Contract Publication Series 15-246

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED UPGRADE OF HINKSTON PIKE IN MOUNT STERLING, MONTGOMERY COUNTY, KENTUCKY

by
Brian G. DelCastello, RPA

Prepared for

KENTUCKY TRANSPORTATION CABINET

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ABSTRACT

On July 8 and 9, 2015, Cultural Resource Analysts, Inc., personnel conducted an archaeological survey for the proposed Hinkston Pike Upgrade northeast of Mount Sterling in north-central Montgomery County, Kentucky. The survey was conducted at the request of David Waldner, Kentucky Transportation Cabinet. The proposed project entails upgrades to Hinkston Pike in order to increase traffic flow. The current survey consisted of a single parcel measuring approximately 9.5 ha (23.5 acres) in size, all of which was surveyed.

A records review, conducted at the Office of State Archaeology, indicated that a small segment (1.5 ha [3.9 acres]) of the project area had been previously surveyed. A single archaeological site (15Mm167) was situated within this previously surveyed segment.

The field methods were commensurate with the conditions observed, consisting of an intensive pedestrian survey supplemented by screened shovel testing in low visibility areas. The previously surveyed area was subjected to a pedestrian survey. Limited shovel testing in the location of Site 15Mm167 did not identify any archaeological materials as the area was disturbed.

The current survey resulted in the discovery of three previously unrecorded archaeological sites (15Mm232–15Mm234). Sites 15Mm232 and 15Mm234 were multicomponent historic residence/farmsteads that contained nondiagnostic prehistoric lithic artifacts. Site 15Mm232 dates to the late nineteenth and early twentieth centuries, while 15Mm234 dates to the twentieth century. Site 15Mm233 was a historic residence/farmstead lacking prehistoric artifacts and it dates to the twentieth century.

Sites 15Mm233 and 15Mm234 likely extend outside of the current project area. Portions of the sites outside of the project area were not evaluated for the current survey and may need to be assessed at a later date if developments are proposed to impact these areas.

Because of their limited research potential, none of the three sites are considered eligible for the National Register of Historic Places, and no further work is recommended. No sites listed in, or eligible for listing in, the National Register of Historic Places will be affected by the proposed construction activity, and cultural resource clearance for this project is recommended.

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Chapter 1. Introduction

On July 8 and 9, 2015, Cultural Resource Analysts, Inc. (CRA), personnel conducted an archaeological survey for the proposed Hinkston Pike Upgrade in northern Montgomery County, Kentucky (Figure 1.1). The project area was north-northeast of Mount Sterling, Kentucky. The survey was conducted at the request of David Waldner of the Kentucky Transportation Cabinet. Field investigations were conducted by Tommy H. McAlpine and Brian G. DelCastello. The fieldwork required approximately 25 person hours to complete. The project area measured approximately 9.5 ha (23.5 acres) in size. Of this total area, approximately 1.5 ha (3.9 acres) had been previously surveyed and was pedestrian surveyed, supplemented with limited shovel testing during the current investigation in order to reassess Site 15Mm167.

Office of State Archaeology (OSA) Geographic Information Systems (GIS) data requested by CRA in May 2015, was returned on July 01, 2015. The results were researched by Heather Barras and Katherine McKinney of CRA at the OSA on July 14–16, 2015. The OSA project registration number is FY16_8507.

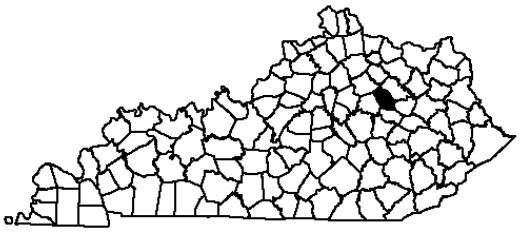

Figure 1.1. Map of Kentucky showing the location of Montgomery County.

Prior to the field investigations an 811 locate was submitted for the project area. Several underground utilities were marked within the project area, concentrated predominately along the existing portions of Hinkston Pike. Shovel testing was not conducted within close proximity of the marked utilities. The survey was only conducted after landowner permission was obtained.

Project Description

The project consists of an archaeological survey for the proposed upgrade and realignment of Hinkston Pike in north-central Montgomery County, Kentucky (see Figures 1.2 and 1.3). It is located north-northeast of the Mount Sterling town center. The project area consists of a single parcel measuring approximately 9.5 ha in size. The proposed project will entail the realignment of a segment of Hinkston Pike. The new upgrade will alleviate traffic flow.

While portions of both sides of Hinkston Pike will be affected by the proposed construction, the majority of the disturbances will be situated to the east where the proposed Hinkston Pike segment splits from the existing portions of the road. Portions of this hilly segment will be graded to allow for better traffic flow. This segment is situated behind several residences along the existing segment of Hinkston Pike.

Purpose of Study

This study was conducted to comply with Section 106 of the National Historic Preservation Act. This transportation project is federally funded, and therefore considered an undertaking subject to 106 review. Any state, county, or municipal lands in the project area

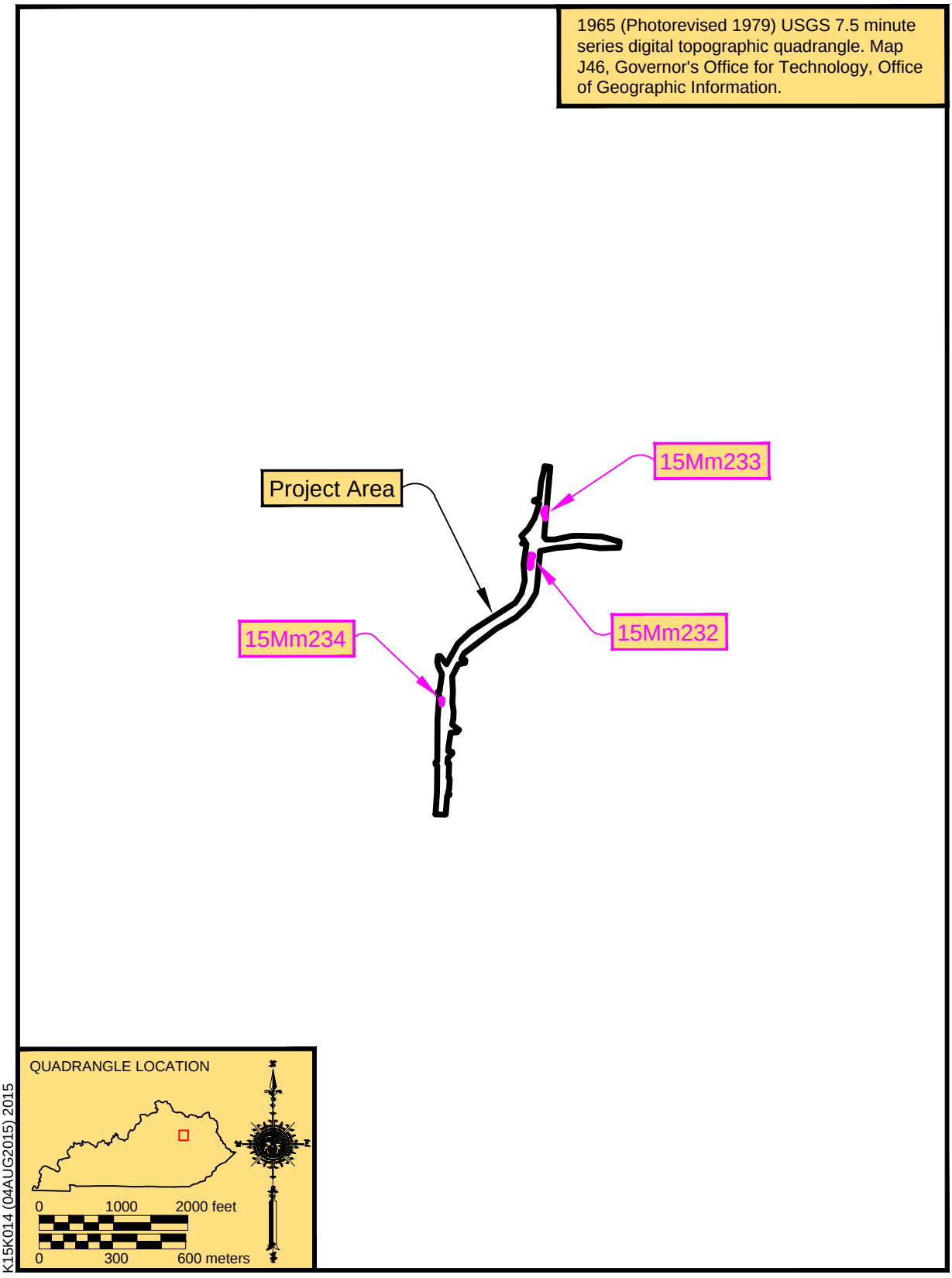

Figure 1.2. Location of project area on topographic quadrangle.

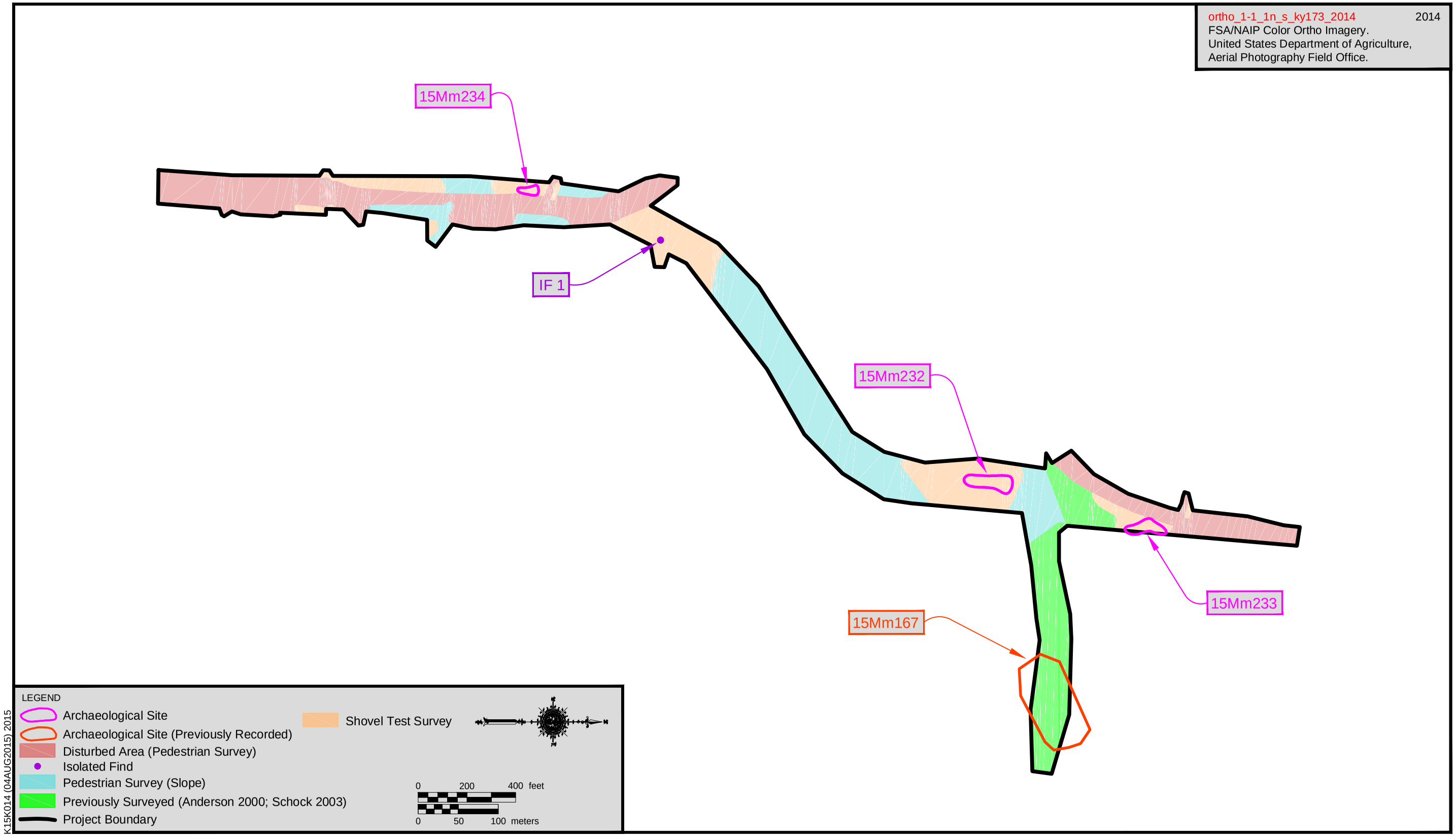

Figure 1.3. Project area plan map.

were surveyed under OSA Kentucky Antiquities Act Permit Number 2015-24 pursuant to Kentucky Revised Statute (KRS) 164.720.

The purpose of this survey was to assess any potential effects the new upgrade might have on identified cultural resources. To do this, the archaeological survey followed these objectives:

> identify prehistoric and historic archaeological sites located within the project area;
>
> determine, to the extent possible, the age and cultural affiliation of sites;
>
> establish the vertical and horizontal boundaries of sites;
>
> establish the degree of site integrity and potential for intact cultural deposits to be present.

For the purposes of this assessment, a site was defined as "any location where human behavior has resulted in the deposition of artifacts, or other evidence of purposive behavior at least 50 years of age" (Sanders 2006:2). Cultural deposits less than 50 years of age were not considered sites in accordance with "Archeology and Historic Preservation: the Secretary of the Interior's Standards and Guidelines" and were not assessed as part of this study (National Park Service 1983).

The following is a description of the project area, previous research and cultural history of the area, the field and laboratory methods used, and the results of this investigation. It conforms to the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2006). Cultural materials, field notes, records, and site photographs will be curated with the University of Louisville in Louisville, Kentucky.

Summary of Findings

Prior to initiating the field investigations, a records review was conducted at the OSA. The review indicated that 14 previous archaeological surveys and 2 NRHP evaluations had been conducted within a 2.0 km (1.2 mi) radius surrounding the project area. The records review also indicated that a small portion (1.5 ha [3.9 acres]) of the project area had been previously surveyed (Shock 2003). That survey identified a single archaeological site (15Mm167) situated within the current project area. It was determined not eligible for listing in the NRHP (Shock 2003). The OSA records review also indicated a total of 43 archaeological sites (including 15Mm167) within the reviewed area.

The current archaeological survey resulted in the identification, documentation, and analysis of three previously undocumented archaeological sites (15Mm232, 15Mm233, and 15Mm234), and one prehistoric isolated find (IF1) consisting of a single nondiagnostic flake. All three sites consist of the sparse remains of historic farms/residences dating to the twentieth century. Sites 15Mm232 and 15Mm234 also contained a sparse prehistoric assemblage consisting solely of nondiagnostic flake debris. Sites 15Mm233 and 15Mm234 appear to extend outside of the current project area.

Site 15Mm232 and the portions of Sites 15Mm233 and 15Mm234 within the current project area are recommended not eligible for listing in the NRHP due to the paucity of cultural materials and the lack of research potential. As a result, no further work is recommended for any of the sites. However, as the boundaries for Sites 15Mm233 and 15Mm234 extend outside the currently defined project area; NRHP eligibility could not be assessed for those unrecorded portions of those sites. Therefore, if the project corridor is rerouted at the locations of Sites 15Mm233 and 15Mm234, then additional archaeological investigations will be needed to assess the potential impacts to the unrecorded portions of each site.

No archaeological sites listed in, or eligible for listing in, the NRHP will be affected by the proposed construction activities of the current project. Therefore, archaeological clearance is recommended.

Chapter 2. Environmental Setting

This section of the report provides a description of the modern and prehistoric environment and considers those aspects of the environment that may have influenced the settlement choices of past peoples. Attributes of the physical environment also often guide the methods used to discover archaeological sites. Topography, bedrock geology, vegetation, hydrology, soils, lithic resources, and climate for the Bluegrass region are discussed below.

The Bluegrass region of Kentucky (Figure 2.1) is third in size behind the Mississippian Plateaus and Eastern Kentucky Coal Field regions, but it is larger than the Western Kentucky Coal Field and Mississippi Embayment regions (Raitz 1973:53; Schwendeman 1979:28). The Bluegrass region acquired its name from the appearance of a bluish colored grass that is known botanically as Poa pratenis and commonly as Kentucky Bluegrass, and the region is referred to as the "Heart of Kentucky" (Davis 1927:3; Raitz 1973:53). The Bluegrass Region is divided into three subregions: the Inner Bluegrass, Outer Bluegrass, and the Knobs. Each of these subregions has unique physical differences that distinguish them from each other. Montgomery County is located within the Outer portion of the Bluegrass Region.

The Outer Bluegrass

The Outer Bluegrass subregion of Kentucky is similar topographically and geologically to the Inner Bluegrass subregion in that it is somewhat karst and gently rolling, but it is also more rugged and is underlain by Ordovician siltstone, limestone, and shale, as well as by Silurian dolomite on its western edge (Newell 2001; O'Brien 1984:61; Pollack 2008:17). Situated between the Inner and Outer Bluegrass is a belt of shale commonly known as the Eden Shale Belt or Eden Shale Hills (O'Brien 1984:61; Raitz 1973:54; Schwendeman 1979:30). This area has been

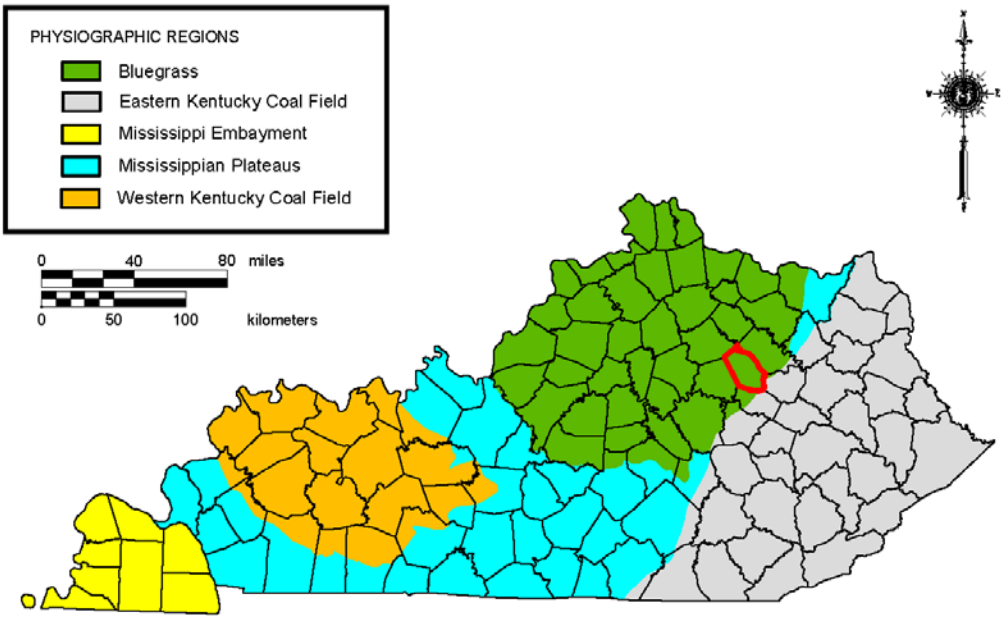

Figure 2.1. The Bluegrass region.

extensively eroded over time, which has contributed to the exposure of an underlying shale bed that is less resistant than other rocks (O'Brien 1984:61). The counties located completely within the Outer Bluegrass consist of Boone, Bracken, Campbell, Carroll, Gallatin, Grant, Henry, Kenton, Mason, Oldham, Owen, Robertson, Shelby, Spencer, Trimble, and Washington. Anderson, Clark, Harrison, Mercer, Nicholas, and Pendleton Counties encompass portions of both the Inner and Outer Bluegrass. Portions of Bath, Bullitt, Fleming, Jefferson, and Nelson Counties overlap with the Knobs. Portions of Boyle, Garrard, Madison, and Montgomery Counties are within the Inner Bluegrass, Outer Bluegrass, and Knobs subregions. Finally, Lincoln and Marion Counties overlap with the Knobs subregion, and small portions extend into the Mississippian Plateaus region.

Like the Inner Bluegrass subregion, rivers that cross the Outer Bluegrass flow through meandering courses that are entrenched well below the plains and low hills. River bottoms within the Outer Bluegrass are narrow, discontinuous, and confined by limestone cliffs and wooded slopes, although they widen at their confluence with the Ohio Valley (Newell 2001). The Outer Bluegrass is bordered to the north and west by the Ohio River and to the south and east by the Knobs region. The Outer Bluegrass circumscribes the Inner Bluegrass region on all sides. The Kentucky, Licking, Ohio, and Salt Rivers and their tributaries drain this region (see Figure 2.2).

Vegetation in the Bluegrass

The Inner and Outer Bluegrass and the western portion of the Knobs are located within the Western Mesophytic Forest region as defined by Braun (2001:122–161), whereas the eastern portion of the Knobs is situated within the Mixed Mesophytic Forest region. The Western Mesophytic Forest region offers a mosaic pattern of climax vegetation types that are often less luxuriant than those observed for the Mixed Mesophytic Forest region (Braun 2001:122–123). The Western Mesophytic region is considered a transition zone in which the effects of local environments allow different climax types to exist in proximity. Braun (2001:529) states that the modern pattern of forest distribution is the result of past and present environmental influences, such as changes in climate, topography, or soil, bringing about changes in vegetation.

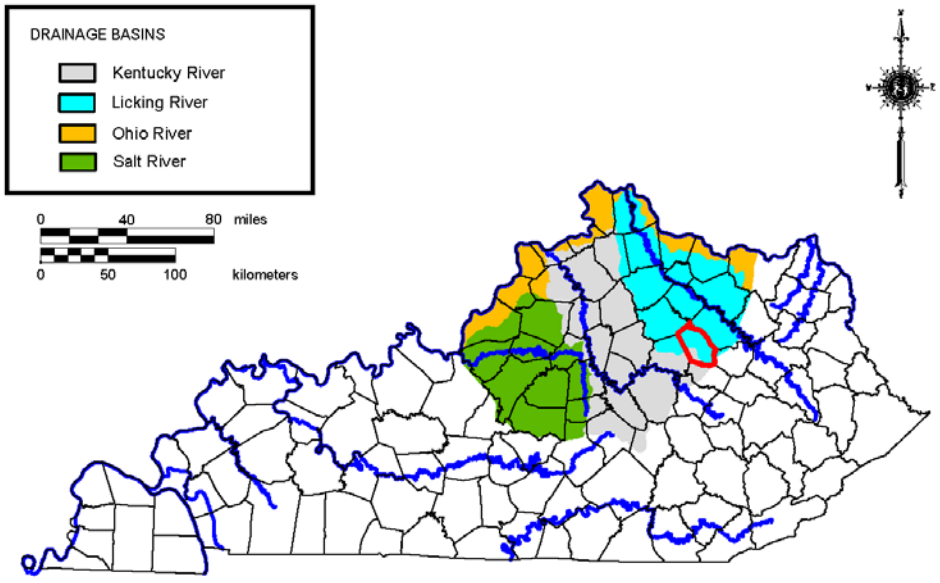

Figure 2.2. Rivers that drain the Bluegrass region.

The Mixed Mesophytic Forest region is described as the most complex and oldest association of the Deciduous Forest Formation (Braun 2001:39). Mixed mesophytic refers to a climax association in which dominance is shared by a number of species, and the dominant trees are beech, tulip tree, basswood, sugar maple, chestnut, sweet buckeye, red oak, white oak, and hemlock (Braun 2001:40). The composition and abundance of dominants in the Mixed Mesophytic Forest region vary by geographic location and correlate to soil moisture, humidity, and the character of underlying rock (Braun 2001:119). Oak-hickory and oak-chestnut communities are typically located along dry slopes and ridges, while scrubby oak thickets and groves of pine can be found along low slopes of wide valleys (Braun 2001:121). Secondary white oak forest occupies much of the valley floors not in pasture or cultivation, whereas swampy valley flats are composed primarily of pin oak, sweet gum, and red maple (Braun 2001:121).

A historic account from 1784 indicates that a variety of vegetation types were abundant in the Bluegrass region in general, including sugar maple, honey locust, mulberry, wild cherry, laurel, buckeye, cane, wild rye, clover, buffalo grass, wild lettuce, and pepper grass (Braun 2001:127–128). Mid-nineteenth-century accounts indicate that at least 25 species of trees were present in the Inner Bluegrass region, including sugar maple, walnut, several oaks, hickories, ash, wild cherry, black locust, honey locust, and mulberry. Notably, beech was not mentioned in the early accounts (Braun 2001:129). Blue ash and bur oak are the dominant tree types in the modern Inner Bluegrass. Interestingly, the bluegrass for which the region is named is not considered an indigenous species (Davis 1927).

Locust, sugar maple, hickory, black walnut, ash, wild cherry, white oak, and an undergrowth of cane were reported for the Outer Bluegrass during the mid-nineteenth century, and unlike the Inner Bluegrass, the presence of beech was noted in some communities (Braun 2001:130). In areas of the subregion that have a more rolling topography, beech, tulip tree, sugar maple, white oak, and red oak were abundant (Braun 2001:130).

Burroughs (1926:93) states that a late-nineteenth-century account indicated maples and white oak were historically common in the Knobs subregion; that beech and red cedar were common in areas underlain by limestone; that pine, hemlock, laurel, and holly were located along cliffs and peaks; and that chestnut and oak forests were located along plateaus. During the 1920s, the natural forest growth consisted of oaks, hickory, chestnut, and Virginia pine, and sycamores were found along streams. Redbud and dogwood were found along knob slopes, and mistletoe was often seen along the limestone belts (Burroughs 1926:93–94).

Soils of the Bluegrass

In the United States, soils are classified according to the USDA Soil Taxonomy (Soil Survey Staff 1999). In this classification system, soils are classified on the basis of macroscopic and chemical attributes that reflect differing aspects of pedogenic development. Soils are also grouped on the basis of limiting factors that include "specific practical purposes, such as the soil limitations affecting the foundations of buildings" (Soil Survey Staff 1999:15). A significant contribution to this classification scheme is based on the topographic position (or landform) on which the soils are situated and by the length of time it has taken for those soils to have developed (Birkeland 1999; Soil Survey Staff 1999).

Throughout the Outer Bluegrass region of Kentucky, many of the soils are mapped as belonging to the Alfisol Order. These soils have typically developed on Late Pleistocene or older landforms or on erosional surfaces of similar age. They have a thin, dark A-horizon, rich in organic matter and nutrients, and a clay-enriched subsoil, and they are relatively high in fertility due to being only moderately leached (Soil Survey Staff 1999:163–165). Alfisols may contain intact archaeological deposits very near or on the ground surface, depending upon the landform on which they formed (e.g., side slope vs. ridgetop). In Montgomery County, Kentucky, a total of six soil associations, most of

which are associated with Alfisols, have been identified and mapped in recent years.

Within the project area, all of the soils have been mapped as belonging to the Lowell-Crider-Shelbyville Association (Froedge 1986). This association is identified in the rolling terrain throughout the central and northern portions of the county. The constituent soils are typically identified along the various hills and ridges throughout the region, although some of the soils have also been identified in floodplain settings. These soils typically have clay-rich to loamy subsoils. Within this association a total of 6 soil series have been identified in the project area (Table 2.1). These soil series will be described in greater detail below.

Lithic Resources

The Bluegrass region displays diverse and abundant sources of lithic raw material that could have been exploited by prehistoric inhabitants. Silurian- and Ordovician-age dolomite, limestone, siltstone, and shale deposits outcrop in various areas of the region (USGS 2011). These deposits contain Grier cherts, which predominate in the Inner Bluegrass area, and Gilbert, Tyrone, and Salvisa cherts, which predominate in the Outer Bluegrass. In the Knobs area, the Devonian to Mississippian-age limestone and shale deposits contain predominantly Boyle and Brassfield cherts. Pleistocene to Holocene-age glacial deposits in the Louisville area contain a variety of cherts. Grier chert is a low to moderate quality chert; however, it is abundant in some areas and was often used as a source of tool stone for prehistoric groups. Gilbert, Tyrone, and Salvisa cherts exhibit a more restricted geographic range than Grier chert; therefore, they are not as commonly recovered on prehistoric sites in the region. Boyle and Brassfield cherts are both high quality cherts and are abundant in the Outer Bluegrass region. Both of these materials were used by prehistoric people in the region.

As discussed in the materials recovered chapter, only a single lithic raw material (i.e., Brassfield) was identified among the various lithic assemblages at Sites 15Mm232 and 15Mm234 as well as IF 1. This raw material is described below.

Brassfield/Boyle Chert

Brassfield chert is present throughout portions of the Eastern Knobs region, the eastern edge of the Outer Bluegrass, and south-central Kentucky. Brassfield chert is generally gray and tan and mottled with occasional blue-gray patches. Fine flecks of white fossil fragments are common. This resource has been described as a fine-grained chert with a moderate to semi-vitreous luster (Amick 1987). Fine flecks of white fossil fragments are common. Brassfield chert occurs as flattened nodules about 4.0 to 7.0 cm (1.6 to 2.8 in) thick and 10.0 cm (3.9 in) long.

Boyle chert has been described as a very fine-grained to medium fine-grained chert possessing a variety of colors, including tan, brown, pink, red, blue, white and gray (Gatus 1980). Tans and gray tend to dominate the color spectrum. This chert type typically has a moderate to semi-vitreous luster. Inclusions within Boyle chert typically consist of crinoid and bryozoan fragments. Boyle chert occurs as nodules and tabular blocks and can be procured from bedrock exposures of the Middle Devonian Boyle Dolomite Formation throughout the Eastern Knobs and along the eastern edge of the Outer Bluegrass and south-central Kentucky (Gatus 1980, 1985).

Based on macroscopic attributes, Brassfield and Boyle cherts are very similar in appearance. Both are fine-grained and multicolored and contain abundant white fossil fragments. Boyle is generally more translucent and tends to have larger fossils than Brassfield, but consistently distinguishing between the two, especially when examining smaller pieces, is difficult, if not at times impossible. Because of the difficulty in distinguishing between these two material types, and common occurrence of these cherts throughout the geographic region, these cherts were treated as a single category in the current lithic analysis. Rather than referring to the material as "Brassfield / Boyle," these lithic raw materials will be arbitrarily designated as "Brassfield" chert.

Table 2.1. Soil Families, Series, and Phases Identified in the Currently Defined Project Area.

Soil Family	Soil Series	Soil Phase	Soil Order	Approximate Area Within Project Area (sq m)	Percent Area
Fine, Mixed, Active, Mesic Typic Hapludalfs	Lowell	Lowell silt loam, 2 to 6 percent slopes	Alfisol	9,363	43.4
Fine, Mixed, Active, Mesic Typic Hapludalfs	Faywood	Faywood silt loam, 6 to 12 percent slopes	Alfisol	3,795	17.6
-NA-	Faywood & Lowell	Faywood-Lowell complex, 12 to 35 percent slopes	Alfisol	3,248	15.1
Fine, Mixed, Active, Mesic Typic Hapludalfs	Lowell	Lowell silt loam, 6 to 12 percent slopes	Alfisol	2,171	10.1
Fine-Silty, Mixed, Active, Mesic Fluventic Hapludolls	Huntington	Huntington silt loam, occasionally flooded	Mollisol	1,714	7.9
-NA-	Faywood & Cynthiana	Faywood-Cynthiana complex, 12 to 35 percent slopes, eroded	Alfisol	1,013	4.7
Fine-Silty, Mixed, Active, Mesic Ultic Hapludalfs	Elk	Elk silt loam, 6 to 12 percent slopes, rarely flooded	Alfisol	257	1.2
			TOTAL	21,561	100.0

Prehistoric and Historic Climate

Climatic conditions during the period of human occupation in the region (Late Pleistocene and Holocene ages) can be described as a series of transitions in temperature, rainfall, and seasonal patterns that created a wide range of ecological variation, altering the survival strategies of human populations (Anderson 2001; Niquette and Donham 1985:6–8; Shane et al. 2001). The landscape during the Pleistocene was quite different from that of today. Much of the mid-continent consisted of periglacial tundra dominated by boreal conifer and jack-pine forests. Eastern North America was populated by a variety of faunal species, including megafaunal taxa such as mastodon, mammoth, saber-toothed tiger, and Pleistocene horse, as well as by modern taxa such as white-tailed deer, raccoon, and rabbit.

The Wisconsinan glacial maximum occurred approximately 21,400 years B.P. (Anderson 2001; Delcourt and Delcourt 1987). By 15,000 B.P., following the Wisconsinan glacial maximum, a general warming trend and concomitant glacial retreat had set in (Anderson 2001; Shane 1994). Towards the end of the Pleistocene and after 14,000 B.P., the boreal forest gave way to a mixed conifer/northern hardwoods forest complex. In the Early Holocene and by 10,000 B.P., southern Indiana was probably on the northern fringes of expanding deciduous forests (Delcourt and Delcourt 1987:92–98). Pollen records from the Gallipolis Lock and Dam on the Ohio River near Putnam County, West Virginia, reveal that all the important arboreal taxa of mixed mesophytic forest had arrived in the region by 9000–8500 B.P. (Fredlund 1989:23). Similarly, Reidhead (1984:421) indicates that the generalized hardwood forests were well established in southeastern Indiana and southwest Ohio by circa 8200 B.P.

Prior to approximately 13,450 B.P., climatic conditions were harsh but capable of supporting human populations (Adovasio et al. 1998; McAvoy and McAvoy 1997). Populations were probably small, scattered, and not reproductively viable (Anderson 2001). The Inter-Allerød Cold Period, circa 13,450–12,900 B.P, brought about the dispersal of Native Americans across the continent. This period was followed by the rapid onset of a cooling event known as the Younger Dryas (circa 12,900–11,650 B.P.) during which megafauna species became extinct, vegetation changed dramatically, and temperature fluctuated markedly. It was also a period of noticeable settlement shift that marked the appearance of a variety of subregional cultures across eastern North America (Anderson 2001).

In a recent review, Meeks and Anderson (2012:111) described the Pleistocene/Holocene transition as “a period of tremendous environmental dynamism coincident with the Younger Dryas event.” The Younger Dryas (circa 12,900 to 11,600 cal. B.P.) represents one of the largest abrupt climate changes that has occurred within the past 100,000 years. The onset of the Younger Dryas appears to have been a relatively rapid event that may have been driven by a freshwater influx into the North Atlantic as a result of catastrophic outbursts of glacial lakes. “The net effect of these outbursts of freshwater was a reduction in sea surface salinity, which altered the thermohaline conveyor belt; effectively slowing ocean circulation of warmer water (heat) to the north and bringing cold conditions” (Meeks and Anderson 2012:111; though see Meltzer and Bar-Yosef 2012:251–252 for a critique of this view). This resulted in significantly lower temperatures during this time. The Younger Dryas ended approximately 1,300 years later over a several decade period. The onset of the Younger Dryas coincides with the end of Clovis and the advent of more geographically circumscribed cultural traditions.

Pollen records for the Younger Dryas indicate that vegetation shifts were sometimes abrupt and characterized by oscillations. These shifts were not uniform over the entire southeast and indicate that a variety of factors were at play. At Jackson Pond in Kentucky (Wilkins et al. 1991), for example, several

pronounced reciprocal oscillations occurred in a large number of spruce and oak. According to Meeks and Anderson, "these oscillations reflect shifts between boreal/deciduous forest ecotones associated with cool/wet and cool/dry conditions, respectively" (2012:113).

Meeks and Anderson (2012:126–130) define five population events for the Paleoindian–Early Holocene transition. Population Event 1 (circa 15,000–13,800 cal. B.P.) is a pre-Clovis occupation that exhibits a slow rise in population. This event may represent the initial colonization of the southeast region and may represent the basis of later Clovis occupation or a failed migration (Meeks and Anderson 2012:129). Population Event 2 represents an apparent 600 year gap between Events 1 and 3. Population Event 3 (circa 13,200–12,800 cal. B.P.) occurred just prior to, and extended into, the Younger Dryas event. This event represents the "first unequivocal evidence for widespread human occupation across the southeastern United States" (Meeks and Anderson 2012:129). Event 3 coincided with the Clovis occupation in the region. A marked decline in the population is posited for Population Event 4 (12,800–11,900 cal. B.P.). This equates with the early to middle Younger Dryas and relates to a post-Clovis occupation of the region. Meeks and Anderson (2012:129) see a fragmentation of the regional Clovis culture at this time along with "the development of geographically circumscribed subregional, cultural traditions in the southeastern United States." A marked increase in population density is posited between 11,900 and 11,200 cal. B.P. This coincides with the late portion of the Younger Dryas and the early portion of the Holocene. Population Event 5 is represented by this time frame. Early Side Notched and Dalton are seen during this time.

During the Early Holocene, rapid increases in boreal plant species occurred on the Allegheny Plateau in response to the retreat of the Laurentide ice sheet from the continental United States (Maxwell and Davis 1972:517–519; Whitehead 1973:624). At lower elevations, deciduous species were returning after having migrated to southern Mississippi Valley refugia during the Wisconsinan advances (Delcourt and Delcourt 1981:147). The climate during the Early Holocene was still considerably cooler than the modern climate, and based on species extant at that time in upper altitude zones of the Allegheny Plateau, conditions would have been similar to the Canadian boreal forest region of today (Maxwell and Davis 1972:515–516). Conditions at lower elevations were less severe and favored the transition from boreal to mixed mesophytic species. At Cheek Bend Cave in the Nashville Basin, an assemblage of small animals from the Late Pleistocene confirms the environmental changes that took place during the Pleistocene to Holocene transition and the resulting extinction of Pleistocene megafauna and establishment of modern fauna in this area (Klippel and Parmalee 1982).

Traditionally, Middle Holocene (circa 8000–5000 B.P., also referred to as the Hypsithermal) climate conditions were thought to be consistently dryer and warmer than the present (Delcourt 1979:271; Klippel and Parmalee 1982; Wright 1968). The influx of westerly winds contributed to periods of severe moisture stress in the Prairie Peninsula and to an eastward advance of prairie vegetation (Wright 1968). More recent research (Anderson 2001; Shane et al. 2001:32–33) suggests that the Middle Holocene was marked by considerable local climatic variability. Paleoclimatic data indicate that the period was marked by more pronounced seasonality characterized by warmer summers and cooler winters.

The earliest distinguishable Late Holocene climatic episode began circa 5000 B.P. and ended around 2800 B.P. This Sub-Boreal episode is associated with the establishment of essentially modern deciduous forest communities in the southern highlands and increased precipitation across most of the mid-continental United States (Delcourt 1979:271; Maxwell and Davis 1972:517–519; Shane et al. 2001; Warren and O'Brien 1982:73). Changes in local and extra-local forests after approximately 4800 B.P. may also have been the result of anthropogenic influences.

Fredlund (1989:23) reports that the Gallipolis pollen record showed increasing local disturbance of the vegetation from circa 4800 B.P. to the present, a disturbance that may have been associated with the development and expansion of horticultural activity. Based on a study of pollen and wood charcoal from the Cliff Palace Pond in Jackson County, Kentucky, Delcourt and Delcourt (1997:35–36) recorded the replacement of a red cedar–dominated forest with a forest dominated by fire-tolerant taxa (oaks and chestnuts) around 3000 B.P. The change is associated with increased local wildfires (both natural and culturally augmented) and coincided with increases in cultural utilization of upland (mountain) forests.

Beginning around 2800 B.P., generally warm conditions, probably similar to those of the twentieth century, prevailed during the Sub-Atlantic and Post–Sub-Atlantic climatic episodes, with the exception of the Neo-Boreal sub-episode, or Little Ice Age (circa 700–100 B.P.), which was coldest from circa 400 until its end. Despite the prevailing trend, brief temperature and moisture variations occurred during this period. Some of these fluctuations have been associated with adaptive shifts in Midwestern prehistoric subsistence and settlement systems (Baerreis et al. 1976; Griffin 1961; Struever and Vickery 1973; Warren and O'Brien 1982).

Studies of historic weather patterns and tree-ring data by Fritts et al. (1979) indicate that twentieth-century climatological averages were “unusually mild” when compared to seventeenth- to nineteenth-century trends (the time period used for comparison represents the coldest period of the Neo-Boreal [400–100 B.P.], or the Little Ice Age) (Fritts et al. 1979:18). The study suggested that winters were generally colder, weather anomalies were more common, and unusually severe winters were more frequent between A.D. 1602 and A.D. 1900 than after A.D. 1900. The effects of the Neo-Boreal sub-episode, which ended during the mid- to late nineteenth century, have not been studied in detail for this region. It appears that the area experienced smaller temperature decreases during the late Neo-Boreal than did the upper Midwest and northern Plains (Fritts et al. 1979), so it follows that related changes in extant vegetation would be more difficult to detect.

Modern Climate

The modern climate of Kentucky is moderate in character and temperature, and precipitation levels fluctuate widely. The prevailing winds are westerly, and most storms cross the state in a west to east pattern. Low pressure storms that originate in the Gulf of Mexico and move in a northeasterly direction across Kentucky contribute the majority of the precipitation received by the state. Warm, moist, tropical air masses from the Gulf predominate during the summer months and contribute to the high humidity levels experienced throughout the state. As storms move through the state, occasional hot and cold periods of short duration may be experienced. During the spring and fall, storm systems tend to be less severe and less frequent, resulting in less radical extremes in temperature and rainfall (Anderson 1975).

According to records maintained at Mount Sterling for the period from 1951 to 1979, the weather of Montgomery County was as follows (Froedge 1986:94, Table 1). The average maximum daily temperature in January is 42.7 degrees Fahrenheit, while the average minimum daily temperature for the same month is 23.8 degrees. July, typically the hottest month in the year, has an average daily maximum temperature of 86.1 degrees Fahrenheit. Yearly precipitation averages approximately 46.74 inches. Precipitation levels for individual months indicate an average range of approximately 2.26 inches for October to approximately 4.98 inches. for July.

Description of the Project Area

The proposed transportation project consists of a single land parcel where the reroute and upgrades to Hinkston Pike will occur (see Figures 1.1–1.3). The new upgrade

will improver traffic flow. The project area measures approximately 9.5 ha (23.5 acres) in size. The project area is located north-northeast of the Mount Sterling town center.

The project area is reflective of the hilly nature of the Outer Bluegrass, consisting of moderately hilly, rolling terrain (Figure 2.3). This rolling terrain is most marked in the central portion of the project area where the proposed reroute deviates from the existing portion of Hinkston Pike (Figures 2.1 and 2.3). On the whole, the project area gently slopes downward to the north to Hinkston Creek. Elevations within the project area range from approximately 305 m (1,000 ft) above mean sea level (AMSL) along portions of the southern end to approximately 265 m (870 ft) AMSL to the north along the creek.

In contrast to the southern and central portions of the project area, the northern stretch is situated within a floodplain (Figure 2.4). This portion of the project area is relatively flat, reflecting the alluvial nature of the floodplain.

Disturbances in the project area appear to be directly related to the construction and maintenance of Hinkston Pike. These disturbances were most obvious in the southern portions of the project area, where land grading activities had altered the landscape to accommodate the construction of the road bed (Figure 2.5). A review of the available historic maps shows that these disturbances likely predate the mid-twentieth century. As discussed in the following chapter, the construction of Hinkston Pike likely occurred at the turn of the twentieth century as it is clearly depicted on the 1929 structural geology map of Montgomery County, Kentucky (KGS 1929) (see Figure 3.1).

Figure 2.3. Overview of project area showing topography along the central portion of the project area. Photo facing northeast.

Figure 2.4. Overview of the northern portion of the project area within the Hinkston Creek floodplain. Photo facing east-northeast.

Figure 2.5. Example of historic/modern land grading activities associated with the original construction of Hinkston pike. Photo facing north.

In addition to the land grading activities, several underground utilities were also located within the project area, concentrated along, and near, the existing portion of Hinkston Pike within the ROW easement. Shovel testing was not conducted in close proximity to these utilities.

Vegetation within the project area generally consisted of a variety of deciduous and herbaceous plants. The southern portions of the project area was dominated by the presence of manicured lawns (see Figure 2.5) and pastures; while the central portion was predominantly pasture (see Figure 2.3). Pasture edges typically consisted of narrow strips of various deciduous trees, shrubs and weedy underbrush. The northern portion of the project area consisted of manicured lawns, pasture, and several small portions of wooded lots (see Figure 2.4).

As previously discussed, a total of six soil series, accounting for seven soil phases, have been identified in the project area (Table 2.1). These soils all belong to the Lowell-Crider-Shelbyville Association (Froedge 1986). This association has been identified throughout this portion of the county among the rolling terrain. These soils are typically present on hills and ridges of the region. They are deep, slowly permeable soils that possess loamy or clay-rich subsoils.

Six of the seven soil phases are classified as Alfisols. Soils within this soil order have typically formed in forested environs on landforms comprised of late Pleistocene and Holocene age sediments (Soil Survey Staff 1999:163). The remaining phase, Huntington silt loam (occasionally flooded) was classified as a Mollisol. Soils within this order have typically formed in either grassy environs or in forested regions (Soil Survey Staff 1999:555). These soils have also formed in alluvial settings where pedogenesis was kept in check with overbank deposition.

The first series is the Lowell Silt Loam. Two soil phases were identified in this soils series: Lowell Silt Loam (2–6 percent slopes) and Lowell Silt Loam (6–12 percent slopes). These soils were classified as fine, mixed, active, mesic Typic Hapludalfs (Soil Survey Staff 2015). Soils in this series are deep, well-drained soils that are formed in limestone residuum. These soils typically occur throughout the uplands on narrow ridges and hillsides (Froedge 1986:73).

The second series is the Faywood Silt Loam (6–12 percent slopes). This series was classified as a fine, mixed, active, mesic Typic Hapludalfs (Soil Survey Staff 2015). Soils in this series are moderately deep, well-drained soils that are formed in limestone residuum. This soil typically occurs throughout the uplands on narrow ridges and hillsides (Froedge 1986:70–71).

The third series is the Huntington Silt Loam (occasionally flooded). This series was the sole example of a Mollisol identified in the project area. It was classified as a fine-silty, mixed, active, mesic Fluventic Hapludolls (Soil Survey Staff 2015). This soil is deep and moderately well-drained and is formed in floodplain sediments originating from upland environs (Froedge 1986:71). Slopes range from 0 to 3 percent.

The fourth series is the Elk silt loam (6–12 percent slopes, rarely flooded). This soil is classified as a fine-silty, mixed, active, mesic Ultic Hapludalfs (Soil Survey Staff 2015). It is a deep and well-drained soil. This series is generally found on stream terraces and are formed in mixed alluvium (Froedge 1986:70).

The remaining soils are comprised by two complexes: Faywood-Lowell complex (12–35 percent slopes) and Faywood-Cynthiana complex (12–35 percent slopes, eroded). These complexes consist of soils comprising two or more recognized soil series (or other taxonomic units) within a small geographic area. Each of these soils are either intricately mixed, or of such small area it would be difficult to map them individually.

Chapter 3. Previous Research and Cultural Overview

Prior to initiating fieldwork, a search of records maintained by the NRHP (available online at: http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome) and the OSA (FY16_8507) was conducted to: 1) determine if the project area had been previously surveyed for archaeological resources; 2) identify any previously recorded archaeological sites that were situated within the project area; 3) provide information concerning what archaeological resources could be expected within the project area; and 4) provide a context for any archaeological resources recovered within the project area.

A search of the NRHP records indicated that no archaeological sites listed on the NRHP were situated within the current project area. The OSA file search, however, did indicate the presence of a single previously recorded archaeological site within the current project boundary. This site, 15Mm167, will be described in greater detail below. The OSA file search was conducted on July 14–16, 2015.

The work at OSA consisted of a review of professional survey reports and records of archaeological sites for an area encompassing a 2 km radius of the project footprint. To further characterize the archaeological resources in the general area, the OSA archaeological site database for the county was reviewed and synthesized. The review of professional survey reports and archaeological site data in the county provided basic information on the types of archaeological resources that were likely to occur within the project area and the landforms that were most likely to contain these resources. The results are discussed below.

Previous Archaeological Surveys

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OSA records revealed that 14 previous professional archaeological surveys and 2 NRHP evaluations have been conducted within a 2 km radius of the project area (see Table 3.1). Forty-three archaeological sites have been recorded in this area also (see Table 3.2). One of these sites (15Mm167) falls within the current project area for the Hinkston Pike Upgrade. Another site (15Mm169) appears just outside of the currently defined project area. An additional survey completed within the 2 km radius has not yet been entered in the OSA GIS (Webb and Funkhouser 1932). The 2 km radius included areas within the Mount Sterling quadrangle.

Archaeological Site Data

Based on the data provided in Table 3.3, a total of 219 archaeological sites have been recorded in Montgomery County. The data indicates that prehistoric open habitation sites without mounds are the most numerous archaeological site type identified in the county, accounting for approximately 68 percent of the known sites. Other site types identified throughout the county consist of: earth mounds (n = 27; 12.33 percent), undetermined (n = 14; 6.39 percent), and historic farms/residences (n = 13; 5.94 percent). The remaining site types were poorly represented throughout the county.

According to the OSA records, most of the archaeological sites in Montgomery County have been documented in the dissected uplands. In fact, the vast majority of the archaeological sites in the county (n = 175; 79.93 percent), have been documented along the various upland landforms, including dissected uplands, hillsides, and undissected uplands.

The 219 archaeological sites possessed a total of 296 cultural components. As indicated on Table 3.3, over half of these components were identified as Indeterminate Prehistoric occupations. Woodland period prehistoric components account for 19 percent (n = 57) of the 296 identified components. Historic components, while highly represented in the current survey, only account for less than 12 percent (n = 35) of the county-wide components. The actual numbers for each of the remaining components were small (see Table 3.3).

Map Data

In addition to the OSA file search, a review of the available maps were initiated to assist with identifying potential historic properties (i.e., structures) or historic archaeological site locations within the proposed project area. The following maps were reviewed during the current investigations.

1879 Atlas of Montgomery County, Kentucky (Beers and Lanagan);

1929 Map of the Areal and Structural Geology of Montgomery County, Kentucky (Kentucky Geological Survey);

1948 General Highway Map of Montgomery County (Kentucky Department of Highways);

1952 Mount Sterling, Kentucky, 7.5-minute series topographic quadrangle (United States Geological Survey [USGS]);

1955 General Highway Map of Montgomery County (Kentucky Department of Highways); and

1965 (photorevised 1979) Mount Sterling, Kentucky, 7.5-minute series topographic quadrangle (USGS).

The reviewed historic maps provided useful information concerning the general locations of current and former structures located within, and adjacent to, the project area. All areas near possible map structures were investigated for archaeological deposits according to accepted survey methods, as described in the Methods Chapter of this report.

The available historic maps indicated the presence of two historic map structures (MS) within the confines of the current project area. Both structures were located along Hinkston Pike. The first (MS1) was situated at the location of Site 15Mm234; while the second map structure was found at Site 15Mm233 (see below). At the time of the current survey, Neither structure was extant, both having been demolished during the last 25 years or so.

The earliest map depicting a map structure within the project area was the 1929 Montgomery County geologic map (KGS 1929) (Figure 3.1). This map depicts a single structure along the western edge of Hinkston Pike. The map structure was situated at the location of Site 15Mm234. The map indicates that this structure occupied the shoulder position of the landform, just outside the current project area. This structure continues to be depicted during the middle to late portions of the twentieth century as a single residential structure on the 1952 (USGS 1952) and 1965 (photorevised 1979) (USGS 1965) 7.5-minute topographic maps.

The presence of several deciduous yard trees and a lamp post appears to indicate that the structure was situated within 10 m (33 ft) of the western project boundary. Based on publically available Google Earth© images, the structure appears to have been demolished sometime between 2006 to early 2008. Aerial imagery of the non-extant residence shows a U-shaped driveway that connected with Hinkston Pike. Portions of the graveled northern access were noted during the current survey as a horizon of gravel underlying the sod.

MS2 was only represented on mid-twentieth-century maps. The structure first appears on the 1952 Mount Sterling, Kentucky, 7.5-minute topographic quadrangle (Figure 3.2) (USGS 1952). It is shown along the eastern edge of Hinkston Pike within a western meander loop of Hinkston Creek at the location of Site 15Mm233. It is depicted at the toe slope position on the Hinkston Creek floodplain directly adjacent to Hinkston Pike.

Table 3.1. Summary of Archaeological Investigations within a 2-km Radius.

Reference	Lead Agency	Request Of	Request On Behalf Of	Purpose	Date	Size	Methods	Results	Recommendations	NRHP Eligible
Webb and Funkhouser 1932	not specified	not specified	-	to compile a list of known archaeological sites	1932	area of unspecified size	not specified	15Mm2 and 15Mm23 (within 2 km of current project area)	not specified	not assessed
Allen 1977	US Environmental Protection Agency	Howard K. Bell, Consulting Engineers, Inc.	-	proposed wastewater treatment facilities	July 26, 1977	area of unspecified size	surface collection	4 sites (15Mm41–15Mm44)	15Mm41–15Mm44: no further work	15Mm41, 15Mm44: not eligible 15Mm42: not assessed 15Mm43: not assessed
Allen and Pollack 1978	not specified	Mount Sterling – Montgomery County Industrial Association	-	proposed industrial park in Montgomery County, Kentucky	In May of 1978	113 ha (280 acres)	pedestrian survey, shovel testing, backhoe excavation	15 sites (15Mm46–15Mm60)	15Mm46, 15Mm48, 15Mm50, 15Mm52, 15Mm53, 15Mm55–15Mm60: no further work 15Mm47: will not be impacted by the proposed construction, no further work 15Mm49, 15Mm51, 15Mm54: needs further mitigation	15Mm49, 15Mm51, 15Mm54: potentially significant
Boisvert et al. 1979	Economic Development Administration	Mt. Sterling – Montgomery County Industrial Authority	-	proposed industrial park	From August 20, 1979 through September 6, 1979	113 ha (280 acres)	A random sample of 20% of the area on Sites 15Mm51 and 15Mm54 were surface collected, the areas of concentrated artifacts on these 2 sites were to be collected. This further work did not exceed an additional 10% of the site area. The entirety of 15Mm49 was subjected to controlled surface collection.	15Mm49, 15Mm51, 15Mm54	Phase III mitigation complete; no further work	15Mm49, 15Mm51, and 15Mm54: eligible for listing
Hand et al. 1990	Community Development Block Grant	Mt. Sterling and Montgomery County Industrial Authority	-	proposed industrial site near the community of Ewington in Montgomery County, Kentucky	August 17, 1990	40 ha (100 acres)	pedestrian survey, strip plowing	3 sites (15Mm109–15Mm111)	no further work	not eligible
Anslinger 1994	Federal Deposit Insurance Corporation	Bill Bramblet of Montgomery & Traders Bank & Trust Company	-	a proposed construction site for a bank location near the community of Mt. Sterling, Montgomery County, Kentucky	On July 13, 1994	.392 ha (.969 acre)	shovel testing, Oakfield soil probing	no sites	no further work	n/a
McKelway 1997	Farmers Home Administration	Howard K. Bell Engineers, Inc.	Mount Sterling Water and Sewage Commission	proposed water and sewage lines and a pump station in Montgomery County, Kentucky	On July 17, 1997	4.0 km (2.5 miles)	pedestrian survey, shovel testing	no sites	no further work	n/a
Hixon 1998	not specified	not specified	-	widening US 60	In March and April of 1998	2.22 km (1.38 mi)	pedestrian survey, shovel testing	3 sites (15Mm142–15Mm144) and 3 isolated finds	15Mm142 and 15Mm144: no further work 15Mm143: should the alignment be moved east, additional phase I investigations needed to determine NR potential	15Mm142 (portion within the proposed alternates) and 15Mm144: not eligible (due to either disturbed nature and/or lack of intact deposits, and general lack of integrity) 15Mm143: not assessed
Anderson 2000	Kentucky Natural Resource and Environmental Protection Cabinet, Division of Water	CDP Engineers, Inc.	Mount Sterling Water and Sewer System	a proposed wastewater treatment plant and a gravity sewer line within and to the north of the community of Mount Sterling in Montgomery County, Kentucky	Between May 4 and May 31, 2000	approximately 10.4 ha (25.6 acres)	pedestrian survey, screened shovel testing, limited backhoe stripping.	4 sites (15Mm149–15Mm152) and 1 isolated find	15Mm149–15Mm152: no further work	15Mm149–15Mm152: not eligible
Schock 2003	not specified	Sandy C. Napper, Mt. Sterling/Montgomery Co. Industrial Authority	-	proposed industrial park	August 2002-April 2003	34 ha (85 acres)	pedestrian survey. shovel testing	9 sites (15Mm165–15Mm173)	15Mm167–15Mm173: no further work 15Mm165 and 15Mm166: Phase II testing	15Mm167–15Mm173: not eligible 15Mm165 and 15Mm166: not assessed

Reference	Lead Agency	Request Of	Request On Behalf Of	Purpose	Date	Size	Methods	Results	Recommendations	NRHP Eligible
Anderson 2004	Mt. Sterling-Montgomery County Industrial Authority	Sandy Romensko, Executive Director of the Mt. Sterling-Montgomery County Industrial Authority	-	a phase II National Register evaluation of sites 15Mm165, 15Mm166, and 15Mm173 in Montgomery County, Kentucky	Between April 5 and 20, 2004	3 sites	controlled surface collection, mechanical stripping of 500 to 550 sq m of the plowzone per site	The integrity of the surface and near-surface remains at these sites were severely compromised from plowing. All of the features were severely truncated by plowing to such an extent that their original functions could not be determined.	15Mm165, 15Mm166, and 15Mm173: no further work	15Mm165, 15Mm166, and 15Mm173: none eligible
Anderson 2005	Federal Communications Commission	MACTEC Engineering and Consulting, Inc.	Verizon Wireless	the proposed Mount Sterling Telecommunications Tower in Montgomery County, Kentucky	On August 10, 2005	.56 ha (1.37 acres)	intensive pedestrian survey, screened shovel testing	no sites found	no further work	n/a
Bundy 2005	Federal Highways Administration	David Waldner of the Kentucky Transportation Cabinet	-	the proposed KY 11 Reconstruction Project Area in Montgomery County, Kentucky	Beginning July 7 and continuing through September 19, 2003	approximately 68.28 ha (168.72 acres)	intensive pedestrian survey, screened shovel probes. Near-surface geophysical survey, limited conventional testing to further evaluate the significance and research potential of 4 sites (15Mm180, 15Mm182, 15Mm185, and 15Mm192)	23 sites (15Mm175–15Mm196)	15Mm175, 15Mm182, 15Mm188, 15Mm192: further work to assess NRHP eligibility 15Mm176–15Mm181, 15Mm183, 15Mm184–15Mm187, 15Mm189–15Mm191, 15Mm193–15Mm196: no further work	15Mm176–15Mm181, 15Mm183, 15Mm184–15Mm187, 15Mm189–15Mm191, 15Mm193–15Mm196: not eligible 15Mm175, 15Mm182, 15Mm188, 15Mm192: not assessed
Stephenson 2008	US Army Corps of Engineers	Third Rock Consultants, LLC	Nestlé	a proposed expansion of the Mt. Sterling Nestlé plant in Montgomery County, Kentucky	From September 11 to 12, 2007	10.1 ha (25.0 acres)	intensive pedestrian survey, screened shovel testing	1 site (15Mm207)	no further work	not eligible
Arnold 2010	Federal Energy Regulatory Commission	Scott Jecker of Whitenton Group, Inc., Environmental Consultants	Texas Eastern Transmission, LP	the proposed Danville DOT pipeline replacement in Montgomery County, Kentucky	On March 18, 2010	approximately .8 ha (2.0 acres)	intensive pedestrian survey, screened shovel testing.	no sites found	no further work	n/a
Gage and Watkins 2012	not specified	Perennial Environmental Services, LLC	Texas Eastern Transmission, LP	the proposed Kentucky Highway 11 Relocation Project in Mount Sterling, Montgomery County, Kentucky	October 31 and December 10, 2011	6.3 ha (15.6 acres)	pedestrian survey, screened shovel testing	1 previously recorded site (15Mm176) and 1 new site (15Mm219)	15Mm176: no further work 15Mm219: avoidance or additional testing	not assessed
McBride et al. 2014	Federal Highways Administration	Kentucky Transportation Cabinet	-	proposed widening of KY 1991 from Maysville Road to Midland Trail Industrial Park in Mount Sterling, Montgomery County, Kentucky	On February 24, 25, and 28, 2014	3.5 ha (8.75 acres)	pedestrian survey, screened shovel testing	3 sites (15Mm225–15Mm227)	no further work	not eligible

Table 3.2. Summary of Archaeological Sites Within a 2-km Radius.

Site	References	Site Type	Cultural Affiliation	Surveyed By	Survey Company	Survey Date	Investigation Type	NRHP Status	Note
15Mm2	Webb and Funkhouser 1932	mound	not specified	not specified	not specified	not specified	not specified	not specified	
15Mm23	Webb and Funkhouser 1932	mound	not specified	J. B. Hoeing	not specified	not specified	not specified	not specified	
15Mm40	none	open habitation w/o mounds	Woodland, undefined	Charles Hockensmith	Assistant State Archaeologist	June 14, 1977	Reconnaissance	not specified	
15Mm42	Allen 1977	open habitation w/o mounds	indeterminate prehistoric	Charles Hockensmith	Office of State Archaeology	June 14, 1977	Not specified	not specified	
15Mm46	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	C. Tumbow	not specified	Not specified	not specified	
15Mm47	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services Inc.	May 1978	not specified	not specified	
15Mm48	Allen and Pollack 1978	open habitation w/o mounds historic isolated find	indeterminate prehistoric indeterminate historic	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm49	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm49 Revisit	Boisvert et al. 1979	-	-	-	-	-	-	-	revisit form not in OSA files
15Mm50A	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm50B	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm51	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm51 Revisit	Boisvert et al. 1979	-	-	-	-	-	-	-	revisit form not in OSA files
15Mm52A	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm52B	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm53A	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm53B	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm54	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	not specified	not specified	
15Mm54 Revisit	Boisvert et al. 1979	-	-	-	-	-	-	-	revisit form not in OSA files
15Mm55	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm56	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm57	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm58	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm59	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm60	Allen and Pollack 1978	open habitation w/o mounds	indeterminate prehistoric	not specified	Archaeological Services, Inc.	May 1978	Not specified	not specified	
15Mm109	Hand et al. 1990	open habitation w/o mounds	Late Woodland/Mississippian	C. Niquette, R. Hand, M. Brent, L. Gaertner	CRA	August 16, 1990	Reconnaissance	NR status not assessed	
15Mm110	Hand et al. 1990	open habitation w/o mounds	Early Archaic Late Archaic Late Woodland/Mississippian	C. Niquette, R. Hand, M. Brent, L. Gaertner, A. Pecora	CRA	August 17, 1990	Reconnaissance	NR status not assessed	
15Mm111	Hand et al. 1990	open habitation w/o mounds	indeterminate prehistoric	L. Gaertner and G. Sheldon	CRA	August 28, 1990	Reconnaissance	NR status not assessed	
15Mm142	Hixon 1998	open habitation w/o mounds	indeterminate prehistoric	James L. Hixon, Kurt H. Fiegel	KYTC	March 1998	Reconnaissance	inventory site	
15Mm143	Hixon 1998	open habitation w/o mounds	Archaic undefined	James L. Hixon, Kurt H. Fiegel	KTC	March 1998	Reconnaissance	inventory site	
15Mm144	Hixon 1998	open habitation w/o mounds	indeterminate prehistoric	James L. Hixon	KTC	April 1998	Reconnaissance	inventory site	
15Mm149	Anderson 2000	open habitation w/o mounds	Early Woodland Middle Woodland Late Woodland/Mississippian	Jason Anderson	CRA	May 8, 2000	Reconnaissance	inventory site	
15Mm150	Anderson 2000	open habitation w/o mounds	Late Woodland/Mississippian	Jason Anderson	CRA	May 30, 2000	Reconnaissance	inventory site	
15Mm151	Anderson 2000	open habitation w/o mounds	indeterminate prehistoric	Jason Anderson	CRA	May 31, 2000	Reconnaissance	inventory site	
15Mm152	Anderson 2000	open habitation w/o mounds	indeterminate prehistoric	Jason Anderson	CRA	May 31, 2000	Reconnaissance	inventory site	
15Mm165	Schock 2003	open habitation w/o mounds	Archaic undefined Early Woodland Late Woodland/Mississippian	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	NR status not assessed	
15Mm165 Revisit	Anderson 2004	open habitation w/o mounds	Middle Archaic Late Archaic Early Woodland Late Woodland/Mississippian	Jason Anderson	CRA	April 5-7, 2004	Intensive	Inventory site	
15Mm166	Schock 2003	open habitation w/o mounds	Early Archaic Late Woodland/Mississippian	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	NR status not assessed	
15Mm166 Revisit	Anderson 2004	open habitation w/o mounds	Archaic undefined Woodland undefined Late Woodland/Mississippian	Jason Anderson	CRA	April 6-8, 2004	Intensive	inventory site	
15Mm167	Schock 2003	open habitation w/o mounds historic farm/residence	Early Woodland Middle Woodland 1851-1950	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	inventory site	
15Mm168	Schock 2003	open habitation w/o mounds	indeterminate prehistoric	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	inventory site	
15Mm169	Schock 2003	open habitation w/o mounds	Archaic undefined Middle Woodland	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	NR status not assessed	
15Mm170	Schock 2003	open habitation w/o mounds	indeterminate prehistoric	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	inventory site	
15Mm171	Schock 2003	open habitation w/o mounds	indeterminate prehistoric	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	inventory site	
15Mm172	Schock 2003	open habitation w/o mounds historic farm/residence	Archaic undefined 1801-1900	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	inventory site	
15Mm173	Schock 2003	open habitation w/o mounds	Early Paleo-Indian	Jack M. Schock	Arrow Enterprises	June 2003	Reconnaissance	NR status not assessed	

Site	References	Site Type	Cultural Affiliation	Surveyed By	Survey Company	Survey Date	Investigation Type	NRHP Status	Note
15Mm173 Revisit	Anderson 2004	open habitation w/o mounds	Early Archaic Woodland undefined Late Woodland/Mississippian	Jason Anderson	CRA	April 16 and 20, 2004	Intensive	inventory site	
15Mm207	Stephenson 2008	open habitation w/o mounds historic farm/residence	indeterminate prehistoric 1900-2000	David J. Stephenson	CRA	September 19, 2007	Reconnaissance	inventory site	
15Mm219	none	open habitation w/o mounds	indeterminate prehistoric	Matthew Gage and Joel Watkins	University of Alabama, Office of Archaeological Research	December 1, 2011	Reconnaissance	NR status not assessed	
15Mm225	McBride et al. 2014	open habitation w/o mounds	indeterminate prehistoric	Dona Daugherty, Ann Wilkinson	CDM Smith, Inc.	February 24, 2014	Reconnaissance	inventory site	
15Mm226	McBride et al. 2014	open habitation w/o mounds	indeterminate prehistoric	Dona Daugherty, Ann Wilkinson	CDM Smith, Inc.	February 28, 2014	Reconnaissance	inventory site	
15Mm227	McBride et al. 2014	open habitation w/o mounds historic farm/residence	indeterminate prehistoric 1851-2000	Dona Daugherty, Ann Wilkinson	CDM Smith, Inc.	February 28, 2014	Reconnaissance	inventory site	

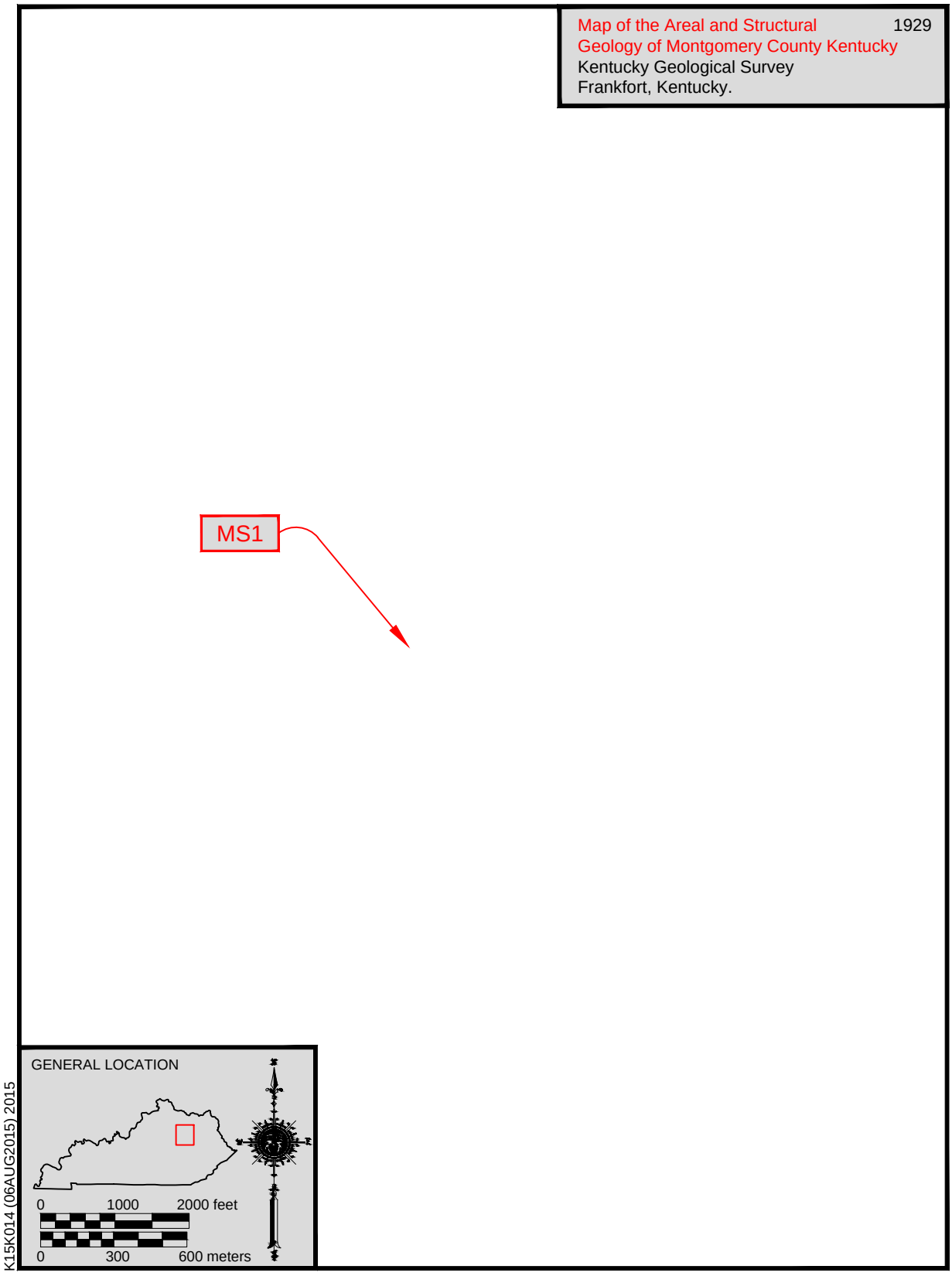

Figure 3.1. The 1929 KGS geologic map of Montgomery County, Kentucky, depicting MS1.

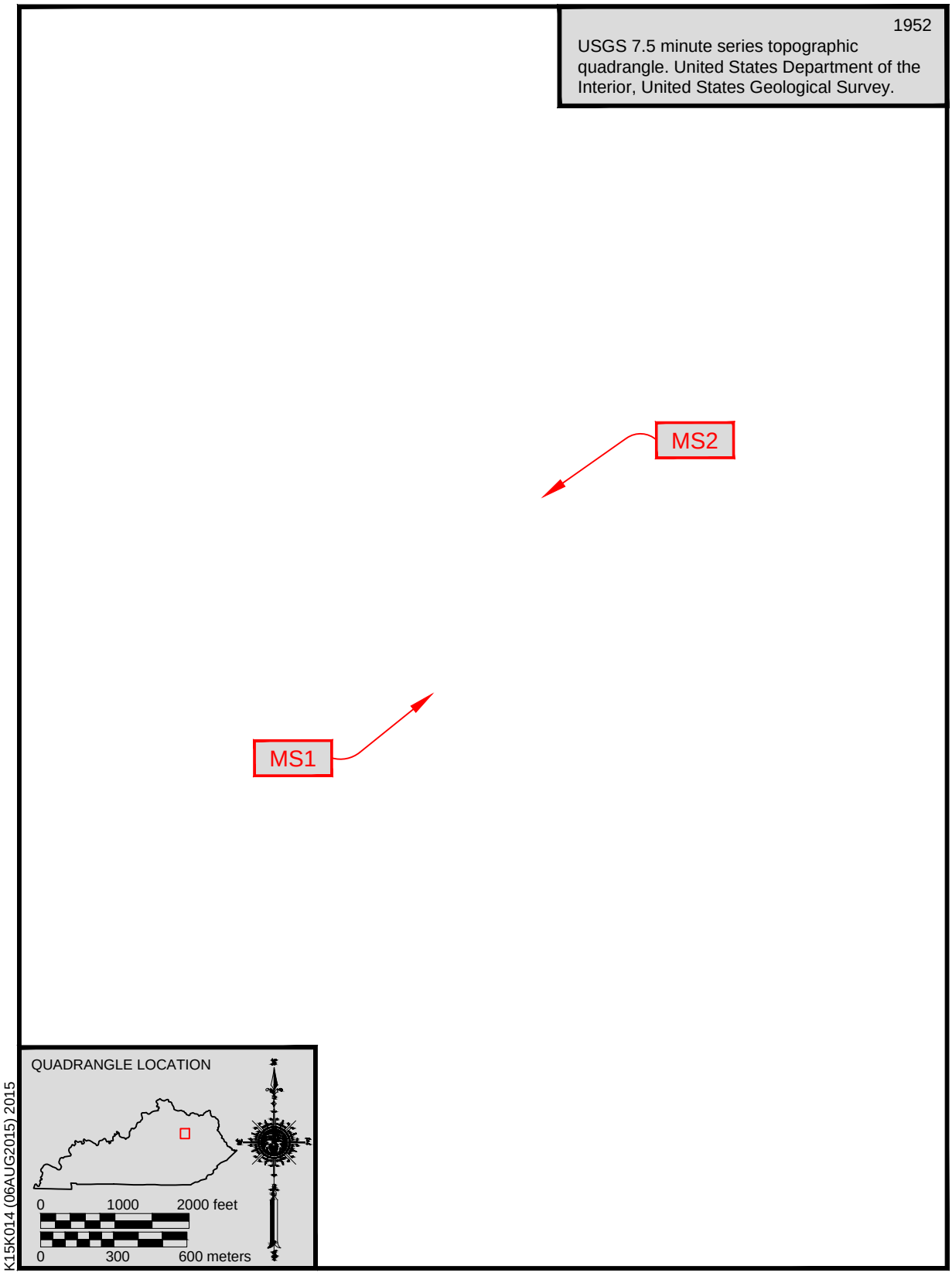

Figure 3.2. The 1952 Mount Sterling, Kentucky 7.5-minute topographic quadrangle depicting MS2.

Table 3.3. Summary of Selected Information for Previously Recorded Archaeological Sites in Montgomery County, Kentucky. Data Obtained from OSA and May Contain Coding Errors.

Site Type:	N	%
Open Habitation without Mounds	148	67.6
Earth Mound	27	12.3
Undetermined	14	6.39
Historic Farm/Residence	13	5.94
Cemetery	4	1.83
Stone Mound	3	1.37
Other Special Activity Area	2	0.91
Quarry	2	0.91
Workshop	2	0.91
Isolated Find	1	0.46
Mound Complex	1	0.46
Non-mound Earthwork	1	0.46
Open Habitation with Mounds	1	0.46
Total	219	100
Time Periods Represented	**N**	**%**
Indeterminate Prehistoric	157	53
Woodland	57	19.3
Historic	35	11.8
Archaic	26	8.78
Late Prehistoric	23	7.77
Paleoindian	3	1.01
Total	296*	100
Landform	**N**	**%**
Dissected Uplands	130	59.4
Hillside	25	11.4
Undissected Uplands	20	9.13
Floodplain	18	8.22
Unspecified	17	7.76
Terrace	8	3.65
Other	1	0.46
Total	219	100

**One site may represent more than one time period.*

The structure continues to be depicted on later twentieth century maps, including the 1965 Mount Sterling, Kentucky, 7.5-minute topographic map (photorevised 1979) (USGS 1965). Conversations with an adjacent property owner suggested that the structure was demolished approximately 15–20 years prior to the survey. No structural remains of the former residence was noted during the current investigations.

Survey Predictions

Considering the known distribution of archaeological sites in Montgomery County, the available information on site types recorded, the reviewed map data, and the nature of the present project area, certain predictions were possible regarding the kinds of sites that might be encountered within the project area. Prehistoric habitations, including open habitations without mounds and earthen mounds, were to be expected. The presence of historic farmsteads/residences would be expected, but at a much lower frequency.

Cultural Overview

Early Human Occupation

There is an increasing amount of evidence documented over the last two decades suggesting that humans arrived in North America before what has traditionally been thought of as the first migration of peoples into the Americas. Archaeologists thought that humans first entered the Americas while following Pleistocene megafauna or other animal species over the Bering Land Bridge that once joined Siberia and Alaska no earlier than about 11,500 years ago. It was thought that after arrival, these migrants—referred to as the Clovis people—quickly spread across North and South America.

Evidence for a pre-Clovis migration is becoming stronger as additional data are collected. Furthermore, multiple entry points or routes have been suggested. Not only did entry into North America occur across a land bridge, but it may also have happened via northern coastal waterways leading to the western (Waguespack 2007), and possibly the eastern (Lowery et al. 2010), seaboards. According to Maggard and Stackelbeck (2008:110) "these discoveries have seriously challenged the Clovis-first model and force us to reconsider the timing of colonization and the processes that were involved in the initial settlement of the New World."

Paleoindian Period (before 8000 B.C.)

The Paleoindian cultural tradition in the northeastern United States has been recognized as part of the Clovis culture, a widespread, homogeneous New World culture typified by a distinctive lithic assemblage. The most distinctive members of this assemblage are lanceolate shaped, often fluted, hafted bifaces (Maggard and Stackelbeck 2008). The presence of other artifact types in these

Paleoindian assemblages, such as chert knives, scrapers, unifacial tools, and blades, is consistent across the eastern United States. These types of artifacts have been recovered from Clovis sites such as Holcombe Beach in Michigan (Fitting et al. 1966), Debert in Nova Scotia (MacDonald 1968), Martens in Missouri (Martens et al. 2004; Morrow 1998, 2000), and Topper in South Carolina (Goodyear and Steffy 2003).

Clovis components are not well represented in Kentucky, but they have been identified at sites such as Adams, Adams Mastodon, Big Bone Lick, Clay's Ferry Crevice, and Parrish (Tankersley 1996). The artifacts in the Clovis toolkit represent predominantly hunting, butchering, and hide-working activities. Bone tools (e.g., awls, needles, flakers, and possibly shaft straighteners) and ornaments are assumed to have been used but have not been recovered because of unfavorable environmental conditions (Griffin 1978:226).

Post-Pleistocene adaptive strategies were geared for coping with a harsh, but rapidly changing, environment. In general, Paleoindian sites are reflective of areas where small groups of people, perhaps no more than 50 individuals (Tankersley 1996:21), would perform specific tasks of short duration. This type of site casts a very low archaeological profile across the landscape. It has been argued that the earliest subsistence strategies in the eastern United States were not typified by a focus on the harvest of megafauna, but rather by a balanced hunting economy based on the exploitation of migratory game—especially caribou—and supplemented by foraged food (Fitting et al. 1966:103–104; Gingerich 2011; Ritchie and Funk 1973:336; Tankersley 1996:22; Walker et al. 2001).

Archaic Period (8000–1000 B.C.)

As Griffin (1978:226) states, "a purely arbitrary division is made between the earlier fluted point hunter and their direct descendants," yet typological comparisons of artifact assemblages begin to take on distinctly regional characteristics with time. The Archaic period is customarily divided into three subperiods: Early (8000–6000 B.C.), Middle (6000–3500 B.C.), and Late (3500–1000 B.C.) (Jefferies 2008). By the Early Archaic, the last glaciers had retreated and the arctic-like boreal forest was developing into the eastern deciduous forest. By the Middle Archaic subperiod, the environment was much as it is today. This subperiod is marked by the introduction of groundstone tools, some of which have been interpreted as plant processing implements. At the beginning of the Late Archaic subperiod, the modern deciduous climax forest covered the entire eastern United States. In response to the changing environment and concurrent changes in plant and animal communities, Archaic period peoples developed a more diversified subsistence strategy that included a shift to exploitation of riverine ecosystems and, perhaps, the beginnings of a planned seasonal round exploitation strategy (Winters 1967:32, 1969).

The typical artifact assemblage representative of the Archaic period is composed of corner- and side-notched, or stemmed, hafted bifaces, increasing in both quantity and stylistic variation through time but accompanied by a decrease in quality of individual workmanship. Corner- and side-notched forms appear earlier in the sequence, whereas stemmed bifaces appear later (Jefferies 2008).

Judging from the greater frequency with which Late Archaic sites appear among sites that are recognized in the prehistoric record, a population increase may be postulated. Moreover, evidence of longer, more intensive site occupation suggests, in some cases, the possibility of extended habitation in parts of the state (Jefferies 2008).

Woodland Period (1000 B.C.–A.D. 900)

Griffin (1978:231) notes that during the Late Archaic subperiod there was "considerable evidence for the long distance movement of goods." The interregional movement of goods provided a structure for

the transmission of information as well. During this period of interregional dynamism, there was a trend towards a more sedentary lifestyle with increasingly elaborate burial ceremonialism and, possibly, stratified social organization. These trends, along with the appearance of fired ceramic vessels, mark the transition between Archaic and Woodland peoples (Griffin 1978).

The Woodland period, like the preceding Archaic period, is divided into three subperiods: Early Woodland (1000–200 B.C.), Middle Woodland (200 B.C.–A.D. 400), and Late Woodland (A.D. 400–900) (Applegate 2008). Overall, the Woodland period witnessed a continuation and elaboration of cultural practices that began during the Late Archaic subperiod. Woodland peoples became increasingly dependent on the cultivation of plant foods, which allowed for a more sedentary lifestyle. Except for the latter part of the Late Woodland subperiod, subsistence practices remained similar to the Archaic subsistence patterns, which is to say a combination of hunting, plant food gathering, and fishing in a seasonal round exploitation pattern. It is within the Woodland period that highly visible site types, such as mounds and enclosures, were constructed (Applegate 2008).

Late Prehistoric Period (A.D. 900–1650)

In addition to an increase in cultural integration and cultural complexity, the Late Prehistoric period witnessed a rapidly growing dependence upon horticulture in the subsistence activities of native populations. Cultural materials are assigned to the Late Prehistoric period by the presence of seemingly diagnostic artifacts, such as mixed limestone and shell or purely shell tempered pottery and triangular projectile points. Temporal assignment based on the presence of triangular points can be misleading since they first appeared during the Late Woodland period. The Late Prehistoric period in this region of Kentucky is referred to as Fort Ancient (Henderson 2008).

During the Fort Ancient period, there was an increased reliance on agriculture, an increase in sedentism, and an increase in the complexity of sociopolitical organization. Subsistence practices focused on the cultivation of corn and beans. This was supplemented with hunting, fishing, and wild plant collecting. Many Fort Ancient villages were circular or elliptical and "exhibit distinct activity areas that encircle a central plaza: domestic/habitation, storage/trash disposal, and mortuary" (Henderson 2008:745). Some, but not all, of these circular villages were surrounded by a palisade.

Cultures with a somewhat similar level of development included Pisgah in the Appalachian Summit, Mississippian in the middle Mississippi River area, and the Plaquemine culture of the lower Mississippi River area. A Late Woodland level of society continued in the Midwest, the Great Lakes, the Northeast, and the piedmont and coastal areas of the Middle Atlantic until European contact (Geier 1992:279–280). The Fort Ancient period is dated between approximately A.D. 900 and 1650.

History of Montgomery County

In 1776, the Virginia General Assembly had created Kentucky County from its western lands. The newly created Kentucky County had approximately the same boundaries as the state of Kentucky does today. This county in 1780 was divided into three separate counties (Fayette, Lincoln, and Jefferson), which would collectively become the District of Kentucky in 1783 (Hammon 1992:495; Kleber 1992:267). Then, in 1792, the Kentucky District would dissipate in favor of the Commonwealth of Kentucky, and the counties that comprised the district would eventually be divided and subdivided into the 120 counties that presently make up Kentucky. The Kentucky General Assembly carved Montgomery County from the eastern portion of Clark County on December 14, 1796, and named it for General Richard Montgomery, who was killed in the Battle of Quebec during the Revolutionary War (Boyd 1992a:644).

Montgomery County was the twenty-second in order of formation.

The county contains 515 sq km (199 sq mi) and is located in the Outer Bluegrass. It is bounded by Bourbon and Bath counties to the north, Menifee County to the east, Powell County to the south, and Clark County to the west. Mt. Sterling is the county seat (Boyd 1992a:644; Rennick 1984:201).

In 1775 William Calk, Enoch Smith, and Robert Whitledge, who had been occupants of Fort Boonesborough, explored land along South Mountain Creek. They constructed a cabin near a spring approximately 1.6 km (1.0 mi) from the present-day location at Mt. Sterling. In 1779, John Harper constructed a cabin near an Indian burial mound around which the town of Mt. Sterling developed. Later, Hugh Forbes, a native of Scotland who offered the name "Stirling" for the developing town, purchased a strip of ground near the burial mound, which eventually was removed from the site (Boyd 1992b:658; Boyd and Boyd 1984:1–2; Richards 1961:81).

Agriculture played a major role in Montgomery County's development and economy throughout the antebellum period. The county developed a slave supported agrarian system early in its existence, and corn, wheat, livestock, and hemp were raised widely and successfully in the early nineteenth century. By 1840, the agricultural economy employed 3,152 people in Montgomery County. By 1850, there were 856 operating farms in the county worth a combined total of nearly $3 million (Boyd 1992a:644; United States Bureau of the Census [USBC], 1840, 1850, Washington, D.C.).

Early industry in Montgomery County was centered around Mt. Sterling. The manufacture of rope and bagging made of hemp was perhaps the most successful early industry in the county. In 1812, Thomas Garrett exported cordage from Mt. Sterling. By 1815, John Young manufactured bagging in town, and he later sold the operation to David Dodge, who owned large ropewalks and bagging factories in Lexington and Winchester. After the War of 1812, the industry declined in Montgomery County, although in 1850, a ropewalk still was located in Mt. Sterling (Boyd and Boyd 1984:202–203). Besides ropewalks and bagging factories, Mt. Sterling also contained a wool carding factory, a tobacco stemmery, tanyards, and a cotton mill. It also had a thriving commercial trade, including tailors, six saddlers, five silversmiths, four cabinetmakers, and three hatters by the mid-1820s. A general store offered goods imported from Philadelphia (Boyd and Boyd 1984:14, 19).

Agriculture, however, remained the dominant, most prosperous industry in Montgomery County during the antebellum period. Farms occupied nearly 89,436 ha (221,000 acres), of which 99 percent was improved. Farmers owned $65,259.00 worth of implements and equipment. They raised $594,114.00 worth of livestock and slaughtered $61,796.00 worth of animals. By 1860, the county's farms were worth over $3.9 million, and farmers owned nearly $1 million worth of livestock (USBC 1850, 1860).

Montgomery County originally stretched from its boundary with Clark County to Kentucky's border with Virginia. The encompassing county contained 7,082 residents in 1800, but the subsequent creation of Floyd, Bath, Powell, and Menifee Counties out of Montgomery County caused fluctuations in it population from census year to census year (Boyd 1992a:644). In 1810, the county contained 12,975 residents, which placed it among the state's most populated counties, but by 1820 its population stood at only 9,587. By 1830, the county had 10,240 residents, but the number slipped to 9,332 by 1840. The number inched to 9,903 by 1850 but dropped 20.6 percent to 7,859 inhabitants by 1860 (USBC 1800–1860).

As noted above, slavery was vital to Montgomery County agriculture; therefore, enslaved African Americans made up a large portion of its population. In 1840, the county contained 2,735 slaves, comprising 29.3 percent of the inhabitants. Over the next decade, the number of slaves increased 12.3

percent to 3,073, and they made up 31 percent of the population. By 1860, the number of slaves dropped to 2,752, and when combined with the 140 free blacks living in the county, African Americans made up 36.7 percent of the population. As the more mountainous reaches of Montgomery County were taken for new counties, the resulting land area was more agriculturally oriented, and the inhabitants were more likely to own slaves (Collins 1882:261; Lucas 1992:xx, 8).

Mt. Sterling and Montgomery County held key positions during the Civil War because of their proximity to both the Bluegrass region and the mountains of eastern Kentucky. Elements of the Union and Confederate armies occupied Mt. Sterling throughout the war. On July 29, 1862, Union soldiers attacked and killed several Confederates at a Mt. Sterling hotel. Confederate cavalry commander Roy S. Cluke and his men raced into the county seat on March 22, 1863, and discovered that a force of 400 Union soldiers held many of the downtown buildings. Cluke ordered his men to burn the buildings to ferret the enemy from their cover, and 10 Union soldiers burned to death before the Federals surrendered to save the town from Confederate torches (Boyd 1992b:658; Boyd and Boyd 1984:43, 47–48). On June 8, 1863, Confederate General John Hunt Morgan captured Mt. Sterling as his force made its way out of the mountains into the Central Bluegrass region. Morgan's men, either frustrated by Confederate failures or by their lack of food and supplies, plundered much of the town. They captured 380 Union troops and an abundance of supplies, but they also robbed the local bank. Several families endured raids on their houses, and the Barnes family's store reported that more than $2,000.00 worth of merchandise had been taken (Boyd and Boyd 1984:48).

In 1857, the Lexington and Big Sandy Railroad started constructing a line eastward from Lexington to Mt. Sterling. They graded the line through Montgomery County to the town, but a nationwide financial panic forced the prospective railroad to stop construction. After the Civil War, Montgomery County invested in the Elizabethtown, Lexington, and Big Sandy (E.L. & B.S.) Railroad, and by using the previously graded line, the railroad was able to complete the line by June 11, 1872. For nearly a decade, Mt. Sterling was the eastern terminus of the railroad, but in 1881, the E.L. & B.S. Railroad extended the line to Ashland. Later, the expanding Chesapeake and Ohio railroad absorbed the line and began running trains to Lexington. Montgomery County then had access to markets on the east coast as well as central Kentucky (Boyd 1992b:658; Boyd and Boyd 1984:60–61, 123).

Before the railroad's arrival, Mt. Sterling's industry continued to be based on the processing of raw materials. In 1869, the town contained a distillery and two flour mills. After the railroad was constructed, additional industry was established in the town, including a lumber mill and a plow handle factory in 1875. Mt. Sterling developed into a supply center for the growing mountain trade, and people from all over eastern Kentucky came to the town to exchange goods. By the 1890s, Mt. Sterling was a bustling railroad town with several large buildings including an opera house on Maysville Street (Boyd and Boyd 1984:79, 201, 204).

Despite the growth and development of industry in Montgomery County, agriculture continued to guide the county's economy. In 1870, there were 575 farms in the county covering nearly 40,469 ha (100,000 acres), and they were worth over $5 million. Farmers owned $51,968.00 worth of implements and machinery, and they raised over a $1 million worth of livestock, indicating the importance of the cattle industry in the county. Montgomery's farms grossed $447,188.00 worth of agricultural goods (USBC 1870).

By 1889, the county contained 977 farms on 45,980 ha (113,618 acres). Farmers owned $58,880.00 worth of implements and machinery and owned $786,370.00 worth of livestock. The farms were worth a collective $4.8 million, and their total output reached $601,270.00. They produced 42,112 bushels of wheat, 51,096 bushels of oats, and 571,345 bushels of corn (USBC 1890).

Montgomery County's population grew rapidly after the construction of the railroad, then it steadied at the end of the nineteenth century. In 1870, it contained 7,557 residents, but over the next decade the population jumped 39.8 percent to 10,566 by 1880. The population reached 12,367 by 1890 and grew very slightly over the next decade, reaching 12,834 by 1900 (USBC 1870–1900).

Montgomery County's economic growth was slow throughout much of the twentieth century. In 1912, the county's first loose-leaf tobacco warehouse was opened in Mt. Sterling, and by the end of the decade, three more warehouses were built in the town. It was the eighth largest tobacco market in Kentucky. Growers from all over the region brought their tobacco to Mt. Sterling to be sold, and much of the money they made was spent in town before they returned home (Boyd and Boyd 1984:94).

During the 1960s, the state constructed Interstate 64 through the county, including an interchange at Mt. Sterling. The highway spurred growth and development in Montgomery County, primarily at Mt. Sterling and the interchange. Several electronic component companies built assembly plants in the area, utilizing the improved transportation system. By 1990, the A.O. Smith Corporation, Kitchen Aid Appliances, and Trojan Manufacturing were the major employers in the county, and Mt. Sterling had 5,362 residents (Boyd 1992a:644, 1992b:658).

Agriculture continued to play an important role in Montgomery County's economy. In 1982, the county had 874 farms covering 49,032 ha (121,161 acres), of which 30,338 were in crops. The average farm size was 56.1 ha (138.6 acres). By 1987, the number of farms had dropped 9.2 percent to 793, and the total acreage dropped 4.3 percent to 46,902 ha (115,897 acres). The amount of harvested cropland had dropped to 11,085 ha (27,392 acres), but the average farm size jumped to 59.1 ha (146.1 acres). By 1992, the number of farms in the county had slipped to 772, and total farm land had dropped to 45,885 ha (113,383 acres), 6.4 percent less than a decade before (Kentucky Agricultural Statistics Service [KASS] 1998:132).

In 1997, Montgomery farms produced over $21.7 million worth of agricultural products, which ranked fifty-ninth among Kentucky's 120 counties. They produced 150,000 bushels of corn, 37,700 bushels of soybeans, and 21,000 bushels of wheat. Farmers planted 1,433 ha (3,540 acres) of burley tobacco, and they harvested nearly 7.4 million pounds of the leaf, which was the twenty-third largest harvest in the state. They raised 29,000 head of cattle in 1998 (KASS 1998:132).

Montgomery County's population declined until World War II, then it entered into a period of steady growth. After the completion of I-64, the county's population grew rapidly. In 1910, the county had 12,868 residents, and by 1930, the population had slipped to 11,660. In 1940, the county contained 12,280 inhabitants, and by 1960, the population reached 13,461. Between 1960 and 1970, the population increased 14.1 percent to 15,364. By 1980, it had grown another 30.4 percent to 20,046 inhabitants. By 1990, the population slipped slightly to 19,561. In 2000, the population was 22,554, and in 2010, it was 26,251 (USBC 1910–2010).

Currently, Montgomery County contains a pre-school, three elementary schools, two middle schools, and three high schools (Montgomery County School District 2015). Tourism opportunities in the county include outdoor recreation at the Easy Walker Park and the Old Silo Golf Club, and attractions such as the Bramble Ridge Orchard, the Ruth Hunt Candy factory, and the Gateway Regional Arts Center draw tourists to the county every year. Many visitors also enjoy visiting the Ascension Episcopal Church built in 1878 as well as the Montgomery County History Museum (Mt. Sterling/Montgomery County Tourism Commission 2011).

Chapter 4. Methods

This section describes the methods used during the survey. Site-specific field methods are discussed in further detail in the Results chapter of this report. Laboratory methods specific to the individual analyses are also discussed in the Materials Recovered section of this report.

Field Methods

The current field investigation consisted of an intensive archaeological survey for construction activities associated with the proposed Hinkston Pike upgrades in north-central Montgomery County, Kentucky. The project area consisted of a single parcel measuring approximately 9.5 ha. Landowner permission was obtained for each parcel prior to the commencement of the survey.

Prior to the survey CRA was provided with mapping of the project area. This mapping depicted the project boundary, contours, and other natural, cultural, and topographic features. A Magellan MobileMapper 6 handheld GPS unit was used to record pertinent archaeological data. The location of the project area was also determined by its relative position to the existing road and property lines. The project area was also examined based on aerial photographs and satellite imagery.

The entire project was subjected to an intensive pedestrian survey supplemented by screened shovel testing (see Figure 1.3). All undisturbed, relatively flat terrain possessing poor surface visibility within the project was subjected to screened shovel testing. These included the various pastures and portions of manicured lawns. All slopes greater than 15 percent also were subjected to intensive pedestrian survey. These latter areas included segments of the central portion of the project footprint. Areas of disturbances, including land grading and underground utility corridors, were also subjected to pedestrian survey.

Shovel testing was conducted in all areas with low surface visibility and less than 15 percent slopes. Shovel tests were excavated at 20 m intervals with spacing of transects set at 20 m. In all cases, shovel tests measured not less than 35 cm in diameter and extended well into the subsoil. Shovel tests were excavated in levels. The topsoil was removed as one level. After the topsoil was removed, 10 cm (4 in) arbitrary levels within natural horizons were excavated. All fill removed from the tests was screened through .64 cm (.25 inch) mesh hardware cloth, and the sidewalls and bottoms were examined for cultural material and features. All artifacts recovered from shovel tests were bagged by test number and level.

As previously stated a small portion (approximately 1.5 ha [3.9 acres]) of the project area had been previously surveyed. This segment, situated along the eastern extension, was subjected to a pedestrian survey. Several shovel tests were excavated within the site boundaries of 15Mm167 in order to determine whether intact archaeological deposits are still present. All of the shovel tests were negative.

When a site was identified, the GPS unit was used to record the location of the site datum, positive shovel tests, and other pertinent archaeological data. At each archaeological site, a datum for mapping was established at the location of a positive shovel test. The site specific methods can be referenced in the Results chapter of this report. The collection of cultural materials varied from each site, dependent upon local conditions. GPS data was collected and a site sketch map was created depicting the location of all shovel tests, project boundaries, site boundaries, and other cultural or topographic features.

Laboratory Methods

All cultural material recovered from the project was transported to CRA for processing

and analysis. Initial processing of the recovered artifacts involved washing all artifacts, sorting the artifacts into the major material classes (i.e., lithic and historic) for further analysis, and assigning catalog numbers. Catalog numbers consisted of the site number and a unique number for each provenience lot or diagnostic specimen. Historic artifacts received a unique catalog number for each material group and class by provenience. Non-diagnostic material, such as flake debris, was cataloged by provenience lot.

The methods, specifics, and results of subsequent analysis are discussed in each of the specific analysis sections of this report. All cultural materials, field notes, records, and site photographs will be curated at the University of Kentucky in Lexington, Kentucky.

Chapter 5. Materials Recovered

The current investigations recovered cultural materials from three archaeological sites (15Mm232–15Mm234) and a single prehistoric isolated find. Sites 15Mm232 and 15Mm234 were multicomponent sites consisting of a light scatter of both prehistoric and historic artifacts; while Site 15Mm233 contained only historic cultural materials.

The artifact assemblages and the analytical methods employed to examine the artifacts recovered from each of the sites will be discussed below. In addition, an inventory of the cultural materials (listed by provenience) is also presented in the following chapter of this report.

Prehistoric Materials Recovered

Brian G. DelCastello

The current investigations recovered a sparse artifact assemblage from two of the newly identified field sites (15Mm232 and 15Mm234) and the isolated find (IF1). The total lithic assemblage consisted of 19 flakes weighing 35.1 g (Table 5.1).

The analysis of flake debris involved the recording of several attributes, including flake size, weight, raw material type, presence of cortex, and probable stage of lithic reduction during which the flake was produced. Material type was determined by comparison with a sample collection housed at CRA. Reduction stage follows Magne's (1985) definitions and was determined by the number of facets on the platform or the number of flake scars on the dorsal surface. Early stage reduction is defined as core reduction, middle stage as the first half of tool production, and late stage as the second half of tool production and subsequent maintenance. For flakes that retain platforms, zero to one facet on the platform indicates early stage, two facets indicate middle stage, and three or more facets indicate late stage. Biface thinning is a specialized form of late stage reduction. A biface thinning flake is defined as a flake with a lipped platform having three or more facets. For non-platform bearing flakes, dorsal flake scars were counted instead of platform facets; zero to one dorsal flake scars indicate early stage, two scars middle stage, and three or more flake scars late stage. Stage of reduction was not determined for blocky debris or flakes smaller than .25 inch.

Material type was determined by comparison with a sample collection housed at CRA. This collection contains a variety of siliceous resources originating from Kentucky, particularly those collected from locales within the greater Bluegrass Region.

A review of the available geologic quadrangles, including the Mount Sterling (Weir 1976) and the adjacent Sharpsburg (Blade 1977), geologic topographic quadrangles, indicates that this region of Kentucky could be considered moderately chert poor. Only two formations in the region have been mapped as containing chert resources: the Holocene Age pebbly silt containing Indeterminate chert pebbles and cobbles, and the Lower Silurian Brassfield Limestone Formation. Both of these resources were available within 5.0 km (3.1 mi) of the project area.

Of special note for the current investigations is the local presence of the Brassfield Formation. This formation is present within 1.0 km (.6 mi) of the project area, particularly to the west, where this formation covers an expansive portion of the region. It is likely that the chert originating from the Brassfield Formation is present throughout the local waterways, although none was noted in the nearby stretch of Hinkston Creek.

During the current investigations a total of 19 lithic artifacts were recovered from two of the sites (15Mm232 and 15Mm234) and the isolated find (IF1) (Table 5.1). The prehistoric artifact assemblage consisted of 18 flakes (34.6 g) and 1 piece of thermal shatter (.5 g).

Of the 18 flakes, only 1 was smaller than .25 inch (.1). The remaining 17 flakes were all manufactured from Brassfield chert.

Little can be definitely stated, given the small sample size of the total number of flakes larger than .25 inch recovered during this project (n = 17). The small sample sizes prevent a statistically valid interpretation of the technological origins of the assemblages. When combined, the flakes appear to represent all reduction stages, suggesting that a wide variety of lithic reduction activities had taken place, including core reduction to tool production and tool maintenance. What is apparent, however, is that these activities focused solely on the locally available Brassfield chert. The single piece of thermal shatter from Site 15Mm232 suggests that some form of thermal activities involving the use of hearths or cooking pits had been conducted on-site. The lack of additional thermally-damaged materials, including FCR, suggests that these thermal activities were ephemeral in nature.

Beyond the notion that prehistoric peoples had once occupied (albeit briefly) portions of the project area, little else can be inferred from the small sample sizes. Based on the lithic assemblages, each of the sites represented very low to low density lithic scatters. The relatively low density of materials at the sites and the lack of diversity of artifact classes recovered suggest that the occupations were of limited duration, and few activities were conducted on-site. The lack of temporally sensitive, or otherwise diagnostic, artifacts precludes an accurate determination of the age of the prehistoric components.

Both sites contained more sizeable historic components that likely disturbed these near surface prehistoric assemblages. All of the artifacts were recovered from the upper portions of the solum.

Historic Materials Recovered

Tanya A. Faberson

Methods

The historic assemblage includes artifacts classified and grouped according to a scheme originally developed by Stanley South (1977). South believed that his classification scheme would present patterns in historic site artifact assemblages that would provide cultural insights. Questions of historic site function, the cultural background of a site's occupants, and regional behavior patterns were topics to be addressed using this system.

South's system was widely accepted and adopted by historical archaeologists. However, some have criticized South's model on theoretical and organizational grounds (Orser 1988; Wesler 1984). One criticism is that the organization of artifacts is too simplistic. Swann (2002) observed that South's groups have the potential to be insufficiently detailed. She suggested the use of sub-groups to distinguish between, for example, candleholders used for religious purposes and those used for general lighting. Others, such as Sprague (1981), have criticized South's

Table 5.1. Summary Data of Recovered Prehistoric Lithic Artifacts.

Site	Provenience	Depth (cm bgs)	Zone	Ct	Wt (g)	Class	Item Type	Raw Material	Reduction Stage
15Mm232	STP t1	10 - 25 cm	I	1	0.5	101	Flakes	Brassfield	Middle
15Mm232	STP t2	20 - 40 cm	I	1	0.1	101	Flakes	<.25 inch	--
15Mm232	STP t5	0 - 40 cm	I	1	0.5	101	Flakes	Thermal Shatter	--
15Mm234	STP b2	15 - 32 cm	I	1	0.1	101	Flakes	Brassfield	Early
15Mm234	STP b2	15 - 32 cm	I	2	2.9	101	Flakes	Brassfield	Middle
15Mm234	STP b2	15 - 32 cm	I	2	9.2	101	Flakes	Brassfield	Late
15Mm234	STP t1	0 - 30 cm	I	2	8.4	101	Flakes	Brassfield	Early
15Mm234	STP t1	0 - 30 cm	I	3	1.2	101	Flakes	Brassfield	Middle
15Mm234	STP t1	0 - 30 cm	I	1	0.4	101	Flakes	Brassfield	Late
15Mm234	STP t2	0 - 22 cm	I	4	10.4	101	Flakes	Brassfield	Early
IF1	STP t1	0 - 10 cm	I	1	1.4	101	Flakes	Brassfield	Middle

classification scheme for its limited usefulness on late nineteenth- and early-twentieth-century sites, sites which include an array of material culture—such as automobile parts—not considered by South. Despite its shortcomings, most archaeologists recognize the usefulness of South's classification system to present data.

Stewart-Abernathy (1986), Orser (1988), and Wagner and McCorvie (1992) have subsequently revised this classification scheme. For our purposes, artifacts are grouped into the following categories: domestic, architecture, arms, furnishings, clothing, personal, communication and education, maintenance and subsistence, biological, and unidentified. The artifacts recovered during this project are summarized in Table 5.2.

Grouping artifacts into these specific categories makes it more efficient to associate artifact assemblages with historic activities or site types. One primary change associated with the refinement of these categories is reassigning artifacts associated with the "Miscellaneous and Activities" under South's (1977) original system. Considering the potential variety of historic dwellings and outbuildings within the project area, a refinement of the artifact groupings was considered important to perhaps observe whether the distribution of specific artifact groups would produce interpretable patterns related to activity areas or structure types. Each one of these groups and associated artifacts is discussed in turn.

Information on the age of artifacts as described in the artifact tables is derived from a variety of sources cited in the discussion of the materials recovered. The beginning and ending dates cited need some clarification. Usually, an artifact has specific attributes that represent a technological change, an invention in the manufacturing process, or simple stylistic changes in decoration. These attribute changes usually have associated dates derived from historical and archaeological research. For example, bottles may have seams that indicate a specific manufacturing process patented in a certain year. The bottle then can be assigned a "beginning," or incept, date for the same year of the patent. New technology may eliminate the need for the same patent and the bottle would no longer be produced. The "ending," or terminal, date will be the approximate time when the new technology took hold and the older manufacturing processes are no longer in use.

Specific styles in ceramic decorations are also known to have changed. Archaeological and archival researchers have defined time periods when specific ceramic decorations were manufactured and subsequently went out of favor (e.g., Lofstrom et al. 1982; Majewski and O'Brien 1987). South's (1977) mean ceramic dating technique uses this information. The dates presented here should not be considered absolute but are the best estimates of an artifact's age available at this time. A blank space indicates that the artifact could not be dated or, alternately, that the period of manufacture was so prolonged that the artifact was being manufactured before America was colonized. An open-ended terminal date was assigned for artifacts that may be acquired today. The rationale for presenting dates for the artifacts recovered is to allow a more precise estimate of the time span the site was occupied, rather than the mean occupation date of a site.

Table 5.2. Historic Artifacts Recovered According to Functional Group.

Group	15Mm232	15Mm233	15Mm234	Total	Percent
Architecture	5	24	7	36	21.95
Arms	0	1	1	2	1.22
Clothing	0	1	0	1	0.61
Domestic	19	83	5	107	65.24
Furniture	0	5	0	5	3.05
Maintenance/Subsistence	1	8	0	9	5.49
Unidentified	0	3	1	4	2.44
Totals	25	125	14	164	100

A summary of the artifacts recovered follows. A complete inventory of the historic artifacts can be found in Appendix B.

Materials Recovered by Functional Group

There were 164 historic artifacts recovered during the current survey. The following provides a descriptive discussion of the types and age of artifacts recovered from Sites 15Mm232 (n = 25), 15Mm233 (n = 125), and 15Mm234 (n = 14).

Architecture Group (N = 36)

The architecture group is comprised of artifacts directly related to buildings, as well as those artifacts used to enhance the interior or exterior of buildings. These artifacts primarily consist of window glass, plate glass, nails, and construction materials, such as brick and mortar. The architecture group items recovered during the current project are discussed below.

Construction Materials (n = 3)

Construction materials refer to all elements of building construction. For this project, the building materials collected included brick fragments and asbestos roofing/siding (Table 5.3). The bricks (n = 2) were separated into hand-made (n = 1) and machine-made fragments (n = 1). The brickmaking industry was one of the most localized of all nineteenth century industries (Walters 1982:125). It was far less expensive to produce bricks on site than to pay to ship the bricks from another location. In fact, a brickmaker could transport everything needed to produce enough bricks for a large building in two wagons. Although brickmaking was present in the United States by the late eighteenth century, this industry did not become popular until circa 1800. Hand-made bricks manufactured at the construction site continued to be popular as late as the 1880s (Walters 1982:126–128).

Hand-made bricks were typically 5:1 bricks because five sides were identical and the sixth side exhibited distinctly different markings. Linear marks were usually found on the sixth side and were caused by the brickmaker when excessive clay was removed from the top of the mold. The remaining five sides of hand-made bricks usually exhibit a gritty/sandy texture from the sand-coated mold (Walters 1982:128). The paste of hand-made bricks is usually more porous than machine-made bricks. Most hand-made bricks manufactured in the nineteenth century were close in size to the standard adopted by the National Brickmakers Association. However, some irregularity did occur accidentally (Walters 1982:130).

The shift from hand-made bricks to machine-made bricks occurred circa 1880. Although machine-made bricks were produced in factories in most major cities in the United States by the mid-nineteenth century, this process was not standardized or popularized until the last two decades of the nineteenth century (Holley 2009:97). The creation of the National Brick Manufacturers Association in 1886 allowed for an industry-wide discussion of standardization. This push came mostly from architects and building contractors who needed a better standard for quantity and project cost estimations (Holley 2009:97). Machine-made bricks will often have marks in the clay related to the machine manufacturing process (Greene 1992; Gurcke 1987). This brick type is typically more uniform in shape, and the paste is more consistent throughout.

It should also be noted that firebricks and molded ornamental bricks became largely popular in the late nineteenth century. Large fires destroyed huge portions of major American cities throughout the latter half of the nineteenth century. This prompted many cities to develop building ordinances that required fireproof brick construction. Ornamental bricks became largely popular between the 1893 and 1904 world's fairs. Unfortunately, the production of these types of bricks declined after 1904 when the extruded method of brick production became more

Table 5.3. Summary of Architecture and Clothing Groups.

Class	Type	15Mm232	15Mm233	15Mm234	Total
Construction material					
	Asbestos roofing/siding	0	1	0	1
	Brick	1	0	1	2
Flat glass					
	Window glass	0	7	0	7
	Plate glass	0	3	1	4
Nails					
	Late fully machine-cut	1	0	0	1
	Unspecified cut	2	2	0	4
	Wire	0	8	5	13
	Indeterminate	1	3	0	4
Other clothing					
	Sock	0	1	0	1
	Total	5	25	7	37

popular than the dry-press method (Broeksmit and Sullivan 2006). Paving bricks typically are heavier and larger than the other bricks described above, and they were manufactured to construct roadways. Hence, they needed to be manufactured to withstand the weight and wear of daily traffic. Brick paving became popular in the 1890s (Hockensmith 1997:158).

The remaining material in this class was identified as a piece of asbestos roofing/siding. It dates after 1907 (Wilson and Snodgrass 2008:4).

Flat Glass (n = 11)

Cylinder glass was developed in the late eighteenth century to enable the inexpensive production of window glass. With this method, glass was blown into a cylinder and then cut flat (Roenke 1978:7). This method of producing window glass replaced that of crown glass production, which dates back to the Medieval period and was capable of fabricating only very small, usually diamond-shaped, panes (Roenke 1978:5). Cylinder glass was the primary method of window glass production from the late eighteenth century through the early twentieth century, at which time cylinder glass windows were slowly replaced by plate glass windows. Plate glass window production became mechanized after 1900 but did not become a commercial success in the United States until around 1917 (Roenke 1978:11).

Cylinder window glass has been shown to gradually increase in thickness through time and can be a useful tool for dating historic sites. Several dating schemes and formulas have been devised that use average glass thickness to calculate building construction or modification dates. These include Ball (1984), Roenke (1978), and Chance and Chance (1976) to name a few. Like previously derived formulas, Moir (1987) developed a window glass dating formula to estimate the initial construction dates for structures built primarily during the nineteenth century. Although Moir (1987:80) warns that analysis on structures built prior to 1810 or later than 1915 have shown poor results, most research in this area shows the regression line extending back beyond 1810 (Moir 1977; Roenke 1978). Hence, dates calculated back to 1785 were considered plausible. Sample size is also a consideration when using the Moir window glass regression formula. According to Moir (1987:78), sample sizes also need to be "reasonable and not collected from a point or two" in order to accurately date the construction of a building. For the purposes of this investigation, a "reasonable" sample size is considered 25 window glass sherds.

Each fragment of flat glass was measured for thickness and recorded to the nearest hundredth of a millimeter using digital calipers. The differences between cylinder window glass, mirror glass, and plate glass were in part determined by the thickness and wear of each flat glass fragment. Although Moir (1987:80) states that dating window glass after 1915 is not as reliable for dating

sites, for our purposes, window glass that measured 2.41 mm (dating to 1916) was included in the calculations because according to Roenke (1978:11), plate glass does not become widely or successfully produced in the United States until 1917. A total of 11 flat glass sherds were recovered during the current survey (Table 5.3). Seven sherds were identified as window glass, and Moir's technique was used to calculate a mean date of 1887 for the window glass in the survey assemblage. The remaining four sherds were identified as plate glass and date from 1917 to the present.

Nails (n = 22)

There are three stages recognized in the technological chronology of nails: wrought nails, cut nails, and wire-drawn nails.

Wrought nails were handmade and were the primary type of construction fastener in the eighteenth and early-nineteenth centuries. Their use ended around 1810 with the widespread use of square cut or machine cut nails (Nelson 1968:8).

The cut nail, introduced in approximately 1800, originally had a machine-cut body with a hand-made head. Around 1815, crude machine-made heads replaced hand-made heads on cut nails, and overall, cut nails replaced wrought nails in the construction industry. Early fully machine-cut nails exhibit a "rounded shank under the head," and therefore, often appear pinched below the head of the nail (Nelson 1968:8). By the late 1830s, these "early" fully machine-cut nails were replaced with "late" fully, or modern, machine-cut nails.

The first wire-drawn nails were introduced into the United States from Europe by the mid-nineteenth century. These early wire nails were primarily used for box construction and were not well adapted for the building industry until the 1870s. Although the cut nail can still be purchased today, the wire nail nearly universally replaced it by the turn of the twentieth century (Nelson 1968:8).

A total of 22 nails were recovered from the project area (Table 5.3). Of the nails recovered, 1 was late fully machine cut, 4 were unspecified cut, 13 were wire-drawn, and 4 were indeterminate. The late fully machine-cut nail had a 7d pennyweight, and it had been pulled (Figure 5.1a). All of the unspecified cut nails were fragmentary. Two of the wire nails were complete, and the pennyweights were 12d and 20d (Figure 5.1). Their conditions were clinched and unaltered, respectively. The remaining 11 wire nails were fragmentary. In general, smaller pennyweight nails typically are utilized for roofing, lathing, moulding, and finishing (2d–5d), while 6d nails are commonly used for light framing. Pennyweights of 7d–9d commonly are utilized for siding, flooring and interior fittings, and nails with pennyweights of 10d and above are most often utilized for flooring, boarding, wooden studding, rafters, and heavy framing (Faulkner 2000; Wentworth 1979). The presence of pulled nails in the assemblage indicates the disassembling and/or demolition of structures or other nail-fastened objects.

Clothing Group (N = 1)

The clothing group includes buttons, clothing fasteners, footwear, and other clothing related items, such as belts, hats, and fabric (Table 5.3). Only one clothing item was recovered during the current survey. It consisted of the remains of a machine-knitted brown wool sock (26.6 g). It was not assigned a specific date.

Domestic Group (N = 107)

Artifacts included in the domestic group consisted of ceramics (n = 44), container glass (n = 60), container closures (n = 2), and other containers (n = 1) (Table 5.4).

The ceramic inventory consisted of refined and utilitarian wares dating from the nineteenth century through the twentieth century. A full description of ceramic types recovered from the project area is listed below, followed by descriptions of other domestic group artifacts.

Figure 5.1. Historic materials recovered: (a) 7d pulled late fully machine-cut nail from 15Mm232 STP t5 Zone I; (b) 20d unaltered wire nail from 15Mm233 STP t1 Zone I; (c) decal-decorated whiteware saucer rim from 15Mm233 STP b2 Zone I; (d) green chromatic-glazed whiteware saucer rim from 15Mm233 STP b2 Zone I; (e) aqua BIM embossed canning jar body sherd from 15Mm232 STP t5 Zone I; (f) aqua ABM external thread canning jar finish from 15Mm234 STP t1 Zone I; (g) carbon electrode battery element fragment from 15Mm233 STP b2 Zone I; (h) fence staple from 15Mm233 STP b4 Zone I; and (i) .41-caliber rimfire brass cartridge from 15Mm233 STP b4 Zone I.

Ceramics (n = 44)

The ceramics recovered were grouped into three major ware types: whiteware (n = 40), ironstone (n = 1), and stoneware (n = 3). Ceramics within each of these ware groups were separated into decorative types that have temporal significance. Each of these ware groups is reviewed below, followed by discussions of associated decorative types.

WHITEWARE (n = 40)

As a ware type, whiteware includes all refined earthenware that possesses a relatively non-vitreous, white to grayish-white clay body. Undecorated areas on dishes exhibit a white finish under clear glaze. This glaze is usually a variant combination of feldspar, borax, sand, nitre, soda, and china clay (Wetherbee 1980:32). Small amounts of cobalt were added to some glazes, particularly during the period of transition from pearlware to whiteware and during early ironstone manufacture. Some areas of thick glaze on whiteware may, therefore, exhibit bluish or greenish-blue tinting. Weathered paste surfaces are often buff or off-white and vary considerably in color from freshly exposed paste (Majewski and O'Brien 1987).

Most whiteware produced before 1840 had some type of colored decoration. These decorations are often used to designate ware groups (i.e., edgeware, polychrome, and colored transfer print). Most of the decorative types are not, however, confined to whiteware. Therefore, decoration alone is not a particularly accurate temporal indicator or actual ware group designator (Price 1981).

Table 5.4. Summary of Domestic Group Items.

Class	Type	15Mm232	15Mm233	15Mm234	Total
Ceramics					
	Whiteware	6	33	1	40
	Ironstone	1	0	0	1
	Stoneware	0	3	0	3
Container glass					
	BIM	11	3	0	14
	ABM	0	38	4	42
	Undiagnostic container	1	3	0	4
Container closures					
	Home canning	0	2	0	2
Other					
	Modern soda bottle label	0	1	0	1
	Total	19	83	5	107

The most frequently used name for undecorated whiteware is the generic "ironstone," which derives from "Ironstone China" patented by Charles Mason in 1813 (Mankowitz and Haggar 1957). For purposes of clarification, ironstone will not be used when referring to whiteware. Ironstone is theoretically harder and denser than whiteware produced prior to circa 1840. Manufacturer variability is, however, considerable and precludes using paste as a definite ironstone identifier or as a temporal indicator. Consequently, without independent temporal control, whiteware that is not ironstone is difficult to identify, as is early vs. later ironstone. For our analysis, the primary determining factor in classification of a sherd as whiteware was the hardness and porosity of the ceramic paste. Decorative types observed on the whiteware sherds in our assemblage are summarized and defined in the following discussions.

Plain/Undecorated (n = 21)

This decorative type includes vessels with no decoration. While some researchers such as Lofstrom et al. (1982:10) and Wetherbee (1980) include molded designs with "plain" whiteware, we agree with Majewski and O'Brien (1987:153) that molded vessels should be grouped on their own. Plain whiteware vessels became very popular following the Civil War and continued in popularity throughout the late nineteenth and early twentieth centuries (Faulkner 2000). Bacteriological research emerged after the Civil War, and it was not long before it became widely known in the medical community that there was a link between bacteria and disease (Duffy 1978:395). Bacteria could not be seen with the naked eye, however, and in spite of efforts by health officials to educate the public with regard to the connection between illness and bacteria, most people still held to the filth and miasmic theories of disease (Rogers 1997:550). As the public became more educated on the subject, these ideas merged, and it became commonly thought that plain, undecorated wares were best suited for maintaining and serving bacteria-free food. That is, the public equated the simple, "clean" appearance of undecorated wares with the purity (i.e., bacteria-free) and cleanliness of what they were eating. The ceramic manufacturing industry followed suit in this line of thinking and met market demands, producing primarily plain wares which resulted in increased competition between whiteware and ironstone manufacturers.

Purity crusades also indirectly helped increase the popularity of plain, white vessels in the late nineteenth and early twentieth centuries as social reformers—many of whom were white and middle class—focused on cleaning up city streets, improving sanitation, and ridding cities of disease epidemics. Part of this crusade was the public promotion of purity at the dinner table. Unfortunately, many of these white public health reformers were also motivated by Social Darwinist ideas, and sanitation problems and disease epidemics

were often blamed on African Americans and East-European immigrants who were stereotyped as being the harbingers of disease and social decay (Friedman 1970:123).

Twenty-one undecorated and/or plain whiteware sherds were recovered during the current project. Eight of these sherds were large enough to appear to have been plain vessels without decoration, and they were assigned dates of 1860–1930 (Majewski and O'Brien 1987:119). The other 13 sherds were too small to determine whether they were from plain vessels or whether they were undecorated parts of decorated vessels. These sherds were assigned a general date range of 1830 to the present (Majewski and O'Brien 1987:119). Identifiable undecorated and/or plain vessels included a cup (n = 1), a mug (n = 1), plates (n = 10), platters (n = 4), a pitcher (n = 1), and saucers (n = 2).

Molded/Embossed (n = 2)

As transfer printing became popular on pearlware, molded designs were simplified. Molded designs were revived with the introduction of whiteware in the late 1830s, but they did not attain the elaborateness of previous forms. Specialized moldings for whiteware were common in the 1840s when the ware had a more limited and generally more affluent market.

During the 1860s, molding tended to become softer in relief as opposed to the angular and sculpted forms of the 1840s and 1850s (Wetherbee 1980). During the 1870s and 1880s, molded decorations occupied smaller areas on dishes, with elaboration confined to handles and lids. British stylistic trends dominated the embossed and molded whiteware industry throughout most of the nineteenth century (Wetherbee 1980).

There were two whiteware sherds with embossed/molded decoration. These sherds date from the 1860s to the present (Faulkner 2000; Majewski and O'Brien 1987:119; Wetherbee 1980). The vessel forms were a teacup (n = 1) and a saucer (n = 1).

Decal (n = 5)

Decal decoration was rare before 1900 on ceramics other than imported porcelains (Majewski and O'Brien 1987:147). The process of decalcomania consists of applying decals—designs printed on a film or paper—to ceramic vessels. This decorative technique is often confused with transfer printing; however, decals can be distinguished from transfer prints by the sharpness of the design, the presence of shading, the use of bright colors, and the slight relief often felt when touching the edge of a decal design (Majewski and O'Brien 1987:146). Decals are applied to vessels prior to the final firing and are usually put through the decorating kiln in order to harden the decal for permanency. The decals include stipple and line-engraved motifs created using a lithographic process in an assortment of colors (Majewski and O'Brien 1984:36).

In contrast to the polychrome sprig and broadline floral style popular in the mid-nineteenth century, floral decals are characterized by their use as a border or vessel accent. Frequently, these appeared as small sprays of flowers applied off-center and often were applied in conjunction with thin-line border stripes, raised-border motifs, hand painting, and gilding (Majewski and O'Brien 1984:36). Occasionally, decals were lightly touched up by hand in order to give a hand-painted appearance. Majewski and O'Brien (1987) suggest that this motif began in the late 1800s as an inexpensive alternative to multi-colored hand-painted techniques. Decals remained a popular method of decoration until the introduction of new decorating methods, including chromatic glazes and silk screening in the mid-twentieth century (Blaszczyk 2000:155). Decal decorations can occur on whiteware, ironstone, and porcelain.

Five whiteware sherds with decal decorations were recovered during the current project (Figure 5.1c). They were assigned dates of 1880–1940 (Blaszczyk 2000:155; Majewski and O'Brien 1987:147; Wegars and Carley 1982). Identifiable vessel forms included a plate (n = 1) and saucers (n = 4).

Chromatic Glaze (n = 12)

Solid colored, or chromatic, glazed ceramics became popular during the second quarter of the twentieth century (Majewski and O'Brien 1987:164). As chain stores dealing in five- and ten-cent merchandise, groceries, drugs, and clothing sought to provide an increased array of cheap merchandise for consumers, pottery companies expanded their production efforts with the use of tunnel kilns. These kilns, which contained continuous flow ovens, allowed pottery manufacturers to significantly increase the output of cheap dishes available to chain stores, and ultimately, consumers (Blaszczyk 2000:120–121).

One of the first well known and popular styles to be produced in the 1920s had a yellow or ivory glaze, with or without decals (Blaszczyk 2000:121). By the 1930s, other chromatic glazes in colors such as red, cobalt blue, and green also became popular, as exemplified by the excitement surrounding Homer-Laughlin's introduction of Fiesta tableware to the consumer market in 1936 (Gonzalez 2000). Over time, other colors were added to the chromatic glazed tablewares available to consumers, and although chromatic-glazed vessels are still available today, the height of their popularity was seen between the 1920s and 1960s.

It should be noted that sherds identified as having solid color glazing can date to the nineteenth century. However, these sherds are usually undecorated fragments from dip-glazed vessels (such as annular and mocha-decorated wares) and should be noted as such.

Twelve sherds were recovered with a solid-colored glaze. Seven were ivory, and five were green (Figure 5.1d). The ivory sherds had been part of a plate. A partial unknown maker's mark was observed on one of the ivory sherds, and it indicated that the vessel had been manufactured in 1948. The other ivory sherds were given a date range of 1920–1970, but it is likely that they were part of the same vessel as the marked sherd. The green sherds had been part of the same saucer, and they were assigned a date of 1930–1970 (Blaszczyk 2000:121).

IRONSTONE (n = 1)

Ironstone is a white or gray-bodied, refined stoneware with a clear glaze. It is often indistinguishable from whiteware. Ironstone differs from whiteware in that the body is more vitreous and dense. In addition, a bluish tinge or a pale blue-gray cast often covers the body. In some cases, a fine crackle can be seen in the glaze; however, this condition is not as common as it is in whiteware (Denker and Denker 1982:138).

Confusion in the classification of white-bodied wares is further compounded by the use of the term as a ware type or trade name in advertising of the nineteenth century. Both ironstones and whitewares were marketed with names such as "Patent Stone China," "Pearl Stone China," "White English Stone," Royal Ironstone," "Imperial Ironstone," "Genuine Ironstone," "White Granite," and "Granite Ware" (Cameron 1986:170; Gates and Ormerod 1982:8). These names do not imply that true ironstone was being manufactured. Some investigators avoid the distinctions entirely by including ironstones as a variety of whiteware. Others, however, such as Wetherbee (1980), refer to all nineteenth-century white-bodied earthenwares as ironstone. For this analysis, the primary determining factor in classification of a sherd as ironstone was the hardness and porosity of the ceramic paste. Sherds with a hard vitreous paste were classified as ironstone.

Charles James Mason is usually credited with the introduction of ironstone (referred to as Mason's Ironstone China) in 1813 (Dodd 1964:176). Others, including the Turners and Josiah Spode, produced similar wares as early as 1800 (Godden 1964). As a competitive response to the highly popular oriental porcelain, British potters initiated this early phase of ironstone production. The ironstone of this early phase bears a faint blue-gray tint and oriental motifs, much like Chinese porcelain. A second phase of ironstone began after 1850 in response to the popularity of hard paste porcelains produced in France. This

variety of ironstone had a harder paste and reflected the gray-white color of French porcelains.

While some ironstones continued to use oriental design motifs after 1850, the general trend was toward undecorated or molded ironstones (Collard 1967:125–130; Lofstrom et al. 1982:10). Ironstone continued to be produced in England, and after 1870, it was also manufactured by numerous American companies. For many years, classic ironstone—the heavy, often undecorated ware—had been frequently advertised as being affordable and suitable for "country trade" (Majewski and O'Brien 1987:121). By the late 1800s, these thick, heavy ironstones began losing popularity and were often equated with lower socio economic status (Collard 1967:13). At the same time, ironstone manufacturers began shifting to thinner, lighter weight ironstones. As a result, this type of ironstone became popular tableware in American homes during most of the twentieth century (Majewski and O'Brien 1987:124–125). In spite of the shift towards thinner and lighter ironstones, heavy ironstone remained on the market and continues to be popular in hotel/restaurant service (hence, this heavy, twentieth-century ironstone is sometimes called "hotelware"). However, its production for home use all but ceased by the second decade of the twentieth century (Lehner 1980:11).

Only one plain ironstone sherd was recovered during the current project (Table 5.4). It was assigned a date of 1830 to the present, and its vessel form is unknown.

STONEWARE (n = 3)

Stoneware served as the "daily use" pottery of America, particularly rural America, after its introduction during the last decade of the eighteenth century. By 1850, this ware generally replaced coarse redware as the primary utilitarian ware used in American households. Stoneware is a semi-vitreous ware manufactured of a naturally fine, but dense, clay. The pottery was fired longer and to a higher temperature than earthenwares; a kiln temperature of at least 1,200 to 1,250 degrees celsius had to be obtained (Cameron 1986:319; Dodd 1964:274–275). As a result, stoneware generally exhibits a hard body and a very homogeneous texture. The paste may vary from gray to brown, depending on the clay source, and length and intensity of the firing.

Because this ware is fired at such high temperatures, its body is nonporous and well suited to liquid storage. Stoneware, as mentioned, was not typically manufactured as a refined ware (such as its cousin, ironstone, or eighteenth-century refined white salt-glazed stoneware), and hence, it was, for the most part, utilized for utilitarian activities associated with jars, churns, crocks, tubs, jugs, mugs, pans, and pots. These vessels were typically glazed, with salt glazing and slip glazing most common.

Although refined salt glazing was practiced in England during the eighteenth century, by 1780, the production of English salt-glazed tableware had been virtually supplanted by the manufacture of cream colored earthenwares (Lewis 1950:29). The salt-glazing technique continued to be utilized for utilitarian vessels, however, and was eventually introduced to the United States in the early-nineteenth century. Salt glazing was accomplished by introducing sodium chloride into the kiln during the firing process, at which point the salt quickly volatilized. The vapor reacted with the clay to form a sodium aluminum silicate glaze (see Billington 1962:210; Dodd 1964:239). The surface of the glaze is typically pitted, having what is commonly known as an "orange peel" effect.

Stoneware may also be coated with a colored slip (a suspension of fine clay and pigment). The Albany slip—named after the rich brown clay found near Albany, New York—first appeared in the 1820s. Initially, it was mainly used for the interior of stoneware vessels. However, by the 1850s, it was also used as an exterior glaze. Bristol glaze, an opaque white slip, was introduced late in the nineteenth century. When used in combination with Albany slip, Bristol-glazed stoneware vessels have a general date range of 1880–

1925 (Ketchum 1983:19; Raycraft and Raycraft 1990:5).

A third glaze often used on stoneware is the alkaline glaze. Like the Albany slip, it was developed in the 1820s. The basic alkaline glaze is made up of wood ash, clay, and sand. Other additions may be slaked lime, ground glass, iron foundry cinders, or salt. These additions affected the color and texture of the glaze. Colors vary from olive to brown to a gray-green or yellowish hue, depending on adjustments in proportion of ingredients (Ketchum 1991:9). Although not as prevalent, alkaline glazing has been used in combination with salt glazing. This causes the stoneware vessel to exhibit the colors of alkaline glazing with the pitted texture of a salt glaze.

Three stoneware sherds were recovered (Table 5.4). Two of the sherds were from the same crock, and they displayed a salt glaze on the exterior surface and a brown slip on the interior surface. They date from 1800 to 1925. The other sherd was Bristol slipped on both the exterior and interior surfaces, and its vessel form is unknown. It was assigned a date range of 1880–1925.

Container Glass (n = 60)

A variety of container glass was recovered during the current investigations. Research by Baugher-Perlin (1982), Jones and Sullivan (1985), Lindsey (2015), and Toulouse (1972) was used to date glass containers. Glass color was the only attribute that could be used for dating those fragments that were not identifiable as to type of manufacture.

The approximate date of manufacture for bottles and bottle fragments recovered from the project area was established by determining the manufacturing process associated with the bottle (i.e., creation of the base and lip of the container) and using any patent or company manufacturing dates embossed on the bottle.

When examining glass vessels, bottle lips can be informative. A lipping tool, patented in the United States in 1856, smooths and shapes the glass rim into a more uniform edge than a hand-smoothed lip or "laid-on ring." Certain types or styles of lips were associated with specific contents; for example, medicines were often contained in bottles with prescription lips (Jones and Sullivan 1985). A "sheared," or unfinished, bottle lip typically dates before 1880.

Lipping tools were used throughout the middle and end of the nineteenth century until the advent of the fully automatic bottle machine (ABM) in 1903. It should be noted, however, that as automated bottle manufacture became available after the turn of the twentieth century (see below), tooled finishes continued to be produced—albeit in steadily decreasing numbers. That is, there is a lag time between tooled finishes and ABM finishes, and although ABM glass is given an incept date of 1903, most tooled-glass vessel sherds will be given a terminal date around the 1920s due to this lag time, unless other diagnostic characteristics are observed enabling one to give it an earlier terminal date.

The manufacturing process can be roughly divided into three basic groups including free blown, blown-inmold (BIM), and automatic bottle-machine manufactured (ABM) vessels (Baugher-Perlin 1982:262–265). BIM and ABM glass were recovered from the current project. Several sherds were undiagnostic.

BLOWN-IN MOLD (BIM) (n = 14)

Most molded bottles are constructed in pieces and have distinctive seams. The dip mold was used from the late seventeenth through the mid-nineteenth century (Baugher-Perlin 1982:262). It leaves no seams, unless glass adhered to the edges of the bottle mold as it was attached to the free blown shoulder and bottle neck. The key mold, on the other hand, was a type of two-piece mold that was used from about 1750 to 1880 (Jones and Sullivan 1985:27). Key mold seams cross the base and are concealed in the corners of a flat-sided body.

The turn paste mold was used from circa 1870 to the early twentieth century and does not contain seams because the glass is blown into a container that is spun. The glass conforms to the mold from the centrifugal

force produced. Vessels formed from this process usually have faint horizontal lines from the spinning process. The three-part mold has seams running around the shoulder of the vessel and partially up the neck of the vessel. This style of mold lost popularity around 1870. The blow back mold was another mold type, and this was used in the manufacture of jars such as the distinctive Mason jar, which was patented in 1858.

Embossing on container glass vessels was made possible by engraving the mold the glass was blown into. This was first conducted in the mid-eighteenth century and continued into the twentieth century. The panel bottle came into popular existence around 1860, and the shape of this vessel was useful because the name of the commodity or the manufacturing company could be changed on the bottle form by substituting a different "slug-plate" into the mold. This process can be identified through the distinctive seams, since they follow the rectangular shape of the nameplate. The date of the manufacturer's patent on the bottle and the name of the company, when present, can often be utilized to determine a date of manufacture for the container.

The finish is the top part of the neck of a bottle or jar made to fit the cork or other closure used to seal the vessel. The finish is often simply referred to as either the lip or rim. Glass factories in the late-nineteenth and early-twentieth centuries produced a wide variety of finishes for their containers (Jones and Sullivan 1985:78). Finishes were formed by manipulating the glass at the end of the bottle neck, by shaping glass added to the end of the neck, by the lipping tool, or by being blown into a mold (Jones and Sullivan 1985:79). The term "finish" originated with the mouth-blown bottle manufacturing process where the last step in the completion of a finished bottle was to "finish the lip."

Mouth-blown bottles were removed from the blowpipe by two primary methods: either through the cracking-off process or by shearing the neck off of the blowpipe. Once this was completed the bottle was reheated in a furnace to smooth out the sharp edges where the blowpipe was detached (Lindsey 2015). This method, referred to as fire polishing, was completed even if no specific finish was to be formed. Once this method was complete a finish could be either added or formed on the top of the bottle neck. These finish types included a laid-on ring, a rolled finish, a flared or flanged finish, an applied finish, and a tooled finish. The most commonly found finish types are the applied finish and the tooled finish. An applied finish was created when applied hot glass is added at the point where the blowpipe was removed. This applied hot glass was manipulated with various tools in order to form a wide variety of finish styles (Lindsey 2015). A tooled finish was created by reheating the severed end of the bottle near the neck. Once reheating or refiring the end of the neck was accomplished, a lipping tool was inserted into the neck of the bottle and rotated while squeezing the jaws to form the finish desired.

A total of 14 BIM glass sherds were recovered during the current survey (Table 5.4). One mold type was identified, and it was a cup bottom mold. This medicine bottle sherd also exhibited an embossed recess panel body. The embossing was unknown. It was assigned a date range of 1865–1920 (Fike 1987). Embossing also was observed on two other BIM sherds. The first was an aqua canning jar sherd with part of a "B" embossed on the body (Figure 5.1e). It was assigned a date of 1884–1920 (Miller and Sullivan 1984). The other was a clear canning jar sherd with unknown embossing. It was assigned a date range of 1864–1920 (Lindsey 2015).

The remaining BIM assemblage consisted of 11 body sherds. Colors included amber (n = 1), amethyst (n = 4), aqua (n = 4), clear (n = 1), and colorless leaded (n = 1). Jones and Sullivan (1985) observed that chemicals color glass, either as natural inclusions or additions by the manufacturer. According to Lockhart (2006), amethyst glass began to be manufactured around 1870, when manganese was being added to the glass recipe. Although initially colorless, the glass will turn a distinctive purplish color when exposed to sunlight over time. It was previously thought

that amethyst glass production ceased by 1914 due to a shortage of manganese from Germany during World War I; however, the change was actually a result of technological advancements in the glass industry, mainly the conversion to automatic bottle machines (Lockhart 2006:53). Although manganese was more difficult to obtain after World War I, and selenium was often less expensive, the improvement in technology was the major reason for the change. The use of selenium proved to be an inexpensive decolorant in glass production and ultimately displaced manganese as a decolorizer by 1920 (Lockhart 2006:53). Amber glass had a general application in the mid-nineteenth century, but was not widely used until after 1860. With the growing public desire to see the contents of the bottles, clear glass came into demand and was popular beginning in the 1860s with the burgeoning public health movements following the Civil War (Baugher-Perlin 1982:261; Wiebe 1967). However, it should be noted that clear glass was available to a limited degree before this time, especially with the use of colorless leaded glass, which generally dates between 1827 and 1875 (Jones 2000:149, 161; Miller and Sullivan 1984). Aqua colored glass also was used for many different containers, but it cannot be assigned a specific date due to its long period of use over the last several centuries and continuing popularity. Vessel forms identified among the BIM body sherds included canning jars (n = 4), miscellaneous bottles (n = 3), and miscellaneous jars (n = 2).

AUTOMATIC BOTTLE MACHINE (ABM) (n = 42)

The Owens automatic bottle-making machine was patented in 1903 and creates suction scars and distinctive seams that run up the length of the bottle neck and onto the lip. Bottles were being manufactured regularly with this machine by 1905, and by 1907, it was utilized to produce significant quantities of container glass vessels (Lindsey 2015; Miller and McNichol 2002). Hence, the ABM mold provides a firm manufacturing date at the beginning of the twentieth century. Another automatic bottle machine called the Individual Section was also used in the commercial production of bottles. This machine was widely used starting in 1925 and by 1940 became the most widely used bottle manufacturing device (Jones and Sullivan 1985:39). This bottle machine was more cost effective than the Owen's machine, which was no longer used after 1955.

There were 42 glass fragments assigned to the ABM category during the current project (Table 5.4). One body type was identified, and it was embossed (n = 15). All 15 clear glass sherds in this category had been part of the same stippled juice bottle. It was assigned a date of 1903 to the present (Lindsey 2015). One finish type also was observed. It was an external thread finish on an aqua canning jar rim (Figure 5.1f). It also dates after 1903. The remaining ABM glass fragments were body sherds in three different colors: amber (n = 3), clear (n = 22), and light green (n = 1). Identifiable vessel forms included household bottles (n = 2), a beer bottle (n = 1), miscellaneous bottles (n = 3), miscellaneous jars (n = 3), and a soda bottle (n = 1). All of these sherds were assigned a date range of 1903 to the present as well.

UNDIAGNOSTIC CONTAINER GLASS (n = 4)

When no other diagnostic features were present, the color of the glass was noted, although there is some subjectivity inherent in color classification. Jones and Sullivan (1985) observed that chemicals color glass, either as natural inclusions or additions by the manufacturer. The concern here was primarily to note the presence of purple or "amethyst" glass, selenium glass, cobalt glass, and "milk" glass. One sherd was amethyst and dates between 1870 and 1920 (Table 5.4) (Lockhart 2006). The remaining three sherds were clear and were assigned a date range of 1864 to the present (Lindsey 2015).

Closures (n = 2)

Bottle closures serve both to prevent the spilling of a bottle's contents and to protect a bottle's contents from contamination and evaporation (Berge 1980). Closures have been used almost as long as animal skins and bottles have been employed to contain liquids.

Closures range from a utilitarian piece of paper or cloth stuffed into the mouth of a bottle to a delicately crafted crystal stopper for a decanter. There are three primary closure types: caps, stoppers, and seals (Berge 1980).

Caps are secured to a bottle by overlapping the outside edge of the finish or mouth. Common cap types include external screw, lugs, crown, and snap-on. External screw caps were first introduced in the mid-nineteenth century (Jones and Sullivan 1985; Toulouse 1977). External thread caps were attached to bottles by means of grooves in the cap that screwed down on continuous glass threads on the finished exterior of a bottle. External thread caps were first produced using metal in 1858 (Jones and Sullivan 1985; Toulouse 1977). Advances in technology led to the introduction of a Bakelite external thread cap around 1922 (Berge 1980; Meikle 1995), an aluminum shell roll-on cap in 1924 (Berge 1980; Rock 1980), and modern plastic caps in the mid-1930s (Meikle 1995). Examples of the external thread cap include canning jar, mayonnaise jar, and pickle jar lids.

The crown cap was patented on February 2, 1892, by William Painter of Baltimore, Maryland (Rock 1980). The crown cap was placed over the finish, and then crimped around a lip or groove in the finish to seal the container. This closure was lined with cork from 1892 until circa 1965 (IMACS 1992; Riley 1958; Rock 1980). Crown caps with composition liners appeared in 1912, and both cork and composition liners were gradually phased out following the introduction of the plastic liner in 1955 (IMACS 1992; Riley 1958). The majority of commercially produced glass soda bottles have crown cap closures.

Stoppers, the second major closure type, are secured to the finish interior of bottles, usually by forcing a portion of the stopper into the bore of the finish. Stopper types include cork, glass, inside screw, porcelain-top, Hutchinson Spring, Electric, Pittsburgh, and Lightning. Cork stoppers were the most common historic closure type. Most glass stoppers use ground or roughened tapered stems along with a roughened finish inside to seal bottles. The “modern” ground and tapered glass stopper was developed in Europe around 1725 (Holscher 1965). Glass stoppers came in many shapes, sizes, and styles and were used as closures in many different types of bottles. As with the cork stopper, the glass stopper was phased out in the 1920s with the advent of the crown cap closure (Berge 1980; Jones and Sullivan 1985).

Seal closures utilized the vacuum on the interior of the glass container. The heating and then cooling of the bottle’s contents created the vacuum. Seal closures, although dating back to 1810, did not become popular until the mid-twentieth century. These closures were most often used in food jars (Berge 1980). There were several types of seal closures including Phoenix, Sure Seal, Giles, spring seal, and disc seal.

The disc seal was used as early as 1810 by Nicholas Appert (Berge 1980). John L. Mason used this type of closure on his patented fruit jar in 1858 (Berge 1980). Mason’s closure was made of zinc and was held in place with an exterior screw cap ring. Unfortunately, the zinc reacted with the contents of the jars, giving the contents an unpleasant metal taste (Jones and Sullivan 1985). Glass liners were then developed and added to the disc around 1869 by Lewis R. Boyd (Toulouse 1969, 1977). These liners prevented the zinc from reacting with the contents of the jar. To aid in opening, Boyd added a handle to the disc circa 1900 (Toulouse 1977). Both of these disc seal types were used until around 1950 (Jones and Sullivan 1985; Toulouse 1969, 1977). In 1865, the Kerr two piece seal was patented. This system utilized a metal seal disc held in place by an exterior screw cap with no center. This seal and cap type system is still in use today.

The closure artifacts recovered from the project area consisted of two milk glass canning jar lid liners (Table 5.4). They date between 1869 and 1950 (Jones and Sullivan 1985; Toulouse 1969, 1977).

Other Container (n = 1)

One modern plastic soda bottle label was placed into this category. The soda brand is unknown, because only a small part of the label was recovered. Based on its appearance, it was given a date range of 1970 to the present, but it likely dates to the late twentieth century.

Furnishings Group (N = 5)

The furnishings category includes artifacts usually associated with the home or building, but are not elements of the actual construction. Examples of furnishings include decorative elements, furniture, heating, lighting, and wall decorations. Artifacts were collected from two of the above categories (Table 5.5). Three lighting items were recovered. All three were clear lamp chimney glass fragments dating from 1854 to 1940 (Faulkner 2008:100; Pullin 1986). The other two furnishing group artifacts consisted of cast iron stove parts. They were not assigned specific dates.

Maintenance and Subsistence Group (N = 9)

The maintenance and subsistence group contains artifacts grouped into classes containing non-food containers, electrical, farming and gardening, hunting and fishing, stable and barn activities, general hardware, general tools, transportation, and fuel-related items such as coal. Two of these classes were represented in the historic assemblage recovered during the current project (Table 5.5).

Electrical (n = 1)

Items in this class of artifacts include insulators, electrical wire, batteries, electrical tape, and any other item associated with electricity. The single item recovered in this category was a carbon electrode battery element fragment (Figure 5.1g). It dates after 1885 (Davidson 2008).

General Hardware (n = 8)

This class of artifacts includes a wide variety of hardware fasteners and items used for a variety of purposes. Objects within this category were identified as a fence staple (n = 1) (Figure 5.1h), barbed wire fencing (n = 3), indeterminate fencing (n = 1), a snap hook (n = 1), possible gate hardware including two bolts and hex nuts (n = 1), and an iron/steel ring (n = 1) that may have been wagon hardware. The barbed wire dates after 1874 (Turner 1971). The snap hook dates after 1883 (United States Patent and Trademark Office 2015). The remaining items could have been manufactured throughout the late nineteenth and twentieth centuries.

Table 5.5. Summary of Furnishing, Maintenance and Subsistence, Arms, and Unidentified Groups.

Class	Type	15Mm232	15Mm233	15Mm234	Total
Heating					
	Cast iron stove part	0	2	0	2
Lighting					
	Lamp chimney	0	3	0	3
General hardware					
	Fencing	0	4	0	4
	Hook	1	0	0	1
	Gate hardware	0	1	0	1
	Ring	0	1	0	1
	Staple	0	1	0	1
Electrical					
	Battery element	0	1	0	1
Projectile					
	Rimfire cartridge	0	1	1	2
Plastic					
	Modern item/part	0	3	1	4
	Total	1	17	2	20

Arms Group (N = 2)

The arms group includes artifacts generally associated with civilian and military weaponry. Examples of arms include gun parts, bullets or projectiles, cartridge cases, and gunflints. Two arms-related artifacts were recovered from the project area (Table 5.5). Both were identified as projectiles. One was a rim-fired .41-caliber brass cartridge that dates between 1863 and 1940 (Figure 5.1i) (Ball 1997:121). The other was a rim-fired .22-caliber brass cartridge dating after 1871 (Ball 1997:121).

Unidentified (N = 4)

This category contains artifacts that could not be identified beyond the material from which the artifact was made. Only one class comprised this group during the current project, and it was modern plastic (Table 5.5). Three were small unidentified items/parts that were mint green (n = 1), white (n = 1), and red (n = 1). The fourth item was a black strap with a hole at one end. All of these items were assigned a date range of 1930 to the present (Meikle 1995).

Discussion

There were 164 historic artifacts recovered during the current survey. The material collected is discussed in detail above, and summarized below according to site.

Site 15Mm232

A total of 25 historic artifacts were recovered from this site. These included architecture (n = 5), domestic (n = 19), and maintenance and subsistence (n = 1) items. The architecture items consisted of a hand-made brick fragment dating to approximately 1880, and 4 nails. The nails included a 7d late fully machine-cut nail that had been pulled, 2 unspecified cut nail fragments, and 1 indeterminate nail fragment. The late cut nail dates between 1830 and 1890, and the unspecified cut nails were assigned a broad date range of 1800–1890.

The domestic artifacts included ceramics (n = 7) and container glass (n = 12). The ceramic assemblage consisted of whiteware (n = 6) and ironstone (n = 1). One whiteware sherd was embossed and dates after 1860. It had been part of a saucer. The other whiteware sherds were plain (n = 4) and undecorataed (n = 1). The plain sherds date between 1860 and 1930. The undecorated sherd dates after 1830. Vessel forms identified among the plain/undecorated whiteware sherds include a plate (n = 1) and platters (n = 4). The ironstone sherd was undecorated and dates after 1830. The mean ceramic date for the Site 15Mm232 assemblage is 1891.

Container glass recovered from Site 15Mm232 primarily consisted of BIM (n = 11) and an undiagnostic container fragment (n = 1). The BIM included an aqua cup bottom mold embossed recessed panel medicine bottle fragment dating between 1865 and 1920, an aqua embossed canning jar sherd dating between 1884 and 1920, and nine body sherds. The body sherd colors included amber (n = 1), amethyst (n = 4), aqua (n = 3), and colorless unleaded (n = 1). Vessel forms included canning jars (n = 3), miscellaneous bottles (n = 3), and miscellaneous jars (n = 2). The undiagnostic container fragment was clear.

The single maintenance and subsistence artifact consisted of a metal snap hook dating after 1883.

The average date range of the artifacts recovered from Site 15Mm232 is 1847–1920, and the mean date is 1882. The presence and types of the architectural and domestic group items indicates that the site was used as a historic farmstead/residence. The presence of the hand-made brick and cut nails suggests that the site was first occupied in the nineteenth century, and the ceramics and container glass suggest a late-nineteenth-century to early-twentieth-century occupation. A historic map dating to 1879 does not show a dwelling in the location of this site, and neither does the next available map dating to 1929 or any subsequent maps. The artifacts recovered from the site are consistent with what is not shown on the map data; namely, that the site was occupied sometime after 1879 and abandoned before 1929. While the artifact

assemblage is small, the domestic artifacts recovered from Site 15Mm232 indicate that refined, yet likely inexpensive, ceramic wares were utilized, and that food preservation was conducted on-site in addition to food preparation and consumption. Proprietary medicines also were purchased. At this time, little else can be interpreted regarding the lifeways of the former residents based solely on the artifact assemblage.

Site 15Mm233

A total of 125 historic artifacts were recovered from Site 15Mm233. These artifacts included architecture (n = 24), clothing (n = 1), domestic (n = 83), furnishing (n = 5), maintenance and subsistence (n = 8), arms (n = 1), and unidentified (n = 3) group items. Construction materials (n = 1), flat glass (n = 10), and nails (n = 13) comprised the architecture group. The construction material was represented by a piece of asbestos roofing/siding dating after 1907. The flat glass included window glass (n = 7) and plate glass (n = 3). The window glass had a mean date of 1887, but since the assemblage was not statistically significant, it cannot be relied upon as an indicator of site date. The plate glass dates from 1917 to the present. Two unspecified cut nail fragments were recovered from the site, but the majority of the nails were wire drawn (n = 8). One of these nails had a pennyweight of 12d, and the other was a 20d nail. Both of these sizes are typically utilized for heavy framing. The other 6 wire nails were fragmentary. In addition to the unspecified cut and wire-drawn nails, 3 nail fragments were indeterminate.

The clothing item recovered from the site was a piece of a machine-knitted brown wool sock. It was not assigned a specific date.

The domestic group items included ceramics (n = 36), container glass (n = 44), container closures (n = 2), and other containers (n = 1). The ceramics consisted of whiteware (n = 33) and stoneware (n = 3). Eleven of the whiteware sherds were undecorated and date after 1830, and four were plain and date between 1860 and 1930. Vessel forms included a cup (n = 1), a mug (n = 1), a pitcher (n = 1), plates (n = 9), and saucers (n = 2). One whiteware sherd was embossed and had been part of a teacup. It dates after 1860. Five decal sherds also were observed in the assemblage, and they date between 1880 and 1940. Identifiable vessel forms include saucers (n = 4) and a plate (n = 1). Chromatic glazing (n = 12) also was represented amongst the whiteware, and the colors included ivory (n = 7) and green (n = 5). All of the ivory sherds had been part of a plate, and one of them displayed part of a maker's mark, indicating the vessel had been manufactured in 1948. The green sherds had been part of a saucer, and they date between 1930 and 1970. Stoneware recovered from Site 15Mm233 included salt glazed exterior/brown slip interior (n = 2) and Bristol slip on the exterior and interior surfaces (n = 1). The salt-glazed sherds had been part of the same crock, and they date between 1800 and 1925. The Bristol slipped sherd dates between 1880 and 1925. The mean ceramic date of the Site 15Mm233 assemblage is 1915.

The container glass included BIM (n = 3), ABM (n = 38), and undiagnostic container fragments (n = 3). The BIM consisted of one clear embossed canning jar fragment dating between 1864 and 1920, and one aqua and one clear body sherds. The ABM sherds included 15 clear embossed (stippled) juice bottle fragments from the same vessel. They were given a date range of 1903 to the present. The remainder of the ABM glass consisted of amber (n = 1), clear (n = 21), and light green (n = 1) body sherds. Identifiable vessel forms included a beer bottle (n = 1), miscellaneous bottles (n = 3), miscellaneous jars (n = 3), and a soda bottle (n = 1). The undiagnostic container fragments were amethyst (n = 1) and clear (n = 2).

The container closures consisted of two milk glass canning jar lid liner fragments. They date between 1869 and 1950. The other container item consisted of a modern soda bottle label fragment that was given a date range of 1970 to the present but could be much more recent in age.

Five furnishing group items were recovered from Site 15Mm233, and they consisted of two cast-iron stove parts and three pieces of lamp chimney glass. The lamp chimney glass dates between 1854 and 1940. Maintenance and subsistence artifacts included a carbon electrode battery element (n = 1), indeterminate fencing (n = 1), barbed-wire fencing (n = 1), possible gate hardware (n = 1), an iron/steel ring (n = 1), and a fence staple (n = 1). The barbed wire dates after 1874.

The arms group artifact consisted of a rim-fired .41-caliber brass shell dating between 1863 and 1940. The unidentified group items consisted of three pieces of modern plastic. These unknown items/parts were mint green, white, and red.

The average date range of the artifacts recovered from Site 15Mm233 is 1885–1957, and the mean date is 1921. The dominance of the architectural and domestic groups supports the known use of the site as a historic farmstead/residence. While some of the artifacts could have been manufactured in the nineteenth century, the overall assemblage is consistent with a twentieth-century residential occupation. The window glass calculated measurements suggest a possible late-nineteenth-century occupation, but with only seven sherds, they are not reliable indicators of site age without additional corroborating of artifact data. Available historic maps indicate a dwelling was present at the site by the 1950s, but it is not shown on an available 1929 map. Based on the map data as well as the overall artifact assemblage, it appears likely that the dwelling at Site 15Mm233 was constructed between 1930 and 1952, probably the early 1930s. It is unknown when the house was abandoned, but it likely was sometime in the last quarter of the twentieth century as it appears on the 1965 (photorevised) Mount Sterling, Kentucky, topographic quadrangle (USGS 1965). The domestic artifacts recovered from Site 15Mm233 indicate that food was prepared, stored, and consumed at the site and that beer and soda beverages were consumed as well. The occupants used a cast iron stove and used oil lamps as lighting sources, but the presence of the battery element indicates the use of electrical power, too. Little else can be interpreted regarding the lifeways of the former residents based solely on the artifact assemblage.

Site 15Mm234

Fourteen historic artifacts were recovered from this site. These items were categorized into the architecture (n = 7), domestic (n = 5), arms (n = 1), and unidentified (n = 1) groups. The architecture items consisted of a machine-made brick fragment (n = 1), wire nail fragments (n = 5), and a piece of plate glass (n = 1). The wire nails and the brick date after 1880, and the plate glass dates after 1917.

The domestic items consisted of ceramics (n = 1) and container glass (n = 4). The single ceramic was an undecorated whiteware body sherd dating after 1830. All four of the container glass sherds were ABM. One was an external thread finish of an aqua canning jar. It dates after 1903. The remaining body sherds could only be classified according to color: amber (n = 2) and clear (n = 1). The amber sherds had been part of a household cleaning bottle.

The arms artifact was a rim-fired .22-caliber brass shell dating after 1871. The unidentified group item was a small broken strap with a hole at an end. It was assigned a date of 1930 to the present.

The average date range of the Site 15Mm234 assemblage is 1889–1970, and the mean is 1929. The artifact types are consistent with the presence of a historic farmstead/residence. Historic maps do not show a structure in the location of Site 15Mm234, but historically there was a house nearby outside of the project area that likely is associated with the site assemblage. The structure is not shown on an available map dating to 1879, but it is shown on a map dating to 1929 as well as maps dating into the 1950s. Even though some of the artifacts could have been manufactured in the nineteenth century, the overall assemblage is consistent with an occupation that started in the early decades of the twentieth century. Since very few artifacts

were recovered, little can be said about the lifeways of the former occupants with the exception of them canning food and purchasing household cleaners, and they also may have been gun owners. Without additional cultural material, little else can be interpreted regarding the lifeways of the former residents based solely on the artifact assemblage.

Chapter 6. Results

The current investigations identified a total of four archaeological resources, consisting of two previously undocumented multicomponent sites (15Mm232 and 15Mm234), a single previously undocumented historic site (15Mm233), and a single prehistoric isolated find. The following sections will describe and discuss each of the archaeological resources, including its general setting, depositional context, and interpretation. The location of these resources is presented in Figures 1.2 and 1.3.

15Mm232

Elevation: 283 m (930 ft) AMSL
Component(s): Indeterminate prehistoric and twentieth century historic
Site type(s): Prehistoric open habitation without mounds, historic farm/residence
Size: 961 sq m (10,344 sq ft)
Distance to nearest water: 100 m (328 ft)
Direction to nearest water: North
Type and extent of previous disturbance: erosion and agriculture, extent unknown Topography: Dissected uplands: shoulder/sideslope
Vegetation: Various pasture grass
Ground surface visibility: Poor due to various grasses (less than 5 percent)
Aspect: Approximately 5 to 10 percent; east
Recommended NRHP status: Not eligible

Site Description

Site 15Mm232 was a light subsurface scatter of prehistoric and historic artifacts. The site was located on a shoulder/sideslope overlooking Hinkston Creek on Parcel 7. The site was approximately south-southwest of Hinkston Creek in Montgomery County, Kentucky (see Figures 1.2 and 1.3). The site was situated at an elevation of approximately 283 m (930 ft) AMSL.

Disturbances to the site included historic and modern agricultural activities. No evidence of recent agricultural activities was noted; however, the landform appears to be used for hay or forage crop harvesting. At the time of the current survey, the field where the site is located was covered by various pasture grasses (Figure 6.1). Due to its position on the slope, erosion would also be a factor in site preservation.

The site was initially identified during shovel testing along a 20 m (66 ft) grid. The site boundaries were established by negative shovel tests to the west and south and by slope to the north and east. The site measured approximately 60 m (197 ft) north–south and 22 m (72 ft) east–west. The site area is estimated to be approximately 961 sq m (10,344 sq ft).

Ground surface visibility was zero percent due to various pasture grasses present along the landform. No artifacts were collected from the ground surface. It is unlikely that the site extends beyond the project boundary.

Investigation Methods

Shovel testing was conducted along transects parallel to the project boundaries along the shoulder and sideslope. A total of 26 screened shovel tests were hand excavated within and adjacent to the site (Figure 6.2). Five of the 26 shovel tests recovered prehistoric flakes and historic cultural material. All of the artifacts were recovered from the upper portion of the shovel tests. No artifacts were identified below the topsoil. All sediment from each of the shovel tests was visually inspected for cultural materials and screened through .25 inch hardware mesh.

Figure 6.1. Overview of Site 15Mm232 showing vegetation. Photo facing north.

Data pertaining to the site location was recorded and marked on appropriate maps. A site datum was established and its UTM coordinates were recorded using a MobileMapper 6 handheld GPS unit. A site sketch map was drawn, showing the placement of the shovel test positions in relation to topographic positions and the project area boundary. As previously stated, the site boundaries were determined by negative shovel tests to the west and south and by slope to the north and east. It is unlikely that the site extends beyond the currently delineated project boundary.

Depositional Context

The site is located on topography mapped as belonging to the Lowell silt loam, Faywood-Lowell complex and Faywood-Cynthiana complex (Froedge 1986; Soil Survey Staff 2015). Shovel testing at the site revealed relatively consistent soils throughout the site (Figure 6.3). A typical shovel test consisted of a brown (10YR 4/3) silty clay loam (possessing weak, fine angular blocky structure) plow zone ranging in depth between 25.0 and 50.0 cm (9.8 and 19.7 in) bgs. The lower boundary was typically abrupt and smooth, suggesting the results of historic/modern agricultural activities. Below the plow zone was a yellowish brown (10YR 5/6) clay loam. Artifacts were confined to the plow zone. No evidence of intact, subsurface cultural features, midden, or other cultural deposits were identified during the current investigations. The prehistoric and historic artifacts were only noted in the first soil horizon.

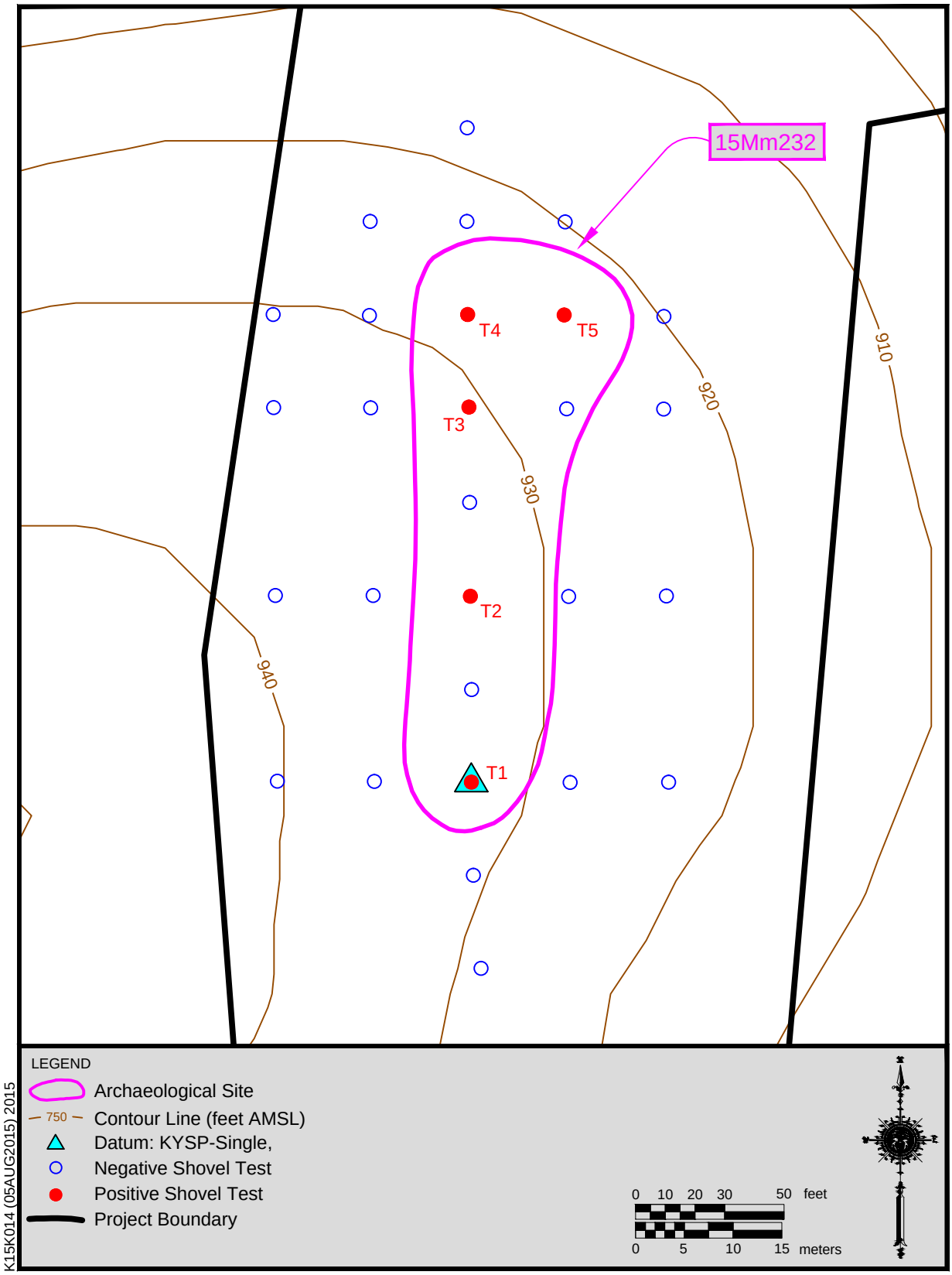

Figure 6.2. Schematic plan map of Site 15Mm232.

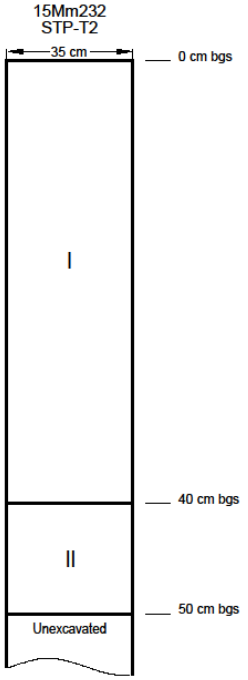

Figure 6.3. Representative soil profile from Site 15Mm232 STP t2 (0–50 cm bgs).

Artifact Assemblage

The current investigations recovered a sparse subsurface scatter of prehistoric and historic artifacts. A total of 28 artifacts were recovered during the current investigations. The artifacts have already been discussed in detail in the previous chapter, and only a brief summary will be presented below.

The prehistoric assemblage consisted of 3 nondiagnostic flakes weighing approximately 1.1 g and the historic assemblage had 25 artifacts (Table 6.1). All of the artifacts were recovered from the upper portions of the solum at depths no deeper than approximately 40.0 cm (15.7 in) bgs.

Little can be said of the prehistoric artifact assemblage. The sparse assemblage prevents an accurate interpretation of the prehistoric activities. No cores, modified implements, or FCR were identified in the assemblage. The presence of the artifacts indicates that the landform was occupied during prehistoric times; however, the lack of temporally diagnostic artifacts prevents a temporal assignment to the occupation.

The artifacts indicate that local Brassfield chert was employed into various lithic reduction activities. Given the small size of the assemblage, it is impossible to determine the technological composition of those activities. The presence of the thermal shatter suggests that some form of thermal-related activities had been conducted on-site. Combined, these artifacts suggest an ephemeral prehistoric occupation.

In addition to the three prehistoric artifacts, the site contained a slightly more sizeable historic component. The historic assemblage consists of a total of 25 artifacts, including items from the architecture (n = 5), domestic (n = 19), and maintenance and subsistence (n = 1) groups. The domestic artifacts consisted mostly of container glass. Most of the assemblage consisted of BIM glass fragments (n = 11), with an additional nondiagnostic fragment (n = 1). The combined glass assemblage had a date range of between 1865 and 1920. The ceramics included both whiteware (n = 6) and ironstone

Table 6.1. Summary of Artifacts Recovered at Site 15Mm232.

Unit	Depth	Zone	Group	Item Type	Count / wt(g)
STP t1	10 - 25 cm bgs	I	Prehistoric flake	Middle Stage Brassfield	1 (0.5 g)
STP t2	20 - 40 cm bgs	I	Architecture	Nail	1
STP t2	20 - 40 cm bgs	I	Domestic	Ceramic	1
STP t2	20 - 40 cm bgs	I	Prehistoric flake	< .25 inch	1 (0.1 g)
STP t3	0 - 30 cm bgs	I	Architecture	Nails	2
STP t3	0 - 30 cm bgs	I	Domestic	Ceramic, BIM, undiag cont frag	4
STP t4	0 - 30 cm bgs	I	Domestic	Ceramic, BIM	5
STP t5	0 - 40 cm bgs	I	Architecture	Brick, nail	2
STP t5	0 - 40 cm bgs	I	Domestic	Ceramics, BIM	9
STP t5	0 - 40 cm bgs	I	Maint/sub	Snap hook	1
STP t5	0 - 40 cm bgs	I	Prehistoric flake	Thermal Shatter	1 (0.5 g)

(n = 1). Only one of the domestic artifacts could be considered decorated; this artifact, an embossed saucer fragment, dates after 1860. Overall, these domestic artifacts had a date range between 1830 and 1930. The mean ceramic date for the Site 15Mm232 assemblage is 1891. The architectural artifacts consisted of a hand-made brick fragment dating between 1880 and 1880, and four nails. The nails included a 7d late fully machine-cut nail that had been pulled, two unspecified cut nail fragments, and one indeterminate nail fragment. The late cut nail dates between 1830 and 1890, and the unspecified cut nails were assigned a broad date range of 1800–1890. The single maintenance and subsistence artifact consisted of a metal snap hook dating after 1883.

Based on the historic artifact assemblage, there is strong evidence that a residential structure had been built during the latter portions of the nineteenth century. The artifacts recovered from the site are consistent with what is not shown on the map data; namely, that the site was occupied sometime after 1879 and abandoned before 1929.

No map structure was identified in the location of Site 15Mm232. A structure was likely located, however, to the west towards the upper portion of the slope near the summit position, rather than on the shoulder and sideslope position at Site 15Mm232. Also, inquiries with various property owners along the project area did not indicate the presence of a former structure along the landform. If a structure had been present, then its location has likely been obliterated by the construction of a large horse barn situated near the summit position approximately 65 m (213 ft) to the west. It is possible, however, that this subsurface scatter of historic artifacts may represent materials translocated downslope after the demolition of the residential structure. The near surface origin of these artifacts, in conjunction with the topography along the shoulder and sideslopes positions, suggests that this post-depositional movement is likely. It is probable that through years of erosion and historic/modern agricultural practices, these artifacts may have moved downslope into the project area. It is more likely that the former structure was situated along the summit position of the landform.

Features

No cultural features were observed during the current investigations of Site 15Mm232. No FCR, charcoal, or burned soil was observed at the site that would indicate the presence of prehistoric features within the site boundaries.

Archival Data

James Heideman

The earliest deed record pertaining to the ownership of the land containing Site 15Mm232 dates to September 1, 1893 (Table 6.2). At that time, Samuel Hart and his wife, Cynthia, sold the 49 ha (120 acre) property containing Site 15Mm232 to their supposed children M.A. and A.S. Hart for $7,000.00 (Montgomery County Clerk's Office [MCCO] Deed Book [DB] 49:502, Mount Sterling, Kentucky). According to census data, Samuel and Cynthia Hart were living in Montgomery County in 1900, and Samuel was working as a farmer (United States Bureau of the Census [USBC], 1900, Washington, D.C.). No other census data is available for any members of the Hart family.

On August 7, 1895, M.A. Hart sold his half interest in the property containing Site 15Mm232 to his supposed brother A.S. Hart for $4,200.00 (MCCO DB 51:180). A.S. Hart would go on to be the sole owner of the property for approximately 10 years. On May 4, 1905, A.S. Hart and his wife, Lucy, sold 1.35 ha (3.33 acres) of the property, that is believed to be the portion containing Site 15Mm232, to Chas B. Duerson and Franklin C. Duerson (MCCO DB 61:372). Chas B. and Franklin C. Duerson were brothers born in Kentucky in 1870 and 1875, respectively, to Charles and Mary F. Duerson. The earliest census data available for the brothers comes from 1900, at which point they are living in

Table 6.2. Ownership History for Site 15Mm232.

Date	Owner	Acreage	Amount
		20	
		79 plus small triangular tract	8500
1933 – 1934	Lucy Hart	162.67 plus small triangular tract	Inheritance
1919 – 1933	A.S. Hart	162.67 plus small triangular tract	44775.5
1905 – 1919	Chas B. and F.C. Duerson	3.33	333.4
1895 – 1905	A.S. Hart	120 +/-	4200
1893 – 1895	M.A. and A.S. Hart	120 +/-	7000
? – 1893	Samuel and Cynthia Hart	Unknown	Unknown

Mount Sterling, Montgomery County, in the household of their parents along with their sisters, Lizzie M. and Minnie K. (USBC 1900). In 1910, the brothers were still living in Mount Sterling in the household of their parents (USBC 1910). By 1920, Chas B. had moved out and was living still living in Mount Sterling in a household composed of his wife, Nell W., and their two children, Nellie and Charles F. (USBC 1920). At that time, Franklin C. was still living in the household of his parents in Mount Sterling (USBC 1920).

The Duerson brothers sold approximately 65.83 ha (162.67 acres) along with a small triangular tract to A.S. Hart on February 26, 1919, for $44,775.00 (MCCO DB 70:332). When A.S. Hart died in the Autumn of 1933, all of his property was devised to his wife, Lucy M. (MCCO Will Book [WB] I:57). On March 6, 1934, Lucy M. Hart sold 32 ha of the property containing Site 15Mm232, along with a small triangular tract of land to L.L. Bridgeforth for $8,500.00 (MCCO DB 80:310). Of the $8,500.00, $4,469.30 was paid to Lucy M. Hart, and the remaining $4,030.70 was paid to the Montgomery National Bank of Mount Sterling. There was no available census data for L.L. Bridgeforth.

Based on the available archival data, the Hart family appears to be the earliest known occupants of Site 15Mm232. The occupation of the site by the Hart family, more particularly the household of Samuel Hart, would have begun by at least the late nineteenth century, if not earlier. Since the only census data available for Samuel Hart comes from 1900, at which point the property was no longer in his possession, it is unclear who comprised Samuel Hart's household during his supposed occupation of the site. It is also unclear what the relation of M.A. and A.S. Hart (thought to be their children) was to Samuel and Cynthia Hart. It is unclear if M.A. or A.S. Hart even resided on the property together or individually during the late nineteenth and early twentieth centuries.

After the Hart's ownership of the property containing the site ended in 1905, it seems that the site was used for tenant farming purposes. Though it is possible that the Chas B. and/or Franklin C. Duerson may have occupied the site from 1905 to 1919, it seems more likely that the property was used for tenant farming during that period. When A.S. Hart reacquired the small tract of land thought to contain the site in 1919, it seems unlikely that he would have been an occupant at the site. A tenant house is listed as being on the property in a deed record from 1934, further supporting the supposition that the site was occupied by tenant farmers throughout much of the first half of the twentieth century. By the mid-twentieth century, at which point members of the Bridgeforth/Howell family owned the property, it appears that occupation of the site ceased. Additional archival research would be needed in order to establish who the site occupants were during the early and mid-nineteenth century, as well as who the potential tenant farmers were that are thought to have occupied the site in the early and mid-twentieth centuries.

Summary and National Register Evaluation

Site 15Mm232 was a prehistoric open habitation of indeterminate age, consisting solely of nondiagnostic flake debris and a historic farm/residence from the late nineteenth to early twentieth century. The sparse artifact assemblage was restricted to the upper portion of the solum throughout the site. No evidence of intact subsurface, features, midden, or other cultural deposits were identified during the current archaeological investigations. The site appears to have limited research value due to the sparse, nondiagnostic artifact assemblage.

The archival research indicated that the first available deed for the property dates to the latter portion of the nineteenth century in 1893 with the possession of the property within the Hart family. Although no map structures are depicted at the site location, the deed record indicated the presence of a small tenant house on the property in 1934. By the mid-twentieth century, however, it appears that the occupancy of the property had ceased with the ownership of the Bridgeforth/Howell family. While it is unclear why a structure was not depicted on any of the available maps, it is possible that the residence had been constructed and later demolished during a short time span in which maps were not available for the current archaeological investigations.

It is unlikely that the portion of Site 15Mm232 within the current project area would produce information beyond that recorded during the current survey. As such, the portion of Site 15Mm232 within the current project area is not considered to have the potential to provide information about local or regional history, and, therefore, is recommended not eligible for listing in the NRHP (Criterion D). It is not likely that further investigation of the site would produce information beyond that recorded during the current survey. Therefore, no further work is recommended for the portion of Site 15Mm232 within the current project area.

Project Impacts

This site is located within the proposed ROW east of the existing stretch of Hinkston Pike. Additional archaeological work would not likely produce significant information beyond what has been collected. As noted above, the site is recommended as not eligible for listing in the NRHP and no further work will be needed.

15Mm233

Elevation: 270 m (885 ft) AMSL
Component(s): Early twentieth century
Site type(s): Historic residence/farmstead (early to mid-twentieth century)
Size: 632 sq m (6,803 sq ft)
Distance to nearest water: less than 10 m (33 ft)
Direction to nearest water: East
Type and extent of previous disturbance: Demolition of structure and other indeterminate disturbances; extent unknown Topography: Floodplain
Vegetation: Deciduous trees and various weedy underbrush
Ground surface visibility: Poor; zero percent
Aspect: Flat
Recommended NRHP status: Not eligible

Site Description

Site 15Mm233 consisted of the remains of an early-twentieth-century residence/farmstead. The site was located on the western side of Hinkston Creek within a meander bend. The site was located approximately north-northeast of the Hinkston Pike in Montgomery County, Kentucky. The site is situated on the floodplain between two bridges (see Figures 1.2 and 1.3). The site was situated at an elevation of approximately 270 m (885 ft) AMSL.

The location of the site was initially suspected by the presence of a single map structure at the site location (see Figures 3.1 and 3.2). A residential map structure was identified initially on the 1952 (USGS 1952) and 1965 (photorevised 1979) (USGS 1965) Mount Sterling, Kentucky, 7.5-minute topographic quadrangles. At the time of the current investigations, the structure was not extant. A neighbor indicated that a single residential house was present at the location and was razed 15–20 years ago. Publically available Google® satellite imagery dating back to 1995 did not show a structure at the site location, indicating that the structure had been demolished for at least two decades. No direct evidence, such as foundations or other structural remains were identified at the site during the current field investigations.

During the field investigation, the site was identified archaeologically by the presence of a scatter of historic artifacts recovered from shovel tests within and adjacent to the tree line (Figure 6.4). The site was identified by the presence of six positive shovel tests. The site boundaries were defined to the east by the project boundary, to the south and north by negative shovel tests, and to the west by the disturbances associated with the construction of Hinkston Pike. The site area is estimated to be approximately 632 sq m (6,803 sq ft). The site likely extends outside the project area to the east.

At the time of the current survey, Site 15Mm233 was located alongside the southern edge of a tree line. The surrounding trees were composed of a variety of deciduous tree species along with an assortment of weedy underbrush. The southern portion of the site was covered in a variety of herbaceous weeds and grasses. Ground surface visibility at the site was poor due to the vegetation.

Investigation Methods

As noted previously, Site 15Mm233 was identified archaeologically as a scatter of historic materials recovered during the shovel testing of the floodplain. The shovel testing was conducted along a 20 m grid within the current project boundaries. Once the site was identified, shovel testing intervals along the site edges were reduced to 10 m in order to better define the site boundaries.

Figure 6.4. Overview of Site 15Mm233, showing topography and field conditions. Photo facing east-northeast.

The shovel testing was conducted along a grid roughly paralleling the eastern edge of Hinkston Pike. The azimuth was approximately 20 degrees east of north. A total of 20 screened shovel tests were excavated within and adjacent to the site (Figure 6.5). Of the 20 shovel tests, 7 were excavated within the established site boundaries and 6 of them (85.7 percent) recovered archaeological materials. All sediment from each of the shovel tests was visually inspected for cultural materials and screened through .25 inch hardware mesh.

As discussed below, most of the artifacts were recovered within 40.0 cm (15.8 in) bgs. One shovel test, however, recovered artifacts to a depth of approximately 60.0 cm (23.6 in) bgs.

Data pertaining to the site location was recorded and the site was identified on appropriate maps. A site datum was established and its UTM coordinates were recorded using a MobileMapper 6 handheld GPS unit. A site sketch map was drawn, showing the placement of the shovel test positions in relation to topographic positions and the project area boundary. As previously stated, the site boundaries were determined by negative shovel tests to the north and south and by Hinkston Pike to the west and the project boundary to the east. Based on the current investigations, it is likely that the site extends beyond the project boundaries to the east.

Depositional Context

Site 15Mm233 as located on topography mapped as the Huntington Silt Loam (6–12 percent) (Froedge 1986; Soil Survey staff 1999). The Huntington Series soils are moderately deep and have either formed in grassy or forested environs or in alluvial settings where pedogenesis was kept in check with overbank deposition.

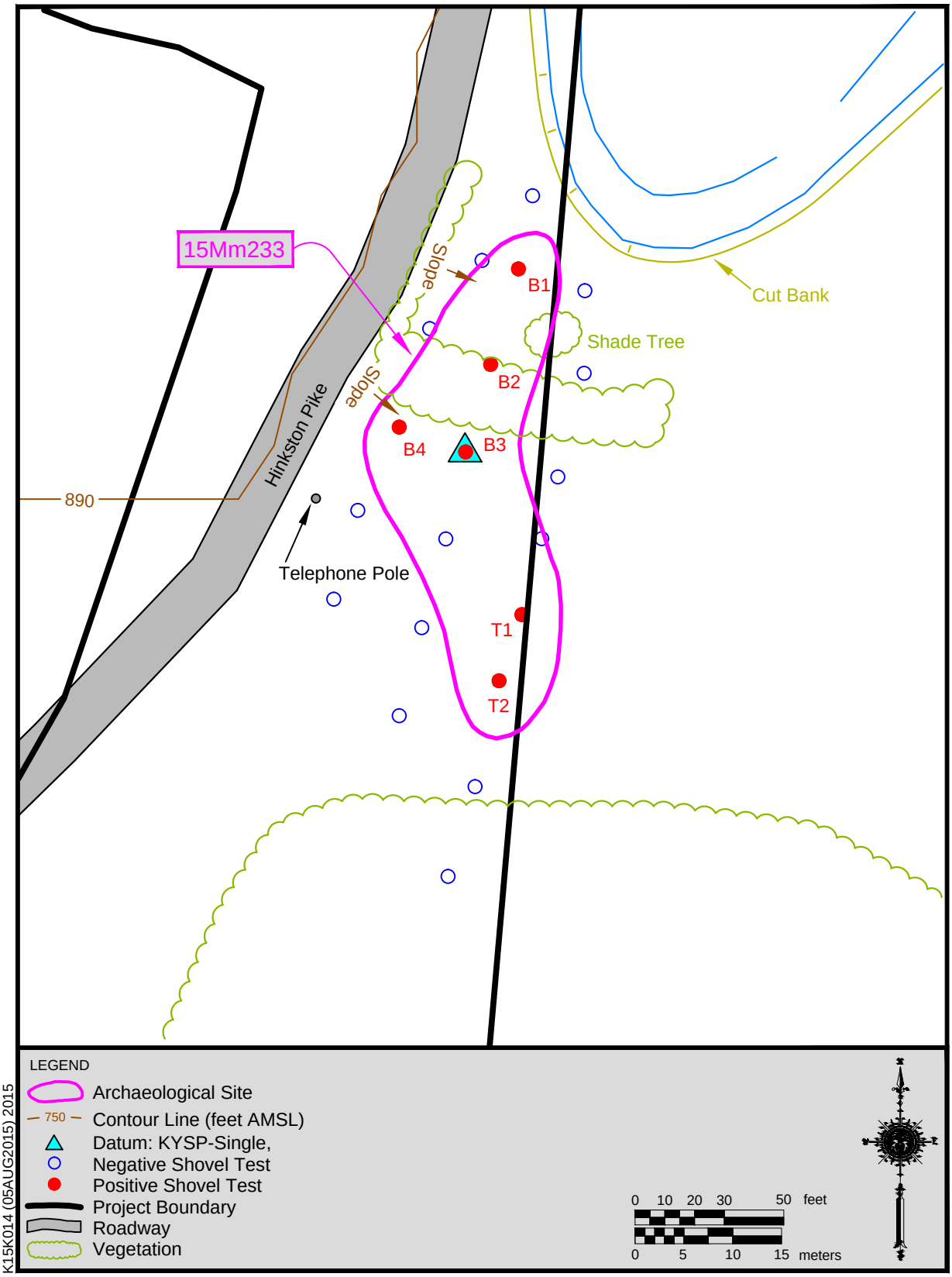

Figure 6.5. Schematic plan map of Site 15Mm233.

Shovel tests at the site revealed soil pedons varying in both soil compositions and depths. These shovel tests appear to reflect the historic modification to the landform, including both the construction and demolition of a structure along with alluvial influences, in terms of flooding and scouring activities.

A typical shovel test at the site revealed a two horizon soil profile consisting of a brown/dark brown (10YR 4/3) silty clay loam overlying a dark yellowish brown (10YR 4/6) silty clay loam (Figure 6.6a). Most of the artifacts were recovered from the upper horizon throughout the site. The depth to the base of the subsoil was not determined during the current archaeological survey.

Several shovel tests, most notably STP b2, revealed the presence of three horizons (Figure 6.6b). Shovel Test b2 consisted of a dark brown (10YR 3/3) silty clay loam possessing weak fine angular blocky structure. The lower boundary was identified at 13.0 cm (5.1 in) bgs and was identified as abrupt and smooth. The second horizon consisted of a very dark brown (10YR 2/2) silt loam containing matrix-supported coal/cinder and charcoal fragments extended to a depth of approximately 34.0 cm (13.4 in) bgs. The lower boundary was identified as abrupt and smooth. The underlying subsoil consisted of a dark yellowish brown (10YR 4/5) silty clay loam and extended to a final depth of approximately 50.0 cm (19.7 in) bgs. The subsoil lower boundary was identified in the shovel test.

It is likely that the STP b3 sediments reflect the waste discard of a coal furnace (or stove) that may have served to heat the residence during inclement weather. The spatially isolated identification of these coal/cinder-rich sediments suggests an isolated dump area. Given the location of the sediments at a distance slightly set back from the road, it is presumed that this shovel test was likely located in the back yard region of the residential lot. It should be noted, however, that no additional evidence of the structure (including depressions or foundation remain) were noted at the site.

Conversations with several local informants indicated that this portion of the Hinkston Creek floodplain is subjected to occasional flooding. In recent years, the creek floods, occassionally burying this stretch of the floodplain in a thin layer of overbank deposits. The abrupt smooth boundaries seen in several of the shovel tests appear to correlate with the alluvial nature of the sediments.

Artifact Assemblage

During the current investigations a total of 125 historic artifacts were recovered (Table 6.3). The artifact assemblage included items in the architecture (n = 24), clothing (n = 1), domestic (n = 83), furnishing (n = 5), maintenance and subsistence (n = 8), arms (n = 1), and unidentified (n = 3) group items. When combined, these artifacts represent the remains of a historic residence/farmstead dating to the early portion of the twentieth century.

The architectural debris consisted of a variety of items, including nails, flat glass, and a single piece of asbestos roofing/siding. The nails consisted of both wire and cut nails along with several indeterminate pieces. Several of these nails were larger examples (12d and 20d) that are typically used in heavy framing. The flat glass included sherds of both window glass and plate glass with dates of 1887 (window) and 1917 to the present (plate). The asbestos siding/roofing material dated post-1907.

The domestic group items included ceramics, container glass, container closures, and other containers. The ceramic assemblage included a variety of whiteware and stoneware sherds. The whiteware included examples of embossed, chromatic, and decal decorated sherds. The sherds represented a variety of vessel forms, including cup, mug, pitcher, plates, and saucers. The stoneware included salt and Bristol glazed sherds that represented several crocks. The assemblage had date ranges between 1860 and 1970 with a mean ceramic date of 1915.

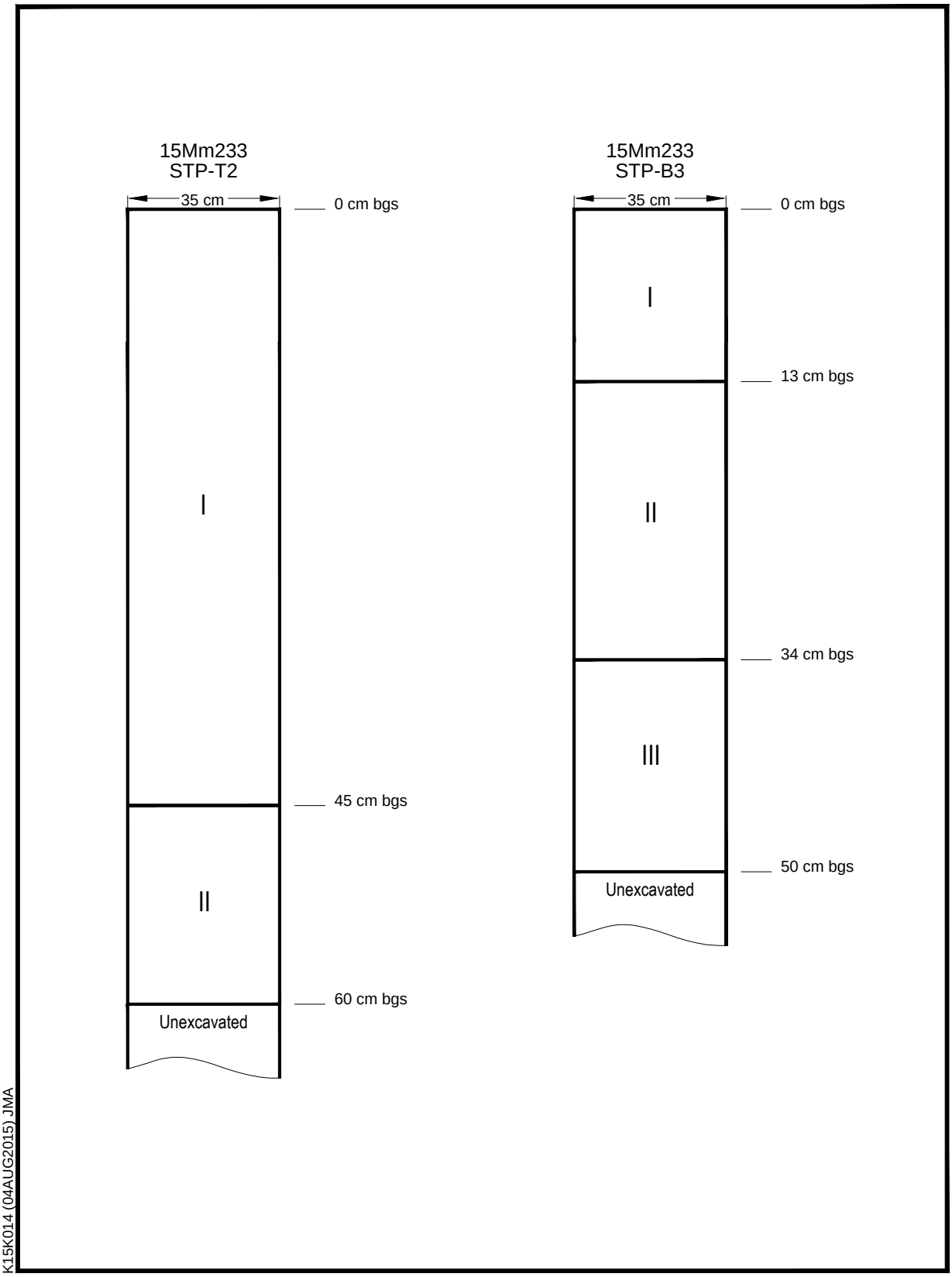

Figure 6.6. Representative soil profile from Site 15Mm233: a) STP t2 (0–60 cm bgs); b). STP b2 (0–50 cm bgs).

Table 6.3. Artifacts Recovered from Site 15Mm233.

Unit	Depth	Zone	Group	Class/Type	N =
STP b1	0–20 cm bgs	I	Maint/sub	Gate hardware	1
STP b2	0–22 cm bgs	I	Architecture	Nail, window glass	2
STP b2	0–22 cm bgs	I	Domestic	Ceramics, BIM, ABM, canning jar lid liner	31
STP b2	0–22 cm bgs	I	Furniture	Cast iron stove parts	2
STP b2	0–22 cm bgs	I	Unidentified	Modern plastic	3
STP b2	22–40 cm bgs	I	Architecture	Window glass, nails, asbestos roofing/siding	4
STP b2	22–40 cm bgs	I	Domestic	Ceramic, ABM	3
STP b2	22–40 cm bgs	I	Furniture	Lamp chimney glass	1
STP b2	22–40 cm bgs	I	Maint/sub	Battery element	1
STP b3	13–24 cm bgs	II	Architecture	Window glass	2
STP b3	13–24 cm bgs	II	Domestic	Ceramics, ABM, undiag cont frag	8
STP b3	13–24 cm bgs	II	Furniture	Lamp chimney glass	1
STP b3	24–34 cm bgs	I	Domestic	Ceramics, ABM	4
STP b4	19–30 cm bgs	I	Architecture	Window glass, plate glass, nails	5
STP b4	19–30 cm bgs	I	Arms	.41 cal rimfire cartridge	1
STP b4	19–30 cm bgs	I	Domestic	Ceramic, BIM, ABM, undiag cont frag	10
STP b4	19–30 cm bgs	I	Maint/sub	Indet fencing	1
STP b4	30–45 cm bgs	I	Architecture	Nail, window glass	2
STP b4	30–45 cm bgs	I	Domestic	Ceramic, ABM, canning jar lid liner, plastic soda bottle label	11
STP b4	30–45 cm bgs	I	Maint/sub	Barbed wire fencing	1
STP b4	45–60 cm bgs	I	Architecture	Window glass	1
STP b4	45–60 cm bgs	I	Domestic	ABM	10
STP b4	45–60 cm bgs	I	Maint/sub	Fence staple, barbed wire fencing	3
STP t1	0–25 cm bgs	I	Architecture	Nails, plate glass	6
STP t1	0–25 cm bgs	I	Clothing	Sock fabric	1
STP t1	0–25 cm bgs	I	Domestic	Ceramic, ABM	2
STP t2	0–30 cm bgs	I	Architecture	Nail, plate glass	2
STP t2	0–30 cm bgs	I	Domestic	Ceramics, ABM	4
STP t2	0–30 cm bgs	I	Furniture	Lamp chimney glass	1
STP t2	0–30 cm bgs	I	Maint/sub	Iron/steel ring	1
				Total	125

The container glass assemblage consisted predominantly of ABM fragments although a few BIM and undiagnostic fragments were also identified. The fragments included 15 fragments of a clear embossed (stippled) juice bottle from the same vessel. Other ABM containers represented in the assemblage included beer bottle, soda bottle, and miscellaneous bottles and jars. The BIM consisted of a single clear embossed canning jar fragment that dated 1864 and 1920, an aqua, and a clear body sherds.

The container closures consist of two milk glass canning jar lid liner fragments. These fragments date between 1869 and 1950.

Five furnishing group items were recovered from Site 15Mm233, consisting of cast-iron stove parts and several pieces of lamp chimney glass. The lamp chimney glass dates between 1854 and 1940. Maintenance and subsistence artifacts included a carbon electrode battery element (n = 1), indeterminate fencing (n = 1), barbed-wire fencing (n = 1), possible gate hardware (n = 1), an iron/steel ring (n = 1), and a fence staple (n = 1). The barbed wire dates after 1874.

The arms group artifact consisted of a rim-fired .41-caliber brass shell dating between 1863 and 1940. The unidentified group items consisted of three pieces of modern plastic. These unknown items/parts were mint green, white, and red.

As indicated in the artifact discussion in the Materials Recovered section, the average date range for these artifacts is 1885 to 1957 with a mean date of 1921. The dominance of the architectural and domestic groups supports the known use of the site as a historic farmstead/residence. While some of the artifacts could have been manufactured in the nineteenth century, the overall assemblage is consistent with a twentieth-century residential occupation. It should be noted, however, that the first indication of a map structure at the

site occurred in 1952 (USGS 1952). Based on the map data as well as the overall artifact assemblage, it appears likely that the dwelling at Site 15Mm233 was constructed between 1930 and 1952, probably the early 1930s.

Features

Beyond the coal/cinder-rich sediments mentioned above, no additional evidence of intact, subsurface cultural features, midden, cultural deposits, or structural remains (such as depressions or foundations) were identified during the current investigations. Beyond the historic artifacts recovered during the shovel testing, no direct evidence of the former structure was identified. The historic artifacts identified during the current investigations appear to relate to the residence that once occupied the site location. Additionally, no fire-cracked rock (i.e., FCR), charcoal, or burned soil was observed at the site that would indicate the presence of prehistoric features.

Archival Data

James Heideman

The earliest deed record available with regard to the ownership of the property containing Site 15Mm233 comes from December 26, 1865 (Table 6.4). At that time 93 ha (230 acres), more or less, were sold by William W. and Mary Embry to their daughter, Nannie Shackelford Bridges, for the consideration of love and affection (MCCO DB 28:608). That deed of conveyance mentioned a previous sale of the property to the Embrys by Joshua Owings on an unknown date. The property was referred to as being a part of the "Old Bledsoe Farm", but no previous deed record was listed (MCCO DB 28:608). No census data could be located in association with William W. and Mary Embry. The only available census data for Nannie Shackelford Bridges was from 1930, at which time she was living in Mount Sterling, with her husband, Marion, and their two children, Jimmy and Sarah N. (USBC 1930).

On February 6, 1913, Nannie Shackleford Bridges and her husband, Marion, sold 110 acres of land thought to contain Site 15Mm233 to L.L. Bridgeforth for $11,000.00 (MCCO DB 66:410). Following L.L. Bridgeforth's purchase of the property, the ownership history for the land containing Site 15Mm233 appears to mirror that of Site 15Mm232, which is outlined above, until 2001.

The property is currently owned by the City of Mount Sterling (Water and Sewer Commission).

The available archival data suggests that the earliest occupants at Site 15Mm233 may have been members of the Bledsoe family at some point in the early or mid-nineteenth century. This supposition is based on mention of the property containing the site being referred to as the "Old Bledsoe Farm".

Table 6.4. Ownership History for Site 15Mm233.

Date	Owner	Acreage	Amount
2001 – Present	City of Mount Sterling	.556	$5,000.00
1913 – 1944	L.L. Bridgeforth		Love and
1865 – 1913	Mary Shackelford and Marion	230 +/-	Affection
? – 1865	Bridges William W. and Mary Embry	Unknown	Unknown
?	Joshua Owings	Unknown	Unknown

However, it is not certain that the occupants of the "Old Bledsoe Farm" had resided in the exact location of Site 15Mm233.

Members of the Embry/Bridges family appear to have been the most likely occupants of Site 15Mm233 from the mid-nineteenth to the early twentieth century. William W. and Mary Embry and their family would have occupied the site from the mid-nineteenth century until 1865, at which point they sold the property to their daughter, Nannie Shackelford Bridges. Nannie and then later her husband, Marion, may have occupied the site from 1865 to 1913. After 1913, L.L. Bridgeforth and members of his family seem the most likely occupants of the site, however, occupation of Site 15Mm233 likely ended by the mid-twentieth century during their ownership. As a result, the Bridgeforth/Howell family would appear to have been the final occupants of the site. A more in-depth understanding of the occupation history for Site 15Mm233 would require additional archival research.

Summary and National Register Evaluation

Site 15Mm233 consisted of a residence/farmstead dating to the early to mid-twentieth century. The available historic maps and archival research indicates the presence of an occupied structure at the site location during the mid-twentieth century. Based on the combined results of the archival research, historic maps, and artifact analysis, it appears that the site was first occupied during the early to middle portion of the twentieth century and first appears on the mid-twentieth century topographic maps. By the late twentieth century, the structure no longer appears on historic maps, suggesting that the structure had been demolished after a use-life spanning much of the twentieth century. According to a local informant, a house had been located at the site location and had been razed within the previous 15–20 years.

The current archaeological investigations recovered a modest artifact assemblage consisting of 125 historic artifacts. This assemblage consisted chiefly of domestic and architectural items, although other artifact classes were represented in smaller proportions: maintenance and subsistence, furnishing, unidentified, arms, and clothing. No prehistoric artifacts, including flakes, cores, tools, FCR, oxidized soil, or charcoal, were observed during the investigations.

As previously mentioned, the site likely continues outside of the current project boundary to the east, and the site area outside of the project footprint has not been assessed. If the project boundary changes to include this latter area, then further work will be required to determine the extent and archaeological integrity of the site in that location.

It is unlikely that further investigation of Site 15Mm233 within the project area would produce information beyond that recorded during the current survey. The archaeological remains appear to be restricted to the upper portion of the soil in predominantly disturbed sediments. Beyond the single shovel test containing a coal/cinder-rich zone (STP b2), no other evidence of intact cultural remains (such as structural remains or foundations) were identified within the currently defined project area during the current investigations. The site is not considered to have the potential to provide information about local or regional history, and, therefore, is recommended not eligible for listing in the NRHP (Criterion D). It is not likely that further investigation of the site would produce information beyond that recorded during the current survey. Therefore, no further work is recommended for this site within the project area.

Project Impacts

This site is located within the proposed ROW along the eastern edge of Hinkston Pike. Additional archaeological work would not

likely produce significant information beyond what has been collected. As noted above, the site is recommended as not eligible for listing in the NRHP and no further work will be needed.

15Mm234

Elevation: 296 m (970 ft) AMSL
Component(s): Twentieth century
Site type(s): Historic residence/farmstead
Size: 229 sq m (2,465 sq ft)
Distance to nearest water: 120 m (394 ft)
Direction to nearest water: East-southeast (unnamed tributary to Hinkston Creek)
Type and extent of previous disturbance: Demolition of structure and other indeterminate disturbances; extent unknown
Topography: Dissected uplands: shoulder/sideslope
Vegetation: Various pasture grasses
Ground surface visibility: Poor; zero percent
Aspect: Approximately 6–10 percent; east-southeast
Recommended NRHP status: Not eligible

Site Description

Site 15Mm234 was a multicomponent site containing both nondiagnostic prehistoric artifacts as well as historic cultural materials dating to the early portion of the twentieth century. The site was located in the southern portion of the project area north of Hinkston Pike (see Figure 1.2). This site is located approximately 450 m (1,476 ft) north of the southern project area boundary on Parcel 1. The site is located along a shoulder position approximately 25 m west of the road in the northeastern corner of a pasture at the exit of a gravel driveway. The site was situated at an elevation of approximately 296 m (970 ft) AMSL.

The location of the site was initially suspected by the presence of a single map structure at the site location. A residential map structure was identified initially on the 1929 Montgomery County geologic map (KGS 1929). Subsequent maps, including the 1952 (USGS 1952) and 1965 (photorevised 1979) (USGS 1965) Mount Sterling, Kentucky, 7.5-minute topographic quadrangles also depict a single structure at the location. Based on available aerial imagery, it appears that the structure was demolished between 2006 and 2008.

During the field investigations, the site was identified archaeologically by the presence of a moderate scatter of prehistoric and historic artifacts recovered from shovel tests within the pasture (Figure 6.7). The site boundaries were established to the south by negative shovel tests, to the west by the project boundary, to the north by steeper slopes, and to the east by disturbances associated with the construction of Hinkston Pike.

The site extends to the west outside of the current project area. An examination of the ground surface to the west, revealed the presence of several deciduous yard trees and a light post with a mercury vapor lamp. Archaeological investigations were not conducted outside of the current project boundary. The site area within the current project area is estimated to be approximately 229 sq m (2,465 sq ft).

At the time of the current survey, Site 15Mm234 was located in a pasture/fallowed field (Figure 6.7). Various pasture grasses and assorted herbaceous weeds covered the land surface. The remains of a stump from a deciduous tree were present along the eastern edge of the site near the fence. Ground surface visibility at the site was poor due to the various pasture grasses and assorted weeds.

Investigation Methods

As previously noted, Site 15Mm234 was identified as a result of shovel testing on the landform. Given the narrow width (east–west) of the project area along this stretch of Hinkston Pike, a single transect of shovel tests spaced at 20 m intervals was placed parallel with the road. Once the site was identified, the shovel testing interval was reduced to 10.0 m (32.8 ft) to the north and south in order to delineate the site boundaries. In order to determine the lateral extent of the site to the

Figure 6.7. Overview of 15Mm234, showing vegetation and topography. A deciduous yard tree is visible to the right of the photo. Photo facing south.

east and west, a series of additional shovel tests were excavated at 5.0 m (16.4 ft) in those directions.

The shovel testing was conducted following the long axis of the project area along a bearing of approximately 10 degrees east of north. A total of nine shovel tests were excavated within and adjacent to the site (Figure 6.8). Of the nine shovel tests, four were excavated within the established site boundaries and archaeological materials were recovered from all four. All of the artifacts were recovered from the upper portions of the solum in the topsoil. All sediment from each of the shovel tests was visually inspected for cultural materials and screened through .25 inch hardware mesh.

Data pertaining to the site location was recorded and the site was identified on appropriate maps. A site datum was established and its UTM coordinates were recorded using a MobileMapper 6 handheld GPS unit. A site sketch map was drawn, showing the placement of the shovel test positions in relation to topographic positions and the project area boundary.

Depositional Context

Site 15Mm234 was located on topography mapped as the Faywood Silt Loam (6 to 12 percent) (Froedge 1986; Soil Survey Staff 1999). The Faywood Series soils are moderately deep, well-drained soils that are formed in limestone residuum.

Shovel testing at the site generally revealed the presence of a two horizon soil profile (Figure 6.9). The upper portion of the solum consisted of a very dark brown (10YR 2/2) to a dark brown (10YR 3/3) silt loam possessing weak, fine angular blocky structure. The lower boundary was generally present at a depth of approximately 14.0 to

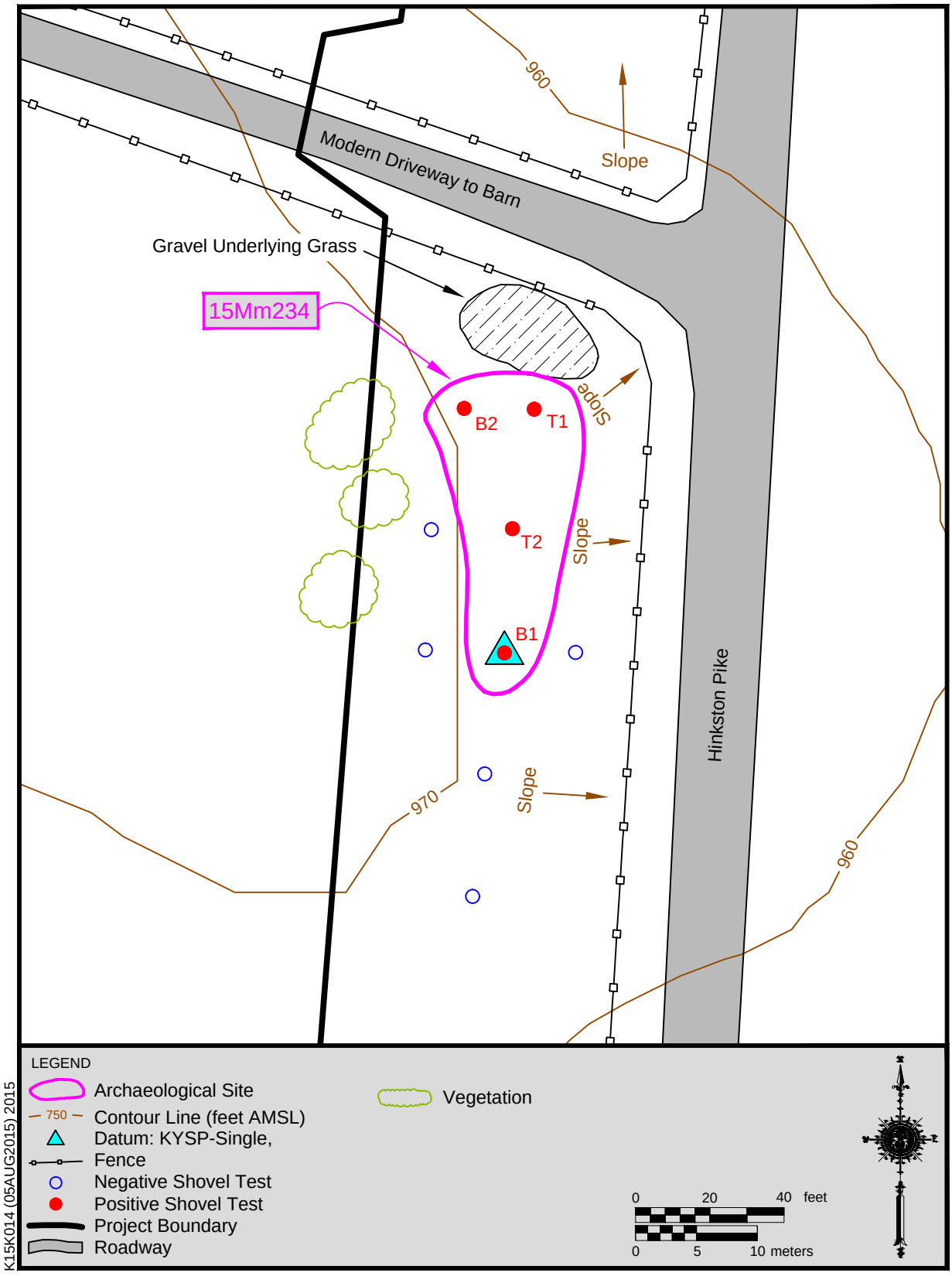

Figure 6.8. Schematic plan map of Site 15Mm234.

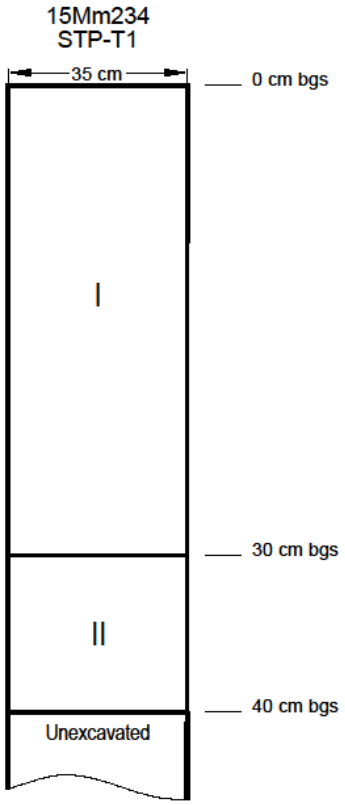

Figure 6.9. Representative soil profile from Site 15Mm234, STP t1 (0–40 cm bgs).

30.0 cm (5.5 to 11.8 in) bgs and was classified as clear and smooth. Underlying the topsoil was generally a strong brown (7.5YR 5/6) silty clay extending to a depth of approximately 27.0 cm (10.6 in) bgs. The subsoil generally possessed a moderate medium angular blocky structure. The lower boundary of the subsoil was not identified during the current investigations.

One shovel test, however, displayed a differing profile. STP b2 (see Figure 6.8) revealed three horizons. The uppermost zone consisted of a dark brown (10YR 3/3) silt loam (weak fine angular blocky structure). The lower boundary was identified at approximately 15.0 cm (5.9 in) bgs. The second horizon was a dark yellowish brown (10YR 4/4) silty clay loam (weak to moderate fine angular blocky structure) that extended to a depth of approximately 32.0 cm (12.6 in) bgs. The lowermost zone consisted of a dark yellowish brown (10YR 4.5/6) silty clay loam (moderate fine to medium angular blocky structure. The shovel test extended to a final depth of approximately 41.0 cm (16.1 in) bgs.

Shovel testing at the site revealed no evidence of subsurface cultural features, midden, or other cultural deposits. Artifacts, including both prehistoric and historic items, were recovered in the upper portions of the solum, all within the topsoil.

Based on the vertical distribution of artifacts across the site, it appears that both prehistoric and historic materials were recovered from the same deposits, and generally the same depths. While one shovel test (STP b2) appears to show some vertical separation of the historic and prehistoric artifacts (see Table 6.5); another shovel test (STP t1) contained prehistoric and historic items at the same depths (0–30.0 cm [0–11.8 in] bgs). Thus is appears that the prehistoric artifacts have not been recovered from *in situ* deposits. The near surface recovery of a few flakes in STP t2 (0–22.0 cm [0–8.7 in] bgs) appears to suggest a similar interpretation. However, the sample sizes are too small to adequately evaluate this hypothesis.

Artifact Assemblage

The current investigations recovered a sparse subsurface scatter of prehistoric and historic artifacts. A total of 29 artifacts were recovered during the current investigations (Table 6.5). The artifacts have already been discussed in the previous chapter, and only a brief summary will be presented below.

The prehistoric assemblage consisted of a total of 15 nondiagnostic flakes weighing approximately 32.6 g. All of the flakes were recovered from the lower portions of Zone I. All of the artifacts were identified at depths shallower than 32.0 cm (12.6 in) bgs in the topsoil deposits. None were recovered from subsoil deposits.

The flakes were all manufactured from Brassfield chert. As previously stated, the chert-bearing Brassfield Limestone formation has been mapped to the west within 1.0 km (.6 mi) of the site. This formation is rather

expansive, suggesting its widespread availability.

Given the small sample size and the nondiagnostic nature of the items, little can be definitively stated of the prehistoric assemblage. The small size of the assemblage suggests that the prehistoric occupation at the site was ephemeral; however, the narrow width of the project area prevents an accurate determination of the nature of the prehistoric occupation. Beyond the fact that all of the flakes (n = 15) were manufactured from Brassfield chert, and that they likely represent the entire reduction sequence, little else can be said of this assemblage. The lack of temporally sensitive artifacts precludes an assignment to a specific time span.

The historic assemblage consists of a total of 14 artifacts, including items from the architecture (n = 7), domestic (n = 5), arms (n = 1), and unidentified (n = 1) groups.

The architectural artifacts consisted mostly of wire nail fragments (n = 5); with single examples of machine-made brick and plate glass having been recovered. The wire nails and the brick date after 1880, and the plate glass dates after 1917.

The sparse domestic artifact assemblage consisted of container glass (n = 4) and a single undecorated whiteware body sherd. The whiteware sherd dates post-1830. Of the four pieces of ABM container glass that were recovered, one was an external thread finish of an aqua canning jar that dated after 1903.

The arms artifact was a rim-fired .22-caliber brass shell that dates after 1871. The unidentified group item was a small broken strap with a hole at an end. It was assigned a date of 1930 to the present.

The historic artifact assemblage has an average date range of 1889–1970, with a mean date of 1929. The artifact types identified at the site are consistent with the presence of a historic residence/farmstead. Even though some of the artifacts could have been manufactured in the nineteenth century, the overall assemblage is consistent with an occupation that started in the early decades of the twentieth century. Several of the available twentieth-century maps depict a map structure at the location of Site 15Mm234 (see Chapter 3 for more information). The initial map depicting a map structure at the site location was the 1929 Montgomery County geologic map (KGS 1929). Topographic maps from the mid-twentieth century (USGS 1952, 1965 [photorevised 1979]) also portray a map structure at the site location.

Features

Within the currently defined project area, no cultural features were observed during the current investigations. No depressions, foundations, or other evidence of historic features were observed either on the ground surface or in the shovel tests at the site.

Table 6.5. Summary of Artifacts Recovered at Site 15Mm234.

Unit	Depth	Zone	Group	Item Type	Count / wt(g)
STP b1	0 - 14 cm bgs	I	Architecture	Brick, nail	3
STP b1	0 - 14 cm bgs	I	Arms	.22 cal rimfire cartridge	1
STP b1	0 - 14 cm bgs	I	Domestic	ABM	1
STP b2	0 - 15 cm bgs	I	Architecture	Plate glass	1
STP b2	0 - 15 cm bgs	I	Domestic	ABM	2
STP b2	15 - 32 cm bgs	I	Prehistoric flake	Early Stage Brassfield	1 (0.1 g)
STP b2	15 - 32 cm bgs	I	Prehistoric flake	Middle Stage Brassfield	2 (2.9 g)
STP b2	15 - 32 cm bgs	I	Prehistoric flake	Late Stage Brassfield	2 (9.2 g)
STP b2	15 - 32 cm bgs	I	Unidentified	Modern plastic	1
STP t1	0 - 30 cm bgs	I	Architecture	Nails	3
STP t1	0 - 30 cm bgs	I	Domestic	Ceramic, ABM	2
STP t1	0 - 30 cm bgs	I	Prehistoric flake	Early Stage Brassfield	2 (8.4 g)
STP t1	0 - 30 cm bgs	I	Prehistoric flake	Middle Stage Brassfield	3 (1.2 g)
STP t1	0 - 30 cm bgs	I	Prehistoric flake	Late Stage Brassfield	1 (0.4 g)
STP t2	0 - 22 cm bgs	I	Prehistoric flake	Early Stage Brassfield	4 (10.4 g)

A brief visual examination to the west, outside of the project area, suggests the possibility of the former structural remains. A shallow depression along with several deciduous yard trees were visible from the current project area. A light post mounted mercury vapor light was also present in the vicinity of the trees. These aboveground features likely represent the backyard area of the former residential structure.

No FCR, charcoal, or burned soil was observed at the site that would indicate the presence of prehistoric features within the site boundaries.

Archival Data

James Heideman

The earliest evidence regarding the ownership of the property containing Site 15Mm234 comes from a deed record from 1916 (Table 6.6). Julia Ewing Owings died on February 12, 1916, which was followed by her husband, Joshua Owings Senior (Sr.), and their children, Hattie Owings, Jack Owings, Mary Owings White, Bettie Owings Prewitt, Rezin G. Owings, and Joshua Owings Junior (Jr.), dividing interest in the property owned by the family on April 17, 1916 (Ancestry.com 2000; MCCO DB 68:329). At that time interest in the property containing Site 15Mm234 was conveyed to Mary Owings White.

By at least 1880, the Owings family was living in Mount Sterling, Montgomery County, and the household of Joshua Owings, Sr., consisted of his wife, Julia Ewing, and their five children: Hattie, Mary (Owings White), Jack, Bettie, and Rezin G. (USBC 1880). Still living in Montgomery County, the household of Joshua Owings Sr. had changed slightly by 1900. At that time, the household included his wife, Julia Ewing, their four children, Hattie, Bettie, Rezin G., Joshua Jr., and an African-American servant, Eliza Drake (USBC 1900). By 1910, Rezin G. and Eliza Drake had left the household, and an African-American house boy, William Black, had joined the household, that was residing in Montgomery County (USBC 1910). By 1920, Julia Ewing Owings had died and the household of Joshua Owings Sr. consisted of his two daughters, Hattie and Mary (USBC 1920). No other census data is available for Joshua Owings, Sr., suggesting that he likely died between 1920 and 1930.

Table 6.6. Ownership History for Site 15Mm234.

Date	Owner	Acreage	Amount
		165.4	$1.00
		165.4	Inheritance
		165.4	Unkown
		165.4	Inheritance
		165.4	Inheritance
		165.4	Inheritance
		165.4	Inheritance
? – 1916	Joshua Owings Sr.	Unknown	Unknown

Based on the available archival data, the occupation history of Site 15Mm234 is somewhat unclear. It is most likely that the site was occupied by members of the Owing family, particularly the household of Joshua Owings Sr., in the early twentieth century. It is possible that their occupation began in the late nineteenth century, but by 1916, the property was owned by Mary Owings White and she would seem to have been the most likely occupant until her death in 1949. Following the death of Mary Owings White, it would appear that occupation at the site ceased. Additional archival research would be required to ascertain details about the nineteenth-century occupation of Site 15Mm234.

Summary and National Register Evaluation

Site 15Mm234 was a multicomponent site, consisting of a twentieth-century historic residence/farmstead that contained a sparse scatter of prehistoric artifacts. Based on the available archival and map data, it was likely constructed sometime during the first quarter of the twentieth century as it first appears on the 1929 map (KGS 1929).

The current archaeological investigations recovered a modest-sized artifact assemblage (n = 29) composed of prehistoric (n = 14) and historic artifacts (n = 15). The prehistoric artifacts solely consisted of nondiagnostic flake debris manufactured from locally available Brassfield chert. Little else can be said of the prehistoric assemblage. The historic component included artifacts from the architecture, domestic, arms, and unidentified groups.

Based on the combined results of the archival research, historic maps, and artifact analysis, it appears that the site was first occupied during the early portion of the twentieth century. Depending on the specific date range of occupation, the artifact assemblage was likely associated with either the Owings family (through the property ownership of Joshua Owings, Sr.) or Mary White. As the death of Joshua Owings, Sr., occurred circa 1920, these cultural materials could either be associated with Mr. Owings or Mary White.

The structure first appears on a 1929 map as a single residential structure and continues to be depicted on the 1965 (photorevised 1979) topographic map. Based on publically available Google® satellite imagery, the structure appears to have been demolished sometime between 2006 and 2008.

As previously mentioned, the site likely continues outside of the current project boundary to the west. That portion of the site outside of the project area has not been assessed. If the project boundary changes to include this latter area, then further work will be required to determine the extent and archaeological integrity of the site in that location.

The archaeological remains have poor depositional (or physical) integrity; all of the recovered artifacts were confined to the upper portion of the solum (i.e., topsoil). No evidence of intact cultural deposits, such as structure remains (i.e., foundations), middens,

or other cultural deposits were identified within the project area during the current investigations. The site is not considered to have the potential to provide information about local or regional history, and, therefore, is recommended not eligible for listing in the NRHP (Criterion D). It is not likely that further investigation of the site within the project area would produce information beyond that recorded during the current survey. Therefore, no further work is recommended for this site.

Project Impacts

This site is located within the proposed ROW along the western edge of Hinkston Pike. Additional archaeological work would not likely produce significant information beyond what has been collected. As noted above, the site is recommended as not eligible for listing in the NRHP, and no further work will be needed.

IF1

UTM Coordinate:

Elevation: 300 m (985 ft) AMSL

Component(s): Indeterminate prehistoric flake

Site type(s): Isolated Find

Distance to nearest water: 250 m (820 ft)

Direction to nearest water: Southeast (unnamed tributary to Hinkston Creek)

Type and extent of previous disturbance: Indeterminate; disturbance extent unknown

Topography: Dissected uplands; shoulder

Vegetation: Various pasture grasses

Ground surface visibility: Poor due to various grasses

Aspect: Less than 5 percent; east

Recommended NRHP status: Not eligible

Description: This isolated find consists of a single prehistoric flake made from Brassfield chert (1.4 g) recovered from a shovel test in the central portion of the project area (see Figure 1.3). The isolated find is located approximately 64 m (210 ft) due east of Hinkston Pike. The nondiagnostic flake was recovered from a shovel test in the upper 10.0 cm (3.9 in) of the modern ground surface. A total of eight radial screened shovel tests were excavated at 10 m and 20 m intervals in each of the cardinal directions.

The lack of temporally sensitive artifacts precludes the identification of the temporal and/or cultural affiliation of this prehistoric component. Beyond the fact that this isolated find represents a single reduction episode involving the use of Brassfield chert, little else can be interpreted from this single artifact.

Chapter 7. Conclusions and Recommendations

CRA personnel completed an archaeological survey for the proposed realignment of Hinkston Pike in Montgomery County, Kentucky. The project area measured approximately 9.5 ha (23.5 acres) in size and was surveyed in its entirety.

The OSA site file search indicated that a small portion (1.5 ha [3.9 acres]) of the project area had been previously surveyed (Shock 2003). This survey identified a single archaeological site (15Mm167) within the currently defined project area, and at that time was determined not eligible for the NRHP (Shock 2003). The current investigations conducted a pedestrian survey of the previously surveyed portion and conducted limited shovel testing at the site location. The shovel testing did not locate any archaeological remains, indicating that this site has likely been destroyed.

The project area was investigated through the use of systematic shovel testing supplemented by pedestrian survey. The survey resulted in the identification of three previously unrecorded archaeological sites (Sites 15Mm232, 15Mm233, and 15Mm234) as well as a single prehistoric isolated find (IF1).

Of the three newly identified archaeological sites, none appear to meet the criteria for inclusion in the NRHP. For the most part, these sites had a low density of cultural material, and the research potential of each was exhausted at this level of investigations. Two of the sites, 15Mm233 and 15Mm234, extend outside the currently defined project area. Any portions of these sites outside of the project boundary were not investigated and remain unassessed. If those portions of the sites are to be impacted by future development, then further archaeological investigations would be recommended.

Note that a principal investigator or field archaeologist cannot grant clearance to a project. Although the decision to grant or withhold clearance is based, at least in part, on the recommendations made by the field investigator, clearance may be obtained only through an administrative decision made by the lead federal agency in consultation with the State Historic Preservation Office (Kentucky Heritage Council).

If any previously unrecorded archaeological materials are encountered during construction activities, the KHC should be notified immediately at (502) 564-6662. If human skeletal material is discovered, construction activities should cease, and the KHC, the local coroner, and the local law enforcement agency must be notified, as described in KRS 72.020.

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APPENDIX A. LITHIC DATA

Table A-1. Lithic Data.

Bag	Site	Unit #	Depth	Zone	Count	Wt(g)	Size Definition	Raw Material	Stage	Flake Portion	Platform	Cortex	Cortex Location
1	IF1	STP t1	0-10 cm bgs	I	9	12.6	.25" to .5"	Brassfield	Middle	Flake Fragment	Not Present	None present	None
2	15Mm232	STP t1	10-25 cm bgs	I	9	4.5	.25" to .5"	Brassfield	Middle	PRB	Non-liped, non-cort	None present	None
19	15Mm234	STP b2	15-32 cm bgs	I	9	78.3	.5" to .75"	Brassfield	Late	Flake Fragment	Not Present	None present	None
19	15Mm234	STP b2	15-32 cm bgs	I	18	26.1	.25" to .5"	Brassfield	Middle	Complete	Non-liped, non-cort	None present	None
19	15Mm234	STP b2	15-32 cm bgs	I	9	4.5	.25" to .5"	Brassfield	Late	PRB	Broken	None present	None
19	15Mm234	STP b2	15-32 cm bgs	I	9	0.9	.25" to .5"	Brassfield	Early	PRB	Non-liped, non-cort	None present	None
20	15Mm234	STP t1	0-30 cm bgs	I	9	74.7	.5" to .75"	Brassfield	Early	PRB	Cortical	Mattrix/residual	Platform only
20	15Mm234	STP t1	0-30 cm bgs	I	9	4.5	.25" to .5"	Brassfield	Middle	Complete	Non-liped, non-cort	None present	None
20	15Mm234	STP t1	0-30 cm bgs	I	18	6.3	.25" to .5"	Brassfield	Middle	Flake Fragment	Not Present	None present	None
20	15Mm234	STP t1	0-30 cm bgs	I	9	3.6	.25" to .5"	Brassfield	Late	Flake Fragment	Not Present	None present	None
20	15Mm234	STP t1	0-30 cm bgs	I	9	0.9	.25" to .5"	Brassfield	Early	PRB	Non-liped, non-cort	None present	None
21	15Mm234	STP t2	0-22 cm bgs	I	9	12.6	.25" to .5"	Brassfield	Early	Complete	Non-liped, non-cort	None present	None
21	15Mm234	STP t2	0-22 cm bgs	I	18	5.4	.25" to .5"	Brassfield	Early	Flake Fragment	Not Present	None present	None
21	15Mm234	STP t2	0-22 cm bgs	I	9	75.6	.75" to 1"	Brassfield	Early	Complete	Cortical	Mattrix/residual	Dorsal and platform

APPENDIX B. HISTORIC MATERIALS DATABASE

Table B-1. Historic Materials Database

Bag	Site	Unit	Dep	Zone	Cat	Group	Class	Type	Attr 1a Def	Attr 1b Def	Attr 1c Def	Attr 2a Def	Attr 3a Def	Burned	Count	Wt (g)	Dia (mm)	Vessel Part	Vessel Type	Date Range	References	Comments
003	15Mm232	STP t2	20–40 cm bgs	I	1	D	Ceramics	Whiteware	Embossed (early)					FALSE	1			Rim	Saucer	1860 -	Faulkner 2000	
003	15Mm232	STP t2	20–40 cm bgs	I	2	A	Nails	Indeterminate	Fragment					FALSE	1							
004	15Mm232	STP t3	0–30 cm bgs	I	3	D	Ceramics	Ironstone	Plain					FALSE	1			Body		1830 -	Majewski and O'Brien 1987:122	
004	15Mm232	STP t3	0–30 cm bgs	I	4	D	Container Glass	Blown in Mold		Amethyst glass				FALSE	2			Body	Miscellaneous jar	1870 - 1920	Lockhart 2006	
004	15Mm232	STP t3	0–30 cm bgs	I	5	D	Container Glass	Undiagnostic container fragment	Fragment	Clear glass				FALSE	1					1864 -	Lindsey 2015	
004	15Mm232	STP t3	0–30 cm bgs	I	6	A	Nails	Cut Nail: unspecified	Fragment					FALSE	2					1800 - 1890	Nelson 1968	
005	15Mm232	STP t4	0–30 cm bgs	I	7	D	Container Glass	Blown in Mold		Amber glass				FALSE	1			Body	Miscellaneous bottle	1850 - 1920	Miller & Sullivan 1984; Jones & Sullivan 1985	
005	15Mm232	STP t4	0–30 cm bgs	I	7	D	Container Glass	Blown in Mold		Aqua glass				FALSE	2			Body	Canning jar	1850 - 1920	Miller & Sullivan 1984; Jones & Sullivan 1985	
005	15Mm232	STP t4	0–30 cm bgs	I	7	D	Container Glass	Blown in Mold		Amethyst glass				FALSE	1			Body	Miscellaneous bottle	1870 - 1920	Lockhart 2006	
005	15Mm232	STP t4	0–30 cm bgs	I	8	D	Ceramics	Whiteware	Undecorated					FALSE	1			Rim	Plate	1830 -	Majewski and O'Brien 1987:119	
006	15Mm232	STP t5	0–40 cm bgs	I	12	A	Nails	Cut Nail: late machine headed	7d	Pulled				FALSE	1					1830 - 1880	Nelson 1968	
006	15Mm232	STP t5	0–40 cm bgs	I	13	M	General Hardware	Hook	Snap Hook	Iron / Steel				FALSE	1					1883 -	US Patent Office 2015	
006	15Mm232	STP t5	0–40 cm bgs	I	9	D	Ceramics	Whiteware	Plain					FALSE	1			Rim, body, base	Platter	1860 - 1930	Majewski and O'Brien 1987:119	
006	15Mm232	STP t5	0–40 cm bgs	I	9	D	Ceramics	Whiteware	Plain					FALSE	1			Body with base	Platter	1860 - 1930	Majewski and O'Brien 1987:119	
006	15Mm232	STP t5	0–40 cm bgs	I	10	D	Container Glass	Blown in Mold	Cup bottom mold	Aqua glass		Embossed recess panel		FALSE	1				Medicine	1865 - 1920	Pullin 1985:355; Fike 1987:5; Berge 1980	embossing unknown
006	15Mm232	STP t5	0–40 cm bgs	I	10	D	Container Glass	Blown in Mold		Leaded glass				FALSE	1			Body	Miscellaneous bottle	1800 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	
006	15Mm232	STP t5	0–40 cm bgs	I	10	D	Container Glass	Blown in Mold		Amethyst glass				FALSE	1			Body		1870 - 1920	Lockhart 2006	
006	15Mm232	STP t5	0–40 cm bgs	I	10	D	Container Glass	Blown in Mold		Aqua glass		Embossed		FALSE	1			Body	Canning jar	1884 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	Partial "B" from Ball Mason jar
006	15Mm232	STP t5	0–40 cm bgs	I	10	D	Container Glass	Blown in Mold		Aqua glass				FALSE	1			Body	Canning jar	1800 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	
006	15Mm232	STP t5	0–40 cm bgs	I	11	A	Construction Material	Brick	Handmade brick: vitrified					FALSE	1	29.3				1800 - 1880	Holley 2009	
007	15Mm233	STP t1	0–25 cm bgs	I	1	D	Ceramics	Whiteware	Undecorated					FALSE	1			Body	Plate	1830 -	Majewski and O'Brien 1987:119	
007	15Mm233	STP t1	0–25 cm bgs	I	2	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	1			Body	Miscellaneous jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	
007	15Mm233	STP t1	0–25 cm bgs	I	3	A	Nails	Wire Nail	20d	Unaltered				FALSE	1					1880 -	Nelson 1968	
007	15Mm233	STP t1	0–25 cm bgs	I	3	A	Nails	Wire Nail	12d	Clinched				FALSE	1					1880 -	Nelson 1968	
007	15Mm233	STP t1	0–25 cm bgs	I	3	A	Nails	Wire Nail	Fragment					FALSE	1					1880 -	Nelson 1968	
007	15Mm233	STP t1	0–25 cm bgs	I	4	A	Nails	Indeterminate	Fragment					FALSE	2							
007	15Mm233	STP t1	0–25 cm bgs	I	5	A	Flat Glass	Plate Glass						FALSE	1					1917 -	Roenke 1978	
007	15Mm233	STP t1	0–25 cm bgs	I	6	C	Other Clothing	Fabric	Sock fabric	Wool	Brown			FALSE	1	26.6						

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008	15Mm233	STP t2	0–30 cm bgs	I	7	D	Ceramics	Whiteware	Decal					FALSE	1			Rim	Plate	1880 - 1940	Blaszczyk 2000:155; Majewski & O'Brien 1987:147; Wegars & Carley 1982	green leaves
008	15Mm233	STP t2	0–30 cm bgs	I	7	D	Ceramics	Whiteware	Undecorated					FALSE	1			Body		1830 -	Majewski and O'Brien 1987:119	
008	15Mm233	STP t2	0–30 cm bgs	I	8	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	1			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
008	15Mm233	STP t2	0–30 cm bgs	I	8	D	Container Glass	Automatic Bottle Machine		Light green glass				FALSE	1			Body	Soda / Mineral water	1903 -	Jones & Sullivan 1985; Lindsey 2015	neck
008	15Mm233	STP t2	0–30 cm bgs	I	9	A	Nails	Wire Nail	Fragment					FALSE	1					1880 -	Nelson 1968	
008	15Mm233	STP t2	0–30 cm bgs	I	10	A	Flat Glass	Plate Glass						FALSE	1					1917 -	Roenke 1978	
008	15Mm233	STP t2	0–30 cm bgs	I	11	F	Lighting	Lamp Chimney	Glass: clear					FALSE	1					1854 - 1940	Faulkner 2008; Pullin 1986:356	
008	15Mm233	STP t2	0–30 cm bgs	I	12	M	General Hardware	Ring		Iron / Steel				FALSE	1							possibly for a wagon or barn–related
009	15Mm233	STP b1	0–20 cm bgs	I	13	M	General Hardware	Lock: unidentified / part						FALSE	1							possible gate hardware including two bolts and hex nuts
010	15Mm233	STP b2	0–22 cm bgs	I	22	U	Plastic	Modern		Item / part				FALSE	1					1930 -	Meikle 1995	mint green
010	15Mm233	STP b2	0–22 cm bgs	I	22	U	Plastic	Modern		Item / part				FALSE	1					1930 -	Meikle 1995	white
010	15Mm233	STP b2	0–22 cm bgs	I	14	F	Heating	Cast Iron Stove Part						FALSE	2							
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Chromatic glaze (monochrome)		Ivory			FALSE	3			Footring with base	Plate	1920 - 1970	Blaszczyk 2000:121; Faulkner 2000	ivory/yellow
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Chromatic glaze (monochrome)		Ivory			FALSE	3			Body	Plate	1920 - 1970	Blaszczyk 2000:121; Faulkner 2000	light creamy ivory yellow
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Chromatic glaze (monochrome)		Ivory			FALSE	1			Base	Plate	1948 - 1970	Blaszczyk 2000:121; Faulkner 2000	light creamy ivory yellow; partial maker's mark indicates manufact Nov 1948
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Decal					FALSE	2			Rim	Saucer	1880 - 1940	Blaszczyk 2000:155; Majewski & O'Brien 1987:147; Wegars & Carley 1982	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Decal					FALSE	2			Body	Saucer	1880 - 1940	Blaszczyk 2000:155; Majewski & O'Brien 1987:147; Wegars & Carley 1982	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Undecorated					FALSE	2			Body	Saucer	1830 -	Majewski and O'Brien 1987:119	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Undecorated					FALSE	4			Body	Plate	1830 -	Majewski and O'Brien 1987:119	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Undecorated					FALSE	2			Rim	Plate	1830 -	Majewski and O'Brien 1987:119	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Chromatic glaze (monochrome)		Green			FALSE	3			Rim	Saucer	1930 - 1970	Blaszczyk 2000:121; Faulkner 2000	
010	15Mm233	STP b2	0–22 cm bgs	I	15	D	Ceramics	Whiteware	Chromatic glaze (monochrome)		Green			FALSE	2			Body	Saucer	1930 - 1970	Blaszczyk 2000:121; Faulkner 2000	

Bag	Site	Unit	Dep	Zone	Cat	Group	Class	Type	Attr 1a Def	Attr 1b Def	Attr 1c Def	Attr 2a Def	Attr 3a Def	Burned	Count	Wt (g)	Dia (mm)	Vessel Part	Vessel Type	Date Range	References	Comments
010	15Mm233	STP b2	0–22 cm bgs	I	16	D	Ceramics	Stoneware	Salt glazed exterior			Slipped interior		FALSE	1			Body with base	Crock	1800 - 1925	Greer 1999; Ketchum 1983	
010	15Mm233	STP b2	0–22 cm bgs	I	16	D	Ceramics	Stoneware	Salt glazed exterior			Slipped interior		FALSE	1			Body	Crock	1800 - 1925	Greer 1999; Ketchum 1983	
010	15Mm233	STP b2	0–22 cm bgs	I	17	D	Container Glass	Blown in Mold		Clear glass		Embossed		FALSE	1			Body	Canning jar	1864 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	embossing unknown but likely part of large cursive letter
010	15Mm233	STP b2	0–22 cm bgs	I	17	D	Container Glass	Blown in Mold		Aqua glass				FALSE	1			Body	Canning jar	1800 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	
010	15Mm233	STP b2	0–22 cm bgs	I	18	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	2			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
010	15Mm233	STP b2	0–22 cm bgs	I	19	D	Container Closures	Home Canning Jars	Liner for Mason zinc: flat					FALSE	1			Body		1869 - 1950	Toulouse 1977:91, 96; Toulouse 1969a:350	
010	15Mm233	STP b2	0–22 cm bgs	I	20	A	Nails	Cut Nail: unspecified	Fragment					FALSE	1					1800 - 1890	Nelson 1968	
010	15Mm233	STP b2	0–22 cm bgs	I	21	A	Flat Glass	Window Glass						FALSE	1					1891 - 1891	Moir 1987	
010	15Mm233	STP b2	0–22 cm bgs	I	22	U	Plastic	Modern		Item / part				FALSE	1					1930 -	Meikle 1995	red
011	15Mm233	STP b2	22–40 cm bgs	I	23	D	Ceramics	Whiteware	Plain					FALSE	1			Body	Plate	1860 - 1930	Majewski and O'Brien 1987:119	
011	15Mm233	STP b2	22–40 cm bgs	I	24	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	2			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
011	15Mm233	STP b2	22–40 cm bgs	I	25	A	Flat Glass	Window Glass						FALSE	1					1854 - 1854	Moir 1987	
011	15Mm233	STP b2	22–40 cm bgs	I	26	A	Nails	Wire Nail	Fragment	Pulled				FALSE	1					1880 -	Nelson 1968	
011	15Mm233	STP b2	22–40 cm bgs	I	27	A	Nails	Indeterminate	Fragment					FALSE	1							
011	15Mm233	STP b2	22–40 cm bgs	I	28	F	Lighting	Lamp Chimney	Glass: clear					FALSE	1					1854 - 1940	Faulkner 2008	
011	15Mm233	STP b2	22–40 cm bgs	I	29	A	Construction Material	Asbestos	Roofing / siding					FALSE	1					1907 -		black with white paint
011	15Mm233	STP b2	22–40 cm bgs	I	30	M	Electrical	Battery Element	Carbon Electrode					FALSE	1					1885 -	Davidson 2008	
012	15Mm233	STP b3	13–24 cm bgs	II	31	D	Ceramics	Whiteware	Plain					FALSE	1			Body	Pitcher	1860 - 1930	Majewski and O'Brien 1987:119	
012	15Mm233	STP b3	13–24 cm bgs	II	31	D	Ceramics	Whiteware	Embossed (early)					FALSE	1			Body	Cup	1860 -	Faulkner 2000	
012	15Mm233	STP b3	13–24 cm bgs	II	32	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	1			Body	Miscellaneous bottle	1903 -	Jones & Sullivan 1985; Lindsey 2015	
012	15Mm233	STP b3	13–24 cm bgs	II	32	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	4			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
012	15Mm233	STP b3	13–24 cm bgs	II	33	D	Container Glass	Undiagnostic container fragment		Amethyst glass				FALSE	1			Body		1870 - 1920	Lockhart 2006	
012	15Mm233	STP b3	13–24 cm bgs	II	34	A	Flat Glass	Window Glass						FALSE	1					1908 - 1908	Moir 1987	
012	15Mm233	STP b3	13–24 cm bgs	II	34	A	Flat Glass	Window Glass						FALSE	1					1883 - 1883	Moir 1987	
012	15Mm233	STP b3	13–24 cm bgs	II	35	F	Lighting	Lamp Chimney	Glass: clear					FALSE	1					1854 - 1940	Faulkner 2008; Pullin 1986:356	
013	15Mm233	STP b3	24–34 cm bgs	II	36	D	Ceramics	Whiteware	Plain					FALSE	1			Rim	Mug	1860 - 1930	Majewski and O'Brien 1987:119	
013	15Mm233	STP b3	24–34 cm bgs	II	37	D	Ceramics	Stoneware	Bristol slipped exterior			Bristol slipped interior		FALSE	1			Body		1880 - 1925	Greer 1999; Ketchum 1983	
013	15Mm233	STP b3	24–34 cm bgs	II	38	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	2			Body		1903 -	ones & Sullivan 1985; Lindsey 2015	

Bag	Site	Unit	Dep	Zone	Cat	Group	Class	Type	Attr 1a Def	Attr 1b Def	Attr 1c Def	Attr 2a Def	Attr 3a Def	Burned	Count	Wt (g)	Dia (mm)	Vessel Part	Vessel Type	Date Range	References	Comments
014	15Mm233	STP b4	19–30 cm bgs	I	40	D	Container Glass	Automatic Bottle Machine		Clear glass		Embossed		FALSE	5			Body	Other bottle/jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	juice bottle; stippled shoulders; all from same vessel
014	15Mm233	STP b4	19–30 cm bgs	I	40	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	1			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
014	15Mm233	STP b4	19–30 cm bgs	I	41	D	Container Glass	Blown in Mold		Clear glass				FALSE	1			Body		1864 - 1920	Lindsey 2015; Miller & Sullivan 1984; Jones & Sullivan 1985	
014	15Mm233	STP b4	19–30 cm bgs	I	42	D	Container Glass	Undiagnostic container fragment		Clear glass				FALSE	2			Body		1864 -	Lindsey 2015	
014	15Mm233	STP b4	19–30 cm bgs	I	43	A	Flat Glass	Window Glass						FALSE	1					1908 - 1908	Moir 1987	
014	15Mm233	STP b4	19–30 cm bgs	I	44	A	Flat Glass	Plate Glass						FALSE	1					1917 -	Roenke 1978	
014	15Mm233	STP b4	19–30 cm bgs	I	45	A	Nails	Cut Nail: unspecified	Fragment					FALSE	1					1800 - 1890	Nelson 1968	
014	15Mm233	STP b4	19–30 cm bgs	I	46	A	Nails	Wire Nail	Fragment					FALSE	2					1880 -	Nelson 1968	
014	15Mm233	STP b4	19–30 cm bgs	I	47	M	General Hardware	Fencing	Indeterminate					FALSE	1							frag
014	15Mm233	STP b4	19–30 cm bgs	I	48	R	Projectiles	Rimfire Cartridge	.41 short	Brass shell				FALSE	1		10.3			1863 - 1940	Ball 1997:121	
014	15Mm233	STP b4	19–30 cm bgs	I	39	D	Ceramics	Whiteware	Plain					FALSE	1			Body	Plate	1860 - 1930	Majewski and O'Brien 1987:119	
015	15Mm233	STP b4	30–45 cm bgs	I	49	D	Ceramics	Whiteware	Undecorated					FALSE	1			Body	Cup	1830 -	Majewski and O'Brien 1987:119	
015	15Mm233	STP b4	30–45 cm bgs	I	50	D	Container Glass	Automatic Bottle Machine		Clear glass		Embossed		FALSE	4			Body	Other bottle/jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	stippled juice bottle
015	15Mm233	STP b4	30–45 cm bgs	I	50	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	3			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
015	15Mm233	STP b4	30–45 cm bgs	I	50	D	Container Glass	Automatic Bottle Machine		Amber glass				FALSE	1			Body	Liquor/ Beer/ Wine	1903 -	Jones & Sullivan 1985; Lindsey 2015	
015	15Mm233	STP b4	30–45 cm bgs	I	51	D	Container Closures	Home Canning Jars	Liner for Mason zinc: flat					FALSE	1					1869 - 1950	Toulouse 1977:91, 96; Toulouse 1969a:350	
015	15Mm233	STP b4	30–45 cm bgs	I	52	D	Other	Modern plastic soda bottle label						FALSE	1					1970 -		modern plastic soda bottle label; indet brand; est date, poss more modern
015	15Mm233	STP b4	30–45 cm bgs	I	53	A	Nails	Wire Nail	Fragment					FALSE	1					1880 -	Nelson 1968	
015	15Mm233	STP b4	30–45 cm bgs	I	54	A	Flat Glass	Window Glass						FALSE	1					1856 - 1856	Moir 1987	
015	15Mm233	STP b4	30–45 cm bgs	I	55	M	General Hardware	Fencing	Barbed					FALSE	1					1874 -	Turner 1971	
016	15Mm233	STP b4	45–60 cm bgs	I	56	D	Container Glass	Automatic Bottle Machine		Clear glass		Embossed		FALSE	6			Body	Other bottle/jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	stippled juice bottle
016	15Mm233	STP b4	45–60 cm bgs	I	56	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	2			Body	Miscellaneous bottle	1903 -	Jones & Sullivan 1985; Lindsey 2015	
016	15Mm233	STP b4	45–60 cm bgs	I	56	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	2			Body	Miscellaneous jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	
016	15Mm233	STP b4	45–60 cm bgs	I	57	A	Flat Glass	Window Glass						FALSE	1					1906 - 1906	Moir 1987	
016	15Mm233	STP b4	45–60 cm bgs	I	58	M	General Hardware	Staple	Fence Staple					FALSE	1							U staple

Bag	Site	Unit	Dep	Zone	Cat	Group	Class	Type	Attr 1a Def	Attr 1b Def	Attr 1c Def	Attr 2a Def	Attr 3a Def	Burned	Count	Wt (g)	Dia (mm)	Vessel Part	Vessel Type	Date Range	References	Comments
016	15Mm233	STP b4	45–60 cm bgs	I	59	M	General Hardware	Fencing	Barbed					FALSE	2					1874 -	Turner 1971	
017	15Mm234	STP b1	0–14 cm bgs	I	1	D	Container Glass	Automatic Bottle Machine		Clear glass				FALSE	1			Body		1903 -	Jones & Sullivan 1985; Lindsey 2015	
017	15Mm234	STP b1	0–14 cm bgs	I	2	A	Construction Material	Brick	Machine made brick: vitrified					FALSE	1	5.7				1880 -	Holley 2009	
017	15Mm234	STP b1	0–14 cm bgs	I	3	A	Nails	Wire Nail	Fragment					FALSE	2					1880 -	Nelson 1968	
017	15Mm234	STP b1	0–14 cm bgs	I	4	R	Projectiles	Rimfire Cartridge	.22 long	Brass shell				FALSE	1					1871 -	Ball 1997:121	
018	15Mm234	STP b2	0–15 cm bgs	I	5	D	Container Glass	Automatic Bottle Machine		Amber glass				FALSE	2			Body	Household bottle	1903 -	Jones & Sullivan 1985; Lindsey 2015	
018	15Mm234	STP b2	0–15 cm bgs	I	6	A	Flat Glass	Plate Glass						FALSE	1					1917 -	Roenke 1978	
019	15Mm234	STP b2	15–32 cm bgs	I	7	U	Plastic	Modern		Item / part				FALSE	1					1930 -	Meikle 1995	black plastic strap frag with hole at one end
020	15Mm234	STP t1	0–30 cm bgs	I	8	D	Ceramics	Whiteware	Undecorated					FALSE	1			Body		1830 -	Majewski and O'Brien 1987:119	
020	15Mm234	STP t1	0–30 cm bgs	I	9	D	Container Glass	Automatic Bottle Machine		Aqua glass			External thread	FALSE	1			Rim	Canning jar	1903 -	Jones & Sullivan 1985; Lindsey 2015	
020	15Mm234	STP t1	0–30 cm bgs	I	10	A	Nails	Wire Nail	Fragment					FALSE	3					1880 -	Nelson 1968	