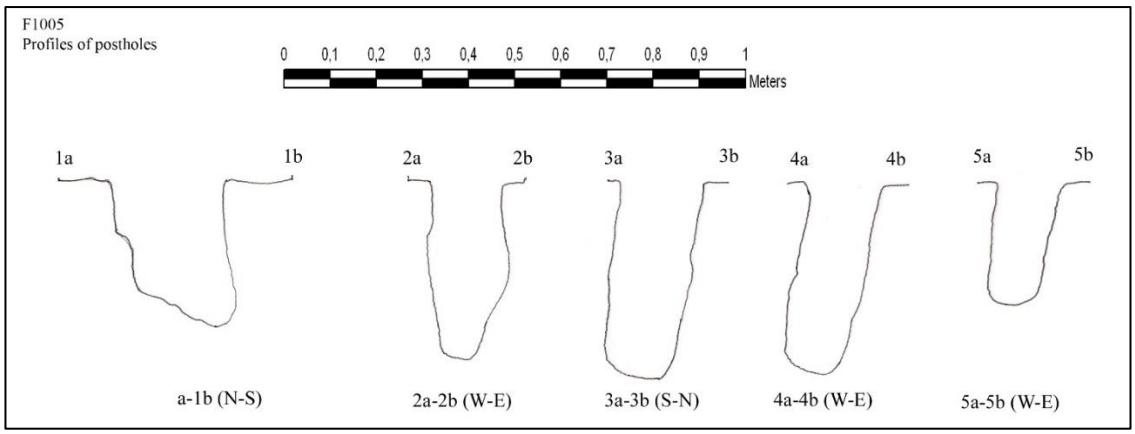


Figure 4.82 Profile of F1005's postholes (F. Debandi).

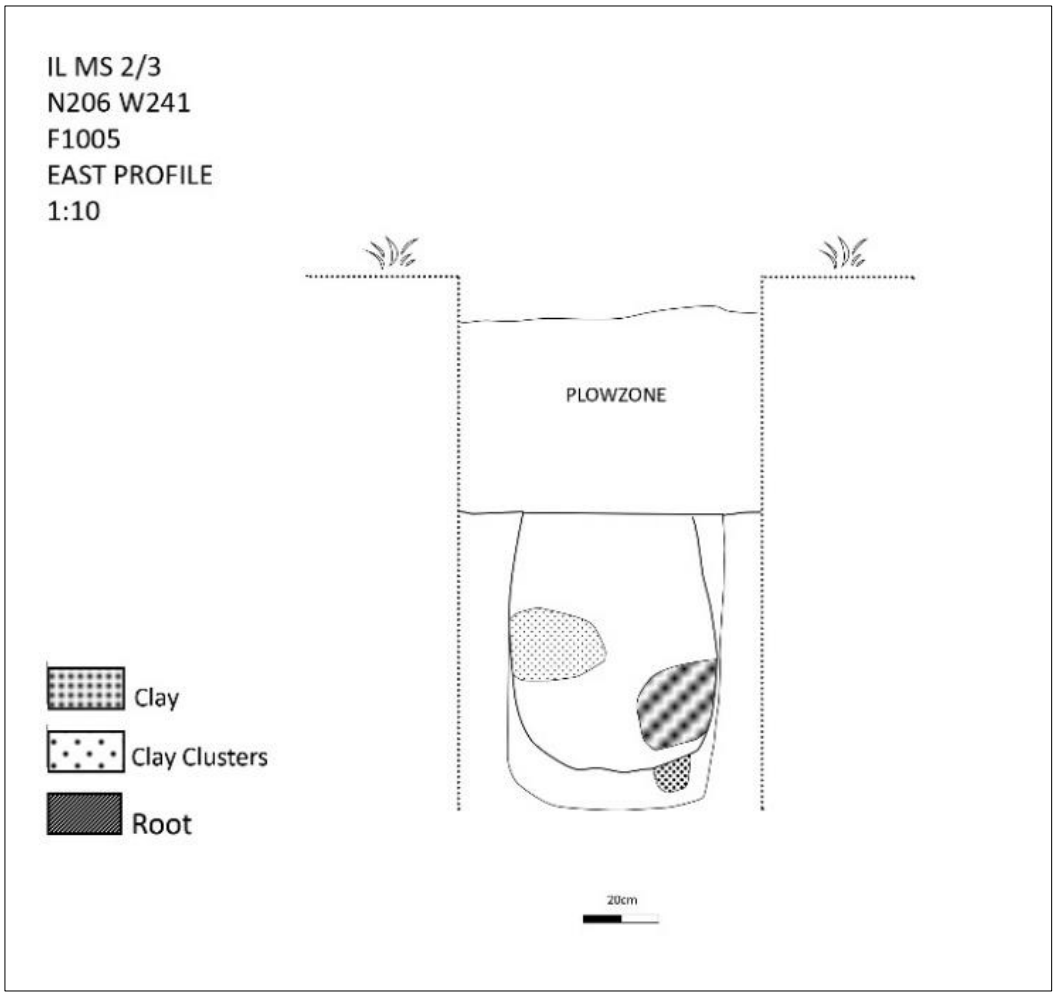


Figure 4.83 East profile of F1005 Northern wall (I. Valese).

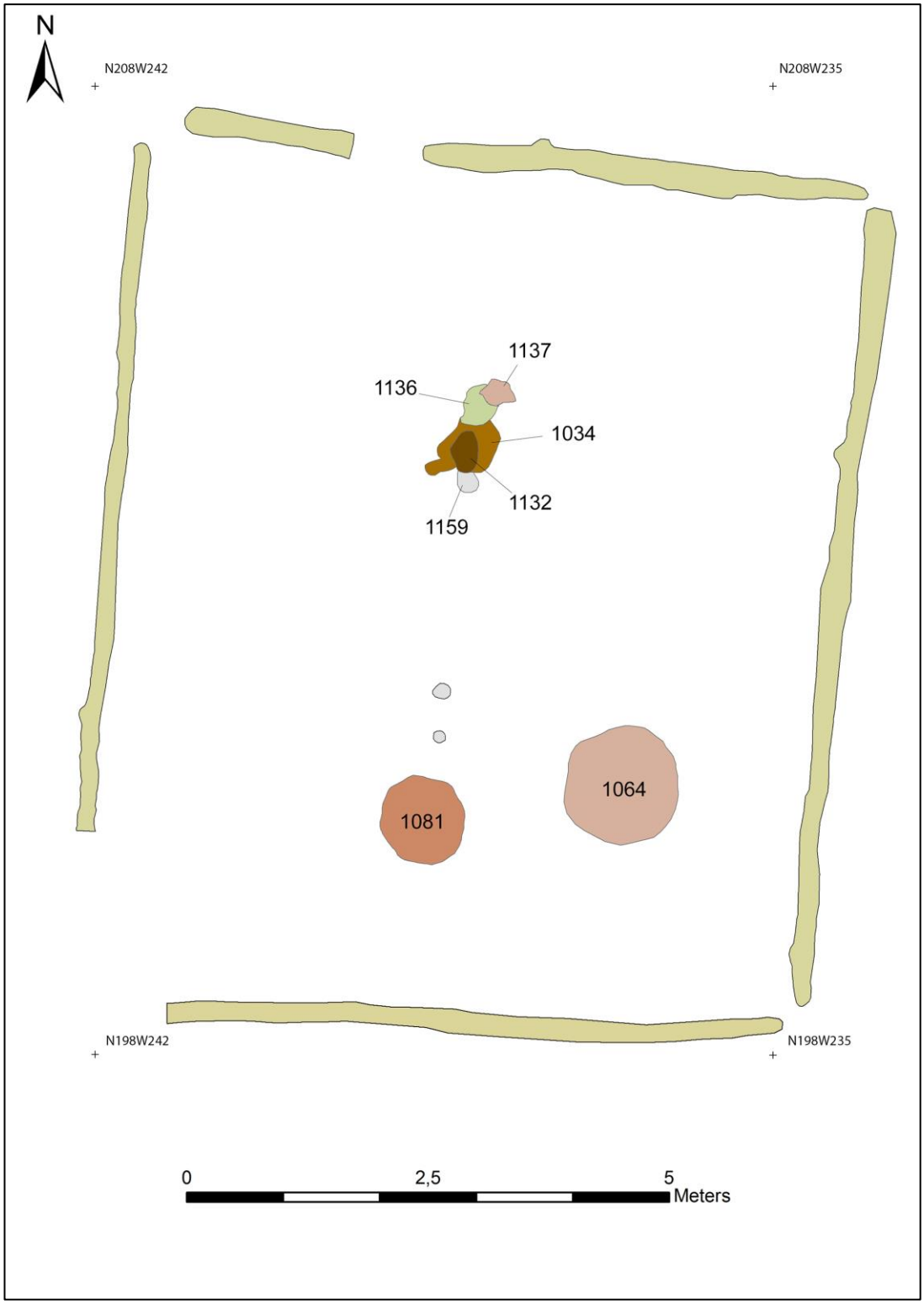


Figure 4.84 Detail of F1005 with possible associated features (I. Valese).

Feature Number: 1009/1100 (H123)

Location: N189-195 W234-240

Orientation: E-W

Type: wall-trenched structure

Topology: F1009/1100 superimposes on F1013 (H107), F1010 (H114), F1069 Complex (H129), F1083, F1108, F1167 and F1211. It is superimposed by F1107 and F1177

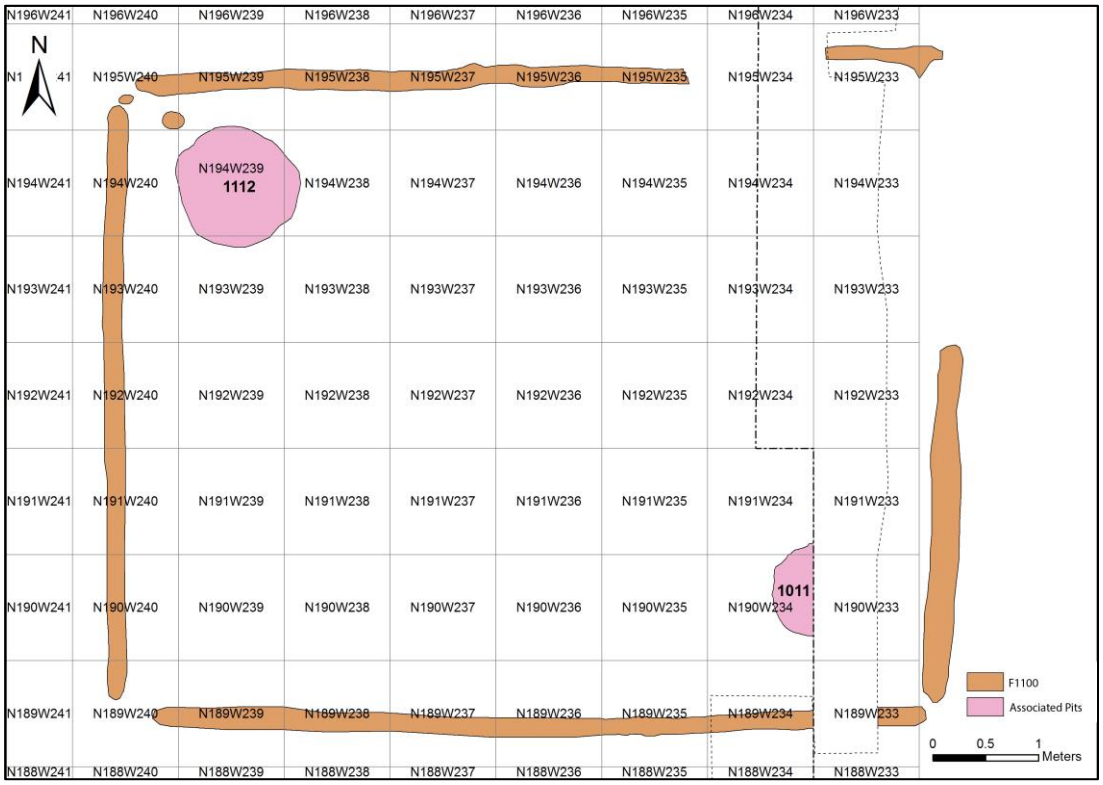


Figure 4.85 F1009/1100 (H123) general map (I. Valese).

F1009/1100 was already located in 15B Tract and numbered H123, during 1960's fieldworks only part of the northern wall and the eastern wall were excavated and mapped. At the end of the Merrell Tract six fieldwork seasons, the building presents the typical structure of most Mississippian wall trench houses with at least three open corners and a rectangular shape.

The excavation of F1009/1100 showed that the wall trenches' depth varied from 5 cm to a maximum of 25 cm. The shallowness of the walls at some point maybe correlated to the presence of the clayish sterile soil underneath the western segment at N189 W235, which could have prevented a deeper excavation of the trench in the first place. The soil recovered from the trenches had a yellowish brown (10YR5/4) sandy matrix.

In 1960's field notes the presence of orange material, similar to that of the compound posts, was recorded for H123, leading Wittry to interpret the building as the central structure of the Compound. In the Merrell Tract excavations as well, a few concentrations of orange material were found in the limits of the northern wall of the structure, nonetheless its association with F1030 remains unclear.

Dimensions: 7.61 x 5.5 m ca.; area of about 42.23 m^2.

Figure 4.86 Detail of sterile clay soil beneath F1100's northern wall.

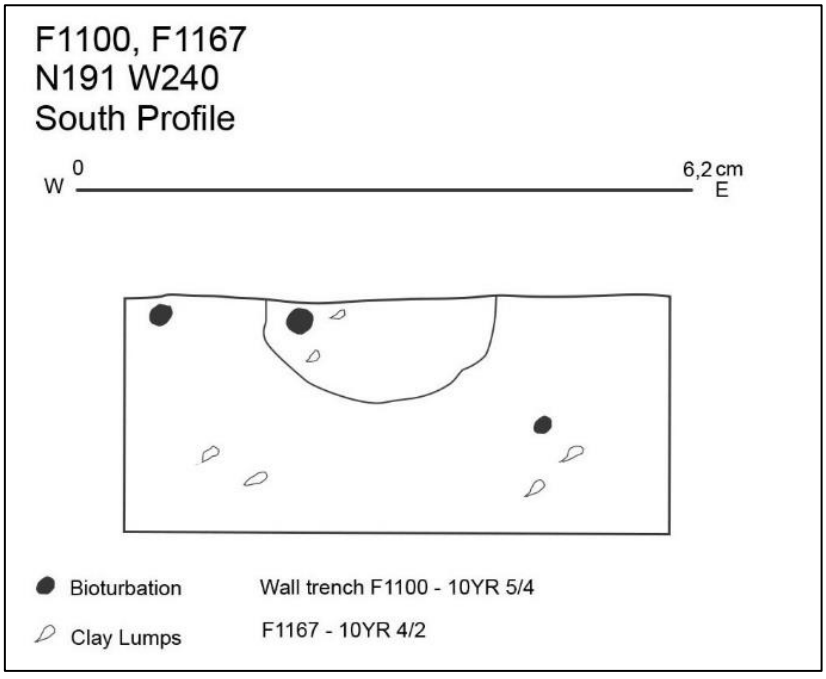


Figure 4.87 F1100's southern wall profile (I. Valese).

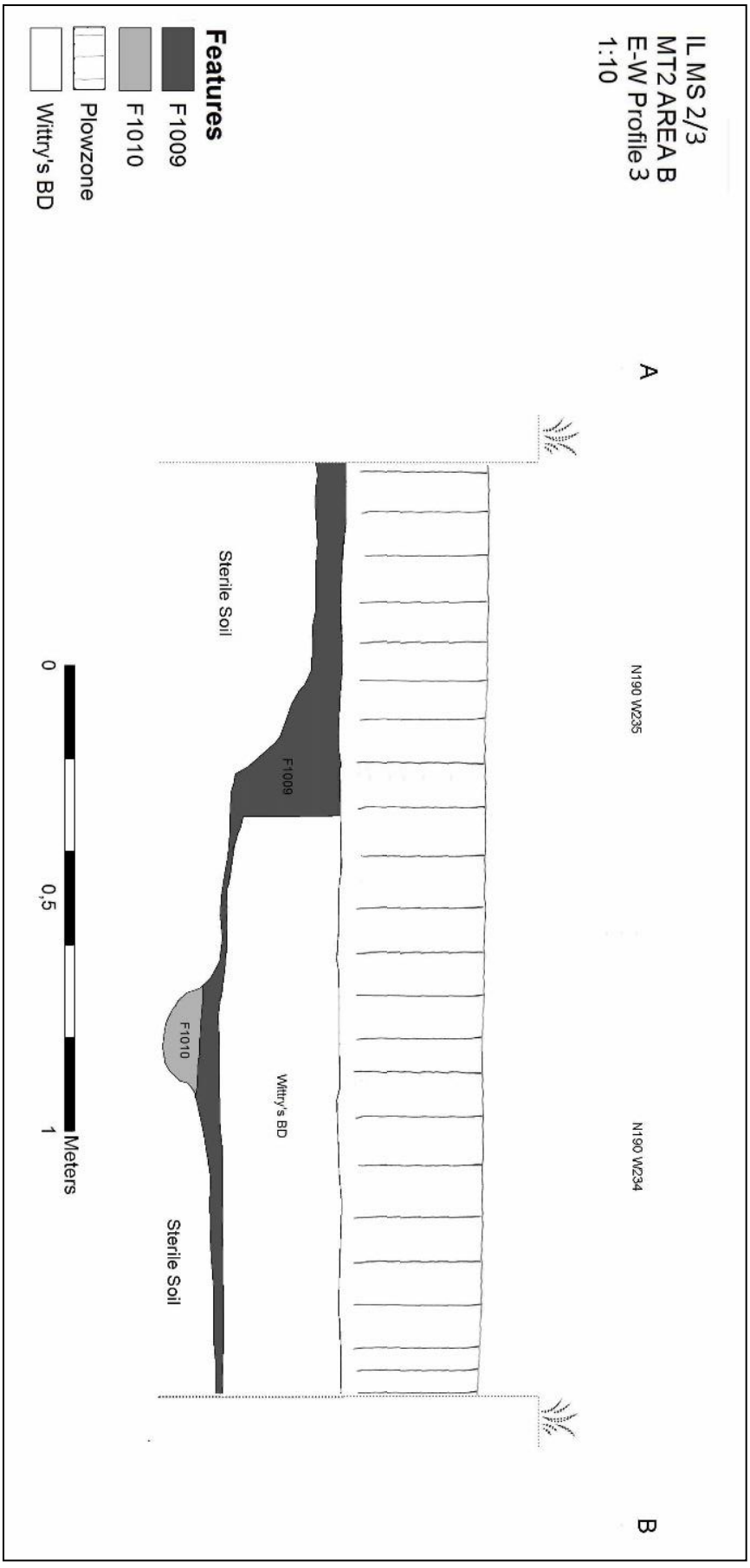


Figure 4.88 Profile of F1100/F1009's northern wall trench (I. Valese).

Feature Number: 1193/1025

Location: N179-187 W235-240

Orientation: NE-SW

Type: rectangular wall-trenched reconstructed building

Topology: Superimposed on F1030, F1211, F1226, F1227, F1228, F1229, F1230 and F1231. Adjacent to F2000. Superimposed by F1201, F1203, F1204 and F1205.

F1025 was detected in 2012 at unit N180 W239. It was an oval shaped feature measuring about 94 cm in length and 40 cm in width, a probe showed a depth of 70 cm. Because of the depth and clayish matrix of the fill, the feature was interpreted as an insertion/extraction ramp of a post pit, or a possible the Sand Prairie phase feature. The chronological placement of F1025 was due to the recovery of several Sand Prairie features, most likely associated to a house basin, found in 2009, in a test unit, made by the Washington University and the Central Mississippi Valley Archaeological Research Institute (CMVARI), located a few meters east from the area.

The expansion of the excavation area in 2016 confirmed the nature of F1025 as part of a Sand Prairie building numbered F1193. However, before the excavated fill was interpreted as part of a house basin the material recovered from the field was collected by 1x1 m units, labelling the bags as if it was a generic fill (by North and West) and later on the fill equalled to F1193's basin.

The feature F1193/1025 was not completely excavated because of time restraint and because part of it is located east of the right of way.

F1193/1025 has an orientation of 20°NE and showed at least one rebuilding episode (two northern and southern walls and two western wall trenches), reflecting the trend of the other Sand Prairie phase structure found in Tract 15B for both orientation and reconstruction.

The excavated portions of the house basin reached a maximum depth of 20 cm ca, while the probes made in the wall trenches showed a depth of 70 cm.

The scraping of the upper levels of the basin yielded a good amount of material consisting mostly in Late Moorhead/Sand Prairie phase ceramics.

Three burned areas superimposed the basin and were numbered F1203, F1204, and F1205, though these features were not excavated hence is not possible to state if they were associate pits or shallow burned areas.

A thick yellow clay layer, F1201, surrounded and partially covered the outer wall trenches of the rebuilt structure. This clay layer was more visible above the western and southern walls of the larger and maybe earlier construction episode; a conceivable interpretation is that the clay could have been melted plaster that covered the walls of the later rebuilding episode of F1193/1025 that deposited on the walls of the earlier and larger structure. Peculiarly, in the northern part of the western wall trench three orange posts were located, but the fill could be a residue of underlying earlier features.

Test pits were made in order to locate earlier structures that could have been superimposed by the Sand Prairie dwelling; as a result of these test pits three orange postholes, belonging to the Compound/F1030, and a series of Emergent Mississippian house basins and postholes were found below F1193.

Dimensions: 7.32x4.50 m; depth of basin 20 cm; wall trenches depth 70 cm; covered area of 30.65 m^2.

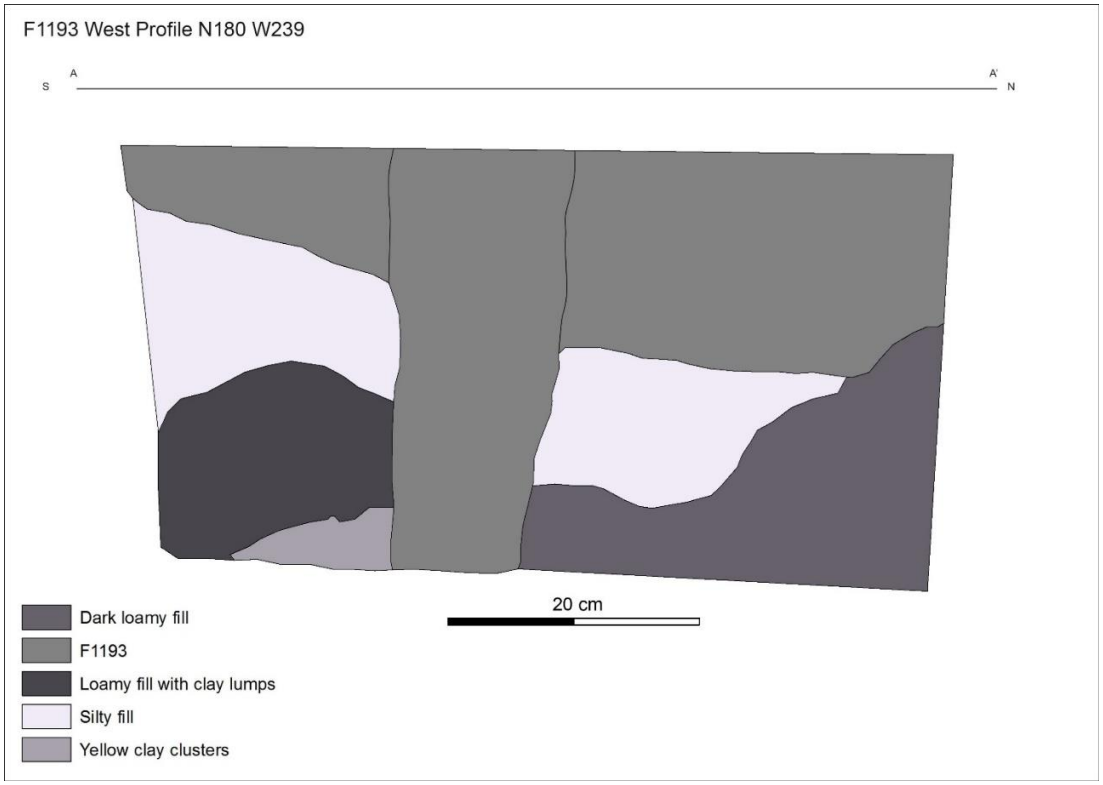


Figure 4.89 F1193 west profile (I. Valese).

Figure 4.90 Detail map of F1193/1025 with possibly associated features and clay layer F1201 (I. Valese).

4.3.2 Pit features

Feature Number: 1011

Location: N190-191 W234

Orientation: -

Type: circular pit

Topology: F1011 cut a clayish layer, F1012 and F1013.

F1011 was a round-shaped pit with a North-South diameter of 93 cm.

The feature was located along the eastern limit of the excavation area, only 40 cm of its western half were excavated. The pit was 14 cm deeps and was filled by a dark-grey (10YR4/3) loamy soil.

The pit yielded several pottery sherds among which a rim sherd of Cahokia Cord Marked that allowing to date the feature to the Moorehead phase.

Dimensions: diameter 93 cm; depth 14 cm.

Figure 4.91 Detail of F1011 and rim sherds.

Feature Number: 1015

Location: N209-213 W235-240

Orientation: -

Type: irregularly shaped feature/midden

Topology: superimposed on F1001, F1019A and F1020B. Superimposed by F1020A

Figure 4.92 Picture of F1015 midden, detail of Ramey Incised bodysherds concentration.

F1015 was an irregular layer that was not entirely defined and excavated since it spread outside the excavation's limits. The excavated portion had an area of 11.81 m^2 and an average depth of 15 cm. Its fill had a matrix of grayish silty-sandy soil and at the bottom of the feature a good amount of Early Moorehead ceramic fragments was found (e.g. Ramey Incised, Cahokia Cordmarked).

Dimensions: length 5.20 m; widht ca. 4 m; average depth of 15 cm.

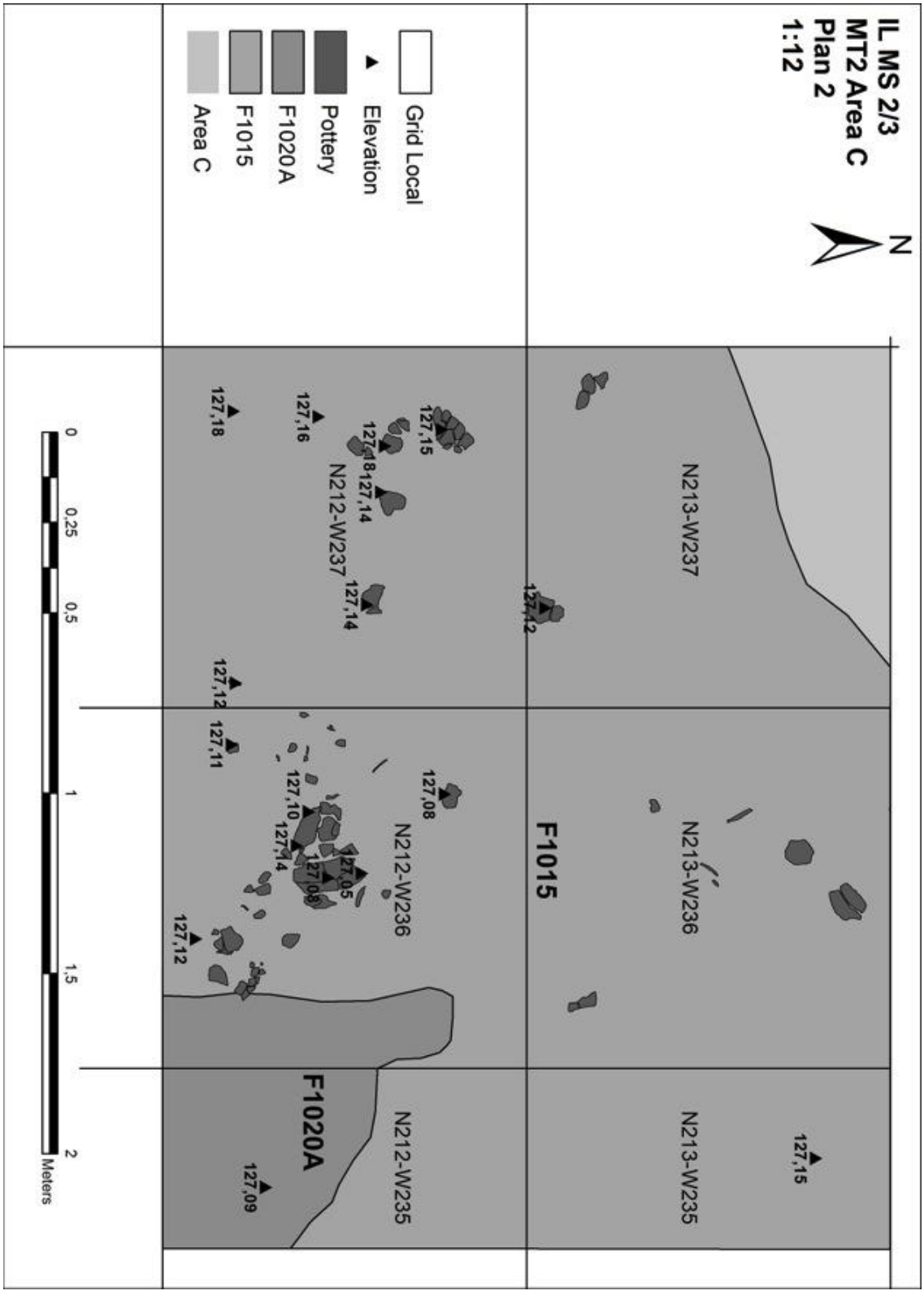


Figure 4.93 Map of the material concentrations in F1015 (M. Valeri).

Feature Number: 1019 (A and B)

Location: N210-213 W236-238

Orientation: -

Type: sub-circular pit/midden

Topology: superimposed by F1015, superimposed on F1001 and F1019C

F1019 was an irregular pit partially excavated because it extended beyond the limits of the excavation area. The pit revealed to be composed by two different zones: Zone A, which had a depth of 17 cm, infilled by a very dark grayish silty-sandy soil (2,5Y3/2); and Zone B, a thin layer (ca. 5 cm) of burned soil (2,5Y2/0) probably the result of a discharge of ash form a hearth. The two zones contained mainly vessel types attributable to the Late Stirling-Early Moorehead phases (e.g. Ramey Incised, Powell Plain, Cahokia Cordmarked, and Cambered); noteworthy is the presence of a notable amount of Ramey Incised fragments associated with several fragments of quartz crystals in correspondence with the limit with the two zones.

Dimensions: length 2.51 m; width 2 m; Zone A – depth 17 cm; Zone B – depth 5 cm.

Figure 4.94 . F1019 zones A and B.

Figure 4.95 Photo of the top of F1019 Zone B.

Feature Number: 1019C

Location: N212-213 W236-237

Orientation: -

Type: irregular pit/midden

Topology: superimposed on F1001, F1023 and F1051; it is superimposed by F1019A-B F1019C is an irregular feature of 42 cm of depth. It is characterized by a dark olive brown

silty soil (2,5Y3/3), which yielded ceramic fragments ascribable to the Emergent Mississippian, Late Stirling and Early Moorehead phases. The Emergent Mississippian fragments probably derive from the disturbance of the underlying earlier features.

Dimensions: length 1 m; width 98 cm; depth 42 cm.

Figure 4.96 Photo of top of F1019 Zone C.

Figure 4.97 . Photo of F1019C bottom.

Feature Number: F1020A

Location: N210-213 W235-236

Orientation: N-S

Type: irregular pit/midden

Topology: F1020A superimposed on F1015, F1020B, and F1020C

F1020A was an irregular pit roughly oval in plan and it was not completely excavated since the feature continues beyond the excavation limits.

The fill excavated from F1020A consisted in a dark brown (10YR2/2) silty soil, which yielded a high amount of pottery, chert debitage and a few fragments of other than lithic material. The ceramic material – mostly shell-tempered – mainly pertains to the Stirling and Moorehead phases.

Dimensions: length 78 cm; width 69 cm; depth 21 cm.

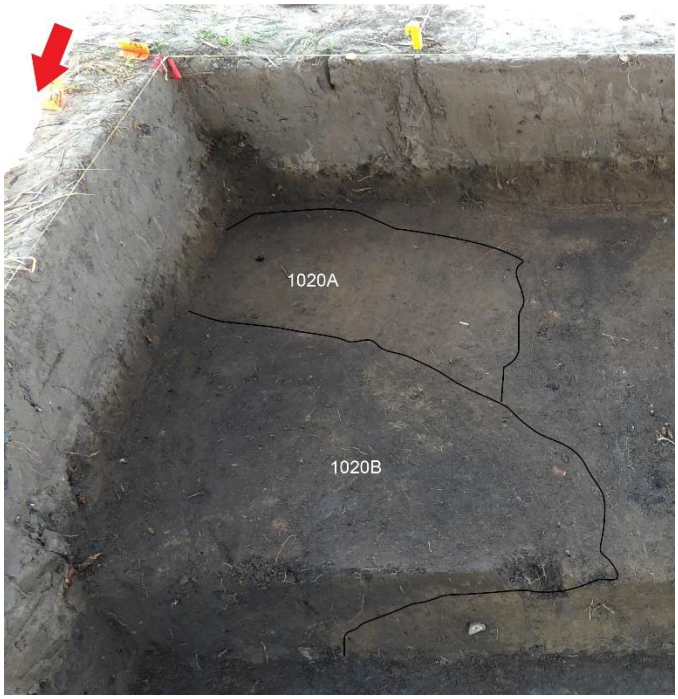


Figure 4.98 Photo of the F1020B profile and the bottom of F1020A.

Feature Number: 1020B

Location: N210-213 W235-236

Orientation: N-S

Type: oval pit/midden

Topology: superimposed on F1020C, it is superimposed by F1015 and F1020A

F1020B is a roughly oval pit composed by a dark olive brown soil (2.5Y3/3) with a silty matrix. It contained ceramic materials dating to Late Stirling and Early Moorehead phases.

Dimensions: length 1.24 m; width 87 cm; depth 31 cm.

Figure 4.99 Photo of the F1020B profile.

Figure 4.100 Photo of pottery sherds in F1020B.

Feature Number: 1020C

Location: N210-213 W235-236

Orientation: N-S

Type: oval pit/midden

Topology: F1020C was superimposed by F1001, F1015, F1020A and F1020B

This feature had an oval shape; its excavation revealed a very dark brown (10YR2/2) sandy fill, which yielded a high number of large fragments of pottery dating to Late Stirling and Early Moorehead phases.

Dimensions: length 1.33 m; width 85 cm; maximum depth 41 cm.

Figure 4.101 Photo of the F1020 Zone C.

Figure 4.102 Photo of Hooded Water Bottle in F1020C.

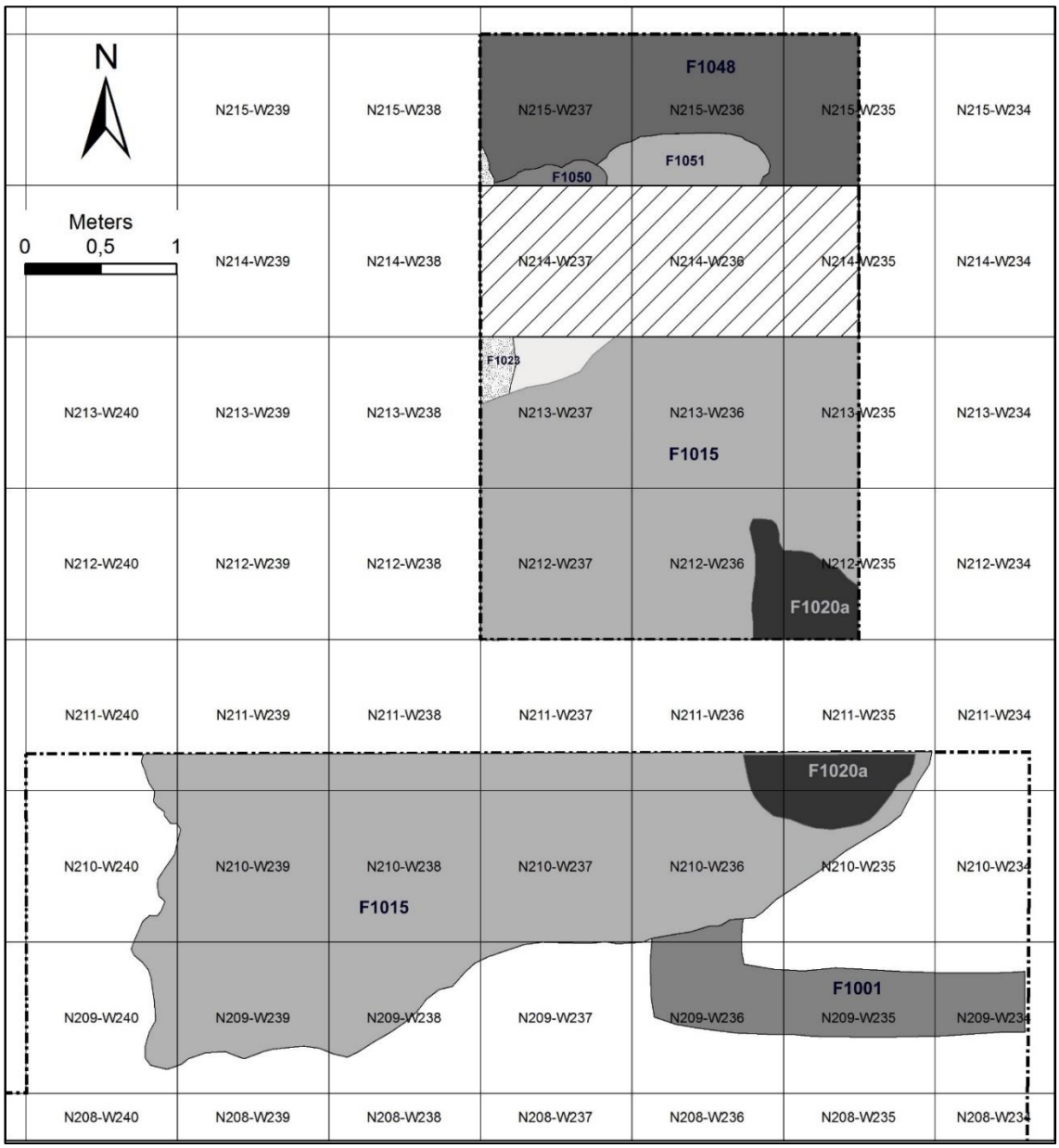


Figure 4.103 Midden area before the removal of F1020a and F1015 (M. Valeri and I. Valese).

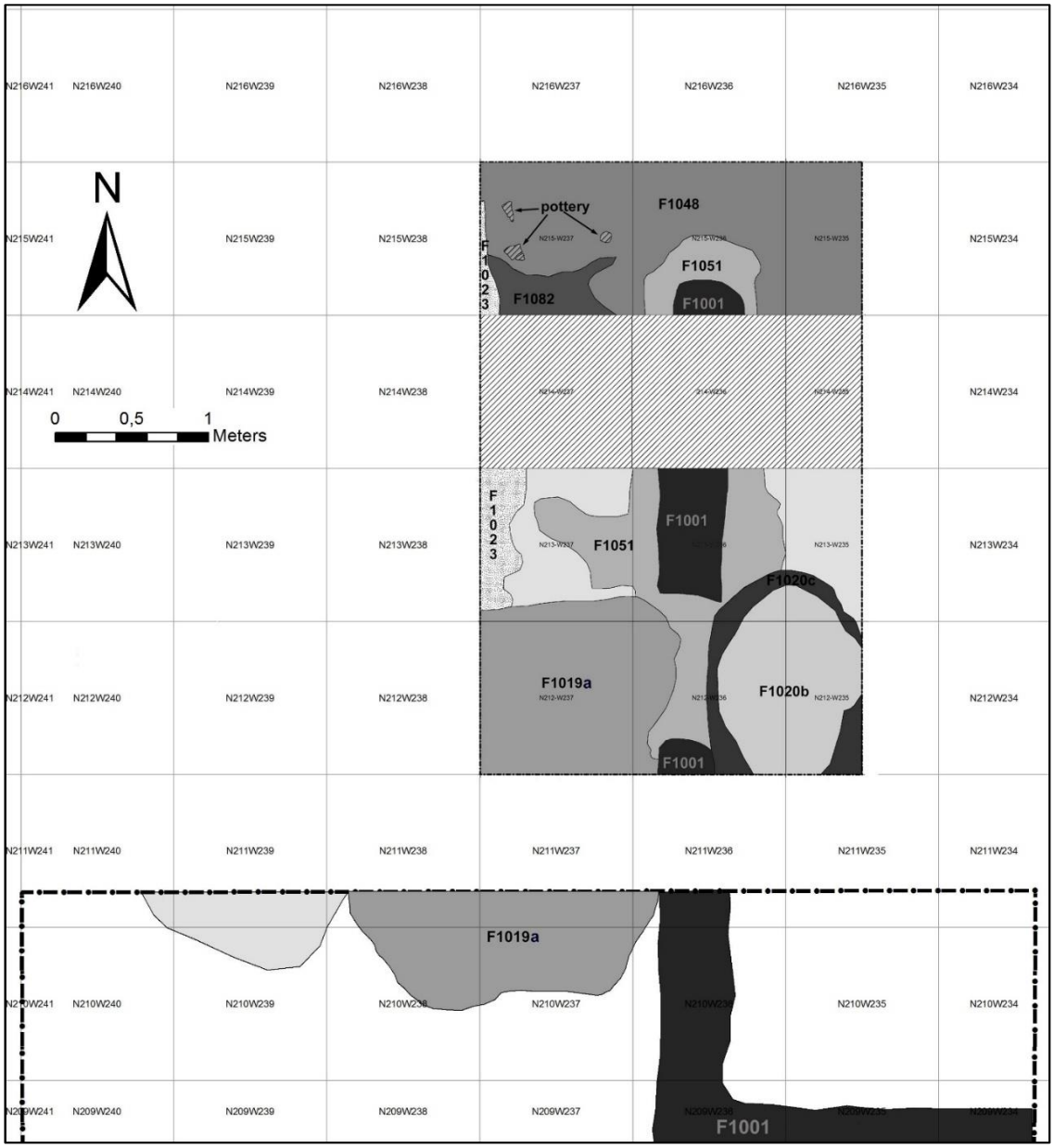


Figure 4.104 Midden area after removal of F1020a and F1015 (M. Valeri and I. Valese).

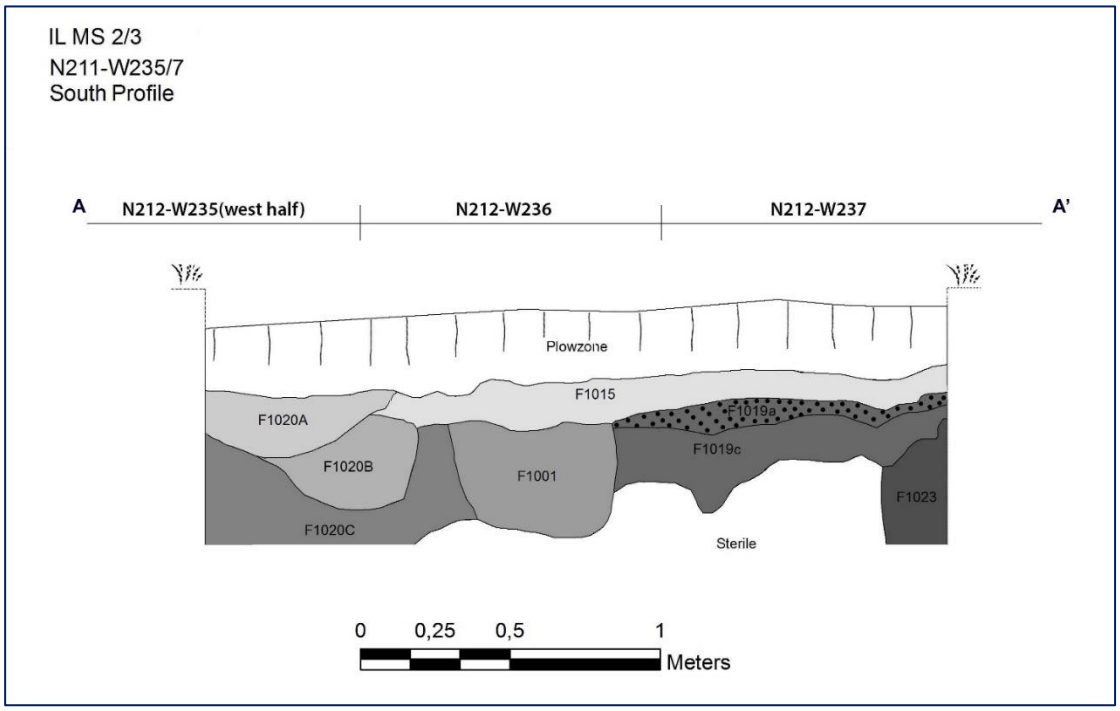


Figure 4.105 North Section of N212-W235/7 (M. Valeri).

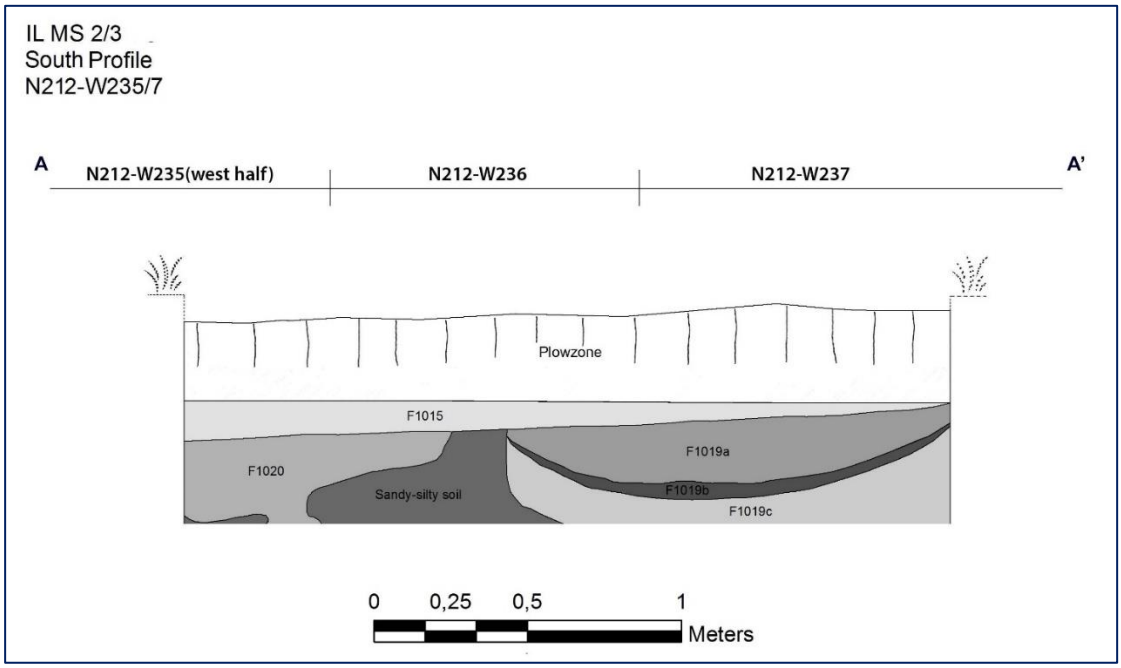


Figure 4.106 North Section of N211-W235/7 (M. Valeri).

Feature Number: 1034, 1136, 1137 and 1159

Location: N203-204 W238-239

Orientation: N-S

Type: irregularly shaped features

Topology: F1034 is superimposed on F1063 (F1033-Complex's north wall) and superimposed by F1132; F1136 is superimposed on F1037 (F1033-Complex's north wall) and is superimposed by F1137; F1137 is superimposed on F1136; F1159 is superimposed by F1132. Possibly associated with F1005

F1034, F1136, F1137 and F1159 are a sequence of irregularly shaped pits or postholes superimposed on each other. These features have been chronologically placed in the Moorhead phase because of the predominance of shell-tempered pottery, amongst which, in F1132, there was a fragment of a Cahokia Cordmarked variety Perino.

Figure 4.107 Features before and after excavation.

Figure 4.108 Profile of features located at n203-204 and w238-239 (C. Deiana).

Feature Number: 1048

Location: N215 W235-237

Orientation: -

Type: midden

Topology: superimposed by F1050, superimposed on F1051, F1052, F1077 and F1082b. Possibly related to F1015

F1048 could be interpreted as part of a midden area that seemed to extend in the northern units of the excavation. By the multiple irregular layers superimposed on each other and the lability of its limits, it is possibly to assume that this feature was deposited in short time.

By the nature of several large body sherds and rims that were retrieved from F1048 it seems probable to consider the feature as domestic material's midden.

Dimensions: length 2.5 m; width 1 m; depth 20 cm.

Feature Number: 1049

Location: N182-185 W242-245

Orientation: -

Type: midden area

Topology: superimposed on F1046

Since the nature of the feature was not clear at the beginning, F1049 was excavated in quarters and the material recovered from the southwestern ¼ was piece-plotted. After the excavation, this feature resulted to be shallow, with a maximum depth of 22 cm, and composed by different deposits that. The different layers that formed F1049 did not have well defined limits especially in plan and some of them were identified later in profile. The matrix of the loamy-sandy fill was mainly very dark brown (10YR2/2), colour due to the high concentrations of it charcoal and charred botanicals. The feature, which by its content and formation was interpreted as a midden area, yielded a good amount of diagnostic pottery rim and body sherds such as Ramey Incised jars, Cahokia Cordmarked variety

Perino, Powell Plain, beakers and Wells Broad Trailed plates, chert debitage, animal bones (mostly deer) and two fluorite beads. The artifacts were equally distributed in the different deposits and the presence of sherds from the same vessel at different elevations

suggest a rapid deposition of the fills that constituted the midden feature. Maize remains were abundant and ubiquitous, a well-preserved concentration of corncobs was found in the southwestern ¼ and it seemed to have been deposited in some sort of perishable container. Along with maize, feature 1049 produced a wealth of archaeobotanical data in 82.5 litres of processed sediments (Parker 2015, see chapter 5.4) in all, at least 25 different plant taxa were represented in F1049 samples. Among wood fragments identified, a majority were hickory, willow/ poplar, elm and oak; nutshell, like wood, was primarily hickory while pecan was the only nut type represented in addition to hickory. The seeds that could be identified were part of the Eastern Complex: chenopod, maygrass, erect knotweed and little barley; however wild resources with food potential included wild bean and possibly wild rice. The recovery of non-edible plant, like morning glory and black nightshade may reflect the performing of ritual activities, even though the presence of an Emergent Mississippian house basin and the low frequency of these kind of seed (three in total) could mean their presence was intrusive.

Dimensions: max depth 22 cm; 3.40x2.27 m.

Figure 4.109 Detail of Ramey Incised rim sherd found in the midden area.

Figure 4.110 Detail of charred corncobs.

Figure 4.111 F1046, F1049 and F1165 photometric image.

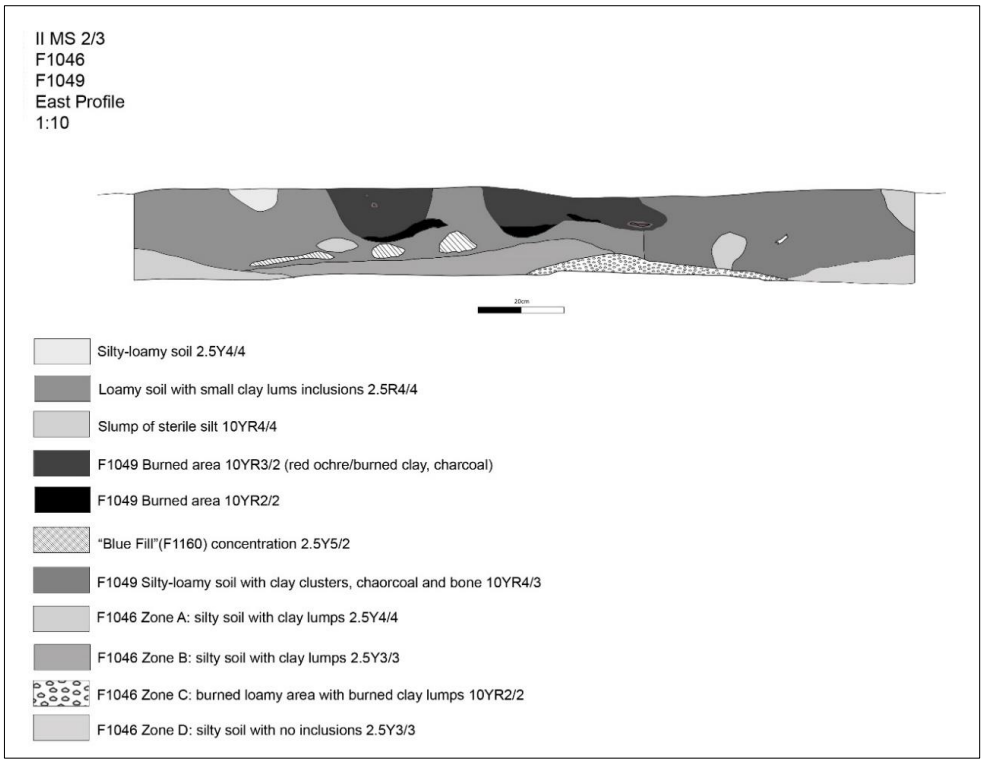


Figure 4.112 F1049 eastern profile (I. Valese and M. Mattioli).

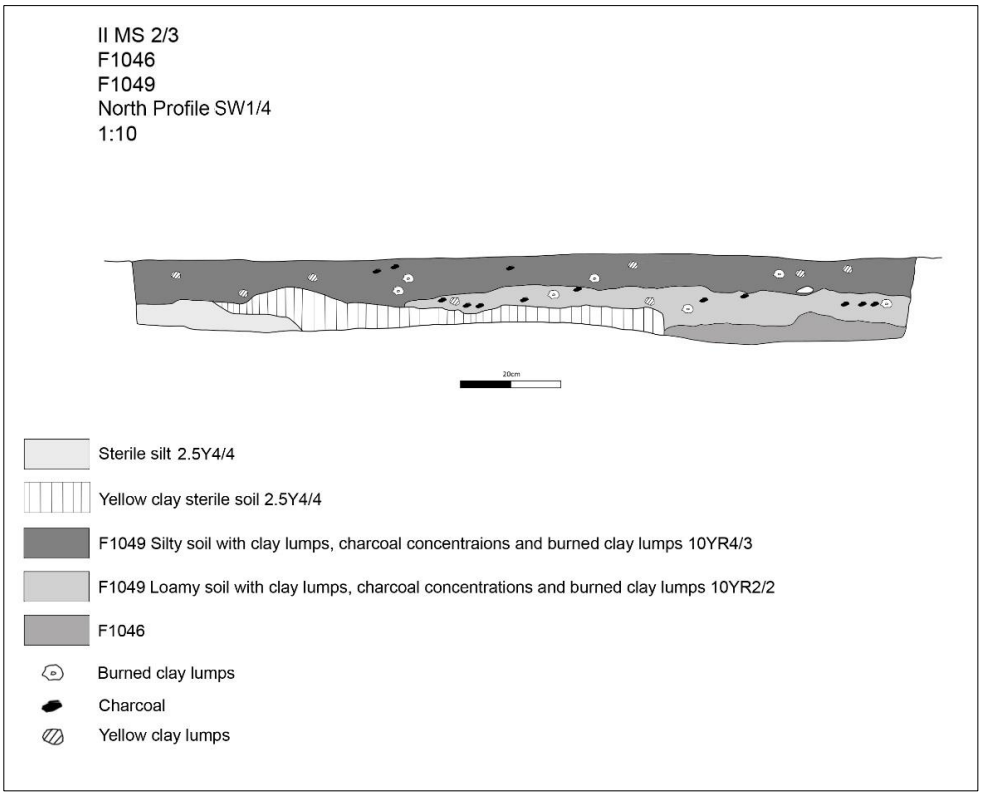


Figure 4.113 F1049 northern profile (I. Valese and S. Armenio).

Feature Number: 1050

Location: N215 W237

Orientation: -

Type: midden

Topology: superimposed on F1048 and F1051

F1050 was a thin semicircular layer containing ashes and very small chunks of charcoal. This feature was interpreted as a discharge of ash. The northern half was excavated while the southern lays under a bulk left in place.

Dimensions: length 70 cm; width 17 cm.

Feature Number: 1051

Location: N215 W236-237

Orientation: -

Type: fill

Topology: superimposed by F1001, F1044, F1048 and F1050, superimposed on F1052, F1077 and F1082

The yellowish loamy-sand feature, which constitutes F1051, probably represents a preparation layer for the excavation and construction of F1001. It was very similar to the sterile soil present in all the excavation area but features, such as F1044, were found once removed. No artifacts were retrieved from F1051 despite its considerable volume.

Dimensions: length 3.7 m; width 90 cm.

Feature Number: 1052

Location: N215 W237

Orientation: -

Type: circular pit

Topology: superimposed on F1053 and F1082; superimposed by F1048

This circular pit had unclear limits and was deep ca. 10 cm, even though it yielded a good amount of diagnostic pottery dating to the Stirling and Moorehead phases.

Dimensions: length 60 cm; width 55 cm; depth 10 cm.

Feature Number: 1053

Location: N215 W237

Orientation: N-S

Type: irregular feature

Topology: superimposed on F1054, F1083, F1084, superimposed by F1052 F1055 and F1082

F1053 was a thin layer rich in ashes and charcoal flecks.

Dimensions: length 92 cm; width 60 cm; depth 3 cm circa.

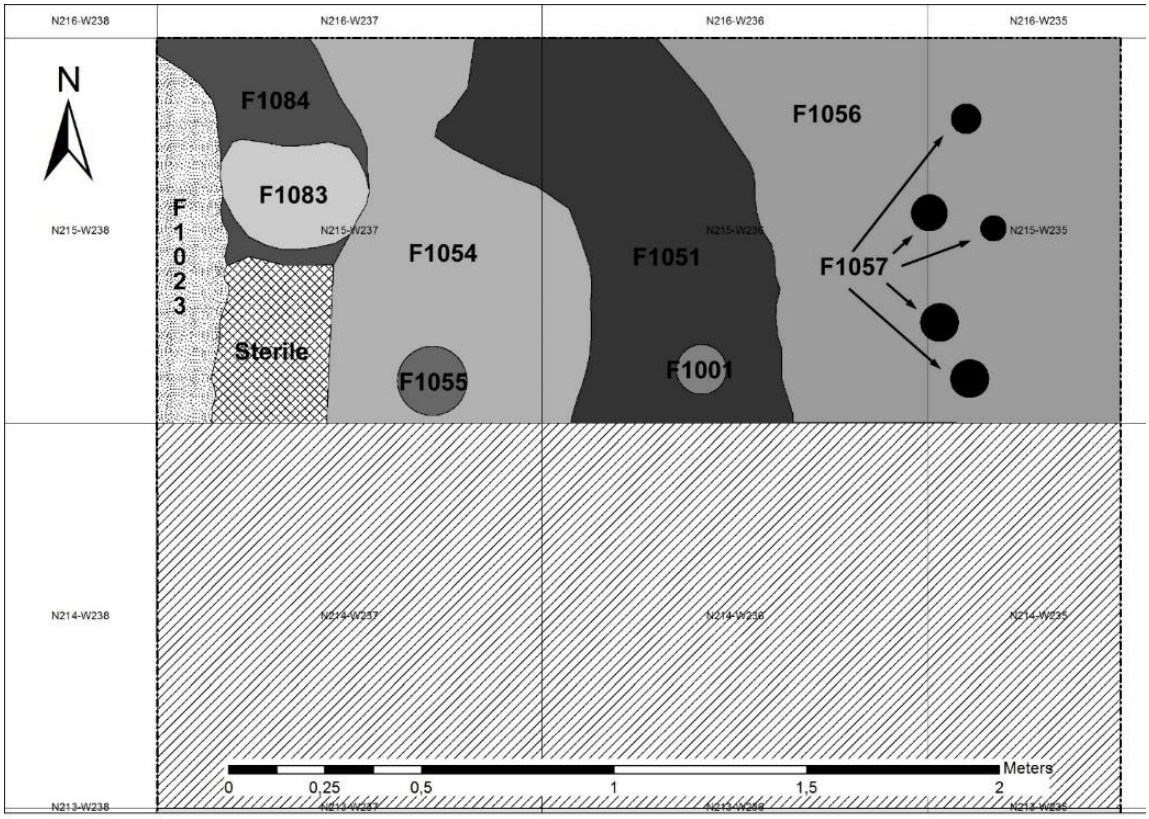


Figure 4.114 Features recovered in the northern units of the excavation at level 9 (M. Valeri).

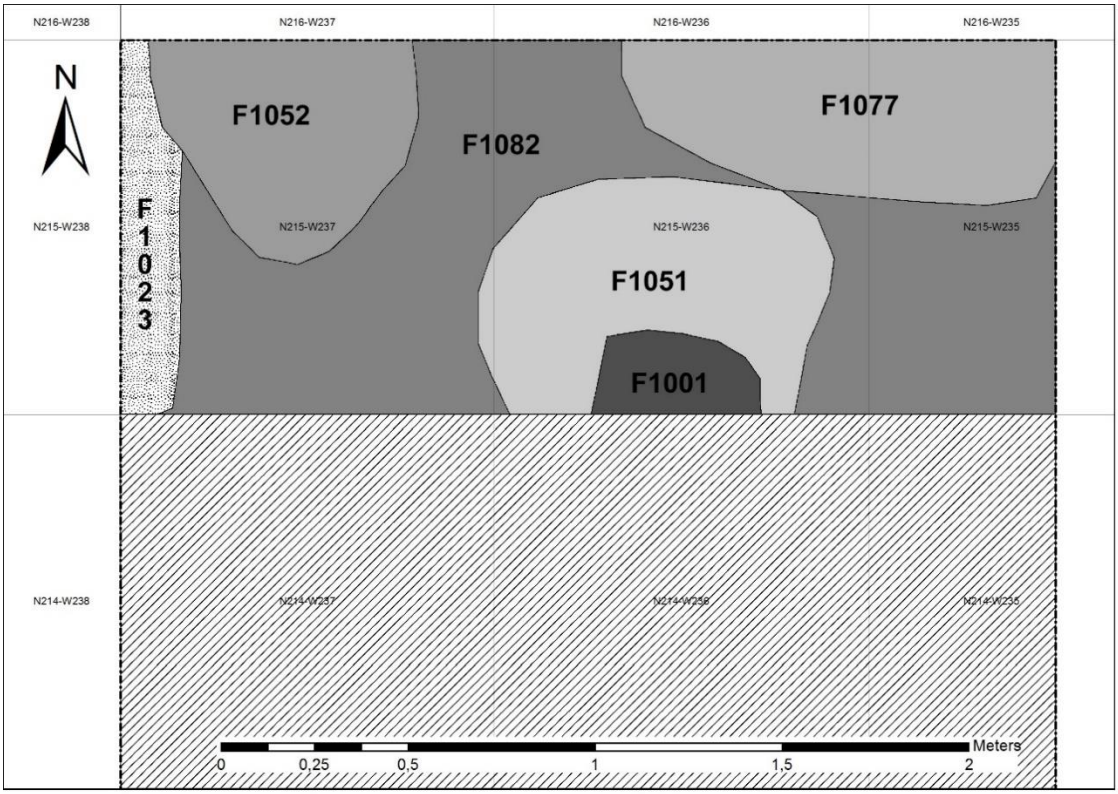


Figure 4.115 Features recovered in the northern units of the excavation at level 7 (M. Valeri).

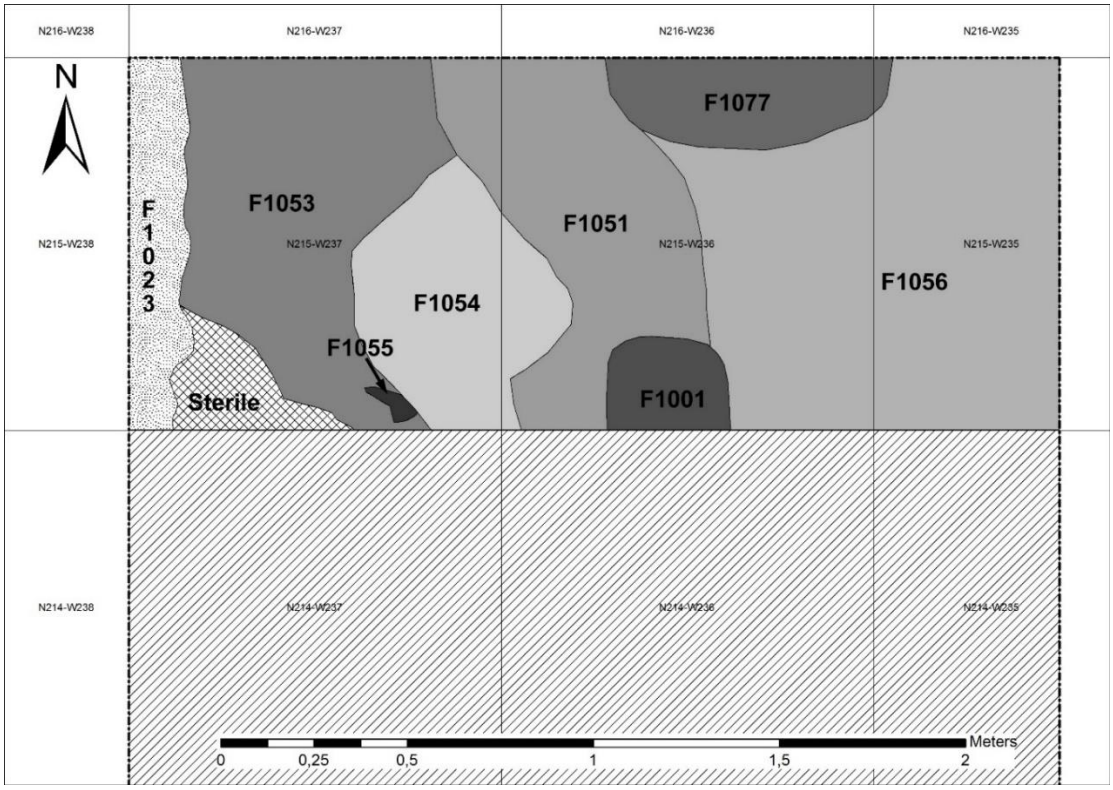


Figure 4.116 Features recovered in the northern units of the excavation at level 8 (M. Valeri).

Feature Number: 1064

Location: N200-201 W237-238

Orientation: -

Type: circular pit

Topology: superimposed on F1040 and F1069. Possibly associated with F1005

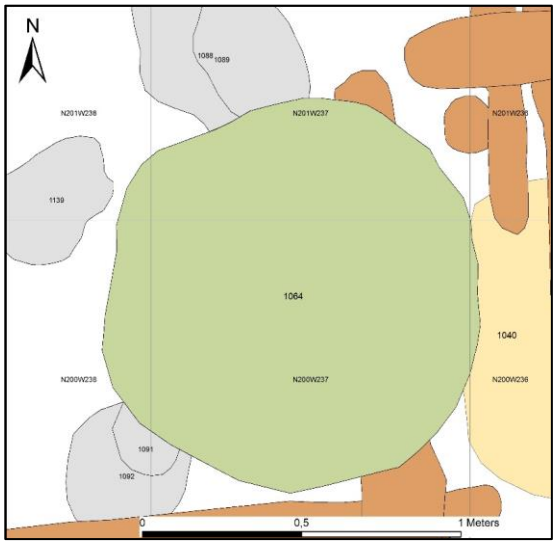


Figure 4.117 Map detail of F1064 (I. Valese).

F1064 is a circular pit in which traces of copper, a chert scraper and a majority of shell-tempered pottery was found.

The pit was excavated in two halves; and was composed by two zones: zone A that had a greyish (2.5Y3/3) loamy fill with clay lumps and charcoal flecks, while zone B was composed by light (2.5Y4/4) clayish mottled soil.

Dimensions: diameter of 1.10 m; depth ca. 36 cm.

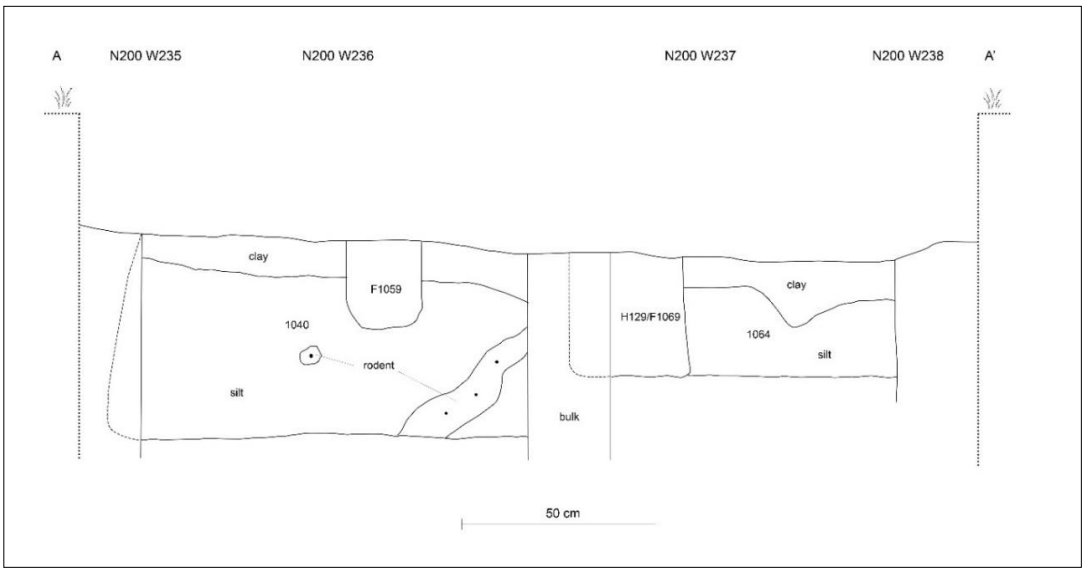


Figure 4.118 F1064 and F1040's southern profile (I. Valese).

Feature Number: 1077

Location: N215 W235-236

Orientation: -

Type: sub-circular pit

Topology: superimposed on F1056, F1082 and superimposed by F1048

The circular feature F1077 was found at the northern limit of the excavation area and since its northern half was located outside the area it was only partially investigated. The matrix of its fill was full of clay clusters and it was probably part of the midden located in the same area.

Dimensions: length 1.10 m; width 40 cm; depth of 15 cm.

Feature Number: 1081

Location: N200 W239-240

Orientation: -

Type: circular pit

Topology: Adjacent to F1074. Superimposed by F1153. Possibly associated with F1005

F1081 was a circular, possibly storage, pit feature, its excavation yielded a stunning amount of material, which was carefully removed and piece plotted.

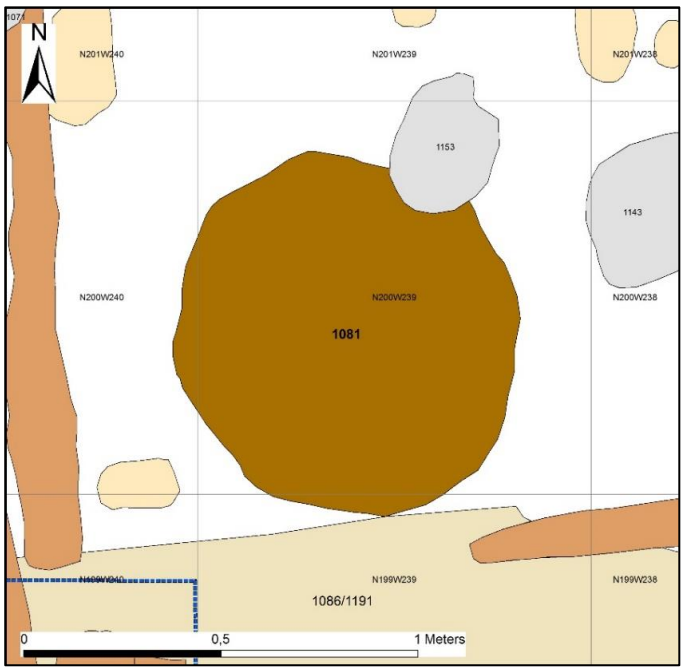


Figure 4.119 Detail map of F1081 (I. Valese).

F1081 had a maximum depth of 70 cm, a flat bottom and its fill was excavated as four different zones. Zone A was 40 cm deep, it was constituted by loamy clay mottled soil (2.5Y 3/3) and small flecks of charcoal. In this uppermost layer pottery sherds, chert, sandstone, and stone tools, animal bones, and two worked bones were retrieved. The shallower zone B (max depth 15 cm), was composed by silty soil (2.5Y4/3- 10YR4/2-10YR 4/4 at bottom of zone). Among the large amount of material revealed a high concentration of bird, fish and mammal bones, two copper beads and five projectile points, including a miniature point. At the bottom of the zone a cache of at least fourteen marine shell whelks was found; the shells were significantly deteriorated due to the nature of the soil even though it was possible to determine that they were a discard from shell-bead production.

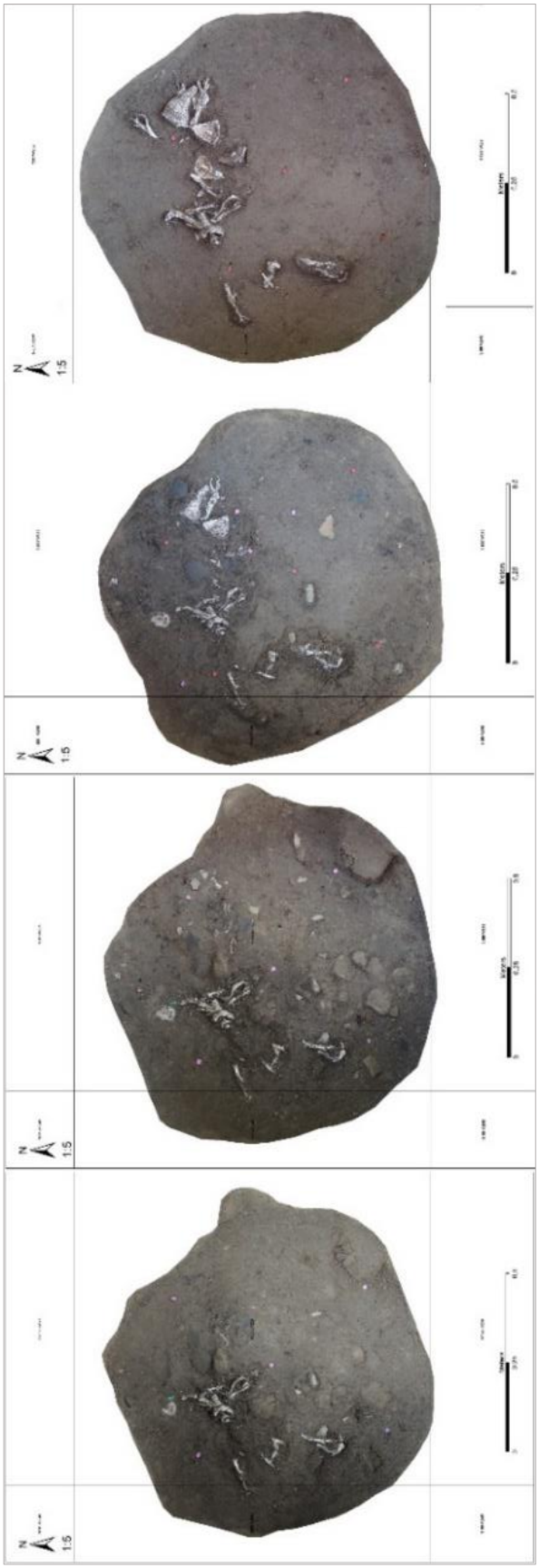


Figure 4.120 F1081 at different levels (I. Valese).

Zone C had a max depth of 4.5 cm and had a loamy soil (10YR4/3) with small clay lumps and it was located in the southeastern portion of the pit. Only a few small bones, chert debitage and yellow ochre was found in this zone; at its bottom, there was a shallow depression (4 cm deep), filled with the same soil. Zone D was a silty (10YR5/2), shallow zone that can be considered as the interface with the underlying sterile silty soil, and it yielded little material.

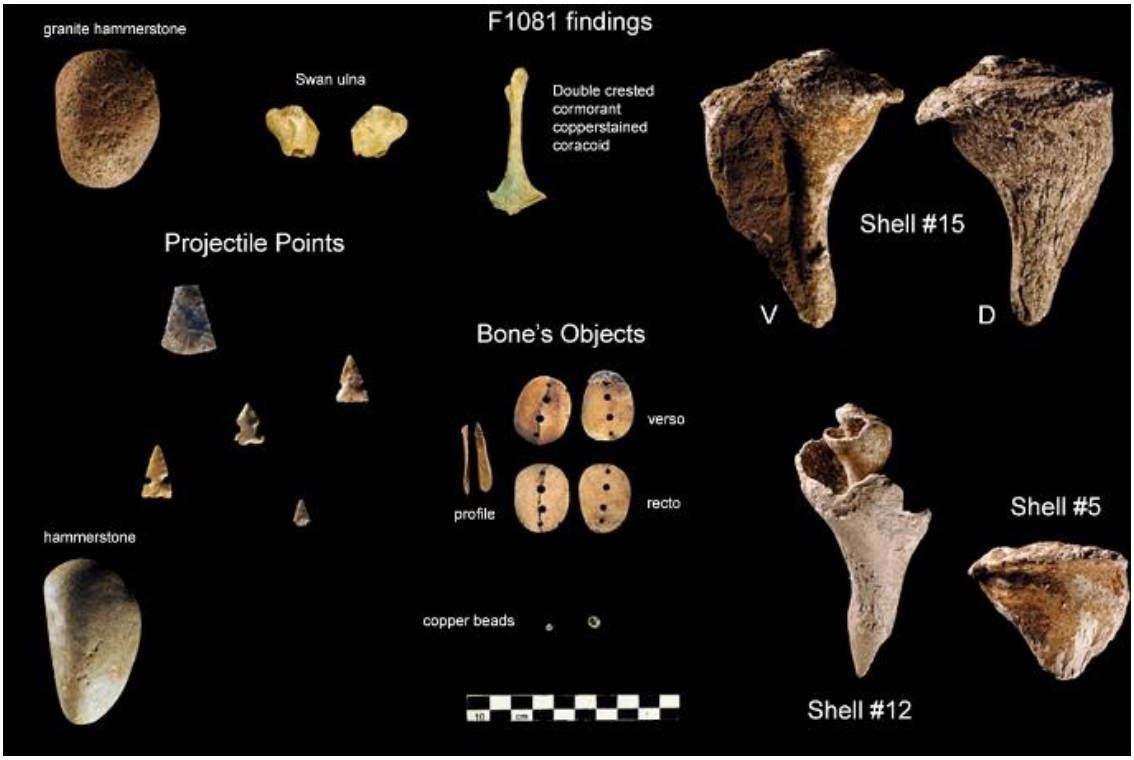


Figure 4.121 Picture of some of the object found in F1081.

The analysis of the material coming from the pit revealed the presence of isolated elements of double-crested cormorant, trumpeter swan, snow goose, common merganser, diving ducks, catfish, bass and deer bones (L. Kelly 2014; see chapter 5.3). The presence of élite and exotic goods, such as the copper beads and the marine shells, and the presence of unusual items (i.e. the worked bones, the double-crested cormorant and miniature projectile point) characterize the assemblage as a "special deposit" containing some items clearly related with ritual paraphernalia. As a result from the flotation of the soil samples, botanical analysis showed the presence of red cedar in the upper level of the feature, a wood that was used both a construction material in special buildings, and burned for the incense-like aromatic smoke (Parker 2014).

Dimensions: diameter 87 cm; depth of 0.70 cm.

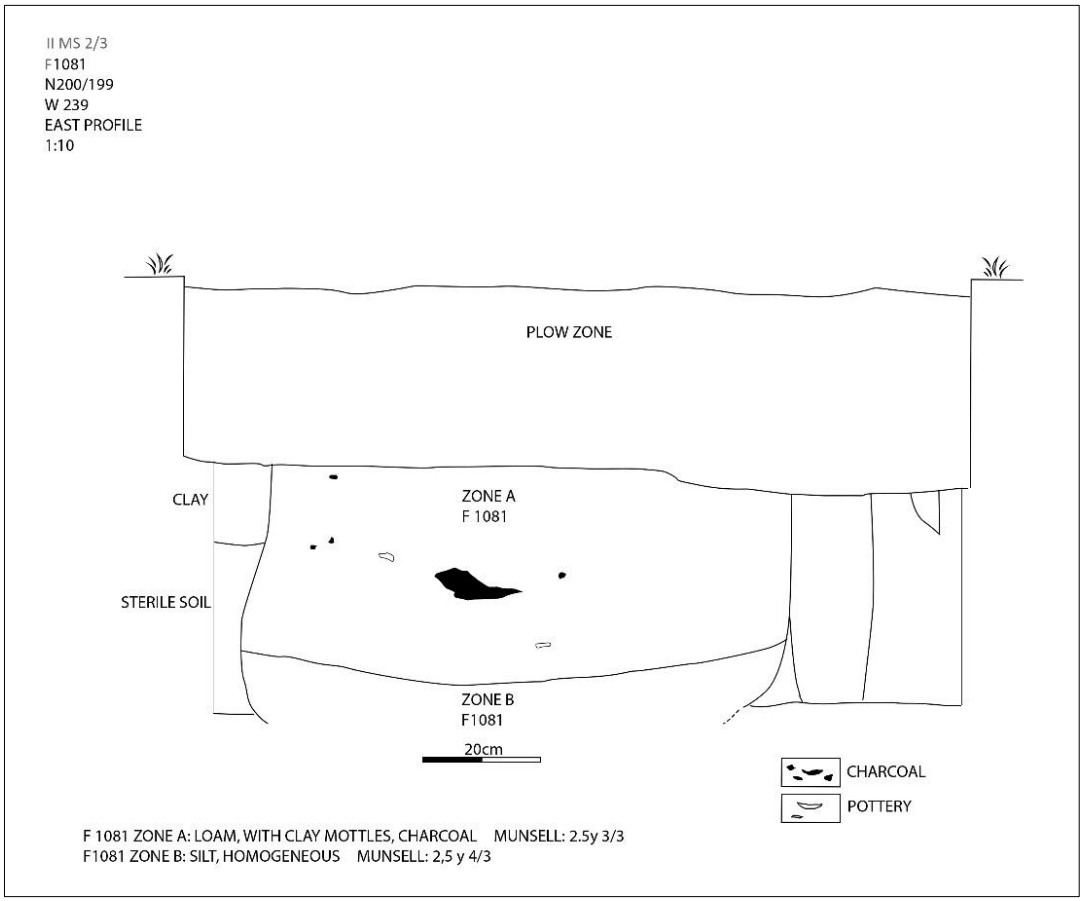


Figure 4.122 Eastern profile of F1081 (C. Deiana).

Feature Number: 1112

Location: N193-195 W238-239

Orientation: -

Type: circular refuse pit

Topology: superimposed on F1111 and superimposed by F1115

F1112 was a circular refuse pit, which yielded a great amount of charred wood. The general fill of the pit had a reddish brown clayish matrix (10YR3/2) among which, at the bottom of the southern half of the pit, several fragments of charred logs and a sample of charred thatch, that lined part of the circumference of the feature, were recovered. Diagnostic pottery allows to place F1112 in the Moorehead chronological phase.

Botanical specimens in F1112 were collected by hand during the excavation and examined[14]. The analysis showed a predominance of hickory wood along whit white oak

[14] The botanical analysis of the Merrell Tracts samples has been made by K. E. Parker.

and sweetgum; furthermore, the thatch remnant consisted of burned compressed grass stems. Among the charred botanicals recovered through flotation, maize remains were encountered in a good quantity as well as remains of fruit or vegetative tissue.

Dimensions: 1.04 m x 0.89 m; maximum depth 32 cm.

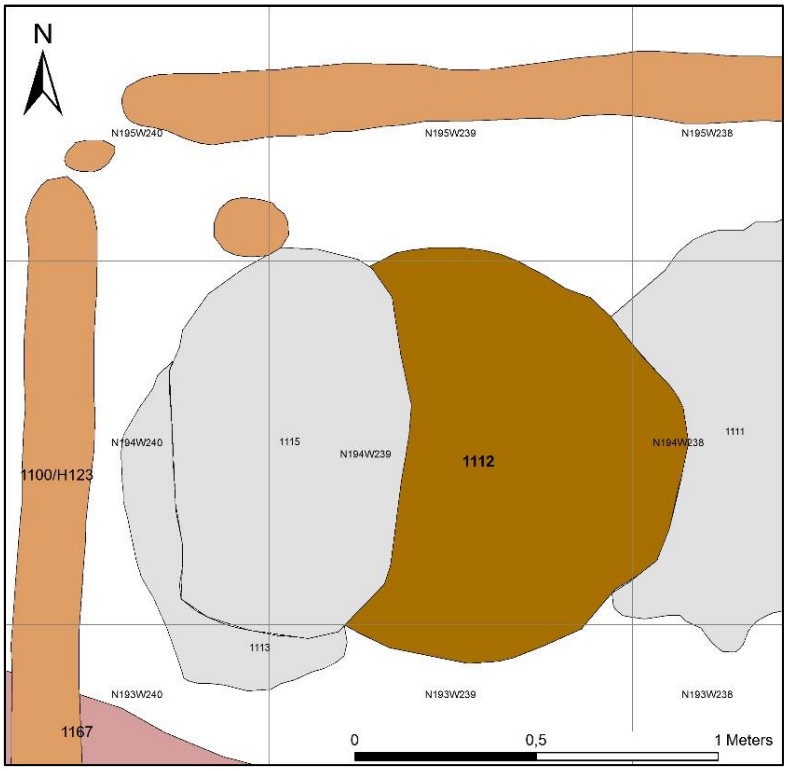


Figure 4.123 Map detail of F1112 (I. Valese).

Figure 4.124 Multilevel photometric image of F1112.

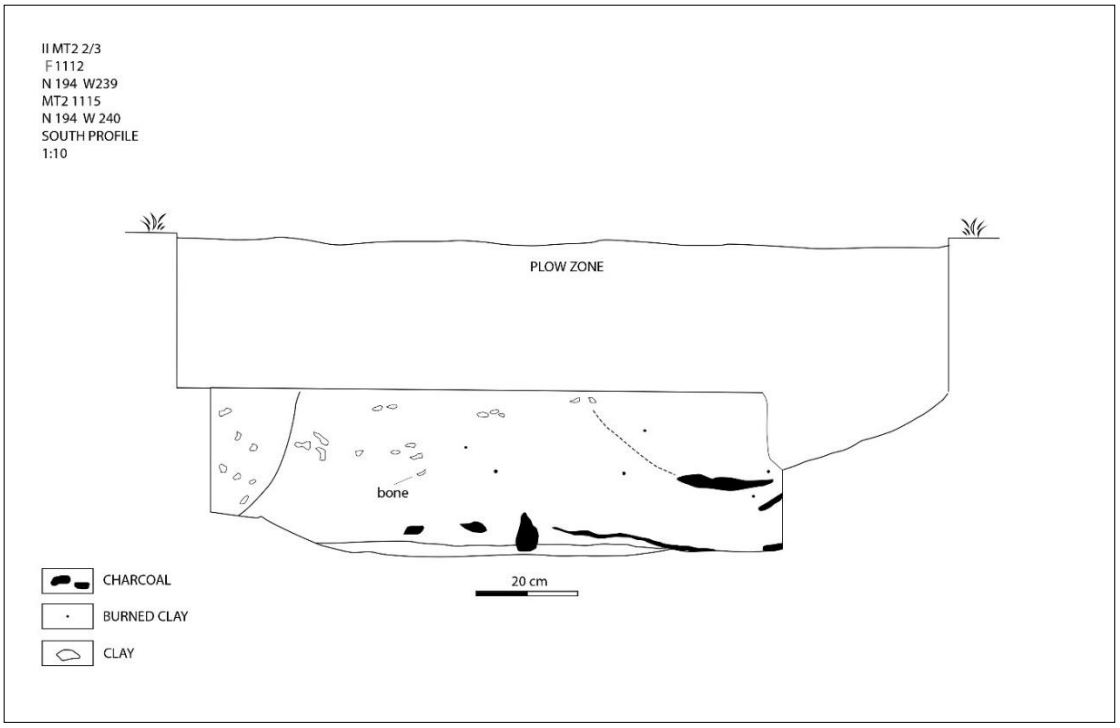


Figure 4.125 F1112's southern profile with details (C. Deiana and M. Mattioli).

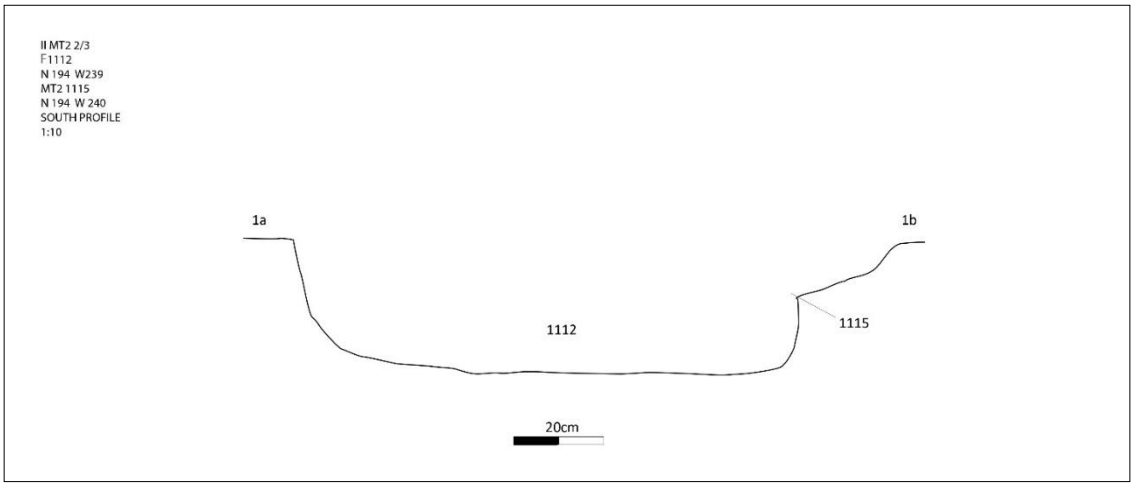


Figure 4.126 F1112's southern profile (C. Deiana and M. Mattioli).

Feature Number: 1130

Location: N202-203 W238

Orientation: -

Type: circular refuse pit

Topology: F1130 is superimposed by F1114 and F1133

F1130 is a circular pit filled with loamy soil (10YR3/3) with charcoal and burned clay inclusions. This pit yielded two Mississippian rim sherds and a broken Burlington projectile point.

Dimensions: 0.45x 0.39 m; maximum depth 35 cm.

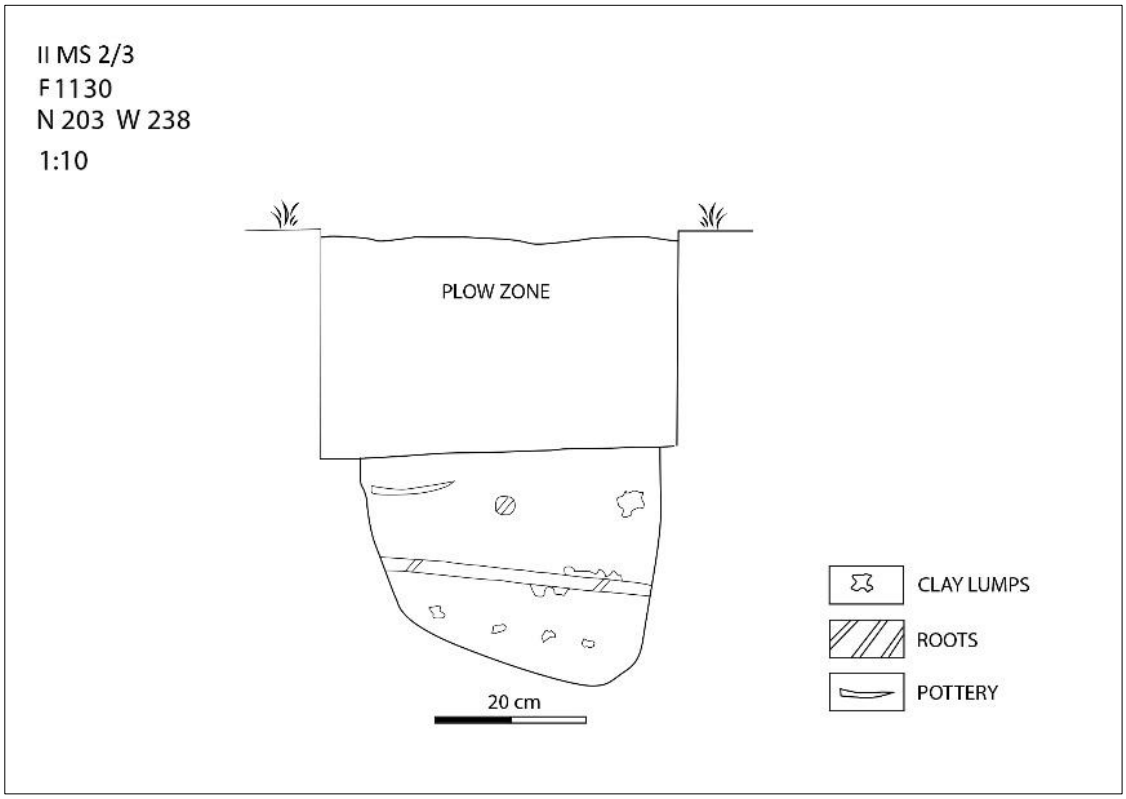


Figure 4.127 F1130 south profile (C. Deiana).

Feature Number: 1132

Location: N204 W239

Orientation: -

Type: oval refuse pit

Topology: Superimposed on F1034 and F1159. Associated with F1005

F1132 is an oval shaped burned area, with sandy soil fill composed by charcoal (10YR2/1), burned clay lumps and small pieces of pottery.

Botanical analysis revealed the presence of two specialty woods, red cedar and bald cypress was amongst the refuse discarded in the pit (Parker 2014; see chapter 5.4).

The Wells Broad Trailed plate rim sherd, indicative of the Moorehead phase, recovered in the feature fill suggests a Moorehead phase chronology.

As one of the latest features, it was presumably associated with the large Moorehead phase structure F1005.

Dimensions: 32x28 cm; max depth 36 cm.

Feature Number: 1177

Location: N187-190 W235-239

Orientation: E-W

Type: burial

Topology: F1177 was superimposed on F1100/H123, F1014, F1211 and F1213

Feature 1177 was identified as a burial pit since a cranium and parts of other bones appeared when scraping the surface of the ovoid feature. Following the Illinois Historic Preservation Agency's indications, the burial was exposed, documented and covered. The limit of the burial was defined as an oval pit surrounded by a darker layer of soil. The individual seems to have been buried in an articulated manner, probably facing north with an NW-SE orientation. However, since the excavation was superficial this affirmation cannot be assured. By the fill and its content F1177 could be interpreted as a big refuse pit in which the individual was deposed, or a burial with grave goods. The material deposited in F1177 belongs to the Late Moorehead phase. No other information was collected on the field.

Dimensions: area of 6.37 m.

4.4 Unaffiliated features

Since many of the features unearthed in Merrell Tract lack of diagnostic material and their relationship with superimposed or superimposing feature was not clear enough, they have been group separately as unaffiliated features. The most part of these features is represented by pits and shallow fill layers the purpose of which was not determined.

Feature Number: 1003

Location: N203 W235-236

Orientation: E-W

Type: rectangular storage pit

Topology: -

F1003 was a rectangular shallow pit filled by clayish silty soil (10YR2/2). The feature was almost devoid of materials, suggesting that it could have functioned as a storage facility for perishable materials. Since it is located inside the wall-trenched building F1005, it might have been associated with it; nonetheless, the lack of diagnostic material does not support any hypothesis of association.

Dimensions: maximum depth 10 cm; 95x80 cm.

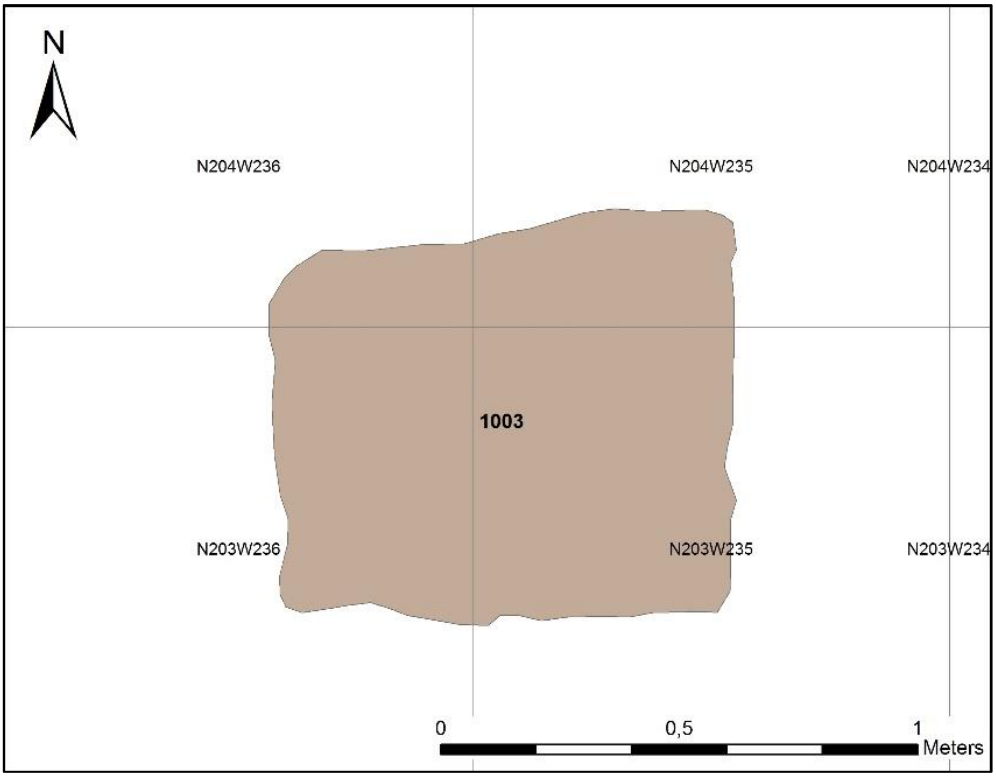


Figure 4.128 Detail map of F1003 (I. Valese).

Figure 4.129 Image of F1003 after the removal of the western half.

Feature Number: 1012

Location: N190-191 W234

Orientation: N-S

Type: irregular clay layer

Topology: superimposed on F1010 and superimposed by F1011

F1012 was a thin clayish layer of irregular shape. It consisted of a grey clayish soil with small concentrations of orange-brown material, possible oxides, a similar kind of soil was found in other units of the excavation (see F1104, F1105, F1107, F1108, F1109 and F1113). Its presence in different parts of the excavation area was possibly a residue of the realization of later features superimposing on the clay fill of F1160 since the matrix of F1012 was very similar to the one that constitutes F1160. It yielded no materials.

Dimensions: maximum depth 4 cm.

Figure 4.130 Zenithal photomap of Area B with F1012 delineated in black.

Figure 4.131 Detail of clayish component of F1012.

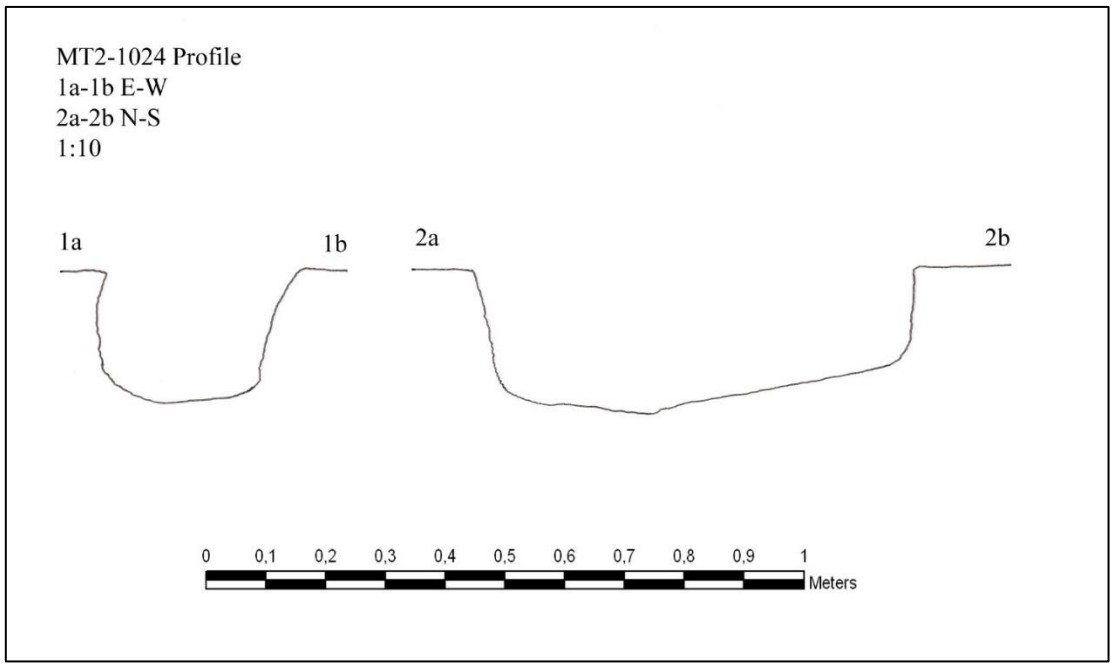


Figure 4.132 Northern and western profile of F1024.

Feature Number: 1024

Location: N206-207 W241-242

Orientation: N-S

Type: oval pit

Topology: no superimpositions

F1024 is a small oval feature with sloping walls and concave bottom. It yielded few, non-diagnostic, cultural material among its silty fill rich in charcoal and traces of ash.

Dimensions: maximum depth 24 cm; 72x29 cm.

Feature Number: 1026

Location: N180 W240

Orientation: -

Type: circular pit

Topology: superimposed on F1030

F1026 is a rounded feature whose fill was divided in two zones: Zone A yielded one grog-tempered plain body-sherd, one two shell-tempered body-sherds, while Zone B (10YR4/4) was 10 cm deep and yielded a good amount of charcoal and burned clay fragments, possibly hearth residues.

Dimensions: diameter 43 cm; maximum depth 20 cm.

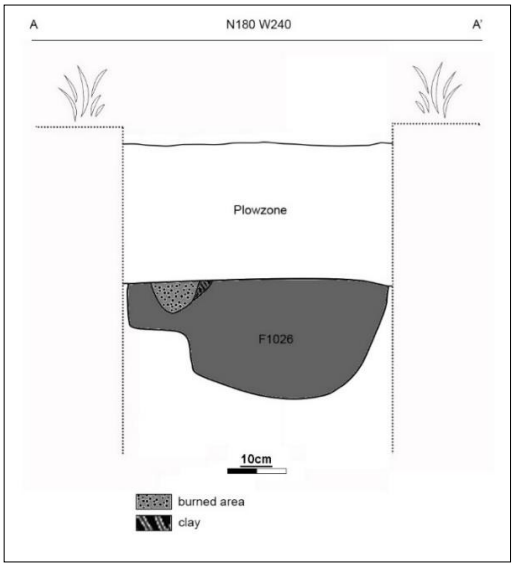


Figure 4.133 Western profile of F1026 (I. Valese).

Figure 4.134 F1026 and postholes of F1030.

Feature Number: 1071

Location: N200-201 W240

Orientation: -

Type: burned area

Topology: superimposed on F1037 (west wall) and F1062

F1071 is a burned area filled by a dark grey sandy soil containing small pieces of non-diagnostic pottery sherds, charcoal and chert debitage.

Dimensions: 47x53 cm; maximum depth 11 cm.

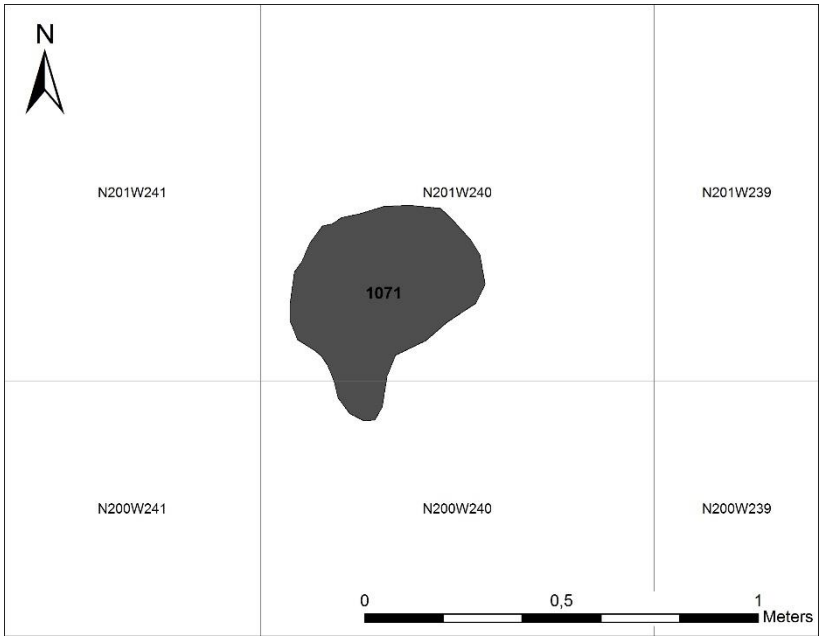


Figure 4.135 Detail map of F1071.

Feature Number: 1082

Location: N193-195 W237-238

Orientation: N-S

Type: irregular feature

Topology: superimposed by F1109 and F1111. Possibly superimposed on F1108

F1082 is an irregular feature that was not completely excavated. Even though by scraping recovered two Emergent Mississippian rims and a Late Emergent/Lohmann Kersey Incised rim sherd were collected. Since its excavation was not completed, it was decided to place it among the unaffiliated features.

Dimensions: 1.55x1.10 m.

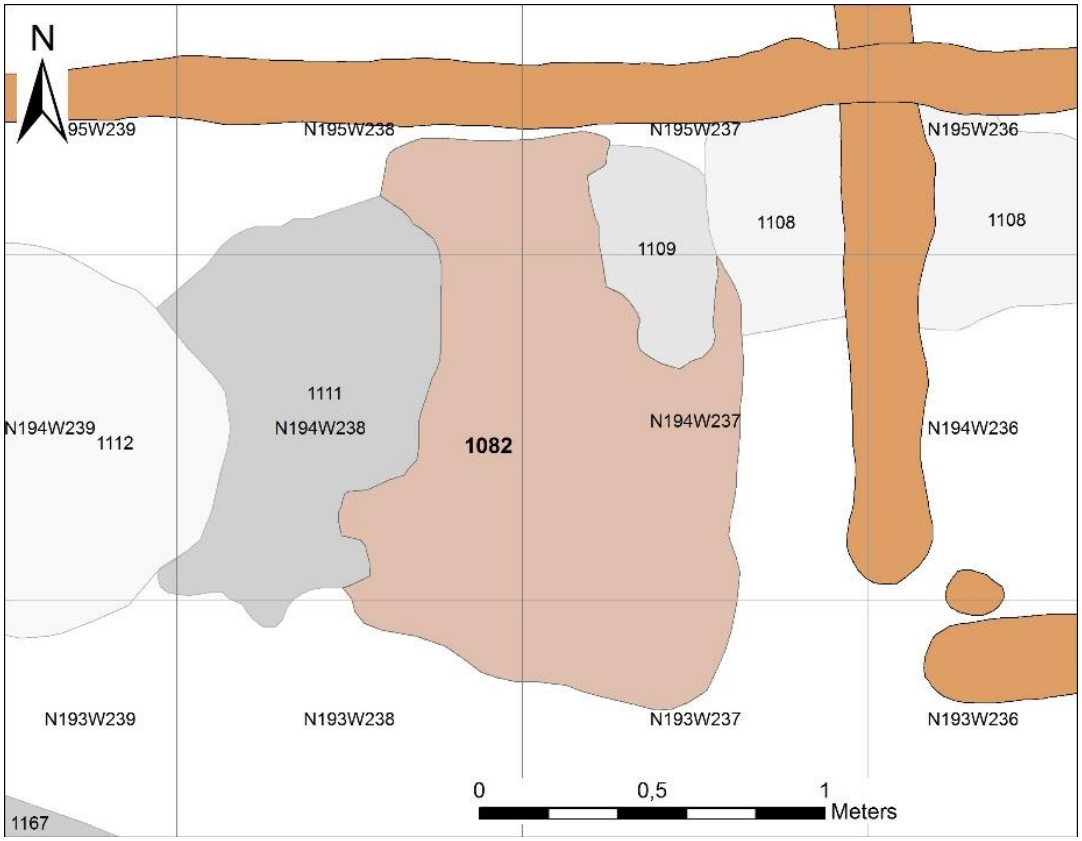


Figure 4.136 Map of the area in which F1082 was located (I. Valese).

Feature Numbers: 1088 and 1089

Location: N201 W237-238

Orientation: -

Type: circular features

Topology: F1088 is superimposed on F1089 and by F1064; F1089 is superimposed by F1088 and F1064

F1088 and F1089 are two pit features superimposed on each other. The first 10 centimetres of F1088 were composed by dark loamy soil (10YR2/2) containing a lot of charcoal, clay lumps and several pottery sherds, it could be possibly interpreted as material discarded from a hearth. The lowermost zone of the feature was characterized by a lighter fill (10YR5/4) and scarcity of material.

F1089 was an oval feature poorly preserved since F1088 partially obliterated it. It was filled by sandy clay mottled soil (10YR5/3) containing a few non-diagnostic pottery sherds, chert debitage and charcoal flecks.

Dimensions: F1088 – 40 x 29 cm; maximum depth 27 cm. F1089 53 x 42 cm; maximum depth 12 cm.

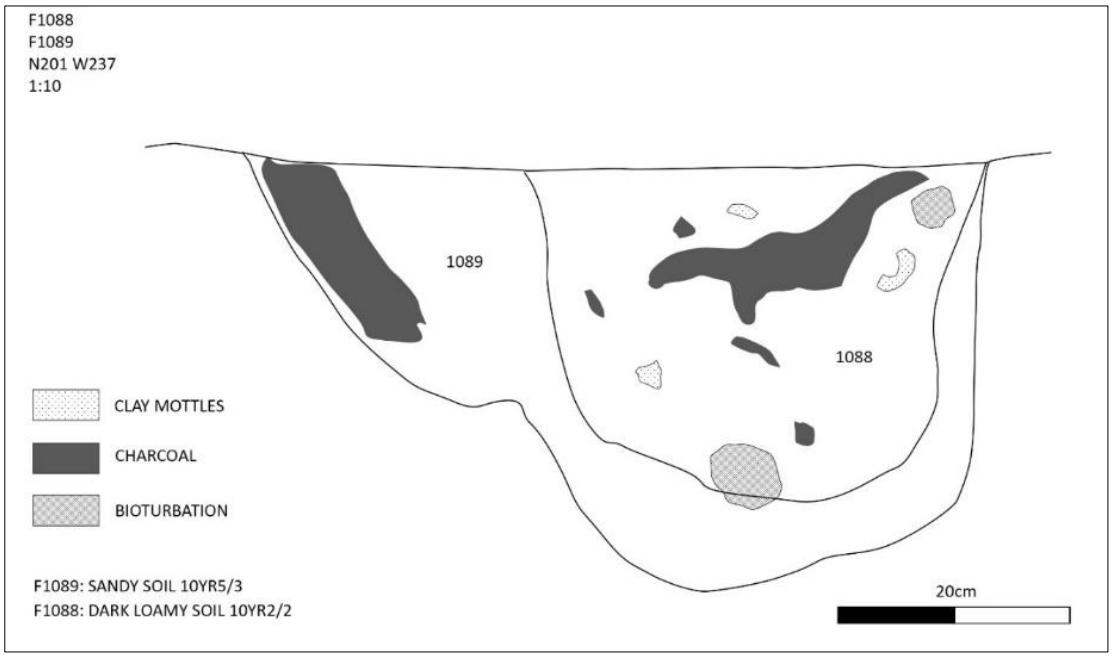


Figure 4.137 North profile of F1088 and F1089 (C. Deiana).

Feature Number: 1091/1092

Location: N199-200 W237-238

Orientation: -

Type: circular feature

Topology: F1091/F1092 is superimposed on F1074, superimposed by F1064

F1091/1092 were excavated as two different features, but at a more accurate analysis, they can be considered as two zones of the same feature. Zone A (F1091) was a shallow burned area (10YR2/1) rich in daub, chert, charcoal and pottery, while Zone B (F1092) was composed by clayish mottled fill (10YR4/3), which yielded non-diagnostic pottery sherds and chert debitage, at the top of this zone there was a denser concentration of yellow clay.

Dimensions: diameter of ca. 40 cm; Zone A: maximum depth 7 cm; Zone B: maximum depth 30 cm ca.

Figure 4.138 Southern profile of F1091/1092.

Feature Number: F2000

Location: N177-179 W236-237

Orientation: E-W

Type: midden area

Topology: Adjacent to F1193

By F2000 we identify a loamy fill located in N177-179 and W236-237, lacking any kind of materials. In its eastern profile, it shows an irregular bottom such as it was not an anthropic feature, soil samples for micromorphology analysis have been taken in order to determine its nature.

Dimensions: not completely defined.

Feature N°	Shape	Description	Unit	Dimensions	Notes
F1029	Circular	hearth	N179 W241	Ø 32cm Max depth 15cm	Sup on F1028/1070
F1058	Oval	pit	N203 W240	42x50cm	Sup on F1033-Complex West Wall
F1115	Oval	pit	N194 W239-240	1.07m x 50cm max depth 14cm	Sup on F1112 and F1113.
F1139	Oval	pit loamy fill (10YR4/3) with clay lumps and charcoal	N200-201 W238	37 x 32cm max depth 14cm	Sup on F1140 and superimposed by F1147.
F1143	Irregular	pit loamy soil (10YR4/3) rich in clusters of clay lumps	N200 W238	39 x 33cm max depth 25cm	Sup on F1145. Possibly a posthole
F1153	Irregular	pit or shallow depression clayish soil (10YR3/3)	N200-201 W239	27 x 33 cm max depth 9cm	Sup on F1081.
F1154	Circular	pit sandy soil (10YR5/4) with clay lumps	N202 W239	33 x 22cm– max depth 26cm	Sup on F1155 = F1039
F1155	Elongated	shallow depression	N202 W239-240	72 x 20cm max depth 10cm	Sup by F1154 = F1039
F1158	Circular	Pit sandy soil (10YR4/3) with clay lumps and gumbo clay lumps	N203 W238-239	52 x 46cm max depth 30cm	Sup on F1156
F1220	Oval	Pit only partially excavated	N183-184 W240	1.18x0.42m	Sup on F1046 and F1168

Table 4-2 List of Unaffiliated features excavated.

4.5 Unexcavated features

Feature N°	Shape	Description	Unit	Dimensions	Notes
F1023	Irregular	Post pit?	N212-215 W236	3x0.20m Depth 2m (probed)	Sup by F1019, F1048, F1082, F1052 and F1084
F1032	Irregular	Pit	N213 W235-236	0.62x0.82m	Sup by 1020c and 1051
F1054	Irregular	Pit?	N215 W236-237	0.63x1m	-
F1056	Irregular	Basin?	N216 W235-236	1x0.90	Sup by F1057, F1077 and F1082.
F1083	Rectangular	EM house basin ?	N192-196 W234-236	4.17 x 1.77m	Sup on F1103 - sup by H123-F1093-F1107 and H129.
F1084	Irregular	Pit?	N215 W236	0.60x0.20m	Sup on F1053 and F1083; Sup by F1023
F1087	Irregular	Fill	N195-198 W 239-243	4.75 x 2.41m	Sup by F1030-F1104- F1105 and F1106- sup on F1073-F1086 and F1094/1095.
F1093	Irregular	Clay layer	N193-194 W235	1.58 x 0.63m	Sup on 1083 – sup by H129
F1094/1095	Rectangular	Fill	N196-197 W237-239	1.42 x 2.48m	Sup by 1086-1087-H129
F1097	Irregular	Fill	N197-198 W236	1.12 x 1.30m	Sup by 1005-1059-1096 Sup on 1098
F1098	Irregular	Burned Area	N197-198 W235-236	1.19 x 0.5m	Sup by 1097-1005 Sup on 1099
F1099	Irregular	Fill	N197-198 W235-237	2.07 x 1.55m	Sup by 1098-1005-1096-1166
F1102	Circular	Post hole	N196 W235	Ø 0.2m	-
F1103	Irregular	Fill	N196-197 W234	1.83 x 0.17m	Sup by 1083
F1104	Irregular	Clay layer	N196-197 W240-241	1.03 x 1.15m	Sup on 1087-1106
F1105	Irregular	Clay layer	N196 W239-240	1.52 x 0.73m	Sup on 1087-1106
F1106	Irregular	Dark mottled fill	N196 W240-241	0.57 x 0.55m	Sup on 1087 Sup by 1104-1105

F1107	Irregular	Clay layer	N195 W234-235	0.70 x 0.38m	Sup on H123
F1108	Irregular	Clay layer	N194-195 W236-237	1.19 x 0.62m	Sup on 1109 Sup by H123-H129-1083
F1109	Irregular	Clay layer	N194-195 W236-237	0.63 x 0.32m	Sup on 1082 Sup by 1108
F1111	Irregular	Yellow mottled clay	N193-195 W238	1.15 x 0.67m	Sup on 1082 Sup by 1112
F1113	Irregular	Clay layer	N193-194 W239-240	0.86 x 0.45m	Sup by 1115
F1169	Irregular	Burned area	N185-187 W243	1.25 x 0.94m	Sup on F1049
F1170	Irregular	Fill	N177-178 W239-240	1.49 x 1.46m	Sup by F1171-F1030
F1172	Irregular	Fill	N177 W240	0.48 x 0.35m	Sup by F1173
F1181	Circular	Hearth	N208 W245	Ø 0.32	Sup on F1183
F1182	Circular	Pit	N208 W246	Ø 0.40m ca.	Sup on F1183
F1183	Rectangular	Pit	N208 W245/246	1.22 x 1.60m	Sup by F1181 and F1182
F1184	Oval	Posthole or Pit	N207 W245	0.58 x 0.38m	Sup on F1185
F1185	Rectangular	Pit	N206/207 W245/246	1.13 x 1.04m	Sup on F1184
F1186	Rectangular	Basin?	N202/204 W245/246	2 x 1.77m	
F1190	Rectangular	Pit	N198 W241	0.64 x 0.27m	Sup by F1086/F1191
F1192		Wall Trench	N188/189 W246	1.97 x 0.11m	-

4.6 Post holes

Post H Fea N	Shape	Fill description	Unit	Dimensions cm	Notes
F1114	Circular	Silty Soil (10YR3/4)	N203 W238	Length 44 Width 31 Max depth 55	Yielded few small pottery sherds, chert debitage, galena and red ochre
F1116	Oval	Loamy soil	N200 W240	Length 16 Width 21 Max depth 17	Yielded few pottery sherds, a groundstone/hammer and few pieces of charcoal
F1117	Circular	-	N203 W238	-	-
F1118	Circular	-	N203 W238	-	-
F1119	Circular	-	N204 W238	-	-
F1120	Circular	-	N204 W238	-	-
F1121	Circular	-	N204 W238	-	-
F1122	Circular	Loamy soil	N203 W240	Ø 10 Max depth 14	Yielded few pottery sherds, a rock, some clay clusters and charcoal Superimposed on F1123
F1123	Circular	Clayish soil	N203 W240	Ø 17 Max depth 15	No materials Superimposed by F1122
F1124	Circular	-	N204 W238	-	-
F1125	Circular	-	N203 W240	-	-
F1126	Circular	-	N203 W239	-	-
F1127	Circular	Loamy soil (10YR3/4) -clay lumps	N203 W239	Ø 8 Max depth 16	No materials
F1128	Circular	Clayish-loamy soil (10YR3/4)	N203 W239	Ø 8	No materials
F1129		-	N203 W239	Ø 7	-
F1131	Oval	Clayish soil (10YR4/4) rich in clay lumps	N201/2 W240	Length max 24 Width max 42 Max depth 19	Yielded charcoal, pottery sherds, ochre and chert.
F1133	Circular	Loamy soil (10YR3/4)	N203 W238	Ø 8 Max depth 10	No materials Superimposed on F1130
F1134	Irregular	Clayish soil (10YR3/3)	N203 W241	Length 20 Width 16	No materials

				Max depth 12	Maybe a group of three postholes
F1135	Oval	Loamy soil (2,5Y3/3) rich in clay lumps	N201 W240	Length 20 Width 30 Max depth 20	Yielded few chert debitage and pottery sherds Superimposed by F1062
F1136	Oval	Loamy soil (10YR4/4) Clay and Orange clay lumps	N203/4 W238/9	Length 45 Width 25 Max depth 38	Yielded chert debitage and pottery sherds Superimposed on F1137
F1137	Irregular	Sandy soil (10YR4/3)	N204 W238/9	Length 45 Width 33 Max depth 37	Yielded pottery sherds and small pieces of red ochre Superimposed by F1136
F1138	Circular	Sandy soil (10YR4/4) Clay and Orange clay lumps	N204 W237	Ø 24 Max depth 28	Corner post of F1033-1037-1059 Yielded few pottery sherds and chert debitage
F1140	Circular	Clayish soil (10YR5/4) Clay lumps	N201 W238	Ø 26 Max depth 20	No materials Superimposed by F1139
F1141	Circular	Loamy soil (10YR4/4)	N201 W238	Ø 18 Max depth 10	No materials
F1142	Oval	Loamy soil (10YR5/3)	N200/1 W238	Length 26 Width 15 Max depth 15	Yielded small fragments of charcoal
F1145	Circular	Loamy soil (10YR3/3) with clay lumps	N200 W238	Length 14 Width 15 Max depth 14	Yielded small pieces of charcoal Superimposed by F1143
F1147	Circular	Loamy soil (10YR2/3)	N200/1 W238	Ø 20	No materials Superimposed on F1139-F1140
F1148	Oval	Loamy soil (10YR4/3) with clay lumps	N201 W240	Length 8 Width 12 Max depth 17	Yielded charcoal, chert and pottery sherds.
F1149	Circular	-	N201-W239	Ø 18	-
F1151	Irregular	Loamy soil (10YR3/3) with clay lumps	N203 W237	Ø 19	Yielded small pieces of charcoal Superimposed on F1059-F1079
F1152	Irregular	-	N203 W237	-	-
F1157	Circular	-	N201 W239	Ø 14	-
F1173	Circular	-	N177 W240	Ø 15	-

F1174	Oval	-	N205/206 W234	-	Possibly pertaining to Rotunda F238
F1175	Oval	-	N205/206 W234	-	Possibly pertaining to Rotunda F238
F1176	Oval	-	N205/206 W234	-	Possibly pertaining to Rotunda F238
F1178	Circular	Clayish-Loamy soil with high concentration of “blue clay” and burned clay.	N187 W243	Ø 34 Max depth 9	F1030 Compound’s bastion. Yielded a small body sherd and charcoal.
F1179	Circular	Homogeneous silty-loamy fill (2.5Y3/2)	N189 W244	Ø 24 Max depth 9	F1030 Compound’s bastion. No material.
F1180	Circular	Loamy soil (10YR4/3) with concentration of blue and orange clay.	N188 W244	Ø 20 Max depth 5	F1030 Compound’s bastion. No material.
F1187	Oval	-	N190/191 W239/240	0,72 x 0,41m	-
F1188	Circular	Post holes	N185 W241	-	Adj to F1046
F1194	Circular	-	N180 W235	-	Sup by F1193

4.7 Historic features – F1196, F1198, F1199

A magnetic survey of the West Plaza area was made in 2012, after an analysis of the maps provided[15], a series of test units were set to investigate a magnetic anomaly mapped in the southern part of the Merrell Tract.

The maps showed, besides hundreds of other irregularities, the presence of a circular anomaly with a diameter of ca. 13 m. Since in the 15B Tract, a circular Lohmann phase structure with approximately the same diameter was found, three test units, one located at the centre and two along its circumference (West and South), were opened to understand the nature of the anomaly.

The TU were located at N54-56/W235, N49/W235 and N56/W240-242 and revealed the presence of a heavy burned circular structure – F1196 - from which a good amount of historic materials was recovered.

The building was destroyed by a fire that possibly reached very high temperatures, as shown by the heavy burned beam fragments still preserved below modern soil.

Probably the area was cleaned up after the collapse of the circular building, since the inside – F1199- and the outside – F1198 - of the structure were devoid from debris. Moreover, an aerial photo dating back to the 1920s shows the presence, at the same location, of some sort of establishment equipped with circular silos, one of them being burned, so that the excavated feature is probably the foundation of the burned historic building.

Figure 4.139 Detail of F1196.

[15] Courtesy of J. Burks who led the survey on March 2012.

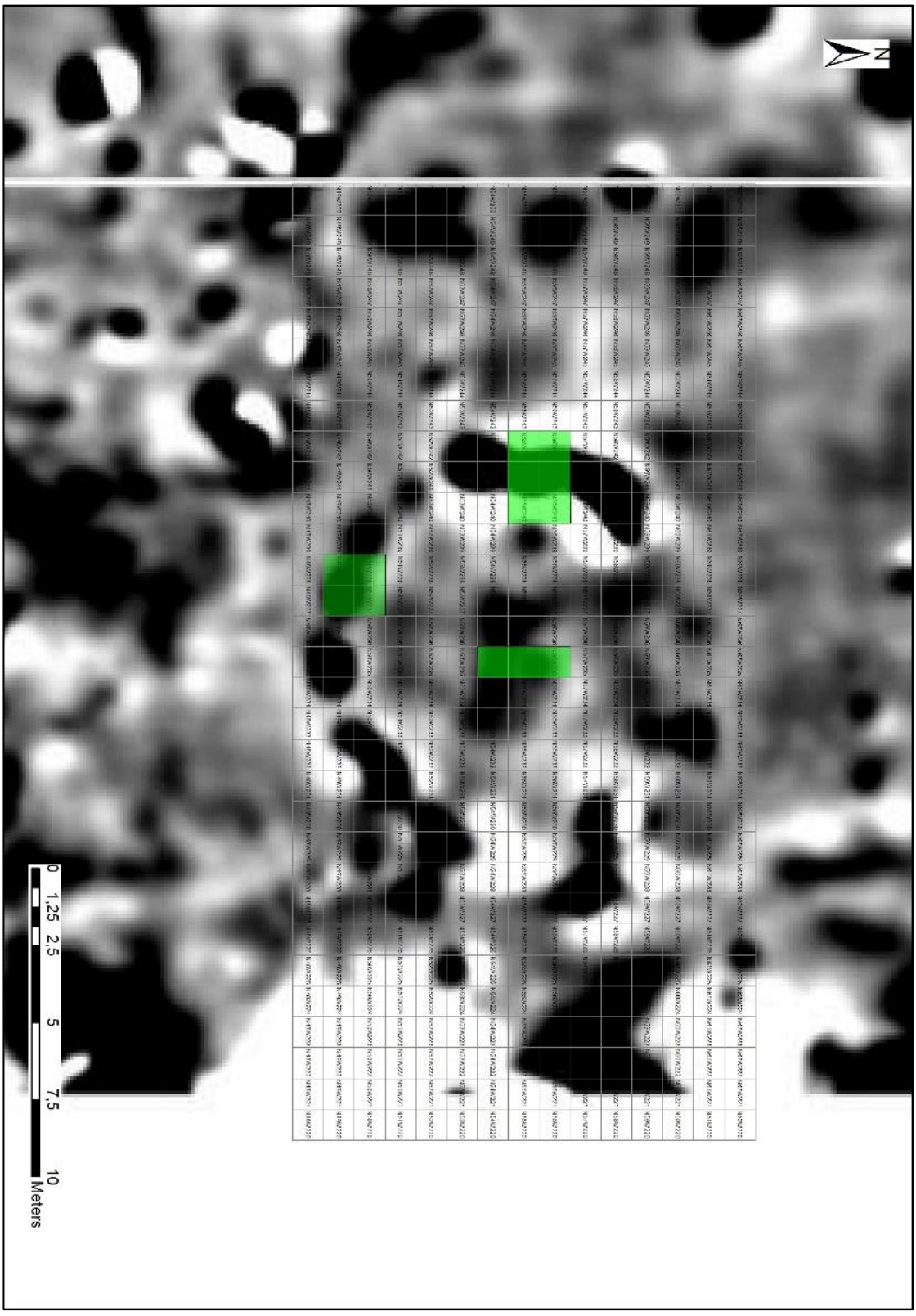


Figure 4.140 The anomaly F1196 in the magnetic survey (courtesy of J. Burks).

Chapter 5 Summary of the material assemblages recovered from the UNIBO's excavations

During six fieldwork seasons at the Merrell Tract, different ceramic and lithic artifacts have been recovered by both plowzone and features along with botanical and faunal remains. Complete reports of the materials recovered in the Merrell Tract's excavations have followed the analysis of both artifacts and organic residues. In the following chapters a summary of those reports will be provided focusing the attention on the materials recovered exclusively from features.

5.1 Ceramic Material form the Merrell Tract-UNIBO's excavations

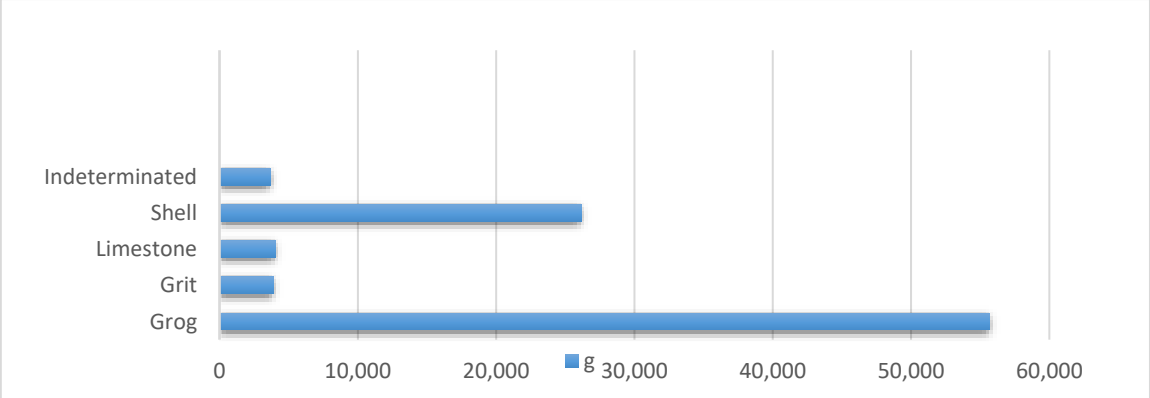


Table 5-1 Percentage of tempers in the total amount of pottery sherds recovered from the excavated area (M. Mattioli).

Six years of excavations led in the Merrell Tract-UNIBO yielded a good amount of ceramic material, the analysis has been conducted by M. Mattioli who supervised the laboratory operations from 2012 to 2016; hence for more detailed information about the ceramics of the University of Bologna's fieldwork the reading of the report she elaborated is suggested (Mattioli 2017).

The materials recovered from the field were collected through trowel scraping or screening. Once transferred at the laboratory the materials were washed and sorted. Information concerning count, weights and measures were recorded and at the end of each fieldwork season all the items were photographed while the diagnostic materials were drawn individually.

The ceramic materials were recorded using different forms provided by the Illinois State Museum. The first form was the "Inventory sheet" in which the materials were recorded in general categories: *body sherds, rims, decorated sherds, decorated rims, handles,*

ceramic objects and potter's clay. The compiling of a more detailed form, the "Paste Form", concerned the description of tempers (*grit, grog, limestone and shell*) and surface treatment (*plain, cordmarked, red slipped, brown slipped, etc.*) of each body and rim sherds recovered from the field. The last step consisted in the description of each rim sherd to be recorded in the "Rim Form", in which, along with a sketch of the sherd, metric information (*weight, rim width, orifice diameter, etc.*) a more detailed description of the item was provided (*vessel type, form, rim type, lip type, surface treatment, decoration technique, appendages, shoulder type, etc*.). All these forms were digitized and another database was specifically designed, by the author of this dissertation, for the recording of diagnostic items not contemplated in the above-mentioned forms. This last database, named "Diagnostics", was mostly used to record decorated body sherds and ceramic objects and provided both metric and qualitative description of the artifacts (*weight, dimensions, temper, vessel form, vessel type, decoration, decoration technique, surface treatment, worked sherd, etc*.).

In this chapter, a brief overview about the ceramic material will be provided along with tables of synthesis compiled from data concerning exclusively the information about rim sherds; for body sherds and diagnostic body sherds analysis see Mattioli's report (2017).

The ceramic assemblage for the Emergent Mississippian phase, recovered in the Merrell Tract-UNIBO, is representative of domestic context. Unfortunately, since the study of the ceramics is still ongoing, no detailed information about the sub-phases of which the Emergent Mississippian phase consists can be provided. The analysis of the paste showed a majority of grog-tempered items followed by limestone and grit; while concerning the vessel forms, the Emergent Mississippian assemblage includes the usual range of jars, bowls and stumpwares[16]. Among the rim sherds recovered a complete rim of a Monks Mound Red limestone-tempered jar (fig. 5.1) has been reconstructed using the fragments found inside an Emergent Mississippian pit (F1017E); this vessel type is typical of the Late Emergent Mississippian Edelhardt phase, usually underrepresented in the West Plaza Area (Pauketat 2013: 224). Although in the 15B Tract an unusual number of shell-

[16] Although stumpwares are usually not considered as vessel forms and are not included in the tables of this chapter, they are noteworthy since they are represented in high numbers among the Emergent Mississippian assemblage of the Merrell Tract-UNIBO. They have been recorded as diagnostics in the Diagnostic Database.

tempered pottery associated with Emergent Mississippian features has been attested (Pauketat 2013: 224), similar evidence has not been noticed yet for the material recovered in the Merrell Tract-UNIBO; however, this could be determined by the superimposition of features and the following mixing of materials. According to Pauketat (2013: 224), the presence of shell-tempered pottery in the 15B Tract's Emergent Mississippian assemblage could be related to a differentiation possibly based on status, identity (i.e. foreign potters) or function; contrarily Kelly (1991) suggests that the shell-tempered vessels retrieved in Emergent Mississippian contexts can be considered as foreign items. A few rim sherds have been recognized, among the Merrell Tract-UNIBO Emergent Mississippian assemblage, as actually exotic: several sherds of Kersey Incised variety, typical of the southern Missouri area (Mattioli 2017), were retrieved from the excavation along with a specimen of Maple Smiles variety, characterized by the typical cord impressed decoration of the northern Illinois area. Finally, a few sherds of Coles Creek Incised, a vessel variety usually found in the southern Yazoo Basin sub area (Phillips, Ford and Griffin 1951), have been located in both plowzone and features.

Figure 5.1 Monks Mound Red vessel reconstructed from fragments retrieved in F1017E.

The Early Mississippian phase is barely represented by the ceramic materials recovered from excavation. A few rim sherds have been assigned to the Lohmann and Stirling phase: one fine grog-tempered beaker, one grog-tempered funnel, three shell-tempered and one limestone-tempered jar, one grog-tempered seed jar, seven Ramey Incised jars and one St. Clair Plain jar. The scarcity of material during the Early Mississippian phase is consistent with the destination of the area to public activities, between the end of the Emergent Mississippian and the span of the Lohmann phase the area was designed to be the West Plaza. It is conceivable to think that the area was constantly cleaned (see chapter 6.2) and that the debris were deposited elsewhere. The non-domestic activities carried in the plaza area are suggested by the presence of Ramey Incised Jars. This vessel type, used in public rituals (Emerson 1989; Pauketat and Emerson 1991), is characterized by an orifice diameter larger than normal, a peculiar decoration placed on the shoulder and a highly-specialized production. These jars were realized through a complicated *chaine operatoire*: the lower part of the vessel was made by pressing the clay into a mold, probably derived from a broken jar, while the upper part, to which the typical "rolled" or "everted" lip was added, was realized separately. Once slightly dry, the two hemispheres were joined together and the decorative motives were added by carving part of the clay out. Then, before firing the pot, the surface was slipped and burnished with a pebble (Holley 1989; Pauketat 1998, 2005). The typical decorative motif proper of the Ramey Incised jars is the scroll motif that possibly represented the section of a conch shell, the movement of the wind or a human dance (Pauketat and Alt 2015: 30), even though falconoid eyes, tail and chevrons are also represented; they are usually interpreted as connected to cosmological representations of the Upper and Under worlds (Pauketat and Alt 2015: 30). The Ramey Incised pottery has been used as a marker of Cahokia's influence all over the Midwest and at the base of the hypothesis of possible Cahokian migrations and interactions (Kelly 1991; Pauketat and Emerson 1991). Based on the similarity among the specimen recovered in different localities, Pauketat (2013: 192-193; Pauketat and Emerson 1991) suggested that this vessel type was manufactured by specialized artisans possibly affiliated to clans devoted to the preservation of sacred bundles. A high number of Ramey Incised jars is attested also for the Late Stirling/Early Moorehead phase. Midden areas (F1015, 1019, 1020 and the slightly later F1049) located in the Merrell Tract-UNIBO yielded a

considerable amount of Ramey Incised jars' rim sherds; suggesting the persistence of the performance of ritual activities in the West Plaza Area (see chapter 6.5).

Figure 5.2 Ramey Incised Jar rims found in Merrell Tract-UNIBO.

Starting from the Moorehead phase, a change in the ceramic assemblages is attested along with an increasing number of serving wares. The earliest open forms dated to the Early Moorehead phase were the Wells plates, divided between Wells Broad Trailed and Wells Fine Incised (Holley 1989; Milner 1984; Pauketat 1998). The decoration of these type of open vessels was Ramey-like and consisted in series of single, short, carved dash elements set diagonally around the rim suggesting, when looked from above, a sunburst pattern (Pauketat 2013: 229). Another decorated Late Mississippian vessel type, represented in the ceramic assemblage of the Merrell Tract-UNIBO is the Cahokia Red Engraved beaker (Mattioli 2017). This kind of beakers consists in a variant of the more common undecorated beakers highly represented in all phases of Cahokia's ceramics, it is characterized by the quartered circle motif surrounded by radiating lines possibly representing symbols related to the world, sun and stars (Pauketat 2013: 231). The Cahokia Red Engraved beakers were possibly related to the consumption of the Black Drink during purification rituals as suggested by the analysis led on some vessels found at Cahokia, which shown evidence of the presence of biomarkers for species of Ilex, such as theobromine, caffeine, and ursolic acid, involved in the preparation of the purifying beverage (Crown et al. 2012). As for the Ramey Incised jars, Well Trailed plates and Cahokia Red Engraved beakers showed some degree of standardization in their production (uniformity and limited range of decorative motives), even though a

simplification from the first type to the last is evident (Pauketat 2013: 232). It is still evident that the production of these wares' type is still linked to the ritual sphere, although, at the same time is clear that vessel production become increasingly decentralized through time, as for the increment of the quotidian and undecorated Cahokia Cordmarked and St. Clair Plain jar forms (Baltus 2014: 271).

Another highly represented form in the Late Mississippian ceramic assemblage in the Merrell Tract-UNIBO is the Mound Place incised bowl defined by a finish paste and surface typical of the Lower Mississippi Valley (Mattioli 2017). It showed a simple decorative treatment consisting in two or more parallel lines placed horizontally on the exterior rim, quite typical for effigy vessels' rims. The technique of decoration varies from a broad incision to a fine engraving (Phillips, Ford and Griffin 1951).

The changes that affected the ceramic assemblage attested during the Late Mississippian phase have been associated as being part of the large-scale social changes that interested this period. The increasing simplification and reduction of the decorative motives along with the increasing usage of serving (i.e. plates and platters) and common wares (i.e. Cahokia Cordmarked) was probably the result of slow dismantling of specialized manufacture of pottery and to the return to local more domestic pottery-making. These trends have been interpreted by Baltus (2014: 271) as an intentional rejection to the previous political and religious ways materialized through the creation of new kind of pottery production as well as for food and drink consumption.

To conclude, the Merrell Tract-UNIBO ceramic assemblages reflect the settlement dynamics that involved the West Plaza area which involved the performance of domestic activities during the Emergent Mississippian and the Late Mississippian (Moorehead and Sand Prairie) phases and public ritual ceremonies during the Lohmann and Stirling phase; the Late Stirling/Early Moorehead can be considered as some sort of transitional period, in which a ritual activities were still performed even though in a more "domestic" context (see chapter 6.6).

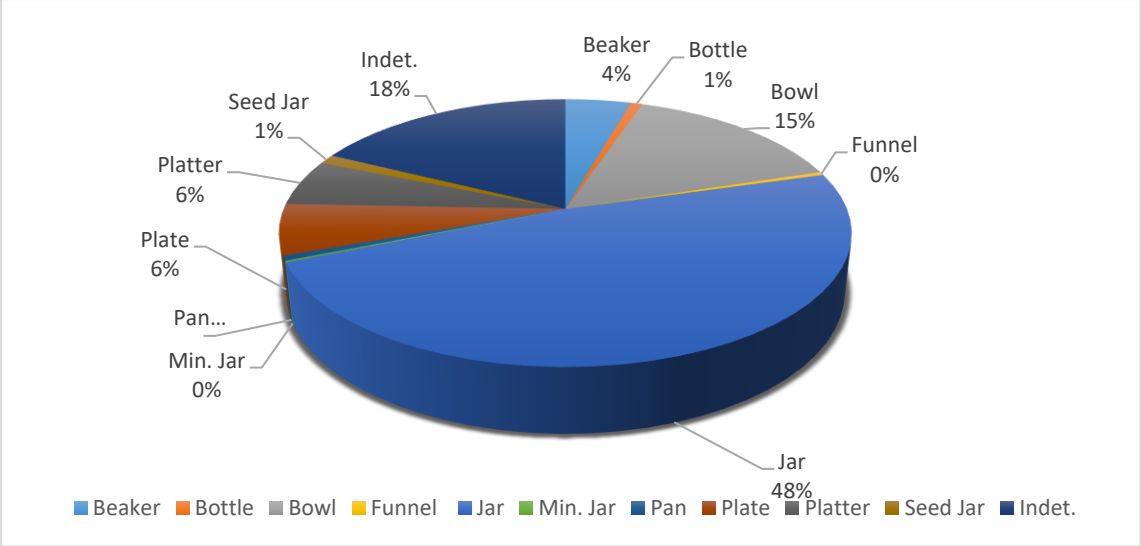


Figure 5.3 Vessel assemblage from Merrell Tract-UNIBO's features (I. Valese and M. Mattioli).

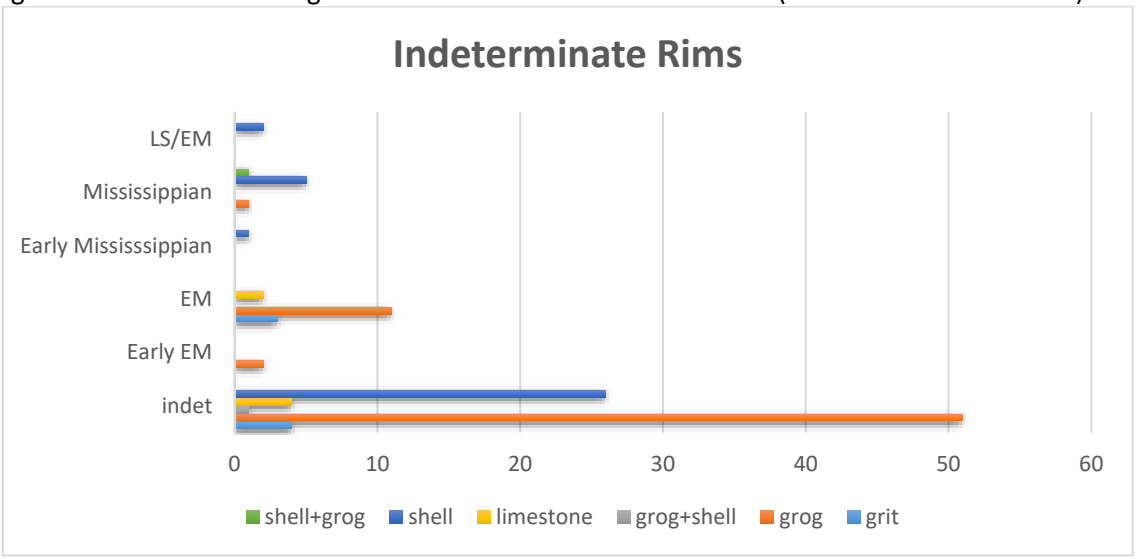


Figure 5.4 Chart showing the number of rims not associated to a vessel type located in unaffiliated features (I. Valese and M. Mattioli).

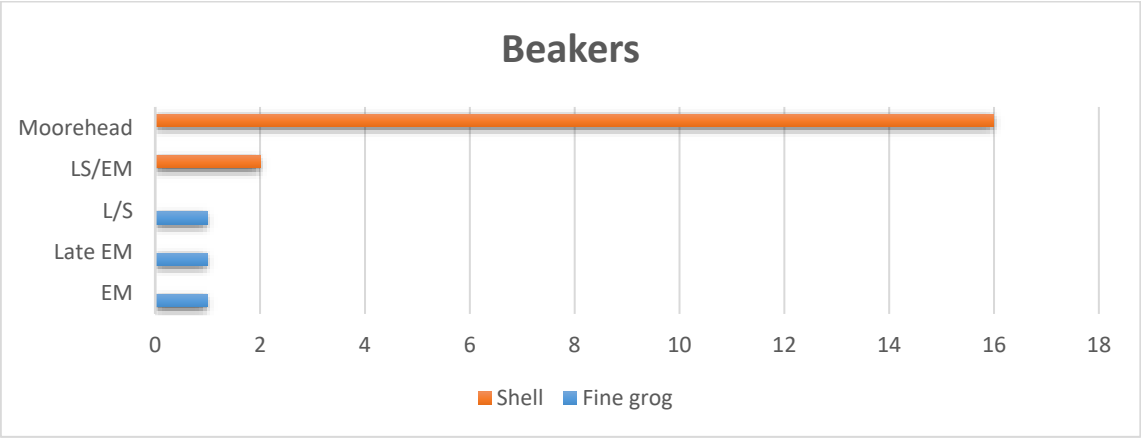


Figure 5.5 Chart showing the number of beakers' rims located in the University of Bologna's excavations. The highest frequency of shell-tempered beakers is attested for the Moorehead phase (I. Valese and M. Mattioli).

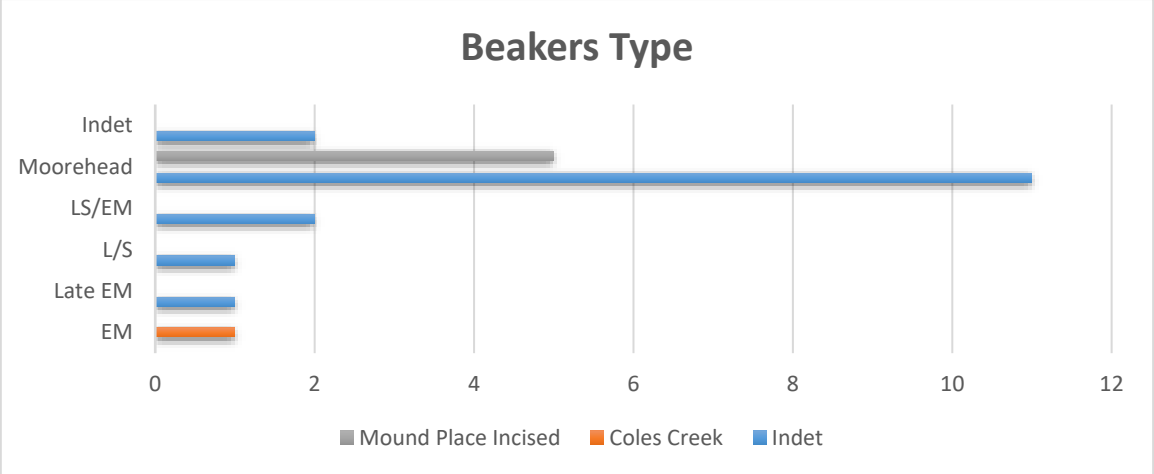


Figure 5.6 Column chart showing the type of beakers found in the Merrell Tract's features (I. Valese and M. Mattioli).

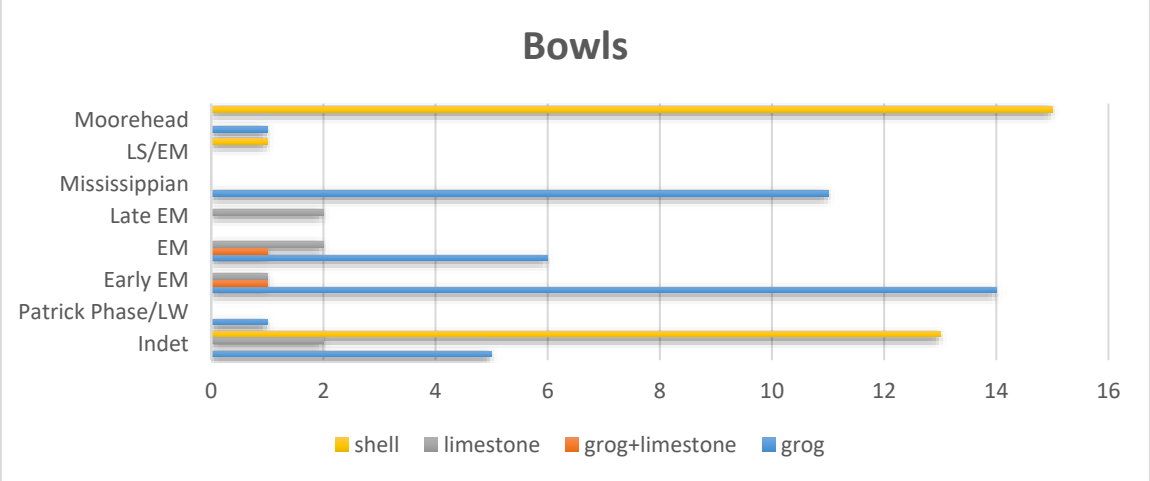


Figure 5.7 Chart showing the amount of bowls' rims from features considering tempers and chronological affiliation (I. Valese and M. Mattioli).

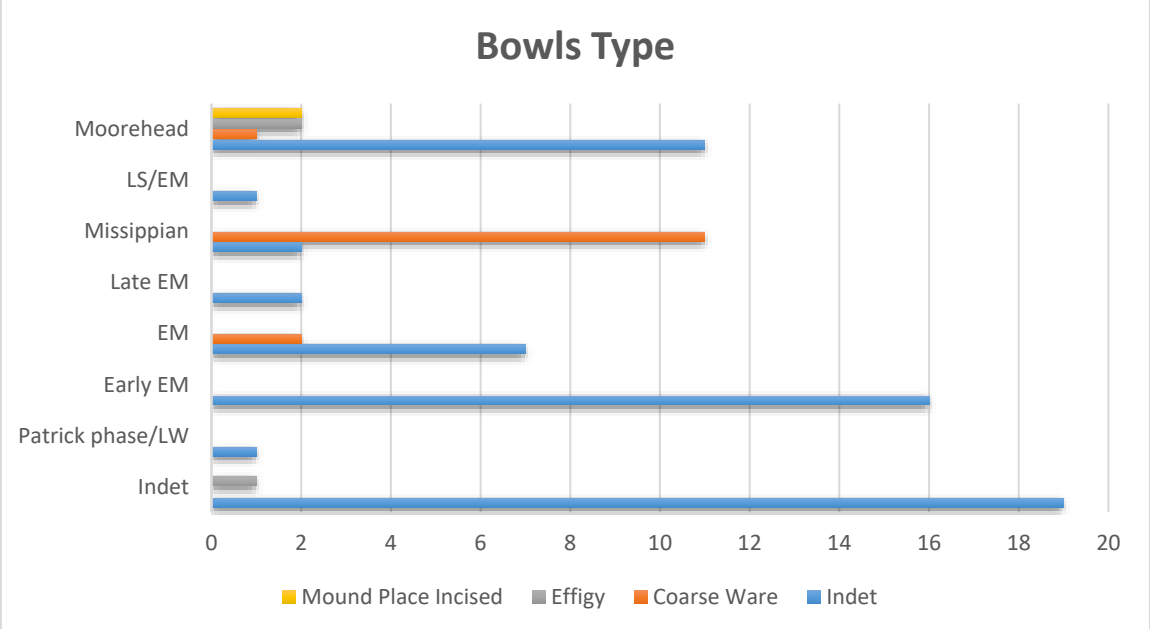


Figure 5.8 Frequency of bowls' rims divided by type and phase (I. Valese and M. Mattioli).

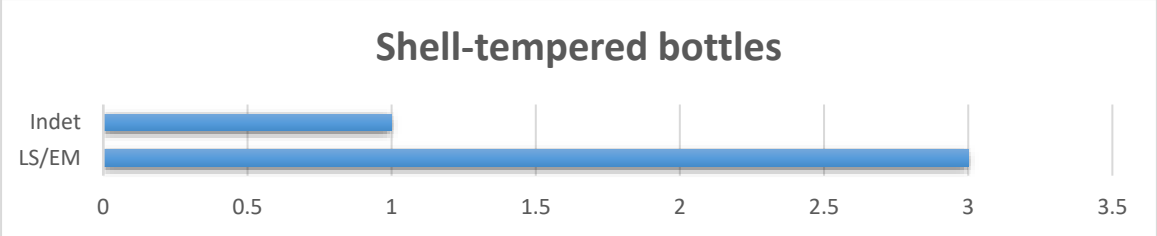


Figure 5.9 Shell-tempered bottles' rims from Merrell Tract (I. Valese and M. Mattioli).

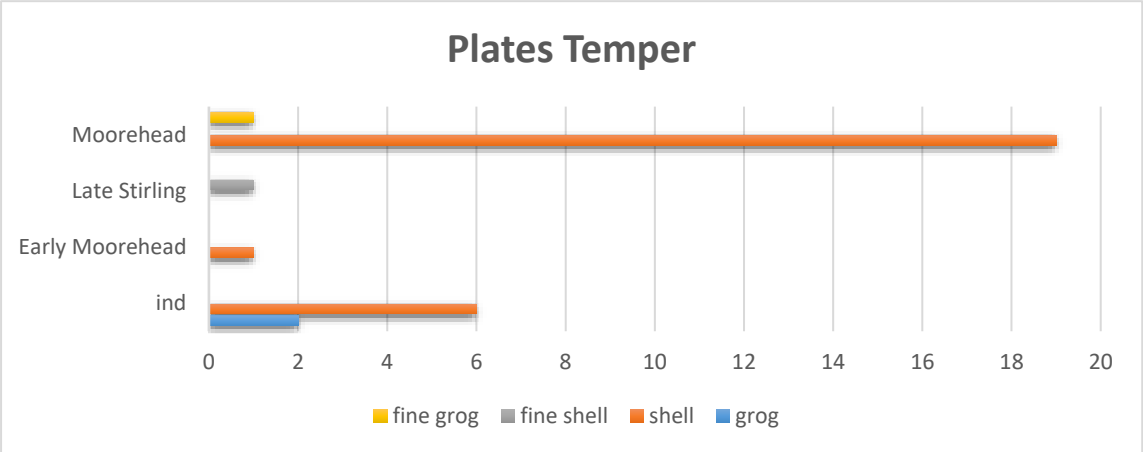


Figure 5.10 Chart showing the tempers of plates recovered in the Merrell Tract in the different phases of occupation. The majority is represented by shell tempered samples dated to the Moorehead phase (I. Valese and M. Mattioli).

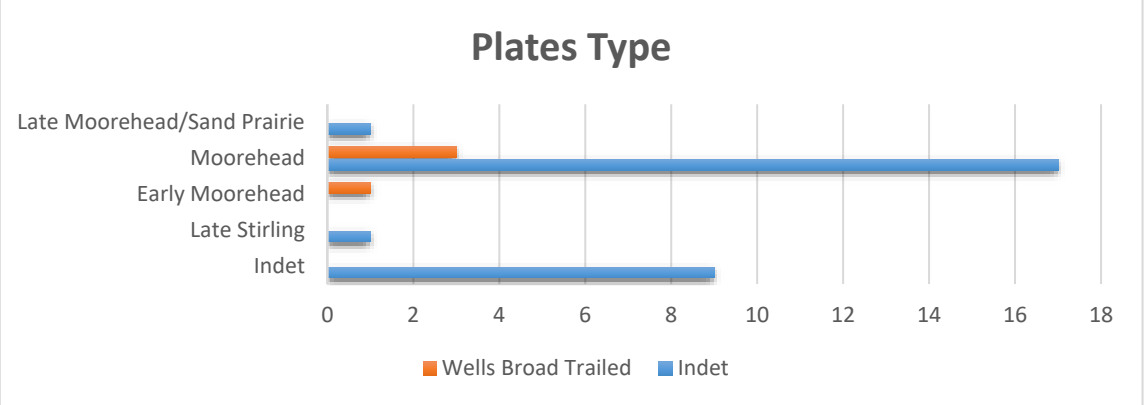


Figure 5.11 Frequency of different type of plates' rim located in the Merrell Tract divided by chronological association (I. Valese and M. Mattioli).

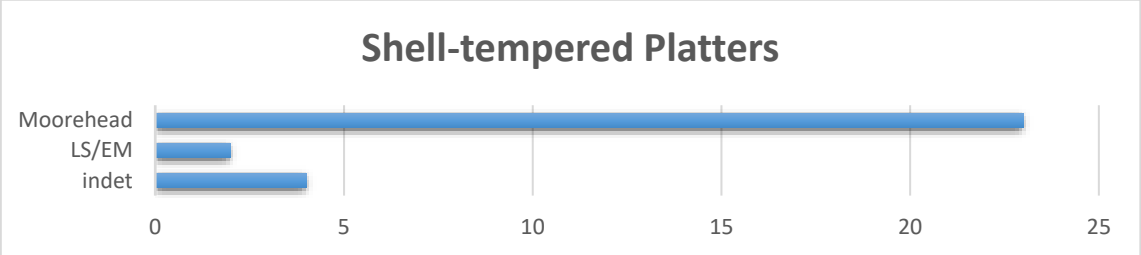


Figure 5.12 Shell-tempered platters divided by phase. The majority of this vessel type was recovered in Moorehead features (I. Valese and M. Mattioli).

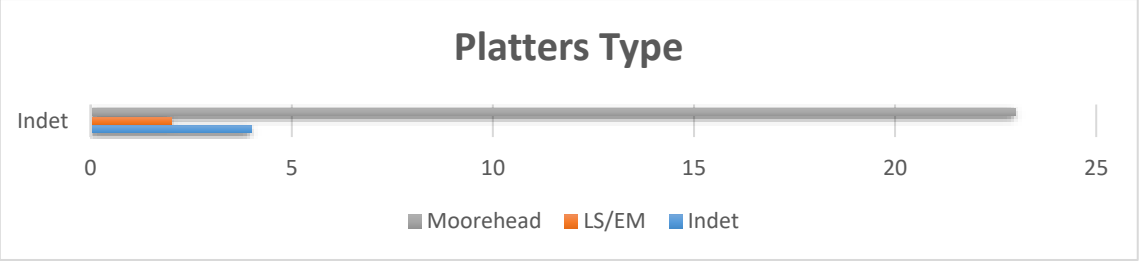


Figure 5.13 Chart showing the frequency in different phases of different types of platters located in the Merrell Tract (I. Valese and M. Mattioli).

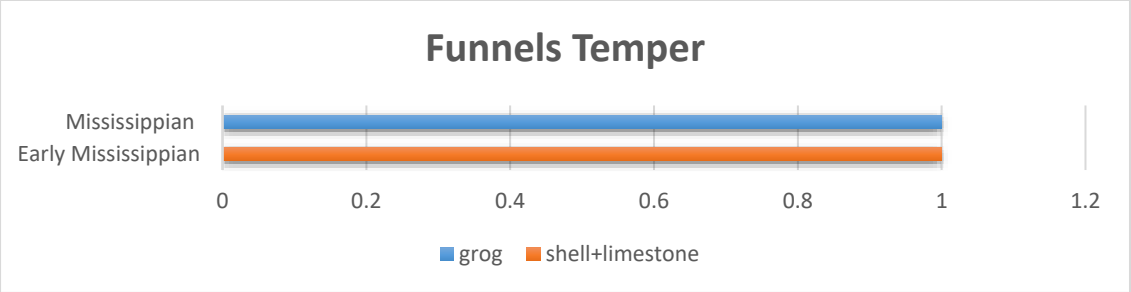


Figure 5.14 Tempers of funnels, divided by phase, recovered in University of Bologna's excavations (I. Valese and M. Mattioli).

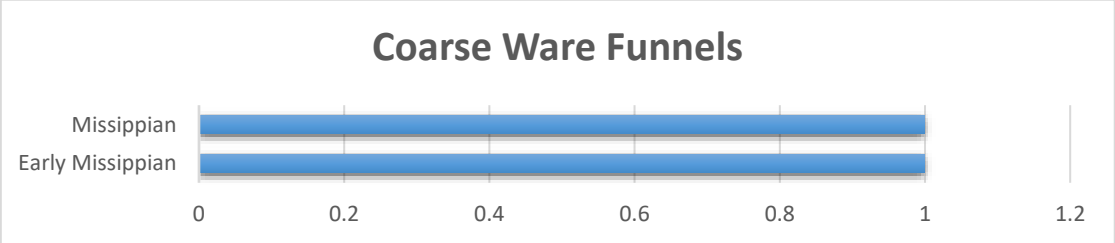


Figure 5.15 Frequency of coarse ware funnels in the different phases of occupation of the area (I. Valese and M. Mattioli).

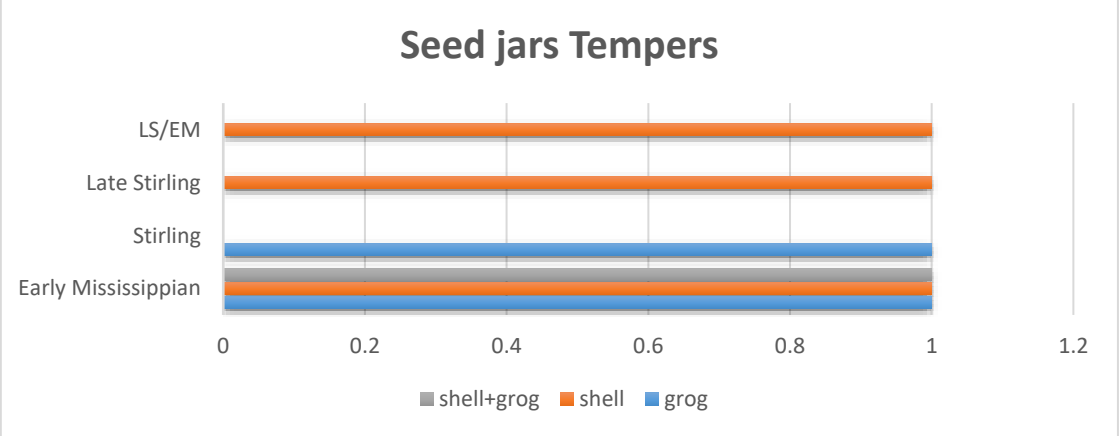


Figure 5.16 Chart showing the tempers of seed jars' rims from Merrell Tract's features. The rims have been divided by chronological affiliation (I. Valese and M. Mattioli).

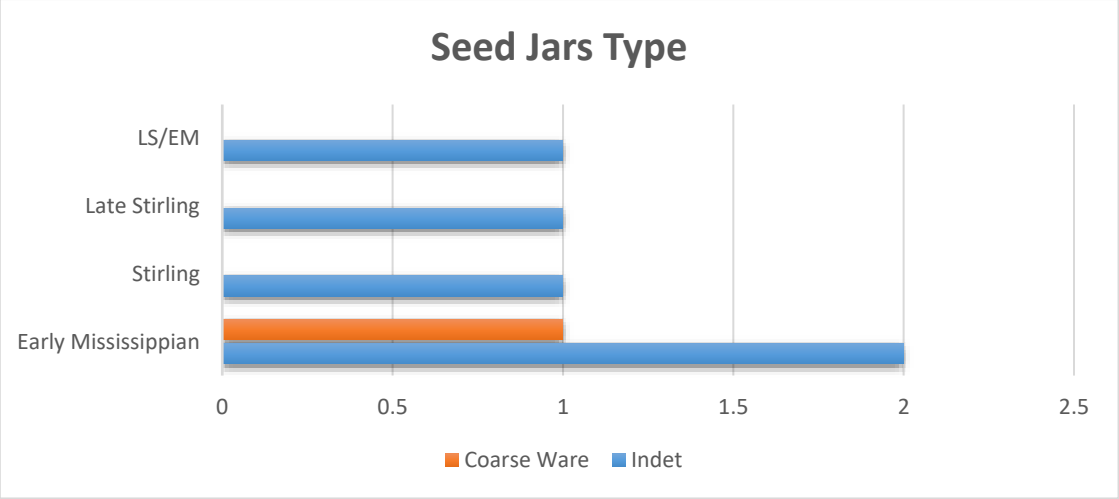


Figure 5.17 Chart showing the different types of seed jars' rims, located in the excavation, and divided by chronology (I. Valese and M. Mattioli).

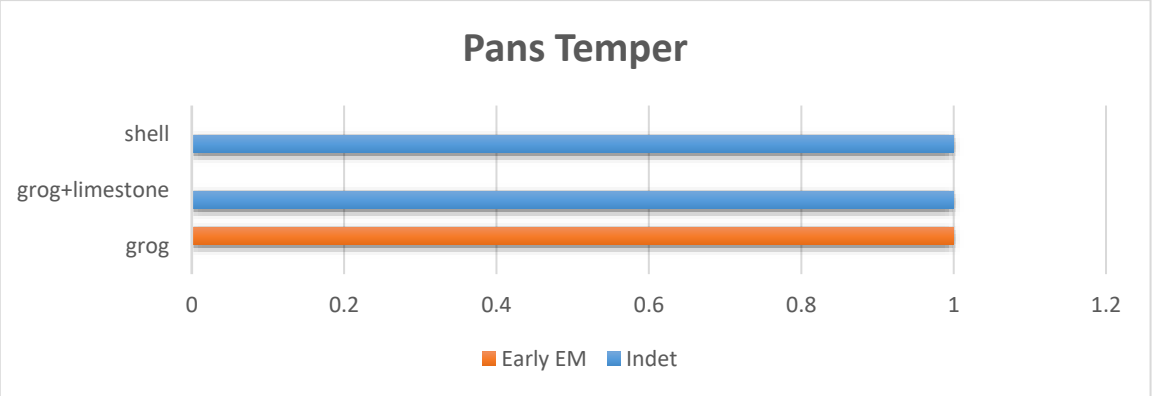


Figure 5.18 Tempers of the pans' rims recovered from the field divided by chronological association (I. Valese and M. Mattioli).

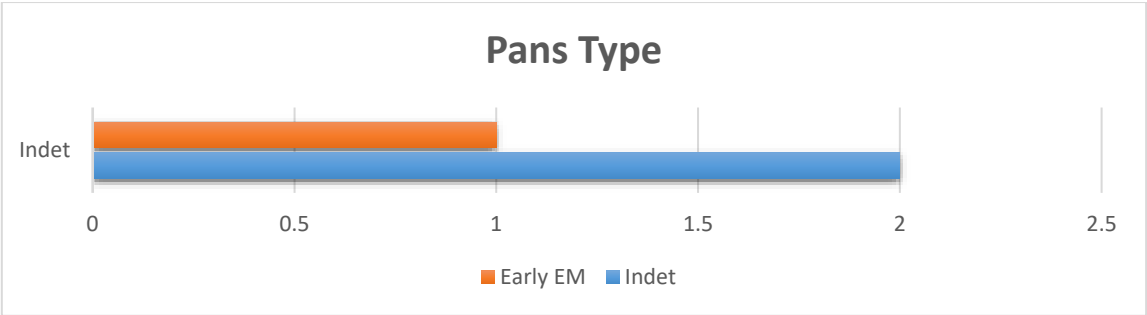


Figure 5.19 Chart showing the pans' type recognized among the Merrell Tract's ceramic assemblage (I. Valese and M. Mattioli).

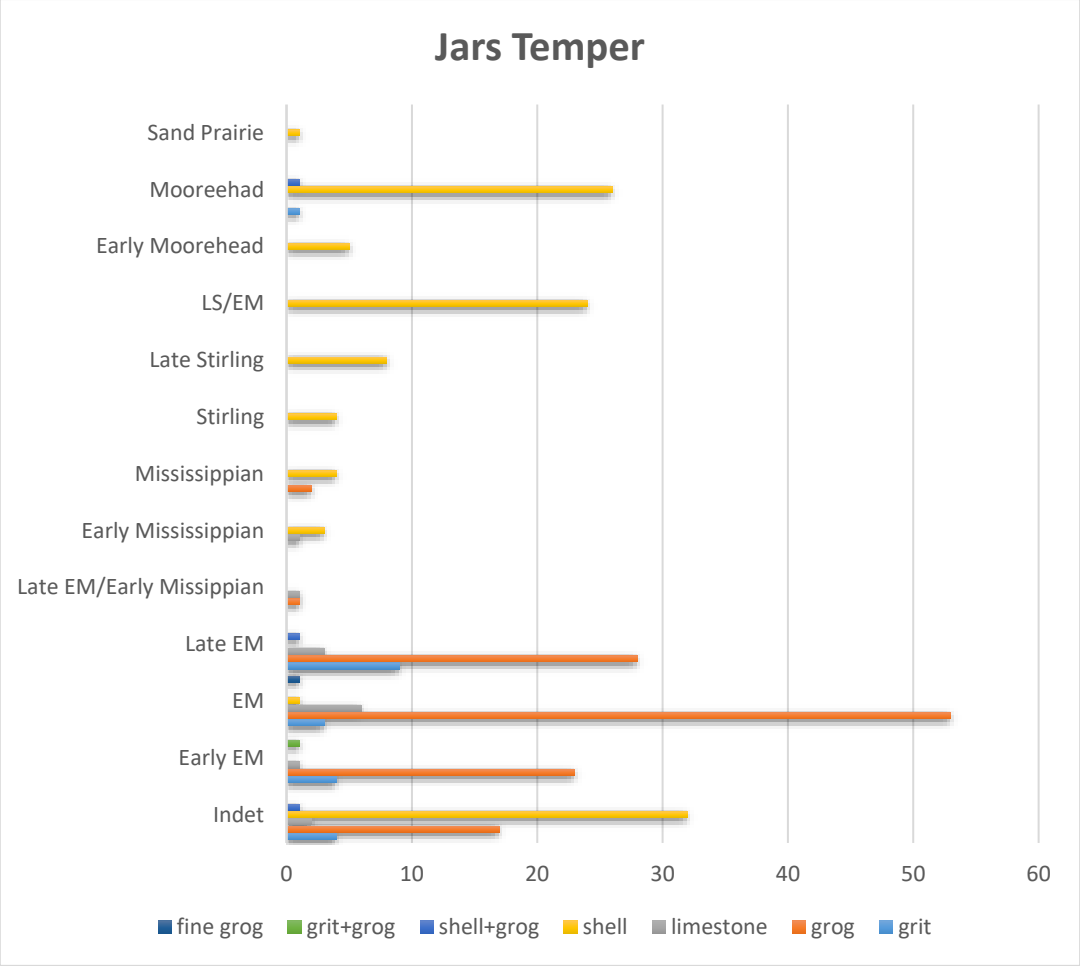


Figure 5.20 Frequency of Jars' rims from Merrell Tract, divided by phase (I. Valese and M. Mattioli).

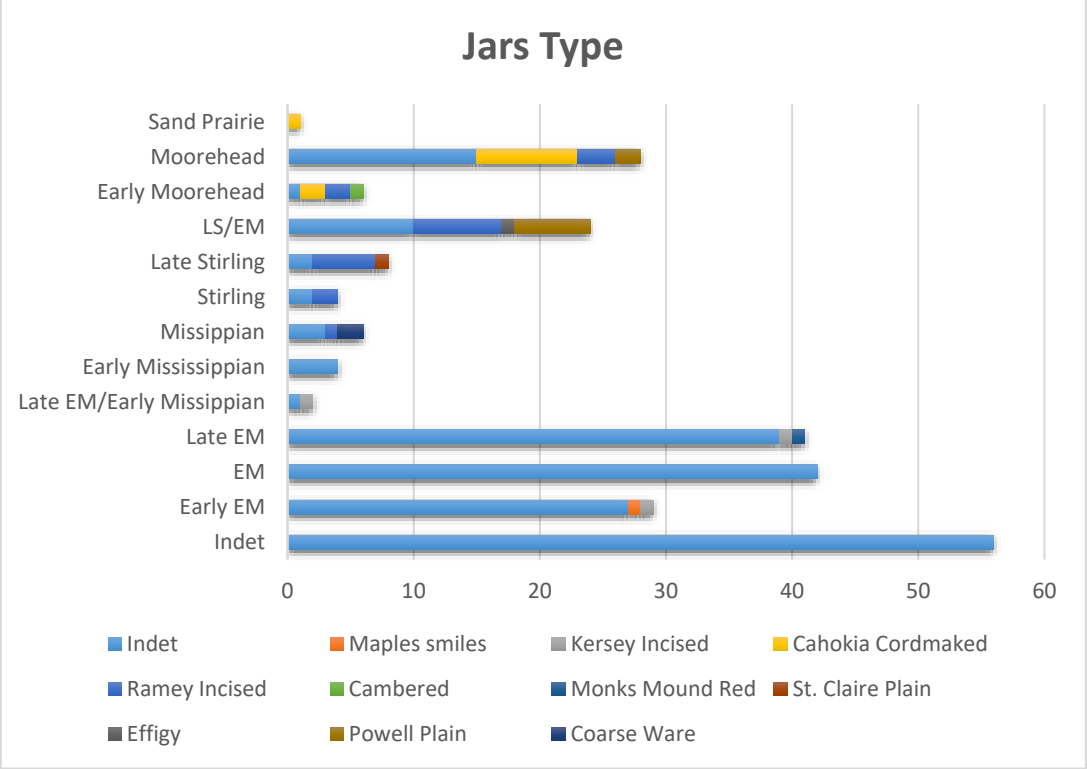


Figure 5.21 Jars' types recognized in the assemblage, divided by phase (I. Valese and M. Mattioli).

5.2 Lithic materials from the Merrell Tract-UNIBO excavations

TOTAL LITHICS RECOVERED IN MERRELL TRACT FROM FEATURES AND PLOWZONE		
	#	**Wgt**
Chert Debitage	12738	33201.2
Chert Tools	405	4353.19
Sandstone	1353	10495
Sandstone tools	176	5784.5
Limestone	673	7692

Table 5-2 Total amount of lithic material recovered in the Merrell Tract-UNIBO (I. Valese and S. Armenio).

The excavations led by the University of Bologna in the Merrell Tract, from 2011 to 2016 yielded a good amount of lithic material and minerals. The analysis of the lithics were carried out by F. Amato and by S. Armenio, hence for more complete information about specific items, the reading of the reports resulted from their work (Amato 2011, 2012, 2013, 2014; Armenio 2015, 2016) is recommended.

The materials recovered on the field were collected through trowel scraping or screening. Once transferred at the laboratory the materials were washed and sorted before an accurate analysis that implied counting and weighting was made. Each item was measured, photographed and drawn. The materials were then recorded using the Inventory sheet form provided by the Illinois State Museum, in which the materials were categorized as: *chert debitage, worked chert, hoe flake, projectile point, core, biface, limestone, sandstone, sandstone abrader, water-worn pebble, rock, ground stone*. A digitized version of this database, along with another one (Lithic Tools Database) specifically designed to record the lithic tools collected during the University of Bologna's excavations, was realized by the author of this dissertation.

A preliminary categorization of the materials has been made on the basis of the raw material; the chert was identified through macroscopic observation of colour, texture, inclusions and cortex. The tools realized in chert were distinguished in arrowheads, *cores*, *scrapers*, *denticulates*, *perforators*, *projectile points*, *adzes, hoe-adze flakes*, *hammerstones*, *microblade cores*, *microdrills* and *microblades*. While the tools realized in materials other than chert were divided in: *abraders (flat* or *slotted*), *palettes*, *hammerstones, grinding tools*, *axe-head/celts and anvils* (Amato 2011, 2012, 2013, 2014;

Armenio 2015, 2016). Although the majority of the material recovered was located in plowzone, herein we provide a brief commentary based on the materials proceeding from features, since it can be meaningful in terms of better understanding the use of lithic materials during the different phases of occupation of the Merrell Tract-UNIBO. The tables below will provide quantitative information (number and weight) about chert debitage, chert tools, lithic other than chert tools as well as information about minerals and miscellaneous items (i.e. fluorite beads) divided by type and phase.

The majority of tools have been recovered in pits or in house basins, except for few items that were recovered in wall-trenches. The chert types recognized in the assemblage collected in the Merrell Tract-UNIBO revealed the predominance of local chert known as Burlington (Amato 2011, 2012, 2013, 2014; Armenio 2015, 2016). This trend has been acknowledged as common in both Emergent Mississippian and Mississippian sites; the nearest formations from which this chert could be procured are the Lower Illinois River Valley and the Crescent Hills Quarries of St. Louis and Jefferson counties (MO), located 45 km southwest of Cahokia; it is attested that the Burlington chert was traded through regional distribution (Emerson and Jackson 1984; Kelly 1984; Milner 1984). Along with Burlington, another local chert, the St. Genevieve, is attested in smaller quantities among the Merrell Tract-UNIBO features' findings. The use of Burlington appears to be stable during the entire occupation of the West Plaza Area from the Emergent Mississippian times to the Sand Prairie phase, whereas the St. Genevieve chert type shows to have been more exploited during the Emergent Mississippian phase and less during the Mississippian period, in which an increase of Burlington and Mill Creek chert have been recorded (Amato 2014; Armenio 2016). A similar trend has been attested at Range by Kelly (1982) and at the East Palisade Tract by Koldehoff (Kelly and Koldehoff 1995: 58).

The high quantity of chert debitage and cores retrieved on the field suggest the performance of on-site production of tools; the relevant number of cores the features yielded could support the hypothesis that the chert was brought in as nodules and then processed on site at least during the Emergent Mississippian and the Late Mississippian phases (Amato 2014); the scarce lithic assemblage for the Lohmann and Stirling phases in the Merrell Tract-UNIBO, on the other hand, reflects the settlement dynamics of the area, since during the Early Mississippian period it functioned as a public space.

The majority of non-local chert is constituted by the Mill Creek, a distinctive chert type from the Illinois Union and Alexander counties (Amato 2014) mostly used for the production of woodworking and digging tools (Koldehoff and Brennan 2010: 145-146). The lack of debitage of this type of chert suggests that the production of large bifaces (i.e. adzes and hoes), which required considerable skill, was not carried on site; hence, it is feasible that Mill Creek tools were manufactured elsewhere and then brought in as finished products (Cobb 1991, 2000). Furthermore, several Mill Creek broken tools showed traces of re-making and reconversion into other usage (Amato 2014).

The number of projectile points and arrowheads seems to increase during the Moorehead and Sand Prairie phases; this trend is in line with general sense of instability attested during the Late Mississippian period reflected through the erection of the palisade and the evidences of warfare and violence among the Mississippian settlements scattered in the American Bottom (Baltus 2014; Pauketat and Alt 2015).

Amid the non-chert lithic tools, the material most commonly used was the sandstone. This type of sedimentary rock, mostly used due to its abrasive nature, was generally not available on the floodplain and it was obtained from a number of different upland outcrops (Armenio 2016). The closest Illinois sandstone sources are located near Alton and St. Clair County (Kelly 1982).

The most represented non-chert tool is the abrader, both in the Emergent Mississippian and in the Moorehead phase. According to Pauketat, while during the Emergent Mississippian phase sandstone abraders can be interpreted as ordinary house tools employed to wear down and shape hard wooden, bone or stone items, the elevated number of slotted and flat abraders attributed to the Moorehead phase could be related to manufacturing activities, related to the processing of pigments and to the realization of paraphernalia carried in the adjacent 15B Tract (Pauketat 2013: 243). The study of the 15B Tract's lithic material revealed that the majority of sandstone abraders come from the Late Mississippian assemblages and were often found in sets composed by hammerstones, saws and palettes; many of the tools showed the presence of white and red staining left after the preparation of pigments obtained from the grinding of galena and ochre (Pauketat 2013: 249). No clear traces of pigments have been observed on the tools recovered from the University of Bologna's excavation, although the tools and raw materials recovered in the Moorehead pit F1081 (see chapter 4.3.2), can be compared to

the “sets” recognized by Pauketat (2013) in the 15B’s Late Mississippian features. Even if the Merrell Tract-UNIBO’s did not yield large quantities of minerals comparable to the ones located in the 15B Tract, the presence of larger quantities of galena, limonite, hematite and ochre is attested for the Mississippian phase starting from the Late Stirling/ Early Moorehead phase, thus supporting Pauketat’s hypothesis on pigments processing in the area during its later residential occupation.

Noteworthy is the large amount of limestone detritus recovered in both Emergent Mississippian and Mississippian (Late Stirling/Early Moorehead and Moorehead) features. The presence of high quantities of limestone for the Emergent Mississippian phase has been interpreted by Pauketat (2013: 263) as connected to the creation of lye used during the processing of maize; the same can be hypothesized for the Merrell Tract-UNIBO’s limestone collected from Emergent Mississippian features. The high amount of limestone remains in Late Stirling and Moorehead features, even higher than that in Emergent Mississippian ones (2231gr contra 1878gr), suggests a similar use of lye during the later domestic occupation of the area.

The few flakes of quartz crystal found in Late Stirling/ Early Moorehead midden areas and features, can be interpreted as associated to the ceremonial activities still carried in the area.

CHERT DEBITAGE RECOVERED IN WALL TRENCHES		
Phase	#	Wgt
Early Mississippian	110	146.4
Stirling	46	47.4
Late Stirling/Early Moorehead	157	226.5
Moorehead	83	128.9
CHERT DEBITAGE RECOVERED IN PIT FEATURES		
Phase	#	Wgt
Emergent Mississippian	1037	2849.6
Stirling	38	63.3
Late Stirling/Early Moorehead	356	1014.2
Moorehead	718	2055.1

Sand Prairie	18	49.7
Unaffiliated	178	342.3
CHERT DEBITAGE RECOVERED IN HOUSE BASINS		
Phase	#	Wgt
Emergent Mississippian	502	858.9
Sand Prairie	377	800.4
TOTAL CHERT DEBITAGE BY PHASE		
Phase	#	Wgt
Emergent Mississippian	1539	3708.5
Early Mississippian	110	146.4
Stirling	84	110.7
Late Stirling/Early Moorehead	513	1240.7
Moorehead	801	2184
Sand Prairie	395	850.1
Unaffiliated	178	342.3
TOTAL CHERT DEBITAGE MT	3620	8582.7

CHERT TOOLS				
EMERGENT MISS.				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Denticulate	St. Genevieve chert	EM basin	1	
Denticulate	Burlington chert	Pit	1	2
Core	Indeterminated	EM basin	1	
Core	Indeterminated	Pit	1	
Core	Burlington chert	Pit	7	
Core	St. Genevieve chert	Pit	2	
Core	St. Genevieve chert	EM basin	1	
Core	Burlington chert	EM basin	2	
Core	2 B 1 SG	EM basin	3	17
General scraper	Burlington chert	Pit	3	3
Formal scraper	St. Genevieve chert	Pit	1	1
Adze-hoe flake	Mill Creek	Pit	3	
Adze-hoe flake	Burlington chert	Pit	1	4
Blade	St. Genevieve chert	EM basin	1	1
Micro-blade core	Burlington chert	Pit	1	1
Micro-blade	Burlington chert	EM basin	1	1
Projectile point	Burlington chert	Pit	1	

Projectile point	Burlington chert	EM basin	1	2
				32
EARLY MISSISSIPPIAN				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
General Scraper	Burlington chert	Wall Trench	2	2
Microblade	Burlington chert	Wall Trench	1	1
				3
STIRLING				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Blade	Burlington chert	Wall Trench	1	
Blade	Indeterminate	Wall Trench	1	2
Denticulate	Burlington chert	Wall Trench	1	1
				3
MOOREHEAD				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Adze	Burlington chert	Pit	1	1
Adze-hoe flake	Indeterminate	Pit	1	1
Core	Burlington chert	Pit	9	
Core	Indeterminate	Pit	2	
Core	Fern Glen	Pit	1	
Core	St. Genevieve chert	Pit	1	13
Formal scraper	Burlington chert	Pit	1	1
General scraper	Burlington chert	Wall Trench	1	
General scraper	Burlington chert	Pit	1	2
Hoe flake	Mill Creek	Pit	1	
Hoe flake	Burlington chert	Pit	1	2
Microblade	Burlington chert	Pit	1	1
Microdrill	Burlington chert	Pit	1	1
Notch-spokeshave	Burlington chert	Pit	2	2
Projectile point	Burlington chert	Wall Trench	1	
Projectile point	Burlington chert	Pit	8	
Projectile point	Indeterminate	Pit	1	10
				34
SAND PRAIRIE				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Arrowhead	St. Genevieve chert	House basin	1	
Arrowhead	Burlington chert	House basin	3	4

Adze	Burlington chert	House basin	1	1
Blade	Burlington chert	House basin	1	1
General scraper	Burlington chert	House basin	3	1
Hoe flake	Mill Creek	House basin	2	2
Spearpoint	Burlington chert	House basin	1	1
Spearpoint-knife	St. Genevieve chert	House basin	1	1
				11
UNAFFILIATED				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Adze	Burlington chert	Pit	1	1
Core	Burlington chert	Fill	1	1
				2
TOTAL OF CHERT TOOLS				**184**
LOTC				
EMERGENT MISS.				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Anvil	Sandstone	Pit	1	1
Biface	Sandstone	Pit	1	1
Celt	Basalt	Pit	1	1
Flat abrader	Sandstone	Pit	3	3
Grinding tool	Grovel	Pit	1	1
Hammer	Basalt	Pit	1	
Hammer	Quartzite	Pit	2	3
Palette	Sandstone	Pit	1	1
Slotted abrader	Sandstone	Pit	9	9
				20
EARLY MISS.				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Slotted abrader	Sandstone	Wall trench	1	1
				1
MOOREHEAD				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Flat abrader	Sandstone	Wall trench	2	
Flat abrader	Sandstone	Pit	7	9
Hammer	Granite	Pit	1	
Hammer	Basalt	Pit	1	2
Palette	Sandstone	Pit	3	3
Slotted abrader	Sandstone	Pit	5	5

				19
SAND PRAIRIE				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Arrow shaft smoother	Sandstone	House basin	1	1
Flat abrader	Sandstone	House basin	2	2
Groundstone	Sandstone	House basin	1	1
				4
UNAFFILIATED				
Type of tool	Material	Type of Feature	#	TOT BY TOOL
Flat abrader	Sandstone	Pit	1	1
Hammer	Basalt	Posthole	1	1
				2
TOTAL OF LOTC TOOLS				**46**
TOTAL TOOLS RECOVERED				**230**

Table 5-3 Summary of the chert and lithic other than chert tools recovered in the Merrell Tract (I. Valese and S. Armenio).

GALENA RECOVERED IN WT		
Phase	#	Wgt
Early Mississippian	1	0.6
GALENA RECOVERED IN PITS		
Phase	#	Wgt
Emergent Mississippian	1	0.5
Moorehead	8	8.4
Sand Prairie	1	0.2
Unaffiliated	1	0.5
TOTAL GALENA MT	12	10.2
HEMATITE RECOVERED IN WT		
Phase	#	Wgt
Moorehead	1	75.1
HEMATITE RECOVERED IN PITS		
Phase	#	Wgt
Late Stirling/Early Moorehead	1	72.1
Unaffiliated	2	0.2
TOTAL HEMATITE MT	4	147.4
LIMONITE RECOVERED IN WT		
Phase	#	Wgt

Early Mississippian	2	0.3
LIMONITE RECOVERED IN PITS		
Phase	#	Wgt
Emergent Mississippian	2	1.1
Moorehead	5	27.4
TOTAL LIMONITE MT	9	28.8
RED OCHRE RECOVERED IN WT		
Phase	#	Wgt
Stirling	1	13.1
Late Stirling/Early Moorehead	1	1
RED OCHRE RECOVERED IN PITS		
Phase	#	Wgt
Emergent Mississippian	4	45.8
Stirling	2	13.2
Late Stirling/Early Moorehead	4	92.2
Moorehead	13	28.4
Sand Prairie	1	26.9
Unaffiliated	32	462
TOTAL RED OCHRE MT	58	682.6
MICA RECOVERED IN PITS		
Phase	#	Wgt
Moorehead	1	1
TOTAL MICA MT	1	1
LIMESTONE RECOVERED IN WT		
Phase	#	Wgt
Early Mississippian	3	6.1
Stirling	5	0.4
Moorehead	4	30.3
LIMESTONE RECOVERED IN PITS		
Phase	#	Wgt
Emergent Mississippian	125	1878.3
Late Stirling/Early Moorehead	64	1033.1
Moorehead	67	1198.1
Unaffiliated	7	250.9
LIMESTONE RECOVERED IN HB		
Phase	#	Wgt
Emergent Mississippian	24	256.1
Sand Prairie	26	295.9
TOTAL LIMESTONE MT	325	4949.2

Table 5-4 Summary of minerals found in the Merrell Tract-UNIBO (I. Valese and S. Armenio).

FLUORITE RECOVERED IN PITS		
Phase	#	Wgt
Moorehead	3	10.6
QUARTZ RECOVERED IN PIT FEATURES		
Phase	#	Wgt
Moorehead	7	10.1

Table 5-5 Summary of fluorite and quartz fragments located in the Merrell Tract-UNIBO (I. Valese and S. Armenio).

5.3 Faunal analysis for the Merrell Tract – UNIBO excavations

The faunal sample that was recovered from the Italian team excavations on the Merrell Tract, Cahokia Mounds Historic Site from 2011 to 2016 has been analysed by L. Kelly (2014, 2017). Most of the bone was recovered from feature dated to either the Emergent Mississippian or to the Mississippian Late Stirling/Moorehead phases, although some of the samples were collected from unaffiliated features (see Table 9). All the bone was hand collected during the excavation and while the floatation samples were examined for faunal materials, irrelevant amounts of very small bone were recovered and therefore were omitted from the analysis.

As reported by L. Kelly a total of 1114 vertebrate NISP makes up the excavated sample: 868 mammal NISP (77.9%); 6 mammal or bird NISP (0.5%); 93 bird NISP (8.3%); 61 fish NISP (5.5%); and 86 indeterminate NISP (7.7%). The bones were subjected to taphonomic effects of burning, weathering, and gnawing at varying degrees (Tables 2 and 6).

All bone analysed was identified by direct comparison to modern osteological collections mostly preserved at the Illinois State Museum Records and Research Facility in Springfield, Illinois, and at L. Kelly's personal collection. Identification, when possible, was made to the most specific taxonomic level, according to the completeness and portion of the bone present, while the nomenclature follows the Integrated Taxonomic Information System website (www.itis.usda.gov). Some elements from the same animal are more diagnostic than others; therefore, not all elements can be identified with equal certainty or specificity (L. Kelly 2017).

Size Class	Animals Falling within Size Class
Large Mammal	Deer, Wapiti
Medium Mammal	Canid, Raccoon, Rabbit, Muskrat, Squirrel
Small Mammal	Mouse, Vole, Mole
Large Bird	Turkey, swan, goose
Medium Bird	Ducks
Small Bird	Perching birds

Table 5-6 Key to the animal size categories constructed (L. Kelly).

5.3.1 Emergent Mississippian faunal assemblage

Among the features that yielded faunal remains, seven have been assigned to the Emergent Mississippian phase (Table 3). The analysis made by L. Kelly infer that the pit F1017E yielded the largest number of remains, however more than half (59.8%) have been impacted by the taphonomic effects of weathering and burning. Mammal remains (86.6% of the total NISP) represented the great majority of the faunal assemblage from this feature where 105 deer (*Odocoileus virginianus*) NISP were identified. Many of the specimens have been assigned by Kelly to the medium-large mammal and large mammal categories since, even if they are mostly likely fragments from deer, they lack diagnostic characteristics to be accurately identified. White-tailed deer, one specimen per feature, was also identified from two other Emergent Mississippian features: F1032 and F1080.

Even though most of the bird remains (22 NISP) could not be identified below class, three taxa (26 NISP) from F1017E were identified: Canada goose (*Branta canadensis*), medium duck (Anatinae), and possible turkey (*Meleagris gallopavo*). Only one fish remain was recovered from excavation and it was identified as belonging to the sucker family (Catostomidae). The bone present in F1168 could not be identified since it disintegrated because of poor preservation.

5.3.2 Mississippian faunal assemblage

The Late Stirling/Early Moorehead phase features 1001, 1015, 1019, 1020, and 1048 yielded 107 NISP (Table 4). The majority (83.2%) are mammal remains among which only deer was identified. Unfortunately, as for the above-mentioned Emergent Mississippian features preservation was not good, with much of the bone being weathered or burned. F1019 yielded 3 bird NISP that were identified at class level; this feature also produced the only fish remains (2 NISP) with one representing the catfish family (Ictaluridae). Features 1005, 1049, 1081, 1112, and 1177 attributed to the Moorehead phase yielded faunal material (Tables 5, 6). Features 1005, 1112, and 1177 had no specimens identifiable below the level of class (Table 5), while from the midden area, F1049, 437 vertebrate NISP were recovered nonetheless the remains have been heavily impacted by weathering and some burning (95.7%). Among the faunal assemblage recovered from F1049, deer was the only mammal identified with 16 NISP representing 2 MNI; along with

5 bird NISP, among them one was determined to be from the duck sub-family Anatinae, and one unidentified fish bone.

A total of 164 vertebrate NISP were recovered from the excavation of F1081 (Table 7). This Moorehead phase pit has been analysed and described separately since the bone show a better degree of preservation than any other feature excavated on this portion of the Merrell Tract (Table 6) and because of the peculiarity of the assemblage.

The analysis of F1081 faunal remains showed the presence of seven deer NISP are present, all collected from F1081's Zone B (levels 4-7) and they represent the 17.7% of the excavated sample (Table 7); 5 rib fragments, a proximal femur that exhibits possible cut marks just above the lesser trochanter, and an anterior, proximal, tibia shaft fragment were identified. The tibia exhibits some light copper staining on the broken surface and a cut mark on the anterior crest. The analysis revealed the presence of other 7 large mammalian NISP from F1081 but the high fragmentation of the samples did not allow a good identification, even though it is likely that they also pertain to white-tailed deer (L. Kelly 2017:7).

Bird remains (Table 8) represent the largest percentage with 36.0% NISP. From the fifty-nine bones, 10 taxa all pertaining to water birds were identified; they include: trumpeter swan (*Cygnus buccinator*), possible snow goose (*Chen* cf. *caerulescens*), duck sub-family (Anatinae), possible puddle duck (cf. *Anas* sp.), possible mallard (cf. *Anas platyrhynchos*), teal (*Anas* cf. *discors/c*arolinensis), diving duck (*Aythya* sp.), possible common merganser (cf. *Mergus merganser*), double-crested cormorant (*Phalacrocorax auritus*), and coot (*Fulica americana*) (L. Kelly 2017: 8).

The one specimen of trumpeter swan is a left, distal ulna that has been grooved and snapped; the majority of swan remains come from excavation led at Cahokia, where it is attested that they were not eaten (L. Kelly 2010) since the most common finds are residue from tool manufacture. The finds are usually related to a specific part of the animal's body that is the wing, as does the one coming from F1081, unfortunately, no finished artifacts have been recovered in Cahokia or in the American Bottom so that no information about the type of instruments that could have been produced by the bone manufacture can be provided.

Figure 5.22 Picture of some F1081's bones.

Among the other finds the three specimens of merganser and cormorant remains stand out as uncommon; although they have been found at Cahokia (e.g. Mound 34 [Parmalee 1957]), they are infrequent; furthermore, the cormorant coracoid found in F1081 shows copper staining due to the direct contact with a copper bead found in its vicinity. The other water birds recovered in this Moorehead pit, represent common waterfowls of the American Bottom area (see Table 8); elements from the wing and axial portions of the birds are represented in almost equal amounts, when all the birds from this feature are viewed as a group, this may mask the nature of use for certain types of birds. The duck specimens that could not be identified further were placed into size categories of small, medium, and large: small ducks include teal, ruddy, and buffleheads; medium ducks include the majority of puddle and diving ducks such as pintail, shoveler, gadwall, ring-neck, canvasback, golden eye; and large ducks include common merganser, mallard, and black ducks (L. Kelly 2017: 9). The excavation of F1081 yielded fifty-seven specimens of fish (34.7% NISP) and 9 taxa were identified (Table 7); all the fish remains are from common taxa found at Cahokia belonging to small-sized fish of one pound or less. They

include gar (*Lepisosteus* sp.), bowfin (*Amia calva*), sucker family (Catostomidae), catfish family (Ictaluridae), bullhead (*Ameiurus* sp.), black or brown bullhead (*Ameiurus melas/nebulosus*), sunfish/bass family (Centrarchidae), bass (*Micropterus* sp.), and crappie (*Pomoxis* sp.).

F1081 also yielded two worked bones; the ovoid objects were found in the upper Zone A (levels 4-7) of the feature, they measure 20.5 x 30.3 mm and each present 4 perfectly matching perforations placed lengthwise along the midline of the bone; the outer holes measure 1.9-2.0 mm while the two middle holes were 2.9-3.0 mm. The bones are 1.0-1.5 mm thick (fig. 5.5). The bones are too modified to be identified; however, they could have been made out from an axial element such as a scapula (i.e. dog) or sternum (i.e. large bird). Both bones exhibit a couple of cut marks, presumably from cutting the blank and the edges are ground smooth and some grinding on the surfaces has been observed, although it could also be natural to the thin bone. The worked bones are not completely flat but slight curved, trait either natural from the bone from which they are made, or a later taphonomic deformation. Their function is still uncertain, but it is postulated they may have been used as a type of button or closure on fabric or skin or some kind of clothing ornament. So far, only another similar object has been found at Cahokia during the East Palisade excavations of 1973, and it is exhibited at the Cahokia Mounds among other ornaments. It measures 3.65 cm in length, 1.42 cm of width and 1.5 mm thick and it was probably realized with deer bone (fig. 179).

The only Sand Prairie feature, F1193, located in the Merrell Tract - UNIBO yielded one specimen that belongs to a medium-large mammal and 26 weathered deer's teeth fragments. Six features fall into this category of unaffiliated (Table 9) and none produced significant faunal materials.

Figure 5.23 Image of the worked bones retrieved in F1081.

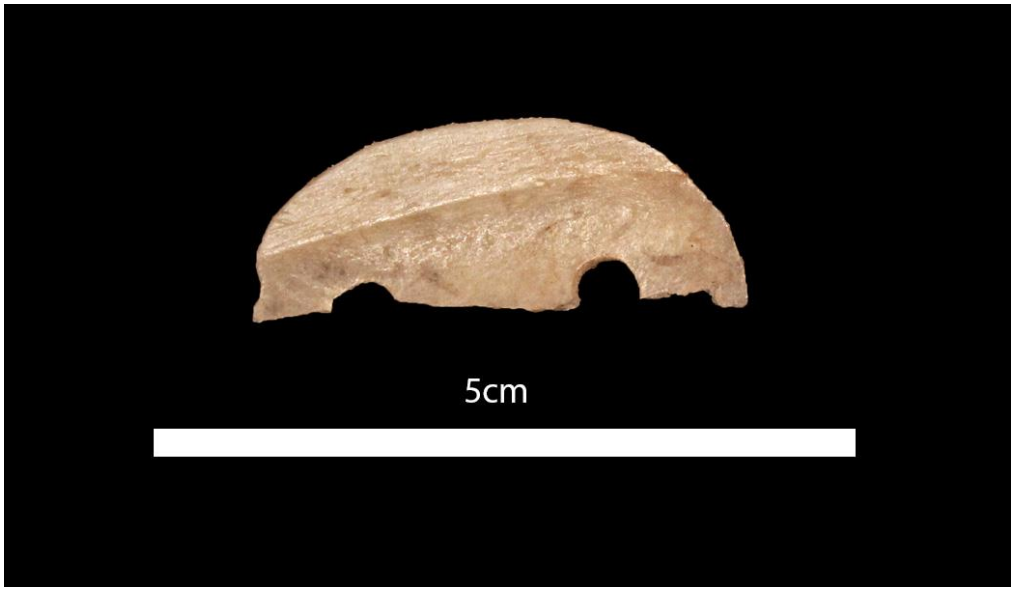


Figure 5.24 Drilled bone ornament (catalogue #73-2191-242) found during the excavations at the East Palisade, exposed at the Cahokia Mounds Museum.

5.3.3 Discussion

The poor preservation of the bones collected during the excavations of the University of Bologna at the Merrell Tract cannot help in providing a clear picture of animal use.

As stated by the analysis led by L. Kelly, among the faunal assemblage, deer bones were recovered more than any other animal, although their larger size and greater density could have determined a better preservation. The few bird and fish bones recovered in the tract pertain to taxa that are commonly found at other areas of Cahokia (e.g.

waterfowl and backwater fish). Conversely, the material found in F1081 had a good degree of preservation, as evidenced by the recovery of tiny fish bones and scales and lack of evidence of taphonomic effects of weathering and burning. Regrettably, whether the better condition in which F1081's fauna rely on taphonomic issues or to a specialized nature of the feature, cannot be said for sure (L. Kelly 2017). The inclusion of some unusual fauna in Feature 1081 advocates that at least some of the remains may be something other than food refuse as suggested by L. Kelly (2017); however, deer remains would not support this theory, since they are from the upper hind leg and from the axial portion of the animal that would have greater amounts of meat associated with them. Still, the recovery of the worked bones, the bird remains of the uncommon merganser and double-crested cormorant and the cut trumpeter swan ulna, which indicates manufacture of some sort of artifact that may have ritual significance, do not pertain to common domestic refuse. The interpretation of the fish remain is similarly difficult, since they are from small sized common fish found in the American Bottom sites, that in this case would not have provided much meat if used for food. L. Kelly (2017:12) suggests that the remains could have been embedded into the soil used to in-fill the feature and consequently not related to the other material found into the pit. She also states that the function of this feature or the possible specialized nature of its contents cannot rely on the faunal materials alone, but on all the classes of material found in it.

	Burned Black	**Calcined**	**Unburned**	**Weathered***	**Gnawed***
Mammals	18	46	775	635	2
Mammal/Bird	1		5	5	-
Birds	7	17	10	3	-
Fish	-	-	4	2	-
Indeterminate	26		41	18	-
Total	52	63	835	663	2
%NISP	5.5%	6.6%	87.9%	69.8%	
*weathered and gnawed NISP included in unburned column					

Table 5-7 Taphonomic Summary of Merrell Tract Fauna (excludes F. 1081) (L. Kelly).

	Emergent Mississippian										
MAMMALS	**1017E**	**1017W**	**1027**	**1032**	**1046**	**1080**	**1168***	**Total NISP**	**Total MNI**	**%NISP**	**%MNI**
Odocoileus virginianus (White-tailed deer)	105	-	-	1	-	1	-	107	2		
medium-large mammal	119	-	-	-	-	3	-	122			
large mammal	47	1	10	-	15	-	-	73			
Sub-total Mammal	271	1	10	1	15	4	-	302	2	87.8	33.3
MAMMAL OR BIRD	5	-	-	-	-	-	-	5	-	1.4	-
BIRDS											
Branta canadensis (Canada goose)	2	-	-	-	-	-	-	2	1		
Anatinae (duck sub-family)		-	-		-		-				
medium	1	-	-	-	-	-	-	1	1		
cf. Meleagris gallopave (turkey)	1	-	-	-	-	-	-	1	1		
large bird	12	-	-	-	-	-	-	12			
medium-large bird	2	-	-	-	-	-	-	2			
medium bird	4	-	-	-	-	-	-	4			
small-medium bird	4	-	-	-	-	-	-	4			
Sub-total Bird	26	-	-	-	-	-	-	26	3	7.5	50
FISH											
Catostomidae (sucker family)	1	-	-	-	-	-	-	1	1		
Sub-total Fish	1	-	-	-	-	-	-	1	1	0.3	16.7
INDETERMINATE VERTEBRATE	10	-	-	-	-	-	-	10	-	2.9	-
Total vertebrate NISP	313	1	10	1	15	4	-	344	6		
*Bone present but too poorly preserved to count											

Table 5-8 Summary of Faunal Remains from Emergent Mississippian Features on the Merrell Tract (L. Kelly).

	Late Stirling/Early Moorehead							
MAMMALS	**1001**	**1015**	**1019**	**1020**	**1048**	**Total NISP**	**%NISP**	**%MNI**
Odocoileus virginianus (White-tailed deer)	1	10	8	1	-	20		(1)
medium-large mammal	-	6	-	-	-	6		
large mammal	-	-	43	-	20	63		
Sub-total Mammal	1	16	51	1	20	89	832	50.0
MAMMAL OR BIRD	-	-	-	-	-	-	-	-
BIRDS								
Anatinae (duck sub-family)								
medium	-	-	-	-	-	-		
large bird	-	-	-	-	-	-		
medium bird	-	-	3	-	-	3		-
indeterminate bird	-	-	-	-	-	-		
Sub-total Bird	-	-	3	-	-	3	2.8	-
FISH								
Ictaluridae (catfish family)	-	-	1	-	-	1		(1)
indeterminate fish	-	-	1	-	-	1		
Sub-total Fish	-	-	2	-	-	2	1.9	50.0
INDETERMINATE VERTEBRATE	-	-	13	-	-	13	12.1	-
Total vertebrate	1	16	69	1	20	107		

Table 5-9 Summary of Faunal Remains Recovered from Late Stirling/Early Moorehead Features on the Merrell Tract (L. Kelly).

		Moorehead								Sand Prairie
MAMMALS		**1005**	**1049**	**1112**	**1177**	**Total**	**%NISP**	**(MNI) %MNI**		**1193**
Odocoileus virginianus (White-tailed deer)		-	16	-	-	16		(2)		-
medium-large mammal		-	74	-	1	75				1
large mammal		-	309	-	-	309				-
Sub-total Mammal		-	399	-	1	400	89.5	40.0		1
MAMMAL OR BIRD		1	-	-	-	1	0.2	-		-
BIRDS										
Anatinae (duck sub-family)										
medium		-	1	-	-	1		(1)		-
large bird		-	2	-	-	2		(1)		-
medium bird		-	-	-	-	-				-
indeterminate bird		-	2	-	-	2				-
Sub-total Bird		-	5	-	-	5	1.1	40.0		-
FISH										
Ictaluridae (catfish family)		-	-	-	-	-				-
indeterminate fish		-	1	-	-	1		(1)		-
Sub-total Fish		-	1	-	-	1	0.2	20.0		-
INDETERMINATE VERTEBRATE		3	32	5	-	40	8.9	-		-
Total vertebrate		4	437	5	1	447				1

Table 5-10 Summary of Faunal Remains Recovered from Moorehead and Sand Prairie Features on the Merrell Tract (L. Kelly).

	Burned Black	Calcined	Unburned	Weathered*	Gnawed*
Mammals	-	-	29	20	-
Birds	-	-	59	3	2
Fish	-	-	57	-	-
Indeterminate	-	-	19	-	-
Total	-	-	164	23	2
%NISP	0.0%	0.0%	100.0%	14.0%	
*weathered and gnawed NISP included in unburned column					

Table 5-11 Taphonomic Summary of Fauna Recovered from Feature1081 (L. Kelly).

	MT2-1081											
Bag number	**2**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Tot**	**Tot**	**%NISP**	**%MNI**
Level(s)	**4/6**	**4/7**	**7/9**	**8/9**	**9**	**9**	**9/10**	**10**	**NISP**	**MNI**		
MAMMALS												
Odocoileus virginianus (White-tailed deer)	-	7	-	-	-	-	-	-	7	1		
medium mammal	-	-	1	-	-	-	-	-	1	-		
medium-large mammal	-	-	-	-	2	-	-	-	2	-		
large mammal	-	7	-	-	-	-	-	-	7	-		
indeterminate mammal	5	-	-	7	-	-	-	-	12	-		
Sub-total Mammal	5	14	1	7	2	-	-	-	29	1	17.7%	5.0%
BIRDS												
Cygnus buccinator (trumpeter swan)	-	1	-	-	-	-	-	-	1	1		
Chen cf. *caerulescens* (possible snow goose)	-	1	-	-	-	-	-	-	1	1		
Anatinae (duck sub-family)	-	-	-	-	1	-	-	-	1	-		
small	2	-	1	-	3	1	-	-	7	1		
medium	1	-	-	-		-	-	1	2	-		
large	1	-	-	-		-	-	-	1	-		
cf. *Anas* sp. (medium puddle duck)	-	-	-	-	1		-	-	1	1		

cf. *Anas platyrhychos* (mallard)	-	1	-	-		-	-	-	1	1		
Anas cf. discors/carolinensis (teal)	-	-	-	-	3	-	4	1	8	1		
Aythya sp. (diving duck)	-	2	-	-	-	-	-	-	2	1		
cf. *Mergus merganser* (possible common merganser)	-	3	-	-	-	-	-	-	3	1		
Phalacrocorax auritus (double-crested cormorant)	-	3	-	-	-	-	-	-	3	1		
Fulica americana (coot)	1	-	-	-	-	-	-	-	1	1		
large bird		1		-	-	-	-	-	1	-		
medium-large bird		2	4	-	-	-	-	-	6	-		
medium bird	1	2	1	-	-	3	1	-	8	-		
small-medium bird	-	2	-	-	1	1		1	5	-		
small bird	-	-	-	-	-	1	-	-	1			
indeterminate bird	4	-	-	-	1	-	1	-	6	-		
Sub-total Bird	10	18	6	-	10	6	6	3	59	10	36.0%	50.0%
FISH												
Lepisosteus sp. (gar)	-	-	-	1	-	1	-	-	2	1		
Amia calva (bowfin)	-	-	-	-	-	1	-	-	1	1		
Catostomidae (sucker family)	1	-	-	-	-	-	-	-	1	1		
Ictaluridae (catfish family)	3	2	1	-	1	3	2	-	12	1		
Ameiurus sp. (bullhead)	1	-	-	1	4	2	1	-	9	1		
Ameiurus melas/nebulosus (black/brown bullhead)	-	-	-	-	-	1	-	1	2	2		
Centrarchidae (bass family)	-	-	-	-	1	-	-	-	1	-		
Micropterus sp. (Bass)	-	1	-	-	-	-	-	-	1	1		
Pomoxis sp. (crappie)	-	-	1	-	-	-	-	-	1	1		
indeterminate fish	-	2	4	-	18	2	1	-	26	-		
Sub-total Fish	5	5	6	2	24	10	4	1	57	9	34.7%	45.0%
INDETERMINATE VERTEBRATE	11	-	-	3	-	5	-	-	19	-	11.6%	-
Total vertebrate	31	37	13	12	36	21	10	4	164	20		

Table 5-12 Summary of Fauna recovered from Feature 1081 (L. Kelly).

	Swan	Goose	Ducks	Mallard	Teal	Diving Duck	Merganser	Coot	Cormorant	Bird	TOT NISP	%NISP
Skull											2	4.2
mandible	-	-	1	-	1	-	-	-	-	-		
Wing											20	41.7
ulna	1	-	3	-	-	-	-	-	-	-		
radius	-	-	1	-	-	-	-	-	-	1		
ulnare	-	-	1	-	-	-	-	-	-	-		
humerus	-	-	2	1	-	-	-	-	-	1		
carpometacarpus	-	-	-	-	1	2	1	-	-	1		
digit 1, phalanx 1	-	-	-	-	-	-	1	-	-	-		
digit 1, phalanx 2	-	-	-	-	2	-	1	-	-	-		
Axial											22	45.8
furcula	-	1	1	-	-	-	-	-	-	1		
scapula	-	-	-	-	1	-	-	-	1	-		
coracoid	-	-	1	-	2	-	-	-	1	2		
rib	-	-	-	-	-	-	-	-	-	4		
synsacrum	-	-	1	-	-	-	-	-	-	-		
sternum	-	-	1	-	1	-	-	-	-	-		
vertebra	-	-	-	-	-	-	-	-	-	4		
Leg											4	8.3
femur	-	-	-	-	-	-	-	1	-	2		
tarsometatarsus	-	-	-	-	-	-	-	-	1	-		
Fragments										11	11	-
Total NISP	1	1	12	1	8	2	3	1	3	27	59	

Table 5-13 Bird Elements from F1081 (L. Kelly).

	LEM/EM*	Early Mississippian	Mississippian	Unaffiliated			
	1160	**1037**	**1053**	**1086**	**1143**	**2000**	**TOT NISP**
MAMMALS							
Odocoileus virginianus (White-tailed deer)	-	-	-	-	26	-	26
medium-large	-	-	15	-	-	-	15
large	1	-	-	-	-	3	4
indeterminate	-	2	-	-	-	-	2
Total Mammal	1	2	15	-	26	3	47
INDETERMINATE VERTEBRATE	-	-	-	4	-	-	4
Total	1	2	15	4	26	3	51
*LEM/EM = Late Emergent Mississippian or Early Mississippian							

Table 5-14 Summary of Faunal Remains from Unaffiliated or Non-specific components on the Merrell Tract (L. Kelly).

5.4 Botanical analysis from the Merrell Tract – UNIBO

During the six years of archaeological investigations at the Merrell Tract led by the University of Bologna, the features located were systematically sampled in order to perform analysis on the eventual botanical remains recovered. The botanical remains collected during the excavation from 2012 to 2015 have been analysed by K. E. Parker (2013, 2014, 2016).

5.4.1 Method

The carbonized plant materials recovered from each flotation sample were separated, using a standard binocular microscope at low magnification (7-10x), into two size fractions with the aid of a No. 10 geological sieve (2 mm mesh). All carbonized materials (wood, nutshell, seeds, maize, etc.) in the large fraction (>2 mm) were then extracted, weighed and counted. The unidentifiable wood fragments found in the heavy fragments were grouped into four categories: ring porous hardwood (i.e. oak (*Quercus* sp.), hickory (*Carya* sp.), and ash (*Fraxinus* sp.), diffuse porous hardwood (willow/poplar (Salicaceae) and maple (*Acer* sp.), bark, or unidentifiable. The small fraction (<2 mm) materials were sorted at 10-30x by seeds, grass stems, maize, and other unusual items such as woven plant fibres; whereas possible an identification was proposed.

The identification of seed, nut, and wood were based on morphological features by comparison with modern specimens and pictorial guides (e.g. Martin and Barkley 1961; Hoadley 1990; http://www.plants.usda.gov/java/factSheet). All identifications were carried to the lowest possible taxon, usually to the genus level. Species identifications were attempted only when morphological comparisons ruled out other members of a genus (i.e. *Polygonum erectum*, *Strophostyles helvola*), or when only one member of a genus is native to the Illinois region (i.e. *Morus rubra*). Scientific nomenclature and general floristics information follows Mohlenbrock (1986).

5.4.2 Discussion

The analysis of the archaeobotanical remains retrieved from Merrell Tract's 2012-2015 excavation revealed a substantial similarity between the botanical assemblages from both Emergent Mississippian and Mississippian phase's features. The type, quantity, and context of plant remains identified reflect a range of cultivated and wild plant resources

valued as food, fuel, construction materials, and items with ceremonial uses (Parker 2016).

High taxonomic diversity characterized both the Emergent Mississippian and Moorehead phase assemblages as varied wild and cultivated/domesticated plants were represented by wood, nutshell, seeds, maize, and miscellaneous carbonized remains. Wild plant-based food resources probably included nut masts (hickory and/or acorn), seeds of peppergrass, wild bean, plum, sumac and two grass seeds resembling wild rice point to other available and potentially valuable dietary items; however, foods acquired through selective foraging would have been supplemental compared to maize and cultivated seed crops. Actually, the majority of seeds pertained to the Eastern Complex cultigens, Erect knotweed represented the primary grain from Emergent Mississippian contexts, with little barley last. Although the EC represented the dietary staples throughout the Emergent and Mississippian periods, the Moorehead phase high density of remains (i.e. F1049) is an indicator of the intensification of maize production, which became the economic support of a farming population.

Concerning the analysis of the wood, the primary taxa included various common upland and floodplain trees: hickory, willow/poplar, oak, and elm/hackberry, and in the Moorehead phase assemblage, the important ceremonial woods, red cedar and bald cypress (i.e. F1081, F1132). These last two woods and the recovery of seeds of narcotic or psychoactive tobacco, morning glory and black nightshade are interpreted in this analysis as sacred signs or active mediators that produce effects of a spiritual nature in Emergent (i.e. F1027, 1046 and 1080) and Mississippian belief systems (Parker 2014, 2016).

	2012 2013 season	2014 season	2015 season
Number of features with plant remains	6	11	1
Number of liters analyzed	51	183.5	48.5
Dominant wood type	red cedar, pecan	hickory, red cedar	hickory
Type	red cedar	red cedar, bald cypress	0
Nutshell (general amount)	minimal	medium hickory	medium hickory
Dominant Seed types Identified	chenopod, sumpweed	little barley, chenopod, maygrass	chenopod, maygrass
Specialty (medicinal/ ritual) seeds	tobacco	tobacco, morning glory	tobacco, morning glory, nightshade
Number of plant taxa identified in wood, nut, seeds	22 taxa	18 taxa	19 taxa
Other notable seed types (resources or habitat indicators)	4 wetland grasses		3 wetland grass/sedge
Maize (amount)	minimal	minimal	high
Composition (kernel or cob)	mostly cob	mostly cob	mostly cob
Other items of interest	insect larva		
	Equisetum (horsetail stems)		

Table 5-15 Summary of the data analysed from 2012 to 2015 excavation (K. E. Parker).

Feature Number	**1013**	**1013**	**1016**	**1017W**	**1017E**	**1017E**	**1022**	**TOT**
Sample Number	MT2-1013-11	MT2-1013	MT2-1016-1	MT2-1017-1	MT2-1017-4	MT2-1017-10	MT2-1022	
Sample Volume (l)	10.0	10.0	8.0	8.0	10.0	10.0	10.0	66.0
Total Wood (N)	35	1	0	32	39	42	15	164
Total Wood Wt. (g)	0.52	0.01		0.27	0.39	0.37	0.13	1.69
Breakdown by taxon (N)								
Acer sp. (maple)							1	1
Carya sp.(hickory)				4			5	4
C. illinoensis (pecan)					9	4		13
Fraxinus sp. (ash)						1		1
Juniperus virginiana (Eastern red cedar)							1	1
Morus rubra (mulberry)				3				3
Quercus sp. (oak)	14			2			3	16
Salicaceae (willow/poplar)	1							1
Ulmaceae (elm family)						5		5
Bark						2		2
Diffuse porous		1		5				6
Ring porous					6	6	1	13
Unidentifiable	5			6	5	23	2	41
Total Nutshell (N)	1	0	1	2	30	390	2	426
Total Nutshell Wt. (g)	0.03		0.01	0.03	0.20	4.10	0.01	4.38
Breakdown by taxon (N and Wt.)								
Carya sp.	1			2		390		393
(hickory)	0.03			0.03		4.10		4.16
C. illinoensis					30			30
(pecan)					0.20			0.20
Juglandaceae			1				2	3
(hickory/walnut family)			0.01				0.01	0.02
Total Seeds (N)	29	30	16	127	37	20	13	272

Breakdown by taxon (N)								
Chamaesyce maculata (nodding spurge)					1		1	2
Chenopodium berlandieri (chenopod)	2	5		4		2	3	16
Digitaria/ Leptoloma spp. (crabgrass)	4							4
Echinochloa muricata (barnyard grass)			12					12
Hordeum pusillum (little barley)		1						1
Nicotiana rustica (tobacco)		1						1
Phalaris caroliniana (maygrass)	9	9		83	11	2	5	119
Poaceae (grass family)				1			2	3
Feature Number	**1013**	**1013**	**1016**	**1017**	**1017**	**1017**	**1022**	**TOT**
Polygonum erectum (erect knotweed)	4	5	2	9	8	6	2	36
Portulaca oleracea (purslane)				7				7
Vitis sp. (grape)				1				1
Unidentifiable	10	9	2	22	17	10		70
Total Maize (Zea mays) (N)	6	11	0	10	23	58	3	111
Total Maize Weight (g)	0.07	0.03		0.07	0.11	0.36	0.01	0.65
kernel	2	6		9	14	45	2	78
cupule	4	5		1	7	6	1	24
glume					2	5		7
embryo						2		2
Miscellaneous Materials (N)	0	0	0	3	0	17	0	20
Insect larva				1				1
Monocot/ grass stem				2		17		19

Table 5-16 Emergent Mississippian features F1013, 1016, 1017 and F1022 botanical remains (K. E. Parker).

Feature Number	**1040, zone B**	**1080, zone A, level 4**	**1080, level 4-5, burnt area**	**1080, zone B, level 5-6**	**TOTAL**
Sample Volume (l)	7.0	6.5	10.0	10.0	33.50
Total Wood (N)	1	9	10	1	21
Total Wood Wt. (g)	0.04	0.06	0.05	0.01	0.16
Breakdown by taxon (N)					
Carya sp.(hickory)	1	2			3
Quercus sp. (oak)				1	1
Salicaceae (willow/poplar)		5	10		15
Ring porous		1			1
Unidentifiable		1			1
Total Nutshell (N)	0	30	459	0	489
Total Nutshell Wt. (g)		0.20	2.32		2.52
Breakdown by taxon (N and Wt.)					
Juglandaceae			5		5
(hickory/walnut family)			0.04		0.04
Quercus sp.		30	454		484
(acorn)		0.20	2.28		2.48
Total Seeds (N)	5	51	1550	21	1627
Breakdown by taxon (N)					
Amaranthus sp. (pigweed)			2		2
Ambrosia sp. (ragweed)				1	1
Chamaesyce maculata (spotted spurge)				3	3
Chenopodium berlandieri (chenopod)		4	58	4	66
Cyperus sp. (flatsedge)			1		1
Fabaceae (bean family)			2		2
Galium sp. (bedstraw)	1				1
Helianthus annuus (common sunflower)			3		3
H. tuberosus (Jerusalem artichoke)			9		9
Hordeum pusillum (little barley)	2		1		3

Ipomoea sp. (morning glory)		1	5		6
Iva annua (sumpweed)			1	1	2
Juncus sp. (rush)		1			1
Lepidium virginicum (peppergrass)			500	4	504
Nicotiana rustica (tobacco)			6		6
Panicum sp. (panic grass)		1	2	3	6
Phalaris caroliniana (maygrass)		9	133	1	143
Poaceae (grass family)			23	2	25
Polygonum erectum (erect knotweed)		12	761		773
Prunus sp. (plum)			1		1
Rumex sp. (dock)		1			1
Scirpus sp. (bulrush)			1		1
Sida spinosa (prickly mallow)		2	5		7
Strophostyles helvola (wild bean)			3		3
Unidentifiable	2	20	33	2	57
Total Maize (Zea mays) (N)	0	16	40	2	58
Total Maize Weight (g)		0.1	0.43	0.01	0.54
kernel		16	32	2	50
cupule			2		2
glume			1		1
embryo			5		5
Miscellaneous Materials (N)	3	15	382	0	400
Vegetative/fruit tissue	3				3
Grass/cane stem		15	305		320
Cooking/food residue			73		73
Insect larva			2		2
Seed clump			2		2

Table 5-17 Emergent Mississippian features F1040 and F1080 botanical remains (K. E. Parker).

Feature Number	**1027, E1/2**	**1027, zone C**	**1027**	**Totals**
Feature Type/ Function	EM circular refuse pit			
Sample Number	5	12	13	
Sample Volume (N of liters)	7.0	8.0	10.0	25.0
Total Wood (N)	2	3	0	5
Total Wood Wt. (g)	0.01	0.02		0.03
Diffuse porous		1		1
Ring porous		1		1
Unidentifiable	2	1		3
Total Seeds (N)	49	18	7	74
Breakdown by taxon (N)				
Chamaesyce maculata (spotted spurge)	2			2
Chenopodium berlandieri (chenopod)	8	8	4	20
Digitaria/ Leptoloma spp. (crabgrass)	1			1
Hordeum pusillum (little barley)	2			2
Ipomoea sp. (morning glory)	1	1		2
Nicotiana rustica (tobacco)	1			1
Panicum sp. (panic grass)			1	1
Phalaris caroliniana (maygrass)	4	1	2	7
P. erectum (erect knotweed)	5	1		6
Solanum ptycanthum (black nightshade)	6			6
Strophostyles helvola (wild bean)		2		2
Unidentifiable	19	5		24
Total Maize (Zea mays) (N)	8	9	0	17
Total Maize Weight (g)	0.04	0.06		0.10
kernel	1			1
cupule	6	8		14
glume	1	1		2

Table 5-18 Emergent Mississippian F1027 botanical remains (K. E. Parker).

Feature Number	**1030**	**1030**	**1030**	**1165**	**1165**	**TOT**
Feature Type/ Function	L. Stirling walled enclosure			pit		
Sample Number	21	22	23	1	14	
Sample Volume (N of liters)	13.0	10.0	10.0	12.0	10.00	55.0
Total Wood (N)	1	0	0	2	0	3
Total Wood Wt. (g)	0.04			0.01		0.05
Breakdown by taxon (N)						
Carya sp. (hickory)				1		1
Quercus sp. (oak)	1					1
Unidentifiable				1		1
Total Seeds (N)	10	4	5	10	3	32
Breakdown by taxon (N)						
Digitaria/ Leptoloma spp. (crabgrass)	1					1
Phalaris caroliniana (maygrass)		2	2	4	1	9
Poaceae (grass family)	2					2
Polygonum erectum (erect knotweed)	1			1		2
Unidentifiable	6	2	3	5	2	18
Total Maize (Zea mays) (N)	0	0	0	0	4	4
Total Maize Weight (g)					0.01	0.01
cupule					4	4
Miscellaneous Materials (N)	0	0	2	0	0	2
Cucurbitaceae (cucurbit) rind			1			1
Grass stem			1			1
Note: Samples #9 and 10 (Feature 1165), total 12.0 liters, had no identifiable plant remains.						

Table 5-19 Faunal remains from Late Stirling Features F1030 (Compound B/C) and F1165 (K. E. Parker).

Feature Number	**1001**	**1005**	**1009**	**1011**	**1019B**	**1019**	**1019**	**1020**	**TOT**
Sample Number	MT2-1001-7	MT2-1005	MT2-89-34	MT2-1011	MT2-1019	MT2-1019	MT2-1019	MT2-1020	
Sample Volume (l)	10.0	7.0	2.0	10.0	2.0	6.0	7.0	7.0	51.0
Total Wood (N)	0	3	0	7	42	65	3	100	220
Total Wood Wt. (g)		0.01		0.03	0.76	1.02	0.02	1.21	3.05
Breakdown by taxon (N)									
Acer sp. (maple)								1	1
Carya sp.(hickory)		1		2				5	8
C. illinoensis (pecan)					11				11
Fraxinus sp. (ash)						1			1
Gleditsia triacanthos (honey locust)								2	2
Juniperus virginiana (Eastern red cedar)				1	4	5	3		13
Quercus sp. (oak)						2			2
Salicaceae (willow/poplar)						7		2	9
Ulmaceae (elm family)								1	1
Bark						2		2	2
Diffuse porous						1	1		2
Ring porous					2			5	2
Unidentifiable		2		4	3	2			11
Total Nutshell (N)	0	0	0	11	1	3	0	12	27
Total Nutshell Wt. (g)				0.12	0.01	0.02		0.20	0.35
Breakdown by taxon (N and Wt.)									
Carya sp.								1	1
(hickory)								0.06	0.06
Corylus americana								2	2
(hazelnut)								0.04	0.04
Juglandaceae				11	1	3		9	24
(hickory/walnut family)				0.12	0.01	0.02		0.10	0.25

Total Seeds (N)	3	0	6	7	86	136	8	11	257
Breakdown by taxon (N)									
Amaranthus sp. (pigweed)				1	1	3		1	6
Ambrosia sp. (ragweed)						1			1
Andropogon sp. (bluestem/ beard grass)						1			1
Cassia sp., cf. *fasciculata* (partridge pea)						1			1
Chamaesyce maculata (nodding spurge)					3				3
Chenopodium berlandieri (chenopod)	1				1	56		1	59
Cyperaceae (sedge family)					5				5
Desmodium sp. (tick trefoil)						2			2
Digitaria/ Leptoloma spp. (crabgrass/ witchgrass)					13				13
Diospyros virginiana (persimmon)						1			1
Echinochloa muricata (barnyard grass)			1						1
Glyceria sp. (manna grass)					2				2
Iva annua (sumpweed)					21	12			33
Nicotiana rustica (tobacco)								1	1
Panicum sp. (panic grass)					12	27			39
Phalaris caroliniana (maygrass)	1		1	1	1	4			8
Poaceae (grass family)			1		8	9	5		23
Polygonum sp. (smartweed)						6			6
Polygonum erectum (erect knotweed)	1		2			3			6
Portulaca oleracea (purslane)						3	3		6
Sida spinosa (prickly sida)						1			1
Spartina sp., cf. *pectinata* (cordgrass)					13	6			19

Unidentifiable			1	5	6			8	20
Total Maize (Zea mays) (N)	0	0	0	9	0	11	0	4	24
Total Maize Weight (g)				0.02		0.03		0.01	0.06
kernel				4					4
cupule				5		10		3	18
glume						1		1	2
Miscellaneous Materials (N)	0	0	0	0	278	350	6	12	646
Equisetum sp. (horsetail) stem					275	350	6		631
Insect larva					1				1
Monocot/ grass stem								8	8
Silica particle					2		*		2
Vegetative/ fruit tissue								4	4
* present, not quantified									

Table 5-20 Faunal remains retrieved in Late Mississippian features: F1001, 1005, 1009, 1019, 1019B and 1020 (K. E. Parker).

Feature Number	**1049**	**1049, SW 1/4**	**1049 SW 1/4**	**1049 SW 1/4**	**1049 SW 1/4**	**1049**	**1049**	**1049**	**1049**	**TOT**
Sample Volume (l)	1.5	7.0	12.0	13.0	9.0	9.0	10.0	11.0	10.0	82.5
Total Wood (N)	12	72	110	88	76	66	94	100	136	754
Total Wood Wt. (g)	0.16	0.90	1.07	0.70	0.89	1.04	1.05	0.99	1.44	8.24
Breakdown by taxon (N)										
Carya sp.(hickory)	8	11	10	6	1	11	10	8	12	77
Quercus sp. (oak)					1		2	2		5
Q. sp., subgenus Erythrobalanus (red oak group)		1			1		1			3
Salicaceae (willow/poplar)		4			1		1	1		7
Ulmaceae (elm family)				5		1			5	11
Ulmus americana (American elm)					5			1		6
Bark			2	2	1	2	1	1	1	10
Diffuse porous	2	2	1	2	4	3	3	2	2	21
Ring porous			6	3	3	3	1	2		18
Unidentifiable	2		1	2	3		1	3		12
Total Nutshell (N)	0	78	61	98	34	2	34	5	67	379
Total Nutshell Wt. (g)		0.84	1.11	1.87	0.29	0.10	0.77	0.02	2.65	7.65
Breakdown by taxon (N and Wt.)										
Carya sp.		49	49	98		2	22		64	284
(hickory)		0.65	0.95	1.77		0.10	0.67		2.62	6.76
C. lllinoiensis		29	12		33		12		3	89
(pecan)		0.19	0.16		0.29		0.10		0.03	0.77
Juglandaceae								5		5
(hickory/walnut family)								0.02		0.02
Total Seeds (N)	1	21	29	48	25	48	42	41	32	287
Breakdown by taxon (N)										
Amaranthus sp. (pigweed)							2		3	5
Andropogon sp. (bluestem/beardgrass)		1								1
Asteraceae (aster family)		1								1
Carex sp. (sedge)				1			1			2

Chamaesyce maculata (spotted spurge)				1						1
Chenopodium berlandieri (chenopod)	1	1	4	10	9	10	9	10	8	62
Hordeum pusillum (little barley)				1	6	1	4			12
Ipomoea sp. (morning glory)								1		1
Juncus sp. (rush)		1	1	6		1				9
Lepidium virginicum (peppergrass)							1			1
Panicum sp. (panic grass)					1	2	3		1	7
Phalaris caroliniana (maygrass)		5	8	19		15	8	5	4	64
Poaceae (grass family)		1		1	2			1		5
Poaceae, cf. *Zizania aquatica* (wild rice)						2				2
Polygonum sp. (smartweed)									1	1
P. erectum (erect knotweed)					1	1	2	6	1	11
Pondeteriaceae (pondweed family)		1								1
Portulaca oleracea (purslane)						1				1
Solanum ptycanthum (black nightshade)						1		1		2
Strophostyles helvola (wild bean)			1					1		2
Unidentifiable		10	15	9	6	14	12	16	14	96
Total Maize (Zea mays) (N)	4	179	326	59	37	53	26	38	88	810
Total Maize Weight (g)	0.02	0.87	1.65	0.55	0.20	0.24	0.14	0.19	0.49	4.35
kernel		2	2	9	6	24	8	26	10	87
cupule	4	161	310	45	31	26	16	11	64	668
glume		16	13	5		3	2	1	14	54
embryo			1							1
Monocot stem (N)	0	2	0	0	3	3	1	1	1	11

Table 5-21 Moorehead phase midden area F1049's faunal remains (K. E. Parker).

Feature Number	1081, zone A, level 5	1081, zone A, level 5	1081, E1/2, level 8-9	1081, W1/2, level 8-9	1081, E1/2, level 8-9	1081, E1/2, level 8-9	1081, E1/2, level 9
Sample Volume (l)	9.0	9.0	8.0	8.0	10.0	9.0	5.0
Total Wood (N)	9	51	19	12	9	43	16
Total Wood Wt. (g)	0.09	0.50	0.23	0.12	0.04	0.47	0.12
Breakdown by taxon (N)							
Carya sp.(hickory)	1			1		1	1
C. illinoensis (pecan)						1	
Celtis sp.(hckberry/sugarberry)							2
Fraxinus sp. (ash)			1				
Gleditsia triacanthos (honey locust)					2		
Juniperus virginiana (Eastern red cedar)	4	19					
Morus rubra (mulberry)			4			1	
Quercus sp. (oak)							
Q.spp., subgenus Lepidobalanus (white oak group)							
Salicaceae (willow/poplar)						10	
Taxodium distichum (bald cypress)							1
Ulmaceae (elm family)		1	1	2			1
Bark				1		1	
Diffuse porous			4		1		6
Ring porous	1		2	4	1		
Unidentifiable	2		8	4	5	6	5
Total Nutshell (N)	2	2	44	78	9	33	7
Total Nutshell Wt. (g)	0.04	0.02	0.87	2.23	0.07	0.85	0.19
Breakdown by taxon (N and Wt.)							
Carya sp.	2		44	78		33	7
(hickory)	0.04		0.87	2.23		0.85	0.19
Corylus americana							

(hazelnut)							
Juglandaceae		2			9		
(hickory/walnut family)		0.02			0.07		
Quercus sp.							
(acorn)							
Total Seeds (N)	0	2	4	3	4	4	6
Breakdown by taxon (N)							
Amaranthus sp. (pigweed)		1		1			
Ambrosia sp. (ragweed)							
Chenopodium berlandieri (chenopod)			1				2
Echinochloa muricata (barnyard grass)							
Fabaceae (bean family)							
Festuca octoflora (six-weeks fescue)							
Helianthus annuus (common sunflower)							
Hordeum pusillum (little barley)			1				
Ipomoea sp. (morning glory)							
Lepidium virginicum (peppergrass)							
Nicotiana rustica (tobacco)							
Phalaris caroliniana (maygrass)			1		1	1	
Poaceae (grass family)			1				
Polygonum erectum (erect knotweed)					1	1	
Portulaca oleracea (purslane)							
Rumex sp. (dock)							
Strophostyles helvola (wild bean)							
Unidentifiable		1		2	2	2	4
Total Maize (Zea mays) (N)	0	2	2	5	1	2	0
Total Maize Weight (g)		0.01	0.01	0.01	0.01	0.01	
kernel				2			
cupule		2	2	2	1	1	
glume				1		1	
embryo							
Miscellaneous Materials (N)	0	1	10	0	0	4	0

Bud							
Vegetative/fruit tissue						2	
Grass/cane stem		1	10			2	

Table 5-22 Partial results of the faunal analysis of the Moorehead pit F1081.

Feature Number	**1081, W1/2, level 9**	**1081, E1/2, level 9**	**1081, W1/2, level 9**	**1081, E1/2, level 9**	**1081, zone D, level 9-10**
Feature Type	pit				
Sample Number	1081-2	1081-3	1081-6	1081-7	1081-
Sample Volume (l)	7.0	10.5	6.0	2.0	7.5
Total Wood (N)	10	11	25	12	4
Total Wood Wt. (g)	0.05	0.06	0.25	0.04	0.02
Breakdown by taxon (N)					
Carya sp.(hickory)	1	1			
C. illinoensis (pecan)					
Celtis sp.(hckberry/sugarberry)					
Fraxinus sp. (ash)					
Gleditsia triacanthos (honey locust)					
Juniperus virginiana (Eastern red cedar)					
Morus rubra (mulberry)	2		2		
Quercus sp. (oak)		1			
Q.spp., subgenus Lepidobalanus (white oak group)					
Salicaceae (willow/poplar)	1		4		
Taxodium distichum (bald cypress)			3		
Ulmaceae (elm family)				9	
Bark					
Diffuse porous	1	2		3	

Ring porous	1	4	11		2
Unidentifiable	4	3			2
Total Nutshell (N)	4	3	6	0	0
Total Nutshell Wt. (g)	0.03	0.04	0.14		
Breakdown by taxon (N and Wt.)					
Carya sp.		3	6		
(hickory)		0.04	0.14		
Corylus americana	1				
(hazelnut)	0.01				
Juglandaceae	3				
(hickory/walnut family)	0.02				
Quercus sp.					
(acorn)					
Total Seeds (N)	2	5	5	0	0
Breakdown by taxon (N)					
Amaranthus sp. (pigweed)					
Ambrosia sp. (ragweed)					
Chenopodium berlandieri (chenopod)		1			
Echinochloa muricata (barnyard grass)					
Fabaceae (bean family)					
Festuca octoflora (six-weeks fescue)					
Helianthus annuus (common sunflower)			1		
Hordeum pusillum (little barley)	1	1	1		
Ipomoea sp. (morning glory)					
Lepidium virginicum (peppergrass)					
Nicotiana rustica (tobacco)			1		

Phalaris caroliniana (maygrass)		1			
Poaceae (grass family)					
Polygonum erectum (erect knotweed)					
Portulaca oleracea (purslane)					
Rumex sp. (dock)					
Strophostyles helvola (wild bean)					
Unidentifiable	1	2	2		
Total Maize (Zea mays) (N)	0	0	2	0	1
Total Maize Weight (g)			0.01		0.01
kernel			1		1
cupule			1		
glume					
embryo					
Miscellaneous Materials (N)	2	3	0	0	1
Bud					
Vegetative/fruit tissue	2	3			
Grass/cane stem					1

Table 5-23 Partial results of the analysis of the botanical remains retrieved in F1081 (K. E. Parker).

Feature Number	**1033 level 4-5**	**1034 level 5-6**	**1037**	**1059 level 4-6**	**1062 level 5**	**1112, level 6-7**	**1112, level 6-7**	**1132, level 4-7**	**1146 level 4-5**
Feature Type	WT	WT	WT	WT	WT	pit		pit	WT
Sample Number	1033-1	1034-	1037-1	1059-	1062-7	1112-	1112-1	1132-	1146-
Sample Volume (l)	8.0	10.0	10.0	6.0	7.5	8.0	8.0	8.0	4.0
Total Wood (N)	2	4	0	4	1	235	78	109	3
Total Wood Wt. (g)	0.01	0.02		0.02	0.01	5.46	0.90	0.86	0.05
Breakdown by taxon (N)									
Carya sp.(hickory)				3		12	1	9	
C. illinoensis (pecan)						3	1		
Celtis sp.(hckberry/sugarberry)									
Fraxinus sp. (ash)		1							
Gleditsia triacanthos (honey locust)									
Juniperus virginiana (Eastern red cedar)		1						1	
Morus rubra (mulberry)									2
Quercus sp. (oak)	1				1	4	5		
Q. spp., subgenus *Lepidobalanus* (white oak group)						1			
Salicaceae (willow/poplar)							9	2	
Taxodium distichum (bald cypress)								1	
Ulmaceae (elm family)									
Bark							1	1	
Diffuse porous		1		1				1	
Ring porous							3	5	
Unidentifiable	1	1							1
Total Nutshell (N)	0	0	2	1	0	0	2	6	0
Total Nutshell Wt. (g)			0.01	0.01			0.03	0.04	
Breakdown by taxon (N and Wt.)									
Carya sp.							1	6	
(hickory)							0.02	0.04	
Corylus americana									

(hazelnut)									
Juglandaceae			2	1					
(hickory/walnut family)			0.01	0.01					
Quercus sp.							1		
(acorn)							0.01		
Total Seeds (N)	2	0	1	2	3	1	38	34	2
Breakdown by taxon (N)									
Amaranthus sp. (pigweed)							2		
Ambrosia sp. (ragweed)							3		
Chenopodium berlandieri (chenopod)				1			1	3	
Echinochloa muricata (barnyard grass)			1					1	
Fabaceae (bean family)								1	
Festuca octoflora (six-weeks fescue)							1		
Helianthus annuus (common sunflower)							1		
Hordeum pusillum (little barley)	1						8		
Ipomoea sp. (morning glory)							1		
Lepidium virginicum (peppergrass)									
Nicotiana rustica (tobacco)									
Phalaris caroliniana (maygrass)					1	1	4	1	
Poaceae (grass family)							6	1	
Polygonum erectum (erect knotweed)					1				
Portulaca oleracea (purslane)							1		
Rumex sp. (dock)								1	
Strophostyles helvola (wild bean)	1								
Unidentifiable				1	1		10	26	2
Total Maize (Zea mays) (N)	2	0	1	0	2	5	16	26	1
Total Maize Weight (g)	0.01		0.01		0.01	0.01	0.05	0.11	0.01
kernel	1		1		1	3	4	7	
cupule	1				1	1	10	14	1
glume						1	2	4	
embryo								1	
Miscellaneous Materials (N)	1	0	0	0	0	2	9	8	0
Bud	1								

Vegetative/fruit tissue							4		
Grass/cane stem						2	5	8	

Table 5-24 Faunal remains retrieved from F1033, 1034, 1037, 1059, 1062, 1112, 1132 and 1146 (K. E. Parker).

Feature Number	**1169**	**1169**	**1170**	**TOTAL**
Sample Number	25	26	15	
Sample Volume (l)	12.0	10.0	7.0	125.50
Total Wood (N)	305	860	1	1.516
Total Wood Wt. (g)	2.38	11.43	0.02	18.04
Breakdown by taxon (N)				
Carya sp.(hickory)	2	4	1	55
Fraxinus sp. (ash)				0
Gleditsia triacanthos (honey locust)				0
Quercus sp. (oak)	16	13		34
Q. sp., subgenus Erythrobalanus (red oak group)		2		
Q. sp., subgenus *Lepidobalanus* (white oak group)	2	1		3
Salicaceae (willow/poplar)				6
Ulmaceae (elm family)				1
Ulmus americana (American elm)				
Bark				4
Diffuse porous				13
Ring porous				7
Unidentifiable				9
Total Nutshell (N)	0	0	0	119
Total Nutshell Wt. (g)				1.73
Breakdown by taxon (N and Wt.)				
Carya sp.				73
(hickory)				1.42
C. lllinoiensis				41
(pecan)				0.29
Juglandaceae				5
(hickory/walnut family)				0.02

Total Seeds (N)	2	5	1	254
Breakdown by taxon (N)				
Amaranthus sp. (pigweed)				2
Andropogon sp. (bluestem/beardgrass)				1
Asteraceae (aster family)				1
Carex sp. (sedge)				1
Chamaesyce maculata (spotted spurge)				2
Chenopodium berlandieri (chenopod)				51
Digitaria/ Leptoloma spp. (crabgrass)				2
Hordeum pusillum (little barley)				7
Ipomoea sp. (morning glory)				3
Juncus sp. (rush)				2
Lepidium virginicum (peppergrass)				1
Nicotiana rustica (tobacco)				1
Panicum sp. (panic grass)				6
Phalaris caroliniana (maygrass)		4		48
Poaceae (grass family)				4
Polygonum sp. (smartweed)				0
P. erectum (erect knotweed)	1	1		18
Pondeteriaceae (pondweed family)				1
Portulaca oleracea (purslane)				1
Solanum ptycanthum (black nightshade)				8
Strophostyles helvola (wild bean)				3
Zizania sp. (wild rice)				2
Unidentifiable	1		1	89
Total Maize (Zea mays) (N)	0	0	1	318
Total Maize Weight (g)			0.01	1.57
kernel				61
cupule			1	233
glume				24
embryo				0
Miscellaneous Materials (N)	0	0	1	10
Bud				1

Grass stem			1	9
Note: Samples #9 and 10 (Feature 1165), total12.0 liters, had no identifiable plant remains.				

Table 5-25 Faunal remains from F1169 and 1170.

Feature Number	**1088**	**1156**	**1158**	**TOT**
Sample Number	1088-1	1156-	1158-	
Sample Volume (liters)	8.0	8.0	8.0	24.0
Total Wood (N)	23	3	3	29
Total Wood Wt. (g)	0.15	0.01	0.11	0.27
Breakdown by taxon (N)				
Carya sp. (hickory)	3	1	1	5
Quercus sp. (oak)	3			3
Bark	1			
Ring porous	3		1	4
Unidentifiable	10	2	1	13
Total Nutshell (N)	2	0	0	2
Total Nutshell Wt. (g)	0.01			0.01
Quercus sp.	2			2
(acorn)	0.01			0.01
Seeds (N)	10	1	4	15
Breakdown by taxon (N)				
Chenopodium berlandieri (chenopod)	1			1
Gaylussacia sp. (huckleberry)			1	1
Hordeum pusillum (little barley)	3		2	5
Strophostyles helvola (wild bean)		1		1
Unidentifiable	6		1	7
Total Maize (Zea mays) (N)	4	1	2	7
Total Maize Weight (g)	0.01	0.02	0.01	0.04
kernel	2			2

cupule	2		2	4
cob		1		1
Miscellaneous Materials (N)	2	0	0	2
Vegetative/fruit tissue	1			1
Grass/cane stem	1			1

Table 5-26 Faunal remains from F1088, 1156 and 1158 (K. E. Parker).

Chapter 6 Interpretation

In this chapter, a general overview about the settlement dynamics that involved the West Plaza area during each occupational phase will be provided.

6.1 The West Plaza area during the Emergent Mississippian occupation

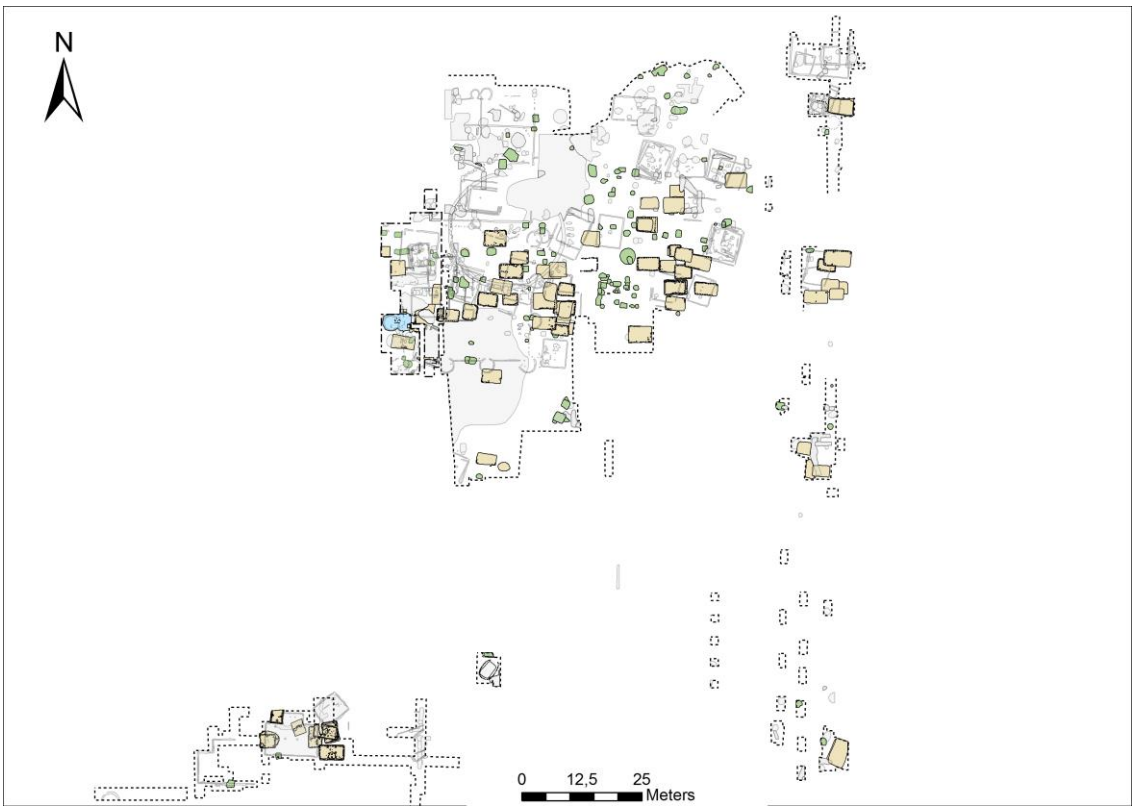


Figure 6.1 Map of the Emergent Mississippian occupation of the area. Houses in tan, pit features in green, F1160 in blue (I. Valese).

The Merrell Tract's excavation revealed the presence of a dense and dynamic Emergent Mississippian occupation. Six years of investigations unveiled the presence of at least eight Emergent Mississippian house basins and at least fourteen pit features. The expression "at least" is being used in this case because, for time constraints, not all the Emergent Mississippian features located in the field have been completely excavated. Most of the features actually were uncovered in test pits, thus the majority of them have only been partially exposed. The high density of the features resulted in a complex palimpsest of fills, whose identification as multiple features superimposed on each other has often been possible thanks to the realization of test units cutting the fills and thus exposing stratigraphic profiles. Given the presence of hundreds of Emergent Mississippian houses recorded in the area by previous investigations (in the 15B and

Merrell-Beloit College Tracts), the presence of numerous features pertaining to this phase was likely; however, the number of structures located, or partially located, far exceeded the expectations. Unfortunately, the repeated creation of features intruding into older ones led to high levels of mixture among the materials collected; therefore, an accurate sub-phase distinction of the structures and pits has not been possible. The constant superimposition of the buildings, which were rebuilt on the same spot, could imply, as suggested by Pauketat (2013), a social meaning related with the continuity of each family's position, both in social and spatial terms, expressed by the location of their houses around a specific courtyard. Furthermore, the average size of the Emergent Mississippian dwellings in the West Plaza area is larger than the one of dwellings found both in the surrounding sites, such as BBB Motor (Emerson and Jackson 1984) and Range (Kelly, Ozuk et al. 2007), and inside Cahokia itself, as in the 15A Tract area (Pauketat 1998; Valeri 2012). The dimensions of the Emergent Mississippian houses of the West Plaza area could be related, then, to the higher status or larger families occupying a central area of the settlement (Pauketat 2013: 60). The Emergent Mississippian houses, as others found in the American Bottom (Kelly 1990, Smith 1990), were built as semi-subterranean rectangular structures, cut into the sterile clayish or silty soil, with single-set perimetral posts.

As indicated by Pauketat (2013), the construction technique employed for the Emergent Mississippian dwelling of the West Plaza Area was probably the bent-pole technology, which implied the use of poles set into the ground, then bent, and tied as to form an arbor roof (Alt and Pauketat 2011). This construction technique sometimes implied the presence of interior roof support posts located along the long sides of the dwellings; this type of inner structures has been defined during the excavations of the Merrell Tract in 1970 (Kelly 1982: 85) in F302 and F306. The two houses presented the same rigid interior framework for the wigwam superstructure attested at Hallyday Site (Alt and Pauketat 2011 figure 2: 113). Moreover, even though entrances are recoded for both the Merrell and 15B Tracts on the long axis of the dwellings, none of them have been located in the University of Bologna's excavation.

The area covered by the two buildings fully exposed in our excavations (10.66 m^2 for F1013 and 12.35 m^2 for F1046) fall within the average calculated for the 15B Tract's basins. The same applies to the postholes diameters and depths, which as for the Tract

15B had an average diameter of 25 cm and a depth of 40 cm ca.; and to the basins' depth, which appeared to be comprised between 30 and 40 cm (Valese 2012; Pauketat 2013).

The house basins located on the Merrell Tract-UNIBO fit well the settlement dynamics already noted in the 15B and Merrell-Beloit Tracts excavations, the houses being arranged in small clusters grouped around small patios or *plazuelas* occupied by pit features serving common purposes. This use of space was observed in peripheral sites among which Range constitutes a key-example (Kelly 1990). What is missing in the archaeological record of the West Plaza Area is the presence of communal square structures, such as those found at Range, distinguished by a different construction technique (single postholes with no basin) and possibly used as common storage facilities such as granaries (Kelly 1990; Mehrer 1995); it is likely, as suggested by Pauketat (2013), that these kinds of structures may have not been found because located outside the excavation areas or because capped by later mounds.

A central main courtyard has been identified for the Emergent Mississippian community of the West Plaza area, and it was distinguished by the presence of the typical four pits and central post arrangement (F199 area, fig. 6.2). It is possible that the other plazuelas were used as secondary common areas (Pauketat 2013) possibly destined to different kind of activities related to single household, which in this case is used here in the sense of Winter's (1976: 25-31). By "household cluster" is intended a complex of buildings and outdoor facilities that was the domestic context of a "family" or a minimal social unit or corporate residence group (Hayden and Cannon 1982).

The structures located in the Merrell Tract-UNIBO were possibly part of at least another household cluster already located in the 15B Tract, moreover, a possible new courtyard might have been located at the southern limits of the excavation area. The types of pit features and their content differ between the two portions of courtyard excavated in the Merrell Tract-UNIBO. The northern open space, in fact, was occupied by a least seven pits (four rectangular in shape - F1016, F1017E, F1017W, F1040 - and three sub-circular and circular pits – F1058, F1061, F1080) which yielded a very high amount of pottery, lithic materials and botanical and faunal remains, especially in the case of F1017E, F1017W and F1080. Evidences of plant processing and cooking activities were attested by the recovering of seeds from species composing the so-called Eastern Complex (*Polygonum erectum*, *Phalaris carolinana* and *Lepidium virginicum)* and white-tailed deer (*Odocoileus*

virginianus) remains. While the presence of tobacco (*Nicotiana rustica)* and morning glory seeds (*Ipomoea* sp.) may reflect the performance of ritual activities (see chapter 5.4). The southern courtyard, instead, was distinguished by the presence of a small circular pit (F1026), the only one yielding refuse, a circular deep storage pit (F1028/1070) and a small post pit (F1171/1197) located less than a meter south. The scarcity of refuse recovered from F1028/F1070 led to interpret the pit as a storage facility and given its dimensions (1.93m of diameter and 92 cm of depth) it is possible that the feature could have served various of the structures clustering around the plazuela. Hence, the two courtyards could have had different purposes; the northern one could have been devoted to the performance of ritual/communal activities such as feasting or gathering, while the southern courtyard could have been destined to be a common storage area. The spatial arrangement of the pit houses located in the Merrell Tract-UNIBO confirms the predominant East-West orientation already observed in the Merrell-Beloit College and 15B Tracts (Kelly 1991a; Valese 2012; Pauketat 2013). Such an organization, along with that of the buildings found in Tract 15A (Pauketat 1998) that seem to share a similar orientation, could imply the establishment of a community grid even before the "Cahokia grid" (Fowler 1997), established at the beginning of the Lohmann phase, as also suggested by Kelly and Pauketat. In this perspective, it would be interesting to obtain more archaeological data concerning the Emergent Mississippian occupation and orientation of the structures in the East/Ramey Plaza area. An eventual East-West orientation in that part of the settlement could foster the interpretation of the Emergent Mississippian occupation of the site as a huge, single village, organized in clusters grouped around courtyards, maybe centred around an early version of Monks Mound[17] or some kind of pre-Monks Mound structure. Hopefully, future investigations will shed light on this issue. Similar trends toward an intentional settlement planning have been attested at the Range Site (Kelly 1990), where the layout of the site, which comprised the presence of central plazas and small courtyards provided with multiple communal storage facilities resulted to be very similar to the one attested in the Emergent Mississippian occupation of the West Plaza area. The Range site community seems to be the result of the agglomeration

[17] An early chronology for Monks Mound has been proposed by many scholars amongst which Dalan (2003), evidences of pre-mound occupation have been recorded by geoarchaeological investigations by McGimsey and Wiant (1984) and by Reed 2009

of smaller groups, although a degree of centralization is shown through the settlement plan and as suggested by Mehrer (1995: 140) it could indicate the emergence of the authority of several smaller groups or a single family.

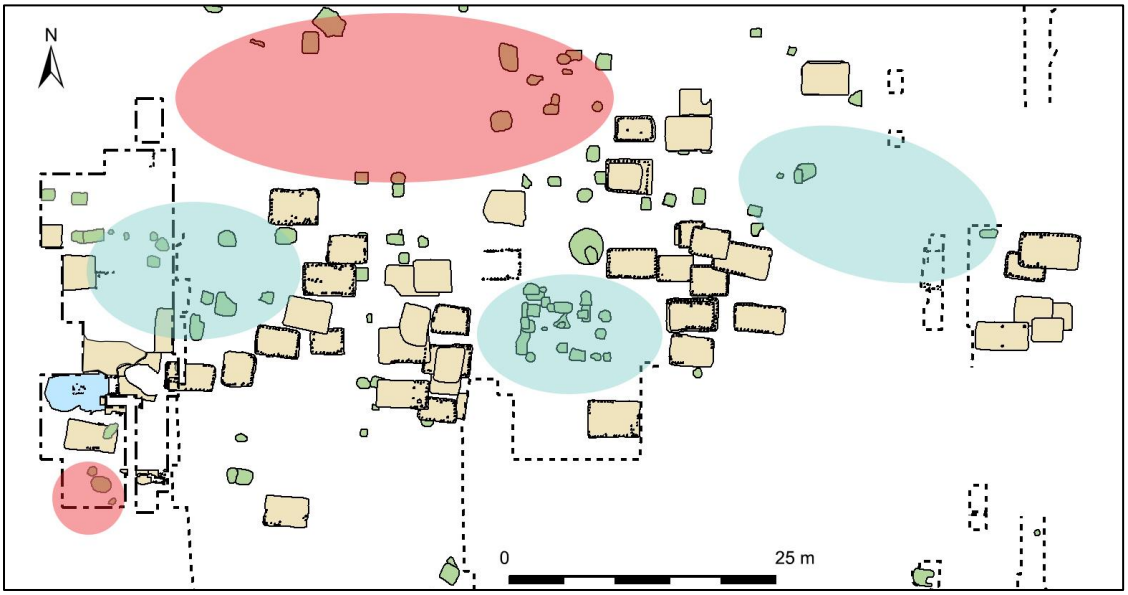


Figure 6.2 Detail map of the Emergent Mississippian Courtyards located in the West Plaza Area. Actual courtyards in green, hypothetical in red.

A peculiar feature, F1160, was located in the Merrell Tract-UNIBO excavation area and has been dated to the Late Emergent Mississippian phase. This feature has been recognized as similar to a clayish soil recovered in the 15B Tract (Wittry and Vogel 1975; Pauketat 2013; Domenici and Valese 2016), named, at the time, “Blue Fill”. This clayish layer was identified in 15B Tract excavations after it was located in a sequence of test pits; and since it was superimposed on the sterile clay soil it was interpreted by Wittry as a natural deposit.

In the Merrell Tract UNIBO excavations, F1160 was found immediately after the removal of the 30 cm of plowzone and, in order to understand whether it was an anthropic feature or not, a sequence of probes and four test pits were realized (see F1160’s description in chapter 4.1), showing the presence of fill from an Emergent Mississippian house basins below F1160, thus suggesting a possible anthropic origin of the clayish soil.

Later features were also superimposed on F1160. In Tract 15B the “Blue Fill” was superimposed by the house basin of the Emergent Mississippian H113. Even though the relationship between F1160 and H113 is not clear, as showed by the profile drawn in the “Test Trenches” notes kept at the Research and Collection Centre of Springfield (fig. 6.3), it suggests the deposition of the clayish layer during the Emergent Mississippian times.

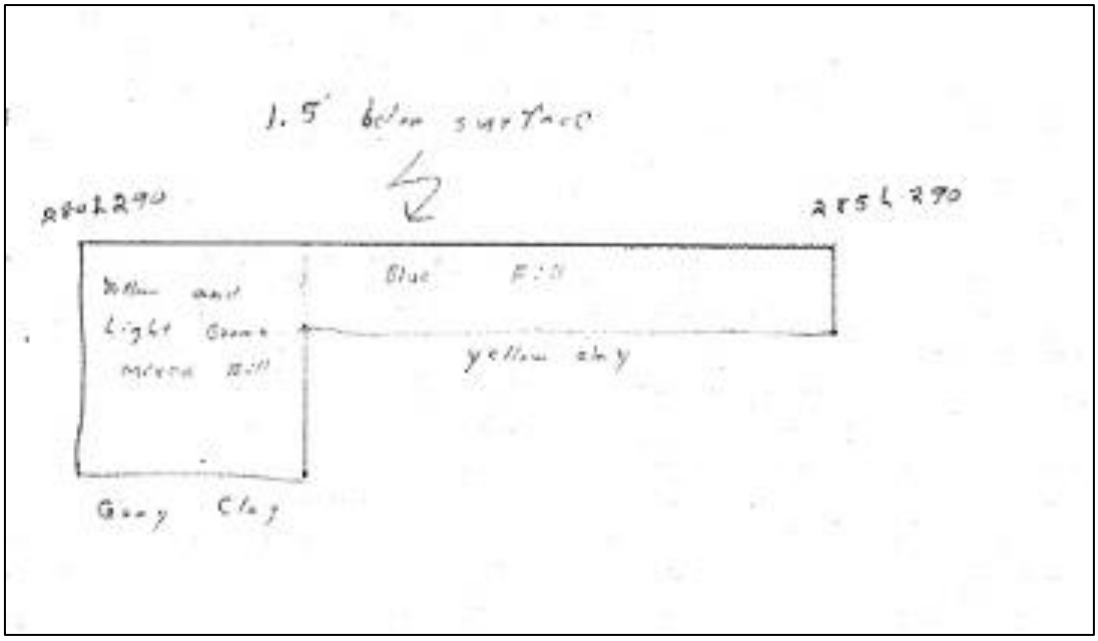


Figure 6.3 Original profile of "Blue Fill" from 1960's fieldnotes. (Courtesy of Research and Collection Centre, Springfield).

No similar features have been documented for the Emergent Mississippian settlements of the American Bottom; hence, this could be an archaeological "*unicum*" for this chronological phase as also suggested by Pauketat (2013). The purpose of F1160/"Blue Fill" have been interpreted, in the light of the Merrell Tract findings, as that to level the area made uneven by the multiple construction episodes. Even if the clayish layer found in the University of Bologna excavations and the one located in the 1960 have been considered as the result of the same archaeological event, they do not seem to be contiguous but, rather, they appear as discontinuous patches. The profile revealed by probes and test pits suggest that they were intentionally laid to fill low-lying areas of the uneven landscape in order to obtain a more regular and horizontal surface. Whether the limits of the feature(s) were regular or not is not clear due to the superimposition of later features and the modern plowing; it might have had a squared northeastern edge, but such a shape could well have been determined by the shape of the underlying basin of F1189. Similar intents of landscape modification, even if in a larger scale, had been observed at Cahokia later in time, when the Grand Plaza was created during the Lohmann phase.[18] Geophysical analysis (Hardgrave 2011) have shown that the area was modified

[18] Dalan (et al. 2003) suggests and early realization of the Plaza in the Late Emergent Mississippian – Early Lohmann phase.

by infilling the swales and cutting the ridges to create a levelled surface, a similar endeavour could be as well seen in the layers of fill located below Mound 76 conceivably laid down to create an even surface on which erect the mound (Kelly and Brown 2001). It is also possible that in the East Plaza area, similar modifications of the landscape were taking places in the Emergent Mississippian times: the excavation of an anomaly called Feature X (Kelly and Williams 2017 unpublished report - and personal communication), revealed by a magnetic survey led by M. Hardgrave in 2003, showed the presence of levelling activities that have been chronologically placed in the Emergent Mississippian times. No traces of clayish soil were found here in the East Plaza area, but apparently, on both sides of Monks Mound the Emergent Mississippian communities started modifying the natural landscape.

The results of the re-analysis of the excavations led by Fowler in 1967 at Mound 72 seem to suggest an earlier chronology of the emergence of Cahokia. The fieldworks conducted at this ridgetop mound, located a few meters south of the Grand Plaza, revealed the presence of a set of primary and secondary burials, along with groups of sacrificed individuals, associated with offertory items such as discoidals, arrow bundles, mica sheets, copper tubes and hundreds of shell beads (Fowler et al. 1999). So far, the Mound 72 assemblage had been interpreted as a *tableau* reproducing cosmological and mythological templates linked to the widely-represented hero of the Southeastern Ceremonial Complex, Red Horn-Morning Star (Brown 2003, 2007). This interpretation primarily relied on the fact that the individuals interred as forming the “Beaded burial” were identified as two males deposited upon a falconoid-shaped mantle made of shell beads. The recent reanalysis of the human remains of the Mound 72 burials revealed a different picture both concerning the chronology of the interments, the gender and number of individuals (Emerson et al. 2016). The so-called “Beaded Burial” would have not been associated to a falconoid-shaped mantle, since the beads would have been placed as different deposits, no more suggesting the association with the Red Horn myth; furthermore, the two individuals would have been a pair of a male and a female; paring that the new analysis showed to be constant among the interments of Mound 72 in which the number of individuals buried is higher than previously suggested (Emerson et al. 2016). Most important discovery, radiocarbon dating, realized in concurrence with these new researches, pre-dates the first activities at mound 72 prior to AD 1000 and

accordingly, the chronology of the “Beaded Burial” to a date preceding AD 1050 (Emerson et al. 2016). These new information, could help better understand the rise of Cahokia as a local and a less sudden phenomenon, even suggested by an earlier chronology for the erection of Monks Mound as well in AD 900 (Benchley 1974; Reed, Bennet and Porter 1968; Skele 1987).

In the light of what was stated before, it is conceivable to suggest that, by the Late Emergent Mississippian times, the processes that resulted in the “creation” of Cahokia were already taking place. Not only these processes were embodied in the efforts of landscape modifications attested in different areas of the site and that saw their major expression during the Lohmann phase, but the Emergent Mississippian period was also interested by a significant trend toward complex social organization reflected in the, conceivably intentional, design of the settlement (i.e. central plazuelas surrounded by structures significantly located respect the common areas). As recently suggested by Brown and Kelly (2015), one of the bases of this phenomenon was the increased exploitation of maize and the resulting labour surplus that led slowly to social inequality and hierarchization; a process that conceivably led to the reorganization of the settlement and to the “creation” of Cahokia.

6.2 The Lohmann phase occupation

Figure 6.4 Map of the Lohmann phase occupation of the area. Highlighted the Lohmann phase's features (I. Valese).

The transition from the Emergent Mississippian phase to the Mississippian phases was marked by a change concerning the use of space. By the end of the Emergent Mississippian and the beginning of the Lohmann phase, the entire settlement was subjected to a radical change, which was at the base of the constitution of Cahokia in the Mississippian times. The "Cahokia grid" was established (Fowler 1997), the former residential areas were moved outside the core of the "Cahokia precinct" and the cruciform layout of the four plazas was set around a focal point, Monks Mound (Kelly 1996; Chappell 2002; Dalan et al. 2003). It was during this reorganization of the settlement that the area located to the West of Monks Mound was finally designated to be a Plaza. The area was cleared of all domiciles that were moved elsewhere outside the public space, as suggested by the results obtained during the excavation led south of Collinsville Road at the former location of the Falcon Drive-in (Gums and Holley 1991). In a 10x10m excavation area, in fact, a good amount of Lohmann and Stirling diagnostic material, typical of domestic activities, was found along with evidences of wall-trenches, pits and house basins. Concurrently, other residential areas were established outside the

central precinct, as shown by the excavations led at the Interpretative Centre Tract II (Collins 1990) and at the 15A Tract (Pauketat 1998), in which the Lohmann structures, organized in clusters gathered around courtyards, were oriented according to the "Cahokia grid".

The salvage excavation led in the 15B Tract in 1960 (Wittry and Vogel 1962), along with the 1970's excavation in the Merrell Tract (Salzer 1972; Kelly 1996) revealed the presence of monumental architecture belonging to the Lohmann phase, hence coeval with the establishment of the public space. In line with mounds 76 and 77, two circular structures were built (F388 and F238/389 unearthed in the 15B Tract), while the centre of the Plaza was marked by huge posts (F305, F312, F316, F343 and 345 located in the Merrell Tract-Beloit College's excavation). The discovery of these features within the space of a plaza changed the common view about Mississippian public spaces; until Wittry's fieldwork in Tract 15B, in fact, plazas were perceived as empty spaces, a fact seemingly suggested by the few materials found during surface collection. This would have been the case also for the Cahokia's West Plaza if the excavations would not have taken place; as a matter of fact, the archaeological record from the 15B, Merrell-Beloit College and Merrell-UNIBO Tracts, both from survey and excavation, pertaining to the phases in which the area was used as a public space was recovered in very limited quantities as the activities usually performed in the public areas left little artifactual debris (Rogers et al. 1982). Therefore, the absence of scattered material would not automatically exclude the presence of buried structures, as proven by both the archaeological and ethnographic evidence, since the presence of posts, small mounds and low embankments within the limits of public spaces is attested (Rogers et al. 1982; Davis 2014). Moreover, the vast employment of geophysical survey has been useful in detecting the presence of constructions and features in other Mississippian plazas; recently at Etowah several squared and circular anomalies were revealed by the magnetic survey[19]; unfortunately, no information can be added about those structures since investigations are still ongoing (King personal communication, http://fatarchaeologist.blogspot.it/).

At any rate, the circular structures located in Cahokia's West Plaza represent an oddity since similar circular buildings in Mississippian sites were mostly located on mounds'

[19] The test pits realized so far, in order to clarify the nature of the anomalies shown in the magnetic survey did not yield any visible trace of archaeological feature (King personal communication).

summits (see below). In its analysis of the 15B Tract, Pauketat (2013) suggested the presence of a small mound on which the two circular buildings would have been built; the presence of this feature was hypothesized on a picture of the rotunda F388. In this picture, the southern wall-trench of the circular building appeared to be superimposed on a mottled basal sediment that the author interpreted as the residue of a mound. Moreover, according to the author, the two circular buildings were not completely defined because of the presence of this unrecognized basket-loaded mound, which was never entirely excavated in 1960 and hence mapped as general "midden". The presence of a potential mound in the northern part of the West Plaza was anticipated for the first time by Kelly (1997: fig. 8.4), who pointed out a topographic high point (127.5amsl) still slightly visible in the Merrell Tract; however, according to Kelly, the mound would have been built only after the dismantlement of the two rotundas.

The excavations led in the Merrell Tract by the University of Bologna yielded no evidence of mound fill in the excavation area; besides, it appears that the basal midden located in 1960, which made the features hard to detect, could be associated to the same loamy fill located in the UNIBO excavation. The loamy fill identified in the Merrell Tract, which caused the same impediment in the delineation of the features as for the one unearthed in 1960, was the result of the high number of earlier Emergent Mississippian house basins and pits superimposed on each other; hence, the possibility of the two rotundas as mound-summit-buildings appears, on these bases, unlikely.

In any case, at the beginning of the Lohmann phase a circular wall-trenched building, F388, was erected to be later replaced, in the late Lohmann phase, by a larger wall-trenched rotunda having a 25 m of diameter (F238/289). This structure showed at least one episode of rebuilding and was probably roofed, as three postholes were located at the centre of the structure and a series of posts located outside its perimeter have been interpreted as buttress for the support of the roof itself (Kelly 1996; Alt and Pauketat 2010; Valese 2012; Pauketat 2013; Domenici and Valese 2016).

As mentioned before, circular large structures like those found in the West Plaza of Cahokia are usually located on top of the mounds; several examples of this kind of buildings are attested in the Mississippian world even if only few of them have been archaeologically investigated. A valid example is constituted by the circular structure located by magnetic survey and later tested at Kincaid on the summit of Mound 8. A

circular wall-trenched building with a diameter of 22 meters was characterized by the presence of a central vertical post that suggested the presence of a roof, a daubed interior and a doorway toward east; the rotunda was, in this case, burned and rebuilt multiple times. No information about the activities performed inside the structure have been collected since not enough surface was exposed during the fieldwork, even though, the abundance of fluorite found in the fill of the wall-trench suggests that the erection of this structure involved some form of ritual to purify or consecrate the building (Welch et al. 2007).

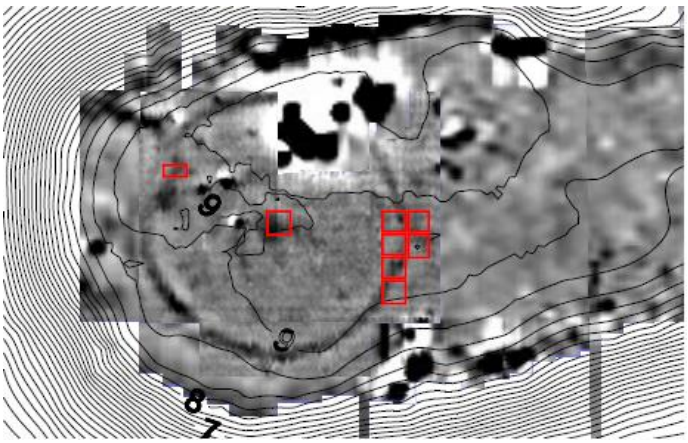


Figure 6.5 Circular structure on Mound 8 at Kinkaid (adapted from Welch et al. 2007).

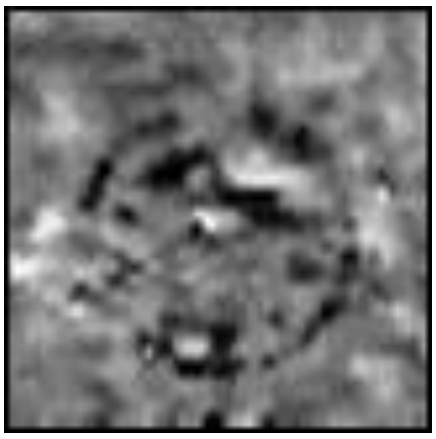


Figure 6.6 One of the circular anomaly found at Etowah (adapted from King 2013).

Circular buildings not erected on mounds summit have been discovered in Cahokia by H. Smith below Mound 55 (Smith 1969) and by W. K. Moorehead below Mound 33 (Kelly 2000); in both cases the circular buildings occupied the area before the erection of mounds. Even if those structures were much smaller than the West Plaza's rotundas and usually paired with squared buildings, it is possible that further excavations in open areas will lead to the location of more of these "special buildings" in other parts of the site. Pauketat (2013) has compared F238/389's building technique to the earth lodges of the historic Plain Indians; the archaeological evidence at Ocmulgee suggests that similar structures were erected in 1015 AD, hence almost at the same time of the Cahokia's rotundas. The structures located at Ocmulgee-Macon Plateau were found in different areas of the site, in proximity of mounds; their preservation was stunning, especially for the structure located southwest of Mound D. These buildings have been interpreted as earth lodges for their resemblance to the historic structures and, even if they were

smaller than F238/389, the building technique involved the presence of external buttresses, central posts for roof support and wall trenches elements that can be easily compared to the West Plaza's rotunda. The excavation of the bigger structure at Ocmulgee (Lodge D1), which was destroyed possibly by an intentional fire, revealed the presence of a prepared clay floor with a central hearth, seats located along the wall and a bird-shaped platform. The excavation yielded a good amount of data concerning the construction material and technique and revealed that the floor of the structure was kept clean of midden since the only material evidence was constituted by a single pot crashed *in situ* by the fallen roof (A. Kelly 1938; Hally 2009).

Figure 6.7 Mound D earth lodge at Ocmulgee (Plate 37, A. Kelly 2010).

Nothing of the floors of the Lohmann rotundas was preserved in 15B Tract, later levelling and/or borrowing activities or historical plowing could have been responsible of their destruction; even though, the similarity with the contemporary Ocmulgee and the later historical earth lodges could suggest a similar function. Even if Cahokia rotundas cannot be firmly ascribed to the earth lodge building typology, the presence of comparable

buildings used for special purposes in other contemporary Mississippian centres could suggest an analogous function, which would be in this case the performance of religious and/or political gatherings; activities that involved the ritual cleaning of the place (Bartram 1793). In the historical accounts, council houses were described as circular buildings, located at the margins of the public areas or on top of small mounds, whose floor was kept clean and free of debris. As reported by Rodning (2009), among the Cherokee, in the 18th century many kinds of activities took place in these public buildings, ranging from sacred community rituals, such as the Busk Ceremony, to routine social gatherings, such as councils and negotiations.

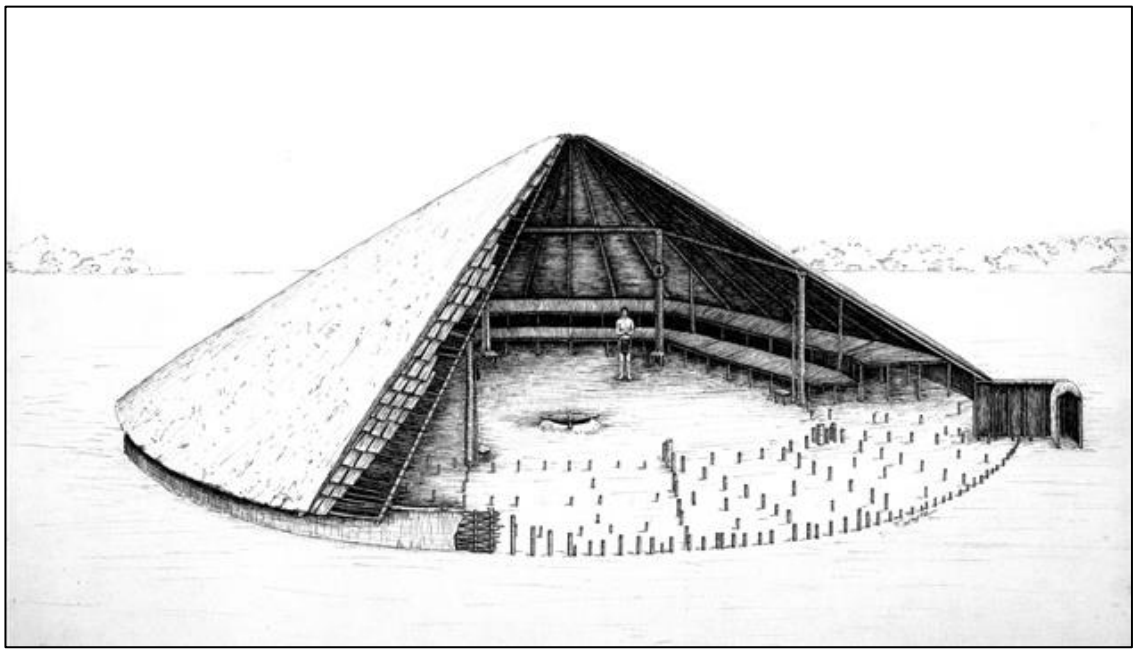


Figure 6.8 Drawing of a Cherokee winter townhouse at Chota, by Thomas Whyte. Frank H. McClung Museum Photographic Collection, University of Tennessee, Knoxville.

6.3 The Stirling phase occupation of the West Plaza

During the Stirling phase, the West Plaza was characterized by the erection of new special buildings; two T-shaped buildings were located at the centre of the area while the northern portion of the Plaza was occupied by bastioned compounds, or enclosures.

The excavations led in 1970s by the Beloit College in the Merrell Tract revealed the presence of two T-shaped buildings, F187 and F160, which were defined as pertaining to the Stirling phase. The two structures were four times larger than the typical Mississippian dwelling both at Cahokia and the hinterland; similar structures were located in Lohmann contexts at Cahokia in the ICTII (Collins 1990), at the centre of the small plaza, and Tract 15A (Pauketat 1998) while Late Stirling/Early Moorehead T-shaped buildings were found at Mitchell (Porter 1974) and at Loyd Site (Vermilion 2005). Even though the function of these buildings remains uncertain, they probably performed a different role than simple dwellings; their location in common areas, their size and the presence of the room that confer them the peculiar shape, suggest a special destination. Collins (1990: 76) and Alt later (2006), suggested on ethnographic evidence that the T-shaped and L-shaped buildings could have been residences for special people, such as religious specialists or chiefs, or some kind of storage facilities, as the smaller room had been interpreted as a *sancta sanctorum* for the storage of ritual paraphernalia. As suggested by Kelly (1996: 35), this could be valid also for the T-shaped buildings from the West Plaza, due to their central location in the public space; moreover, according to the author, their size suggests that they could have accommodated large numbers of people or things. The ritual-related function of F187 and F160 could be supported by the presence of a small circular structure, possibly a sweat lodge, located a few meters west of the T-shaped features and that was conceivably associated to them (Kelly 1996: 36). During the 15B Tract's excavations, the remains of two imposing compounds were retrieved in the northern portion of the public space. The two structures were studded with circular bastions (Alt and Pauketat 2010; Pauketat 2013) or rooms (Kelly 1996) and both showed at least one episode of reconstruction. The northernmost building, Compound A[20], had a circular shape and covered an area of ca. 491 m^2, having a diameter of 25 m; the southernmost

[20] In previous works (e.g. Valese 2010/11) a different denomination of the compounds was adopted; in order to avoid confusion, here the building names are the one used in Pauketat 2013.

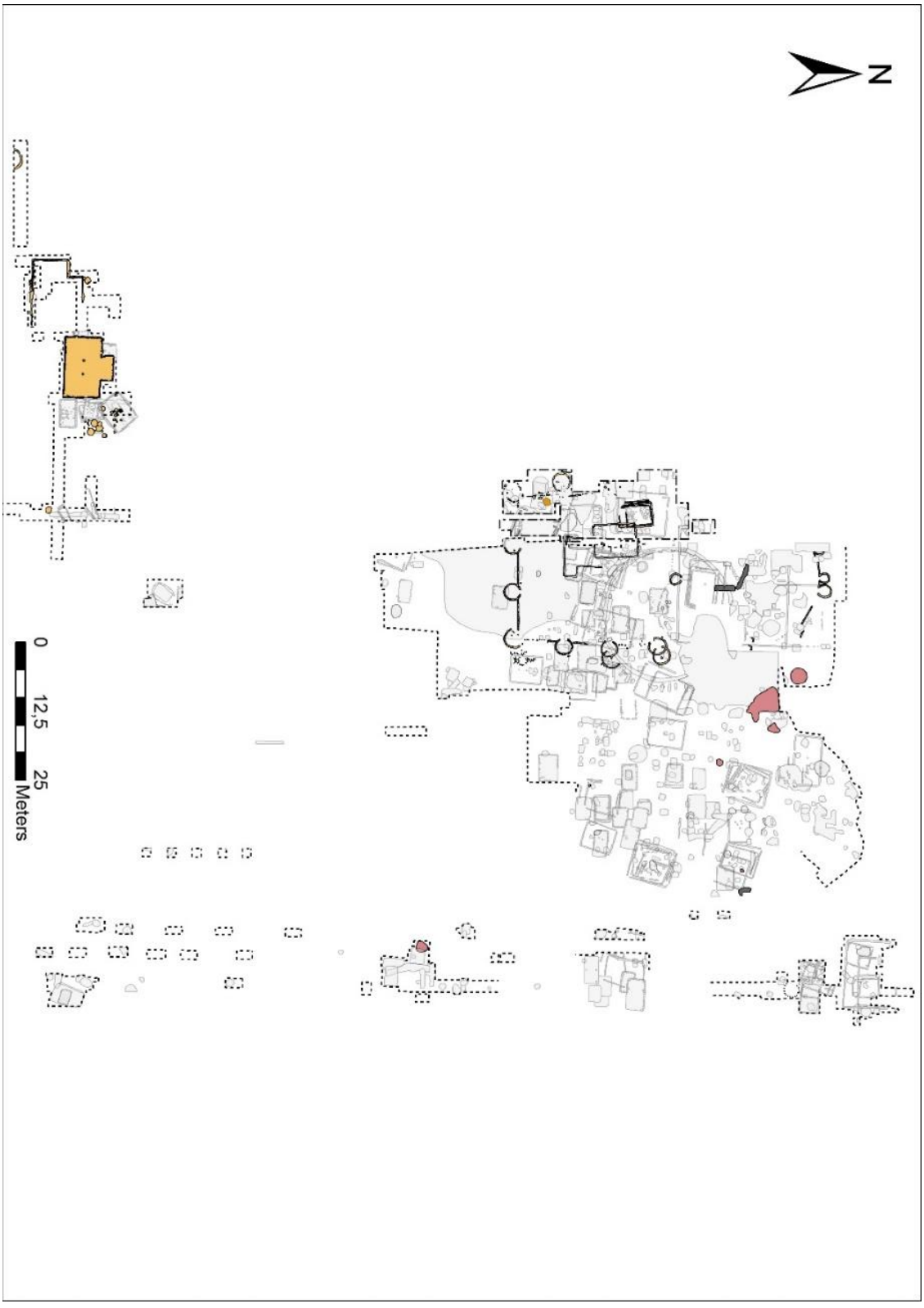


Figure 6.9 Map of the Stirling phase occupation of the West Plaza (I. Valese).

Compound slightly skewing outward toward the north; it covered and area of more than 650 m^2. The chronology of these compounds has been determined on stratigraphic superimpositions to the Late Stirling phase.

Very little can be said about Compound A since, unfortunately is one of the less preserved structures excavated in the 15B Tract. Only two whole bastions, pertaining to the latest construction episode, have been completely excavated in 1960; portions of two other circular bastions have been located and mapped. A bigger bastion (H111), pertaining to the northern edge of the building was also excavated; it was possibly related to the first construction of the compound since it was superimposed by the bastion H110; only few traces of the curtain walls connecting the bastions were found.

In 2013, the University of Bologna opened a test pit in order to locate the western part of the circular compound; only five evanescent postholes and a small portion of a wall trench that, according to Kelly (personal communication) could belong to the Compound A, were recovered. Unfortunately, the features were poorly preserved since the area was highly disturbed by later borrowing activities.

Compound B and its reconstruction (Compound C) were better preserved than the circular structure located to the north. The excavations led in the 15B Tract exposed five bastions belonging to the later reconstruction, and at least two from the first construction episode; the 1960's crew also recovered large portions of the compound's wall-trenches both from the eastern and southern walls.

The excavations led in the Merrell Tract by the University of Bologna were aimed in completing the investigations of Compound B/C and in acquiring more information that could help to understand the purpose of these buildings and the presence of eventual inner associated features. Unfortunately, the western edge of the buildings was poorly preserved, compared to the portions found in Tract 15B, nonetheless traces of the rebuilding activities were found. Even though very damaged, two complete bastions and their reconstructions have been located, and several postholes from a third were unearthed in the northernmost units of the excavation area; very few portions of the wall trench were retrieved, while no traces of the northwestern corner bastion or northern wall were found. In both 15B and Merrell Tracts, no traces of a northern wall were located so that we cannot state for certain whether it existed and if it was studded by bastions as well as the other perimetral walls or not. A conceivable explanation for the lack of the

northern wall in both tracts could be related to the later borrowing activities that could have destroyed the northern portion of the bastioned building; anyhow, since the lack of any archaeological evidence, even if unlikely, the Compound B/C could have been an open structure (cfr. Wittry's unpublished reconstructive sketches – fig. 6.10).

As recorded in the 1960's field notes, the compounds B and C had peculiar postholes filled with an orange material defined by the excavators "orange clay"; the same coloured soil was recovered in the postholes located in the Merrell Tract (F1030 and F1030b). As stated before, only a few portions of the compounds' wall-trench were found and one bastion retrieved was wall-trenched and lacked any orange-filled postholes. This bastion's wall-trench resulted different from the others since it was filled with blueish clay and orange fill fragments (fig. 4.57); the other portions of the curtain wall found were filled with the same material, but in this case the presence of orange-filled postholes was established. The difference of the matrix fill recovered in the Merrell Tract for Compound B/C (F1030) has been attributed to the presence of the earlier clay feature F1160 above which the compound was superimposed, even though at a first glance it almost seemed that the two rebuilding episodes of the compound could have been realized with two different construction techniques. Besides, the very poor preservation of the compounds' wall trenches in the Merrell Tract still remains puzzling when compared to the almost complete portion of the structures excavated in the 15B Tract; nevertheless, this could be attributed to a more intense later plowing activity that interested the area. The chronological sequence of the compounds and the presence of possible inner features have been interpreted in different ways since their recovery in 1960. Wittry, in unpublished sketches and field notes[21], proposed that the first to be erected was the circular Compound A, later replaced by the bastioned building located a few meters south, which he hypothesized as a rectangular structure (fig. 6.10). The archaeologist, recognized a rectangular wall-trenched building named H123 as being the earliest structure located inside the compound, and since the excavators noticed the presence of orange-filled postholes in H123's wall-trenches, Wittry interpreted it as the inner structure of Compound B/C. Moreover, according to the archaeologist, Compound B/C would have been contemporary to another non-bastioned structure (F358) located a few

[21] Notes kept at the Research and Collection Centre of Springfield (IL.)

meters north; this last feature was chronologically placed in the Early Moorehead phase after the University of Bologna's excavations at the Merrell Tract.

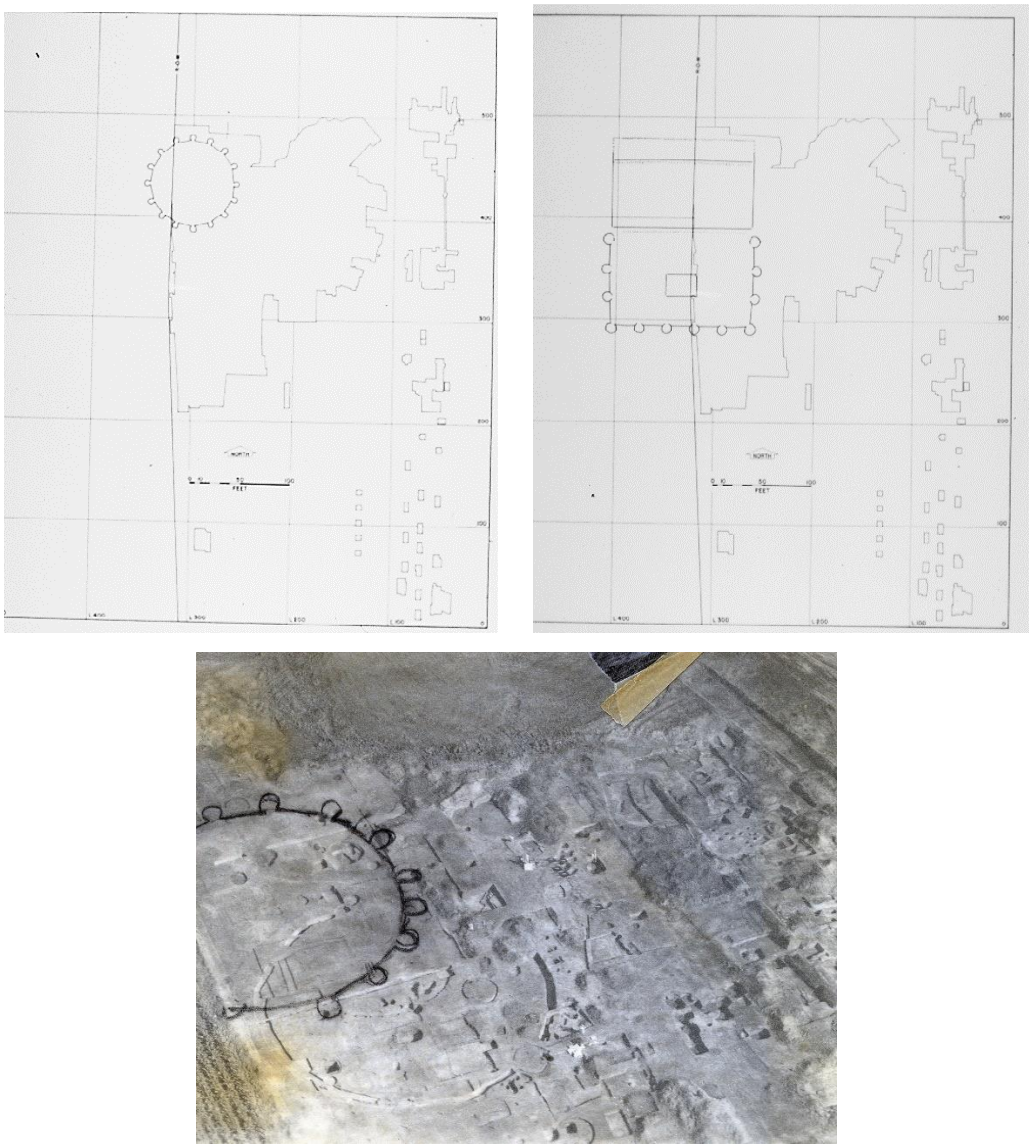


Figure 6.10 Original sketches of West Plaza's compounds realized by W. Wittry (Courtesy of the Research and Collection Center, Springfield).

In the recent re-analysis of the 15B Tract's archaeological data, Pauketat (2013: 88-96), following Wittry, suggested a chronological sequence for the West Plaza enclosures that accounts the circular bastioned compound A as the first structure to be erected; this circular building, after a possible event of rebuilding, was later replaced by compound B/C. According to the author, two buildings could be interpreted as inner structure associated to compound B and its reconstruction (Compound C); the first to be erected almost at the centre of the enclosure would have been the L-shaped H114, later

substituted, probably at the same time in which the compound was rebuilt, by the rectangular building H123.

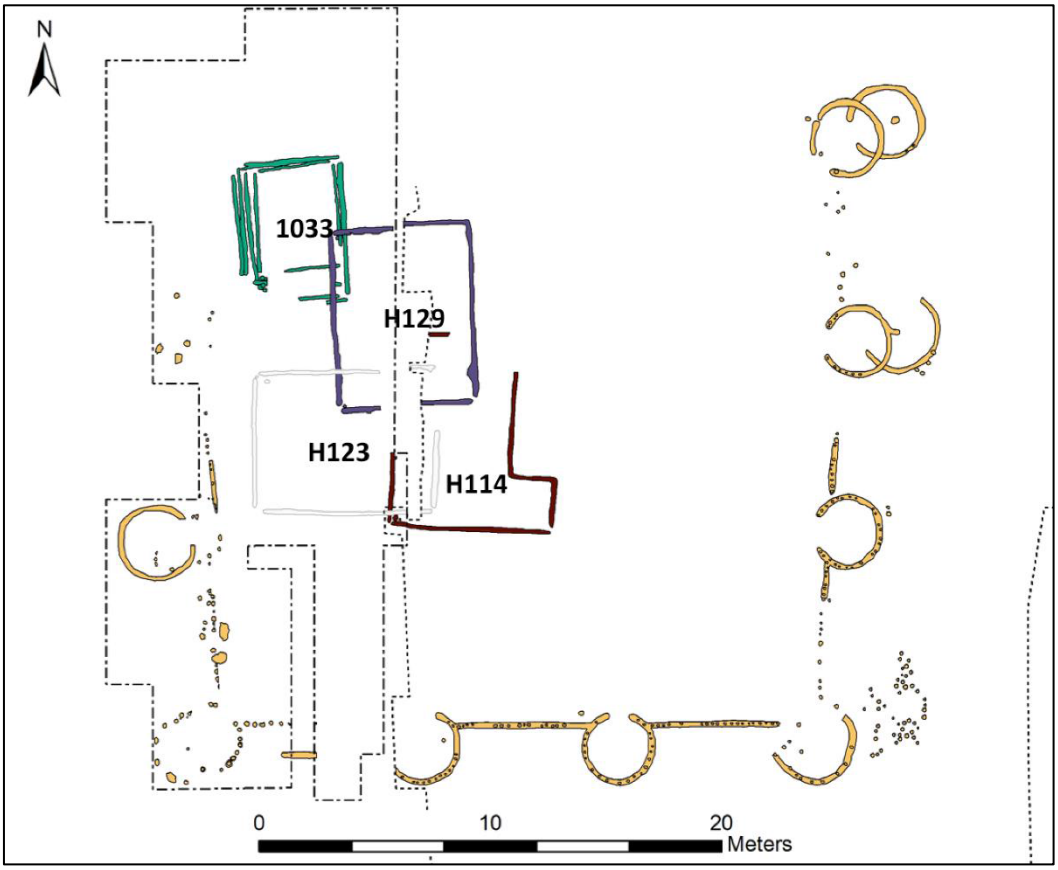


Figure 6.11 Compound B/C and sequence of possible associated buildings (I. Valese).

In the light of the results of our excavations led in the Merrell Tract, it is possible to suggest a different interpretation concerning Compound B and C and their associated buildings.

During the University of Bologna's fieldwork, a structure showing multiple episodes of rebuilding, numbered F1033-Complex, was located. Their multiple reconstructions could resemble, at first sight, a pattern common in later Moorehead and San Prairie phase houses, but their stratigraphic position and orientation (3.48° West of North), as well as the retrieving of a good amount of Early Mississippian pottery, suggest that the building was erected and rebuilt during the Early Mississippian phase. The long axis orientation of this complex resulted to be opposite when compared to the other structures unearthed in the West Plaza, although in accordance with the orientation of the Compound B/C's western wall. Moreover, postholes recovered from the northern and western wall of at least one of the rebuilding episodes of F1033-Complex, were filled with orange coloured

soil (fig. 4.64), characteristic that could suggest an association with the bastioned Compound B/C. Observing the reconstructive image relative to the Compound B / C, in which an ideal location of the northern wall of the compound was traced (fig. 6.12), it is clear that F1033 would have been too close or even overlapped by the wall of the latest compound C; considering this, is possible to assume that F1033 may have been associated with the older Compound B. Unfortunately, there is no actual proof of the contemporaneity of the two buildings hence F1033 and its reconstructions could have occupied the area before or immediately after the bastioned buildings. Although, to support this eventual correlation and the special function of the F1033-Complex is the similarity with a sequence of rebuilt structures excavated in a site located north of Cahokia. The Olin site was excavated by the Southeastern Illinois University Edwardsville between 1971 and 1975 and later studied and interpreted by Baltus (2014) as a possible cahokian outpost. The occupation of this site span from the Late Stirling/Early Moorehead to the Late Moorehead phase. Since the beginning of the Mississippian occupation, the site was fully enclosed within a palisade provided with rectangular bastions; at a certain point, a smaller inner palisade with circular bastions was erected in order to enclose a smaller portion of the settlement, which included a sequence of special buildings and an open area. Even though the Olin structure has been interpreted as an actual palisade, while the West Plaza buildings are generally referred as compounds, the similarity resides both in their shape and in the presence and location the inner special buildings. Both the enclosures shared a roughly squared shape (circa 30 m per side) with two walls slightly skewing outwards and both had circular bastions. The northwestern side of the area located inside the inner palisade at Olin was occupied by a sequence of frequently rebuilt structures, H24-26. The interpretation for H24-26 as a special building rely on the fact that they were rebuilt always in the same position and at greater frequency than simple domestic dwellings (Baltus 2014: 118), as it also happens for the F1033-Complex. These resemblances could actually support the special function of the structures located during the University of Bologna's excavations.

The L-shaped H114/F1010 remains a good candidate for being the earliest inner structure of the squared compound, both for the presence of the ante-room interpreted by Collins (1990) as a *sancta-sanctorum*, in which ritual paraphernalia was stored, and for its location almost at the centre of the enclosure. It is conceivable to assert that it was one

of the earliest structures located within the compound B/C's walls, since it was superimposed by H123/F1100 and possibly also by H129/F1069. No stratigraphic relation is attested between H114 and F1033-Complex, henceforward the hypothesis that the two structures could have been contemporary is not to be discarded. It is evocative, even altogether speculative, to hypothesize of a possible contemporaneity of the T and L-shaped structures unearthed during the Merrell Tract-Beloit College excavations, and located a few meters south, because of the similarity of function of this type of buildings both having the anteroom and being possible élite domicile or storage spaces for special items. Given that the T-shaped structures covered a bigger area than H114 (ca. 84 m^2 versus a projection of ca. 46 m^2) it is possible that the first were used as special dwellings or public buildings while the latter could have functioned as storage for a special content especially if enclosed within a compound.

Even if no direct evidence of superimposition has been attested on the field, it is likely that H114/F1010 was later superimposed by another building, H129, which was uncovered in the 15B Tract and partially excavated in the Merrell Tract-University of Bologna as F1069. This rectangular building was superimposed on F1033-Complex and was considered Late Mississippian by both Wittry and Vogel (1962) and Pauketat (2013: 104). Although the exact chronology for H129/F1069 is yet unclear, it was probably constructed before the early Moorehead phase, since it is superimposed by Moorehead features. Therefore, if H129 was built during the Late Stirling phase, it could have been another possible inner building for one of the reconstructions of the compound B/C. Even if no hard evidence confirmed this association, the orientation of the building, which follows the western wall of the bastioned structure whit a slight NW-SE inclination (2° West of North), and its location slightly off the compound's centre seem to support this hypothesis. Contrarily to what hypothesized so far, our excavations in the Merrell Tract revealed that the wall-trenched building H123 was not one of the earliest structures as suggested by Wittry since, it superimposed on H129/F1069 and it was associated with two pits that yielded Moorehead phase diagnostic material.

In summary, in the light of what said above, during the Stirling phase the West Plaza was occupied by special structures such as the compounds, or enclosures, and the T-shaped structures. No internal structures into the northern circular enclosure were found, while the southern rectangular compound probably enclosed at least one building in each of its

reconstruction phases. The chronology of the two structures is still purely hypothetical, but despite the most common above-mentioned hypothesis that interpret compound A as the first building to be erected later replaced by compound B, is suggestive the hypothesis of a possible contemporaneity of the two structures, at least in one of their reconstruction episodes. Although, without any firm evidence in favor or against this hypothesis, the alternative possibility that the compound A and B/C could have been contemporary, as suggested by their almost perfect N-S alignment is suggestive (Domenici and Valese 2016). The pairing of rounded and square special-purpose structures was, in fact, a recurring trait of Eastern Woodland cultural tradition; this kind of associations were common among Ohio Hopewell earthworks such as Hopetown, High Bank, or Newark (Squier and Davis 1848). The quadripartite pits of Emergent Mississippian courtyards at Range (Kelly 1990a) or even in the shapes of the Twin Mounds in Cahokia's Grand Plaza reflect the pairing of round and square shapes (Dalan et al. 2003; Valese 2012; Kelly and Brown 2014; Domenici and Valese 2016). Harriet Smith (1969) in her 1941's excavation unearthed, below Mound 55, two paired Lohmann buildings with interior fireplaces, one having a circular and the other having a squared shape (Smith 1969: fig. 33). Both have been interpreted as special associated buildings that could have functioned as a dwelling reserved to a special, possibly religious, individual and an associated circular ceremonial structure or sweat lodge.

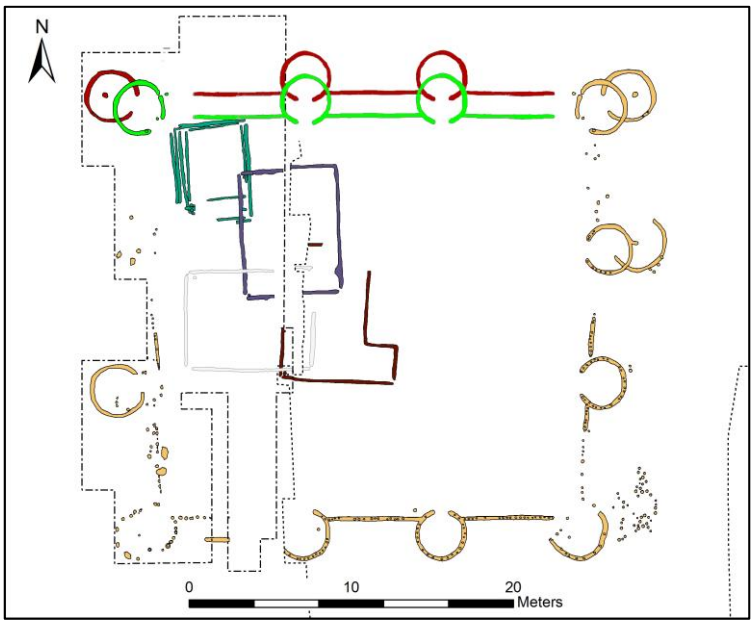


Figure 6.12 Compound B/C with reconstruction of the northern wall (I. Valese).

In other relevant Mississippian centers the pairing of a squared and a circular building was common as well, as happened on the summit of the main mound of Hiwassee Island (TN), where a circular and a square building (49 and 44) were erected (Lewis and Kneberg 1946: plate 16). Interestingly, a similar pairing occurred in the plazas of historical Cherokee and Creek settlements, often dominated by a rounded and a rectangular townhouse (Rodning 2009, 2010, 2011; Bartram 1853: figs. 1-5; Domenici and Valese 2016).

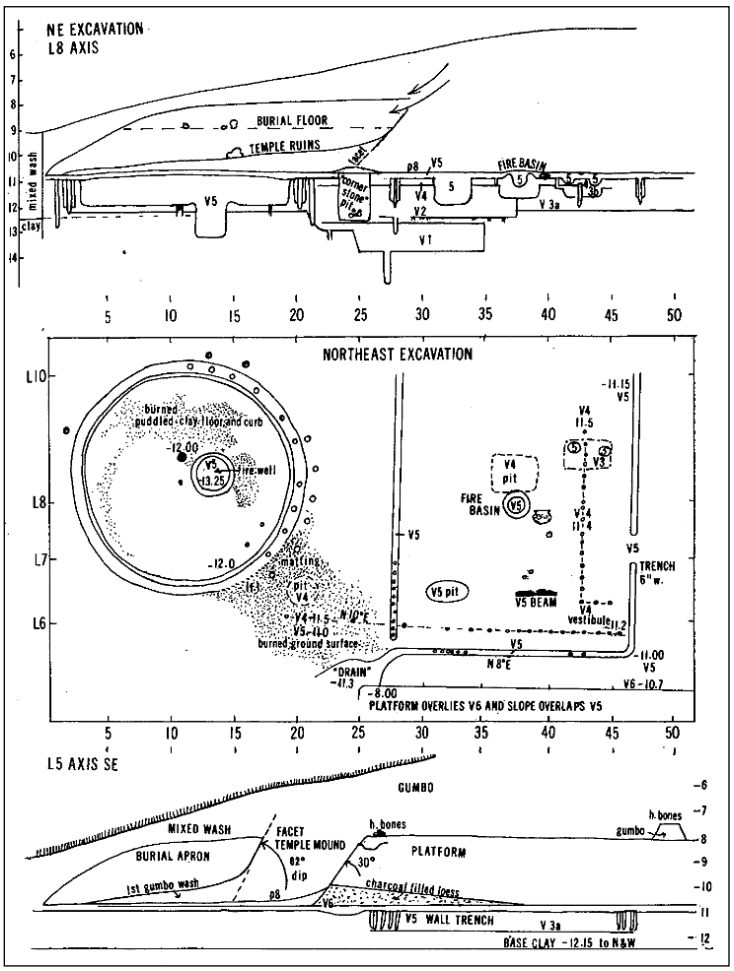


Figure 6.13 Mound 55, pre-mound buildings (Smith 1969, fig.33).

Even if it is well known that the two shapes were associated to seasonal use (winter *vs*. summer building), it doesn't exclude that the two shapes couldn't have had deeply entrenched symbolic meanings related with the inherent dualism of Eastern Woodland cosmology (Dalan et al. 2003: 204; Kelly and Brown 2014: 316-317). To speculate a little further on this formal similarity with historical townhouses, one could suggest that the compounds, as well as the earlier rotundas, could have physically embodied the

corporate identity of specific social groups, precisely as occurred with earth lodges and townhouses among historical Native American groups (Domenici and Valese 2016). No matter how many hypotheses can be made about the compounds, until material evidence will not be found, they will remain altogether speculative. Different hypothesis have been proposed concerning the compounds' function; unfortunately, the archaeological record cannot support or exclude none of them since no diagnostic materials were retrieved in the possibly associated features. In 1991, Patricia O'Brien suggested that compound B/C could have served as a trading or a storage centre, given their proximity to the creek, hence the "bastions" could have actually served as storage rooms, probably roofed in order to protect the stored material.

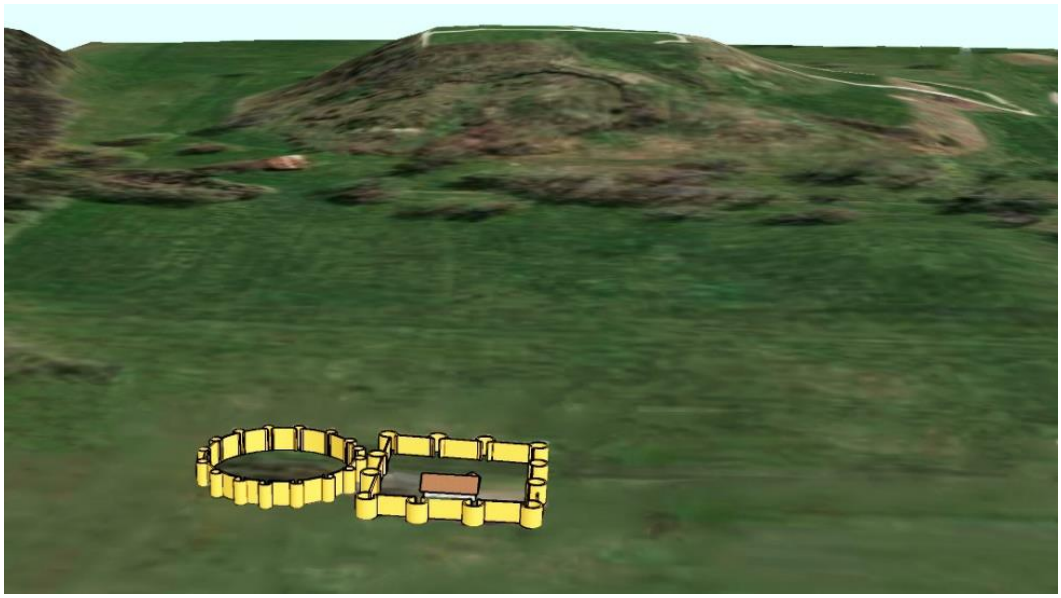


Figure 6.14 3D reconstruction of Compounds A and B/C. Realized with Google SketchUp.

The lack of archaeological evidence, as she also stressed, did not provide hints about what kind of goods could have been stored, if ceremonial paraphernalia (which could be suggested by the presence of the possible associated L-shaped H114), military equipment (functioning as an arsenal) or storage for trading materials, hence functioning as a market place (O'Brien 1991: 158). While, given the resemblance of the bastioned buildings with the first Cahokia's palisade, which was studded by small circular bastions as well, a defensive function of the compounds have been postulated by many others (Dalan et al. 2003; Iseminger 2010; Alt and Pauketat 2010; Pauketat 2013); with the bastions functioning as defensive facilities, which according to Alt and Pauketat (2010: 388) would have been manned also during the cold seasons, given the presence of a hearth in one of

the bastions. Although another hearth has been located in the Merrell Tract-UNIBO, within the limits of one of the compound bastion, its association with the building has not been ascertained; besides the dimensions and the matrix of the hearth's fill suggested a limited use of the feature, as for the other located in the 15B Tract, which was described in the field notes as a "slightly fired area".

Whether the function of these compounds was defensive or not is still debated, however here is suggested that their function differed in some ways from the one played by the palisade. Whereas the function of the stockade was *tout-court* defensive, since it was erected in order to protect the epicentre from dangers coming from the outside; wooden enclosures, such as the compounds, would have had a dual function, both ritual and defensive aimed to protect and demarcate a sacred space in which ritual gatherings took place, screening it from the exterior (Alt and Pauketat 2010). In support of the fact that the compounds could have played an important ceremonial and public role is their location in one of the main plazas of Cahokia, not far from Monks Mound; furthermore, the practice of reconstructing important buildings over earlier important structures, as attested in the West Plaza area, could support this interpretation. Additionally, the possible association of the special L-shaped building, H114, could testify the performance of ritual-related activities inside the compounds.

Excavations led along the western edge of the Grand Plaza, a few meters west from Mound 48 have ascertained the presence of a western wall of the Cahokia palisade (Trubitt 1999, 2000b, 2001; Kelly et al. 2008), as suggested by the aerial photographs of 1920s and 1930.

However, the topographic relationship between the West Plaza's buildings and the palisade still remains uncertain, albeit the 1970s' fieldwork of Beloit College in the Merrell Tract aimed to locate the western wall of the palisade no traces of it have been found, so far, in the West Plaza area. In the re-analysis of the 15B Tract archaeological record, Pauketat (2013: 91,101-109) proposes that some features that were recovered during the excavation were possibly related to the palisade, though unrecognized on the field. On the basis of what he identifies as possible palisade features, he hypothesizes two different routes for the western wall: one that includes the West Plaza area inside the Cahokia palisade and another that locates the bastioned compounds and the later residential areas outside the Cahokia precinct. To support the first hypothesis the author suggested

that one of the bigger bastions of the circular compound A (H111) could have been actually part of the first palisade, along with F62 (F67-72) located into a culvert trench[22] that could have been the Late Stirling stockade's northern wall gone unrecognized. On the contrary, he continues, it is possible that the partially excavated F138, a circular wall trench, and F107, a fill concentration of unknown temporal affiliation, would have been part of the north-south western wall of the palisade located just outside the test trenches in which the features were found. At any rate, more archaeological investigation should be made in order to support the various hypothesis suggested; by the description of the fill located in the culvert trench, located north of 15B Tract, it seems to be very similar to the Late Stirling/Early Moorehead midden excavated in the northern units of the University of Bologna. Furthermore, in contrast of the lack of remains related to the life of the Plaza, the retrieving of fill rich in archaeological debris at the northern edge of the public area could be related to possible activities of cyclical and ritual cleaning, as attested in other part of the site (Swanton 1928; Young and Fowler 2000) and in the archaeological and ethnographic comparison (Kidder 2004).

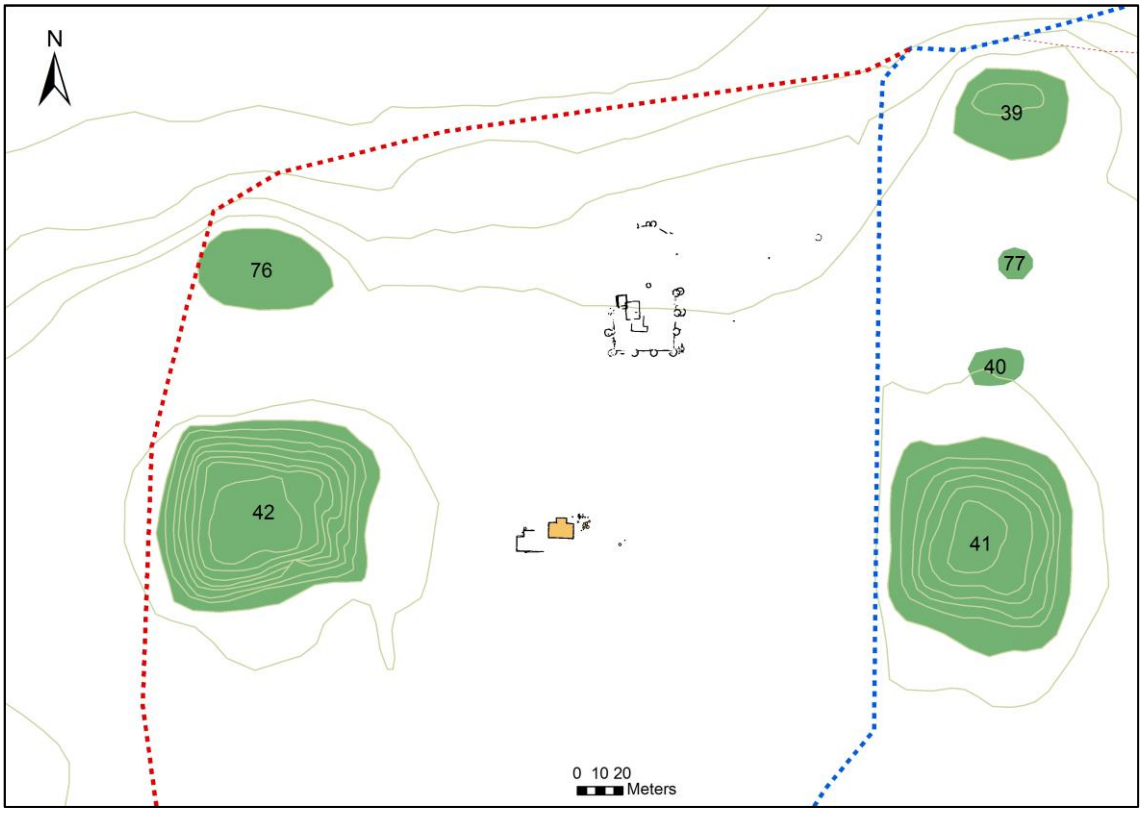


Figure 6.15 Possible paths of Cahokia palisade. Adapted from Bruni (2013: 135 fig.22).

[22] No maps or profiles were made of this trench located at N570 and W180-230 of the 15B Tract's grid system.

The location of the West Plaza's enclosures, whether inside or outside the palisade, would imply a different meaning of the bastioned structures. If they were included inside the perimeter of the main Cahokia's palisade, the value of the buildings, goods and activities that they were secluding would have been higher in significance since it needed a double protection. Otherwise, if the compounds were located just outside the palisade they could have been some sort of "power statement" mimicking at a lesser scale the imposing central stockade, a materialization of the corporate identity of a lesser – but still important – social segment of Cahokian society. Whatever the spatial relationship with the stockade the buildings of the West Plaza area covered obviously an important special-purpose within Stirling-phase Cahokia epicenter (Domenici and Valese 2016).

Concerning the chronological aspect, the construction of the palisade has been attributed, so far, to the Late Stirling phase (Fowler 1997; Dalan 2003; Kelly et al. 2008; Iseminger 2010) therefore the compounds would have been erected at the same time. However, recent investigations, which implied a recalibration of the carbon dating with the program OxCal, have revealed that the construction of Cahokia's stockade could be post-dated to the Moorhead phase (Schilling 2010; s 2011); according to this latest research, the compounds would have been built a hundred years before the stockade, being some sort of architectonic prototype for the realization of the palisade.

Whether inside or outside the palisade, and despite their contemporaneity the erection of walls, screens and enclosures segregating religious or élites zones is an indicator of significant social divisions and, as stressed by Alt and Pauketat (2010), possibly a reflection of the wider process of "compartmentalization" in which households and house spaces became highly organized by task (Rogers and Smith 1995). The erection of the West Plaza compounds and the Cahokia stockade were part of a radical social change that involved the whole settlement. They were the reflection of a different way of experiencing the surrounding landscape; the erection of walls meant the destruction of social spaces along with the material dislocation of entire neighbourhoods (Iseminger and Kelly 1995) since walls divide and redefine communities (Alt and Pauketat 2010). During the Stirling phase, even though it was the period of Cahokia's acme, something changed; the house clusters were not oriented anymore along the settlement general grid, as attested at the ICTII where the houses were built following an orientation based on a local plazuela and the nearby mound (Collins 1990). In the twelfth century, indoor storage

facilities made their first appearance while the access to certain material items was restricted (Pauketat 1992) reflecting a deep change at the household-level of society, which was in this case inward looking and no more tied to a wider common view of the settlement that during the Lohmann phase was notable for its inclusive, corporate qualities (Mehrer and Collins 1995). The erection of screens and wall could have been cause and/or consequence of this increasing segregation possibly related to the escalation of violence as attested by the fortification of several other Mississippian centres (e.g. Angel, Aztalan).

All these changes were reflected in the reorganization of Cahokia, which involved the abandonment of public areas, such as the North and East Plaza, and the clear distinction between a central precinct, in which the main mound and plaza possibly along with the main élites dwellings and structures, and the outside still standing, even more dispersed (Kelly and Iseminger 2008), residential areas that, even though not worthy enough to be enclosed in the central precinct, were still flourishing, as attested by the construction of Ramey Plaza immediately east of the stockade, in which ritual-related items were still manufactured during the Moorehead phase (Brown and Kelly 2014). The same would have been possible for the West Plaza, in which important ritual activities would have been still performed inside the walls of the bastioned compounds even after the radical changes that were affecting the Cahokia's life.

6.4 The West Plaza Area after the compounds

By the end of the Stirling and the beginning of the Moorehead phase, the former West Plaza area was subjected to an intense modification. The dismantlement of the bastioned compounds suggests a radical change in the use of the space. At a certain point during the Moorehead phase, the area was fully reconverted to residential use, although before that, for a certain time, it seems conceivable that ritual and public activities were still performed. This hypothesis is supported by the presence of buildings having a possible "special" destination, located along the northern edge of what was the plaza area.

6.4.1 The Late Stirling/Early Moorehead special buildings

Figure 6.16 Detail map of Early Moorehead phase buildings and post pits located in the area (I. Valese).

Before the West Plaza was reconverted to a residential area, a sequence of "special" buildings were erected. The biggest building occupying the area, attributed to the Late Stirling/Early Moorehead phase, was F358/1001. The presence of layers of midden and disturbed areas, located in both the 15B and Merrell Tract-UNIBO excavations, made the definition of this feature challenging. Furthermore, several wall-trenches were recognized on the field during the 15B excavations, although never numbered or associated to any specific structure. Therefore, the actual occupational sequence of the West Plaza area after the dismantlement of the compounds could have been more complex. However, no additional considerations can be made to clarify this issue, since the archaeological record do not provide any further information.

Part of the University of Bologna's excavations has been focused on the delineation of the limits of F358/1001 whose eastern limit was already exposed during 1960s fieldworks. The southwestern corner of the structure was located in 2008 in a 2x1 m unit opened by Kelly and it was later intercepted and excavated by the Italian team for a length of ca. 6 meters; no evidences of the wall were found at the northern edge of the excavation area.

The discontinuity in the wall trench of F358 was apparently due to later borrowing activities that affected the structure.

The shape of F358/1001 have been interpreted in different ways after it was excavated. Wittry in some sketches (fig. 6.10) kept at the Research and Collection Centre of Springfield (Il.) considered the building as another enclosure contemporary to Compound B/C, located a few meters south, although F358 would not have been studded by circular bastions. On the contrary, Pauketat (1994: fig. 4.7), Kelly (1996: fig. 13) and Dalan (et al. 2003: fig. 34) interpreted, at first, F358/1001's wall trenches as curtain walls of a northern rectangular bastioned compound, disagreeing on the presence of a circular bastioned structure. This interpretation was possibly misguided by the 1960's general map of the 15B Tract in which the easternmost bastion of the circular compound was drawn erroneously as a part of the eastern wall-trench of F358.

In most recent studies (i.e. Alt and Pauketat 2010; Valese 2012; Pauketat 2013; Kelly and Brown 2014) F358/1001 is considered as a rectangular wall-trenched structure with no bastions; however, its construction has been post-dated to the Late Stirling/Early Moorehead phase once the dismantlement of the compounds was completed.

Although a later chronology of the building is widely accepted, the definition of its shape remains problematic since the area was heavily disturbed. Thanks to the more recent excavations led in the Merrell Tract, it is acknowledged that the southern wall of F358/1001 has a length of ca. 20 m while the northward extension of the building is still uncertain. According to Pauketat's reconstruction (2013: fig. 4.36), the northern wall of the building is to be recognized into a wide, east-west oriented, unnumbered wall-trench, whose western limits were ill defined because of the presence of a disturbed area; if so the structure would have had an almost perfect squared shaped and would have covered an area of ca. 400 m^2. However, the original 15B Tract's maps show a row of postholes, possibly pertaining to the eastern wall of F358/1001, proceeding toward the northern edge of the tract. In this case, the structure would have been rectangular (ca. 20 x 26 meters), with inner partitions, covering an area of ca. 520 m^2. Anyhow, whether F358/1001 covered an area of 400 or 520 m^2, it still would have been one of the biggest, possibly roofed, wall-trenched building excavated at Cahokia, comparable to the 15A Tract's H3 (Pauketat 1998) and to the rectangular building standing atop of Monks Mound Hence, F358/1001 cannot be interpreted as a simple house; nonetheless, even no

evidence of the activities performed inside the building have been found, it is conceivable to assume that it could have been functioned as some sort of “public” or élite building destined to the performance of non-domestic activities.

According to Pauketat (2013: 96), a Stirling phase structure, named “the unnumbered northern building”, can be recognized among the unnumbered wall-trenches mapped in the area where F358/1001 was located. This unnumbered building would have been 8.5 x 11.2 m, covering an area of 155 m^2. Even though, in this dissertation the possibility of the presence of other unrecognized wall-trenched structures in the area is taken into consideration; the chronology of this “unnumbered northern building” is considered slightly later since it was superimposed on one of the wall trenches (the northern wall for Pauketat) of F358/1001. Additionally, here is considered the hypothesis that the eastern wall of the “unnumbered northern building” would not have been excavated in the same trench as the eastern wall of F358/1001, as suggested by Pauketat (2013: 96), but could be identified in another small portion of a wall-trench mapped a few centimetres east (fig. 2.17).

Contemporary to F358/1001, the area was probably occupied by other structures that could have had “special” functions. At the northeastern edge of the 15B Tract, H10 and H20, two sequential buildings, were located. These structures, remarkable for their dimensions measuring respectively ca. 80 and 93 m^2, have been defined by Kelly “some type of specialized facilities” (1996: 38) because their proximity to the swampy area located north of the tract; similarly, Pauketat (2013: 96) suggests they could have housed individuals belonging to a special status or rank. A similar function is proposed for H21; this building, although of small dimensions (9.2x4.2 m), it was characterized by the presence of a south-facing portico and an internal shrine (2013: 96) that could have been a storage room destined to same kind of ritual paraphernalia or a bundle, as suggested for similar structures located elsewhere (Alt 2006; Pauketat et. al 2012). H21 could have been associated with a smaller building, H6, located a few meters south and interpreted (Pauketat 2013: 96) as a storage facility.

Another wall-trench building, partially excavated in 1960s and located south of F358/1001, shares the same east-west orientation with some of the buildings described above (H6, 10, 20 and 21). During the University of Bologna’s excavations, the western part of H123 has been fully exposed and partially tested. The building had been formerly

associated to the compound B/C both by Wittry (1962) and Pauketat (2013) as one of its inner structures. Their interpretation lies on the 1960's field notes in which H123 was described as having the same orange-clay postholes as the ones found in the compound B/C. On the contrary, the Merrell Tract-UNIBO excavations yielded no evidence of orange postholes associated with H123/1009 while revealed the presence of two pits, conceivably associated with the rectangular building, in which Moorehead diagnostic material was retrieved, confirming a chronology suggested by Kelly (Kelly and Koldehoff 1995: fig 5.2). H123/1009 does not show any characteristic of a "special" building, moreover, its dimensions do not suggest a storage function as for the small building H6, hence it could have been one of the first residential buildings erected in what once was the West Plaza. Contemporary to these structures it is possible that an open area, possibly dedicated to public/communal functions, was left on the east side of the 15B Tract where post pit, dating to the Moorehead phase, would have accommodate marker poles standing at the centre of this smaller plaza.

This could be considered as an intermediate phase between the Lohmann/Stirling and later Moorehead occupation of the area. From the beginning of the Lohmann and for the entire duration of the Stirling phase, the area was devoid of domiciles; the rotundas and the later bastioned compounds were almost certainly dedicated to the performance of special, political and/or ritual, activities. The erection of F358/1001 happened at some point after the dismantlement of the compounds during the Late Stirling/Early Moorehead phase, as attested by the materials recovered in the midden areas that obliterated the building along with similar features scattered all over the 15B Tract superimposed on the Late Stirling/Early Moorehead structures like H6 and H21. The construction of F358/1001 in the same spot of the circular compound A could imply some sort of commemoration of the earlier structure, of which possibly inherited the functions; however, at the same time it reveals a discontinuity from the past. F358/1001, although one of the biggest building found at Cahokia, do not have a palisade-like aspect and no internal shrines in its interior have been recognized. Evidently, its function was different than the earlier public buildings, but it can be considered as a *trait d'union*, one last example of Cahokia's acme, before the area was fully converted to residential use.

Although altogether speculative, the buildings described above could have been part of a same "household"/"neighbourhood". They would have been organized around a

special-purpose open space marked by a series of posts and each building could have played a different role such as the élite domicile or council house (F358/1001), the special buildings connected to watery rituals (H10, H20), the priest or bundle keeper's house (H21) and the common buildings and storage facilities (H123, H6) (Valese 2012; Pauketat 2013: 109).

6.4.2 The Moorehead phase residential occupation

Starting from the beginning of the Moorehead phase a general sense of insecurity resulted in the erection of fortified Mississippian centres scattered all over the Southeast (i.e. Angel, Kinkaid, Olin, Aztalan, etc.). The construction of the palisade[23] at Cahokia was the response to threats possibly coming both from the outside and from the inside of the cahokian community. The entire centre of Cahokia was subjected to radical changes; besides Monks Mound and the Grand Plaza, many focal points of the site, such as the North Plaza, the sacred area of Mound 72 and Rattlesnake Mound, were left outside the defensive walls. The East Plaza, obliterated by the stockade wall, was replaced by another open area, the Ramey Plaza, located toward east and left outside of the enclosure (Kelly and Brown 2014: 313). On the western side of Monks Mound, the area in which the monumental woodhenges stood was reconverted to a residential space (Pauketat 1998; Valeri 2012); at the same time, the West Plaza definitely ceased to exist. It is still unknown if the area was enclosed inside the perimeter of the main palisade, at any rate, it was no more destined to public activities and special buildings were replaced by domiciles.

The middle Moorehead phase residential occupation is attested all over the West Plaza area. A higher concentration of structures is attested along the northern edge of the investigated tracts, traces of Late Mississippian (Moorehead and Sand Prairie phase) occupation were also located in the proximity of the mounds that once surrounded the public area. Test pits made on the flanks of mound 39, 77 (Kelly 2000) and 76 (Kelly and Brown 2001) yielded late Mississippian ceramic residue while élites buildings are attested on top of mound 42 (Benchley 1974) and mound 48 (Ringberg 1996).

[23] The exact chronology of the Cahokia palisade is still debated, it fluctuates between the Late Stirling and the beginning of the Moorehead phase (see chapter 6.3)

Figure 6.17 Detail of residential buildings located in the area during the Late Moorehead phase (I. Valese).

The 15B and Merrell-UNIBO tracts revealed that the houses were organized in clusters grouped around small courtyards, which were kept almost at the same location until the end of the Sand Prairie phase (Valese 2012; Pauketat 2013). The Moorehead phase residential structures were rectangular, covering an average floor area comprised between 30 and 35 m^2 (Pauketat 2013: 114). The presence of a few smaller buildings could reflect status differentiations or different functional destinations. It is conceivable, as suggested by Pauketat (1998), that the smaller buildings could have been storage facilities associated with larger domiciles being part of a same household.

The orientation of the buildings, apart from for a few exceptions, had a prevailing North-South orientation which became more angled during the Later Moorehead phase, reaching up to 30 degrees of azimuth (Pauketat 1998: 117).

During the Late Stirling/Early Moorehead phase, borrowing activities took place at the northern end of the Merrell Tract-UNIBO (Kelly, personal communication). The borrowing of soil, possibly connected to the ritual capping of the mounds attested from the beginning of the Moorehead phase (Kelly and Brown 2014: 315), contributed to the

destruction of earlier architectural evidences such as the above-mentioned F358/1001. The borrowed areas were rapidly filled through repeated episodes of refuse deposition; the midden areas and refuse pits, located in the Merrell-UNIBO, were rich in faunal residue (mostly deer) and diagnostic ceramic material. The presence of fragments of Late Stirling/Early Moorehead Ramey Incised, Cahokia Cordmarked jars and special materials such as quartz crystals, red cedar fragments and tobacco reflect the performance of feasting activities comparable, even if at a lesser scale, to the earlier deposit found during the excavation of the sub-mound 51 (L. Kelly 2001). This extensive borrowing activity supports the possibility that the local Early Moorehead cahokian community was still capable to coordinate and organize corporate labor investments (Brown and Kelly 2015; Domenici and Valese 2016).

Slightly later middens are attested both in Merrell-UNIBO and 15B Tracts. The one excavated by the University of Bologna, (F1049) was a shallow sub-circular deposit that yielded a good amount of Moorehead diagnostic pottery (i.e. Ramey Incised, Cahokia Cordmarked and Powell Plain jars and Well Broad trailed plates), two beads made of white and purple fluorite, faunal and charred botanical remains. These smaller midden deposits were possibly associated to the Moorehead dwellings located in their proximity and were the result of the accumulation of discarded goods (Domenici and Valese 2016).

During the University of Bologna's fieldworks, one of the biggest Moorehead building located in both Merrell and 15B Tracts (F1005), which covered and area of 58.38 m^2 (8.2x7.12 m), was located. Its N-S orientation (5° East of North) matched that of various Late Mississippian houses excavated in Tract 15B (Pauketat 2013: 114-119) and it was possibly one of the structures associated with the midden F1049 located a few meters south.

Even if no basin associated with F1005's wall trenches was preserved, at least three pit features, located within the building, have been interpreted as associated to it. The material recovered from two of the pits (F1081 and F1132) suggest the performance of special activities. The botanical analysis revealed the presence of ceremonially significant plants such as eastern red cedar, in both pits, and bald cypress, in F1132[24] (Parker 2014). The circular pit F1081, contained high quantities of faunal remains[25] (L. Kelly 2017) mostly

[24] See chapter 5.4

[25] See chapter 5.3

composed by water birds and fish (37 avian NISP, 36.3%; 21 fish NISP, 20.5%) associated with highly unusual materials such as two worked bone probably used as ornaments, five arrowheads (one miniature), two copper beads and at least the remains of fourteen Gulf Coast lighting whelk shells. Even though the faunal assemblage contained in F1081 is comparable to the others recovered from some of the Moorehead midden areas (i.e. F79 and F157) located in the 15B Tract (Pauketat 2013: 275-298); the presence of élite and exotic goods (i.e. copper and marine shells) along with unusual items characterizes it as a "special deposit" possibly related to the realization of ritual paraphernalia. One of the peculiarities of this pit is the presence of both tools and processing residues; the analysis of the shells, led by L. Kozuch of the Illinois State Archaeological Survey, revealed that they represented leftovers of bead-making process; significantly, among the tools recovered into the pit, there was a microdrill known to be employed into the making of beads. Moreover, it contained two worked bones and a swan ulna with cut marks indicating its use in the production of beads or tubes (L. Kelly 2015). Among the tools unearthed in the pit, there were two sandstone palettes and a few fragments of red and yellow ochre. Pauketat (2013: 303) suggested that the high presence of sandstone palettes and grinding tools from the Late Mississippian features of the 15B Tract (Pauketat 2013: 273-274) could have been related to the processing of pigments and the production of ceremonial items possibly involving the manufacture of ornate costumes and clothing. The material preserved in the pit excavated by the University of Bologna seems to suggest the performance of these ritual-related manufacturing activities. Furthermore, the presence of F1081's unusual content, along with sacred woods, could advocate that the big building F1005 was probably not a common domicile while possibly an élite building related to the preparation and/or storage of the ritual paraphernalia possibly realized in the neighbouring buildings. Moreover, to support the rituality involved in the making of the ritual paraphernalia, it is possible that F1081's deposit was arranged in a precise manner duplicating the "cosmological order" with the marine shells laid down at the bottom, representing the underworld along with fish, and the waterfowl placed on top, representing the element of transition between the watery underworld and upper world and sky (Domenici and Valese 2016).

The presence of exotic and élite goods is an evidence that the Late Mississippian cahokian community had access to precious materials, as also suggested by the Md. 34's copper

workshop and élite buildings located on the east side of Monks Mound (Kelly et al. 2008), and was still engaged in the performance of communal feasting (Kelly and Brown 2014). Even if reverted to residential use, the West Plaza area was still the theatre of some kind of ceremonial activities, probably of a more "local" kind than in previous centuries, being associated with nearby residential clusters and not with monumental public buildings. This more private, household or supra-household level of ceremonial practices seems to be in accord with the emergence of a Late Mississippian "new ceremonialism" (Pauketat 2013: 302-303) and with the general trend toward increased inward-looking Cahokian society (Kelly and Brown 2014: 213-215; Domenici and Valese 2016). The Moorehead phase occupation of the West Plaza area support the view of the Moorehead phase as a period of social transformation and creation of "new ways of being Mississippian", in the words of Baltus (2014: 9).

Although there was a drop in population and evidence of warfare all over the American Bottom, the "Moorehead Moment", as defined by Brown and Kelly (2000), was characterized by the appearance of other Mississippian fortified centres scattered throughout the lower Midwest and Southeast. The cultural and possibly political entanglement among these centres and Cahokia is evident both in their setting, based on the association of mounds and plazas (Lewis and Stout 1998), and by the diffusion of the iconography and beliefs of the Southeastern Ceremonial Complex conceived at Cahokia (Brown and Kelly 2000). The West Plaza area serves an example of this intentional detachment from the previous religious and political principles as one of the main public areas of the site was deleted by being destined to house residential buildings and possibly performing specialized manufacturing activities.

Another trait of discontinuity with the previous Lohmann and Stirling phases is the placing of burials within the residential area, and not in dedicated spaces on the outskirts of the settlement, along with the more common interments in communal funerary facilities such as mortuary mounds (Valese 2012; Pauketat 2013: 181). Apart from the burials located on mound 39 and 77 by Moorehead in 1920s, several were found in the West Plaza area. The 15B Tract excavations revealed the presence of at least 11 Late Mississippian burials, plus several scattered human remains in refuse pits, wall-trenches and refuse areas (Pauketat 2013: 162). Almost all the burials, eight of the eleven identified, resulted to be associated with residential buildings; mortuary practice that

seem to be proper of this part of the site since it is not attested in other excavated contexts at Cahokia such at 15A, ICTII and Dunham Tracts (Pauketat 2013: 181). The analysis of the 15B Tract burials, revealed that they were all primary depositions, both located in grave pits or in refuse areas. By the degree of preservation of the bones, it was not possible to identify the sex of all the individuals, nevertheless it appears that there was a predominance of females among the ones identified. This trend could indicate a specific mortuary practice involving women, since taphonomic processes usually make that the more robust male skeletons are overrepresented in the archaeological record (Pauketat 2013: 162). Even if the tendency was to deposit the body in an extended position, no uniformity in the orientation of the deceased is attested, as they seem to be randomly placed within the grave. On the contrary, it seems that the burials were oriented according to the house to which they were associated and it is attested that the deceased were interred before, during and after a dwelling was built. Among the burials placed in a distinguishable pit, only three were provided with grave goods placed on the right side of the head (Pauketat 2013: 162). Another burial (F1177) was located during the University of Bologna's excavations at Merrell Tract; the burial was only defined but not excavated, therefore only a partial description can be made. Unfortunately, no information concerning the sex can be provided, since the individual was not completely exposed. The deceased was left in an extended NW-SE position with the head facing north, and seemed to be in primary deposition as the *patellae* were spotted in place. The burial was located among a wide Moorehead phase refuse area; it is possible that a grave-pit was dug into this bigger midden, since a slight burned area defined the southeastern portion of the pit in proximity of the feet. As the burial was located within a refuse area that was not completely excavated, it is not possible to assert with certainty that the material found in those units can be considered as grave good associated with the burial or not. Nevertheless, the recovery of a miniature jar, the great quantity of decorated plates, bowls and jars fragments and small remains of mica can support this hypothesis.

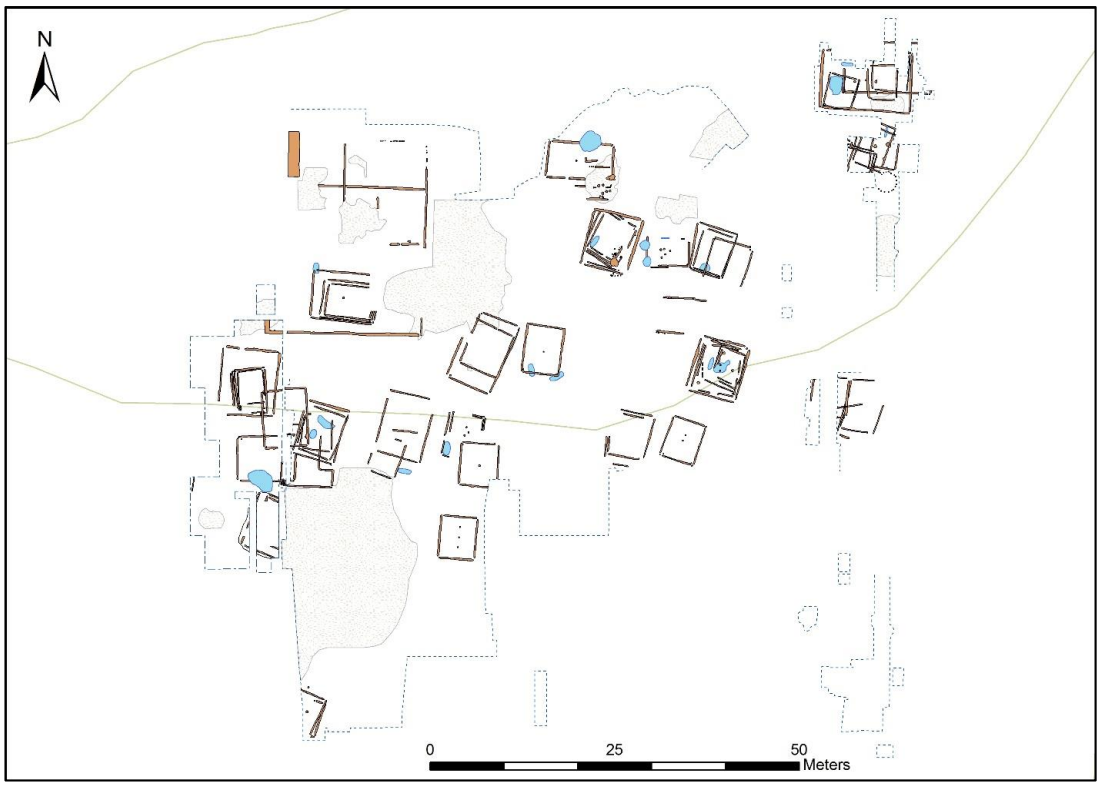


Figure 6.18 Detail of burials located in the West Plaza Area (I. Valese).

The feature was superimposed on the southern wall trench of a Moorehead phase structure (H123/F1100) therefore, as for the other burials located in the adjacent 15B Tract, it is conceivable to assume that it was intentionally placed on top of the structure as to sanction its final dismantlement and possibly to commemorate its location (Pauketat 2013: 181). The association between burials and houses can be related, as suggested by Pauketat (Pauketat 2013: 181), to the endeavor, of the social group, to maintain the ties with their family members through this mortuary practice exclusive of this area of Cahokia. Furthermore, the presence of grave goods, among which exotic materials are recognized, is another reflection of the changes taking place starting to the beginning of the Moorehead phase. Compared to the Lohmann and Stirling phases, in which only the high-status lineages had right to exotic and grave goods, by the Late Mississippian times a higher presence of these kind of materials associated with burials and dwellings reflects a more widespread access of the individuals to wealth or power (Pauketat 2013: 181). This trend possibly represents a period of changes and uncertainty defined by violence, as also shown by three scalped individuals in the 15B Tract (Pauketat 2013: 169), and constant shift of power among kin groups (Kelly and Brown 2014: 312).

6.5 The last occupation: The Sand Prairie phase

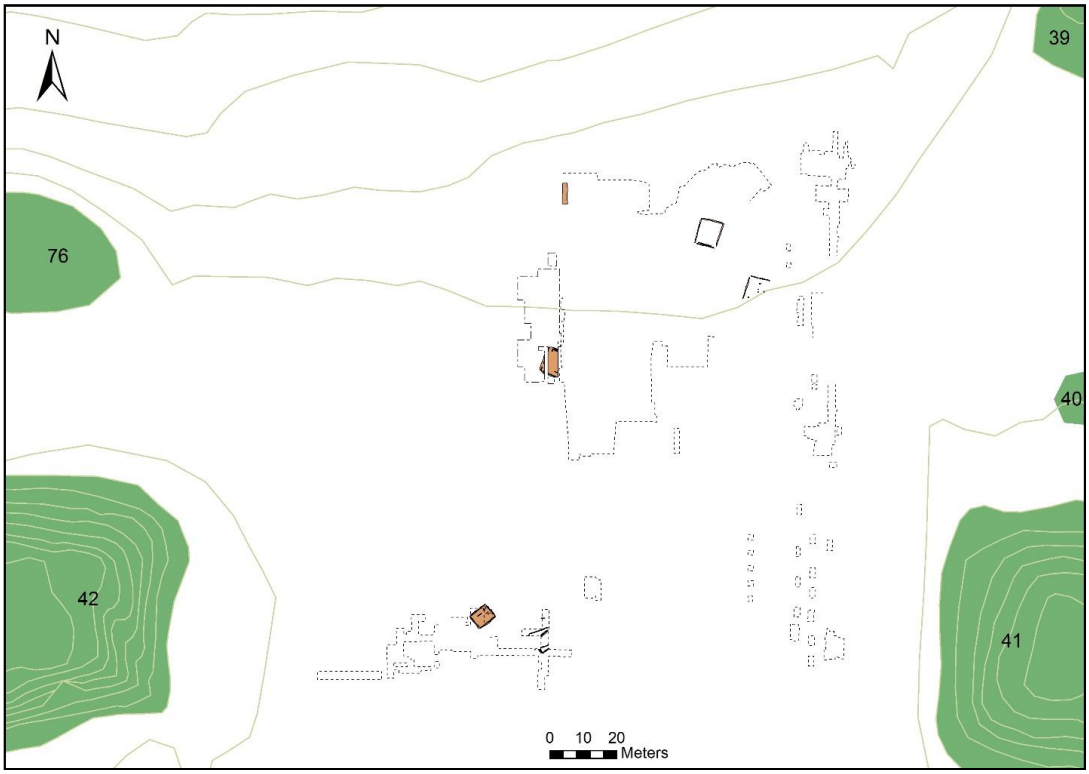


Figure 6.19 Detail map of Sand Prairie phase structures located in the West Plaza Area. In this map are represented exclusively the structures that can be attributed with certainty to the Sand Prairie phase.

At the Cahokia Conference in 1972 (Fowler and Hall 1975), the Sand Prairie phase was defined on the basis of Vogel's (1975) analysis of Late Mississippian materials from the tracts 15A and 15B after the division of the Trappist Focus, a phase named by Griffin in 1949, into an earlier Moorehead phase and a later Sand Prairie phase (Kelly and Koldehoff 1995: 18). This period was characterized by the disappearance of polished and slipped wares, Powell Plain and Ramey Incised replaced by assemblages composed by Wells Fine Incised plates, effigy head bowls, deep wide bowls, fabric-impressed pans and pans with vertical walls; among the new assemblage, beakers and Cahokia Cordmarked jars were kept in use (Vogel 1975; Kelly and Koldehoff 1995: 18).

The shift to the Sand Prairie phase was characterized by the decline of population that reached the 34-37% from Moorehead to only 13-15% of Stirling phase (Milner 1986). This decreasing trend reflected the dissolution of the upper levels of social hierarchy (Merher 1995: 153).

Little or no ceremonial construction of mounds is attested at Cahokia; additionally, on top of Monks Mound traces of non-elite residential activities were found (Benchley 1974: 161-172). Across the hinterland temple towns fell in disuse and floodplain mortuaries served smaller rural communities; this local segmentation has been interpreted as a consequence of the lack of Cahokia's integrating influence (Merher 1995: 153).

The Sand Prairie phase occupation at Cahokia, as defined by Holley (1989) and Dalan (2003: 102), consisted in a "rump" population scattered around what once was the Central Precinct confined around the flanks of Monks Mound with a higher concentration on the western edge, where structures were located and excavated (Rogers and Smith 1995: 53). Sand Prairie materials were also recovered from Harding mound, Jesse Ramey mound, Wells village area near mounds 50-51 and mound 31 (Kelly and Koldehoff 1995). The West Plaza area, during the Sand Prairie phase, revealed to have the highest population density in the site, since structures pertaining to this phase were detected at the Merrell Tract-Beloit College (Kelly and Koldehoff 1995), the 15B Tract (Kelly and Koldehoff 1995; Pauketat 2013), in the area located between Mound 39 and 77 (Kelly 2000), on top of the mounds 42 (Benchley 1974) and 48 (Ringberg 1996).

Systematic excavations were led in 1970s at the Merrell Tract-Beloit College (Salzer 1972; Kelly and Koldehoff 1995) where two structural complexes (F313-314-348 and F304-308-310) with associated pits and hearths, pertaining to the Sand Prairie Phase, were investigated[26]. Both complexes were possibly part of the larger residential area located north. The Merrell Tract-Beloit College's Sand Prairie buildings showed at least one episode of rebuilding, deep but not wide wall-trenches having open corners and a northeast-southwest orientation (Kelly and Koldehoff 1995: 23). A decapitated frog effigy pipe was deposited in the northeastern corner of the wall trench of the initial house (F348) as a dedicational offer for the erection of the building. The location of the sandstone pipe would indicate the sunrise for summer solstice as suggested by Kelly (and Koldehoff 1995: 90). The same house complex showed evidence of ritual burial attested by the deposition of whole vessels in the proximity of the hearth symbolizing fertility (lobed jar and gourd effigy jar), sun and its creational power (red slipped plate with sunburst decoration) and a ritual-related figure, possibly a witch, represented by the owl

[26] See chapter 2.2 for a more detailed description of the features.

effigy bowl (Kelly and Koldehoff 1995: 89). Moreover, due to the large number of projectile points found in the house basin and associated pits and to the presence of smudge pits, used in the process of smoking the hides, in the immediate vicinity of the buildings Kelly (and Koldehoff 1995: 91) suggests the performance of rituals connected to hunting activities. Whereas, the large quantity of open serving vessels located for the most part in the outside pits would indicate the performance of rituals involving the whole community, such as the Busk or Green Corn Ceremony (Kelly and Koldehoff 1995: 90). During the most recent excavation led in the Merrell Tract by the University of Bologna, another Sand Prairie phase building, F1193, was located and partially excavated[27]. As for the buildings dug by the Beloit College students, F1193 showed at least one episode of rebuilding, deep but narrow wall trenches and the presence of at least one basin. Three inner features, possibly pits or fired areas, were defined on the field, but they were not excavated because of time restrain. A peculiar layer of yellow mottled clay, which superimposed the outermost walls of the F1193, has been interpreted as some sort of plaster that covered the walls of one of the rebuilding episodes (fig. 4.92). Yet, since it superimposed the wall trenches of the larger structure, it is possible that the later construction episode can be identified with the smaller building, such as for the Merrell Tract-Beloit College's F313-314-348. Unfortunately, until the excavation of F1193 will not be completed, no exact sequence can be provided.

The Sand Prairie phase structures located in the Merrell Tracts can be considered as part of a larger residential area located during the excavations of the 15B Tract. Among the buildings excavated in 1960, some have been recognized as pertaining to the Sand Prairie phase; however, the conditions proper of the 1960s' salvage excavation and the superimposition of the Sand Prairie on the earlier Moorehead phase structures resulted into the impossibility to separate the earlier material from the later (Pauketat 2013: 114). Hence, only three (H43/56, H59 and H112) of the 15B Tract's buildings can be attributed with certainty to the Sand Prairie phase[28]. These three buildings were incinerated and most of the logs were found collapsed on the houses' basins; the excavation of H112,

[27] See chapter 4.3 for a more detailed description

[28] Pauketat (2013a:119) suggests that H129 can be considered as pertaining to the Sand Prairie phase due to its superpositiong. As stated before in the dissertation (see. Chapters 4.2 and 4.3), H129 has been partially excavated in the Merrell Tract-UNIBO excavations as F1069Complex and proved not to be a Sand Prairie structure.

though, was not completed because it was located on the western excavations' edge. The incineration of these structures has been interpreted by Pauketat (2013: 121) as a final commemorative act, as for the Merrell Tract-Beloit College complex, although in this case sanctioned through the destruction via fire.

Figure 6.20 Detail of H112 burned daub (slide 9-11 RCC)

Figure 6.21 Ceramics and burned logs, H43-56 (slide 5-21 RCC)

During the Sand Prairie phase, there was a shift in the orientation of the buildings (cfr. Moorehead phase orientation in the previous chapter). Many of the structures identified as Late Mississippian (Moorehead/Sand Prairie) by Pauketat (2013) share the same northeast-southwest orientation (approx. 20° of azimuth) with the Sand Prairie F1193 located in the Merrell Tract-UNIBO. In the reconstructive map (fig. 6.22), based on data recovered from both Pauketat (2013) and Kelly (1995), the structures seems to be arranged in clusters grouped around small courtyards.

However altogether speculative, the more angled orientation of the Merrell Tract-Beloit College structures, comprised from 52° and 72° east of north (Kelly and Koldehoff 1995: 26), could imply either that they could have been related to a different cluster of structures, still not located in the area, sharing a different orientation or that they could have had a slightly different chronology.

Through the data collected from the abovementioned excavations, it is clear that the Sand Prairie phase occupation of the West Plaza area involved both domestic and ritual activities. This is generally considered as a period of decline and demise (Dalan 2003; Iseminger 2010) that preluded the abandonment of the site; however, the Sand Prairie phase occupation of the West Plaza area suggest a different picture characterized by the performance of common and private rituals, the circulation of exotic and precious goods,

even if no more exclusive of the élites (Iseminger 2010: 154), and a good degree of residential stability reflected by the multiple reconstruction of the domiciles (Kelly and Koldehoff 1995: 87). Those characteristics could imply that some degree of social complexity was still maintained among the Cahokia's community and possibly between Cahokia and its hinterland, in which small centres such as Julien Site and Florence Street could have preserved their central role as civic/ceremonial and mortuary centres even during the Sand Prairie phase as suggested by Roger and Smith (1995: 53).

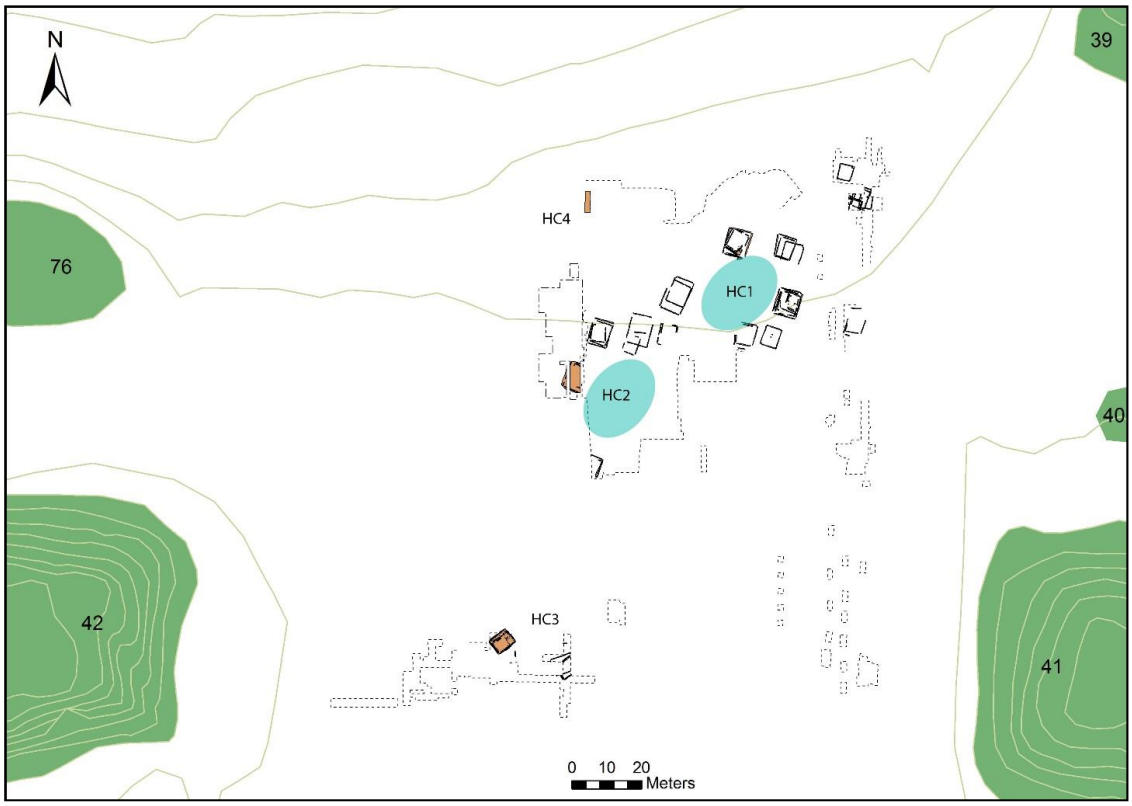


Figure 6.22 Map of hypothetical Sand Prairie phase house clusters (HC) sharing the same orientation. Courtyards in blue. Elaborated unifying the Sand Prairie phase maps from Kelly (1995) and Pauketat (2013) in which the houses attributable to this specific phase are different (I. Valese).

The causes of Cahokia's decline are still debated, it is more likely that the concurrence of many factors contributed to its demise and progressive abandonment (Iseminger 2010: 148). However, recent studies led by a team of geographers from the Departments of Geography and Anthropology and Center for Climatic Research, University of Wisconsin-Madison, Madison, and Department of Earth and Planetary Sciences, Washington University in Saint Louis have found evidences of repeated flood events that could have led to the abandonment of the centre (Muñoz et al. 2015).

The results from the analysis of a sequence of cores made in the deposits of the Horseshoe lake, located in Cahokia's surroundings, revealed an increase in the frequency of large floods starting from AD 1200 that could have determined Cahokia's decline and abandonment. The magnitude of this event was sufficient to destroy agricultural fields and surpluses along with entire settlements scattered in the floodplain. Maintaining political authority in this time of crisis would have meant a significant challenge to a complex non-state society like Cahokia, which could have had troubles in controlling the fragmented hinterland resulted by the relocation of the destroyed settlement on the highlands (Munoz et al. 2015: 6321). Hence, the return of large floods could have mined the stability of Cahokia's leaders and could have been active cause of the socio-political disintegration progressed that resulted in the complete dissolution of Cahokia by AD 1350 (Muñoz et al. 2015: 6322).

Regardless the role of Cahokia in the American Bottom during the Sand Prairie phase's unstable socio-political landscape, Cahokia's cultural influence was still felt in the far flourishing centres of Moundville (Knight and Steponaitis 1998), Etowah (King 2003a) and Spiro (Brown 1996) where Cahokian myths and system of beliefs, embodied in the Southeastern Ceremonial Complex, spread along with Cahokian traded or locally reproduced artifacts (Pauketat and Alt 2015).

Chapter 7 Summary and Conclusions

Cahokia was built following a preconceived plan based on the cardinal directions and the principles of centrality, quadralateralism and dualism, adopting Monks Mound as the centre of the scheme with the four plazas arranged around this focal point (Kelly 1996). The West Plaza was an integral part of downtown Cahokia, and by the 15B and Merrell Tracts' excavations, it seemed to cover an important religious and/or political role.

During the Emergent Mississippian phase (AD 750-1050) the area was intended for residential use; groups of house clusters surrounded small courtyards in which, predominantly, domestic activities were played. It is interesting to notice how these dwellings were built in an East-West orientation and seemed to have a regular distribution. The increasing nucleation and the systematic distribution of the household clusters on the Edelhardt meander scar was possibly part of the process of formation of Cahokia as a "mega village" as defined by Kelly (2008).

The botanical residues retrieved from the pits located in the Emergent Mississippian courtyards testify the carrying out of domestic and ritual activities. In the other Emergent Mississippian settlements such as Range, the nucleation and the organization of communal, supra-household ritual activities was one of the key features in the shaping of larger social units (Kelly 1990a, 1990b; Kelly et al. 1990). No evidence of communal ritual facilities comes from the excavation led in the West Plaza area, even though a set of features in the center of a Merrell phase courtyard could be interpreted as central marker posts surrounded by a quadripartite arrangement of pits (Pauketat 2013: 62; fig. 4.11, Valese 2010/2011), a pattern common in other Emergent Mississippian sites.

Moreover, the communal intent towards the creation of an incipient "urban cluster" (Kelly 2008) could be seen through the landscape modification activities that took place at large scale during the late Emergent Mississippian phase, and evident both in the West – with the levelling activity with the deposition of the "Blue Fill" F1160 and the sub-mound levelling activities identified below Md. 76– and East Plaza (i.e. Feature X, Williams and Kelly 2017). These landscape modifications imply the transport and laying down of such a heavy and hard fill, as for the case of F1160, suggest some form of corporate labor investments by the late Emergent Mississippian communities of the area forewarning to the sequence of landscape modifications that would have brought to the creation of the

West Plaza in a span of time comprised between the end of the Emergent Mississippian phase and the beginning of the Lohmann phase. Interestingly, the larger dimensions of late Emergent Mississippian houses from Merrell and Tract 15B (Unibo's excavation data, Pauketat 2013: 60, 301) suggest that the inhabitants of the area could have been of higher (or, at least, distinct) social status with respect to their contemporaries in other sectors of Cahokia. This fact hints at some kind of special concern towards the Merrell Tracts-Tract 15B area since the early phases of the Cahokia sequence (Kelly 1990; Pauketat 2013). By the beginning of the Lohmann phase the site was undergone to a massive transformation, that interested not only the West Plaza area but the entire settlement. The Emergent Mississippian residential areas were cleared away and relocated, new neighbourhoods located at the margins of the settlement were conceived (i.e. ICTII, Falcon Drive-In), in order to construct the "Cahokia Epicenter".

The West Plaza, defined by earthen mounds, unlike the Grand and East Plazas, wasn't clear from edifices, since Rotundas, in the earlier, and Compounds, in the later phases occupied part of it. The construction of the rotundas and the absence of residential buildings is an undeniable clue that the area was meant to be a public space. It's hard to comprehend the exact purpose of those structures, since no data concerning inside pits or related facilities have been recorded by archaeologists, even though, their purpose is not easy to comprehend, the size and the shape of the buildings lead to consider a religious or public function. The creation of the "Downtown Cahokia" following a plan based on the quadripartite arrangement of plazas, one of the basic tenets of Native American cosmologies that has its roots in the Emergent Mississippian community layout, has been described as one of the key elements in the creation of Cahokia's urban plan (Kelly and Brown 2014). This process involved massive investments of labor and movements of people as explicitly shown by the transformations occurred in the West and East Plaza areas (Brown and Kelly 2015).

Compounds A and B/C mark the beginning of the Late Stirling phase, replacing the earlier circular buildings. Even though, the relative chronology of Compounds A and B/C is unknown, most archaeologists have referred to these buildings as two independent and not contemporary facilities (Dalan et al. 2003; Kelly 1996; Alt and Pauketat 2010; Pauketat 2013), first of all because of their closeness, they are about 4m apart, and because of the bastions' dimensions that are different in the two buildings. It seems plausible to think,

instead, that Compound B and C were contemporary and maybe associated structures (Valese 2012; Domenici and Valese 2016). Examples of circular buildings associated with square ones in Cahokia already exist; Smith, in fact, brought to light two similar, although smaller, buildings under Md. 55, which constitute a community complex of the usual rectangular full Mississippian residence and a circular ceremonial house, both constructed on the same architectural principles (Fowler 1969). Observing Smith's pre-mound buildings, it's impossible to not note the analogy which subsists between them and 15B' Compounds, the same association of round and square shapes can be observed, also, in the quadripartite arrangements of pits in the Emergent Mississippian courtyards (i.e. Range, Kelly 1990), or even in the shapes of the Twin Mounds in Cahokia's Grand Plaza. Remarkably, another ethno-historic parallel can be made about this matter, as a matter of fact, a similar pairing occurred in the plazas of historical Cherokee and Creek settlements, in which a rounded and a rectangular townhouse were built (see Rodning 2009, 2010, 2011; Bartram 1853: figs. 1-5). In the historical settlement, the two buildings were meant to be used during different season (winter- round buildings, summer – rectangular buildings) but still the two shapes could have had symbolic meanings related with the inherent dualism of Eastern Woodland cosmology (Dalan et al. 2003: 204). Moreover, the compounds, as well as the earlier rotundas, could have physically embodied the corporate identity of specific social groups, precisely as occurred with earth lodges and townhouses among historical Native American groups (Domenici and Valese 2016).

As for the rotundas, no information from the excavations have been revealed about the Compounds' function. Certainly, they must have had some very important purpose; they evoke the Palisade appearance, which strongly suggest a defensive function; unfortunately, the thinness of the walls goes against their efficiency as defensive structures. It is unquestionable, at any rate, that one of their function was to separate a structure or activities that were played on its inside, from the outside. It is quite conceivable that the role of the Compounds could have been related with inner structures having a ritual or a political role. The act of shield and exclude both from visual and participation suggests a shift in Cahokia's society. Maybe factional divisions were emerging within the inhabitants of the subcommunities that cooperated during the earlier Lohmann phase in the establishment of the settlement. The building of the central

stockade, whose chronological relationship with Compounds A and B/C is unfortunately unclear, was the materialization of this trend of spatial seclusion and sociopolitical factionalism (Domenici and Valese 2016).

The construction of the Cahokia's Palisade and its chronological relationship with the Compounds introduce another inquiry about the spatial organization of Cahokia epicenter in Stirling times concerning whether were the compounds A and B/C inside or outside the central stockade. However, this question remains unanswered since the chronology of the palisade and the compounds are still uncertain and even more the course of the palisade is still unknown for its west side (see Pauketat 2013: 101-109, 302; figs. 4.40, 9.1). Anyhow, the being of the compounds as an inside or outside the Cahokia's precinct changes its role among society, if located outside, then, Compounds A and B/C, would be imitating at a smaller scale the massive central stockade, embodying the corporate identity of a lesser – but still important – social segment of Cahokian society. Otherwise, if the West Plaza stands inside the stockade, the Compounds would have had a more important function as "double enclosures" for the activities carried out within their walls. Whatever the spatial and chronological relationship between the stockade and the compounds, the West Plaza area, during the Late Stirling phase, was still playing an important role as a special-purpose space in which ritual and/or élites' activities were performed.

Once the compounds were torn down, the West Plaza area was still for a brief lapse of time occupied by a series of non-domestic buildings. A series of bug structures were built, such as H6, H10, H20, H21, Unnumbered northern building, and F358/1001; among the hypothesis the most plausible seems to be Pauketat's, who describes those buildings as élite families or religious specialists and caretakers' dwellings (Pauketat 2013: 96-100; 302). F358/1001 stands out for its dimensions and monumentality and possibly could be interpreted as the last council house-like building of the area before it was reconverted to a more common residential area (Valese 2012; Domenici and Valese 2016).

Starting from the Early Moorehead phase and continuing into the Sand Prairie phase, the Merrell Tract-Tract 15B area witnessed the sprawling of a new, dense, mostly Late Mississippian residential occupation, dozens of domestic Early-to-Late Moorehead and Sand Prairie phase, houses and associated features are indicative of a Late Mississippian residential occupation (see Pauketat 2013: 109-121). One of the biggest dwellings has

been uncovered in the University of Bologna's excavation; the large F1005 building with its associated pits and midden areas, often rich in remains of fine or precious materials such as Ramey Jars, decorated plates, quartz crystals, and fluorite beads. The presence of exotic and élite goods suggest that the Late Mississippian community of the area had access to precious materials and probably engaged in some kind of communal feasting activities thus suggesting that the area, even if reverted back to residential use, was still the theatre of some kind of ceremonial activity, probably of a more "local" kind than in previous centuries, being associated with nearby residential clusters and not anymore with monumental buildings (Domenici and Valese 2016). This more private, household or supra-household level of ceremonial practices, paired with the increasing practice of burying the dead within the residential structures and not in communal funerary facilities, seems to be in accord with the emergence of a Late Mississippian "new ceremonialism" (Pauketat 2013: 302-303, Baltus 2014) and with the general trend toward increased inward looking Cahokian society.

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