Phase I Archaeological Intensive Survey of the East C Alternate for the Proposed KY 185 Realignment in Warren County, Kentucky (KYTC Item No. 3-110.00)

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Kentucky Transportation Cabinet

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ABSTRACT

Between April 11 and May 6, 2011, AMEC Earth & Environmental archaeologists conducted a Phase I archaeological survey of the East C Alternate of the proposed KY 185 realignment corridor in Warren County, Kentucky (Item No. 3-110.00). This survey was conducted at the request of Palmer Engineering, Inc. The project area consisted of a 1000 foot (305 meter) wide by 3.89 mile (6.27 kilometer) long corridor. The East C Alternate corridor encompassed a total of 472.3 acres (191.1 hectares). A small portion of the alternate (34.9 acres, 14.1 hectares) was inspected by AMEC archaeologists during the original survey of the KY 185 corridor (Knopf et al. 2010). Thus, there was a total of 437.4 acres (177.0 hectares) of the East C Alternate that had not been subjected to a Phase I survey.

Landowners denied access to 95.0 acres (38.4 hectares) of the project area. The remaining 342.4 acres (138.6 hectares) was subjected to a combination of visual inspection and intensive shovel testing. A total of 2,990 shovel test probes were excavated in relatively level areas with poor surface visibility. Areas that were steeply sloped, had good surface visibility, or were obviously disturbed were covered by pedestrian survey and visually assessed.

As a result of this investigation, AMEC archaeologists revisited one previously recorded archaeological site (15WA353) and identified ten new archaeological sites (15WA177-15WA186) and nine isolated finds (IF 1-IF 9). The site inventory included one rockshelter, four prehistoric open habitations without mounds, four historic farms, and two sites containing both a prehistoric open habitation and historic farm. The only prehistoric diagnostic artifact recovered during the survey was an Early Archaic Kanawha Stemmed point from 15WA184. The historic components ranged from the mid-nineteenth century to the present. The isolated finds were all prehistoric flakes.

Of the 11 archaeological sites within the corridor, one is considered potentially eligible for the National Register of Historic Places. Site 15WA353 is a large prehistorically occupied rockshelter containing “hominy holes”. Due to the potential for intact deposits beneath the roof fall, we recommend this site be avoided or subjected to Phase II investigations to evaluate its eligibility for inclusion on the National Register of Historic Places. It is our opinion that the remaining ten archaeological sites and isolated finds are not eligible for listing on the National Register of Historic Places. These sites were sparse to moderate density artifact scatters that contained no evidence of intact features or midden and have a low potential to contain significant archaeological deposits. We recommend that no further archaeological investigations be conducted at these locations.

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1.0 INTRODUCTION

1.1 Purpose of Investigation

Between April 11 and May 6, 2011, archaeologists from AMEC Earth & Environmental, Inc. (AMEC) conducted a Phase I archaeological survey of the East C Alternate of the proposed KY 185 realignment corridor in Warren County, Kentucky (KYTC Item No. 3-110.00) (**Figures 1.1 - 1.2**). The East Alternate C corridor represents a change in the proposed realignment that occurred following AMEC"s initial survey of the KY 185 project area last year (Knopf et al. 2010). These archaeological services were conducted at the request of Palmer Engineering, Inc (Palmer).

The Kentucky Transportation Cabinet (KYTC) proposes to alter the route of KY 185 extending from north of the junction with KY 263, to the Green River boundary line. The current route of KY 185 no longer meets minimum safety standards for the present traffic load and future traffic projections. The East C Alternate extends from 1595+00 control point to the northern end of the proposed alignment at the Green River crossing. The purpose of the survey was to identify and document archaeological sites present within the project area of potential effect (APE) and to provide recommendations regarding their potential eligibility for inclusion on the National Register of Historic Places (NRHP).

This archaeological investigation was required by the Kentucky State Historic Preservation Office seated in the Kentucky Heritage Council (KHC/SHPO) to ensure compliance with state and Federal regulations. This archaeological investigation was conducted in accordance with Public Law 89-665, the National Historic Preservation Act (NHPA) of 1966 (36 CFR 400.4, as amended), 16 U.S.C. 470 (f), and Presidential Executive Order 11593. This project complies with established specifications for field investigations and NRHP assessment according to the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (Federal Register, Vol. 48, No. 190, 1983), and with *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* prepared by the KHC/SHPO (Sanders 2001, revised August 2006).

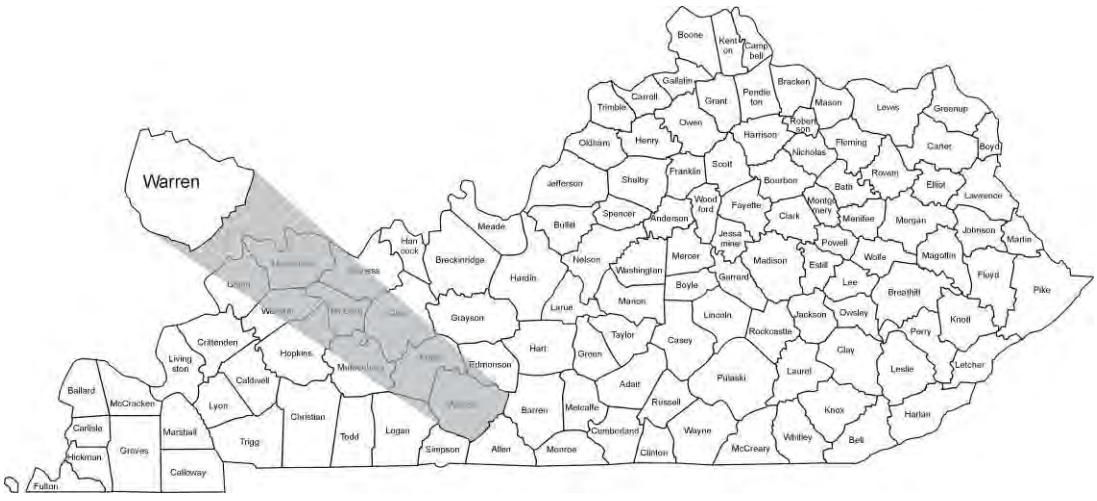

Figure 1.1. Location of Warren County, Kentucky

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Figure 1.2. Survey area reference map for East Alternate C of the proposed realignment of KY 185 (Reedyville quadrangle 1958, photorevised 1979; Bowling Green North quadrangle 1970, photorevised 1979).

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1.2 Project Description and Area of Potential Effect

As significant residential, commercial, and industrial growth has occurred in the Bowling Green area, improvements are necessary for KY 185 to meet modern road safety standards and transportation needs. The construction efforts for the proposed KY 185 realignment project will involve extensive ground disturbance that has the potential to adversely impact archaeological sites and other cultural resources.

The project area consisted of a 1,000 foot (ft) or 305 meter (m) wide by 3.89 mile (mi) or 6.27 kilometer (km) long corridor (**Figure 1.2**). The APE for the project encompassed both the proposed right of way (ROW) for the East C Alternate of the KY 185 improvement project and an investigation buffer extending 500 ft, or 152.5 m, on either side of the proposed centerline. The investigation buffer was included to provide information about nearby archaeological resources should changes to the proposed ROW be required.

The KY 185 East C Alternate project area encompassed approximately 472.3 ac (191.1 ha). Several landowners denied access to their property. This was communicated to the Field Director during face-to-face or telephone conversations. Landowners denied access to approximately 95.0 ac (38.4 ha) of the project area (**Figure 1.2**). **Table 1.1** lists these landowners and the acreage of the parcels the crew could not survey. A total of 34.9 ac (14.1 ha) were covered during the original Phase I survey of the proposed KY 185 realignment corridor (Knopf et al. 2010) and did not require reinvestigation.

The remaining 342.4 ac (138.6 ha) of the APE was subjected to a combination of visual inspection and intensive shovel testing following the KY SHPO guidelines (Sanders 2001). A total of 313.0 ac (126.7 ha) of was investigated through the excavation of 2,990 shovel tests. The remaining 29.4 ac (11.9 ha) consisted of steep slope, was severely disturbed, or had good surface visibility and was visually inspected during the pedestrian survey.

1.3 Disturbances within the East C Alternate Project Area

Disturbances within the EAST C ALTERNATE project area consisted of a combination of residential construction and highway construction. The most extensive disturbed areas were located where the project APE intersects with the existing road easements and associated residences. Utilities such as water and electrical lines were noted in the project area. These disturbances were confined to areas adjacent to the road beds and residences. The area has also been affected by timbering and plowing which

generally results in erosion or homogenization of the upper soil horizon. A detailed discussion of the disturbances observed within the project area is presented in **Chapter 2.0**.

1.4 Execution of Field Investigations and Restrictions/Limitations

AMEC conducted the Phase I intensive survey between April 11 and May 6, 2011, under the field supervision of David Schatz and Chad Knopf, with Michael French serving as Principal Investigator. The field crew included Savannah Darr, Bridget Mohr, Adam Newell, Clay Cantrell, Robert Winn, and Eden Ransdale. Over 960 hours were expended to complete all aspects of the field investigation. Portions of the project area crossed state owned and maintained property, chiefly including state-maintained right of ways. Pursuant to KRS 164.705-735, the investigators requested and received a permit (No. 2011-08) from the Office of State Archaeology (OSA) to conduct archaeological investigations on Kentucky State property within the project area (**Appendix 1**). The only restriction/limitations the crew experienced was being denied access to approximately 95.0 ac (38.4 ha) by landowners.

1.5 General Results of Field Investigations

During the Phase I investigation, AMEC archaeologists surveyed 342.4 ac (138.6 ha) of the 472.3 ac (191.1 ha) APE. The remaining area had either been surveyed previously (34.9 ac, 14.1 ha) (Knopf et al. 2010) or landowners denied permission to access the property (95.0 ac, 38.4 ha). A total of 11 archaeological sites and nine isolated finds were identified within the APE (**Figures 1.3 - 1.4**). The archaeological sites encompassed a total of 4.9 ac (2.0 ha), or one percent of the area surveyed. The boundaries of the sites and isolated finds were defined by topographic features, project area boundaries, and shovel test probes (STPs). **Table 1.2** summarizes the sites by type and lists the recommendations for each. Detailed explanations of site boundaries are provided in the individual site descriptions presented in **Chapter 6.0**.

One previously recorded prehistoric rockshelter site (15WA353) was revisited and is considered potentially eligible for listing on the NRHP due to the potential for intact cultural deposits beneath the extensive roof fall. Since site 15WA353 is considered potentially eligible for inclusion on the NRHP, it is recommended that this site be avoided. If it cannot be avoided, then we recommend Phase II archaeological investigations to fully evaluate its eligibility for inclusion on the NRHP.

Four prehistoric open habitations without mounds were identified including 15WA181, 15WA182, 15WA183, and 15WA184. One of these, 15WA184, yielded an Early Archaic point. The age of the occupation(s) at the other sites is unknown. None of these four sites are considered eligible for listing on the NRHP.

Four sites (15WA186, 15WA178, 15WA179, and 15WA180) were historic period farms that dated from the late nineteenth century or later. None of these sites is considered eligible for listing on the NRHP.

The final two sites, 15WA177 and 15WA185, each contained a prehistoric open habitation without mounds and a historic period farm. The ages of the prehistoric components are unknown. The historic period occupations occurred during the mid-nineteenth century or later. Neither of these sites is considered eligible for listing on the NRHP.

Nine isolated finds were also identified within the corridor. Most consisted of one flake, however, Isolated Find (IF) 2 and IF 3 contained two and three flakes respectively. Though they are evidence for prehistoric activity, they were not considered archaeological sites due to the limited number of artifacts based on guidance from the OSA for the original survey of the KY 185 realignment corridor (Knopf et al. 2010). The ages of the isolated finds are not known and none are considered eligible for inclusion on the NRHP.

Table 1.2. Summary of Archaeological Resources Within the East C Alternate Corridor

Site Type	Site and Isolated Finds	Recommended for Avoidance or Phase II Evaluation
Prehistoric rockshelter	15WA353	15WA353
Prehistoric open habitation without mounds	15WA181, 15WA182, 15WA183, 15WA184	None
Historic farm	15WA186, 15WA178, 15WA179, 15WA180	None
Prehistoric open habitation without mounds and historic farm	15WA177, 15WA185	None
Isolated finds	IF 1, 2, 3, 4, 5, 6, 7, 8, 9	None
Total archaeological resources	**20**	15WA353

1.6 Curation of Artifacts, Field Notes, and other Records

Artifacts recovered during the Phase I survey of the KY 185 East C Alternate APE will be curated at the William S. Webb Museum of Anthropology located at the University of Kentucky in Lexington upon approval of the technical report of findings.

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Figure 1.3. Northern portion of the East C Alternate corridor showing locations of archaeological sites, isolated finds, and survey methodology (Reedyville 7.5 minute quadrangle 1958, photorevised 1979).

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Figure 1.4. Central portion of the East C Alternate corridor showing locations of archaeological sites, isolated finds, and survey methodology (Reedyville quadrangle 1958, photorevised 1979; Bowling Green North quadrangle 1970, photorevised 1979).

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Figure 1.5. Southern portion of the East C Alternate corridor showing locations of archaeological sites, isolated finds, and survey methodology (Bowling Green North quadrangle 1970, photorevised 1979).

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2.0 ENVIRONMENTAL BACKGROUND

2.1 Physical Setting

Warren County includes 547 square miles (sq mi), or 1,416.7 square kilometers (sq km). The county is located in south-central Kentucky, primarily on the Mississippian Plateau with the northern tip extending onto the Pennsylvanian Plateau (Barton 1981). It is bordered by Allen, Barren, Butler, Edmonson, Logan, and Simpson counties. The extreme northern section of Warren County is located in the Western Coal Fields, with the remaining majority lying in the Western Pennyroyal Physiographic Region (Barton 1981). The terrain is divided between nearly level to mildly rolling karst plains with few surface streams and hundreds of sinkholes and a higher plateau region in the northwest separated by the Dripping Springs Escarpment. This southeast-facing cuesta crosses Warren County from northeast to southwest (McGrain and Currens 1978). Elevations in Warren County range from 395 ft (120 m) above mean sea level (AMSL) up to 955 ft (291 m) AMSL at Pilot Knob. Elevations along the Dripping Springs Escarpment and into the northwest portion of the county typically range between approximately 450 ft AMSL and 750 ft (137 m and 22.9 m) AMSL.

The Green River and its tributaries drain the county, with the river forming the county"s northern boundary (Barton 1981). The Barren River bisects much of the county and flows into the Green River in the northwest corner of the county, near the town of Woodbury. Along with the Barren River, the Gasper River in the west and Drake"s Creek in the northeast constitute the major tributaries of the Green River. Two minor tributaries of the Green River drain the East C Alternate project area. Ivy Creek winds through the northern ridges close to the Green River, and Indian Creek passes through the southern extent of the corridor.

2.1.1 Geology

Stratigraphically, much of Warren County is made up of Mississippian epoch formations; however the extreme northern tip overlays Pennsylvanian epoch formations (Barton 1981). More recent unconsolidated Quaternary alluvial deposits are located along larger waterways (Noger 1988). Karst activity, typified by sinkholes and caves, is evident throughout Warren County.

Mississippian formations that occur in Warren County include the following: *Glen Dean Limestone, Hardinsburg Sandstone, Golconda Formation, St. Louis Limestone, St. Genevieve Limestone, Girkin Formation, Leitchfield Formation, Warsaw Formation and the Fort Payne Formation*. The Mississippian deposits were formed from marine sediment over 350 million years ago (Grabowski Jr. 1986). Erosion of younger deposits has left Mississippian deposits exposed at the surface in some areas, the oldest exposed formation being Warsaw Limestone.

Pennsylvanian rocks outcrop in the northernmost portion of Warren County, where the county crosses into the Western Kentucky Coalfields physiographic region (Rice 1986). Approximately 320 million years ago, as the seas receded, the deposits of the Pennsylvanian age were left. Continuous fluctuation of the sea level created deposits of sandstone, siltstone, shale, and coal. Due to the relatively minor portion of Warren County that falls into this physiographic region, the Pennsylvanian material in the county chiefly consists of the *Caseyville Sandstone* (Noger 1988).

Quaternary deposits in Warren County primarily include alluvium that is closely associated with the Green River, Barren River, Gasper River, and Drake"s Creek, as well as some of the tributaries of these waterways (Noger 1988). Quaternary deposits may also include loess that

occurs on high elevations over much of Kentucky and forms a surface veneer in many areas of the state (McDowell and Newell 1986).

2.1.2 Soils Encountered in the Project ROW

The United States Department of Agriculture (USDA) soil survey of Warren County indicates the East C Alternate APE incorporates two soil associations and eighteen different soil types (Barton 1981, Mitchell 2004). The Zanesville-Sadler association is present across much of the project area and is represented by deep, nearly level to sloping, well-drained and moderately well-drained soils formed in loess on sideslopes and uplands. The second soil association is the Frondorf-Ramsey, which is characterized by moderately deep and shallow, sloping to very steep, well-drained to excessively drained soils formed in loess on steep and narrow uplands. These soils covering the project area are described in **Table 2.1** using data presented by Barton (1981) and Mitchell (2004).

Table 2.1. Soil Series within the Project Area.

Series Symbol	Soil Name	Description
CaB	Caneyville silt loam, 2 to 6% slopes	Moderately deep, well drained soil found on uplands. The typical surface layer is a brown silt loam with a fine granular structure.
CaC	Caneyville silt loam, 6 to 12% slopes	Moderately deep, sloping, well drained soil found on ridgetops and sideslopes. The typical surface layer is a grayish brown silt loam with a fine granular structure.
CaC3	Caneyville silty clay, 6 to 12% slopes, severely eroded	Moderately deep, sloping, well drained soil most commonly found on ridgetops and sideslopes. Due to erosion, the reddish brown clay subsoil material is exposed and shallow gullies are common.
CnD	Caneyville-Rock outcrop complex, 6 to 20% slopes	Complex consists of small areas of moderately deep, steep, well drained Caneyville soil interspersed with rock outcrops and rock ledges along sideslopes.
CnF	Caneyville-Rock outcrop complex, 20 to 60% slopes	Steep, moderately deep, moderately well drained Caneyville soil is found interspersed with rock outcrops and ledges along sideslopes.
CrB	Crider silt loam, 2 to 6% slopes	Deep, well drained, gently sloping soil found on broad upland plateaus. The surface soil is a brown silt loam with firmer, blocky soil beneath.
FrC	Frondorf silt loam, 6 to 12% slopes	Moderately deep, well drained, sloping soil found on ridgetops and sideslopes of sandstone and shale uplands. The surface soil will be a brown silt loam with yellowish-brown clay loam subsoil.
FrD	Frondorf silt loam, 12 to 20% slopes	Moderately deep, well drained, moderately steep sloping soil found on sideslopes of sandstone and shale uplands. The surface soil will be a brown silt loam with yellowish-brown clay loam subsoil.
Gr	Grigsby sandy loam, frequently flooded	Deep, well drained soils generally found on nearly level alluvial bottom lands along the bends of the Green and Barren Rivers. The surface soil is a dark yellowish brown sandy loam overlaying a deep layer of brown sandy alluvial loam.

Table 2.1. Soil Series within the Project Area.

Series Symbol	Soil Name	Description
La	Lawrence silt loam, rarely flooded	Deep, somewhat poorly drained, nearly level soil found on uplands and terraces. Surface soil is a grayish brown silt loam overlaying yellowish brown silty clay loam subsoil.
Ne	Newark silt loam, frequently flooded	Deep, somewhat poorly drained, nearly level soil found on flood plains and alluvial areas. Frequent flooding from December to May. Surface soil is a brown silt loam overlaying yellowish brown to brownish-gray silt loam subsoil.
Np	Nolin silt loam, ponded	Deep, well drained soil found on level to gently sloping plains. The upper soil layer will typically be a brown silt loam overlaying dark yellowish brown silt loam subsoil. Ponding is frequent from December to May.
RaF	Ramsey-Frondorf complex, 20 to 60% slopes	Shallow to moderately deep, excessively drained to well drained soil in shallow bands along slope. The surface soil will typically be a brown loam overlaying increasingly blocky and sandstone laden yellowish brown subsoil.
Us	Urban land-Udorthents complex, smoother, 0 to 15% slopes	Nearly level to moderately steep areas of soil and rock material that have been filled, shaped, and graded for major road construction as well as areas of paved asphalt for urban land use along state roads in Warren County.
WeB	Wellston silt loam, 2 to 6% slopes	Deep, well drained soil found on undulating ridges. The surface soil is a brown to yellowish-brown silt loam with strong brown silty clay loam subsoil.
WeC2	Wellston silt loam, 6 to 12% slopes, eroded	Deep, well drained, sloping soil found on rolling ridges and formed in loess. Erosion has removed some of the original surface material. Typical surface soil is a brown silt loam over strong brown silty clay loam subsoil.
ZaB	Zanesville silt loam, 2 to 6% slopes	Deep, well drained to moderately well drained soil found on gently sloping ridgetops and the upper part of sideslopes. The surface soil is a dark grayish-brown to strong brown silt loam overlaying yellowish-brown silty clay loam subsoil.
ZaC2	Zanesville silt loam, 6 to 12% slopes, eroded	Deep, moderately well drained soils formed in loess and found on rolling ridges and sideslopes. Much of the original surface soil has eroded away. Typical surface soil is dark yellowish-brown silt loam with a yellowish-brown silty clay loam subsoil.

2.2 Prehistoric and Historic Environment

Since the end of the Pleistocene Epoch, both the vegetation and climate of the Pennyroyal region of Kentucky have remained relatively stable. Starting at about 10,000 years ago, the entire state of Kentucky was dominated by Maritime Tropical and Pacific air masses. While the glaciers to the north would have made the climate somewhat cooler than today's average temperatures, the weather patterns during this period would have been similar to those of modern times (Delcourt and Delcourt 1984). The area known today as Kentucky was covered by mixed hardwood forests at this time (Delcourt and Delcourt 1981). This type of forest would contain a wide variety of forest communities. Oak-hickory forests would have been found in warm exposed areas, beech-maple forests would occur in cool, moist shaded areas, and along

streams and river valleys northern riverine forests would have been present (Kricher 1988). With the glacial retreat further north, average temperatures rose and the mixed hardwood forests in other oak-hickory forests gradually replaced areas of Kentucky (Davis 1983; Delcourt and Delcourt 1981).

Given this diversity of forest types, it is not surprising that the flora of the area was also very diverse. The trees present throughout the region prehistorically may have included a variety of oaks, hickories, and pines, as well as American chestnut, dogwood, sassafras, hophornbeam, yellow buckeye, eastern sycamore, and hackberry. tuliptrees, elm, sweetgum, shagbark hickory, and red maple also may have been present, especially in moist areas. The understory might have contained spice bush, red elderberry, poison ivy, mountain laurel, a variety of blueberries, and deer berry among other plants. Herbs that may have been found include wintergreen, wild sarsaparilla, wood-sorrel, mayapple, rue-anemone, jack-in-the-pulpit, bloodroot, yellowroot, and trout lilies to name a few (Kricher 1988).

A wide variety of fauna would also have been present from the early Holocene to early historic times. Mammals that thrive in the mixed Appalachian forests may have included the gray squirrel, fox squirrel, whitetail deer, raccoon, beaver, woodchuck, a variety of mice, striped skunks, mink, otter, fox, black bear, and bobcats. Bird species would likely have included red-tailed hawks, ruffed grouse, great horned and eastern screech owl, pileated woodpecker, wild turkey, and blue jay among others (Kricher 1988). The floral and faunal species present in Kentucky remained relatively constant until modern times (Delcourt and Delcourt 1981).

In modern times, the greatest modification of the landscape has occurred along river bottoms and ridgetops. The lower elevations have been cleared for farms, road building, and urban development, while the higher elevations have been severely modified by timbering in the late 1800s and early 1900s. This alteration of habitats has caused the decline and/or disappearance of numerous species of both flora and fauna. For instance, the American chestnut, common during prehistoric times as a canopy tree, has been reduced to an understory tree by a blight introduced into North America in 1904 (Kricher 1988).

The pollen record shows that relatively mild temperature fluctuations have occurred since the end of the Pleistocene. After about 10,000 Before Present (B.P.), there was a gradual warming trend that resulted in generally higher temperatures than are known today. The highest temperatures appear to have occurred around 5000 B.P. This warming trend continued until the beginning of the Little Ice Age (A.D. 1450-1850) when there was a significant drop in temperature. After the Little Ice Age, temperatures became more moderate (Davis 1983).

Today, the vicinity of the project area has a temperate climate. The following modern climate information was summarized from the updated Warren County USDA Soil Survey (Mitchell 2004). Temperature extremes range from -21 degrees Fahrenheit (F), during the winter of 1963 to 108 degrees F, recorded in the summer of 1936; however the average temperatures are more moderate. The average daily minimum temperature in winter is 26 degrees F, but the overall average temperature in winter is 36 degrees F. The average daily maximum in summer is 87 degrees F; the overall average in summer is 76 degrees F. Rainfall is distributed throughout the year; total annual precipitation is about 51 in. Snowfall, on average, is 12.8 in. The growing season extends from April to October (Mitchell 2004).

2.3 Survey Conditions

The majority of the East C Alternate APE consisted of cleared pastures, wooded slopes, light residential areas with access roads, and paved roads. Open fields in the project area were typically located along broad rolling ridgetops (**Figure 2.1**), on undulating saddle ridge across much of the central project area, and on the floodplain associated with Indian Creek (**Figure 2.2**). Much of this area has been used as livestock pasture as the local farmers have attempted to use the karst topography to their greatest benefit. Though the pastures tend to be located on level to gently sloped terrain, some of the slopes are greater than 20 degrees.

The karst topography which characterizes this region can include dramatic, rocky slopes that often greatly exceed 20 percent (**Figure 2.3**). Many of these slopes are wooded and have suffered from severe erosion that has claimed much of the original surface soil. These portions of the project area feature bluffs (**Figure 2.4**) and rock overhangs, some of which could have been used for brief or long-term human occupations (**Figure 2.5**). Sinkholes and springs are also prevalent within the project area and could have provided water access for groups throughout the history (c.f. Gatus and Maynard 1978).

Modern construction and erosion have disturbed portions of the project area to varying degrees (**Figure 2.6**). The ROW for the existing roads within the APE widens and narrows in response to the slope of the terrain. Some residential lots maintained much of their original topography, while others appeared to have been heavily modified by grading, leveling, or the addition of fill. Markers for underground utility lines were also noted within the project area. These lines typically follow disturbed road corridors, although the disturbance for the installation of the lines can extend across residential and farm lots.

Figure 2.1. Rolling topography on a broad ridgetop within the project area, facing east.

Figure 2.2. Floodplain bordering Indian Creek, facing north.

Figure 2.3. Steep wooded slope within the project area, facing northwest.

Figure 2.4. Stone bluffs in the project area, facing east.

Figure 2.5. Rock overhang in the project area, facing south.

Figure 2.6. Light rural residential occupation, facing northeast.

3.0 CULTURAL/HISTORIC CONTEXT AND PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

3.1 Prehistoric Cultural/Historical Context

The history of human activity in Warren County and the surrounding region of Kentucky spans thousands of years. The earliest groups to leave a definitive material record of their presence were early Paleoindians who entered the region during the Late Pleistocene glacial epoch more than 10,000 years ago. Their descendants, and the descendants of other Native American groups who migrated to the region, lived along the Ohio River for the next ten millennia. This long prehistoric era lasted until the arrival of the first European explorers and settlers in the seventeenth and eighteenth centuries, which marks the beginning of the Historic period.

While cultural change is a slow and continual process, archaeologists and other researchers divide the human history of a region into distinct cultural periods. Archaeologists and historians recognize four broadly defined prehistoric periods for the Ohio River Valley. These include the Paleoindian period (ca 9500-8000 B.C.), the Archaic period (8000-1000 B.C.), the Woodland period, (1000 B.C.-A.D. 1000) and the Late Prehistoric period (A.D. 900-ca. 1700). The Historic period began with the arrival of the first European explorers and colonists.

This summary is a brief outline of Kentucky archaeological history and draws heavily from the *Archaeology of Kentucky* (Pollack 1990, 2008) as well as *Kentucky Archaeology* (Lewis 1996a).

3.1.1 Paleoindian Period, ca. 9500-8000 B.C.

Tankersley defines the Early Paleoindian period (9500-9000 B.C.) as the period when Clovis groups first entered the region (Tankersley 1996). These early colonizing groups were small, consisting of one or two family groups. They were highly mobile hunter-gatherers who subsisted primarily by hunting Late Pleistocene fauna such as bison, musk ox, caribou, and the now extinct megafauna such as ground sloth, moose-elk, mammoth, and mastodon (Tankersley 1996). Most Paleoindian sites are identified as simple isolated finds with single Clovis points, characterized by fluting, or point fragments.

According to Tankersley, the Middle Paleoindian period (9000-8500 B.C.) is marked by increased diversity in fluted point styles (Tankersley 1996) as well as a more diverse lithic tool kit that included spurred end scrapers and side scrapers, and an increased use of lower quality local cherts. Tankersley suggests these changes reflect an increased reliance on smaller game and even plant resources. A distinctive regional fluted point style, the Cumberland point, is found in Kentucky.

By the Late Paleoindian period (8500-8000 B.C.), fluted projectile points had disappeared and were replaced by points of the non-fluted Dalton Cluster (Justice 1987; Tankersley 1996). The Dalton Cluster points display a much greater stylistic variety reflecting greater regional diversity. There was also a wider range of tools associated with the Dalton tool kit as opposed to the earlier Paleoindian groups (Tankersley 1996). The regional diversity in point styles may indicate more restricted settlement systems on the part of these later Paleoindian groups, while the more diverse tool kit composition may indicate more intensive exploitation of a wider range of food resources.

3.1.2 Archaic Period (ca 8000-1000 B.C.)

The Archaic period (ca. 8000-1000 B.C.) encompasses the 7000 year time span when early Native Americans in the eastern U.S. adapted to the changing post-Pleistocene Early Holocene climate. The Archaic includes Early Archaic, Middle Archaic, and Late Archaic sub-periods, which are described below.

In many respects, Native American adaptive strategies during the Early Archaic period (8000-6000 B.C.) more closely resembled those of their Paleoindian predecessors than those of the later Middle and Late Archaic periods. Like their Paleoindian counterparts, the early Native American groups of the Early Archaic were hunter-gatherers who incorporated a great deal of mobility into their subsistence/settlement systems. However, the Early Archaic is generally seen as a transitional period when regional populations more fully adapted to the changing environmental conditions that were taking shape during the Early Holocene (Jefferies 1996). Such modern game species as white-tailed deer and turkey, and important subsistence plant species like the nut-bearing oak, hickory, and chestnut trees of the spreading deciduous forest, replaced the Late Pleistocene fauna and flora (Jefferies 1996). The lithic tool kits of the Early Archaic were similar to those utilized during the Paleoindian period. However, there is evidence for increased regionalization during the Early Archaic, an intensification of trends first observed during the Late Paleoindian period. While these early groups continued to be highly mobile, their seasonal settlement systems were more regionalized, with different bands and macro-bands restricting the seasonal mobility to specific drainages (Anderson and Sassaman 1996). Artifact type markers for the early portion of the Early Archaic include Kirk Corner-notched points and Thebes Side-notched points (Jefferies 1996; Justice 1987). Later Early Archaic point types include Kirk Stemmed points and bifurcate-based LeCroy and Kanawha points (Jefferies 1996; Justice 1987).

By the onset of the Middle Archaic period (6000-3000 B.C.), early Native American populations had begun to settle down into increasingly regionalized settlement ranges. Middle Archaic sites along the Ohio River drainage and elsewhere includes large base camps used as long-term, perhaps even year-round, residential sites (Jefferies 1996). These changes in settlement strategy coincided with the long warm, dry spell which climatologists call the Hypsithermal Climatic Interval. Much of Kentucky became arid grasslands and the distribution of subsistence game and plant resources were more restricted than in previous periods. Though the Middle Archaic period is poorly understood in Kentucky, it is generally recognized as a period of intensive regionalization when groups began to exploit a wider range of local subsistence resources. Middle Archaic artifact assemblages include the appearance of ground stone tools and pecking stones generally attributed to plant food processing. Middle Archaic groups were able to access a variety of subsistence resources, and were able to limit their residential mobility. A plethora of stylistically distinct projectile point types with limited distribution ranges appeared during this time including Morrow Mountain, Matanzas, and Big Sandy II points (Jefferies 1996; Justice 1987).

During the Late Archaic period (3000-1000 B.C.), the number of prehistoric sites scattered across the Kentucky landscape increased dramatically. The diversity of those sites present in the landscape increased as well. Late Archaic subsistence/settlement strategies emphasized generalized hunter/gatherer strategies, and these groups intensively exploited a range of subsistence resources in a variety of environmental settings (Collins and Driskell 1979; Jefferies 1996). There is also clear evidence for increased sedentism at numerous sites where human and dog burials occur, along with large trash pits and hearths (Anslinger 1988). By the end of the Archaic, there is evidence for incipient horticulture, basket weaving, and a variety of tools for

woodworking and food processing (Watson 1974). Late Archaic site types included large base camp sites on floodplains as well as the interior lowlands along the Ohio River‟s major tributaries. Along the Ohio River drainage, large shell mounds appeared during the Late Archaic, either built intentionally by Late Archaic groups, or built up over time through repeated utilization of the same location. The sites also yielded diverse artifact assemblages indicative of long-term residential activities. Smaller resource extraction sites are scattered throughout the full range of geographic settings in the region. Projectile points indicative of Late Archaic occupation include McWhinney Stemmed, Merom-Trimble Cluster, and Brewerton points (Jefferies 1996).

3.1.3 Woodland Period, ca. 1000 B.C.-AD 1000

The division of the Early Woodland period (1000-200 B.C.) from the proceeding Late Archaic period is marked by the appearance of ceramic pottery around 1000 B.C. Many Early Woodland projectile point types are indicative of transitional Late Archaic/Early Woodland occupations including Kramer, Wade, Savanna River, Saratoga Stemmed, Buck Creek Barbed and various other stemmed points (Justice 1987; Railey 1996). Early Woodland sites are similar in type and distribution to those during the Late Archaic. Large midden sites are located in the alluvial valleys and smaller resource procurement sites are found scattered throughout the landscape. However, the Early Woodland also has the first appearance of distinct ceremonial sites. There is also evidence for widespread horticulture of such domesticated plants as gourds and sunflowers.

Complex ceremonials continued through the middle part of the Woodland period (200 B.C.-A.D. 500). Sophisticated mortuary practices suggest the appearance of hierarchical social organization and long-range trade (Railey 1996). Though hunting and gathering continued to be the major source of subsistence food, the use of horticulture intensified and permanent settlements were firmly established along river bottoms. A number of plants were domesticated including sunflower, maygrass, knotweed, little barley, and goosefoot. Other utilized plants included maize, squash, and gourds (Railey 1996).

By the beginning of the Late Woodland period (A.D. 500-1000), a major technological change was the introduction of the bow and arrow (Railey 1996). This was indicated in the archaeological record by the appearance and proliferation of small triangular points. Other chipped stone tools diagnostic of the Late Woodland include Jacks Reef Corner-notched, commissary knives, and small triangular Madison points believed to be arrowheads (Railey 1996). Increasing regional variability of stylistic motifs on ceramic pottery became increased throughout the Late Woodland. Subsistence/settlement strategies continued the trend toward increased sedentism. Small, nucleated circular villages with circular central plazas appeared in some locations of the state by the Late Woodland (Railey 1996). The appearance of aggregated settlement may, in part, have resulted from increased population density and shrinking settlement ranges. Along with aggregating into central village locations, Late Woodland populations adopted intensive horticulture of maize and domesticated plant seed plants.

3.1.4 Late Prehistoric Period, ca. A.D. 1000-1540

By the Late Prehistoric period, central Kentucky was the interface of two cultural groups, Fort Ancient and Mississippian. Each culture will be discussed briefly below.

Mississippian Culture

The period from A.D. 900-1700 saw the development of a variety of regional cultural expressions that have been included under the name *Mississippian*. During this time, population increased. Agriculture was a means of intensifying production, with maize, beans, and gourds comprising the agricultural base (Lewis 1996b). Hunting and gathering supplemented agriculture.

A distinguishing feature of Mississippian Period is a settlement system that included a hierarchy of sites. At the highest tier of this hierarchy are large palisaded towns believed to be ceremonial and political centers, comprising pyramidal platform mounds aligned around central plazas. The political organization of the period correlates to that of a chiefdom level society. Other Mississippian sites include smaller nucleated villages and dispersed farmsteads. Defense and cooperation were likely responsible for the nucleation of settlements (Muller 1986). Settlement was generally favored in areas of highest soil fertility, commonly in the bottomlands along rivers. Houses were generally rectangular, with wall trenches, log foundations, and thatched roofs. Exchange of goods occurred between groups as evidenced from the recovery of exotic items. However, local exchange was probably more important than that on a regional scale (Muller 1986).

Fort Ancient Culture

Fort Ancient culture was overwhelmingly dependent on bean and maize agriculture and its social structure was fundamentally based around the organization of agricultural activities. Fort Ancient phases and traditions are generally thought to have been chiefdom level societies, but lacked the social hierarchy of the Mississippian cultures to the west (Sharp 1996).

Fort Ancient populations lived in towns with a central plaza surrounded by houses. palisaded walls, and defensive ditches (Sharp 1996). The central plaza was the site of social and ceremonial activities, but unlike the Mississippians to the west, central plaza platform mounds were absent. Instead, the mounds present were part of complex mortuary practices and were located on the edges of the plaza. The material culture of Fort Ancient Period includes shell-tempered pottery and a variety of ceramic vessel forms including jars, bowls, and pans (Sharp 1996). Lithic artifact assemblages were typically limited to simple tools such as small triangular points (Justice 1987). The presence of marine shell and Catlinite disk pipes at Fort Ancient sites points to participation in long-distance exchange networks and interaction spheres (Sharp 1996).

3.2 Contact Period, ca. A.D. 1540-1795

The term “protohistoric” frequently refers to the native culture of North America during that span of time following the first influence of European cultures (principally through trade goods or disease), and later, when the native cultures were recorded and described by the encroaching Euro-American cultures. Typically during this period, the native cultures underwent acculturation, a virtual breakdown of their former way of life through replacement by or approximation of the cultural norms of the dominant culture.

Henderson et al. (1986) refers to the Protohistoric period as beginning when the first indirect effects of the European presence were felt by native cultures, roughly A.D. 1540. The beginning date was selected based on journals of the De Soto expedition in the 1540‟s observing that trade goods and European disease were there before them. The signing of the Greenville

Treaty in 1795 marks the end of this period. In that document, the Indians relinquished all claims to land in the region to the new government of the United States. The several tribes in various stages of acculturation were removed to small reservations to the north and west (Henderson et al. 1986).

The Protohistoric period spans nearly two centuries, ending around A.D. 1795. The inhabitants of the region during this period probably consisted of diverse groups speaking Algonquian or Iroquoian languages, and basing their economies on a combination of horticulture and fishing, hunting, and gathering. Small encampments at scattered locations sometimes coalesced into larger villages on floodplains in the spring for the cultivation of corn, beans, squash, and a few other selected plants, like tobacco.

During this period, in what is now Kentucky, contact between Native Americans and Europeans may have been indirect, with European trade goods and information about Europeans spread through the existing Native American exchange systems. The earliest European exploration of what was to become Kentucky has not been established, but Marquette and Joliet passed the mouth of the Ohio in 1673 during their exploration of the Mississippi River (Alvord 1965). Other French, English, and Spanish traders and explorers may have passed through the territory in the late seventeenth century to mid-eighteenth century as well (McBride and McBride 1990).

Disease increasingly reduced native populations all over the central and eastern parts of the continent during this period. In this region, epidemics are documented from the last decades of the 1500s and into the mid-1600s.

3.3 Historic Period Cultural / Historical Context

3.3.1 Formation and Early Colonial and Post-Revolutionary American Settlement in Warren County

The settlement of what would become Warren County began in the early 1770s. Prior to European exploration, this area, like most of Kentucky, was a transitory hunting ground for the Native Americans. However there were some permanent settlements, mainly in Central and Northern Kentucky. Archaeologists have found remnants of villages and burial mounds in some portions of Warren County (Kleber 1992). It is believed that Long Hunters entered the region around 1775, carving their names on trees by their encampment on the Barren River. These carvings are the first indication of European exploration in the area. Many settlers followed the trails into the region, but settlement was slow. By 1785, McFaddens Station, built by Andrew McFadden, was established on the Barren River by Cumberland Trace. Other early landowners included General Elijah Covington and George and Robert Moore (Kleber 1992). In 1792, Kentucky achieved statehood, and within four years, the area of Warren County was given out as land grants in payment for military service.

The population of Warren County continued to increase as settlers found the soil to be more fertile than expected, due to the presence of many waterways such as the Green, Gasper, and Barren Rivers, as well as Drake"s Creek, Bay"s Fork, and Jenning"s Creek. Initial settlement followed these waterways, ignoring the central portion of the county, known as the Barrens, due to the false assumption that the soil was not good for agriculture. Land management practices by the Native American inhabitants in the area (no exact tribe could be credited with maintaining the land) made the Barrens a rich and fertile region. Once this was known, settlers quickly moved in to take advantage of the land (Baird and Crowe-Carraco n.d.). By 1796, due to the extensive growth in the region, the inhabitants petitioned to create a new county.

Warren County, the state"s twenty-fourth, was created on December 19, 1796, from what had previously been Logan County. The county was named for General Joseph Warren of Boston, a hero of the Battle of Bunker Hill, who was credited for dispatching Paul Revere and William Dawes on their famous ride to warn the countryside of the approaching British threat (Kleber 1992). County officials quickly set about to establish a county seat and develop the area. That same year, Charles and Robert Moore donated two acres for a log courthouse and a log jail to be built. One year later, the Moore brothers again donated roughly 30 acres to build a small settlement around the two log structures (Baird and Crowe-Carraco n.d.). This community was called "Bowling Green." Though no initial explanation was given as to why that name was chosen (Baird and Crowe-Carraco n.d.), Bowling Green may have been chosen to honor the colonists who pulled down a statue of King George III in Bowling Green Square in New York City and melted the metal for bullets. Bowling Green would become the county seat and the largest and most prosperous town in the region.

From the beginning, the economy of Warren County depended upon agriculture and the Barren and Green rivers. Tobacco, corn, ham, hay, and whiskey were all exported on the rivers, either to New Orleans or Nashville because exporting goods over land was expensive and time consuming. In the early 1800s, as steamboat technology improved, residents of Warren County recognized their capability to haul larger cargoes than the flatboats that normally carried goods. Because the rivers were narrow and winding in the area, efforts were made to clear the worst areas and in 1828 the steamboat *United States* brought coffee, sugar, and tea to Bowling Green (Baird and Crowe-Carraco n.d.). Within two years locks and dams were approved. Despite the worth of the waterways, by the 1850s the railroads were replacing steamboats and Warren County again jumped at the chance to improve its economy.

The railroads brought changes to Warren County. By 1859 the Louisville & Nashville (L&N) Railroad had depots in Bowling Green, Smiths Grove, and Woodburn. The formerly Protestant community comprised of former Pennsylvanians, Carolinians, and Virginians saw a change in ethnic make-up as Catholic German and Irish immigrants arrived to lay track. The L&N brought prosperity due to the numerous businesses that accompanied the railroad, and an increase in population. However, it also opened the county to occupation when the Civil War broke out in 1861.

3.3.2 Warren County during the Civil War

When the Civil War began, the residents of Warren County upheld the state"s stance of neutrality until both Union and Confederate troops turned their attention on Bowling Green and its transportation assets. General Simon Bolivar Buckner and his Confederate troops entered the county in September, 1861, and would remain until February of 1862 (Kleber 1992). Roughly 20,000 Confederate troops would occupy the county, which they believed to be sympathetic to the South (Baird and Crowe-Carraco n.d.). But Union sympathies prevailed, and the Confederate troops failed to recruit as many soldiers as expected. A Provisional convention in Russellville attempted to rally Confederate sympathy by declaring Bowling Green the "Confederate capital of Kentucky," but rampant illnesses of dysentery, measles, pneumonia, scurvy, and typhoid, and the threat of Union invasion, pushed the Confederate troops out of Bowling Green and into Nashville in February 1862. They destroyed bridges and railroads as they withdrew from the county. Union troops remained in the area until spring of 1862, when they moved further south to attack Nashville. Warren County would never be occupied again, although soldiers from both sides would travel through the region. Only a few hundred Union troops would remain to patrol the area against guerilla attacks and the county remained under martial law for six months after the war (Baird and Crowe-Carraco n.d.). By 1867, the last of the

troops left the region, leaving a depressed economy and a ravaged land as fields were burned or raided, trees cut down, bridges and roads destroyed, and livestock stolen.

3.3.3 Warren County after the Civil War and into the Twentieth Century

After the Civil War, Warren County struggled to regain its former momentum. Racism and the temporary loss of *habeas corpus* created tension amongst Warren County residents. However, the return of the railroad revitalized the county"s economy. Small communities developed along the rail line, including Bristow. Livestock and other agricultural goods were the primary exports. Later, in addition to agricultural, Warren County became known for its limestone, another premier export for the county. Limestone became synonymous with late nineteenth century growth as it reflected a change in architecture for the region, but also provided an economic alternative to agriculture. Quarries opened around the county and small communities operated stone mills to shape the stone before shipment on the railroads. For over forty years, between 1880 and 1920, Warren County limestone would be used in such structures as the Governor"s Mansion in Frankfort, numerous structures in Louisville (including the Presbyterian Theological Seminary), and structures in Atlanta, Boston, New York City, and Washington DC (Baird and Crowe-Carraco n.d.). Locally, limestone reflected the shift from wood to stone structures. Limestone became a status symbol, and the construction of stone fences marked the greatest wealth. Brick became another popular building material, and Warren County"s architecture between the 1880s and the 1920s rivaled that of the larger cities in the state.

With the onset of the twentieth century, Warren County was marked by growth that paralleled the trend across the nation. Economic growth continued, and the most pressing issue for the county was temperance. Local women"s organizations successfully lobbied for Prohibition. In 1919, the Volstead Act led to Prohibition, and Warren County officially became a dry county when the act went into effect in 1920. Prohibition was not repealed until 1933 with the Twenty-first Amendment.

During World War I almost 1,000 men served in the military, and numerous women served with the Red Cross in Europe (Baird and Crowe-Carraco n.d.). Locally, parades and bake sales kept spirits high and provided support for both those abroad and still in the county. The economy of the county followed national trends in recession and economic growth. After the war, Warren County would benefit from the growing desire for automobiles. In the 1920s, oil speculators arrived to tap the county"s plentiful oil resources. This oil boom accelerated growth in every industry in the region (Baird and Crowe-Carraco n.d.).

Because the area experienced such a boom economy, immigration into the county was high and housing became a major issue. The housing shortage gave rise to severe social problems, including homelessness, illness, and malnutrition (Baird and Crowe-Carraco n.d.). The death of two children in the county caused local women to organize relief programs. These programs ranged from welfare-type programs and story hours for children, to camp scholarships for the less privileged. These programs provided Warren County with a strong foundation for public relief in 1929, when the U.S. entered the Great Depression. In addition to these programs, Warren County relied heavily on the Works Progress Administration (WPA) for employment. Numerous buildings were constructed, including college buildings, a post office annex, a jail, warehouses, and a municipal airport. Outside of the public relief programs and the number of people employed through the WPA, the major employers in the county were the Western Kentucky Teachers College, Pet Mile, and Honey Crust bread. Local businesses provided the remainder of the industrial employment in addition to agriculture.

The lack of large industry prompted county officials to push for development at the end of World War II. Still, the county would be chiefly reliant on agriculture until the 1960s and 1970s when Interstate 65 and the Green River Parkway road projects were completed, fostering the industrial boom in Warren County (Kleber 1992). Population growth has seen steady improvements since the 1970s, growing from 57,432 residents in 1970 to 71,828 by 1980, 76,673 by 1990, 92,522 by 2000, and presently estimated at over 105,000 residents. The goal for expansion and growth was successful and several large corporations moved into the area. Union Underwear and General Electric were two of the largest employers. Today, the Warren County economy relies on a combination of industry, education, agriculture, and tourism.

3.4 OSA Records Check and Previous Archaeological Investigations

Prior to commencement of the field investigations, records on file at the Kentucky OSA were examined to determine if any previous archaeological investigations have been conducted and if any archaeological sites had been recorded within the East C Alternate APE or within a two kilometer (1.24 mile) buffer around the APE. The records examined included the OSA's geographic information system (GIS) archaeology database, state site forms, and reports of investigation. The locations of previous archaeological surveys in relation to the APE are shown in **Figure 3.1**.

The only archaeological survey work that has been done within the APE was the original survey of the proposed KY 185 realignment corridor conducted by AMEC (Knopf et al. 2010). This survey resulted in the discovery of five open habitations without mounds, two sites with open habitations without mounds and a historic farm component, two rockshelters, and one historic industrial site. None of these sites are within the East C Alternate APE. Four prehistoric sites, 15WA168, 15WA171, and 15WA176, and the historic industrial site, 15WA175, were considered to be potentially eligible for listing on the NRHP. These four sites were recommended for avoidance or additional investigation is avoidance was not feasible.

In addition to the previous work done on the proposed KY 185 realignment corridor, three Phase I archaeological surveys and twenty archaeological sites were identified within the 2-km (1.24-mi) buffer surrounding the APE. The first survey was conducted by Nancy O'Malley in 1983. The survey area consisted of approximately 25 mile (40 km) corridor for a proposed water line in Warren County, Kentucky. During this survey 17 archaeological sites were recorded. Sixteen sites were not eligible for inclusion on the NRHP and no further archaeological work was recommended. Site 15WA40, a late prehistoric rockshelter, was considered potentially eligible for inclusion on the NRHP and further investigation was recommended (O'Malley 1983).

The OSA GIS query showed that Don Ball conducted a Phase I survey along the Green River in Butler and Warren counties near the conjoining border of Butler, Warren, and Edmonson counties in 1998. However, the report that was supposed to accompany this investigation could not be found in the OSA library. OSA personnel conducted a review of their holdings and discovered the report was missing (Nancy O'Malley, personal communication 2010). Consequently, no additional information regarding this investigation was available.

In 2001, Darlene Applegate performed a cultural resources survey of approximately 0.4 ac (0.2 ha) for a proposed telecommunications tower near Richardsville in Warren County. Systematic pedestrian reconnaissance and shovel probing was used to investigate the study area. No archaeological sites or historic standing structures were located and no further work was recommended (Applegate 2001).

Figure 3.1. The East C Alternate corridor and previously surveyed areas shown on portions of the Reedyville (1958, photorevised 1979) and Bowling Green North (1970, photorevised 1979) quadrangles.

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Based on a query of the OSA"s GIS database, the only previously recorded archaeological site within the East C Alternate APE was 15WA353. According to the site form, this prehistoric rockshelter of unknown age was recorded by Vernon White in 1970 as part of a "hominy hole survey." The rockshelter was composed of two parts. Site 15WA353A was the larger of the two shelters and contained two hominy holes. In the site description attached to the site form, White reported that, "No artifacts or flint chips were found but Jack Schock had visited the site earlier and reported finding a few flint chips." The second smaller shelter, designated site 15WA353B, contained one hominy hole. No artifacts were found in this shelter; however, a small overhang near 15WA353B produced one flake. White did not assess the NRHP status of site 15WA353.

The remaining sites relevant to this project were outside the East Alternate C APE, but were within the 2-km buffer. Site 15BT65 was recorded by James L. Swauger in 1970 and is listed as an unassigned prehistoric petroglyph. The petroglyph is located near a creek feeding into the Green River in the southeastern corner of Butler County. The NRHP eligibility of this has not been assessed.

Sites 15BT69, 15BT70, 15BT71, and 15BT72 were recorded by Charles Hockensmith in 1983. All four of these sites are prehistoric open habitation without mounds, and are located in close proximity to one another along a floodplain terrace overlooking a bend in the Green River. The only site that could be assigned to a cultural period was 15BT72, which contained a Middle to Late Woodland Lowe point. These four sites have not been assessed for NRHP eligibility.

In addition to site 15WA353, Vernon White recorded three prehistoric rockshelter sites 15BT325, 15WA390, and 15WA391 in 1970. Site 15BT325 is situated on a slope above a terrace to the west of a bend in the Green River. Site 15WA390 is located on a slope overlooking the Green River and to the south, and site 15WA391 overlooks Ivy Creek. None of these sites have been assigned to a cultural period, however some projectile point fragments were collected from sites 15WA390 and 15WA391. These sites have not been assessed for NRHP eligibility.

Sites 15WA396, 15WA397, 15WA398, 15WA399, 15WA605, 15WA650, 15WA651, 15WA652, and 15WA653 are prehistoric rockshelters that were recorded by Vernon White in 1971. Sites 15WA396, 15WA397, and 15WA650 were located on the slopes overlooking Shanty Hollow Lake. Sites 15WA651, 15WA652, and 15WA653 were along slopes closer to the branches of Ivy Creek. Sites 15WA398, 15WA399, and 15WA605 were situated on slopes overlooking Clay Lick. Only one of these sites, 15WA399, was assigned to a cultural period. This site was occupied at least once during the Late Archaic or Early Woodland period based on the recovery of two Adena projectile points. Other potentially diagnostic artifacts were also recovered from sites 15WA650, 15WA651, 15WA652, and 15WA653. However, these artifacts were not identified. These nine rockshelter sites have not been assessed for NRHP eligibility.

Records for sites additional sites within the 2-km buffer, 15WA2 and 15WA392, could not be located in the OSA library. OSA personnel reviewed their holdings and reported that all records for these sites are missing (Nancy O"Malley, personal communication 2010). However, site 15WA2 may have been reported by Webb and Funkhauser (1932:385) and included mounds, springs, a hominy hole, and the remains of a fortification with earthen and stone walls. There is no indication that any formal archaeological investigations have been undertaken at the site.

Finally, sites 15WA167 through 15WA176 were recorded by AMEC during the Phase I survey of the KY 185 realignment corridor (Knopf et al. 2010). Three sites (15WA167, 15WA173, and 15WA174) were prehistoric open habitations of unknown age. Sites 15WA169, 15WA170, and

15WA172 were similar, but also contained a scatter of historic artifacts. One additional open habitation site, 15WA171, Late Woodland/Mississippian Triangular cluster point. Of the two rockshelter sites, one (15WA168) was of an unknown prehistoric age and the other (15WA176) was occupied during the Late Archaic and Middle Woodland periods. The final site discovered during this survey, 15WA175, was a historic farm that also contained a grist mill. Four sites, 15WA168, 15WA171, 15WA175, and 15WA176 were considered to be potentially eligible for listing on the NRHP.

4.0 FIELD METHODS

4.1 Background Investigation

Prior to field investigations, the OSA"s site files and GIS database were queried to determine if any archaeological sites had been recorded within the APE or if archaeological surveys had been conducted within the project ROW. In addition to the one site within the APE, 15WA353, the review showed there was the potential for small to moderate sized prehistoric open habitations, historic farms, and rockshelters within the APE.

Historic maps, especially those that showed structures, were also consulted. The purpose was to alert the field crew to areas with a high potential to contain historic sites. The maps that were examined included the Warren County atlas (Beers 1877), the 1923 USGS 15 minute Brownsville quadrangle, the 1937 Warren County Highway and Transportation map, the 1958 Reedyville 7.5 minute quadrangle, and the 1959 Bowling Green North 7.5 minute quadrangle. In general, these maps showed that relatively few structures have existed in this area. The maps were also helpful in narrowing the occupation spans for the historic sites identified during the survey.

4.2 Field Methods

Phase I field investigations were conducted in accordance with Secretary of the Interior"s *Standards and Guidelines for Archaeology and Historic Preservation* (Federal Register, Vol. 48, No. 190, 1983), and the KY SHPO"s guidelines presented in *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2001).

Except for the 95.0 ac (38.4 ha) where landowners denied access and the 34.9 ac (14.1 ha) that was examined previously (Knopf et al. 2010), the East C Alternate APE was visually inspected during the pedestrian survey. The corridor was walked and examined for direct evidence of archaeological sites, such as structural foundations, refuse dumps, wells and cisterns, gravestones, quarry pits, and earthen and stone mounds as well as caves, chert outcrops, benches, rock faces, and rock overhangs that may have been utilized by prehistoric or historic groups.

Level (<20 degree slopes) undisturbed areas with less than 50 percent surface visibility were subjected to shovel test probe (STP) excavation at 20 m (66 ft) intervals. Shovel test probes were also excavated along banks close to spring outlets, where soils were not visibly deflated or affected by an abundance of stone outcrops. STPs were excavated on the cardinal directions around sink holes.

Each STP measured approximately 30 centimeters (cm) (12 in) in diameter. They were excavated to a minimum depth of 30 cm (12 in) below surface (bs), or until a distinct culturally sterile subsoil or bedrock was encountered. The soil from each STP was screened through ¼-inch (in) mesh hardware cloth. The wall of each STP was examined for artifacts as well as soil color and texture changes that might indicate the presence of intact cultural deposits. When the inspection was complete and the relevant data was recorded, the hole was filled, tamped, and the sod replaced.

When artifacts were found in an STP the interval between excavations was narrowed to better define site boundaries, artifact concentrations, and variations in stratigraphy. Notes were taken for each shovel probe within the site recording the depth, color, texture, artifact content of each

soil strata, and other pertinent information. The shovel test data was recorded on forms and orientated to a geo-referenced 66-ft (20-m) grid that was established across each field site. Shovel test probes were assigned coordinates based on a NAD27 UTM grid as determined by a hand-held global positioning system (GPS) device. Artifacts from each STP were placed in a bag labeled with the appropriate provenience information.

Areas with good surface visibility were visually inspected by walking transects spaced no more than 20 m (66 ft) apart. The ground surface was inspected for artifacts, soil discolorations, and other indications of human habitation. If artifacts were found, 10-m square collection blocks were established at 10 to 20-m intervals across the site. Each was assigned a unique number and the center point was recorded using a hand-held GPS device. All artifacts within each block were collected and placed in a bag labeled with the appropriate provenience information. Shovel probes were excavated as needed to document the soil profile and look for evidence of intact archaeological deposits.

At rock overhangs, all areas where the ground surface was exposed were inspected for artifacts and indications of previous looting activity. Shovel probes were excavated close to the drip-line of the overhangs and inspected for artifacts and stratified soil deposits that would indicate cultural activity and utilization of the shelter. Due to the complexity of rockshelters resulting from their shape, roof fall, and other factors, the location of surface collection areas and STPs was determined on a case-by-case basis.

Sketch maps were prepared for each site and isolated find located during the survey. These maps depicted major cultural and landscape features, the distribution of STPs or surface collection locations, artifact concentrations, and other elements critical to describing and interpreting the site. Photographs were also taken at each site.

An analysis of the artifacts recovered the archaeological sites and isolated finds is presented in **Chapter 5.0**. Descriptions of the sites and isolated finds recorded during this survey are presented in **Chapter 6.0**.

5.0 MATERIALS RECOVERED

5.1 Introduction

This section presents the analytical procedures and descriptive categories utilized to analyze the cultural materials recovered from the archaeological sites identified during the investigation of the East C Alternate corridor. Cultural artifacts, the material remains of human activities, are the principal means by which archaeological sites are identified during field investigations. The artifacts lost and discarded by prehistoric and historic groups at a site serve as material markers of their activities. For prehistoric groups, these artifacts may include stone tools and lithic manufacturing debris as well as pottery, bone, and other organic remains. For later historic groups, artifact assemblages may include domestic and kitchen wares such as container glass, cooking utensils, and glazed ceramic dishes, as well as personal items such as clothes fasteners, tools, and shoe parts, among others. Historic sites may also yield architectural debris such as window glass, nails, brick, and roofing shingles.

The typological categories presented below are for both prehistoric and historic artifacts. The assemblages from three sites (15WA181, 15WA182, and 15WA183) consisted entirely of prehistoric artifacts. Three sites (15WA186, 15WA178, and 15WA180) yielded only historic artifacts. The inventories from remaining five sites (15WA353, 15WA177, 15WA179, 15WA184, and 15WA185) contained both prehistoric and historic materials. All nine isolated finds were prehistoric artifacts. The typological categories for the 160 prehistoric and 154 historic artifacts recovered during the survey are presented below.

5.2 Prehistoric Artifact Analysis

Sites 15WA353, 15WA177, 15WA179, 15WA181, 15WA182, 15WA183, 15WA184, and 15WA185 and isolated finds 1 through 9) all yielded prehistoric cultural material. The analysis of prehistoric cultural materials recovered from a site can serve a number of purposes. Certain key artifact types are indicative of when a site was occupied. These same artifacts may also be indicative of how these early peoples were related to other contemporary groups. A detailed analysis of the artifacts recovered from a site may also indicate what types and ranges of activities were carried out at a locality. The artifact analysis, in conjunction with other observations such as the physical setting and the presence or absence of cultural features and midden, is important in assessing the significance of a given site.

The analytical schemes used to classify the prehistoric artifacts are presented below. Discussions of the artifacts from each site including frequencies, spatial distributions, and the cultural, temporal, and behavioral implications of the assemblage are presented in **Chapter 6.0** under the corresponding site heading.

The analysis of the prehistoric artifact assemblage was designed to address four critical issues:

1) Patterns of resource utilization through identification of lithic raw material types;
2) The range and diversity of activities conducted at the site through the classification of the artifacts into descriptive categories based on morphology and perceived function;
3) The various stages of the lithic reduction sequence represented at each site through the analysis of the debitage recovered; and
4) The period of occupation and cultural affiliation of each site or component through the comparison of temporally diagnostic artifacts with established types.

5.2.1 Raw Material Categories

As part of the analysis, each lithic artifact was visually examined macroscopically or with a 15x hand lens in order to identify the raw material from which the artifact was made. Identification of the raw materials facilitates inquiries into procurement strategies, curation behavior, and catchment range. Drawing from written descriptions and a type collection maintained at AMEC's Louisville office, the following raw material types were identified: Chalcedony, pebble chert, St. Louis/Ste. Genevieve chert, and Vienna chert.

Chalcedony - Identified as a dense white to tan solid colored material, the texture ranges from coarse to fine with a dull to waxy luster. Chalcedony may be available in the St. Louis formation south of the project area (Shawe 1963). One flake and one shatter fragment of chalcedony were recovered during this investigation.

Pebble chert - This chert can make up a significant portion of raw material in certain archaeological sites, particularly if the sites are near a creek or river where outwash from rock formations or glacial deposits is present. The same situation exists in areas which were once glaciated, where the cobbles may be present in soils. A final source of these cobbles may be in soils formed over a parent rock formation of sandstone or limestone that is breaking down, leaving the more durable chert cobbles as "floaters" in the soil. Unless they form from an *in situ* breakdown of a specific chert-bearing formation, cobbles are generally a blend of different chert types, and consist of a wide variety of colors, textures and inclusions. They are generally covered with a brown to orangish brown patina; however, white or off-white patinas are not uncommon (Cantin 2005:20). Pebble chert may be available in local streams and river. Two flakes and one piece of pebble chert shatter were identified during this investigation.

Ste. Genevieve chert - A high quality blue-gray chert that ranges in color from a translucent brownish gray to a deep bluish gray to almost black. This chert occurs locally in the Ste. Genevieve formation limestone, which is very similar to the St. Louis limestone (Shawe 1963). The major distinction between the two is the presence of platycrinites. St. Genevieve chert occurs in thin beds, lenses and stringers, but rarely as nodules. This chert is also fossiliferous, containing oolites, fenestrate bryozoans, and brachiopods (Gatus 2005:446-447). Thirty-five flakes and two shatter fragments of Ste. Genevieve were recovered during this investigation.

St. Louis chert - This chert occurs as both nodules and tabular bands near the top of the Mississippian aged St. Louis Limestone and are an abundant resource south of the project area (Gatus 2005; Shawe 1963). St. Louis chert in Kentucky changes to a very fine, high quality dark blue to gray hued chert that is sometimes similar in quality to Wyandotte. In addition to the less common green to greenish grey colors, this chert may also be dark red. Sixty-nine flakes, ten shatter fragments, two bifaces, and one core of St. Louis chert were identified during this investigation.

Vienna chert - This chert is a component of the Vienna Limestone formation found south of the project area and occurs in discontinuous beds and in nodular form (Shawe 1963). Its texture ranges from very fine to coarse and the interior colors are either deep blue-black or pinkish tan to light grayish tan (Gatus 2005:443-444). This chert may contain a large number of inclusions and internal fracture planes are common. Four flakes, one piece of shatter, and two bifaces of Vienna chert were collected during this field investigation.

5.2.2 Artifact Categories

A total of 160 individual prehistoric artifacts were recovered from the archaeological sites and isolated finds identified during the Phase I investigations of the East C Alternate corridor **(Table 5.1).** The artifacts recovered consisted of chipped stone artifacts and miscellaneous artifacts. The three categories of chipped stone artifacts recovered were debitage, bifaces, and cores. The miscellaneous artifacts consisted of charcoal, fauna, and unmodified chert manuports. It should be noted that the charcoal and fauna were found on prehistoric sites and were included in this inventory even though they could be of modern origin. The artifact categories used for the prehistoric artifact analysis are defined below.

Table 5.1. Prehistoric Artifacts Recovered by Site

Artifact Type	15WA353	15WA177	15WA179	15WA181	15WA182	15WA183	15WA184	15WA185	IF 1	IF 2	IF 3	IF 4	IF 5	IF 6	IF 7	IF 8	IF 9	Grand Total
Shatter	3						12											15
Flake	10	2	1	4	4	9	67	2	1	2	3	1	1	1	1	1	1	111
Biface: Preform 1		1																1
Finished							3											3
Core							1											1
Miscellaneous: Charcoal Sample	1																	1
Fauna							2											2
Unmodified Manuport							26											26
Grand Total	**14**	**3**	**1**	**4**	**4**	**9**	**111**	**2**	**1**	**2**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**160**

Debitage

Debitage is the gross category that includes flakes and shatter. These artifacts are by-products of chipped stone tool manufacturing and show no evidence further use or modification (Crabtree 1982). Lithic debitage is generally ubiquitous at prehistoric sites and forms the bulk of most assemblages. The debitage recovered from the archaeological sites and isolated finds is summarized in **Table 5.1**.

Flakes are defined as any piece of stone removed from a larger piece. Flakes generally exhibit a bulb of percussion and striking platform at their proximal end and a feathered or abrupt termination on their dorsal end (Crabtree 1982). Flakes also have distinct dorsal and ventral surfaces. The ventral surface is generally smooth with no other flake scars. The dorsal surface may be covered with cortex or may show the scars from prior flake removals. A total of 111 flakes were recovered from sites 15WA353, 15WA177, 15WA179, 15WA181, 15WA182, 15WA183, 15WA184, and 15WA185, as well as isolated finds 1 through 9.

Shatter includes angular fragments of lithic debris that have no discernable dorsal or ventral surface (Crabtree 1982). Shatter may result from the uncontrolled breakdown of material during

knapping or temperature extremes resulting from natural or cultural events. A total of 15 pieces of chert shatter were collected from sites 15WA353 and 15WA184.

While several methods of debitage analysis have been employed to examine issues relating to lithic technology (see Andrefsky 1998; Henry and Odell 1989; Odell 2003), all require an adequate sample of systematically collected material. Such is not the case for most assemblages obtained during Phase I survey, which often consist of less than 30 specimens and are frequently subject to collection biases resulting from artifact visibility, survey conditions, sampling intervals, and other factors (Plog et al. 1978:406). Given these issues, a simplified debitage analysis that involved the proportion of shatter, the presence/absence of dorsal cortex on flakes and the number of facets on flake striking platforms was implemented.

The debitage analysis for this project began by sorting shatter from flakes. **Shatter** (n=15) was sorted into raw material groups and counted. While shatter can be generated at anytime during the reduction process, it is most commonly associated with material testing and the initial lithic reduction (Bradbury and Carr 2004; Root 2004:73). It is, therefore, is a potential indicator of primary reduction activities.

The **flake** analysis (n=111) began by separating the artifacts into raw material types, and continued by recording the presence or absence of cortex on the dorsal surface and the number of facets on the striking platform. For this analysis, the term “cortex” is used generically and refers to any naturally occurring rind on the outside surface of chert. It has been demonstrated that the presence of cortex on flakes is a good indicator of early stage reduction activities. This is because most, if not all, of the cortex is frequently removed during the initial flake removals. Activities that may be inferred from the presence of cortical flakes include material testing and early stage reduction (Andrefsky 1998:114; Mauldin and Amick 1989: 70; Odell 1989:185; Magne 1989:17).

The cortex was also separated on the basis of whether it was derived from primary or secondary context. Primary context cortical flakes were most likely obtained at or near a bedrock source. Secondary context cortical flakes have been mechanically or chemically and suggest procurement from fluvial or other similar settings (Luedtke 1992). This information can be used to examine procurement patterns.

The number of facets on the striking platform is another attribute that utilized for this analysis. The striking platform is the surface where force was applied to detach a flake. Striking platform facets represent small flakes that were removed from the edge of the artifact to help direct the size and angle by which a larger flake will be removed. Flake scars were recorded as platform “facets” if they extended all the way across the striking platform from the edge to the bulb. Flakes that were limited to the platform edge were not counted as facets. The number of facets was broken into three groups; absent, 0-1 and 2 or more.

Striking platform facets are widely viewed as one of the most useful characteristics for assessing debitage assemblages. They are particularly useful for distinguishing between core and biface reduction technologies (Bradbury and Carr 1995, 1999; Odell 2003:126; Tomka 1989:146-147). The utility of this attribute comes from the fact that more edge preparation is required for the successful removal of flakes from a biface than from a core. Because of this, over 99 percent of flakes derived from core reduction will have one or no facets on their striking platform (Bradbury and Carr 2004). Therefore, the exclusive or nearly exclusive presence of platforms with 0 to 1 facets in an assemblage suggests a dominance of core reduction debris.

Flakes with two or more facets are rarely generated during core production. While bifacial reduction also generates flakes with 0 to 1 facets, those with two or more facets on the striking platform are produced even during the production of early stage blanks (Bradbury and Carr 1995, 1999, 2004; Odell 2003:126; Tomka 1989:146-147). As a result, the presence of flakes with multifaceted platforms can be used to infer that an assemblage contains some proportion of biface reduction debris. Of course, the reliability of using platform facet counts or any other attribute to make inferences is dependent on the sample size and method by which the assemblage was obtained.

Cores

A core is a nucleus of material from which one or more flakes have been detached (Crabtree 1982:30; Faulkner and McCollough 1973:80). The flake removal may be patterned, as in the case of Middle Woodland blade cores, or random, as in the case of amorphous cores. Though cores can be bifacial, there does not appear to be intent to create a bifacial tool. Rather, cores are the byproduct of the production of useable flakes. This has been supported by microware studies, which show that cores were rarely utilized (Yerkes 1987). Since cores are a by-product of tool production, they should rightfully fall under the classification of debitage. However, they are traditionally found in sections describing chipped stone tools. A single core was recovered from 15WA184 (**Table 5.1**).

Tested cores have three or fewer negative flake scars. Based on the small number of flake scars, it is presumed that the raw material was found unsuitable for further reduction and discarded. It is also possible that the core was discarded or lost after the desired flake was removed.

Bifaces

Bifaces are implements that have two distinct sides or faces, both of which have negative flake scars that meet along a common edge (Crabtree 1982:16). These artifacts have the appearance of patterned reduction with the goal of creating an implement with a bifacial working edge. When possible, bifaces were classified in three separate ways, reduction sequence type, descriptive/functional type, and diagnostic type. A total of four bifaces were recovered during this survey (**Table 5.1**).

Reduction Sequence Types

In the reduction sequence classification bifaces were assigned to one of five types defined by Johnson (1989). Going from early to late stage reduction the types include blank, preform 1, preform 2, and finished. One preform 1 and three finished bifaces were recovered during this survey.

Preform 1 bifaces represent the second stage in the reduction sequence following the manufacture of a blank. At this point, the emphasis is beginning to shift from forming the initial bifacial edge to thinning the biface, removing the remaining cortex, and smoothing the two faces (Whittaker 1994:202). The lateral margins of these tools have been completely worked and little cortex typically remains. The edges have a wavy or sinuous appearance as they have not been straightened by fine percussion (Johnson 1989). The shape of the preform I biface is more defined than in the blank and the length is generally greater than the width. They are also relatively thick with typical width-to-thickness ratios of only 2:1 (Whittaker 1994:202). One medial preform I fragment was recovered from 15WA177 (**Figure 5.1**).

Figure 5.1. Bifaces recovered from the project area.
(A) Medial preform I fragment, Vienna chert (15WA177, STP N21.5), (B) Proximal finished biface fragment, St. Louis chert (15WA184, Controlled Surface Collection 10), (C) Proximal finished biface fragment, St. Louis chert (15WA184, Controlled Surface Collection 4), (D) Finished biface (Kanawha Stemmed PP/K), St. Louis chert (15WA184, STP K82).

Finished bifaces can be morphologically similar to preform 1 and preform 2 type bifaces, but generally have more refined appearance. What distinguishes the finished biface is that a haft element is present on the distal end of the artifact (Johnson 1989). These artifacts are commonly classified as projectile point/knives (PP/Ks), drills, etc. and represent the final stage in the biface reduction sequence. Three finished bifaces were recovered from 15WA184 (**Figure 5.1**).

Descriptive/Functional Types

When possible, bifaces were assigned to descriptive/functional categories. The purpose was to help identify activities carried out at the site and to facilitate comparison with other assemblages. The only descriptive/functional type identified during this investigation, projectile point/knives, is defined below.

Projectile point/knives, or PP/Ks, generally have a relatively high width-to-thickness ratio and have retouched margins. They will generally have a distinct hafting element, though this is not always the case. PP/Ks are often used as diagnostic artifacts since they can generally be assigned to chronological periods and cultural traditions based on their morphology. These artifacts were presumably hafted and used as spear, dart, arrow points, or as knives. Two proximal finished biface fragments that probably represent PP/Ks and one nearly whole PP/K were collected from 15WA184 (**Figure 5.1**).

Diagnostic Types

Finished bifaces were examined for diagnostic attributes that would help with the assignment of the specimen to a defined temporal type. Standard works, especially Justice (1987), were consulted. The one diagnostic point type recovered during the investigation, a Kanawha Stemmed point from 15WA184, is defined below.

Kanawha Stemmed points are characterized by a small triangular blade with a short and rounded base, which has a shallow bifurcation. The blade edges vary from straight to incurvate with a shoulder projection (Justice 1987:95). Kanawha points are found at sites dating to the ca. 6200 to 5800 B.C. (Early Archaic) time frame (Justice 1987:95). The Kanawha Stemmed point collected from 15WA184 is shown in **Figure 5.1** and the metric attributes are presented in **Table 5.2**.

Table 5.2. Diagnostic Biface Metric Data*

Site No.	Prov.	Diagnostic Type	Segment	Raw Material	Max Length	Max Thickness	Max Width	Neck Width	Basal Width	Blade Length	Shoulder Width	Stem Haft Length	Temporal Period
15WA184	STP K82	Kanawha	Proximal-Medial	Vienna	-	6.02	25.21	10.46	13.21	-	25.21	-	Early Archaic

*Metric data is in millimeters. No measurement made if portion with attribute was missing.

Miscellaneous Artifacts

Three types of miscellaneous artifacts were recovered during the survey. These included fauna, charcoal, and unmodified chert manuports. The fauna and charcoal may well be from the modern era. However, they were included in this section because they were found on prehistoric sites. Faunal remains were separated into gross categories such as mammalian, avian, reptilian, amphibian, piscean, and unknown, and counted. The charcoal was examined with a 15x hand lens to try and sorted into wood, non-wood, and unknown, and weighed.

Manuports are unmodified lithic raw materials that not known to occur at a particular location naturally and, thus, are presumed to have been brought in by humans. Manuports were separated into gross material types and counted.

5.2.3 Prehistoric Artifact Inventories for Sites and Isolated Finds

This section will discuss the prehistoric artifact assemblages recovered and analyzed from each site examined during the Phase I survey of the East C Alternate corridor. The artifacts are listed by site in **Table 5.1** above. The flakes recovered during the survey are listed by attribute and site and isolated find in **Table 5.3** below. Historic artifacts recovered from these and other sites are presented later in this chapter. Discussions regarding the context of the artifacts and within each site and site interpretations are presented in **Chapter 6.0.**

Site 15WA353
The revisit of site 15WA353 during the Phase I survey resulted in the recovery of fourteen debitage and one charcoal sample. The debitage included four shatter and ten flakes. Raw materials included St. Genevieve chert (n=5), St. Louis chert (n=7) and Vienna chert (n=2). The presence of shatter and one cortical flake suggests that the lithic industry included some early stage reduction. The cortex on the one flake suggests the material was obtained at or near a bedrock source. The charcoal sample consisted of several small fragments of woody material that weighed a total of 2.5 grams (g).

15WA177
The prehistoric component at 15WA177 was represented by two St. Louis chert flakes and one Vienna chert preform I biface. The striking platform on both flakes was missing and neither had cortex on their dorsal surface. The preform 1 represents the early portion of the production trajectory. However, it is unknown if this piece was produced on-site or was a curated piece that imported from another location.

15WA179
The survey of 15WA179 resulted in the recovery of one flake of St. Louis chert. The striking platform was missing from this and there was no cortex on the dorsal surface.

15WA181
The survey of 15WA181 resulted in the recovery of four flakes of St. Louis chert. All four lacked their striking platform and none had cortex on their dorsal surface.

15WA182
The investigation of 15WA182 resulted in the recovery of three flakes of Ste. Genevieve chert and one of St. Louis chert. None retained their striking platform, but all four had cortex on their dorsal surface suggesting that some early stage lithic reduction took place at 15WA182. The type of cortex also indicates the material was obtained from at or near a bedrock source.

15WA183
The survey of 15WA183 produced three flakes of Ste. Genevieve chert and six of St. Louis chert. The striking platform was absent from all the flakes, but the cortex on two of the St. Louis chert flakes suggests that early stage reduction of materials obtained at or near a bedrock source took place at this site.

Table 5.3. Flake Attributes by Site and Isolated Find

Raw Material	Cortex	Platform Facets	15WA353	15WA177	15WA179	15WA181	15WA182	15WA183	15WA184	15WA185	IF 1	IF 2	IF 3	IF 4	IF 5	IF 6	IF 7	IF 8	IF 9	Grand Total
Chalcedony	None	Platform Absent							1											1
Pebble Chert	Secondary	Platform Absent							1											1
	None	Platform Absent							1											1
Ste. Genevieve	Primary	1 Facet									1									1
		Platform Absent	1				3		6											10
	Secondary	Platform Absent							6										1	7
	None	1 Facet											1					1		2
		Platform Absent	4					3	8											15
St. Louis	Primary	Platform Absent					1	2	1				1	1		1				7
	Secondary	Platform Absent							4											4
	None	1 Facet	1						3			1								5
		Platform Absent	2	2	1	4		4	36	2					1		1			53
Vienna	Secondary	Platform Absent										1								1
	None	Platform Absent	2										1							3
Grand Total			**10**	**2**	**1**	**4**	**4**	**9**	**67**	**2**	**1**	**2**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**111**

15WA184
The survey of 15WA184 resulted in the recovery of 83 lithic artifacts, two fauna, and 26 manuports. The chipped stone assemblage included 12 shatter, 67 flakes, one tested core, and three finished bifaces. The raw materials consisted of St. Genevieve chert (n=22), St. Louis chert (n=54), pebble chert (n=3), chalcedony (n=2), and Vienna chert (n=2). The cortical flakes were derived from both primary (n=7) and secondary contexts (n=11). The three flakes that retained their striking platform all had 0-1 facets. The presence of shatter, cortical flakes, a tested core all point toward early stage reduction activities. The three finished biface consisted of two non-diagnostic fragments that are probably broken PP/Ks, and one nearly whole Early Archaic Kanawha Stemmed PP/K. Twenty-six chert manuports were also recovered. There is no indication that chert outcrops at or near this location. Therefore, it is presumed these pieces were intentionally transported to 15WA184 by the prehistoric occupants. Drawing from the chipped stone evidence, these pieces may have been intended for reduction. The two fauna were from the order Mammalia and may well be of recent origin.

15WA185
The survey of 15WA185 produced two flakes made from St. Louis chert. Neither retained their striking platform nor was there any cortex on their dorsal surface.

Isolated Find 1
The Phase I survey of IF 1 resulted in the recovery of one St. Genevieve chert flake with no cortex or striking platform.

Isolated Find 2
The investigation of IF 2 produced an artifact assemblage consisting of one St. Louis chert flake with a 0-1 facet striking platform and one Vienna chert flake with secondary cortex.

Isolated Find 3
The survey of IF 3 resulted in the recovery one flake of Ste. Genevieve chert, one of St. Louis chert, and one of Vienna chert. One flake had a 0-1 facet striking platform and the one cortical flake was from a primary context.

Isolated Find 4
The investigation of IF 4 produced a single cortical flake of St. Louis chert from a primary context.

Isolated Find 5
IF 5 consisted of a single non-cortical flake made from St. Louis chert that also lacked its striking platform.

Isolated Find 6
IF 6 was a single St. Louis chert flake that lacked cortex and a striking platform.

Isolated Find 7
The survey of IF 7 produced one non-cortical St. Louis chert flake with no striking platform.

Isolated Find 8
IF 8 produced a single a non-cortical flake of Ste. Genevieve chert without a striking platform.

Isolated Find 9
The investigation of IF 9 produced a single flake made from Ste. Genevieve chert. The cortex on the dorsal surface indicated the material was probably obtained from a river or stream.

5.2.4 Prehistoric Artifact Summary

A total of 160 prehistoric artifacts were recovered from the archaeological sites and isolated finds located during the survey of the East C Alternate. Chipped stone artifacts dominated the inventory, comprising approximately 82 percent (n=131) of the prehistoric material. The only diagnostic artifact was the Early Archaic Kanawha Stemmed point found at 15WA184. Tools were also scarce and consisted of one core and four bifaces, three of were finished and represented PP/Ks. The remaining artifacts were in the miscellaneous category and included two fauna that may be of recent origin and 26 chert manuports. Finally, a 2.5 g sample of wood charcoal was recovered from site 15WA353.

Examination of the Reedyville and Bowling Green North geologic quadrangles (Shawe 1963, 1966) indicate the nearest potential bedrock sources of St. Louis chert, St. Genevieve chert, Vienna chert, and chalcedony are several miles south of the East C Alternate project area. Cobbles of these and other cherts are probably available in the Green River near the north end of the alternate corridor. Based on the presence of cortex from primary and secondary deposits, chert was obtained from both these source areas. Based on the flake data, early stage lithic reduction was a significant activity at sites in the survey area. However, flakes indicative of later stage reduction, especially those with multi-faceted striking platforms, are probably under represented. Nonetheless, the limited inventory from the prehistoric sites indicates that most were ephemeral encampments. The one possible exception may be site 15WA353 where more substantial cultural deposits may be covered by roof fall.

5.3 Historic Artifact Analysis

A total of 154 historic artifacts were recovered from eight of the sites within the East C Alternate corridor. Some were sparse artifact scatters consisting of less than 10 artifacts (sites 15WA353, 15WA178, 15WA180, and 15WA184), while others were more substantial assemblages (15WA186, 15WA177, 15WA179, and 15WA185).

As with the prehistoric analysis, the analysis of historic artifacts was primarily descriptive. The primary goals of the historic artifact analysis were to determine site function and age of occupation. To help achieve the analytical goals, artifacts were first grouped under functionally related categories. These functional categories were developed by South (1977) and are seen to reflect activities with which individual artifact types were generally associated. Artifacts from the Kitchen, Architectural, Firearms, Furniture, Activity and Other/Unidentified groups were identified during this survey (**Table 5.4**).

The assemblages were next divided into gross artifact types, which included but were not limited to ceramic, glass, metal, synthetics, structural fasteners, structural material, biological, and miscellaneous. These gross categories were further subdivided into classes such as stoneware, ironstone, bottle glass, flat glass, nails, mortar, and coal.

The artifact analysis also focused on determining the age of the site. Each artifact was examined for temporally diagnostic attributes. Studies by Edwards and Wells (1993), Jones and Sullivan (1989), Miller (1980, 1991), Noel Hume (1970), South (1977), and many others have

provided information on the manufacturing date ranges for a wide variety of artifacts. It has been demonstrated, however, that ceramic and glass artifacts provide the best temporal data.

Table 5.4. Summary of Historic Artifacts by Functional Group

Artifact Type	Frequency
Activity Group	
Battery Part	**1**
Cinder	**3**
Coal	**8**
Metal Band	**3**
Unidentified Lead	**5**
Unidentified Metal	**2**
Unidentified Metal Container Part	**5**
Wire	**3**
Architectural Group	
Cut Unspecified Nail	**4**
Late Cut Nail	**2**
Unidentified Nail	**2**
Wire Nail	**13**
Window Glass	**2**
Clothing Group	
White Metal Button	**1**
Firearms Group	
Shotgun Shell	**1**
Furniture Group	
Lamp Chimney	**6**
Kitchen Group	
Domestic Stoneware	**4**
Glass Bottle/Jar Machine-Made	**54**
Glass Tableware	**3**
Glass Undetermined	**2**
Ironstone/White Granite	**13**
Metal Bottle/Jar Lid	**2**
Whiteware	**10**
Other/Unidentified Group	
Unidentified Glass	**2**
Unidentified Plastic/Synthetic	**3**
Grand Total	**154**

There are several reasons why ceramic and glass artifacts are good chronological indicators. First, the decorative attributes of historic ceramics changed fairly rapidly over time, owing largely to changes in public taste. Second, after the early part of the nineteenth century, glass manufacturing technology changed fairly rapidly. This was due, in part, to public taste but even more so to technological innovations. Third, ceramic and glass items are usually abundant at historic sites, thus providing a large sample for analysis.

Ceramic items were first examined to determine the type of paste used in the manufacture of the artifact and the type of slip or glaze present. Each piece was then examined for decorative attributes, such as molded rims or decals. While paste, glazes, and slips can be used as broad chronological indicators (Greer 1981), decoration provides a much finer range of manufacture dates (Majewski and O'Brien 1987; South 1977:207-230).

Curved glass items were first broken down into color classes. As with ceramics, these can provide broad date ranges (Jones and Sullivan 1989; Newman 1970). In the case of amethyst glass (a.k.a. sun colored glass, solarized glass, manganese glass) the production dates are relatively narrow (1880-1925) and, thus, serve as good chronological markers (Newman 1970:74). Each piece was examined for manufacturing marks that might also provide information about the age of the artifact. Such marks include shape, mold seams, closure type, maker‟s marks, and neck treatment (Jones and Sullivan 1989, Lorrain 1968, Newman 1970, Miller and Sullivan 1984, Toulouse 1971).

The artifacts recovered from the sites within the East C Alternate corridor are discussed below first by South‟s (1977) functional group then by site assemblage. This is followed by a summary of the historic assemblages.

5.3.1 Architectural Group

The Architectural Group includes those artifacts associated with the construction and maintenance of structures, and includes nails, bricks, hinges, screws, and window glass to name a few. **Table 5.5** lists the 23 Architectural Group artifacts found during the survey and examples are found in **Figure 5.2.**

Table 5.5. Architectural Group Artifacts by Site.

Artifact Class	Artifact Type	Artifact Detail	Date Range	Reference	15WA186	15WA177	15WA178	15WA179	15WA185	Grand Total
Structural Fasteners	Nails	Cut Nail Unspecified	1790-1880	Nelson 1968		2			2	**4**
		Late Cut Nail	1835-1880	Nelson 1968		1			1	**2**
		Unidentified Nail	-	-				2		**2**
		Wire Nail	Post 1880	Nelson 1968	2	1	2	8		**13**
Window	Glass	Window Glass/Flat Glass	-	-		1			1	**2**
Grand Total					**2**	**5**	**2**	**10**	**4**	**23**

Nails

Like ceramics, nails form one of the most widespread categories of artifacts recovered from historic sites. As with many other materials, increasing industrialization had a major impact on the manufacturing of nails and associated hardware. Archaeologists have devoted considerable attention to nails in order to identify their chronologically significant characteristics (Nelson

1968). These are identified by manufacturing process (wrought, cut, wire) and, when possible, their size.

Wrought nails are the earliest form of iron nails, and were made by hand, usually in a local smithy or forge. Typically these nails are square or rectangular in cross section, and taper on all four sides towards the point. Wrought nails were in common use until approximately the 1830s and 1840s. No wrought nails were found during the survey.

Cut nails are stamped from a sheet of steel and consequently taper on two sides only. The artifacts show some variation between early and late forms. Early cut nails have a constricted shank just below the head, and were first produced in the late 1790s. Later cut nails are not constricted below the head, and were in general use by the late 1830s and continued to be popular into the 1880s. Cut nails are still made and used today for special purposes, but are not commonly used for building construction.

Wire nails are made by cutting hardened steel wire and are round in cross-section. Wire nails were first produced in the 1850s but were not commonly used until the 1880s. These are by far the dominant type manufactured and used today (Nelson 1968).

As can be seen from the following discussions both cut and wire nails were used over several decades. There are, therefore, not sensitive chronological indicators. However, they can be useful for determining more generalized time frames. The presence of cut nails suggests a mid- to late nineteenth century occupation. The presence of significant numbers of wire nails, on the other hand, indicates that the some portion of the occupation postdates the 1880s.

Two wire nails were collected from sites 15WA186 and 15WA178. Site 15WA177 yielded two cut unspecified nails, one late cut, and one wire nail. Two unidentified nails and eight wire nails were collected from 15WA179. Site 15WA185 yielded two cut unspecified nails and one late cut nail (**Table 5.5**). Collectively, the nails indicate occupations dating to the mid- to late nineteenth and late nineteenth through twentieth centuries. The nails provided no evidence that any of these sites predated the mid-nineteenth century.

Window Glass/Flat Glass

Flat glass fragments are presumed to have been used in window panes if no other function can be determined, such as for mirrors, table tops, picture frames, etc. Flat glass shards comprise an important, chronologically sensitive artifact type. During the eighteenth century, flat glass appropriate for windows was cut from large, flattened disks of hand blown glass. By the early nineteenth century, glass manufacturers produced broad glass that may be distinguished by a slight thickening toward the plate margin, one surface slightly more opaque than the other, and bubbles in the glass usually distorted in straight lines. In the late nineteenth century, machine-made glass, characterized by a uniform thickness, with occasional wavy lines of bubbles, was widely produced. In the early twentieth century, production of sheet pane glass eclipsed other manufacturing processes. This window glass was generally uniform in thickness and lacked imperfections.

Studies have demonstrated that measuring flat glass thickness can be a useful indicator of chronology (Ball 1983; Moir 1987; Roenke 1978). An estimate of the date when individual pieces of flat glass were manufactured was determined using a regression equation developed by Moir (1987). Single pieces of window glass were collected from 15WA177 and 15WA185. These two flat glass shards yielded a late nineteenth and an early twentieth century date (**Table**

5.6). It should be noted that the sample size was well below the minimum of 15 recommended by Moir (1987).

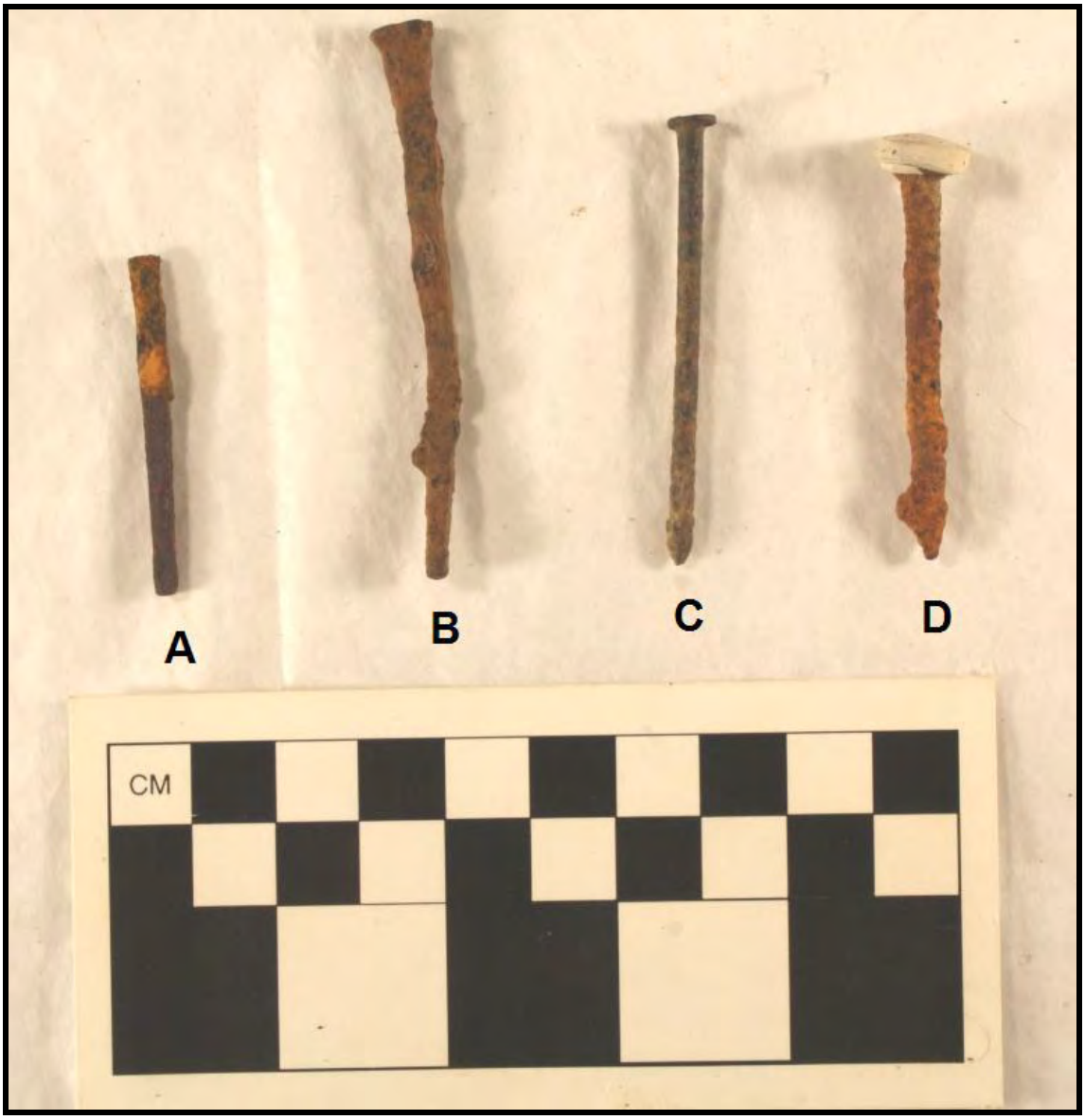

Figure 5.2. Representative Architecture Group artifacts.
(A) Cut unspecified nail (15WA177, STP N23), (B) Late cut nail (15WA185, General Surface Collection), (C) Wire nail (15WA179, STP NO36), (D) Wire siding nail (15WA186, STP 9).

Table 5.6. Window Glass Thicknesses by Site

Site	Thickness (mm)	Count	Date*
15WA177	1.87	1	1870
15WA185	2.31	1	1907

*Based on equation presented in Moir 1987

5.3.2 Kitchen Group

The Kitchen Group is comprised of artifacts associated with general domestic debris. The predominant artifacts of this class include ceramics, table and bottle/jar glass, faunal remains, and eating utensils. The major artifact categories in this group are described below.

Ceramics

Ceramics are one of the most important artifact categories on an historic archaeological site. Ceramics are chronologically sensitive, functionally specific, and were prone to changes in style and fashion. Because ceramics reflect trends in fashion, they can be used to discern economic and social status and class. As they have known functions, component information on consumption patterns, food preparation, and food and beverage storage patterns can be inferred. Ceramic form and function have also been linked to ethnicity providing another avenue of inquiry for archaeologists.

Typically, ceramics are divided into two groups: refined and coarse or unrefined earthenwares. Refined earthenwares were primarily used for dining, tea, and serving food, but they may also have been household utilitarian objects such as chamber pots, pitchers, and ewers. Coarse earthenwares were primarily manufactured for utilitarian functions involving food preparation and storage. Mixing bowls, pans, jugs, jars, crocks, and churns are examples of such forms. The three major categories of coarse earthenwares are redware, stoneware, and yellow ware.

The refined and coarse earthenwares recovered during the survey are described below. **Table 5.7** lists the Kitchen Group ceramic artifacts by site and examples are shown in **Figure 5.3**.

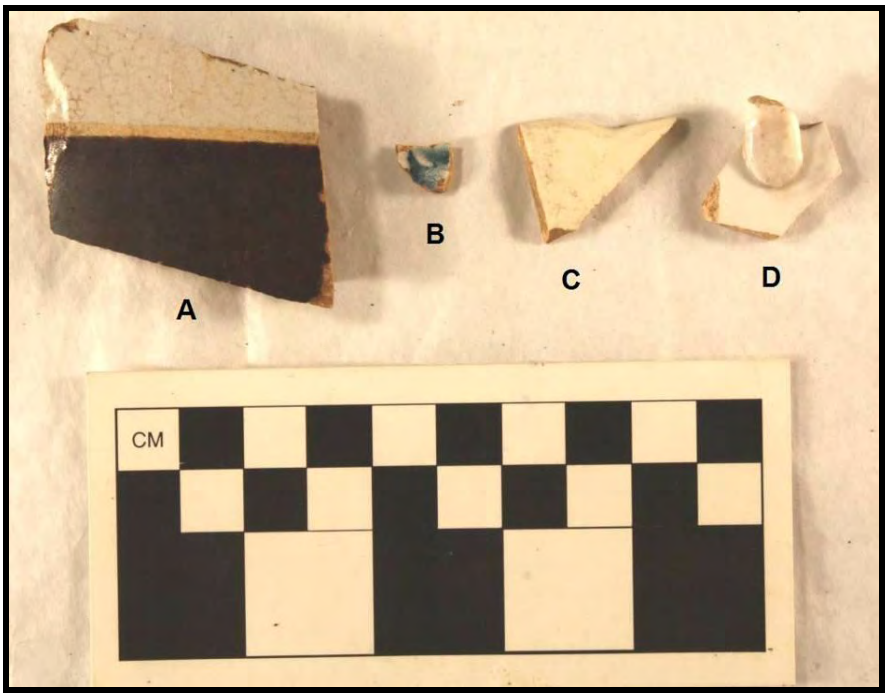

Figure 5.3. Representative Kitchen Group ceramic artifacts.
(A) Bristol and Albany glazed exterior and Albany interior domestic stoneware (15WA180, STP O4), (B) Transfer printed whiteware (15WA177, STP N23), (C) Molded whiteware (15WA179, STP LM37), (D) Undecorated white granite/ironstone (15WA185, STP O19).

Refined Earthenware

Refined earthenwares identified to ware type coupled with decoration have been and continue to be reliable temporal indicators. Ware types include creamware, pearlware, and whiteware. Static definitions of these wares are useful in establishing chronological control because they are associated with limited time periods. These wares were not static and changed over time as tastes changed, and as market competition forced potters to produce cheaper wares. For instance, creamware became lighter in color over time. White granite (often referred to as ironstone by archaeologists) evolved from the stone chinas and early ironstone in the 1840s, was vitrified during its early production and semi-vitreous after 1870. Therefore, defining white granite solely on vitrification becomes problematic. Consequently, color and decoration can be more important for classification than ware type.

Whiteware

Whitewares are non-vitreous, white-pasted earthenware usually having a clear or colorless glaze. Whitewares were first manufactured in England ca. 1800, became popular by 1820, remained in common use throughout the 1800s, and are still being manufactured today. The period of greatest popularity of whiteware occurred between 1830 and 1890 or 1900 (Majewski and O'Brien 1987:119-125; Miller 1980:16-17; Noel-Hume 1978:130-131). Whiteware occurs in virtually every decorative type of the nineteenth century, thus decoration type, color, style, and vessel form can be used to place whiteware within a tighter time frame. For instance, Miller et al. (1994:225) found printed wares in red, brown, green and purple common choices in potters' invoices to the United States from 1829 through the 1840s, and excavated assemblages from 1830 to 1850 are distinctive because of the great variety of color used to decorate vessels.

Recent refinements in dating whiteware using decoration and popularity (Fitts 1999; Miller et al. 1994; Wall 1994) enable tighter chronological placement of some whiteware decorative types. Early whiteware defines a decorative group that includes transfer printed, painted, cut sponged, flow-blue, annular banded, shell edge, and embossed edge pattern types. For the most part the popularity and production of these decorative types are limited by 1870 (Majewski and O'Brien 1987; Lofstrom 1976; Miller et al. 1994; George Miller and Amy Earls, SHA conference workshop, 1997).

One fragment of undecorated whiteware and one fragment of blue transfer printed whiteware were collected from 15WA177. Site 15WA179 yielded one molded and one undecorated piece of whiteware. Six fragments of undecorated whiteware were recovered from 15WA185. The decorated whitewares from these sites artifacts date from the mid- to late nineteenth century. The age of the undecorated wares could extend into the twentieth century (**Table 5.7**).

Ironstone/White Granite

Ironstone and white granite are terms used to "refer to semivitreous wares intermediate in hardness between earthenware and porcelain" (Majewski and O'Brien 1987:120; Miller 1993). Early ironstone, particularly "Mason's Ironstone China" was marketed to the United States and consists of a high quality body that imitated porcelain in hardness. This type of ironstone tended to have a faint bluish tint and had colorful decorative patterns somewhat imitative of oriental motifs (Majewski and O'Brien 1987:121). This type of ironstone, however, does not appear in reported archaeological assemblages and may be confused with pearlware or porcelain. It could also be possible that the expense of this early ware prohibited its consumption on many of the sites excavated to date. Early in the 1840s another plain undecorated ware begins to be

imported to America and is referred to by potters as white granite ware. This ware continues to be called ironstone by most archaeologists, but ironstone is the name that Charles Mason gave to his stone china in 1813 and has been used as a generic term for this type of ware.

According to Miller (1991:5) white granite changed throughout the nineteenth century. The wares from the 1840s through the 1860s are generally vitrified with molded marleys containing geometric or botanical motifs giving way to plain round shapes without molding by the 1870s (Miller 1991:5). By the late nineteenth century white granite also became less vitrified as the ware lost its appeal and manufacturers began to find ways to make the ware cheaper. One way to cut costs was to fire the ware at a lower temperature and to produce undecorated specimens rather than the molded ones of the mid-nineteenth century. Some white granite also has blue-tinted glaze, as well, which is known as Blue-Grey Ironstone. As is the case with most wares, any color decoration will be more important for classification than the ware type. It is only with undecorated vessels that identification as to ware becomes important in establishing a chronology. Also, by the nineteenth century, except for porcelain, all ceramics were marketed more by type of decoration than by ware type (Miller 1980).

15WA177 yielded three fragments of undecorated ironstone/white granite, and 15WA185 yielded nine fragments of undecorated ware (**Table 5.7**). Since these fragments are undecorated, they can only be assigned a broad time range of the mid-nineteenth to early twentieth century.

Coarse Earthenware

Coarse earthenwares include redware, stoneware and yellow ware. These coarse ceramics were used extensively for storage, such as jars, and food preparation, but occasionally as tablewares. Redwares predominated as storage vessels until the mid-nineteenth century, when salt and alkaline glaze stonewares became available through local potteries. Yellow ware was mass-produced in the factories of Liverpool, Ohio beginning in the 1830s and continues to be produced today. Coarse earthenwares are relatively thick, usually with a grey salt glaze or brown clay slip. These ceramics were generally less expensive than the refined earthenwares with white glazes. This investigation yielded only stoneware.

Stoneware

Stonewares are semi-vitreous wares, usually glazed, which were made in a great variety of thick, utilitarian forms. Stoneware paste ranges in color from red to buff to brown, and can turn grey during firing. Stoneware is primarily categorized by exterior surface treatment, the most common category of which is salt glazed. Stonewares were made in Europe by the seventeenth century, in England by the eighteenth century, and were in abundance in the United States, including Kentucky, by the mid-nineteenth century. In fact, stoneware effectively replaced redware as the utilitarian vessel type of choice. Consequently, the proportion of redware as compared to stoneware may be a general temporal indicator.

Due to the abundance of domestic stoneware manufacturers and the difficulty in attributing vessels to a particular manufacturer, the ware by its self is considered a poor chronological indicator on nineteenth century sites. However, the presence or absence of two common slips used as glazes, Bristol and Albany, are useful for dating purposes. Albany slip ranges in color from light brown to black, and was ubiquitous in the Midwest from 1830 to 1900 (Phillippe 1990:80). Bristol slip is white and was introduced into the United States by the 1880s, frequently

in combination with Albany slip until about 1920. Bristol slip on stoneware usually occurs alone on vessels after 1920 (Lebo 1987:132).

15WA180 yielded a single piece of stoneware with a Bristol glazed exterior and Albany slop interior. A fragment of Bristol glazed interior and exterior stoneware was recovered from both 15WA177 and 15WA179. One piece of unidentified exterior and Albany slip interior was collected from 15WA185. The Bristol glazed stoneware were common during the late nineteenth and early twentieth century, while the age of the Albany slipped shard could extend back to the mid-nineteenth century (**Table 5.7**).

Table 5.7. Ceramic Kitchen Group Artifacts by Site

Site	Artifact Class	Artifact Type	Artifact Detail	Color/ Decoration	Date Range	Reference	Total
15WA177	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Interior and Exterior	1880-1925	Raycraft and Raycraft 1990	1
		Ironstone/ White Granite	Undecorated	Undecorated	1845-1930	Majewski and O'Brien 1987	3
		Whiteware	Transfer Printed	Blue	1830-1870	Miller 2000	1
			Undecorated	Undecorated	Post 1830	Miller 1991	1
15WA177 Total							**6**
15WA179	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Interior and Exterior	1880-1925	Raycraft and Raycraft 1990	1
	Ceramics	Whiteware	Molded	Undecorated	1830-1880	Majewski and O'Brien 1987	1
			Undecorated	Undecorated	Post 1830	Miller 1991	1
15WA179 Total							**3**
15WA180	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Exterior and Albany Interior	1880-1925	Raycraft and Raycraft 1990	1
15WA180 Total							**1**
15WA185	Ceramics	Domestic Stoneware	Other	Unidentified Exterior Albany Interior	1830-1925	Raycraft and Raycraft 1990	1
		Ironstone/ White Granite	Undecorated	Undecorated	1845-1930	Majewski and O'Brien 1987	9
		Whiteware	Undecorated	Undecorated	Post 1830	Miller 1991	6
15WA185 Total							**16**
Grand Total							**26**

Container Glass

Container glass, like ceramic sherds, constitutes one of the most important components of a historic assemblage. Like domestic ceramics, these artifacts convey significant chronological, functional, and social information. Analysis of container glass offers an important source of data on the period of occupation at the site, the kinds of activities carried out at the site, and potentially the social status or ethnicity of the occupants. Glass containers can be dated most accurately from the manufacturing methods used to create the glass vessel (Baugher-Perlin 1982; Jones and Sullivan 1985). Typically, container glass is divided into three groups: mold-blown bottle glass, machine-made bottle glass, and table glass. Mold-blown glass vessels have distinctive marks, including hand applied lips and pontil marked bases. Vessels manufactured by machines have distinctive seams in the glass. Handmade containers were manufactured until circa 1870. Machine-made glass containers were mass-produced after about 1880. Table glass was also created via mold and was mainly used for dining.

The Kitchen Group glass artifacts found within the East C Alternate corridor were all machine-made bottle glass or table glass. **Table 5.8** lists these artifacts, and examples are found in **Figure 5.4**.

Machine-Made Bottle Glass

Due to technological innovations in 1884 and 1892, semi-automatic mechanical manufacturing of wide and small mouth containers was possible. The only difference between semi-automatic manufacture and automatic manufacture is the way the melted glass is passed to the machine. In semi-automatic manufacture skilled laborers introduce the glass into the mold, while in automatic manufacture the glass is introduced mechanically by a machine. It was not until the perfection of the Owen's machine in 1903 that fully automatic mechanical bottle manufacturing was possible. Bottles made using this process are readily identifiable as the Owen"s machine leaves a distinct mark on the base of the vessel. By 1917, 50 percent of glass containers were made using this fully automatic machine (Miller and Sullivan 1984). Vessels made using the Owen's machine are not found in archaeological contexts after 1970 (Miller and Sullivan 1984). Also, during the late nineteenth and early twentieth century, semi-automatic machines continued to be used and modified for automatic manufacture through the development of glass feeding devises like the Peeler Paddle Gob Feeder (Miller and Sullivan 1984). Vessels made by semi-automatic machines are indistinguishable from vessels made on most other machines, except the Owen's machine. The precision of automatic manufacturing enabled the standardization of continuous thread finishes, and screw caps replaced other forms of nonpressurized sealing.

The manufacture of glass jars was a direct result of, and benefited from, the technological advancements made in bottle production. The increased demand for better food packaging and food preservation created the popularity of home canning in the mid-1800s. Home canning was actually developed as a result of an 1810 contest sponsored by the French government to perfect long-term food preservation that was won by Nicholas Appert. However, it was not until the 1850s when tinsmith John Mason developed a metal screw cap that preserving jars were widely produced (Sives 1991). Along with the development of canning jars and their lids were jar lid liners made of glass and porcelain. By 1869, a lid liner was developed for Mason's metal screw caps, which greatly enhanced the preservation process. Utilizing the new technologies for producing bottles, jar manufacture increased greatly by the end of the 1800s.

A total of 50 shards of machine-made glass were recovered from 15WA353, 15WA177, 15WA178, 15WA179, 15WA180, and 15WA185. Four machine-made glass fragments with

embossing were collected from 15WA177, 15WA179, and 15WA185. An opaque white canning jar lid liner was recovered from 15WA184 (**Table 5.8**). All of the datable bottle glass was machine-made and dates from the very late nineteenth to twentieth centuries.

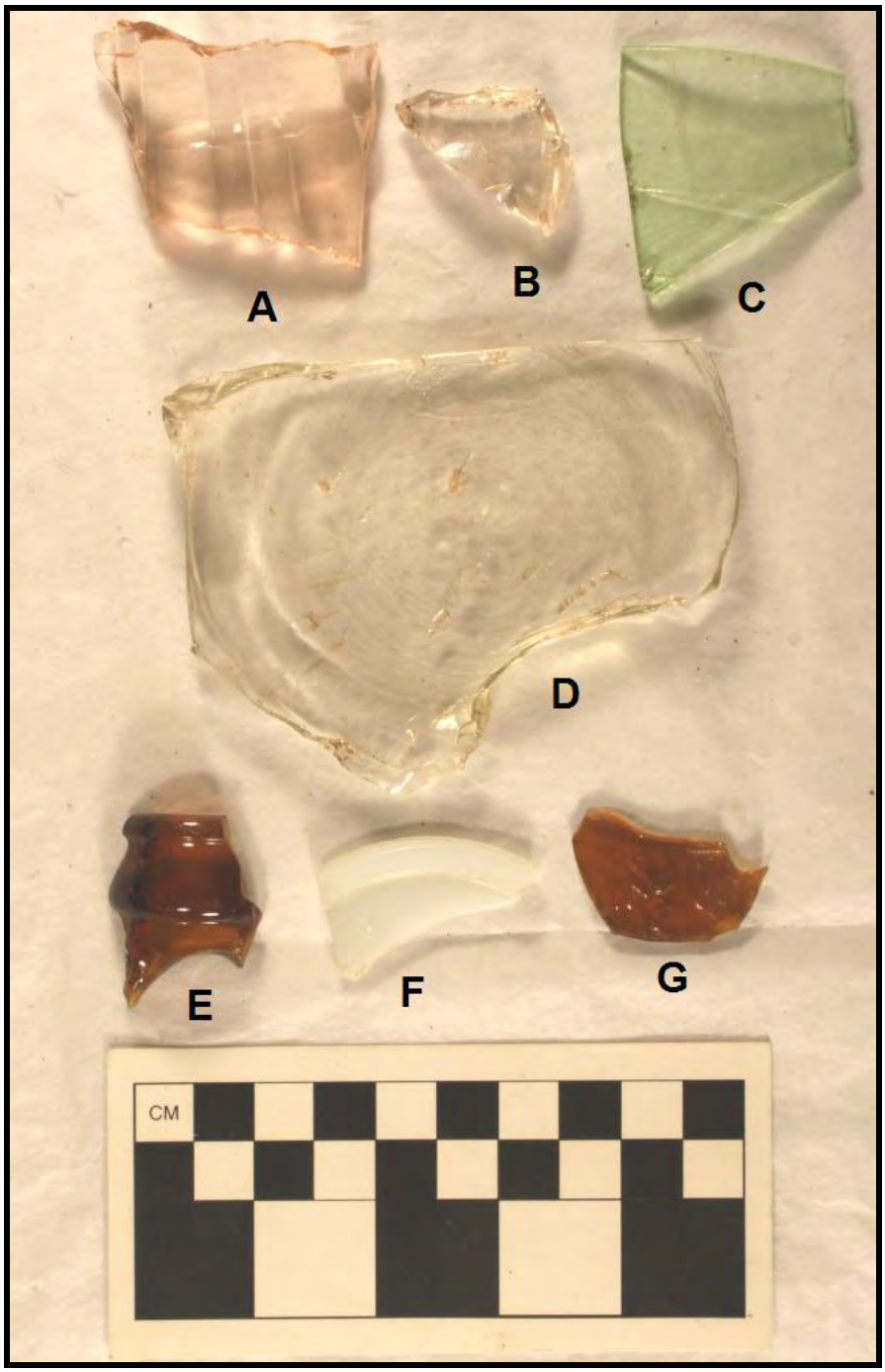

Figure 5.4. Representative Kitchen Group glass artifacts.
(A) Press molded tableware (15WA177, STP M22), (B) Press molded tableware (15WA185, General Surface Collection), (C) Optic molded tableware (15WA185, General Surface Collection), (D) Embossed machine-made bottle/jar (15WA185, STP O19), (E) Machine-made bottle/jar (15WA180, STP O4), (F) Machine-made lid liner (15WA184, Controlled Surface Collection 8), (G) Machine-made bottle/jar (15WA179, STP NO36).

Table Glass

The manufacture of glass tableware is a somewhat problematic area. In many cases discerning the manufacture type is not helpful in answering questions concerning chronology. Processes used to make tableware were used over long periods of time. These processes include free blowing, press molding, optic molding and pattern molding. Most of these methods are still used to a lesser degree today.

Although the process of press molding glass had been used to make doorknobs and stemware feet much earlier, press-molding hollowware became possible by the 1820s. Pressed glass made in the first few decades of the nineteenth century was often decorated with relief motifs, including classical busts, and a finely stippled or mat background that hid defects in the glass and mold seams. These highly decorated pieces, usually made using leaded glass, reflected light and were aptly referred to as "lacy glass". By the 1850s, improvements in manufacturing eliminated the need to hide defects. By the 1870s, the popularity of pressed glass increased as white, multi-colored, and other new shades became affordable due to improvements in the glass formula (Davis 1970; Deiss 1981:71-76; Innes 1976; McKearin and McKearin 1948). The new glass formula resembled leaded formulas and was used extensively in press molding after the 1870s. Consequently, press molded, leaded tableware is uncommon on American sites after 1870 (McKearin and McKearin 1948:395).

More elaborate combinations of decoration types and color became popular in press molded table glass after 1870 (Innes 1976). Carnival glass, for example, often given away as prizes at carnivals and fairs, was made by coating pressed glass with metallic paint to simulate more-expensive wares. Carnival glass was produced from the late 1890s to the 1930s (Deiss 1981:86).

Although the method of manufacture alone is not particularly useful for narrowing the chronological range, decorative style can be used for more specific temporal assignments. Decorative styles changed over time in table glass. For instance, after 1870 naturalistic designs featuring animals and flowers became popular eclipsing the geometric motifs of the earlier part of the nineteenth century (Innes 1976).

One fragment of pink press molded tableware was recovered from 15WA177. Site 15WA185 yielded one piece of light green optic molded and one colorless non-leaded press molded (**Table 5.8**). These artifacts span most of the nineteenth century and extend into the twentieth century.

Table 5.8. Glass Kitchen Group Artifacts by Site

Site	Artifact Class	Artifact Type	Artifact Detail	Color	Date Range	Reference	Total
15WA353	Glass	Bottle/Jar	Machine-made	Light Green	Post 1895	Jones and Sullivan 1985	1
15WA353 Total							**1**
15WA177	Glass	Bottle/Jar	Machine-made	Amethyst Solarized	Post 1895	Jones and Sullivan 1985	2
				Aqua			1
				Cobalt Blue			1

Table 5.8. Glass Kitchen Group Artifacts by Site

Site	Artifact Class	Artifact Type	Artifact Detail	Color	Date Range	Reference	Total
				Colorless Non-Leaded			6
				Opaque White			1
			Machine-made Embossed	Aqua			1
		Tableware	Press Molded	Pink	1820-1920	Jones and Sullivan 1985	1
		Undetermined Glass	Unidentified	Colorless Non-Leaded	-	-	1
15WA177 Total							**14**
15WA178	Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	Post 1895	Jones and Sullivan 1985	1
15WA178 Total							**1**
15WA179	Glass	Bottle/Jar	Machine-made	Brown	Post 1895	Jones and Sullivan 1985	6
				Colorless Non-Leaded			13
			Machine-made Embossed	Brown			1
		Undetermined Glass	Other	Colorless Non-Leaded	-	-	1
15WA179 Total							**21**
15WA180	Glass	Bottle/Jar	Machine-made	Aqua	Post 1895	Jones and Sullivan 1985	1
				Brown			2
				Colorless Non-Leaded			2
15WA180 Total							**5**
15WA184	Glass	Bottle/Jar	Lid Liner	Opaque White	Post 1869	Jones and Sullivan 1985	1
15WA184 Total							**1**
15WA185	Glass	Bottle/Jar	Machine-made	Amethyst Solarized	Post 1895	Jones and Sullivan 1985	1
				Aqua			6
				Colorless Non-Leaded			5
				Opaque White			1

Table 5.8. Glass Kitchen Group Artifacts by Site

Site	Artifact Class	Artifact Type	Artifact Detail	Color	Date Range	Reference	Total
			Machine-made Embossed	Colorless Non-Leaded			2
		Tableware	Optic Molded	Light Green	1820-1920	Jones and Sullivan 1985	1
			Press Molded	Colorless Non-Leaded	1870-1920		1
15WA185 Total							**17**
Grand Total							**60**

Other Kitchen Group Artifacts

This category includes all kitchen artifacts not accommodated by the above categories. Examples include faunal material, utensils, cooking vessels, metal cans, metal can pull-tabs, glass bottle crown caps, metal foil, and other wrapping materials, etc. Two metal bottle/jar lids were recovered from 15WA179 (**Figure 5.5, Table 5.9**). These lids probably date to the twentieth century, though a more specific range could not be determined.

Table 5.9. Other Kitchen Group Artifacts by Site

Artifact Group	Artifact Class	Artifact Type	15WA179	Grand Total
Kitchen	Metal	Bottle/Jar Lid	2	2
Grand Total			**2**	**2**

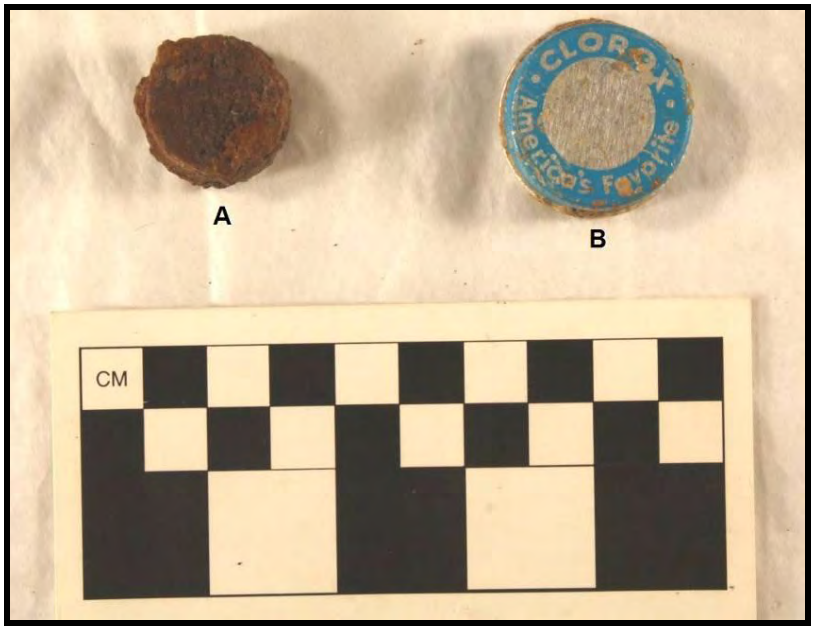

Figure 5.5. Representative Kitchen Group metal artifacts.
(A) Bottle/jar lid (15WA179, STP LM36), (B) Bottle/jar lid (15WA179, STP LM37).

5.3.3 Activity Group

Artifacts within the Activity Group include those associated with specific activities centered on work and leisure. Work-related activities include aspects of farming, blacksmithing, etc., while fishing is an example of a leisure activity. Woodworking tools, blacksmithing tools, machine parts, and plow or other farming equipment parts fall within the Activity Group (Barlow 1992; Blandford 1976; Henderson 2002; Russell and Erwin Manufacturing 1865; Schoeder 1970).

The majority of the Activity Group artifacts recovered from the project area were metal (**Figure 5.6, Table 5.10**). Site 15WA177 yielded two metal band fragments, one unidentified metal object, three wire fragments, three cinders, and five pieces of coal. Five unidentified metal container parts were recovered from 15WA178, and five unidentified lead fragments were recovered from 15WA179. One unidentified metal fragment was collected from 15WA180, and one metal band fragment was recovered from 15WA185**.** None of the these artifacts could be assigned to a specific or general time frame.

Figure 5.6. Representative Activity Group artifacts.
(A) Unidentified lead (15WA179, STP NO36), (B) Battery core (15WA179, STP LM36), (C) Metal band (15WA177, STP NO22), (D) Unidentified wrought metal (15WA180, STP O4).

Table 5.10. Activity Group Artifacts by Site

Artifact Class	Artifact Type	15WA177	15WA178	15WA179	15WA180	15WA185	Grand Total
Biological	Cinder	3					3
	Coal	5		3			8
Metal	Band	2				1	3
	Lead			5			5
	Unidentified	1			1		1
	Unidentified Wrought				1		1
	Unidentified Container Part		5				5
	Wire	3					3
Other	Battery Part			1			1
Grand Total		**14**	**5**	**9**	**1**	**1**	**30**

5.3.4 Clothing Group

This group is comprised of artifacts associated with clothing, such as buttons, collar studs, buckles, shoe leather, irons, eyelets, garter snaps, thimbles, straight and safety pins, and hook-and-eye closures. One white metal embossed button was recovered from 15WA185 (**Table 5.11**). The button is embossed "ELK BRAND", which is a clothing manufacturing company established in Nashville, Tennessee in 1924 (**http://www.elkbrand.us/**). A terminal date for this button is unknown. The button can be found in **Figure 5.7**.

Table 5.11. Clothing, Firearms, Furniture, and Other/Unidentified Group Artifacts by Site

Artifact Group	Artifact Class	Artifact Type	15WA177	15WA178	15WA179	15WA185	Grand Total
Clothing	White Metal	Button				1	1
Clothing Total						**1**	**1**
Firearms	Metal	Shot Gun Shell	1				1
Firearms Total			**1**				**1**
Furniture	Glass	Lamp Chimney		4	2		6
Furniture Total				**4**	**2**		**6**
Other	Glass	Unidentified			2		2
	Plastic/Synthetic	Unidentified		2	1		3
Other Total				**2**	**3**		**5**
Grand Total			**1**	**6**	**5**	**1**	**13**

5.3.5 Firearms Group

This category includes firearm parts, lead balls or bullets, cartridge casings, percussion caps, bullet molds, lead sprue, powder horn parts, and gunflints. This artifact group is an important one in cataloguing specimens recovered from nineteenth century and Civil War era sites. One brass shot gun shell cap with an indiscernible maker"s mark (**Figure 5.7**) was recovered from 15WA177 (**Table 5.11**).

5.3.6 Furniture Group

Furnishings include those items that commonly would be found in the interior of a domestic household. Mirror glass, pieces of furniture, and lamp chimney glass all fall into this category. Lamp chimney glass was widely used in most households until the electric light bulb was available (Barlow 1992; Thuro 1976). Four fragments of lamp chimney glass were recovered from 15WA178, and two pieces were recovered from 15WA179 (**Table 5.11**).

5.3.7 Other/Unidentified Group

This group contains artifacts that cannot be placed within a functional group. These artifacts are often fragmentary, rusted, or damaged and their function cannot be discerned. Two fragments of unidentifiable glass were collected from 15WA179. A total of 3 unknown plastic/synthetic fragments were recovered from 15WA178 and 15WA179 (**Table 5.11**).

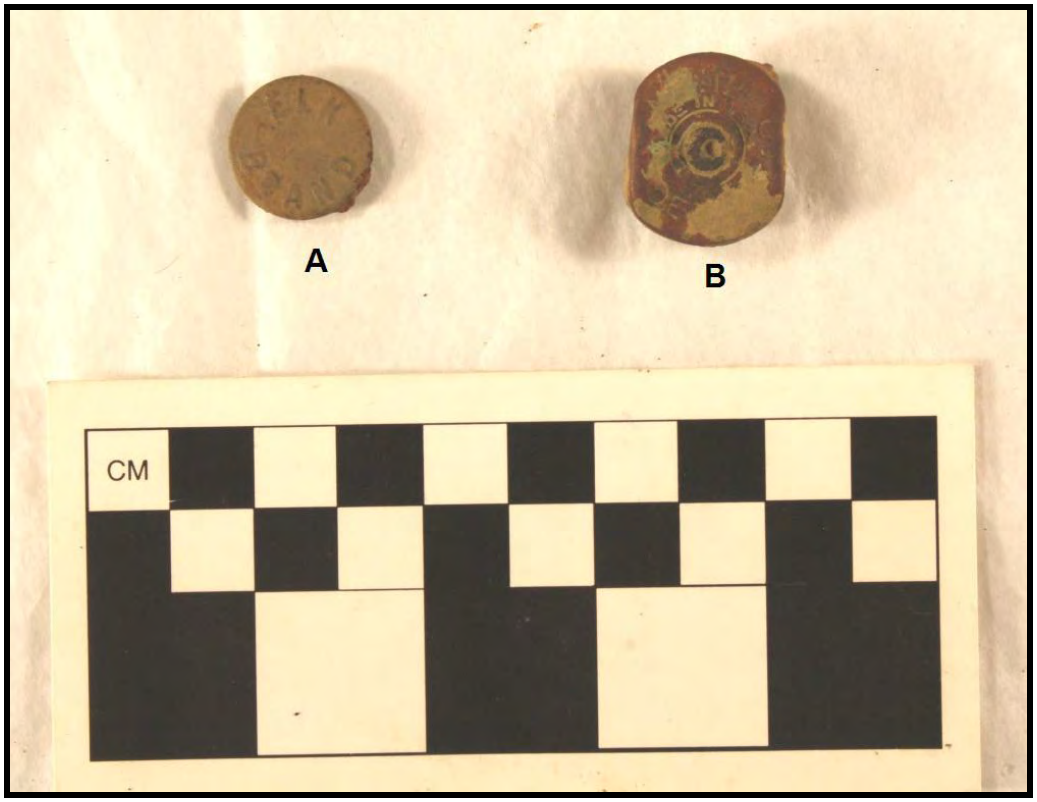

Figure 5.7. Representative Clothing and Firearms Group artifacts.
(A) Embossed button (15WA185, STP O19), (B) Shot gun shell cap (15WA177, STP NO22).

5.3.8 Historic Artifact Analysis Results by Site

The historic artifact assemblages recovered and analyzed during the Phase I survey of the East C Alternate corridor are discussed in this section. A total of 154 historic artifacts were recovered from sites 15WA353, 15WA186, 15WA177, 15WA178, 15WA179, 15WA180, 15WA184, and 15WA185. The assemblages from each site are discussed below and are tabulated in **Table 5.12.** The diagnostic historic artifacts recovered from these sites and their age ranges are presented in **Table 5.13.**

15WA353
The historic artifact assemblage from site 15WA353 consisted of one machine-made bottle/jar fragment with an age range of 1895 to the present.

15WA186
The survey of 15WA186 produced two historic artifacts. Both of the artifacts were wire nails which came into common use after ca. 1880 and are still used today. This single historic artifact is probably arbitrarily discarded trash.

15WA177
The historic artifact assemblage from 15WA177 produced 40 historic artifacts from the Activity, Architectural, Firearms, and Kitchen groups. The Activity group artifacts consisted of three cinders, five coal fragments, two metal band fragments, three fragments of wire, and one unidentified metal. The Architectural group artifacts were two cut unspecified nails, one late cut nail, one wire nail and one window glass/flat glass fragment. The brass cap of a shot gun shell was also collected for the Firearms group. The Kitchen group artifacts consisted of Bristol glazed domestic stoneware, three undecorated white granite/ironstone fragments, one undecorated whiteware, one blue transfer printed whiteware, 11 machine-made bottle/jar fragments, one embossed machine-made bottle/jar fragment, one press molded tableware, and one undetermined glass fragment. The remainder of artifacts recovered from this site was prehistoric.

Based on the relatively high artifact frequency and the variety of functional groups represented, this assemblage is consistent with a domestic habitation (South 1977). The mean date derived from the 23 artifacts with known manufacturing ranges was 1916.8. Based on Moir"s (1987) regression equation, the single piece of flat glass yielded a date of 1870. This may approximate the house"s construction date or a remodeling event.

15WA178
The survey of 15WA178 produced 14 historic artifacts from the Activity, Furniture, Kitchen, and Other groups. Five unidentified metal container parts were recovered as well as two wire nails. Four lamp chimney fragments were collected, and one machine-made bottle/jar fragment was also collected. Finally, two fragments of unknown plastic/synthetic were also recovered.

Though the assemblage is small, the variety of functional groups represented suggests debris resulted from a domestic habitation (South 1977). The sample of artifacts with known manufacturing ranges (n=3) was too small to provide a reliable mean date, but it was noted all from the late nineteenth and twentieth centuries.

Table 5.12. Summary of Historic Artifacts by Site

Artifact Group	Artifact Class	Artifact Type	15WA353	15WA186	15WA177	15WA178	15WA179	15WA180	15WA184	15WA185	Grand Total
Activity	Biological	Cinder			3						3
		Coal			5		3				8
	Metal	Band			2					1	3
		Lead					5				5
		Unidentified			1			1			2
		Unidentified Container Part				5					5
		Wire			3						3
	Other	Battery Part					1				1
Activity Total					**14**	**5**	**9**	**1**		**1**	**30**
Architectural	Structural Fasteners	Cut Nail Unspecified			2					2	4
		Late Cut Nail			1					1	2
		Unidentified Nail					2				2
		Wire Nail		2	1	2	8				13
	Window	Window Glass/Flat Glass			1					1	2
Architectural Total				**2**	**5**	**2**	**10**			**4**	**23**
Clothing	White Metal	Button								1	1
Clothing Total										**1**	**1**
Firearms	Metal	Shot Gun Shell			1						1
Firearms Total					**1**						**1**
Furniture	Glass	Lamp Chimney				4	2				6
Furniture Total						**4**	**2**				**6**
Kitchen	Ceramics	Domestic Stoneware			1		1	1		1	4
		Ironstone/ White Granite			3					9	12
		Whiteware			2		2			6	1
	Glass	Bottle/Jar	1		12	1	20	5	1	15	55
		Tableware			1					2	3
		Undetermined Glass			1		1				2
	Metal	Bottle/Jar Lid					2				2
Kitchen Total			**1**		**20**	**1**	**26**	**6**	**1**	**33**	**88**
Other/ Unidentified	Glass	Unidentified					2				2
	Plastic/ Synthetic	Other				2	1				3
Other/Unidentified Total						**2**	**3**				**5**
Grand Total			**1**	**2**	**40**	**14**	**50**	**7**	**1**	**39**	**154**

Table 5.13. Historic Artifact Manufacturing Dates by Site

Functional Group	Artifact Class	Artifact Type	Artifact Detail	Date Range	Reference	15WA353	15WA186	15WA177	15WA178	15WA179	15WA180	15WA184	15WA185	Total
Architectural	Structural Fasteners	Nails	Cut Nail Unspecified	1790 -1880	Nelson 1968		2						2	**4**
			Late Cut Nail	1830-1880			1						1	**2**
			Wire Nail	1880-Present	Nelson 1968		1	2	2	8				**13**
	Window	Glass	Window Glass/ Flat Glass	1870	Moir 1987		1							**1**
				1907	Moir 1987								1	**1**
Kitchen	Ceramics	Domestic Stoneware	Bristol Glazed	1880 - 1925	Raycraft and Raycraft 1990		1			1	1			**3**
			Unidentified	1800 - 1925									1	**1**
		Ironstone/ White Granite	Undecorated	1845 - 1930	Majewski and O'Brien 1987		3						9	**12**
		Whiteware	Molded	1830 - 1880						1				**1**
			Transfer Printed	1830 - 1870	Miller 2000		1							**1**
			Undecorated	1830 - 1960	Miller 1991		1			1			6	**8**
	Glass	Bottle/Jar	Lid Liner	Post 1869	Jones and Sullivan 1989							1		**1**
			Machine-made	1895-Present		1	12	1		20	5		15	**54**
		Tableware	Optic Molded	1820-1870									1	**1**
			Press Molded Non-Leaded	1870-1920									1	**1**
Grand Total						**1**	**23**	**3**	**2**	**31**	**6**	**1**	**37**	**104**

15WA179
The historic assemblage from 15WA179 had 50 total artifacts. Several artifact groups were identified at this site. The Activity group included three pieces coal, five unknown lead fragments, and one battery part. The artifacts collected from the Architectural group were eight wire nails. The Furniture group included two fragments of lamp chimney. The artifacts collected from the Kitchen group were ceramics, glass and metal. The ceramics included one fragment of Bristol glazed domestic stoneware, one molded whiteware, and one undecorated whiteware. In the glass category there were 19 machine-made bottle/jar fragments, one embossed machine-made bottle/jar fragment, and one undetermined glass fragment. Two metal bottle/jar lids were also recovered from this site. The Other group consisted of three unknown glass fragments.

The artifact frequency and range of functional groups indicate the artifacts from 15WA179 derived from a domestic habitation (South 1977). The 31 artifacts whose manufacturing ranges could be determined yielded a mean date of 1944.4. This is latest date of the three assemblages where the artifact sample was large enough to justify the calculation. While the mean date for 15WA179 could be skewed by the high frequency of wire nails and machine-made glass, there were only a couple of artifacts that would suggest a mid- or early nineteenth century component.

15WA180
The historic assemblage from 15WA180 had seven artifacts. One unknown metal fragment collected was from the Activity group. One Bristol glazed domestic stoneware from the Kitchen Group was recovered as were five machine-made bottle/jar fragments. The artifact sample is too small to determine if the assemblage is consistent with a domestic habitation. The limited number of artifacts with a known manufacturing range (n=6) dated to the late nineteenth and twentieth centuries.

15WA184
The survey of 15WA184 produced a single opaque white glass lid liner type that was first manufactured in 1869 and continued in common use until the mid-twentieth century.

15WA185
The historic assemblage from 15WA185 had 39 artifacts. Several historic artifact groups were identified at this site. One metal band was recovered from the Activity group. The Architectural group artifacts included two cut unspecified nails, one late cut nail and one window glass/flat glass fragment. One white metal embossed button was recovered from the Clothing group. The Kitchen group artifacts included one unglazed domestic stoneware fragment, nine undecorated White Granite/Ironstone, six undecorated whiteware, 13 machine-made bottle/jar fragments, one embossed machine-made bottle/jar fragment, one piece of optic molded tableware, and one press molded tableware.

The relatively large size of the sample and the range of functional groups are consistent with a domestic habitation (South 1977). The 37 artifacts with known manufacturing ranges yielded a mean date of 1910.5. This is the earliest date of the three sites for which the mean was calculated. An 1870 date was calculated for the single piece of flat glass using Moir"s (1987) regression equation. This could approximate the construction date or may be evidence of a remodeling event.

5.3.9 Historic Artifact Summary

A total of 154 historic artifacts were recovered from the nine archaeological sites investigated during the course of the survey of the East C Alternate corridor. The assemblages from site 15WA353, 15WA186, 15WA180, and 15WA184 contained fewer than ten artifacts making it difficult to determine the mean age of the inventory and site function. The limited inventories suggest that the materials were obtained from the margins of larger artifact scatters or that the sites represent special use or utilitarian areas.

The 15WA178 assemblage with its 14 artifacts was somewhat larger. It was noted that most of South"s functional groups were represented by at least one artifact. While this suggests the debris may have originated from a domestic habitation, the limited sample size makes this a tentative interpretation.

The largest assemblages were obtained from sites 15WA177, 15WA179, and 15WA185. The size of the assemblages and the variety of functional groups represented indicate these sites represent domestic habitations. The mean artifact manufacturing dates for these three sites ranged from the early to mid twentieth century. While it is possible that these sites were first occupied during the nineteenth century, the lack of mold blown bottles, pearlewares, creamwares, wrought and early cut nails, and other early artifacts makes it doubtful the sites were inhabited prior to the Reconstruction period. Additional information about the individual sites and the context from which the artifacts from all the sites were obtained is presented in **Chapter 6.0**.

6.0 SURVEY RESULTS AND SITE DESCRIPTIONS

6.1 Introduction

An overview of the project area including survey conditions and areas denied access is presented in **Chapter 1**. Specific surface conditions and other descriptive information for each archaeological site and other areas of cultural interest within the KY 185 East C realignment corridor are presented below. The field methods employed to identify and evaluate archaeological sites and other cultural resources within the project area proved to be effective, particularly given the light artifact density at many of the archaeological sites.

A total of ten previously unknown archaeological sites and nine isolated finds were identified and documented during the survey. Additionally, one previously recorded archaeological site (15WA353) was revisited. Of the 342.4 ac (138.6 ha) project area surveyed, approximately 4.9 ac (2 ha) were encompassed within the boundaries of the archaeological sites, which accounted for approximately 1 percent of the project area.

6.2 Soils

The project area can be divided into three distinct landforms; steep slopes, milder convex slopes, and gently sloping plateaus or broad saddle ridges. Brief discussions of the typical soils observed on the landform types within the project area and representative soil profiles are presented below.

The stratigraphy along the gently sloping plateaus, the agricultural fields, and the broad ridgetops was fairly consistent across these portions of the project area. Typical soil profiles consisted of approximately 25 cm (9.8 in) of medium brown (Munsell 7.5YR 4/4) to dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil overlaying distinct reddish brown (Munsell 5YR 4/4) to yellowish red (Munsell 5YR 5/6) clay subsoil that in some cases contained minor natural stone inclusions, such as degrading sandstone.

The mild slopes that buffered the more level plateau landforms from the steeper slopes featured generally shallow soils. Erosion has left, on average, between 10 to 15 cm (4 to 6 in) of medium brown (Munsell 10YR 4/3) to dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. Underlying the topsoil was a yellowish brown (Munsell 10YR 5/6) to dark yellowish brown (Munsell 10YR 4/6) clay or silty clay subsoil, with occasional degrading sandstone content. Many of these areas were along slopes that approached 20 degrees. On slopes over 20 degrees, opportunistic shovel probing was conducted where feasible to maintain understanding of the soil stratigraphy and investigate high probability areas for archaeological sites.

The rocky steeper slopes, located in the areas near the northern terminus of the ROW featured predominantly shallow and deflated soils with some slightly deeper soils scattered throughout on terraces and ridgetops. In areas where slopes leveled off, the typical topsoil would consist of approximately 12 to 20 cm (5 to 8 in) of medium brown (Munsell 10YR 4/3) silt loam overlaying a reddish brown (Munsell 5YR 4/4) clay or silty clay subsoil.

6.3 Karst Features

Karst landscape is shaped by bedrock that has been dissolved by groundwater. This type of landscape can be found in many areas of Kentucky, including Warren County. Notable karst features that were witnessed within the ROW for the KY 185 East C realignment project include

rock overhangs, sinkholes, and springs. Rock overhangs that are large enough to shelter one or more humans have the potential for prehistoric occupation. Multiple rock overhangs were sighted during the course of this survey and were tested for evidence of prehistoric occupation (**Figure 6.1**). Except for one previously recorded rockshelter site (15WA353), none of the overhangs showed evidence of habitation.

Figure 6.1. Uninhabited rock overhang observed within the project ROW, facing west.

Sinkholes were observed within the project area and represent areas where the underlying bedrock has collapsed, forming a rounded depression in the ground surface. Because the root cause of this collapse is the presence of groundwater, at times water may have been accessible to cultural groups and animals at the base of the sinkhole (Gatus and Maynard 1978). Where sinkholes were present in the project area, opportunistic shovel testing was conducted around the edges of the depression. Many of the sinkholes noted during the investigation have been used for trash disposal, leaving them choked with modern debris (**Figure 6.2**).

Figure 6.2. Historic trash in a sinkhole within the project ROW, facing south.

Caves are the most commonly recognized karst features and it is thought that they underlie much of South Central Kentucky. South Central Kentucky is home to Mammoth Cave, the longest known cave system in the world. Because of the relative stability and regulated temperatures provided by caves, they have been utilized as shelters by cultural groups throughout history. Only one cave was noted during this survey. Located within the boundary of site 15WA353, this cave is discussed in the site description later in this chapter.

6.4 Historic Period Structures

Three barns were located within the proposed ROW for the KY 185 East C realignment project. The majority were balloon-framed structures that consisted of a large crib with a central breeze-way and smaller attached lean-to cribs (**Figure 6.3**). They were roofed with corrugated metal, had dirt floors, and were covered with vertical wood siding. All the barns were constructed with wire nails. No artifacts, intact historic midden, or subsurface features were identified in the vicinity of the barns during the present investigation. Due to these factors, the barns were not considered archaeological sites. However, it should be noted that these buildings were only evaluated for their archaeological potential and no architectural assessments were conducted during this survey. Several occupied houses that appeared to date from the mid-twentieth century or later were also located within the proposed KY 185 East C Alternate ROW. Though later twentieth century artifacts were occasionally found in the proximity of these structures, there was no evidence of earlier or significant archaeological deposits.

Figure 6.3. Balloon-framed barn located within the central project ROW, facing north.

6.5 Archaeological Site Descriptions

6.5.1 Site 15WA353

Site Type: Rockshelter
UTM Coordinates: 0
Quadrangle: Reedyville 1958, photorevised 1979
Elevation: AMSL
Slope: 37 percent
Soil Type: FrC - Frondorf Silt Loam 6 to 12 percent slopes, RaF - Ramsey-Frondorf complex, 20-60 percent slopes
Visibility: Variable
Dimensions: 622.5 m^2 (0.15 ac), Variable Dimensions described in text
NRHP Eligibility Recommendation: Potentially eligible for listing on the NRHP. Phase II or Avoidance Recommended.

Site Description

Site 15WA353, a prehistoric rockshelter, was situated on a steep northeast-facing slope (**Figure 6.4**) covered with secondary growth woodlands overlooking an unnamed tributary of the Green River. Site 15WA353, was originally recorded by Vernon White in 1970 in a survey conducted to record the presence of prehistoric „hominy hole" features in the area. According to the site form, this site has not previously been assessed for NRHP eligibility. The site was first visited by AMEC archaeologists in 2010 to verify that it was outside of the first survey of the KY 185 realignment corridor. GPS points were taken but no other work was conducted as the site was not within the APE that was investigated in 2010 (Knopf et al. 2010). Due to changes in the proposed alignment, site 15WA353 is within the current project APE and was subjected to Phase I investigation.

The site consists of several parts. First is a large shelter with two open-faced chambers and ground water drainages seeping from several locations. The second part is a small cave situated at the back of a cleft caused by a massive stone block that detached from the cliff face sometime in the past. The third part consists of two auxiliary rockshelters approximately 30 m (100 ft) north along the cliff face. These two shelters are stacked one above the other. In addition to these, there was a small overhang immediately above the main shelter, as well as a small bench located between the main shelter and the two auxiliary ones. The site, including the three shelters, the bench, cave, and overhang, covers an area of approximately 0.7 ac (0.28 ha). The rock face where the site is situated consisted of bedded sandstone and conglomerate capped with limestone. This has left portions of the shelter wet in some areas due to water seepage.

The main shelter, originally identified in the site form filed by Vernon White as 15WA353 "A," consists of two chambers facing roughly north. The easternmost chamber (Chamber 1) is the smaller of the two and is approximately 26 m (85 ft) wide and averages 5m (16 ft) deep (**Figures 6.5** and **6.6**). It is 9 m (29.5 ft) deep at its maximum. The chamber is tallest, 4.6 m (15 ft), at the drip line and slopes steeply to the back where it is approximately 50 cm (20 in) high. This chamber contained approximately 130 sq m (1399 sq ft) of surface area. This chamber is very wet with an active stream flowing along its length. Ground water was also seeping from the back wall and ceiling of this chamber. The floor of this chamber consisted of gravels and mudstone fragments that have eroded from the walls and ceiling. Several large blocks of roof fall were present. One of these had a shallow „hominy hole" feature, approximately 5 cm (2 in)

deep, indicating the roof fall may have d been resting in place prior to some occupational episodes of this site. One shovel test was excavated in the interior of this chamber as the drip line was covered with stones. The shovel test had three soil strata, the uppermost of which was 5 cm (2 in) of dark grey (Munsell 10YR 4/1) silt and gravel. Stratum 2 was a strong brown (Munsell 7.5YR 5/6) silty clay extending from 5-30 cm (2-12 in) below surface. Stratum 3 was a very dark grey (Munsell 10YR 3/1) clay mottled with degraded fragments of mudstone excavated to a depth of 60 cm (24 in). No artifacts were recovered from this test and it rapidly filled with water that seeped in from the surrounding soil.

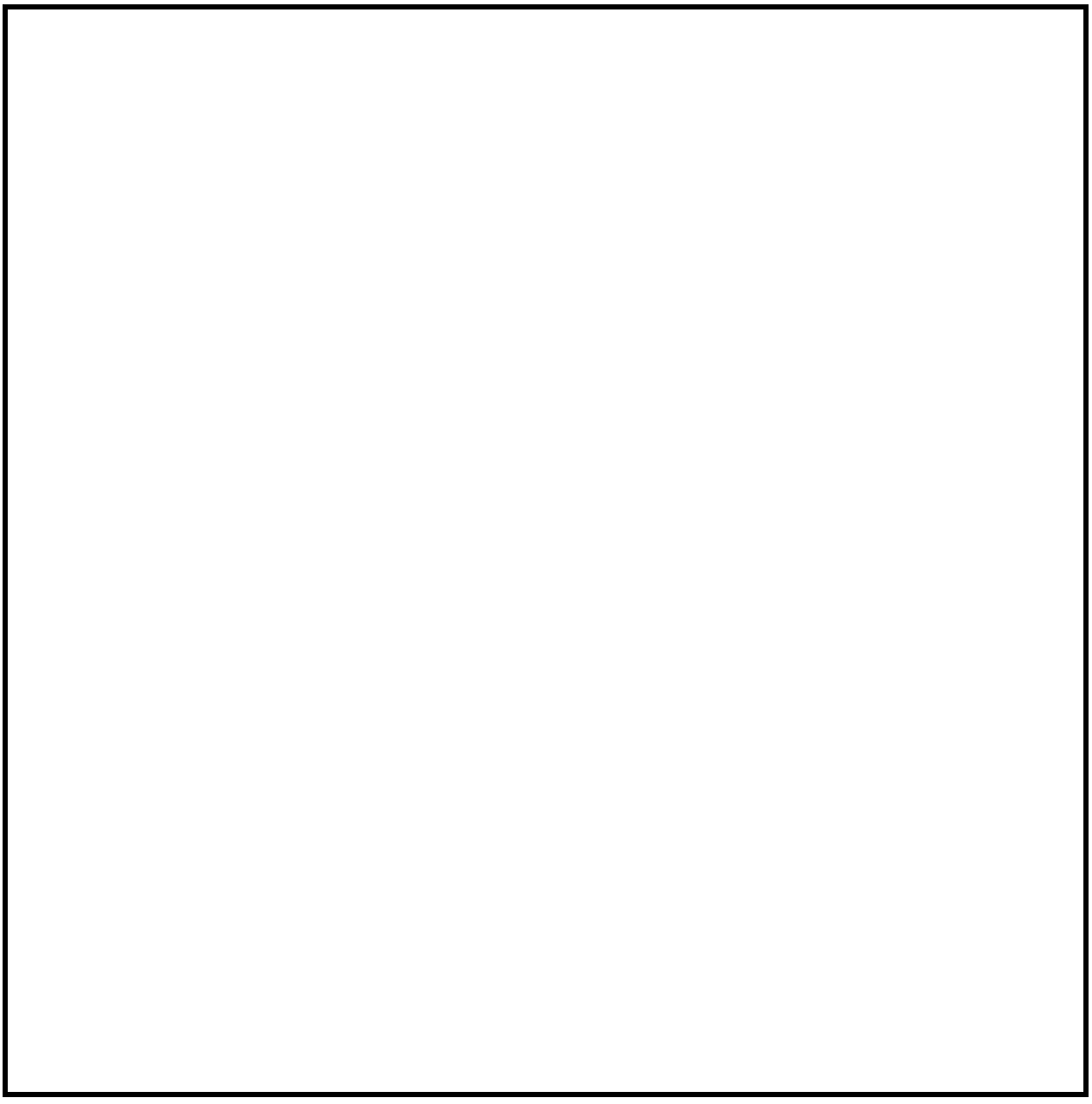

Figure 6.4. Map of Site 15WA353, showing its various elements and local topography (adapted from the Reedyville (1958, photorevised 1979) USGS quadrangle).

Chamber 2 was 23 m (75.5 ft) wide and 15 m (50 ft) deep at its maximum extent (**Figures 6.5** and **6.7**). At the drip line this chamber is 10.6 m (35 ft) high and it gently slopes to back where it is approximately 3 m (10 ft) high. This chamber contained approximately 345 sq m (3713 sq ft) of surface area. Unlike Chamber 1, Chamber 2 was largely dry with small seeps along the back wall at the east end. The small stream that originated in Chamber 1 extends to the west through Chamber 2 midway between the back wall and the drip line. It mainly flows beneath the extensive roof fall that lines the front of the shelter and extends close to the rear of the chamber. Between two of these large blocks of stone is a much smaller one with a „hominy hole" feature approximately 15 cm (6 in) deep (**Figure 6.8**). A small looter or animal hole was noted at the western end of Chamber 2, but did not appear to be very deep and no artifacts were noted in the spoil pile around it.

Two shovel tests were excavated within Chamber 2. Both were placed behind the roof fall toward the back of the shelter. None were excavated in front of the roof fall outside of the shelter because the area was covered by exposed rock. One of the shovel tests was excavated in an area of dark staining seen on the ground surface just south of the Chamber 2 „hominy hole" feature (**Figure 6.9**). This shovel test contained three strata, the uppermost of which was 5 cm (2 in) of black (Munsell 10YR 2/1) silt. While there were no discernable fragments of charcoal noted in this stratum it is surmised that there may have been a surface fire at this location. However, no feature was associated with it such as a pit or stone ring and no evidence of fired soil was present making it likely that the staining was from a relatively modern single use surface fire. Stratum 2 was a dark yellowish brown (Munsell 10YR 3/4) mixture of silt and sand extending from 5-15 cm (2-6 in) below surface. Stratum 3 was a dark yellowish brown (Munsell 10YR 3/6) clay mottled with degraded fragments of mudstone excavated to 50 cm (20 in) below ground surface. Several artifacts were recovered from this shovel test, the majority of which were from the upper part of Stratum 2. These artifacts are described later in the Materials Recovered portion of this site description.

The second shovel test within Chamber 2 was excavated on the western end of the shelter near the looter or animal hole. This test consisted of three strata, the uppermost of which was 10 cm (4 in) of dark brown (Munsell 10YR 3/3) silty sand. Stratum 2 was a dark yellowish brown (Munsell 10YR 4/4) sand extending from 10-40 cm (4-16 in) below surface. Stratum 3 was a reddish brown (Munsell 2.5YR 5/4) sandy clay excavated to a depth of 60 cm (24 in). A small number of artifacts were recovered from this shovel test, the majority of which were from the upper part of Stratum 2. These artifacts are described later in the Materials Recovered portion of this Site Description.

The two shelters located approximately 30 m to the northwest of the main shelter were small and stacked one above the other on the cliff face. Both of these shelters faced the northeast. The lower one, which was identified in the site form filed by Vernon White as 15WA353 "B," was the smaller of the two, with an overhang 9 m (29.5 ft) wide and 2.5 m (8 ft) deep (**Figures 6.10** and **6.11**). A chamber behind the overhang extended back into the cliff face approximately 6 m (19.6 ft) and averaged 2.5 m (8 ft) in width. The entire shelter contained approximately 37.5 sq m (403 sq ft) of area. The overhang was approximately 3 m (10 ft) high, while the interior of the chamber was 2 m (6.5 ft) high toward the back. At the constricted entrance of the chamber, a „hominy hole" feature approximately 45 cm (18 in) deep extended into the stone floor (**Figure 6.12**). Two shovel tests were excavated on the level area under the overhang, one along the drip line and one at the entrance of the chamber. The interior of the chamber had little in the way of soil and consisted mainly of exposed rock. Both shovel tests contained dark brown (Munsell 10YR 3/3) silt sand soils to a depth of 10 cm (4 in) where they encountered sandstone bedrock (**Figure 6.13**). No artifacts were recovered from either of the shovel tests.

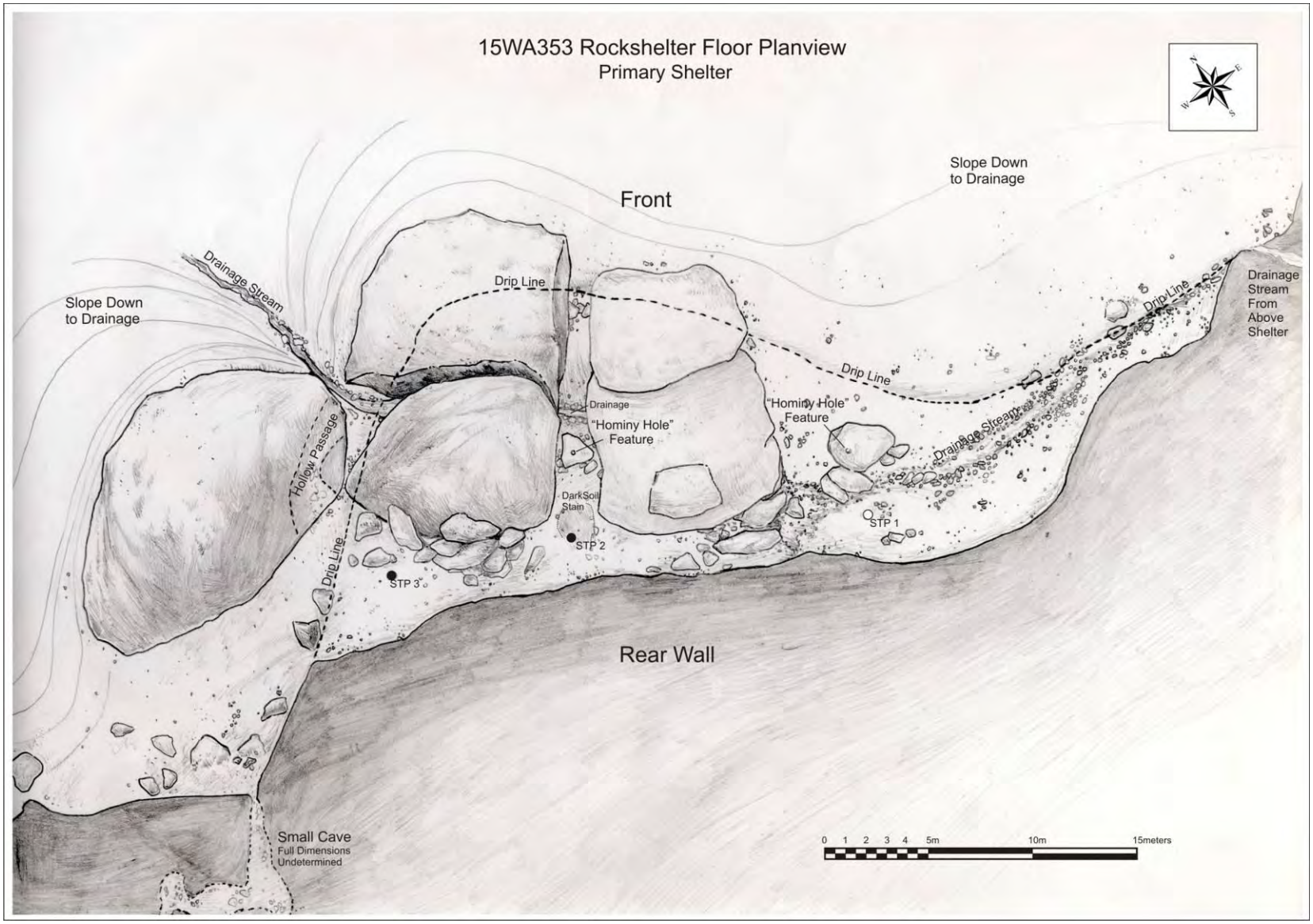

Figure 6.5. Site 15WA353, main shelter diagram showing Chambers 1 and 2, and small cave.

Figure 6.6. Site 15WA353, Chamber 1, facing south.

Figure 6.7. Site 15WA353, Chamber 2, facing northwest.

Figure 6.8. Chamber 2 'hominy hole' feature (arrow) at site 15WA353, from above.

The upper shelter was larger than the lower and was approximately 11 m (36 ft) wide and 10 m (32 ft) deep (**Figures 6.10** and **6.14**). It was 3 m (9.8 ft) tall at the drip line and gently sloped to the back where it was approximately 1 m (3.2 ft) high. The interior of the shelter had several large fragments of roof fall and a shallow drainage channel generally followed the southeast wall. In addition to the opening facing the northeast, there was a smaller low opening that faced the north permitting access to the bluff line that extended to the north (**Figure 6.15**). The floor of the shelter was covered in earth, but there were a few areas of exposed rock, mainly along the drip line

A small, low chamber was located adjacent to the upper shelter and was approximately 5 m (16 ft) wide and 5 m (16 ft) deep and very irregular. It was approximately 1.5 m (5 ft) in height at the drip line and 50 cm at the rear. There was minimal soil in this chamber. The majority of the floor was exposed rock.

Two shovel tests were excavated in the upper shelter, one at the drip line and one adjacent to the roof fall at the rear. The shovel test located at the drip line was a dark brown (Munsell 10YR 3/3) silty sand soil to a depth of 40 cm (15.7 in) where sandstone bedrock was encountered (**Figure 6.16**). Eleven prehistoric artifacts were recovered from this shovel test. These artifacts are described below in the Materials Recovered portion of this site description. The shovel test located in the interior of the shelter was a dark yellowish brown (Munsell 10YR 4/4) silt sand soil to a depth of 15 cm (6 in) were sandstone bedrock was encountered. No artifacts were recovered from this shovel test.

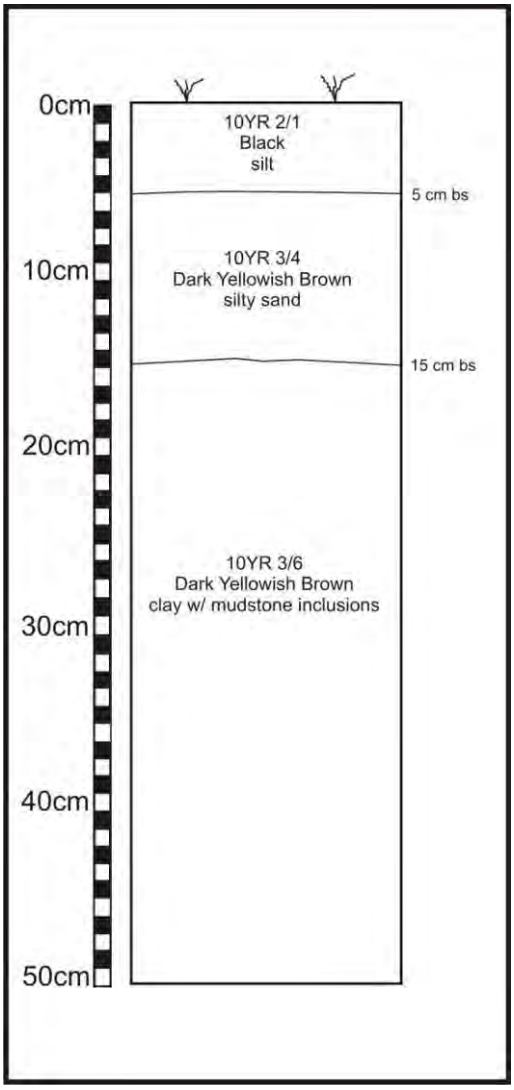

Figure 6.9. Soil profile observed within Chamber 2 of the main shelter at site 15WA353.

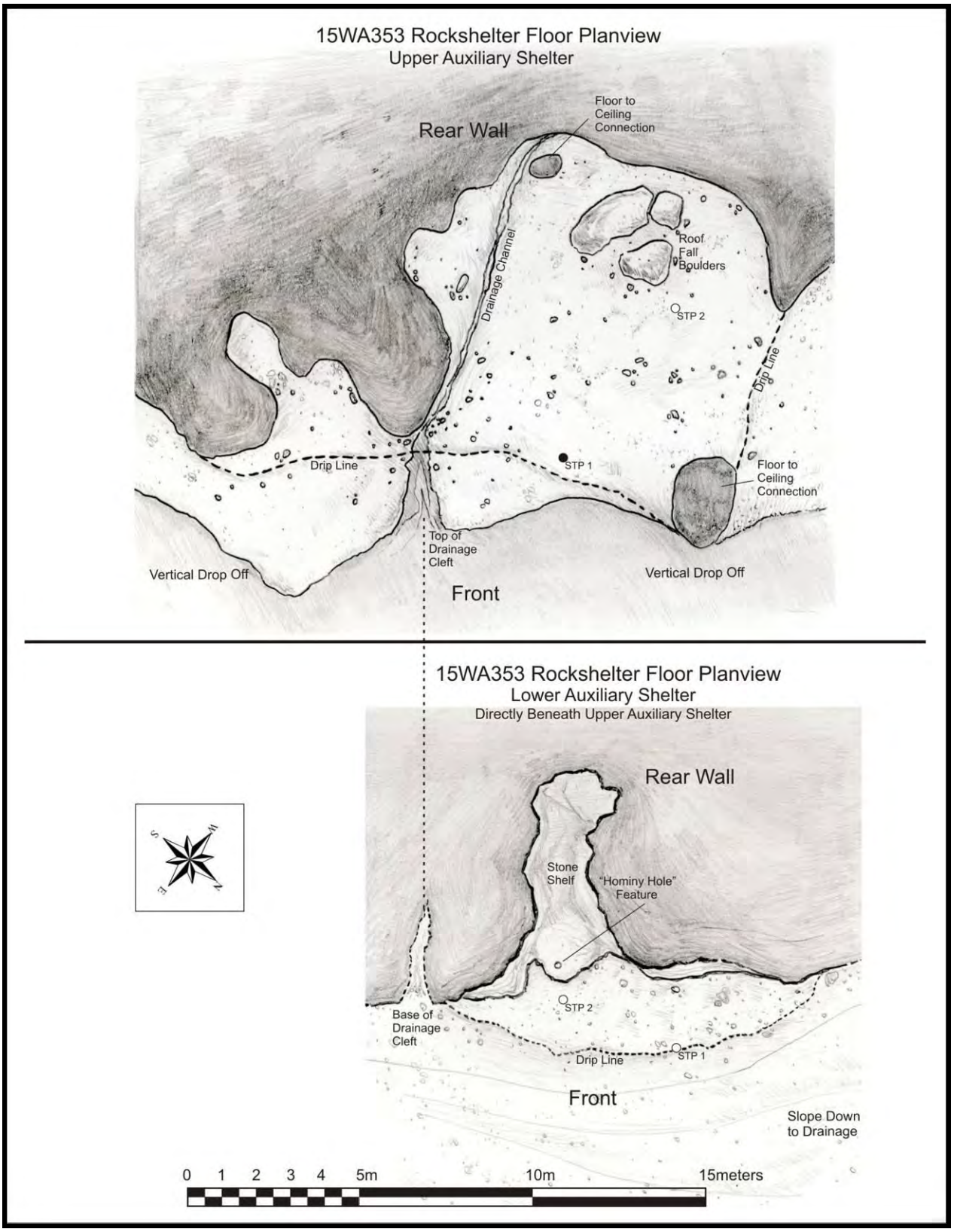

Figure 6.10. Maps of site 15WA353 auxiliary shelters.

Figure 6.11. Site 15WA353, lower auxiliary shelter, facing southeast.

Figure 6.12. Site 15WA353, close up of 'hominy hole' feature from lower auxiliary shelter.

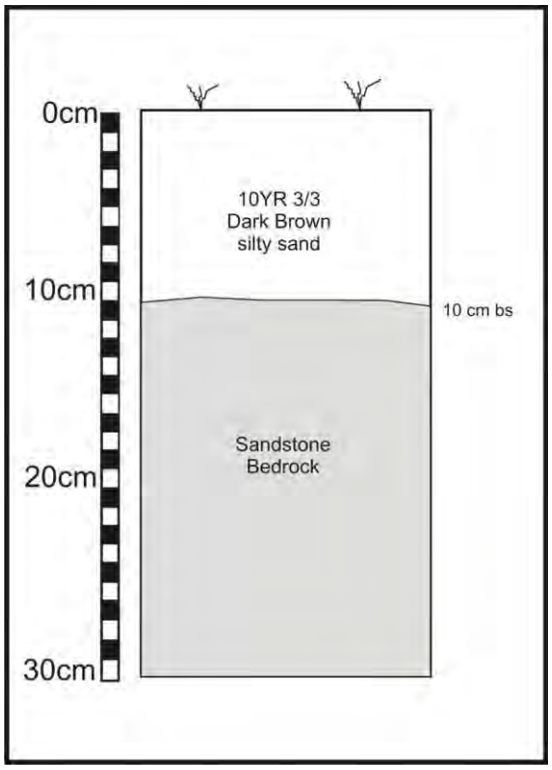

Figure 6.13. Soil profile observed in both STPs excavated in the lower auxiliary shelter.

Figure 6.14. Site 15WA353, upper auxiliary shelter, facing southwest.

Figure 6.15. Site 15WA353, showing the opening at the north end of the shelter.

The bench between the main shelter and the two auxiliary shelters was lightly wooded and sloped gently to the northeast before terminating at a steep slope (**Figure 6.17**). This bench was approximately 20 m (65.6 ft) wide and extended approximately 15 m (50 ft) from the base of the bluff line to the slope edge. Two shovel tests excavated on the bench 10 m apart contained two soil strata, the uppermost of which was a dark yellowish brown (Munsell 10YR 4/6) silt loam to a depth of 30-35 cm (12-14 in). The second stratum was a yellowish brown (Munsell 10YR 5/6) silty clay loam. No artifacts were recovered from either of the shovel tests.

The cave was located adjacent to the main shelter at the rear of a cleft where a large portion of the rock face had detached. It had a small wedge shaped opening approximately 1 m (3 ft) high (**Figure 6.18**). Investigators found that the interior of the cave opened up into two small chambers approximately 2 m (6.5 ft) high. There were several smaller openings that continued past these chambers but these were not investigated due to safety reasons. The floor of the cave was rocky with little soil present. Some animal droppings were noted, but no cultural material was observed. No shovel tests were excavated due to the lack of soil.

The shallow overhang above the main shelter was approximately 25 m (82 ft) wide and had a maximum depth of 1.5 m (5 ft) in a 3 m (10 ft) section (**Figure 6.19**). The overhang was approximately 2 m (6.2 ft) high within this section and sloped steeply to the ground surface at the back of the overhang. The bench in front of the overhang was approximately 3 m (10 ft) at its widest before it dropped 50 ft to the ground below. One shovel test was excavated at the drip line. This shovel test contained two soil strata, the uppermost of which was a dark yellowish brown (Munsell 10YR 4/6) silt loam to a depth of 10 cm (4 in). The second stratum was a yellowish brown (Munsell 10YR 5/6-5/8) silty clay loam to a depth of 25 cm (10 in) where bedrock was encountered. No artifacts were recovered from this shovel test.

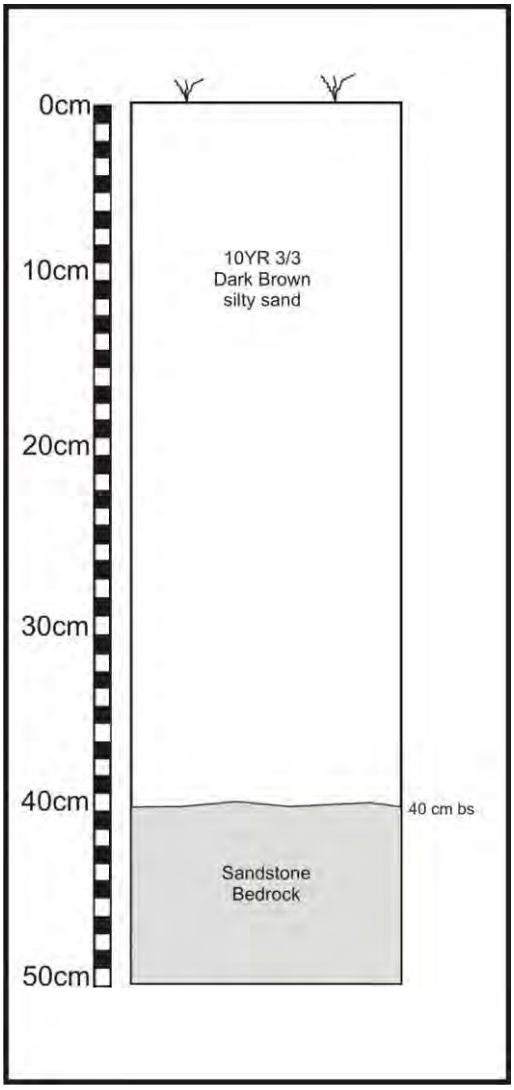

Figure 6.16. Soil profile observed in STP 1 in the upper auxiliary shelter.

Figure 6.17. Site 15WA353, stream drainage from bench, facing east.

Figure 6.18. Site 15WA353, showing small cave entrance.

Figure 6.19. Site 15WA353, showing overhang above the main shelter, facing southwest.

Other than the possible looter hole and possible modern single-use surface fire pit located in Chamber 2 of the main shelter, no obvious evidence of human disturbance or looting at the shelter was observed. It seems disturbance in the vicinity of the rockshelter has been kept to a minimum due to its inaccessibility and remote location. While historic logging in the area is likely, the rock face on which the site is situated is difficult to access, making effective use of the area for cropland and historic plowing impossible. The large amount of roof fall and generally undisturbed soils in the main shelter and the seemingly undisturbed soils in the upper auxiliary shelter make it likely that there may be some intact cultural deposits present at the site.

Materials Recovered

The investigation at site 15WA353 resulted in the recovery of fourteen prehistoric and one historic artifact. The assemblage included ten flakes (five of Ste. Genevieve chert, three of St. Louis chert, and two of Vienna chert); four St. Louis chert shatter; and one charcoal sample (**Table 6.1**). Eight of the ten flakes did not possess platforms and had no cortex on their dorsal surface. One St. Genevieve chert flake had primary context cortex indicating the material was obtained at or near a bedrock source. One St. Louis chert flake retained its striking platform which had less than two facets and could have been derived from either core or biface reduction. The presence of shatter and a cortical flake suggest the lithic industry included early stage reduction. However, later stage biface reduction cannot be ruled out. The one charcoal fragment appeared to be wood but was not submitted for ethnobotanical analysis.

The upper auxiliary shelter contained the most flakes consisting of three different chert types. The two positive shovel tests in the only had one flake each. The sparse artifact content at the site indicates that the currently accessible areas were not intensely occupied. The historic

artifact assemblage from site 15WA353 consisted of one machine-made bottle/jar fragment likely from incidental disposal (**Table 6.1**). This, along with the possible modern fire pit and potential looter hole in Chamber 2, were the only indications of recent activity at site 15WA353.

Table 6.1. Artifacts Recovered by Provenience from Site 15WA353

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
Upper Auxiliary Shelter STP 1	Prehistoric	Debitage	Shatter	St. Louis	-	3
			Flake	St. Genevieve	-	5
				St. Louis	-	1
				Vienna	-	1
		Miscellaneous	Charcoal	-	-	1
Total						**11**
Chamber 2 STP 2	Kitchen	Glass	Bottle/Jar	Machine-made	Light Green	1
	Prehistoric	Debitage	Flake	St. Louis	-	2
Total						**3**
Chamber 2 STP 3	Prehistoric	Debitage	Flake	Vienna	-	1
Total						**1**
Grand Total						**15**

Site Summary and NRHP Recommendations

Site 15WA353 is a large rockshelter with multiple elements, including a main shelter with two chambers, two auxiliary shelters, a bench, a cave, and an overhang. The artifact content was sparse at the site, with the majority coming from the upper auxiliary shelter. While three „hominy hole" features were identified at the site (two in the main shelter and one within the lower auxiliary shelter) no evidence of other cultural features were identified. No diagnostic artifacts were recovered during this survey and none were listed on the original site form.

The extent of the archaeological deposits was difficult to determine. Shovel test probes did not indicate the presence of distinct cultural strata, but many terminated at rock. Roof fall was extensive and may cap older intact cultural deposits, especially within the main shelter. No extensive evidence of looting was noted during shovel testing, although there was a small hole that may have been dug by looters or an animal. The only evidence of modern use consisted of a single glass bottle/jar shard and a possible camp fire.

Rockshelters were utilized throughout prehistory with well-documented occupations dating from the Late Paleoindian period through Mississippian period in south central Kentucky (Lewis 1996; Pollack 2008). The most extensive use of rockshelters occurred during the Early Woodland Period when early Native Americans used them as intensively occupied base camps from which hunter-gatherer parties exploited local resources. Rockshelters are also known to contain burials from at least the late Early Woodland in the Warren County area (Applegate 2008:345) though no evidence of burials was found. Rockshelters also provide some of the best archaeological contexts for preservation perishable cultural materials such as botanical remains, textiles, leather goods, and other artifact classes seldom preserved at other sites (Applegate 2008:344).

The overall nature of the site indicates that it has the potential to contain significant cultural remains from one or more prehistoric occupations that could yield data regarding how Native-American groups utilized rockshelters in the Upper Green River region. Though the artifact density was relatively low, the presence of "hominy holes" suggests this site could contain the remains of longer term, or intense shorter term habitation(s). A substantial portion of this material may be beneath the large roof fall boulders and would be difficult to access. Site 15WA353 is considered potentially eligible for inclusion on the NRHP and avoidance or further investigation to assess its NRHP eligibility is recommended.

6.5.2 Site 15WA186

Site Type: Historic Farm
UTM Coordinates: 0
Quadrangle: Reedyville 1958, photorevised 1979
Elevation: AMSL
Slope: 19 percent
Soil Type: CnD Caneyville-Rock outcrop complex, 6-20 percent slopes
Visibility: 0 percent
Dimensions: 366 m^2 (0.09 ac), 15 m (N/S) x 20 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA186 is the remnants of a historic farmstead located along an unnamed tributary of the Green River (**Figures 6.20** and **6.21**). The site was discovered during visual inspection of highly sloped areas along the project area corridor. It is situated on a constricted and largely level bench between an abandoned road and a small creek. Based on the distribution of artifacts within two positive shovel tests and the remnant foundations, the site area covered approximately 0.09 ac (0.04 ha) (**Figures 6.22** and **6.23**).

The site consists of a sparse historic artifact scatter and the remains of a concrete block foundation. The foundation remnants were not contiguous, although a section of the north wall is intact to a height of 46 cm (18 in). It is likely that a frame structure rested on the foundation rather than the entire structure being constructed from the concrete block based on the lack of additional building debris around the site. No evidence of a chimney fall was present and no bricks were identified at the site.

The shovel tests were located in and around the foundation remnants. The typical soil profile on the exterior of the structure consisted of an approximately 12 cm (4.7 in) layer of dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. The underlying subsoil consisted of a yellowish brown (Munsell 10YR 5/4) silty clay loam (**Figure 6.24**). The interior of the structure appeared to have deflated soils consisting of a 5 cm (2 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. The underlying subsoil consisted of a yellowish brown (Munsell 10YR 5/4) silty clay loam. Data on shovel tests excavated at 15WA186 is presented in **Appendix B**, **Table B-2**).

Figure 6.20. Topographic extent showing the location of 15WA186.

Figure 6.21. Overview of site 15WA186, facing southwest.

Figure 6.22. Site 15WA186, showing foundation remnants, facing southeast.

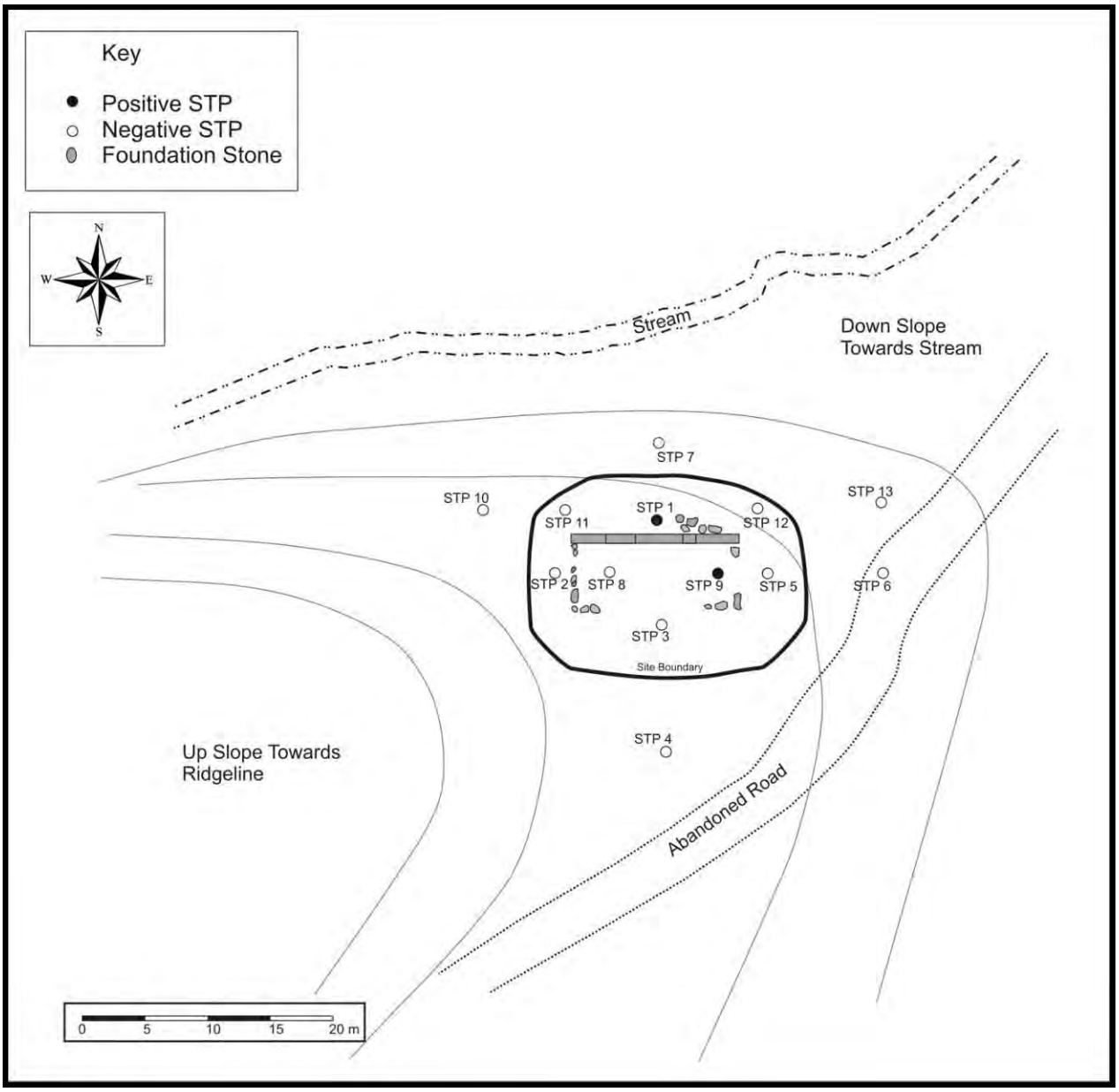

Figure 6.23. Map of site 15WA186 and its surroundings.

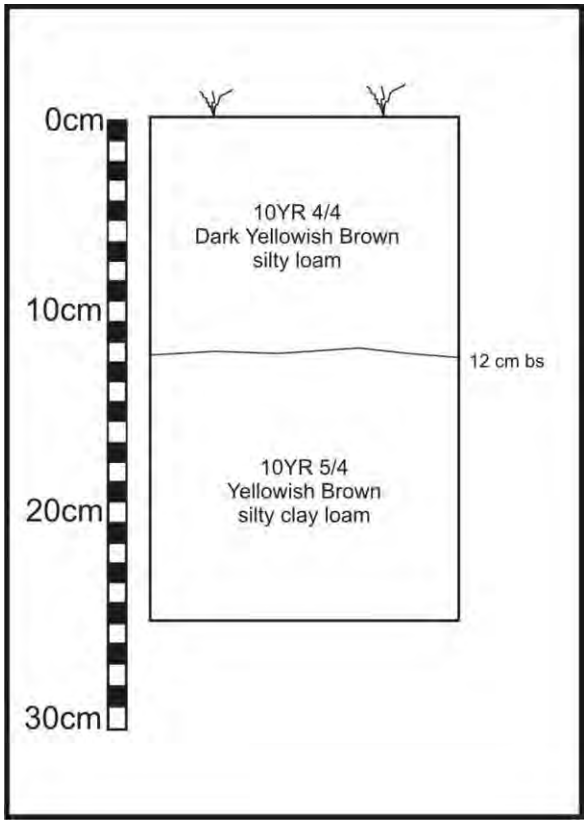

Figure 6.24. Diagram depicting the typical soil profile observed at site 15WA186, as represented in shovel test STP 2.

Materials Recovered

The survey of 15WA186 produced two historic artifacts. Both of the artifacts were pulled wire nails of different sizes (**Table 6.2**). Wire Nails are members of the Architecture group and have been in popular use since the 1880s. This is consistent with the fact that concrete blocks, which were used in the construction of the building foundation, did not come into use until after 1900 (Simpson 1999). The sparse artifact density and absence of artifacts from other functional groups indicates that site 15WA186 was a specialty use locality, such as a barn, shed, or similar outbuilding.

Table 6.2. Artifacts Recovered from Site 15WA186

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP 1	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 20d	1
STP 1 Total						**1**
STP 9	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 6d	1
STP 9 Total						**1**
Grand Total						**2**

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if 15WA186 was present on any of the early maps of the area, which might indicate its age. The building was not located on any of the available maps, suggesting the likelihood that this is an outbuilding, which were not typically recorded on these maps except in the case of some larger barns, or that these building remnants date to the later twentieth century.

Site Summary and NRHP Recommendations

Site 15WA186 consists of a remnant foundation and a sparse artifact scatter located on a constricted bench of land. The artifact density across the site was very low and, other than the foundation, there was no evidence of intact cultural deposits. The artifacts and foundation material indicate this was a twentieth century utilitarian structure, such as a small barn or shed. This is reinforced by the fact that the site does not appear on any of the historic maps.

This site does not appear to be a significant archaeological find. Given the low density of artifacts, the lack of intact subsurface cultural deposits, and its probable age and function, 15WA186 is not considered eligible for inclusion on the NRHP and no further work is recommended.

6.5.3 Site 15WA177

Site Type: Open Habitation Without Mounds, Historic Farm
UTM Coordinates: 5
Quadrangle: Reedyville 1958, photorevised 1979
Elevation: AMSL
Slope: 12 percent
Soil Type: RaF, Ramsey-Frondorf complex, 20-60 percent slopes
Visibility: 0 percent
Dimensions: 2407 m^2 (0.59 ac), 65 m (N/S) x 70 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA177 is the remnants of a historic farmstead with a minor prehistoric component located along the northern end of the project area (**Figures 6.25** and **6.26**). The site was discovered during shovel test excavations and visual inspection along the project area corridor. It is situated on a constricted and largely level tow ridge. Based on the distribution of artifacts within nine positive shovel tests and the remnant foundations, the site area covered approximately 0.59 ac (0.24 ha) (**Figures 6.27** and **6.28**). The site consists of a historic artifact scatter and the remains of a limestone foundation.

The foundation remnants were not contiguous and appear to have been disturbed, some having been pushed into a pile, while others are spread randomly across the site. There were no other structural remnants such as timbers or roofing associated with the foundation stones. Additionally, no evidence of a chimney fall was present and no bricks were identified at the site. The former structure at this location may have been constructed on piers made up of the scattered stones identified at the site.

Figure 6.25. Topographic extent showing the location of site 15WA177.

Figure 6.26. Overview of site 15WA177, facing north.

Figure 6.27. Site 15WA177, showing foundation remnants, facing northwest.

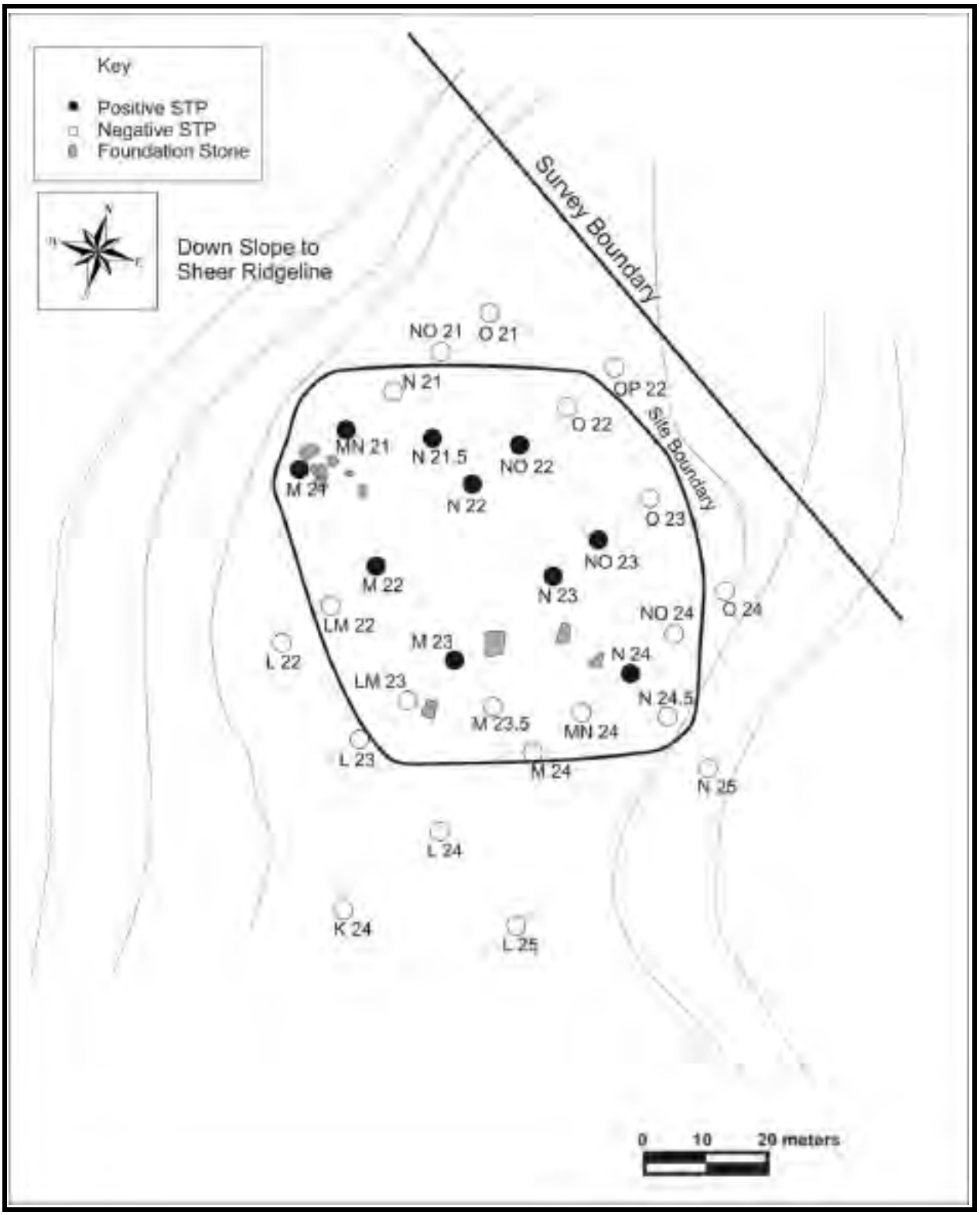

Figure 6.28. Map of site 15WA177 and its surroundings.

Eighteen shovel tests were excavated within the boundary of site 15WA177. Most of these had similar profiles consisting of a 15-20 cm (6 to 8 in) layer of brown to dark yellowish brown (Munsell 10YR 4/3-4/4) silt loam topsoil. The underlying subsoil varied between a strong brown (Munsell 7.5YR 5/6), grayish brown (Munsell 10YR 5/2), and yellowish brown (Munsell 10YR 5/4) silty clay loam (**Figure 6.29**). Several shovel tests, mainly along the edges of the site, exhibited deflated soils consisting of a 2 to 10 cm (1 to 4 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. The underlying subsoil consisted of a brown (Munsell 7.5YR 5/4) mottled silty clay loam. These shovel tests, along with push piles observed in the vicinity of the site, may be an indication the site has been impacted by heavy equipment. Data on shovel tests excavated at site 15WA177 is presented in **Appendix B**.

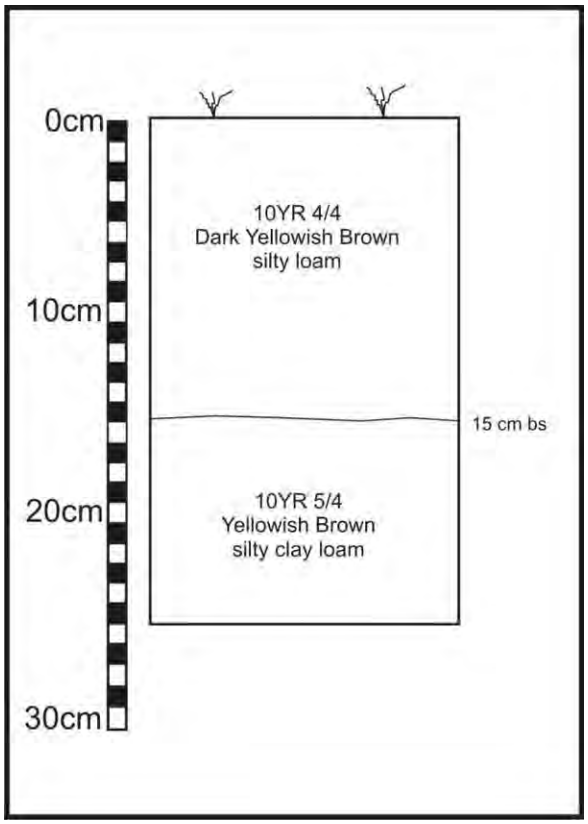

Figure 6.29. Diagram depicting the typical soil profile observed at site 15WA177, as evidenced in shovel test MN21.

Materials Recovered

The historic artifact assemblage from site 15WA177 included forty historic artifacts from the Activity, Architectural, Firearms, and Kitchen groups from nine positive shovel tests (**Table 6.3**).The Activity group artifacts consisted of 14 artifacts representing 35 percent of the collection. The Architectural group artifacts consisted of five artifacts representing 13 percent of the assemblage. One Firearm group artifact was recovered totaling two percent of the collection. The remaining 20 of the historic artifacts were from the Kitchen group and represented 50 percent of the assemblage. The distribution and variety of artifact types indicates that the site was a domestic occupation. The dates associated with the historic

artifacts recovered ranged from the mid-nineteenth to the twentieth century, and 23 artifacts with known manufacturing ranges yielded a mean date of 1916.8. A flat glass thickness date of 1870 was obtained using Moir"s (1987) regression equation. While this could approximate the initiation of the historic occupation at site 15WA177, the reliability of the date is suspect as it was based on a single piece of flat glass.

The remaining artifacts recovered from this site were prehistoric. The investigation of site 15WA177 produced two St. Louis chert flakes and one Vienna chert preform I biface. Neither of the flakes retained their platform or had cortex on their dorsal surface. The sparse density of the lithic scatter indicates that the prehistoric use of this site was ephemeral.

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if site 15WA177 was present on any of the early maps of the area, which might indicate its age. Site 15WA177 was identified on the 1923 USGS topographic map of the area (**Figure 6.30**). This correlates well with the mean date derived from the artifacts recovered. No structure is shown at this location on the 1958 topographic quadrangle, suggesting it was in disrepair or removed. The artifact assemblage indicates the prehistoric occupation was very ephemeral.

Table 6.3. Artifacts Recovered from Site 15WA177

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP M21	Kitchen	Glass	Bottle/Jar	Machine-made	Aqua	1
					Colorless Non-Leaded	1
STP M21 Total						**2**
STP M22	Activity	Metal	Wire	-	-	1
	Kitchen	Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	1
			Tableware	Press Molded	Pink	1
STP M22 Total						**3**
STP M23	Kitchen	Ceramics	Ironstone/ White Granite	Undecorated	Undecorated	3
		Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	1
STP M23 Total						**4**
STP MN21	Activity	Biological	Cinder	-	-	1
	Kitchen	Glass	Bottle/Jar	Machine-made	Amethyst Solarized	2
					Colorless Non-Leaded	3
STP MN21 Total						**6**
STP N21.5	Activity	Biological	Coal	-	-	2
	Kitchen	Glass	Bottle/Jar	Machine-made	Opaque White	1
	Prehistoric	Biface	Preform I	Vienna	-	1
STP N21.5 Total						**4**

Table 6.3. Artifacts Recovered from Site 15WA177

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP N23	Activity	Biological	Cinder	-	-	2
			Coal	-	-	1
		Metal	Band	-	-	1
	Architectural	Structural Fasteners	Nails	Cut Nail Unspecified	Fragment	2
	Kitchen	Ceramics	Whiteware	Transfer Printed	Blue	1
		Glass	Undetermined Glass	Unidentified	Colorless Non-Leaded	1
	Prehistoric	Debitage	Flake	St. Louis	-	1
STP N23 Total						**9**
STP N24	Activity	Biological	Coal	-	-	2
	Prehistoric	Debitage	Flake	St. Louis	-	1
STP N24 Total						**3**
STP NO22	Activity	Metal	Band	-	-	1
	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 8d	1
		Window	Glass	Window Glass/Flat Glass	-	1
	Firearms	Metal	Shot Gun Shell	Brass	-	1
STP NO22	Kitchen	Ceramics	Whiteware	Undecorated	Undecorated	1
		Glass	Bottle/Jar	Machine-made	Cobalt Blue	1
				Machine-made Embossed	Aqua	1
STP NO22 Total						**7**
STP NO23	Activity	Metal	Unidentified	-	-	1
			Wire	-	-	2
	Architectural	Structural Fasteners	Nails	Late Cut Nail	Fragment	1
	Kitchen	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Interior and Exterior	1
STP NO23 Total						**5**
Grand Total						**43**

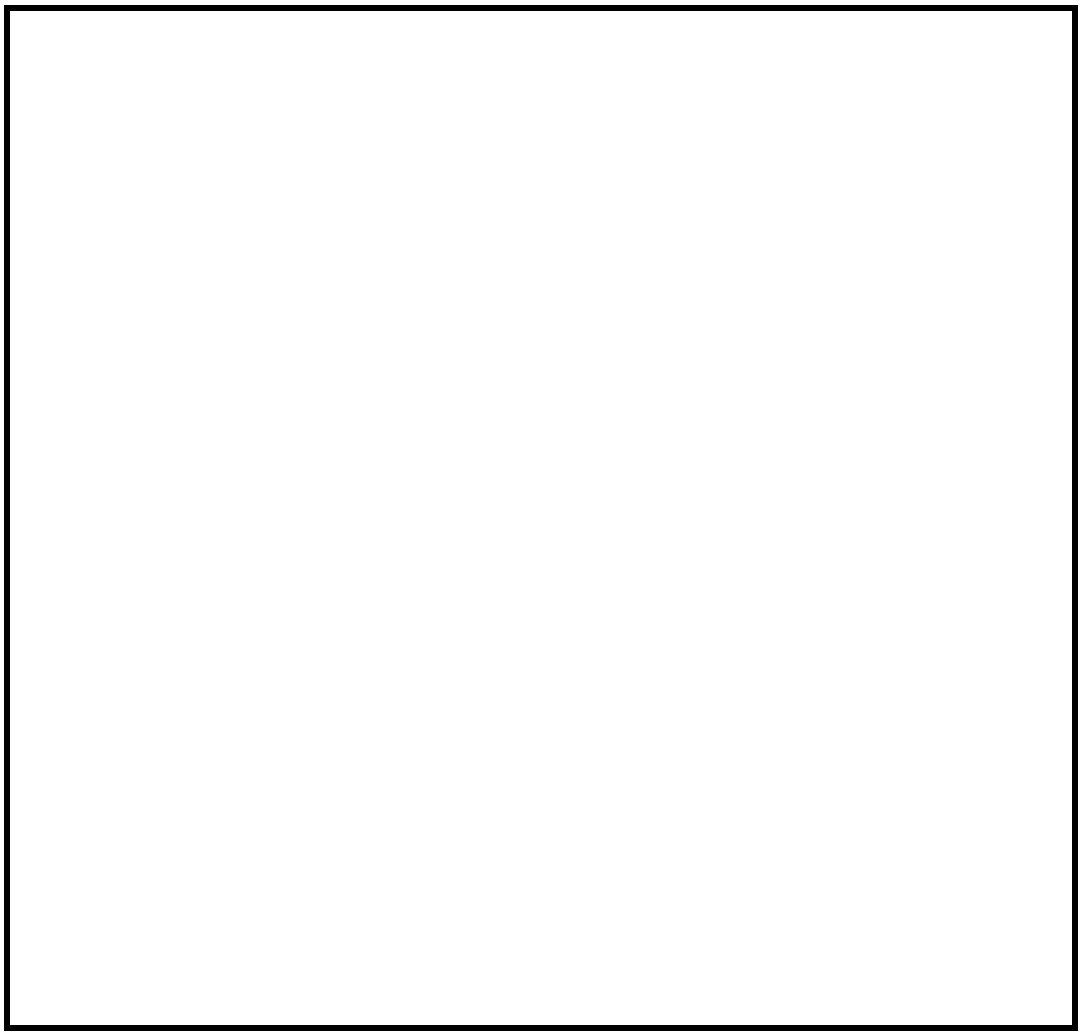

Figure 6.30. 1923 Brownsville, KY US Geological Survey Map showing location of site 15WA177.

Site Summary and NRHP Recommendations

Site 15WA177 was a historic farmstead with a minor prehistoric component consisting of scattered limestone foundation remnants and a light artifact scatter. The artifacts and archival data suggest this was the location of a dwelling that was occupied from the mid-nineteenth century to no later than 1958 with a principal occupation occurring in the early 1920s. The density, including both prehistoric and historic artifacts, across the site was approximately 4.7 artifacts per positive shovel test; a moderately low density. The site appears to have been disturbed by heavy equipment, likely used to remove the majority of the former structure. There was no evidence of midden or intact features witnessed on the surface or in the STP investigations.

Given the low artifact density, lack of intact archaeological deposits, and probability of heavy disturbance, this site does not appear to be a significant archaeological find. Given these factors site 15WA177 is not considered eligible for inclusion on the NRHP and no further work is recommended.

6.5.4 Site 15WA178

Site Type: Historic Farm
UTM Coordinates: 5
Quadrangle: Reedyville 1958, photorevised 1979
Elevation: AMSL
Slope: 6 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent slope
Visibility: 0 percent
Dimensions: 2483 m^2 (0.61 ac), 75 m (N/S) x 40 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA178 is a historic artifact scatter associated with a log outbuilding and a frame barn located along the west side of the northern portion of the project area (**Figures 6.31, 6.32**). The site was discovered during shovel test excavations and visual inspection along the project area corridor. It is situated in a gently sloping valley. This valley trended east where it eventually became a steeply sloped drainage outside of the project area. The site was roughly bounded on the north and south by shallow stream drainages and on the east by a pond. To the west of the site was a open fallow field. The site was situated in a fallow lightly overgrown area surrounding a twentieth century balloon frame barn. Based on the distribution of artifacts within five positive shovel tests and the log structure, the site area covered approximately 0.61 ac (0.25 ha) (**Figures 6.33** and **6.34**).

The log structure was approximately 4.5 m (15 ft) square with a doorway and window located on the east side. The window sat above the doorway. The south side was the most intact, consisting of 12 logs giving a height of approximately 3 m (10 ft). The north side of the structure was severely rotted causing the first three logs to have collapsed, tilting the structure to the north. The logs that made up the structure were unfinished and of inconsistent quality. The corner notching was also inconsistent using v-notches and square notches. The north and south sides had two notches cut into the bottom of the seventh log, approximately 1.5 m (5 ft) from the corners, to provide a space for a cross beam, presumably for a second floor platform. Only one of these logs was still present. The gaps between the logs were open and devoid of chinking except on portions of the east and north sides where 1x8 in boards had been nailed (using wire nails) to marginally cover the open spacing. There was no roof on the structure, although possible remnants of one were identified on the north side of the structure, consisting of corrugated metal and more modern cut timbers. No evidence of a foundation was noted and the severely rotted northern side of the structure indicates that it was simply constructed resting unmoored on the ground surface or on shallow piers. No evidence of a chimney fall was present and no bricks were identified at the site. This structure is likely either an expedient construction of local timber or was hastily moved to this location to be used as an out-building rather than a dwelling.

The barn located within the southern portion of the site area was a twentieth century balloon frame building constructed with both finished and rough hewn lumber held together by wire nails. The roof was corrugated metal and had upright wooden siding. The barn showed no evidence of having earlier construction episodes or greater archaeological significance on its own.

Figure 6.31. Topographic extent showing the location of site 15WA178.

Figure 6.32. Overview of site 15WA178, facing east.

Figure 6.33. Site 15WA178, showing log building remnants, facing southeast.

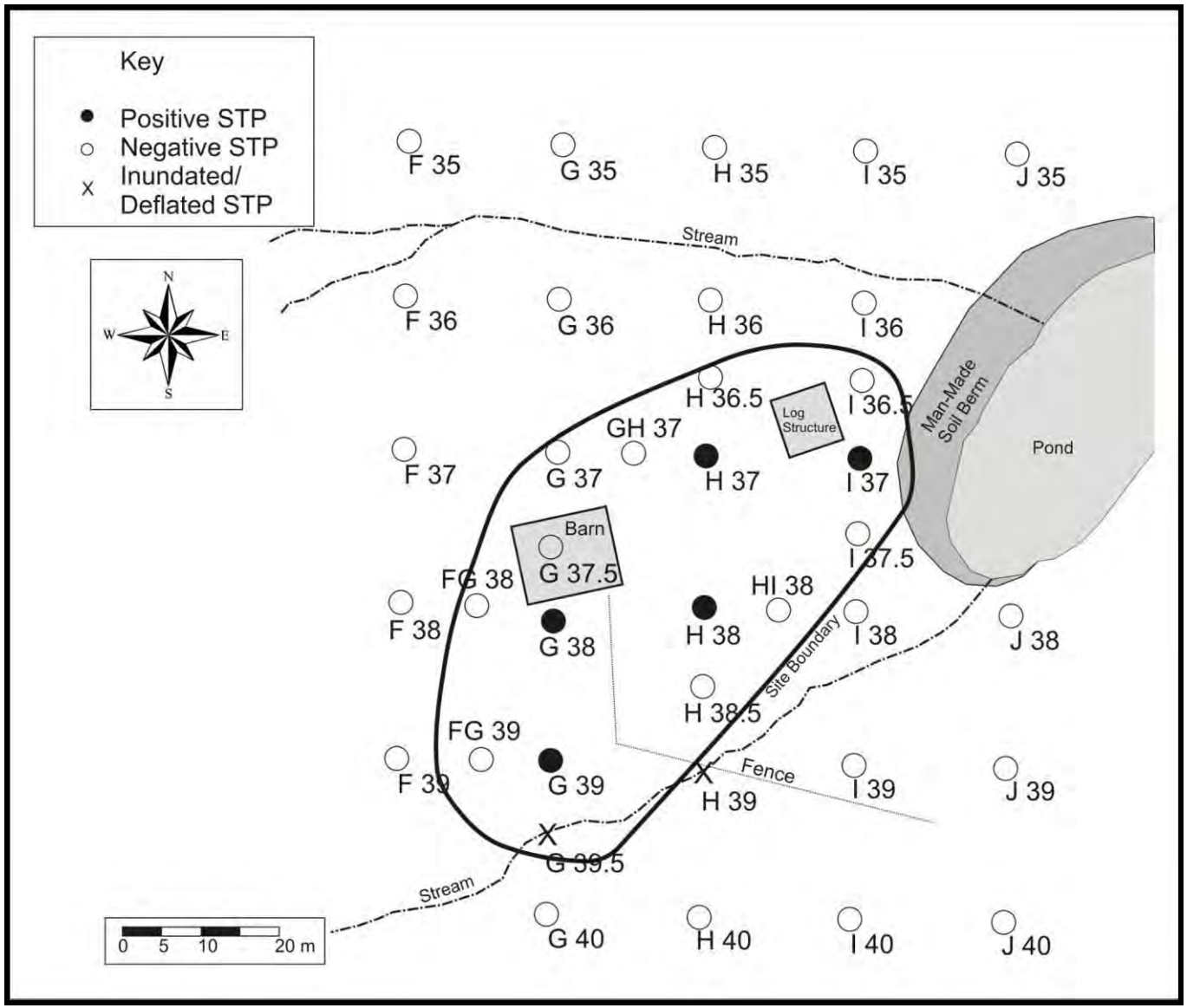

Figure 6.34. Map of site 15WA178 and its surroundings.

Fifteen shovel tests were excavated within the boundary of site 15WA178, five of them positive. Most of these had similar profiles consisting of a 15-25 cm (6 to 10 in) layer of dark yellowish brown (Munsell 10YR 4/4-4/6) silt loam topsoil. The underlying subsoil was a yellowish brown (Munsell 10YR 5/4-5/6) silty clay loam (**Figure 6.35**). Several shovel tests, mainly along the edges of the site exhibited deflated soils consisting of a 5 to 10 cm (2 to 4 in) deep dark yellowish brown (Munsell 10YR 4/4-4/6) silt loam topsoil. The underlying subsoil consisted of a mottled yellowish brown (Munsell 10YR 5/4-5/6) silty clay loam. These shovel tests may be an indication of disturbances at the site, or highly erodible soils that have resulted in the fallow land observed in this area. Data on shovel tests excavated at site 15WA178 is presented in **Appendix B**.

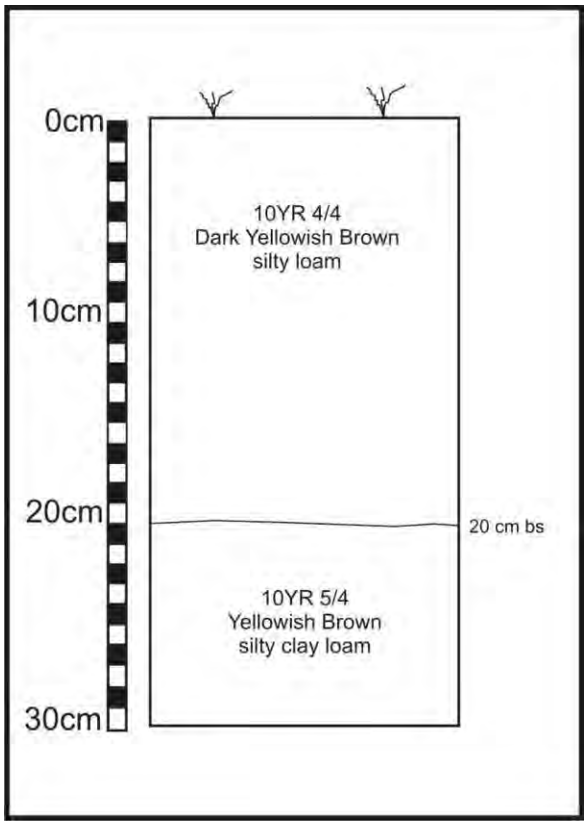

Figure 6.35. Diagram depicting the typical soil profile observed at site 15WA178, as observed in shovel test GH37.

Materials Recovered

The survey of site 15WA178 produced fourteen historic artifacts from the Activity, Furniture, Kitchen, and Other groups from five positive shovel tests (**Table 6.4**). The bulk of the artifacts were from the Furniture and Activity category. The assemblage does not indicate that this was a domestic site but rather a specialty use area likely related to farming activities. The dates associated with the artifacts recovered ranged from the very late-nineteenth into the twentieth century.

Table 6.4. Artifacts Recovered from Site 15WA178

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP G38	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 8d	1
	Furniture	Glass	Lamp Chimney	-	-	4
	Other	Plastic/ Synthetic	Unidentified	-	-	1
STP G38 Total						**6**
STP G39	Other	Plastic/ Synthetic	Unidentified	-	-	1
STP G39 Total						**1**
STP H37	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 16d	1
STP H37 Total						**1**
STP H38	Kitchen	Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	1
STP H38 Total						**1**
STP I37	Activity	Metal	Unidentified Container Part	-	-	5
STP I37 Total						**5**
Grand Total						**14**

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if site 15WA178 was present on any of the early maps of the area, which might indicate its age. None of the available maps showed a building at this site location, reaffirming the likelihood that this was not the location of a residence, but rather the location of outbuildings associated with farming activities.

Site Summary and NRHP Recommendations

Site 15WA178 was a historic artifact scatter associated with a frame barn and log outbuilding. The artifact density across the site was approximately 2.8 artifacts per positive shovel test; a low density. Given the low density of the artifact assemblage and the narrow focus of the artifact groups present, this site appears to be the location of agricultural activities rather than a residence. No evidence of intact archaeological features was noted during the investigation at site 15WA178.

Because of its function, the low artifact density, and lack of features that could yield intact archaeological data, this site does not appear to be a significant archaeological find. Site 15WA178 is not considered eligible for inclusion on the NRHP and no further work is recommended.

6.5.5 Site 15WA179

Site Type: Historic Farm
UTM Coordinates: 7
Quadrangle: Reedyville 1958, photorevised 1979
Elevation: AMSL
Slope: 9 percent
Soil Type: Ne - Newark Silt Loam, frequently flooded, FrC - Frondorf silt loam, 6 to 12 percent slopes
Visibility: 0 percent
Dimensions: 1814 m^2 (0.45 ac), 48 m (N/S) x 60 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA179 is the remnants of a historic farmstead with a minor prehistoric component located on the east side of the northern portion of the project area (**Figure 6.36, 6.37**). The site was discovered during shovel test excavations and visual inspection along the project area corridor. It is situated on a largely level tow ridge. The site is bounded to the west and abandoned county road to the north, and a steep sided ridge to the south. East of the site, extending out of the project area, was a level tow ridge and drainage. Based on the distribution of artifacts within five positive shovel tests, the remnants of foundations, two extant out-buildings, and a well, the site area covered approximately 0.45 ac (0.18 ha) (**Figures 6.38** and **6.39**).

There were three concrete block foundation remnants identified at the site. The largest was approximately 2.4 m (8 ft) by 3 m (10 ft) and only a single course high. This may have been the foundation of a small out-building. The second foundation remnant was small, approximately 1.4 m (4.5 ft) by 1.15 m (3.8 ft) and open on one end. One corner had three courses stacked. Because the structure was assembled without mortar, most of the rest had collapsed. The third remaining concrete block foundation was also open ended, measuring approximately 1 m (3 ft) on each side. The second and third concrete block foundations were unlikely to have supported permanent structures due to their small size and the lack of mortar that would be necessary to strengthen such a foundation. These two foundations may have been set up for some minor, expedient use.

There were two frame out-buildings present along the southern edge of the site. Both were located at the base of a steep rise in a low drainage swale. Neither building appears to rest on a prepared foundation. The larger of the two sheds has two rooms, and there appears to have been a fenced enclosure extending to the north of the building. This may indicate that it was used as an animal pen and shelter. The smaller of the two out-buildings had a single room and was likely a storage shed.

A square concrete block well head was located on the western side of the site. The well head was approximately 1.6 m (5.3 ft) square and 1.01 m (3.3 ft) high. Inside of the enclosure was a capped well pipe. An abandoned road/drive was also located along the western side of the site, running parallel. Asphalt was still visible in this area and the road/drive may be a remnant of an older roadbed. Finally, a defunct utility pole was present in the central part of the site. An old style ceramic Rockingham-glazed insulator was still attached at the top of the pole.

Figure 6.36. Topographic extent showing the location of site 15WA179.

Figure 6.37. Overview of site 15WA179, facing north.

Figure 6.38. Site 15WA179, showing concrete block foundation remnants, facing east.

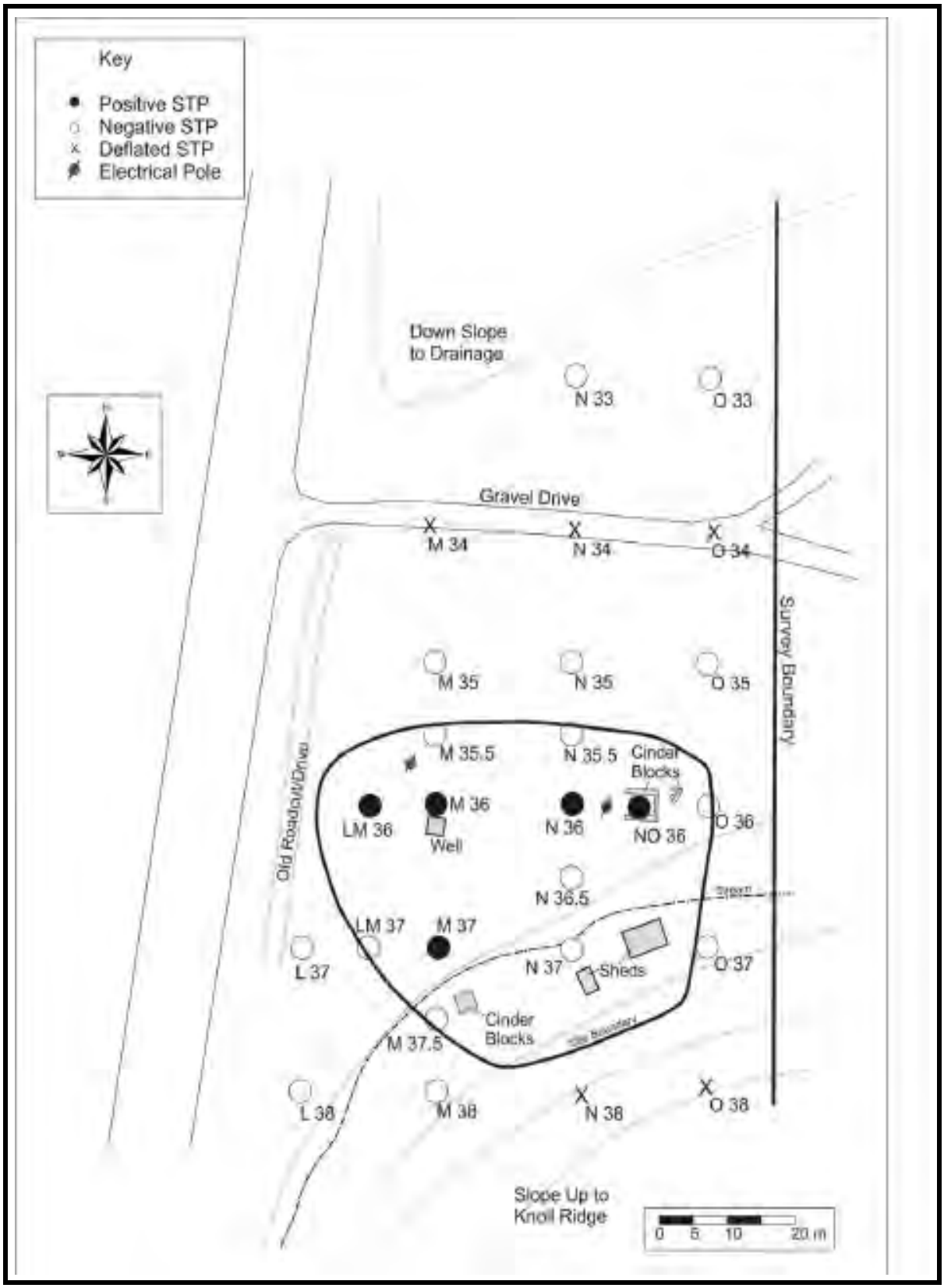

Figure 6.39. Map of site 15WA179 and its surroundings.

Fourteen shovel tests were excavated within the boundary of site 15WA179. Most of these had similar profiles consisting of a 15-30 cm (6-12 in) layer of dark yellowish brown (Munsell 10YR 4/4-4/6) silt loam topsoil. The underlying subsoil was a yellowish brown (Munsell 10YR 5/4-5/6) silty clay loam (**Figure 6.40**). Only one shovel test along the western side of the site exhibited deflated soils consisting of a 10 cm (4 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil mixed with coal ash. The underlying subsoil was a silty clay loam identical to the subsoil observed across the rest of the site. Data on shovel tests excavated at site 15WA179 is presented in **Appendix B**.

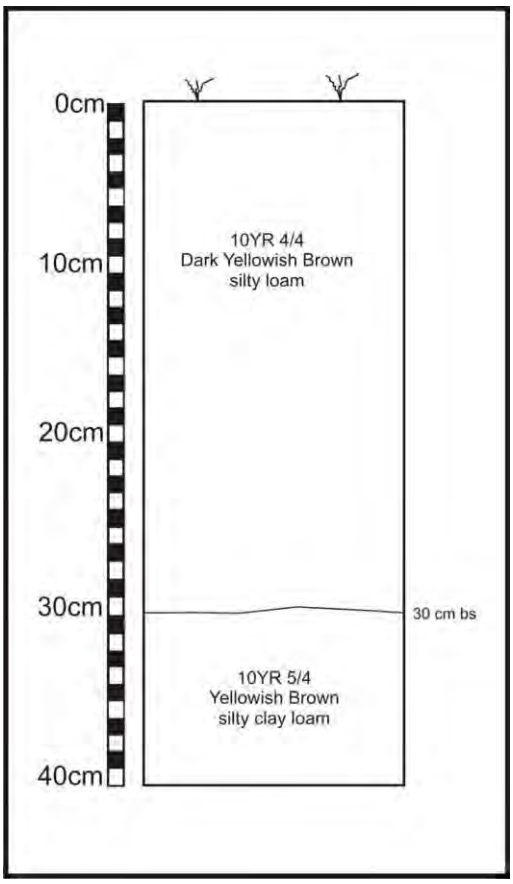

Figure 6.40. Diagram depicting the typical soil profile observed at site 15WA179, as observed in shovel test M36.

Materials Recovered

The historic artifact assemblage from site 15WA179 produced 50 historic artifacts from the Activity, Architectural, Other, and Kitchen groups from five positive shovel tests (**Table 6.5**).The Activity group artifacts consisted of nine artifacts representing 18 percent of the collection. The Architectural group artifacts consisted of 10 artifacts representing 20 percent of the assemblage. Other group artifacts consisted of three artifacts representing 6 percent of the collection. The remaining historic artifacts were from the Kitchen group and represented 56 percent of the assemblage. The distribution of artifact types is compatible with a domestic occupation. The dates associated with the historic artifacts recovered ranged from the mid-nineteenth to the twentieth century. However, the mean date of 1944.4 that was obtained from 31 artifacts known manufacturing ranges indicated a principal mid-twentieth century occupation.

The survey of site 15WA179 also resulted in the recovery of one flake of St. Louis chert that did not have dorsal cortex or a striking platform. The presence of only one flake suggests the prehistoric occupation at this site was ephemeral.

Table 6.5. Artifacts Recovered from Site 15WA179

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP LM36	Activity	Biological	Coal	-	-	1
		Other	Battery Part	-	-	1
	Kitchen	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Interior and Exterior	1
		Glass	Bottle/Jar	Machine-made	Brown	2
					Colorless Non-Leaded	5
		Metal	Bottle/Jar Lid	-	-	1
STP LM36 Total						**11**
STP LM37	Kitchen	Ceramics	Whiteware	Molded	Undecorated	1
				Undecorated	Undecorated	1
		Metal	Bottle/Jar Lid	-	-	1
STP LM37 Total						**3**
STP M36	Kitchen	Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	1
	Other	Plastic/ Synthetic	Unidentified	-	-	1
STP M36 Total						**2**
STP M37	Activity	Biological	Coal	-	-	2
	Architectural	Structural Fasteners	Nails	Unidentified Nail	Fragment	2
	Kitchen	Glass	Undetermined Glass	Other	Colorless Non-Leaded	1
STP M37 Total						**5**
STP N36	Prehistoric	Debitage	Chert	St. Louis	Flake	1
STP N36 Total						**1**
STP NO36	Activity	Metal	Lead	-	-	5
	Architectural	Structural Fasteners	Nails	Wire Nail	Pulled, 7d	8
	Furniture	Glass	Lamp Chimney	-	-	2
	Kitchen	Glass	Bottle/Jar	Machine-made	Brown	4
					Colorless Non-Leaded	7
				Machine-made Embossed	Brown	1
	Other	Glass	Unidentified	-	-	2
STP NO36 Total						**29**
Grand Total						**51**

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if site 15WA179 was present on any of the early maps of the area, which might indicate its age. Site 15WA179 was identified on the 1923 and 1958 USGS topographic quadrangles (**Figure 6.41**), reaffirming the mid-twentieth century occupation date range determined from the artifacts recovered.

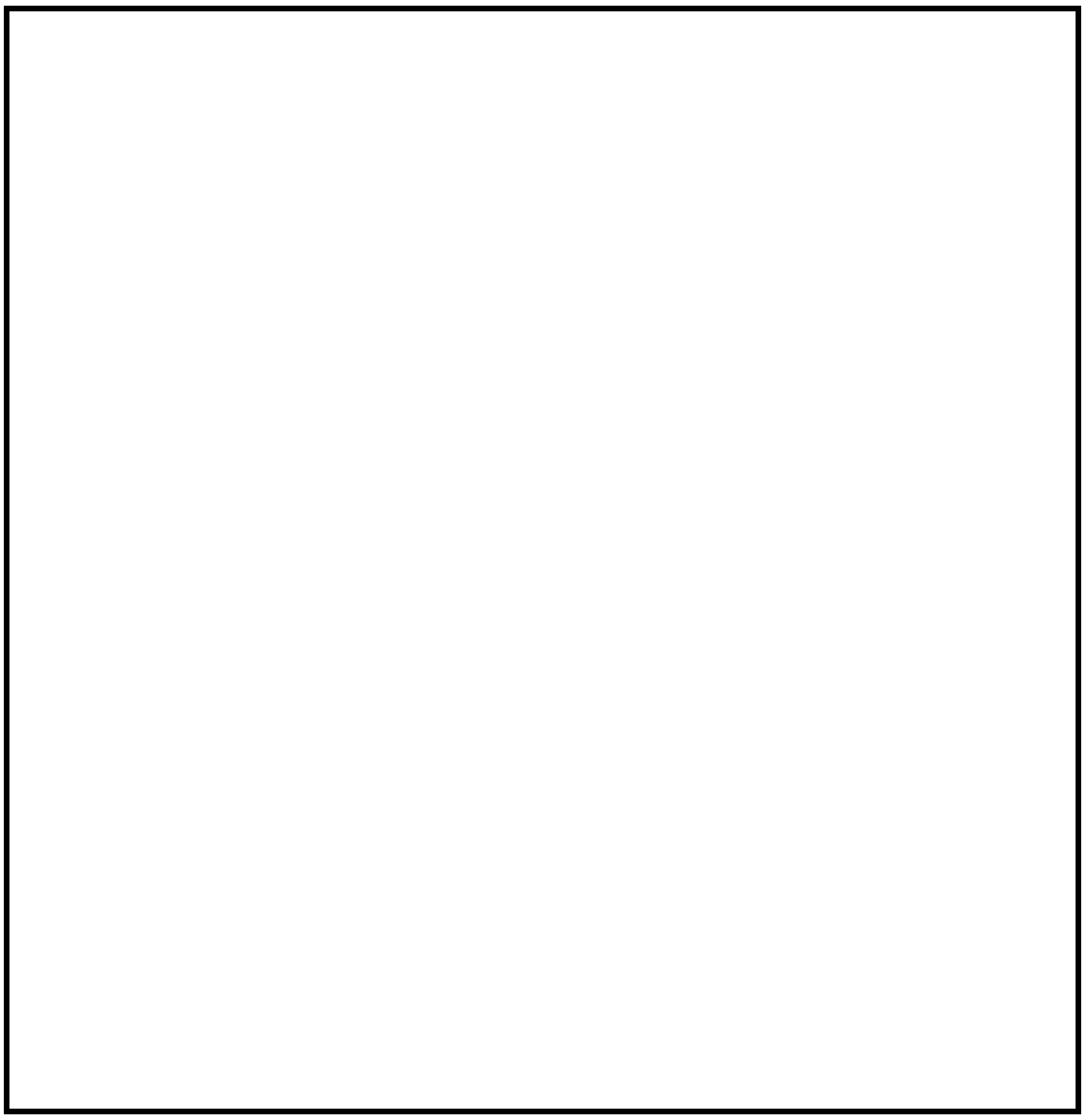

Figure 6.41. 1923 Brownsville, KY US Geological Survey map showing location of site 15WA179.

Site Summary and NRHP Recommendations

Site 15WA179 was a historic farmstead consisting of concrete block foundation remnants, two extant out-buildings, a well, and an artifact scatter. Based on the archival data, artifacts recovered, and extant structural elements, site 15WA179 appears to date from the early to mid-twentieth century. The site also contained a minor prehistoric component of unknown age. The artifact density across the site, including both prehistoric and historic artifacts, was approximately 10 artifacts per positive shovel test. Even with a moderately high artifact density, this site does not appear to have developed significant midden deposits. Other than the foundations and the well, no evidence of intact archaeological features was noted either on the ground surface or during shovel testing.

Because of the lack of midden and cultural features, this site does not appear to have the potential to yield intact deposits or significant archaeological data. Given these factors site 15WA179 is not considered eligible for inclusion on the NRHP and no further work is recommended.

6.5.6 Site 15WA180

Site Type: Historic Farm
UTM Coordinates: 4
Quadrangle: Bowling Green North, 1970, photorevised 1979
Elevation: AMSL
Slope: 9 percent
Soil Type: ZaC2, Zanesville silt loam, 6 to 12 percent slope, eroded **Visibility:** 0 percent
Dimensions: 490 m^2 (0.12 ac), 35 m (N/S) x 23 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA180 is an artifact scatter in the side yard of a residence located on the north side of the southern portion of the project area (**Figure 6.42, 6.43**). The dwelling and a pre-fabricated metal barn associated with the residence are outside the project boundary to the east of the artifact scatter. The only extant structures within the corridor are a pre-fabricated metal shed and an above-ground swimming pool. The artifact scatter was located on a mild slope leading from the side of the house down to the drainage alongside.

The site was discovered during shovel test excavations along the project area corridor, and is bounded by the project area boundary to the east and encompasses two positive shovel probes flanked on the north, south, and west by negative shovel tests. Based on the distribution of artifacts within two positive shovel tests, the site area covered approximately 0.12 ac (0.05 ha) (**Figure 6.44**). No architectural remnants directly related to this site were identified within the project area. However, there was a dwelling, likely dating to the twentieth century, located just to the east of the site outside of the project area. The artifacts recovered from site 15WA180 are most likely related to this residence and possible landscaping or construction work that involved minor soil modification, or erosion that has carried the artifacts slightly downhill from the immediate vicinity of the residence.

Six shovel tests were excavated within the boundary of site 15WA180. Most of these had similar profiles (**Figure 6.45**) consisting of a 10-20 cm (4 to 8 in) layer of dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. The underlying subsoil was a strong brown (Munsell 7.5YR 5/6) silty clay loam which was heavily mottled in a few cases, suggesting that this area has possibly been landscaped to accommodate the adjacent residence. Data on shovel tests excavated at site 15WA180 is presented in **Appendix B**.

Materials Recovered

The historic artifact assemblage from the two positive STPs at site 15WA180 consisted of one artifact from the Activity group and six from the Kitchen group (**Table 6.5**).The sample is very small, but is consistent with a domestic site. The dates associated with the historic artifacts recovered ranged from the late-nineteenth to the twentieth century.

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if the house associated with site 15WA180 was present on any of the early maps of the area, which might assist in indicating the age of the adjacent site. Site 15WA180 does not appear on the 1923 Brownsville 15 minute USGS quadrangle. An unoccupied dwelling is present at this location on the 1937 Warren County highway map, and an occupied structure is present on the 1970 Bowling Green North USGS quadrangle. It cannot be determined if the structures shown on the two historic maps represent the same building, however, they do demonstrate that the historic period use of the site probably began between 1923 and 1937.

Site Summary and NRHP Recommendations

Site 15WA180 was an artifact scatter associated with a residence located immediately outside the project area. Based on the artifacts and archival data, this site appears to date after 1923. The artifact density across the site was very low, and visual inspection and shovel probing revealed no evidence of intact features or midden. Additionally, the mottled soils observed in several of the STPs suggest the portion of the site within the project area has been disturbed. This site is most likely a minor trash scatter associated with the adjacent residence and does not merit a significant archaeological find.

Given the low density of artifacts, the lack of evidence of intact cultural deposits, the evidence of disturbance to soils yielding the artifact content, and the relatively recent age of the associated dwelling, Site 15WA180 is not considered eligible for inclusion on the NRHP. No further work is recommended.

Figure 6.42. Overview of site 15WA180, facing east.

Figure 6.43. Overview of site 15WA180, facing east.

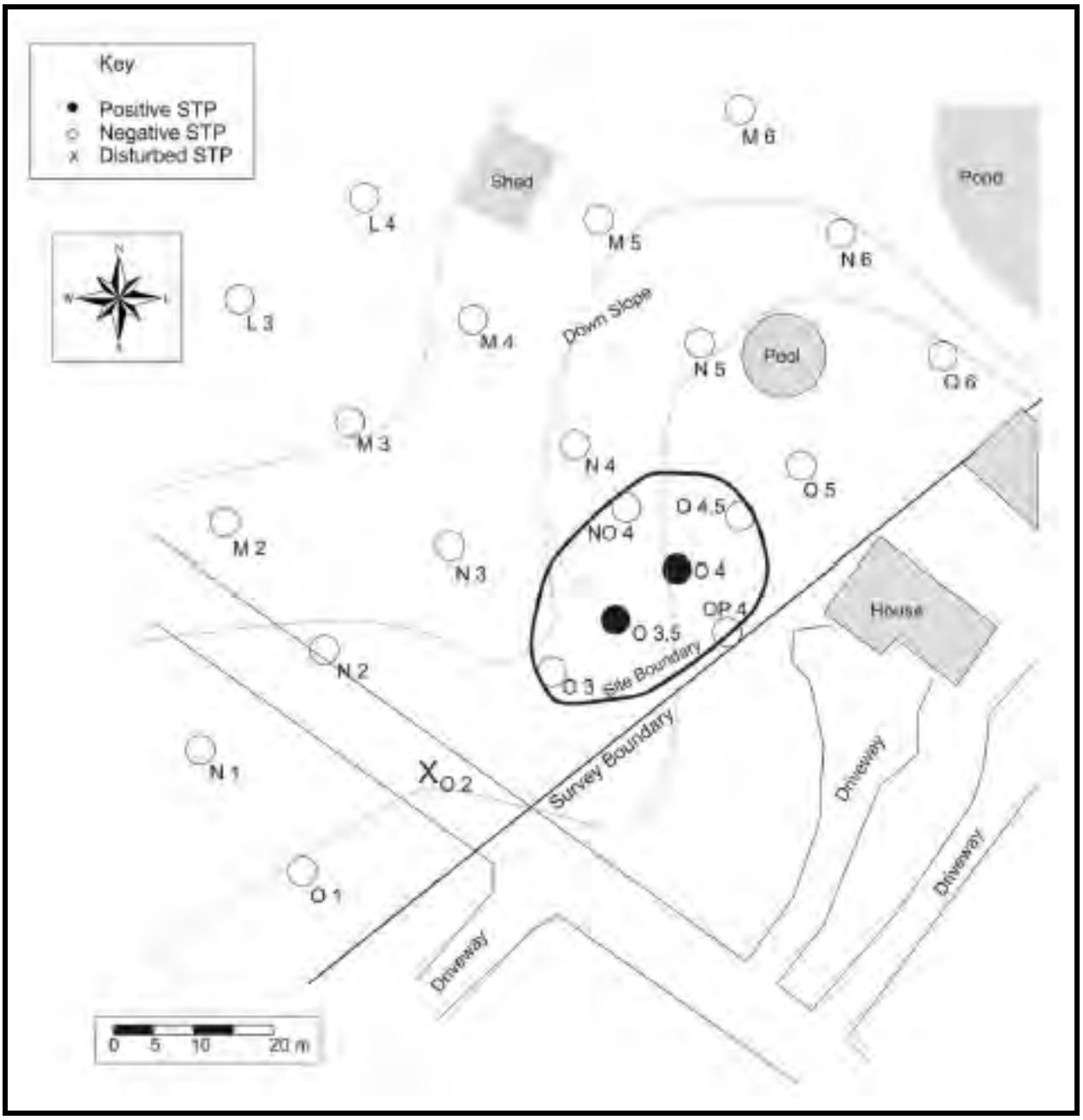

Figure 6.44. Map of site 15WA180 and its surroundings.

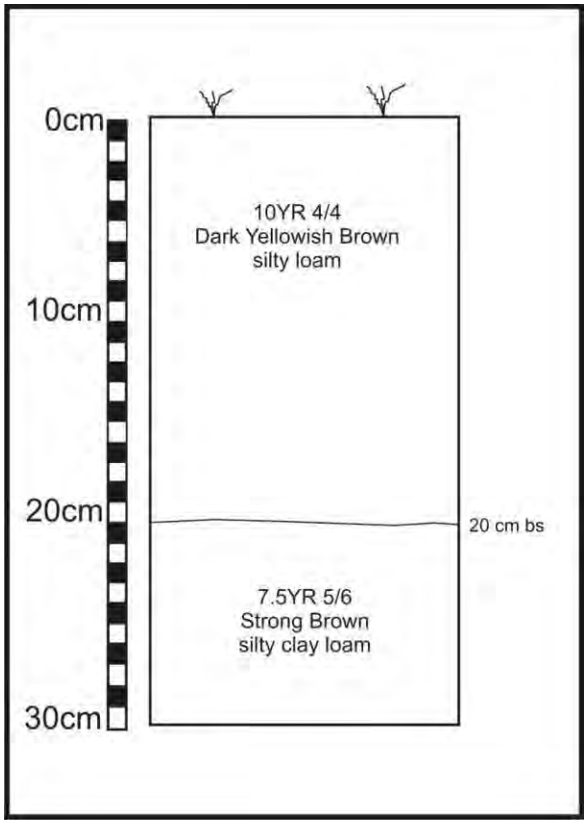

Figure 6.45. Diagram depicting the typical soil profile observed at site 15WA180, as evidenced in shovel test O3.

Table 6.6. Artifacts Recovered from Site 15WA180

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
STP O3.5	Kitchen	Glass	Bottle/Jar	Machine-made	Colorless Non-Leaded	1
STP O3.5 Total						**1**
STP O4	Activity	Metal	Unidentified	Wrought	-	1
	Kitchen	Ceramics	Domestic Stoneware	Bristol Glazed	Bristol Glazed Exterior and Albany Interior	1
		Glass	Bottle/Jar	Machine-made	Aqua	1
					Brown	2
					Colorless Non-Leaded	1
STP O4 Total						**6**
Grand Total						**7**

6.5.7 Site 15WA181

Site Type: Open Habitation Without Mounds
UTM Coordinates: 9
Quadrangle: Bowling Green North, 1970, photorevised 1979 **Elevation:** AMSL
Slope: 1 percent
Soil Type: FrD, Frondorf silt loam, 12 to 20 percent slope
Visibility: 0 percent
Dimensions: 469 m^2 (0.11 ac), 30 m (N/S) x 20 m (E/W)
NRHP Eligibility Recommendation: Not Eligible

Site Description

Site 15WA181 was a prehistoric open habitation located on a tow ridge near Indian Creek in the central part of the project area (**Figure 6.46, 6.47**). The site was discovered during shovel test excavations along the project area corridor (**Figure 6.48**). The site area encompassed approximately 0.11 ac (0.04 ha) and was completely covered with dense pasture grasses. The site was identified and delineated by shovel testing. A total of two positive shovel tests yielded a total of four prehistoric artifacts. This low density of artifacts indicates that this site is a light scatter representing an ephemeral occupation.

Figure 6.46. Overview of site 15WA181, facing east.

Figure 6.47. Topographic extent showing the location of site 15WA181.

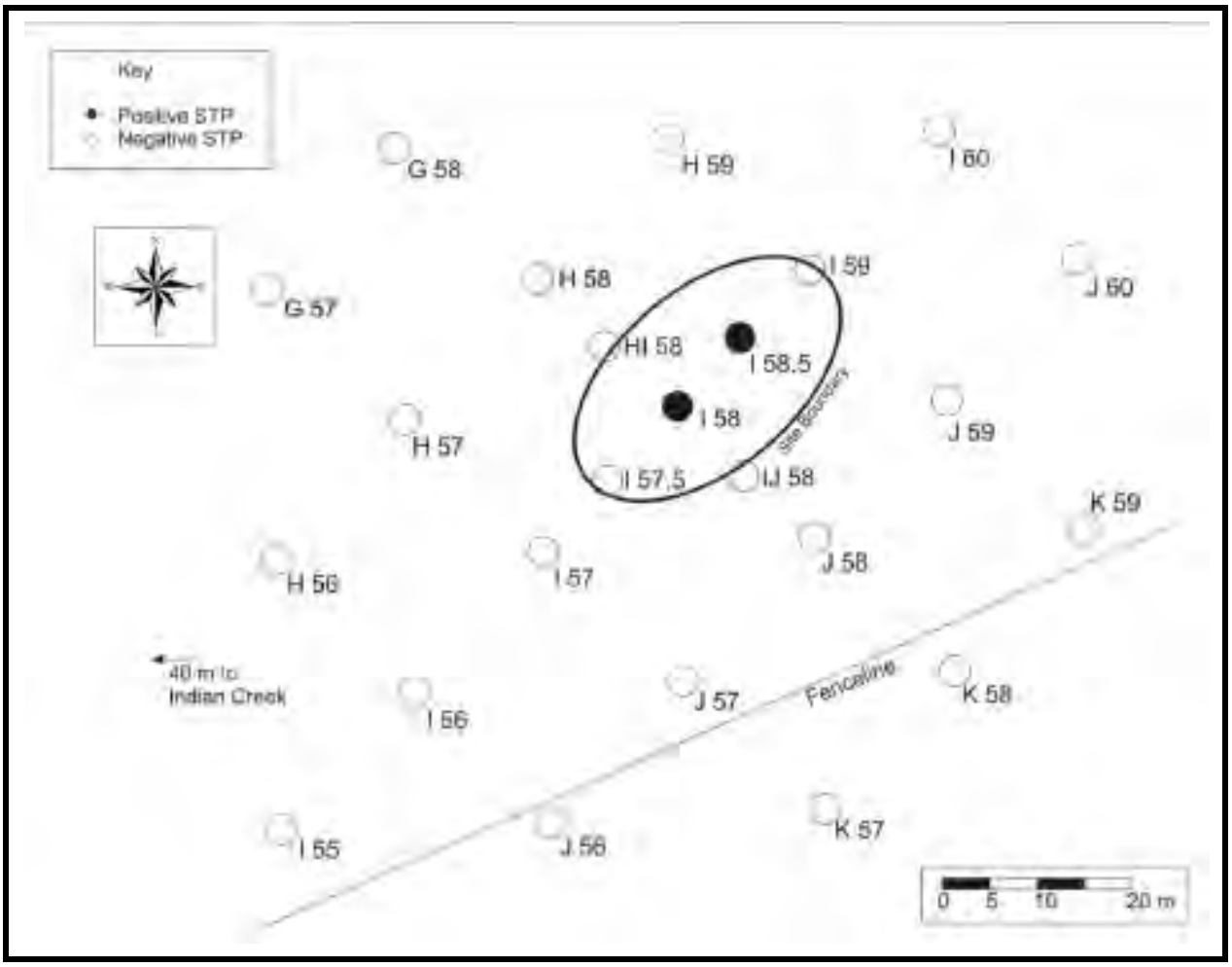

Figure 6.48. Map of site 15WA181.

The typical soil profile observed during shovel test excavations consisted of a dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil overlaying a yellowish brown (Munsell 10YR 5/4) silty clay loam (**Figure 6.49**). Stratum 1 plowzone depths were typically 15-30 cm (6-12 in). No artifacts were recovered below the plowzone. Data on individual STPs excavated at site 15WA181, including information on soils, is presented in **Appendix B**.

Materials Recovered

The survey of site 15WA181 resulted in the recovery of four flakes of St. Louis chert (**Table 6.8**). None of the four retained their platforms, and none had cortex on their dorsal surface. The presence of flakes indicates that lithic reduction took place at this locality, however, no other information regarding cultural activities could be gleaned from this small assemblage. The sparse lithic scatter suggests that the prehistoric occupation of site 15WA181 was ephemeral.

Site Summary and NRHP Recommendations

Site 15WA181 was a prehistoric lithic scatter of unknown age located along a tow ridge in the central part of the project area. The artifact density across the site is very low and no evidence of sub-plowzone prehistoric deposits or cultural features was identified.

Given the light density of prehistoric material this site appears to be an ephemeral occupation that would not have been likely to result in the development of midden or features. This site does not have good potential to yield further information that would contribute to the understanding of prehistoric and historic peoples in the area. Given these factors, site 15WA181 is not considered eligible for inclusion on the NRHP and no further work is recommended.

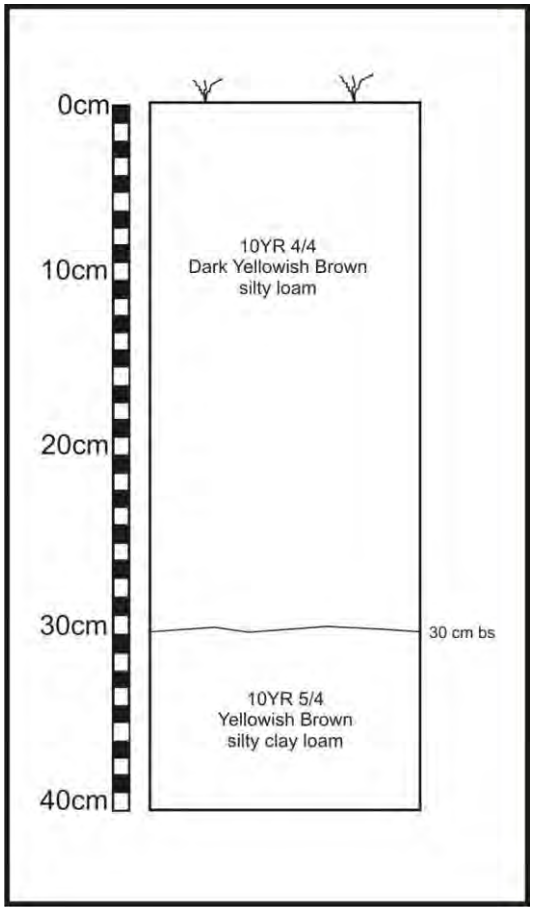

Figure 6.49. Diagram depicting the typical soil profile observed at site 15WA181 as evidenced in shovel test I59.

Table 6.7. Artifacts Recovered from Site 15WA181

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail	Total
STP I58	Prehistoric	Debitage	Flake	St. Louis	2
STP I58 Total					**2**
STP I58.5	Prehistoric	Debitage	Flake	St. Louis	2
STP I58.5 Total					**2**
Grand Total					**4**

6.5.8 Site 15WA182

Site Type: Open habitation without mounds
UTM Coordinates: 8
Quadrangle: Bowling Green North, KY 1970,photorevised 1979
Elevation: AMSL
Slope: 2 percent
Soil Type: La, Lawrence silt loam, rarely flooded
Visibility: 0 percent
Dimensions: 300 m^2 (0.07 ac), 20 m (N/S) x 20 m (E/W) **NRHP**
Eligibility Recommendation: Not eligible

Site Description

Site 15WA182 was a prehistoric open habitation site located along a fence line in the central part of the project area (**Figures 6.50, 6.51**). The site was discovered during shovel test excavations along the project area corridor (**Figure 6.52**). The site area encompassed approximately 0.07 ac (0.02 ha) of a livestock pasture covered by dense grasses. The site was identified and delineated by shovel probes, one of which produced cultural material. Though only one shovel test resulted in artifact content, enough was recovered to warrant documentation as an archaeological site.

Figure 6.50. Overview of site 15WA182, facing east.

Figure 6.51. Topographic extent showing the location of site 15WA182.

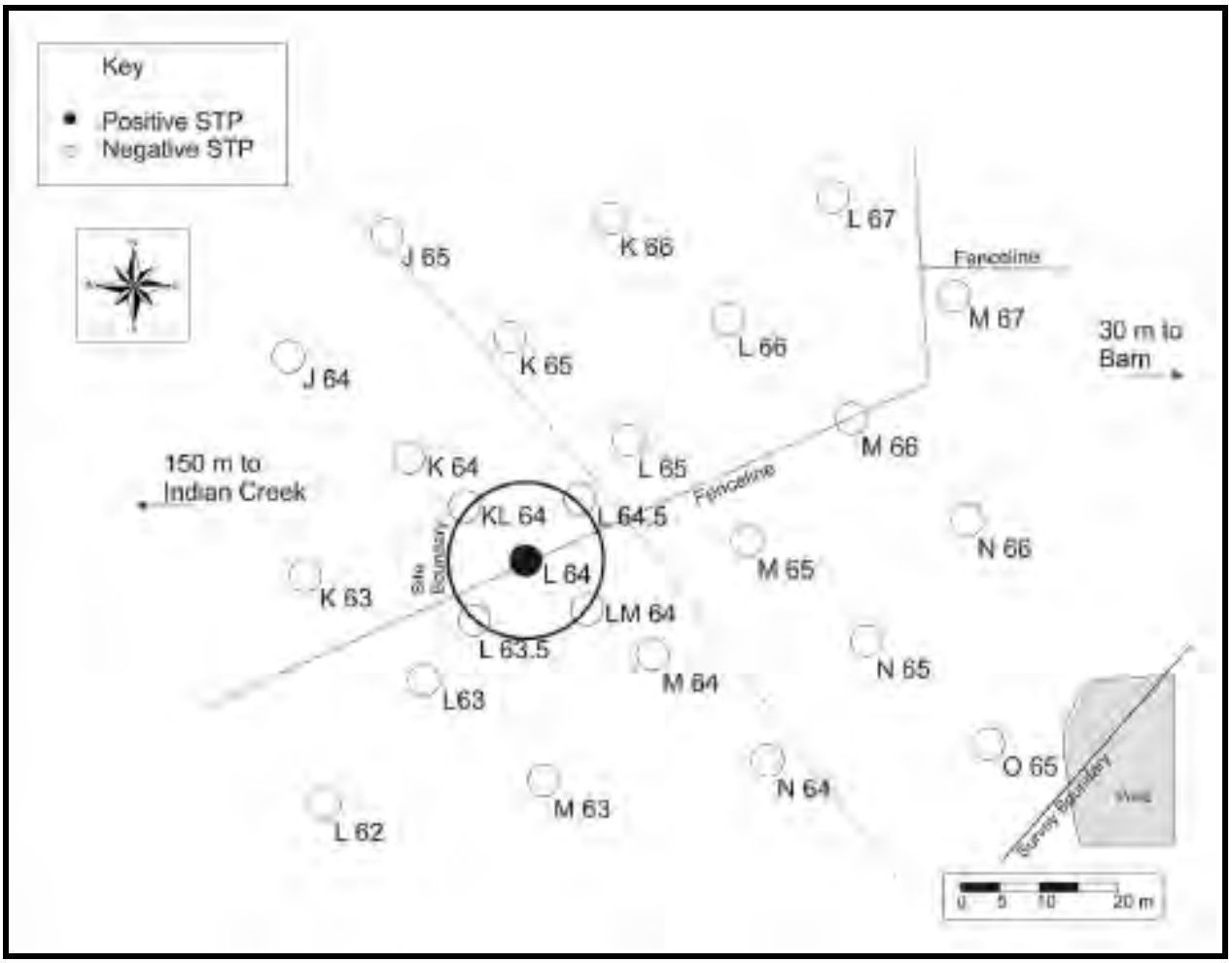

Figure 6.52. Map of site 15WA182.

The typical soil profile observed during shovel test excavations consisted of a dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil overlaying a brown (Munsell 7.5YR 5/6) silty clay loam (**Figure 6.53**). Stratum 1 plowzone depths were typically 15 cm (6 in). No artifacts were recovered below the stratum 1 plowzone. Data on STPs excavated at 15WA182, including information on soils, is presented in **Appendix B**.

Materials Recovered

The investigation of 15WA182 resulted in the recovery of three flakes of Ste. Genevieve chert and one flake of St. Louis chert (**Table 6.8**). None of the four flakes retained their striking platform. However, the cortex on the dorsal surface of all four flakes indicates the material was obtained at or near a bedrock source. It also suggests a focus on early stage lithic reduction activities. Based on the small size of the site and the limited artifact inventory, the prehistoric use of this location was most likely a very short-term ephemeral occupation.

Site Summary and NRHP Recommendations

Site 15WA182 was a low density prehistoric lithic scatter of unknown age located along a fence line in the central part of the project area. Shovel probing revealed no evidence of sub-plowzone

prehistoric deposits. Given the light density of material and its limited size, this site appears to be a very brief, ephemeral occupation focused on lithic reduction that would not have been likely to result in the development of midden or features. This site does not have good potential to yield further information that would contribute to the understanding of prehistoric and historic peoples in the area. Given these factors, 15WA182 is not considered eligible for inclusion on the NRHP and no further work is recommended.

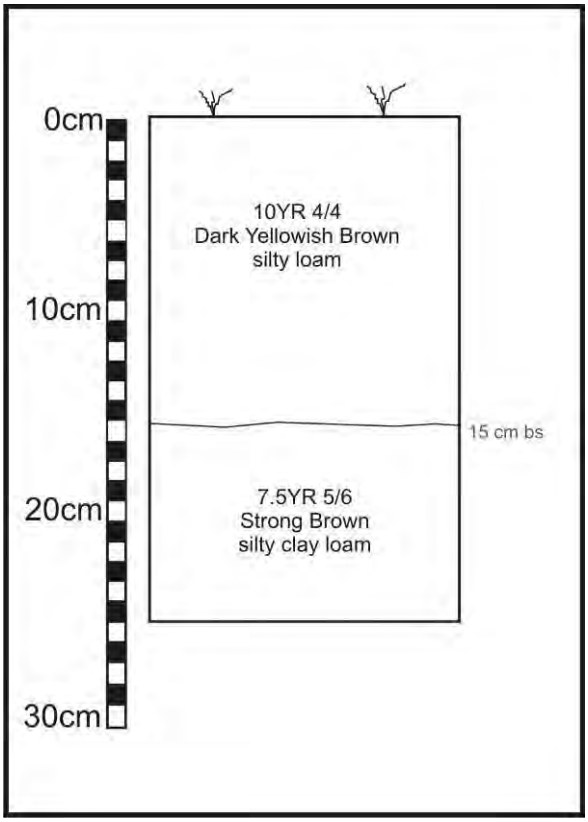

Figure 6.53. Diagram depicting the soil profile observed at 15WA182.

Table 6.8. Artifacts Recovered from Site 15WA182

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail	Total
STP L64	Prehistoric	Debitage	Flake	Ste. Genevieve	3
				St. Louis	1
STP L64 Total					**4**
Grand Total					**4**

6.5.9 Site 15WA183

Site Type: Open habitation without mounds
UTM Coordinates: 8
Quadrangle: Bowling Green North, KY 1970,photorevised 1979
Elevation: AMSL
Slope: 10 percent
Soil Type: FrD, Frondorf silt loam, 12 to 20 percent slopes
Visibility: 0 percent
Dimensions: 4325 m^2 (1.06 ac), 82 m (N/S) x 100 m (E/W) **NRHP**
Eligibility Recommendation: Not eligible

Site Description

Site 15WA183 was a prehistoric open habitation site, located on a terrace along an unnamed tributary of Indian Creek (**Figures 6.54, 65.5**). The site was discovered and delineated during shovel test excavations along the project area corridor (**Figure 6.56**). The site area covered approximately 1.06 ac (0.42 ha) of a pasture covered with dense grasses. The northern, eastern and southern boundaries of the site were delineated by shovel testing. The western boundary of the site consisted of a steep slope overlooking the unnamed tributary to Indian Creek. Artifact density across the site is low and varied in range between one and two artifacts recovered from the seven positive shovel tests.

Figure 6.54. Overview of site 15WA183, facing south.

Figure 6.55. Topographic extent showing the location of 15WA183.

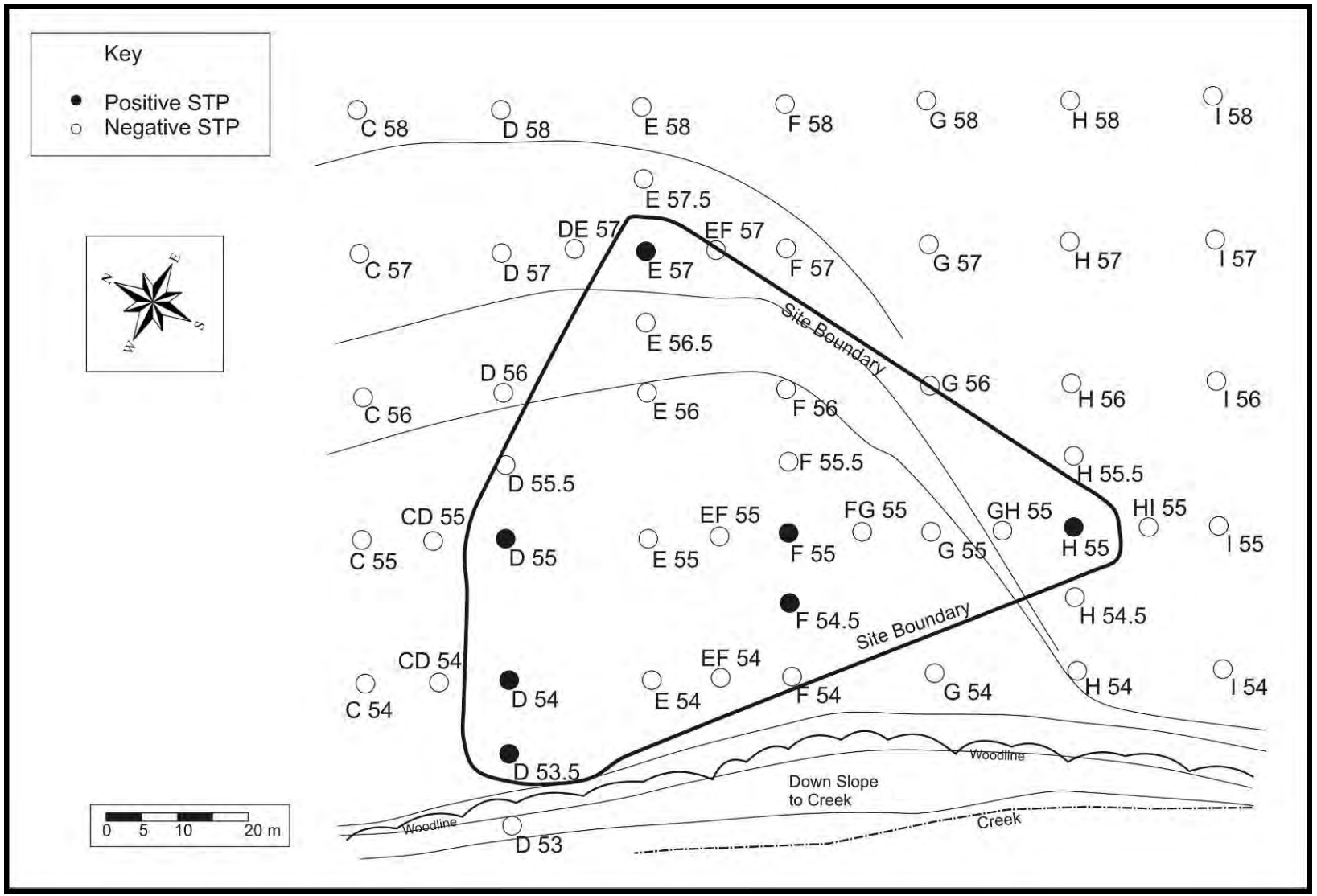

Figure 6.56. Map of site 15WA183.

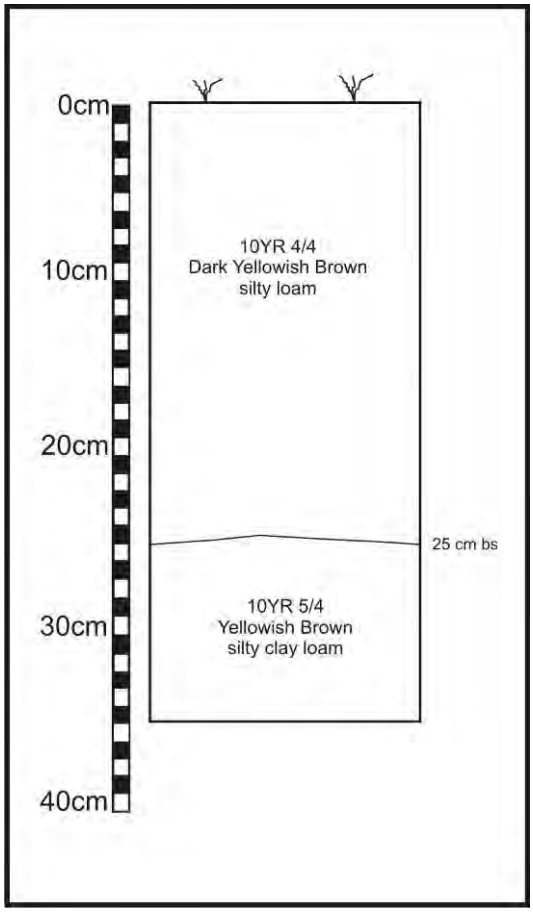

Figure 6.57. Diagram depicting the typical soil profile observed at site 15WA183.

The typical soil profile observed during shovel test excavations on site consisted of a dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil overlaying a yellowish brown (Munsell 10YR 5/4) silty clay loam (**Figure 6.57**). Stratum 1 plowzone depths ranged from 10-25 cm (4-10 in) and no artifacts were recovered below the stratum 1 plowzone. Data on STPs excavated at site 15WA183 including information on soils is presented in **Appendix B**.

Materials Recovered

The survey of 15WA183 produced three flakes derived from Ste. Genevieve chert and six flakes of St. Louis chert (**Table 6.9**). Seven of the flakes did not have a striking platform and had no cortex on their dorsal surface. Two of the St. Louis chert flakes also had no striking platform, but cortex present on their dorsal indicates the material was obtained at or near a bedrock surface. These cortical flakes also suggest that early stage lithic reduction took place at this site. The limited artifact inventory indicates that 15WA183 was an ephemeral habitation or activity area.

Site Summary and NRHP Recommendations

Site 15WA183 was a widely dispersed prehistoric lithic scatter of unknown age located along the banks of an unnamed tributary of Indian Creek. The artifact density across the site is low and no evidence of sub-plowzone prehistoric deposits or features was noted. Given the light artifact density and the limited inventory of artifact types, this site appears to be an ephemeral

occupation that would not have been likely to result in the development of midden or features. This site does not have good potential to yield further information that would contribute to the understanding of prehistoric and historic peoples in the area. Given these factors, this site is not considered eligible for inclusion on the NRHP and no further work is recommended.

Table 6.9. Artifacts Recovered from Site 15WA183

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail	Total
STP D53.5	Prehistoric	Debitage	Flake	St. Louis	2
STP D53.5 Total					**2**
STP D54	Prehistoric	Debitage	Flake	St. Louis	2
STP D54 Total					**2**
STP D55	Prehistoric	Debitage	Flake	St. Louis	1
STP D55 Total					**1**
STP E57	Prehistoric	Debitage	Flake	Ste. Genevieve	1
STP E57 Total					**1**
STP F54.5	Prehistoric	Debitage	Flake	St. Louis	1
STP F54.5 Total					**1**
STP F55	Prehistoric	Debitage	Flake	Ste. Genevieve	1
STP F55 Total					**1**
STP H55	Prehistoric	Debitage	Flake	Ste. Genevieve	1
STP H55 Total					**1**
Grand Total					**9**

6.5.10 Site 15WA184

Site Type: Open habitation without mounds; Early Archaic
UTM Coordinates: 3
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: 585 ft AMSL
Slope: 3 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent slopes
Visibility: 100 percent
Dimensions: 6915 m^2 (1.7 ac), 75 m (N/S) x 115 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA184 was a prehistoric open habitation site that also yielded one historic artifact. Located on a terrace above an unnamed tributary of Indian Creek, the site was situated on the north side (**Figures 6.58,** and **6.59**). The site was discovered during intensive visual inspection of a plowed field and subsequent shovel testing along the project area corridor (**Figure 6.60**). Based on the surface collection the site area covered approximately 1.7 ac (0.68 ha).

The site was identified and delineated by recovering artifacts from 12 surface collection blocks and one positive shovel test. The boundaries of the site roughly follow the edges of an upland terrace located at the base of a rolling ridgeline overlooking the Indian Creek drainage.

Artifact density across the site is high and varied in range between one and 48 artifacts per collection block. Among the artifacts recovered was a Kanawha Stemmed PP/K which dated to the Early Archaic period.

Figure 6.58. Overview of site 15WA184, facing east.

Because of the excellent surface visibility the site was surface collected using 10 m (32.8 ft) square collection blocks at the approximate shovel test locations of the four transects that crossed the plowed field. The surface of each collection block was systematically inspected for artifacts. It was determined that the southwest corner of the site yielded the highest density of artifacts. Collection Block (CB) 7 contained 48 artifacts and CB 11 yielded 25. The remaining blocks contained from one to nine artifacts each.

A shovel test was excavated at the southwest corner of CB 7 to determine the soil profile for the site. The soil profile consisted of three strata. Stratum 1 was a 30 cm (12 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam plowzone. Stratum 2 was a 35 cm thick (30-65 cm bs) dark yellowish brown (Munsell 10YR 4/6) silt loam with some clay content. The third stratum was a yellowish brown (Munsell 10YR 5/6) silty clay loam excavated to a depth of 85 cm, or 33.5 in (**Figure 6.61**). Cultural materials were collected from the top 30 cm (12 in) plowzone and the five cm (2 in) thick interface between Stratum 1 and Stratum 2. The Kanawha Stemmed PP/K was found at the base of the plowzone, approximately 30 cm bs (12 in bs). No artifacts were recovered from below approximately 35 cm bs (13.8 in bs). Data on the STP at the corner of CB 7 is presented in **Appendix B**.

Figure 6.59. Topographic extent showing the location of site 15WA184.

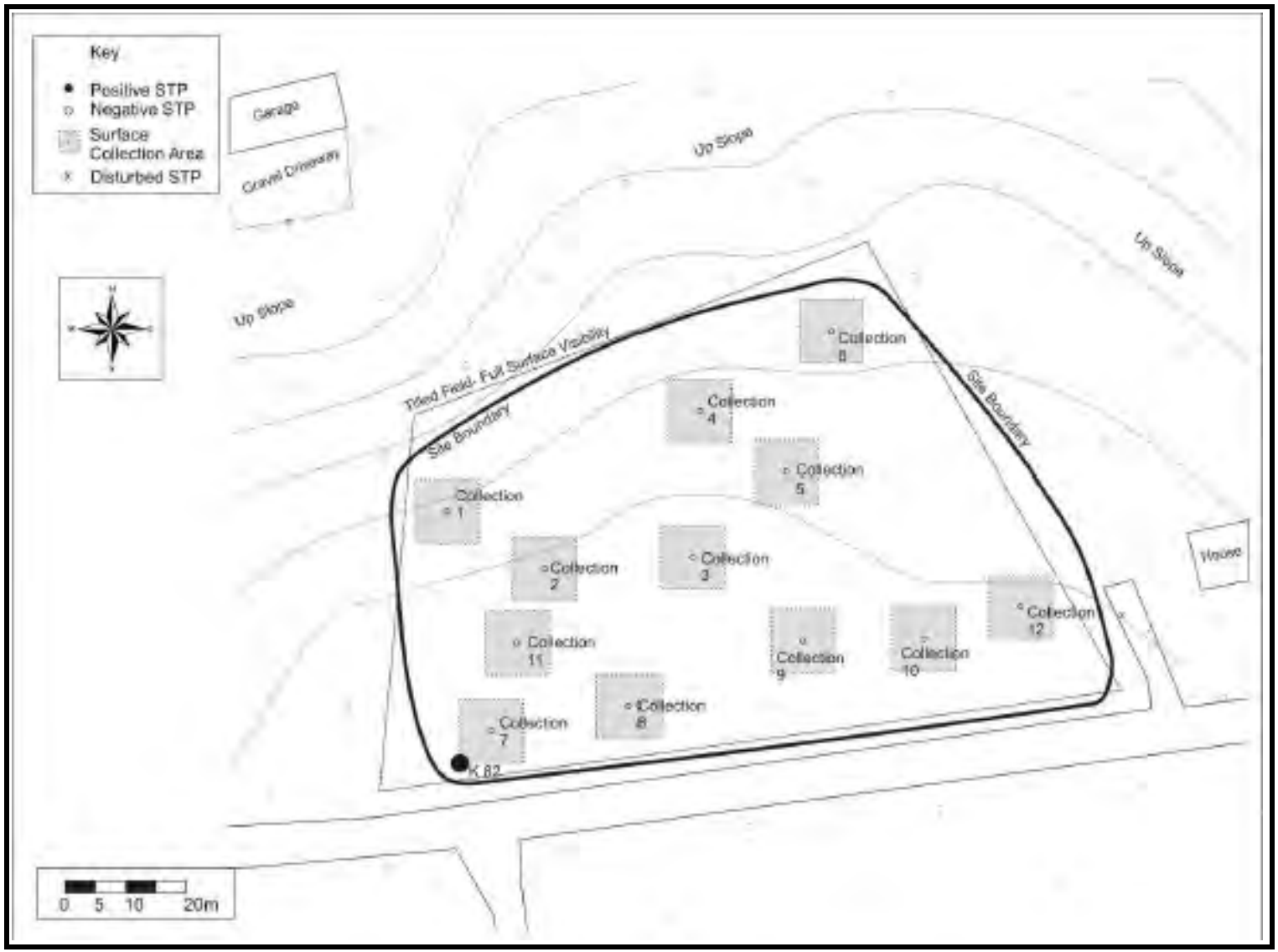

Figure 6.60. Map of site 15WA184.

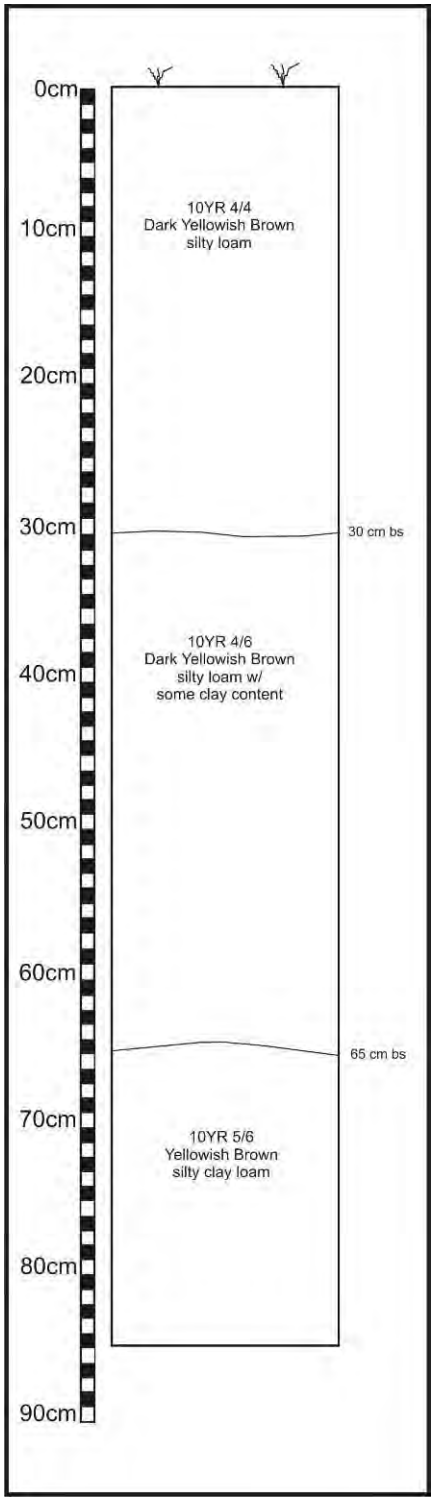

Figure 6.61. Diagram depicting the soil stratigraphy at site 15WA184 as observed in shovel test K82.

Materials Recovered

The investigation of site 15WA184 produced 108 prehistoric and 1 historic artifact (**Table 6.10**). The assemblage included 67 flakes (20 of Ste. Genevieve chert, 44 of St. Louis chert, two of pebble chert, and one of chalcedony); 12 shatter (one of Pebble chert, one of Chalcedony, two of Ste. Genevieve chert, seven of St. Louis chert, and one of Vienna chert). Also recovered were one St. Louis chert core, three bifaces (one Vienna finished biface and two St. Louis chert finished biface fragments).Two faunal remains that may well be modern in origin and twenty six chert manuports were also recovered.

Of the 67 flakes collected from site 15WA184, 18 possessed cortex but lacked their striking platform. The 18 cortical flakes included examples from both secondary (n=11) and primary contexts (n=7) indicating that the occupants of the site obtained their chert from both fluvial and bedrock sources. It is also notable that 27 percent of the flakes had cortex, suggesting an emphasis on early stage lithic reduction activities. It was also observed that shatter made up 15 percent of 79 member debitage inventory. This proportion is consistent with assemblages derived from core reduction (Bradbury and Carr 2004) and is supported by the presence of 26 chert manuports in CB 7.

Only three of the 67 flakes retained their striking platform. All had 0-1 facets and none had cortex on their dorsal surface. While core reduction produces assemblages where nearly 100 percent of flakes have simple platforms, the sample from site 15WA184 is too small to allow such a conclusion.

The tools from site 15WA184 included a single tested core and three finished bifaces. One of the finished bifaces was a nearly complete Kanawha Stemmed PP/K which is diagnostic of the Early Archaic period (Justice 1987). The remaining two bifaces were non-diagnostic proximal fragments. The tested core was found in CB 7, which also contained a large number of flakes. The two non-diagnostic finished bifaces were found in the eastern and northern portions of the site where the artifact density was comparatively low. The Kanawha Stemmed point was found at the base of the plowzone in the STP adjacent to CB 7.

The survey of 15WA184 produced a single opaque white glass lid liner. This artifact is likely an incidental deposit and does not represent a historic occupation at the site.

Table 6.10. Artifacts Recovered from Site 15WA184

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail	Total
Block 1	Prehistoric	Debitage	Shatter	St. Louis	1
			Flake	Ste. Genevieve	1
				St. Louis	7
CB 1 Total					**9**
Block 2	Prehistoric	Debitage	Shatter	Ste. Genevieve	1
			Flake	St. Louis	6
CB 2 Total					**7**
Block 3	Prehistoric	Debitage	Flake	Ste. Genevieve	1
				St. Louis	1
CB 3 Total					**2**
Block 4	Prehistoric	Biface	Unidentified	St. Louis	1

Table 6.10. Artifacts Recovered from Site 15WA184

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail	Total
			Finished Fragment		
		Debitage	Flake	St. Louis	1
CB 4 Total					**2**
Block 5	Prehistoric	Debitage	Flake	St. Louis	1
		Miscellaneous	Fauna	-	2
CB 5 Total					**3**
Block 6	Prehistoric	Debitage	Flake	St. Louis	3
CB 6 Total					**3**
Block 7	Prehistoric	Core	Tested	St. Louis	1
		Debitage	Flake	Pebble Chert	2
				Ste. Genevieve	5
				St. Louis	14
		Miscellaneous	Unmodified Manuport	Chert	26
CB 7 Total					**48**
Block 8	Kitchen	Glass	Bottle/Jar	Opaque White Lid Liner	1
	Prehistoric	Debitage	Shatter	St. Louis	1
CB 8 Total					**2**
Block 9	Prehistoric	Debitage	Shatter	Ste. Genevieve	1
			Flake	Ste. Genevieve	1
CB 9 Total					**2**
Block 10	Prehistoric	Biface	Unidentified Finished Fragment	St. Louis	1
CB 10 Total					**1**
Block 11	Prehistoric	Debitage	Shatter	Chalcedony	1
				St. Louis	3
			Flake	Chalcedony	1
				Ste. Genevieve	12
				St. Louis	8
CB 11 Total					**25**
Block 12	Prehistoric	Debitage	Shatter	St. Louis	1
			Flake	St. Louis	1
CB 12 Total					**2**
STP K82	Prehistoric	Biface	Kanawha PP/K	Vienna	1
		Debitage	Shatter	Pebble Chert	1
				St. Louis	1
				Vienna	1
			Flake	St. Louis	2
STP K82 Total					**6**
Grand Total					**112**

Site Summary and NRHP Recommendations

Site 15WA184 was a prehistoric lithic scatter with a very minor historic component. The artifact density across most of the site was relatively low, especially considering the good surface visibility at the time of the survey. However, there was a distinct concentration of artifacts near the southwest corner of the site. The combined debitage assemblage indicates an emphasis on early stage core reduction involving mainly St. Louis and St. Genevieve cherts. The presence of one core and several manuports is consistent with this interpretation. The single diagnostic artifact, a Kanawha Stemmed PP/K, indicates that site 15WA184 was occupied at least during the Early Archaic.

The artifact concentration near the southwest corner of the site contained all of the chert manuports, much of the debitage, and the one core from site 15WA184. The Kanawha Stemmed PP/K was also found in the STP that was excavated in this area. This data suggests the presence of a concentrated activity or habitation area dating to the Early Archaic period. While the spatially discrete artifact concentration is intriguing, there is no indication that the site has the potential to contain intact sub-plowzone deposits. There was no indication of artifact bearing strata below the plowzone and there was no evidence of features in the shovel test. Additionally, there was no fire cracked rock or burned earth in the STP or on the surface that would indicate this area has the potential to contain intact archaeological deposits.

Though this concentration may well contain the remains of an Early Archaic occupation, it is doubtful that information generated from additional investigations of site 15WA184 would contribute to the understanding of prehistoric peoples in the area. Given this, site 15WA184 is not considered eligible for inclusion on the NRHP and no further work is recommended.

6.5.11 Site 15WA185

Site Type: Open habitation without mounds, Historic Farmstead
UTM Coordinates: 1
Quadrangle: Bowling Green North, 1970, photorevised 1979
Elevation: AMSL
Slope: 3 percent
Soil Type: CnD, Caneyville-Rock outcrop, 6 to 20 percent slope
Visibility: 0 percent
Dimensions: 438 m^2 (0.1 ac), 18 m (N/S) x 48 m (E/W)
NRHP Eligibility Recommendation: Not eligible

Site Description

Site 15WA185 is a historic scatter associated with a farmstead that also contained a minor prehistoric component. The site is located west of the juncture of two roads at the north central section of the project area (**Figures 6.62, 6.63**). The site was discovered during shovel test excavations and visual inspection along the project area corridor. It is situated on a largely level upland. The site was bounded by an intensely disturbed area surrounding a natural gas well on the west, an area of exposed bedrock to the north, a pasture to the south, and the project area boundary to the east. Based on the distribution of the positive shovel tests and a surface collection, the site area covered approximately 0.1 ac (0.04 ha) (**Figure 6.64**). It is highly probable that the site extends further to the east, beyond the project boundary.

The existing dwelling located on the eastern edge of the site and project area boundary was reported by the landowner to be a two story log cabin with a log pole roof, dating to the mid 1800s (Edna Flora, personal communication 2011). The dwelling has a rear shed addition and horizontal board siding. The foundation was constructed of limestone block and the chimney was built from brick. At the time of the survey the roof was covered with asphalt shingling. Adjacent and north of the house was a two car frame garage with wood siding. Assuming it was originally intended as a car garage, this structure is of twentieth century construction. Several other buildings, including a barn and two storage sheds, were located further to the east outside the project area

The area west of the site was heavily disturbed by a natural gas well (**Figure 6.65**). This well was drilled in the 1980s to supply the home located on the eastern side of the project area. Unfortunately, the well was excavated in an area where privies were reportedly located, destroying these resources (Edna Flora, personal communication 2011).

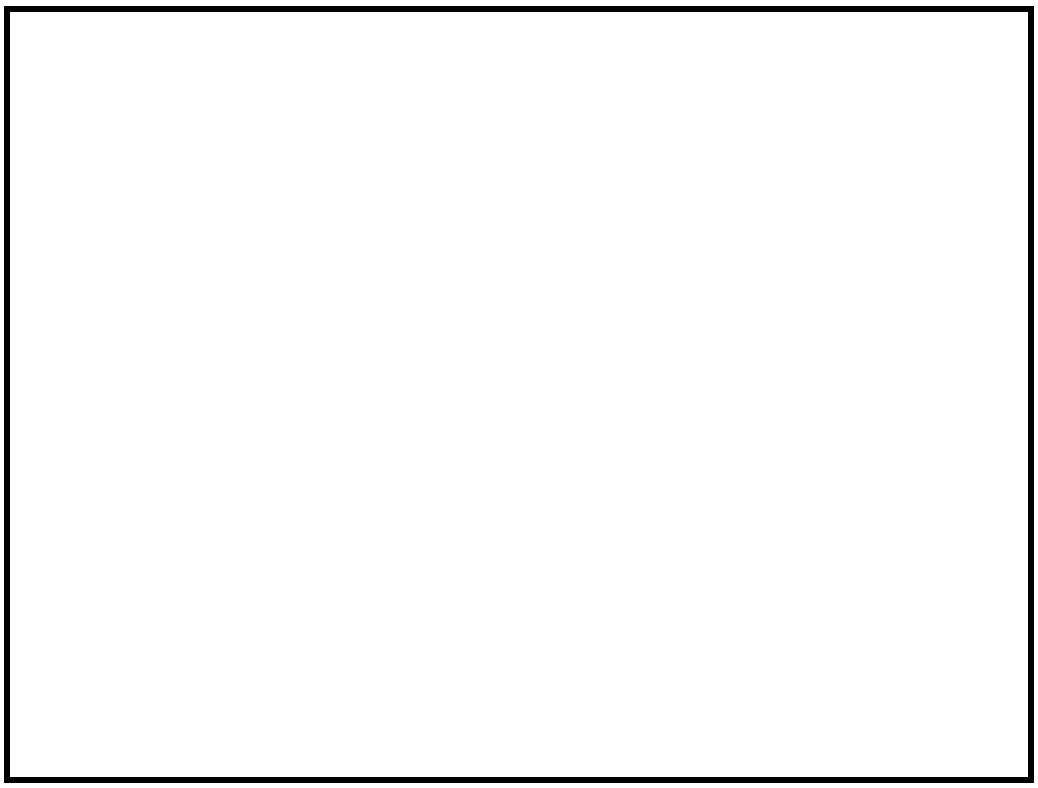

Figure 6.62. Overview of site 15WA185, facing north.

USGS TOPO QUAD – Reedyville, KY 1958

USGS TOPO QUAD – Bowling Green North, KY 1970

Figure 6.63. Topographic extent showing the location of site 15WA185.

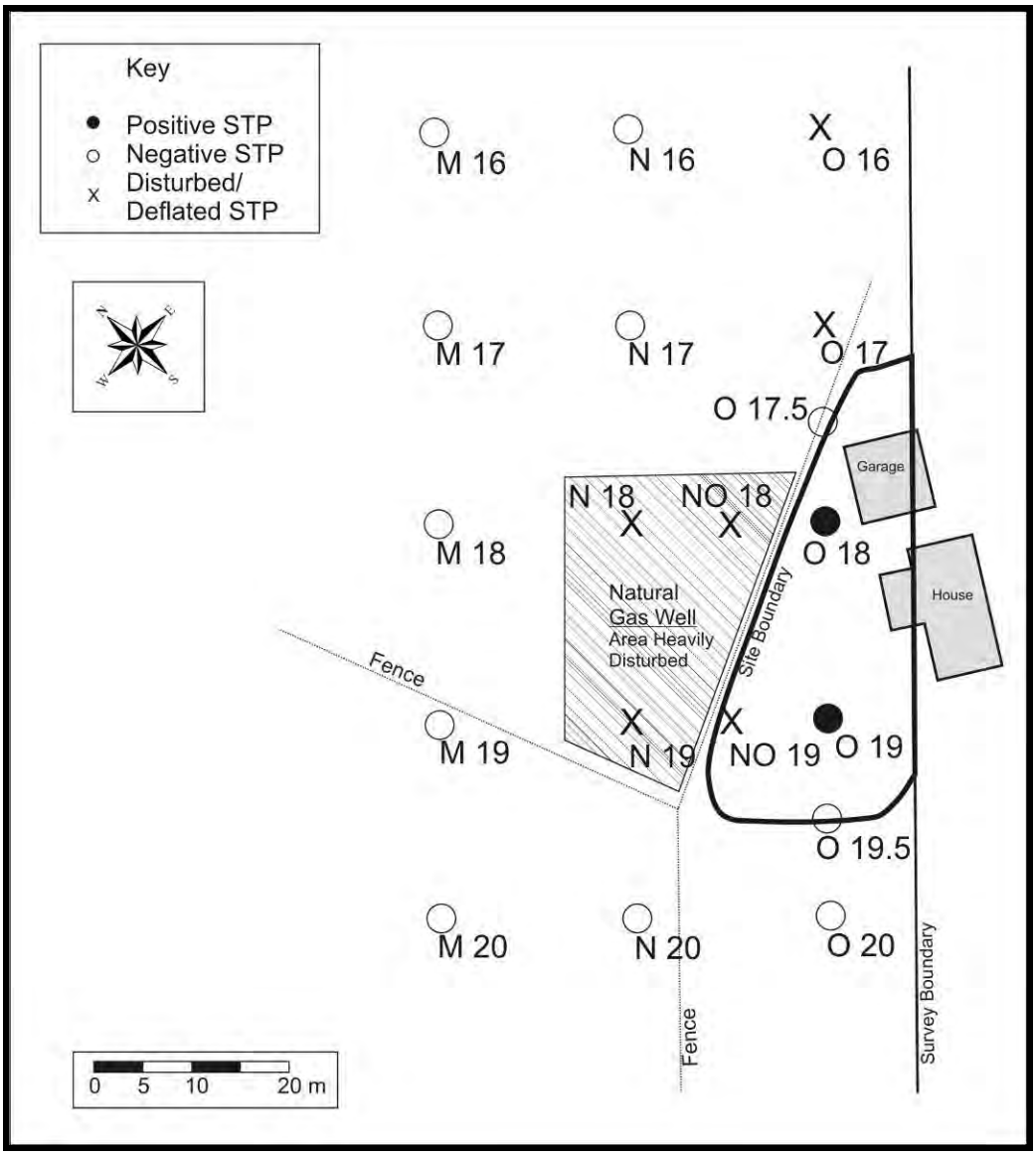

Figure 6.64. Map of site 15WA185 and its surroundings.

Five shovel tests were excavated and one area surface collected within the boundary of site 15WA185. Most of the shovel tests had similar profiles consisting of a 10-20 cm (4 to 8 in) layer of dark yellowish brown (Munsell 10YR 4/4) silt loam topsoil. The underlying subsoil was a brown (Munsell 7.5YR 5/6) silty clay loam (**Figure 6.66**). One of the shovel tests, excavated at the western edge of the area disturbed by the natural gas well, exhibited disturbed soils consisting of a heavily mottled brown (Munsell 7.5YR 5/6), silty clay loam. Data on shovel tests excavated at site 15WA185 is presented in **Appendix B**. A narrow strip along the fence line between the disturbed area around the natural gas well and the yard surrounding the residence featured good surface visibility and artifacts were surface collected.

Figure 6.65. Site 15WA185, showing natural gas well, facing west.

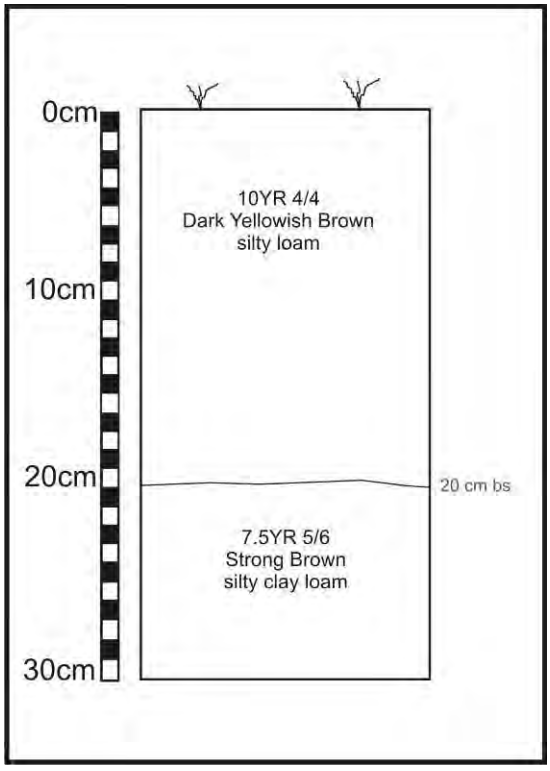

Figure 6.66. Diagram depicting the typical soil profile observed at site 15WA185, as evidenced in shovel test O19.

Materials Recovered

The assemblage from site 15WA185 consisted of 39 historic and 2 prehistoric artifacts. The material was recovered from two shovel tests and a surface collection along the fence separating the yard from the natural gas well (**Table 6.11**). The historic inventory represented several functional groups including Activities, Architectural, Clothing, and Kitchen. The Activity group consisted of 1 artifact representing 2 percent of the collection. The Architectural group artifacts consisted of 4 artifacts representing 10 percent of the assemblage. The one Clothing group artifact recovered totaled 2 percent of the collection. The remaining 33 historic artifacts were from the Kitchen group and represented 85 percent of the assemblage. The distribution of artifact groups is consistent with a domestic occupation. The dates associated with the historic artifacts recovered ranged from the mid-nineteenth to the twentieth century, with a mean date of 1910 based on the 37 total nail, ceramic, and glass artifacts recovered. The date obtained from the recovery of flat window glass is 1907, however the sample of window glass recovered is too small to make such projections definitive.

Two flakes were also recovered from the STPs at 15WA185. Both flakes were made from St. Louis chert, neither had cortex on the dorsal surface, and both were missing their striking platform. No diagnostic artifacts or tools were recovered. While the prehistoric component could extend outside the project area, the current evidence indicates that the activity or occupation at this location was ephemeral.

Archival Research

A basic search was conducted of maps found at the M.I. King Library at the University of Kentucky, the Kentucky History Center, AMEC"s collection, and online. This search was conducted in order to determine if site 15WA185 was present on any of the early maps of the area, which might indicate its age. Though site 15WA185 was not located on the 1877 DeBeers gazetteer map, it was identified on the 1923 USGS topographic map of the area. This correlates well with the early mean date derived from the artifacts recovered, indicating a principal occupation of the site ranging from the early 1900s to the modern day.

Site Summary and NRHP Recommendations

Site 15WA185 consisted of a yard scatter of historic artifacts at the rear of an existing historic dwelling and an ephemeral prehistoric occupation represented by two flakes. It is likely that the site extends outside the project area to the east. The site may have also extended further to the west, however this area has been severely impacted by the installation of a natural gas well. The age of the prehistoric component is unknown due to its limited extent and the lack of diagnostic artifacts. Based on oral information, historic map data, and the artifacts, the historic occupation may have commenced as early as the late-nineteenth century, post-1877, though the principal occupation seems to range from the early 1900s and continues today.

The artifact density across the site was approximately 13 artifacts per positive shovel test. Even with the relatively high density the STPs revealed no evidence of intact midden or features within the investigation area. Besides the standing structures at the site, no evidence of intact cultural features was noted either on the ground surface or during shovel testing.

Because of its limited size and lack of intact archaeological deposits, the portion of the site within the current ROW boundary does not appear to be a significant archaeological resource.

Given these factors site 15WA185 is not considered eligible for inclusion on the NRHP and no further work is recommended.

Table 6.11. Artifacts Recovered from Site 15WA185

Provenience	Artifact Group	Artifact Class	Artifact Type	Artifact Detail		Total
General Surface Collection	Architectural	Structural Fasteners	Nails	Late Cut Nail	Pulled, 8d	1
	Kitchen	Ceramics	Domestic Stoneware	Other	Unidentified Exterior Albany Interior	1
			Ironstone/ White Granite	Undecorated	Undecorated	8
		Glass	Bottle/Jar	Machine-made	Aqua	2
					Colorless Non-Leaded	1
			Tableware	Optic Molded	Light Green	1
				Press Molded	Colorless Non-Leaded	1
General Surface Collection Total						**15**
STP O18	Activity	Metal	Band	-	-	1
	Architectural	Structural Fasteners	Nails	Cut Nail Unspecified	Fragment	2
	Kitchen	Ceramics	Whiteware	Undecorated	Undecorated	1
		Glass	Bottle/Jar	Machine-made	Aqua	2
					Colorless Non-Leaded	1
					Opaque White	1
	Prehistoric	Debitage	Flake	St. Louis	-	1
STP O18 Total						**9**
STP O19	Architectural	Window	Glass	Window Glass/Flat Glass	-	1
	Clothing	Civilian	White Metal	Button	Cast Flat Disc and Shank	1
	Kitchen	Ceramics	Ironstone/ White Granite	Undecorated	Undecorated	1
			Whiteware	Undecorated	Undecorated	5
		Glass	Bottle/Jar	Machine-made	Amethyst Solarized	1
					Aqua	2
					Colorless Non-Leaded	3
				Machine-made Embossed	Colorless Non-Leaded	2
	Prehistoric	Debitage	Flake	St. Louis	-	1
STP O19 Total						**17**
Grand Total						**41**

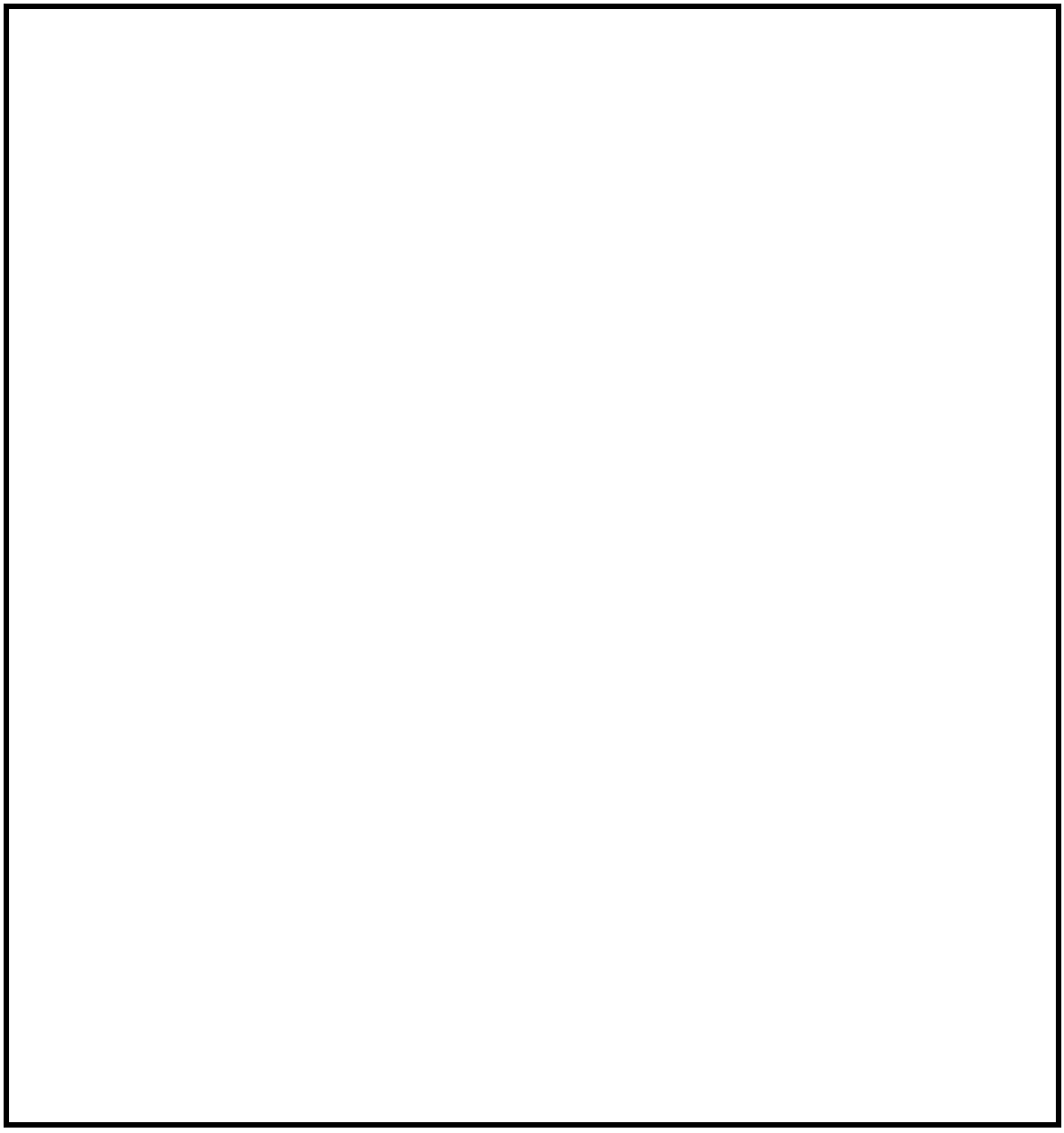

Figure 6.67. 1923 Brownsville, KY US Geological Survey map showing the location of site 15WA185.

6.6 Isolated Finds

6.6.1 Isolated Find 1

Site Type: Isolated Find
UTM Coordinates: 0
Quadrangle: Reedyville, KY 1958, photorevised 1979
Elevation: AMSL
Slope: 41 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent
Visibility: 0 percent
Dimensions: Less than 1m^2
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 1 consisted of one flake located in a shovel test at the drip line of a rock overhang in the northern part of the project area (**Figure 6.68**). Due to the constricted nature of the overhang no other shovel tests were excavated at this location. The typical soil profile observed at Isolated Find 1 consisted of 40 cm (16 in) of dark yellowish brown (Munsell 10YR 4/4) sandy silt loam overlaying a yellowish brown (Munsell 10YR 5/4) silty clay loam subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

Isolated Find 1 resulted in the recovery of one prehistoric artifact. This artifact was a single flake derived of Ste. Genevieve chert. The paucity of artifacts recovered precludes any useful interpretation of site function for Isolated Find 1.

Summary and NRHP Recommendations

Isolated Find 1 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP and no further archaeological investigations are recommended.

USGS TOPO QUAD – Reedyville, KY 1958

Figure 6.68. Topographic map close-up showing the location of Isolated Find 1.

6.6.2 Isolated Find 2

Site Type: Isolated Find
UTM Coordinates: 4
Quadrangle: Reedyville, KY 1958, photorevised 1979
Elevation: AMSL
Slope: 8 percent
Soil Type: ZaB, Zanesville silt loam, 2 to 6 percent slope
Visibility: 0 percent
Dimensions: Less than 10m^2
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 2 consisted of two flakes located on a gently rolling hill in a large pasture, just east of the northern part of the project area (**Figure 6.69**). The first flake was recovered during regular shovel test excavations along the project area corridor. A series of radial shovel tests excavated around this positive probe produced one additional flake. Based on prior consultations with the OSA, the two flakes do not warrant a state-issued site number.

The typical soil profile observed at Isolated Find 2 consisted of 20 - 25 cm (8 - 10 in) of dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/6) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The investigation of Isolated Find 2 produced an artifact assemblage consisting of two prehistoric artifacts. This assemblage included one St. Louis chert flake and one Vienna chert flake. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 2.

Summary and NRHP Recommendations

Isolated Find 2 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

Figure 6.69. Topographic map close-up showing the location of Isolated Find 2.

6.6.3 Isolated Find 3

Site Type: Isolated Find
UTM Coordinates: N6
Quadrangle: Reedyville, KY 1958, photorevised 1979
Elevation: AMSL
Slope: 7 percent
Soil Type: ZaB-Zanesville Silt Loam, 2 to 6 percent slopes
Visibility: 0 percent
Dimensions: Less than 10 m^2
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 3 consisted of three flakes located on a gently rolling hill in a large pasture, just to the east of the northern part of the project area (**Figure 6.70**). Two flakes were recovered during regular shovel test excavations along the project area corridor. A series of radial shovel tests excavated produced one additional flake. Based on prior consultations with the OSA, the three flakes do not warrant a state-issued site number.

The typical soil profile observed at Isolated Find 3 consisted of a 25 cm (10 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/6) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The survey of Isolated Find 3 resulted in the recovery of three prehistoric artifacts (one flake of Ste. Genevieve chert, one of St. Louis chert, and one of Vienna chert). The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 3.

Summary and NRHP Recommendations

Isolated Find 3 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD – Reedyville, KY 1958

Figure 6.70. Topographic map close-up showing the location of Isolated Find 3.

6.6.4 Isolated Find 4

Site Type: Isolated Find
UTM Coordinates: 9
Quadrangle: Bowling Green North 1970, photorevised 1979
Elevation: AMSL
Slope: 10 percent
Soil Type: ZaB, Zanesville silt loam, 2 to 6 percent slope
Visibility: 0 percent
Dimensions: Less than $1m^2$
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 4 consisted of one flake located on a gently rolling hill in a large pasture south of in the southern part of the project area (**Figure 6.71**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the probe that produced the flake failed to yield additional artifacts. The typical soil profile observed at Isolated Find 4 consisted of a 25 cm (10 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/4) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The investigation of Isolated Find 4 produced a single prehistoric artifact, which was a flake derived of St. Louis chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 4.

Summary and NRHP Recommendations

Isolated Find 4 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD – Bowling Green North, KY 1970

Figure 6.71. Topographic map close-up showing the location of Isolated Find 4.

6.6.5 Isolated Find 5

Site Type: Isolated Find
UTM Coordinates: 4
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: AMSL
Slope: 5 percent
Soil Type: FrD, Frondorf silt loam, 12 to 20 percent slope
Visibility: 0 percent
Dimensions: Less than $1m^2$
NRHP Eligibility Recommendation: Not eligible

Site Description

Isolated Find 5 consisted of one flake located on a gently rolling hill in a large pasture in the central part of the project area (**Figure 6.72**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the positive probe yielded no additional artifacts. The typical soil profile observed at Isolated Find 5 consisted of a 30 cm (12 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/4) slit clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The survey of Isolated Find 5 produced a single prehistoric artifact; a flake derived of St. Louis chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 5.

Summary and NRHP Recommendations

Isolated Find 5 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD – Bowling Green North, KY 1970

Figure 6.72. Topographic map close-up showing the location of Isolated Find 5.

6.6.6 Isolated Find 6

Site Type: Isolated Find
UTM Coordinates: 6
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: AMSL
Slope: 10 percent
Soil Type: FrD, Frondorf silt loam, 12 to 20 percent slope
Visibility: 0 percent
Dimensions: Less than $1m^2$
NRHP Eligibility Recommendation: Not eligible

Site Description

Isolated Find 6 consisted of one flake located at the confluence of Indian Creek and an unnamed tributary in a large pasture in the central part of the project area (**Figure 6.73**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the positive probe failed to yield additional artifacts. The typical soil profile observed at Isolated Find 6 consisted of a 20 cm (8 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/4) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The investigation of Isolated Find 6 produced a single flake derived of St. Louis chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 6.

Summary and NRHP Recommendations

Isolated Find 6 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD – Bowling Green North, KY 1970

Figure 6.73. Topographic map close-up showing the location of Isolated Find 6.

6.6.7 Isolated Find 7

Site Type: Isolated Find
UTM Coordinates: 4
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: AMSL
Slope: 5 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent slope
Visibility: 0 percent
Dimensions: Less than 1m^2, Isolated Artifact
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 7 consisted of one flake located in a large pasture in the south central part of the project area (**Figure 6.74**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the probe that produced the flake failed to yield additional artifacts. The typical soil profile observed at Isolated Find 7 consisted of a 20 cm (8 in) deep strong brown (Munsell 7.5YR 4/6) silt loam overlaying a strong brown (Munsell 7.5YR 5/6) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The survey of Isolated Find 7 produced a single flake derived of St. Louis chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 7.

Summary and NRHP Recommendations

Isolated Find 7 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD – Bowling Green North, KY 1970

Figure 6.74. Topographic map close-up showing the location of Isolated Find 7.

6.6.8 Isolated Find 8

Site Type: Isolated Find
UTM Coordinates: 0
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: AMSL
Slope: 11 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent slope
Visibility: 0 percent
Dimensions: Less than $1m^2$
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 8 consisted of one flake located in a large pasture in the south central part of the project area (**Figure 6.75**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the positive probe failed to yield additional artifacts. The typical soil profile observed at Isolated Find 8 consisted of a 25 cm (10 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/4) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The survey of Isolated Find 8 produced a single flake derived of Ste. Genevieve chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 8.

Summary and NRHP Recommendations

Isolated Find 8 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

USGS TOPO QUAD –
Bowling Green North, KY 1970

Figure 6.75. Topographic map close-up showing the location of Isolated Find 8.

6.6.9 Isolated Find 9

Site Type: Isolated Find
UTM Coordinates: 0
Quadrangle: Bowling Green North, KY 1970, photorevised 1979
Elevation: AMSL
Slope: 11 percent
Soil Type: FrC, Frondorf silt loam, 6 to 12 percent slope
Visibility: 0 percent
Dimensions: Less than $1m^2$
NRHP Eligibility Recommendation: Not eligible

Description

Isolated Find 9 consisted of one flake located in a large pasture in the central part of the project area (**Figure 6.76**). This isolated find was recovered during shovel test excavations along the project area corridor. A series of STPs excavated adjacent to the probe that produced the flake failed to yield additional artifacts. The typical soil profile observed across Isolated Find 9 consisted of a 20 cm (8 in) deep dark yellowish brown (Munsell 10YR 4/4) silt loam overlaying a yellowish brown (Munsell 10YR 5/4) silty clay subsoil. No evidence of subsurface features or other intact cultural deposits was noted during this investigation.

Materials Recovered

The survey of Isolated Find 9 produced one flake derived of Ste. Genevieve chert. The paucity of the material recovered precludes any useful interpretation of site function for Isolated Find 9.

Summary and NRHP Recommendations

Isolated Find 9 yielded no diagnostic artifacts and there is little data with which to assess its relationship to other sites. Because of these factors this location does not have a good potential to yield valuable data that would contribute to the understanding of prehistoric peoples of the area and does not meet the minimum standards for inclusion on the NRHP. No further archaeological investigations are recommended.

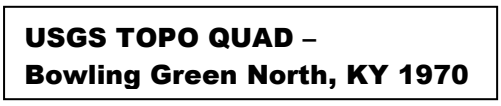

Figure 6.76. Topographic map close-up showing the location of Isolated Find 9.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Between April 11 and May 6, 2011, archaeologists from AMEC conducted a Phase I archaeological survey of the East C alignment corridor for the proposed realignment of KY 185 in Warren County, Kentucky (KYTC Item No. 3-110.00). As a result of the investigation, AMEC identified a total of 20 field sites that produced historic and/or prehistoric artifacts. Of these, 11 were archaeological sites (15WA353, 15WA186, 15WA177, 15WA178, 15WA179, 15WA180, 15WA181, 15WA182, 15WA183, 15WA184, and 15WA185). The remaining nine were prehistoric isolated finds that yielded insufficient numbers of artifacts to qualify as archaeological sites (IF 1 - IF 9). Summaries of the archaeological sites and isolated finds including the management recommendations for each are presented in **Table 7.1**.

Of the 11 archaeological sites identified, one (15WA353) may be eligible for the NRHP. Site 15WA353 is a prehistoric rockshelter of unknown age. This shelter was found on a north facing cliff line and consisted of one main shelter, two auxiliary shelters, a small cave, and a rock overhang. Three “hominy holes” were also located; two in the main shelter and one in one of the auxiliary shelters. Some evidence of possible looting or recent animal burrowing was noted though the full extent of this disturbance is unknown. Though few artifacts were recovered during the Phase I survey, there is extensive roof fall which could cap more substantial cultural deposits.

Site 15WA353 may represent a significant prehistoric occupation, particularly if intact features midden, or stratified deposits are present beneath the extensive roof fall boulders. If substantial deposits are present, site 15WA353 may be eligible for inclusion to the NRHP under Criterion D: the potential to yield information on history or prehistory. AMEC recommends that the site should be avoided if possible. If avoidance is not feasible, the site should be subjected to Phase II investigations to fully evaluate its NRHP eligibility.

It is our opinion that the remaining archaeological sites (15WA177 - 15WA186) and isolated finds (IF 1 - IF 9) are not eligible for listing on the NRHP. We therefore recommend that no further archaeological investigations be conducted at these locations.

The crew was unable to survey 95.0 ac (38.4 ha) of the project area because landowners denied permission to access the parcels. This was communicated to the Field Director during face-to-face or phone conversations. These parcels will need to be inspected by Phase I archaeological survey after permission to enter the properties is obtained.

Table 7.1. Summary of Archaeological Resources Identified and Management Recommendations.

Site/IF No.	UTM Easting (NAD 27)	UTM Northing (NAD 27)	Site Type	Temporal/ Cultural Affiliation	Management Recommendations
15WA353			Rockshelter	Undetermined prehistoric	Potentially eligible for NRHP. Avoidance or Phase II evaluation recommended.
15WA186			Historic Farmstead	Late 19th - 20th century	Not eligible for NRHP. No further archaeological investigations recommended.
15WA177			Historic Farmstead/ Lithic scatter	Late 19th - 20th century, undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
15WA178			Historic Farmstead	Late 19th - 20th century	Not eligible for NRHP. No further archaeological investigations recommended.
15WA179			Historic Farmstead/ Lithic scatter	Late 19th-20th century, undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
15WA180			Historic Farmstead	Late 19th - 20th century	May be NRHP eligible. Avoidance or Phase II evaluations recommended.
15WA181			Prehistoric Open Habitation without mounds	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
15WA182			Prehistoric Open Habitation without mounds	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
15WA183			Prehistoric Open Habitation without mounds	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
15WA184			Prehistoric Open Habitation without mounds	Early Archaic	Not eligible for NRHP. No further archaeological investigations recommended.
15WA185			Historic Farmstead/ Lithic scatter	Mid 19th-20th century, undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 1			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 2			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 3			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 4			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.

Table 7.1. Summary of Archaeological Resources Identified and Management Recommendations.

Site/IF No.	UTM Easting (NAD 27)	UTM Northing (NAD 27)	Site Type	Temporal/ Cultural Affiliation	Management Recommendations
IF 5			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 6			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 7			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 8			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.
IF 9			Isolated Find/Prehistoric	Undetermined prehistoric	Not eligible for NRHP. No further archaeological investigations recommended.

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APPENDIX A

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APPENDIX B

SHOVEL TEST PROBE DATA

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Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA353	1 Chamber 1	0-5 cm 10YR 4/1 Silt/Gravel	5-30 cm 7.5YR 5/6 Silty clay	30-60 cm 10YR 3/1 Mottled Clay and Mudstone	N	Interior
15WA353	2 Chamber 2	0-5 cm 10YR 2/1 Silt	5-15 cm 10YR 3/4 Silt/Sand	15-50 cm 10YR 3/6 Mottled Clay and Mudstone	Y	Interior
15WA353	3 Chamber 2	0-10 cm 10YR 3/3 Silt/Sand	10-40 cm 10YR 4/4 Sand	40-60 cm 2.5YR 5/4 Sand Clay	Y	Interior
15WA353	Bench 1	0-30 cm 10YR 4/6 Silt Loam	30-40 cm 10YR 5/6 Silty clay Loam		N	
15WA353	Bench 2	0-35 cm 10YR 4/6 Silt Loam	35-60 cm 10YR 5/6 Silty clay Loam		N	
15WA353	1 Lower Aux	0-10 cm 10YR 3/3 Silt/Sand	Sandstone		N	Interior
15WA353	2 Lower Aux	0-10 cm 10YR 3/3 Silt/Sand	Sandstone		N	Drip Line
15WA353	1 Upper Aux	0-40 cm 10YR 3/3 Silt/Sand	Sandstone		Y	Drip Line
15WA353	2 Upper Aux	0-15 cm 10YR 4/4 Silt/Sand	Sandstone		N	Interior
15WA353	1 Upper Overhang	0-10 cm 0YR 4/6 Silt Loam	10-25 cm 10YR 5/6-5/8 Silty clay Loam		N	
15WA186 (FS 1)	1	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		P	
15WA186 (FS 1)	2	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5/4 Silty clay Loam		N	
15WA186 (FS 1)	3	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam		N	
15WA186 (FS 1)	4	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam		N	
15WA186 (FS 1)	8	0-5 cm 10YR 4/4 Silt Loam	5-15 cm 10YR 5/4 Silty clay Loam		N	
15WA186 (FS 1)	9	0-5 cm 10YR 4/4 Silt Loam	5-15 cm 10YR 5/4 Silty clay Loam		P	
15WA186 (FS 1)	11	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA186 (FS 1)	12	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	LM 22	0-5 cm 10YR 4/4 Silt Loam	5-15 cm 7.5YR 5/6 Mottled Silty clay Loam		N	
15WA177 (FS 2)	LM 23	0-5 cm 10YR 4/4 Silt Loam	5-15 cm 7.5YR 5/6 Mottled Silty clay Loam		N	Very Rocky

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA177 (FS 2)	M 21	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA177 (FS 2)	M 22	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA177 (FS 2)	M 23	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA177 (FS 2)	M 23.5	0-2 cm 10YR 4/4 Silt Loam	2-15 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	MN 21	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA177 (FS 2)	MN 24	0-3 cm 10YR 4/4 Silt Loam	3-10 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	N 21	0-20 cm 10YR 4/3 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	N 21.5	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam		P	
15WA177 (FS 2)	N 22	0-20 cm 10YR 4/3 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	Filled w/water
15WA177 (FS 2)	N 23	0-15 cm 10YR 4/3 Silt Loam	15-25 cm 10YR 5/2 Silty clay Loam		P	Cinder and Coal Frags.
15WA177 (FS 2)	N 24	0-15 cm 10YR 4/3 Silt Loam	15-25 cm 10YR 5/2 Silty clay Loam		P	Rocky soil
15WA177 (FS 2)	N 24.5	0-2 cm 10YR 4/4 Silt Loam	2-10 cm 10YR 5/4 Silty clay Loam		N	Near Push Pile
15WA177 (FS 2)	NO 22	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 7.5YR 5/6 Mottled Silty clay Loam		P	
15WA177 (FS 2)	NO 23	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 7.5YR 5/6 Mottled Silty clay Loam		P	
15WA177 (FS 2)	NO 24	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	O 22	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA177 (FS 2)	O 23	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA178 (FS 3)	FG 38	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA178 (FS 3)	FG 39	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA178 (FS 3)	G 37	0-20 cm 10YR 4/6 Mottled Silt Loam/Wet	20-35 cm 10YR 5/6 Mottled Silty clay Loam/Wet		N	
15WA178 (FS 3)	G 37.5	0-10 cm 10YR 4/6 Mottled Silt Loam	10-25 cm 10YR 5/6 Mottled Silty clay Loam		N	

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA178 (FS 3)	G 38	0-20 cm 10YR 4/6 Silt Loam/Wet	20-30 cm 10YR 5/6-5/8 Silty clay Loam/Wet		P	
15WA178 (FS 3)	G 39	0-40 cm 10YR 4/6 Silt Loam/	40-50 cm 10YR 5/6-5/8 Silty clay Loam/Wet		P	Adjacent to Drainage
15WA178 (FS 3)	G 39.5	Drainage	Drainage		N	Not Excavated
15WA178 (FS 3)	GH 37	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA178 (FS 3)	H 36.5	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Mottled Silty clay Loam		N	
15WA178 (FS 3)	H 37	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 5YR 5/4 Silty clay Loam		P	
15WA178 (FS 3)	H 38	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam		P	
15WA178 (FS 3)	H 38.5	0-5 cm 10YR 4/4 Silt Loam	5-15 cm 10YR 5/4 Mottled Silty clay Loam		N	
15WA178 (FS 3)	H 39	Drainage	Drainage		N	Not Excavated
15WA178 (FS 3)	HI 38	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA178 (FS 3)	I 36.5	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	W/ Manganese and Iron Staining
15WA178 (FS 3)	I 37	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		P	Adjacent to Berm
15WA178 (FS 3)	I 37.5	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5/6 Silty clay Loam		N	
IF 1 (FS 4)	1	0-40 cm 10YR 4/4 Silt Loam	40-60 cm 10YR 5/4 Silty clay Loam		P	Drip Line Artifact in Level 2
15WA179 (FS 5/6)	L 36	Asphalt Driveway	---		N	Disturbed
15WA179 (FS 5/6)	LM 35.5	0-20 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA179 (FS 5/6)	LM 36	0-25 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		P	
15WA179 (FS 5/6)	LM 37	0-30 cm 10YR 4/4 Silt Loam	30-40 cm 10YR 5/4 Silty clay Loam		P	
15WA179 (FS 5/6)	M 35.5	0-30 cm 10YR 4/4 Silt Loam	30-40 cm 10YR 5/4 Silty clay Loam		N	
15WA179 (FS 5/6)	M 36	0-30 cm 10YR 4/4 Silt Loam	30-40 cm 10YR 5/4 Silty clay Loam		P	Near Well
15WA179 (FS 5/6)	M 37	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4 Silty clay Loam		P	Coal Throughout

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA179 (FS 5/6)	M 37.5	Drainage	Drainage		N	Not Excavated
15WA179 (FS 5/6)	M 38	0-10 cm 10YR 4/4 Silt Loam	10-20 cm 10YR 5/4 Silty clay Loam			Coal Ash in Top Stratum
15WA179 (FS 5/6)	MN 37	Drainage	Drainage		N	Not Excavated
15WA179 (FS 5/6)	N 35.5	0-15 cm 10YR 4/6 Silt Loam	15-25 cm 10YR 5/6-5/8 Silty clay Loam		N	
15WA179 (FS 5/6)	N 36	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4-5/6 Silty clay Loam		P	
15WA179 (FS 5/6)	N 36.5	Drainage	Drainage		N	Not Excavated
15WA179 (FS 5/6)	N 37	Drainage	Drainage		N	Not Excavated
15WA179 (FS 5/6)	N 37.5	0-20 cm 10YR 4/6 Silt Loam	20-30 cm 10YR 5/8 Silty clay Loam		N	
15WA179 (FS 5/6)	NO 36	0-15 cm 10YR 4/6 Silt Loam	15-25 cm 10YR 5/6 Silty clay Loam		P	
15WA179 (FS 5/6)	O 36	0-15 cm 10YR 4/6 Silt Loam	15-25 cm 10YR 5/6-5/8 Silty clay Loam		N	
15WA179 (FS 5/6)	O 37	0-20 cm 10YR 4/6 Silt Loam	20-30 cm 10YR 5/8 Silty clay Loam		N	
IF 2 (FS 7)	DE 75	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	
IF 2 (FS 7)	E 74	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	
IF 2 (FS 7)	E 74.5	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR5/6 Silty clay Loam		P	
IF 2 (FS 7)	E 75	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR5/4 Silty clay Loam		P	
IF 2 (FS 7)	E 75.5	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	
IF 2 (FS 7)	EF 75	0-25 cm 10YR 4/6 Silt Loam	25-35 cm 10YR5/8 Silty clay Loam		N	
IF 3 (FS 8)	CD 78	0-25 cm 10YR 4/6 Silt Loam	25-35 cm 10YR5/8 Silty clay Loam		N	
IF 3 (FS 8)	D 77	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	
IF 3 (FS 8)	D 77.5	0-25 cm 10YR 4/6 Silt Loam	25-35 cm 10YR5/8 Silty clay Loam		P	
IF 3 (FS 8)	D 78	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		P	
IF 3 (FS 8)	D 78.5	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	
IF 3 (FS 8)	DE 78	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR5/6 Silty clay Loam		N	

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
IF 4 (FS 9)	LM 14	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 4 (FS 9)	M 13.5	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 4 (FS 9)	M 14	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		P	
IF 4 (FS 9)	M 14.5	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 4 (FS 9)	MN 14	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA180 (FS 10)	NO 4	0-10 cm 10YR 4/4 Silt Loam	10-20 7.5YR 5/6 Very Mottled Silty clay Loam		N	
15WA180 (FS 10)	O 3	0-20 cm 10YR 4/4 Silt Loam	20-30 7.5YR 5/6 Silty clay Loam		N	
15WA180 (FS 10)	O 3.5	0-10 cm 10YR 4/4 Silt Loam	10-25 7.5YR 5/6 Silty clay Loam		P	
15WA180 (FS 10)	O 4	0-20 cm 10YR 4/6 Mottled Silt Loam	20-30 7.5YR 5/6 Very Mottled Silty clay Loam		P	Encountered Bedrock at 30 cm
15WA180 (FS 10)	O 4.5	0-20 cm 7.5YR 4/6-5/6 Very Mottled Silty clay Loam	---		N	Disturbed
15WA180 (FS 10)	OP 4	0-10 cm 10YR 4/4 Silt Loam	10-20 7.5YR 5/6 Silty clay Loam		N	
IF 5 (FS 11)	HI 50	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/6 Silty clay Loam		N	
IF 5 (FS 11)	I 49.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
IF 5 (FS 11)	I 50	0-30 cm 10YR 4/4 Silty clay	30-40 cm 10YR 5/4 Silty clay Loam		P	
IF 5 (FS 11)	I 50.5	0-10 cm 10YR 4/4 Silty clay	10-20 cm 10YR 5/4 Silty clay Loam		N	
IF 5 (FS 11)	IJ 50	0-30 cm 10YR 4/4 Silty clay	30-40 cm 10YR 5/4 Silty clay Loam		N	
15WA181 (FS 12)	HI 58	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA181 (FS 12)	I 57.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	Hydric
15WA181 (FS 12)	I 58	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		P	
15WA18 (FS 12)	I 58.5	0-30 cm 10YR 4/4 Silty clay	30-40 cm 10YR 5/4 Silty clay Loam		P	

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA181 (FS 12)	I 59	0-30 cm 10YR 4/4 Silty clay	30-40 cm 10YR 5/4 Silty clay Loam		N	
15WA181 (FS 12)	IJ 58	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 7.5YR 5/6 Silty clay Loam		N	
15WA182 (FS-13)	L 63.5	0-15 cm 10YR 4/4 Silty clay	10-25 cm 7.5YR 5/6 Silty clay Loam		N	
15WA182 (FS-13)	L 63.5	0-15 cm 10YR 4/4 Silty clay	10-25 cm 7.5YR 5/6 Silty clay Loam		N	
15WA182 (FS-13)	L 64	0-15 cm 10YR 4/4 Silty clay	10-25 cm 7.5YR 5/6 Silty clay Loam		P	
15WA182 (FS-13)	L 64.5	0-15 cm 10YR 4/4 Silty clay	10-25 cm 7.5YR 5/6 Silty clay Loam		N	
15WA182 (FS-13)	LM 64	0-10 cm 10YR 4/4 Silty clay	10-25 cm 7.5YR 5/6 Silty clay Loam		N	
15WA183 (FS 14/15/16)	CD 54	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	CD 55	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	D 53.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	D 54	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	D 55	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	D 55.5	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	D 56	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	DE 57	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	E 54	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	E 55	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	E 56	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	E 56.5	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	E 57	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	E 57.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	EF 54	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
15WA183 (FS 14/15/16)	EF 55	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5.4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	EF 57	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	F 54	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	F 54.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	F 55	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	F 55.5	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	F 56	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5.4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	FG 55	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	G 55	0-15 cm 10YR 4/4 Silty clay	15-25 cm 10YR 5/4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	GH 55	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5.4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	H 54.5	0-25 cm 10YR 4/3 Silt Loam	25-35 cm 10YR 5.4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	H 55	0-25 cm 10YR 4/3 Silt Loam	25-35 cm 10YR 5.4 Silty clay Loam		P	
15WA183 (FS 14/15/16)	H 55.5	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5.4 Silty clay Loam		N	
15WA183 (FS 14/15/16)	HI 55	0-10 cm 10YR 4/4 Silt Loam	10-25 cm 10YR 5.4 Silty clay Loam		N	
IF 6 (FS 17)	AB 53	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	
IF 6 (FS 17)	B 52.5	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/4 Silty clay Loam		N	Hydric
IF 6 (FS 17)	B 53	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		P	
IF 6 (FS 17)	B 53.5	Creek			N	Not Excavated
IF 6 (FS 17)	BC 53	0-25 cm 10YR 4/4 Silty clay	25-35 cm 10YR 5/6 Silty clay Loam		N	
IF 7 (FS 18)	BC 31	0-25 cm 7.5YR 4/6 Silt Loam	25-35 cm 7.5YR 5/6 Silty clay Loam		N	
IF 7 (FS 18)	C 30.5	0-20 cm 7.5YR 4/6 Silt Loam	20-30 cm 7.5YR 5/6 Silty clay Loam		N	
IF 7 (FS 18)	C 31	0-25 cm 7.5YR 4/6 Silt Loam	25-35 cm 7.5YR 5/6 Silty clay Loam		P	

Site/IF # (Field Site #)	STP #	Stratum 1	Stratum 2	Stratum 3	Positive Y/N	Notes
IF 7 (FS 18)	C 31.5	0-20 cm 7.5YR 4/6 Silt Loam	20-30 cm 7.5YR 5/6 Silty clay Loam		N	
IF 7 (FS 18)	CD 31	0-20 cm 7.5YR 4/6 Silt Loam	20-30 cm 7.5YR 5/6 Silty clay Loam		N	
15WA184 (FS 19)	K 82	0-30 cm 10YR 4/4 Silt loam	30-65 cm 10YR 4/6 Silt Loam	65-85 cm 10YR 5/6 Silty clay Loam	P	Artifacts from upper 35 cm
IF 8 (FS 20)	BC 86	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 8 (FS 20)	C 85.5	0-15 cm 10YR 4/4 Silt Loam	15-25 cm 10YR 5/4 Silty clay Loam		N	
IF 8 (FS 20)	C 86	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4 Silty clay Loam		P	
IF 8 (FS 20)	C 86.6	0-25 cm 10YR 4/4 Silt Loam	25-35 cm 10YR 5/4 Silty clay Loam		N	
IF 8 (FS 20)	CD 86	0-20 cm 10YR 4/4 Silt Loam	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 9 (FS 21)	CD 88	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 9 (FS 21)	D 87.5	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		N	
IF 9 (FS 21)	D 88	0-20 cm 10YR 4/4 Silty clay	20-30 cm 10YR 5/4 Silty clay Loam		P	
IF 9 (FS 21)	D 88.5	0-15 cm 10YR 4/4 Silty clay	15-25 cm 7.5YR 5/4 Silty clay Loam		N	
IF 9 (FS 21)	DE 88	0-5 cm 10YR 4/4 Silty clay	5-15 cm 7.5YR 5/4 Silty clay Loam		N	
15WA185 (FS 22)	NO 19	0-20 cm 7.5YR 5/6 Mottled Silty clay Loam	---		N	Disturbed
15WA185 (FS 22)	O 17.5	0-10 CM 10YR 4/4 Silt Loam	10-25 cm 7.5YR 5/6 Silty clay Loam		N	
15WA185 (FS 22)	O 18	0-15 CM 10YR 4/4 Silt Loam	15-25 cm 7.5YR 5/6 Silty clay Loam		P	
15WA185 (FS 22)	O 19	0-20 CM 10YR 4/4 Silt Loam	20-30 cm 7.5YR 5/6 Silty clay Loam		P	
15WA185 (FS 22)	O 19.5	0-20 CM 10YR 4/4 Silt Loam	20-30 cm 7.5YR 5/6 Silty clay Loam		N	