Contract Publication Series 17-410

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED KY 32 RECONSTRUCTION FROM PARK HILLS DRIVE TO VIKING DRIVE NORTH IN ROWAN COUNTY, KENTUCKY (ITEM NO. 9-204.00)

by
Julia K.C. Gruhot and
Tanya A. Faberson, PhD, RPA 15693

Prepared for

KENTUCKY TRANSPORTATION CABINET

Prepared by

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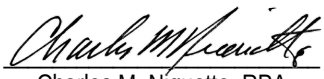

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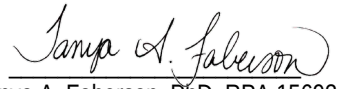

Tanya A. Faberson, PhD, RPA 15693
Co-Principal Investigator

December 11, 2017

Lead Agency: Federal Highway Administration
Kentucky Transportation Cabinet Item Number 9-204.00
Statewide Contract No. PON2 1600003838, Letter Agreement No. 44-DBD
OSA Project Registration No.: FY18_9387

ABSTRACT

From October 30 through November 2, 2017, Cultural Resource Analysts, Inc., personnel conducted an archaeological survey of the preferred alignment for the proposed reconstruction of KY 32 from Park Hills Drive to Viking Drive North in west-central Rowan County, Kentucky (Item No. 9-204.00). The survey was conducted at the request of David Waldner at the Kentucky Transportation Cabinet, Division of Environmental Analysis. The project consists of an archaeological survey of approximately 17 ha (42 acres) along the KY 32 preferred reconstruction corridor.

Land use variability in the project area and associated surface conditions necessitated that field methods include shovel testing, bucket augering, and intensive pedestrian survey. Survey methods varied according to topographic setting and past and current land use practices. The project area consisted of primarily private residences and commercial property with some agricultural and wooded areas, the majority of which were investigated through pedestrian survey supplemented with screened shovel testing and bucket augering. Only occasional shovel probes were performed within disturbed areas to confirm the extent of disturbance.

Prior to the fieldwork, a records review was conducted at the Office of State Archaeology. The review indicated that 17 previous professional archaeological surveys have been conducted and 5 archaeological sites had been recorded within a 2.0 km (1.2 mi) radius of the project area. Three previous surveys, but no sites, were located within the current project area.

The current investigation resulted in the identification of three previously unrecorded archaeological sites (15Ro240, 15Ro241, 15Ro242). Sites 15Ro240–15Ro242 were all historic farmsteads/residences. Newly recorded site 15Ro240 is the sparse remains of a historic farmstead/residence dating to the mid-twentieth century that correlates with residential structures depicted on a historic map from 1953. The site is highly disturbed and appears to contain no intact cultural deposits, and no further work is recommended. The newly recorded archaeological Site 15Ro241 was a sparse artifact scatter from a no longer extant historic farmstead/residence dating to the early to mid-twentieth century that correlates with a residential structure depicted on maps dating to 1929 and 1935. Newly recorded Site 15Ro242 was a sparse historic scatter associated with a farmstead/residence likely occupied from the mid- to late twentieth century that correlates with a residential structure depicted on maps dating to 1953 and 1970. The boundaries of Sites 15Ro241 and 15Ro242 likely extend outside the current project area. The recorded portion of both sites are highly disturbed and neither appears to contain intact cultural deposits. Therefore, no further work is recommended within the portions of the sites recorded within the current project area, and archaeological clearance is recommended for those portions. Since the boundaries of Sites 15Ro241 and 15Ro242 appear to extend outside the project area, neither site can be accurately evaluated for inclusion in the National Register of Historic Places as currently defined. In the event the project boundaries change, additional work will be required at both sites in order to delineate the true extent of their boundaries. The survey also identified a multicomponent historic/prehistoric isolated find.

Because of their limited research potential, no further work is recommended at these three sites. Site 15Ro240 is considered not eligible for inclusion in the National Register of Historic Places, and the portions of Sites 15Ro241 and 15Ro242 within the project area are considered not eligible, although they remain officially unassessed as both potentially extend outside of the project area. No sites listed in or eligible for the National Register of Historic Places will be affected by the proposed construction activity. Archaeological clearance for this project is recommended.

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I. INTRODUCTION

Between October 30 and November 2, 2017, Cultural Resource Analysts, Inc. (CRA), personnel conducted an archaeological survey of the preferred alignment for the proposed reconstruction of KY 32 from Park Hills Drive to Viking Drive North in west-central Rowan County, Kentucky (Figure 1). The survey was conducted at the request of David Waldner at the Kentucky Transportation Cabinet (KYTC), Division of Environmental Analysis (DEA) (Item No. 9-204.00), and was only performed once landowner permission was obtained. The project area is located northwest of the city of Morehead (Figure 2). Fieldwork was conducted by Julia K.C. Gruhot, Thomas H. McAlpine Jr., and Karen Taylor and required approximately 100 hours to complete. Office of State Archaeology (OSA) Geographic Information Systems (GIS) data requested by CRA on September 25, 2017, was returned on October 9, 2017. The results were researched by Heather Barras of CRA at the OSA on October 17, 2017. The OSA project registration number is FY18_9387.

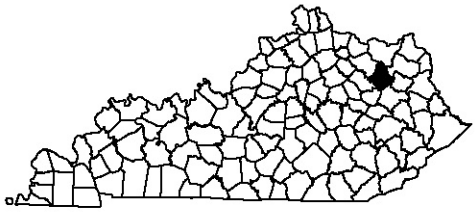

Figure 1. Map of Kentucky showing the location of Rowan County.

Project Description

The project area was located primarily along KY 32, beginning north of Park Hills Drive, at the intersection of Hickory Drive and KY 32, and extending south to just before Viking Drive North (Figure 3). Small portions of other intersecting roads were also within the project area (see Figure 3). The project area totaled approximately 17 ha (42 acres), the majority of which were investigated through pedestrian survey supplemented with screened shovel testing and bucket augering. The project area consisted of terraces, sideslopes, and small alluvial landforms.

Existing KY 32 is a two-lane highway that provides access to numerous community, business, and residential properties. It is classified as a rural minor arterial road and narrow shoulders do not meet the standards for a roadway of this type. The existing road has hills and curves that limit sight distance resulting in collision patterns at several approaches. Congestion is also a major problem. The location of the Rowan County public schools, two lumber yards, an industrial facility, and a number of businesses, means this section of KY 32 carries a mixture of passenger cars, buses, and trucks.

Proposed changes are focused on addressing the congestion of KY 32 during peak periods and improving the safety, mobility, and connectivity between Morehead and Flemingsburg. All proposed geometry will meet the criteria for a 55 mph design speed, meaning the curves and hills will be smoother, flatter and safer to drive. Additional turn lanes and a wide shoulder will be added.

Purpose of Study

This study was conducted to comply with Section 106 of the National Historic Preservation Act. This transportation project is federally funded, and therefore considered an undertaking subject to 106 review. Any state, county, or municipal lands in the project area were surveyed under OSA Kentucky Antiquities Act Permit Number 2017-32 pursuant to Kentucky Revised Statute (KRS) 164.720.

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

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

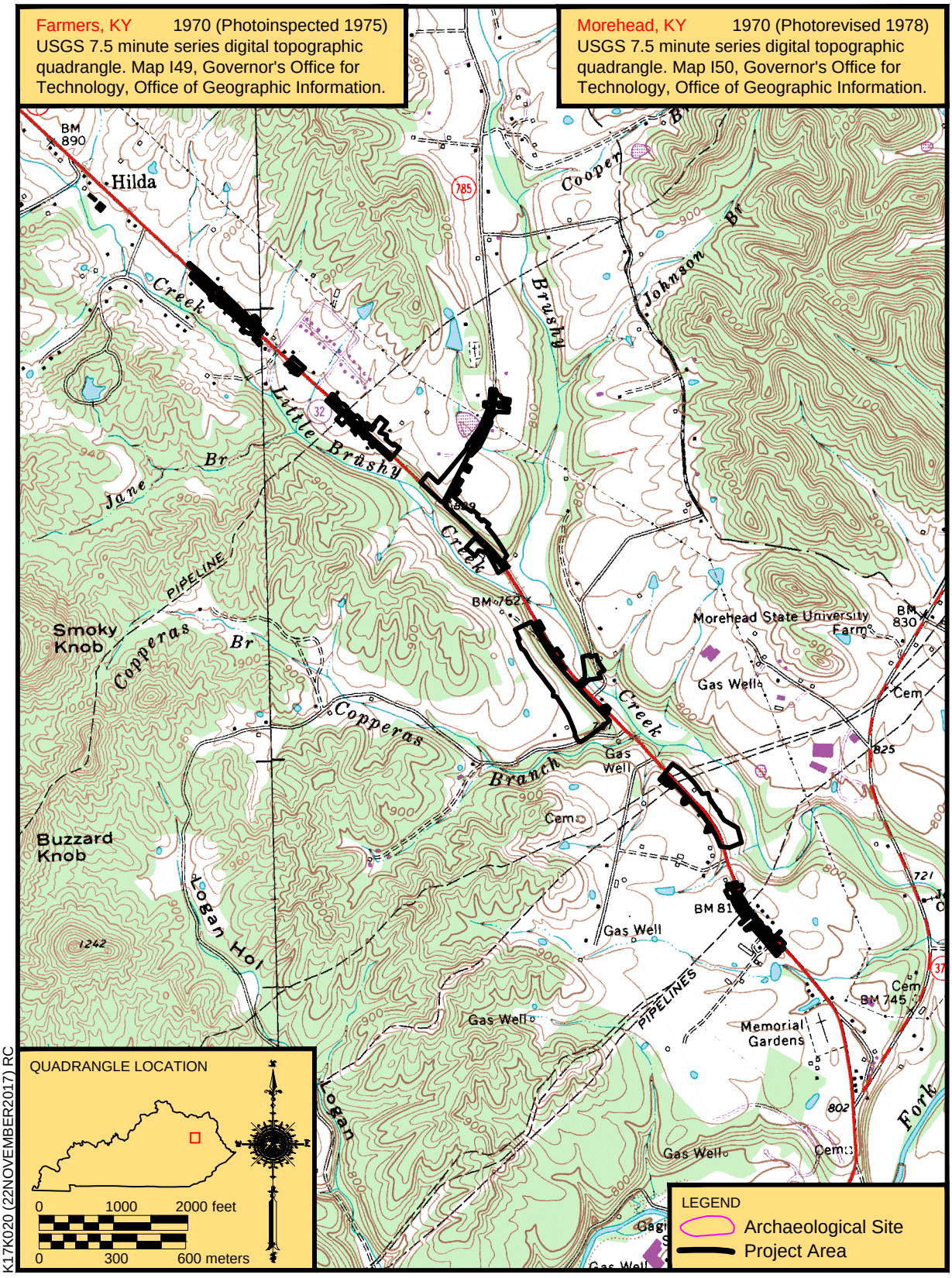

Figure 2. Location of project area on Farmers and Morehead, Kentucky topographic quadrangle (USGS 1970a, 1970b).

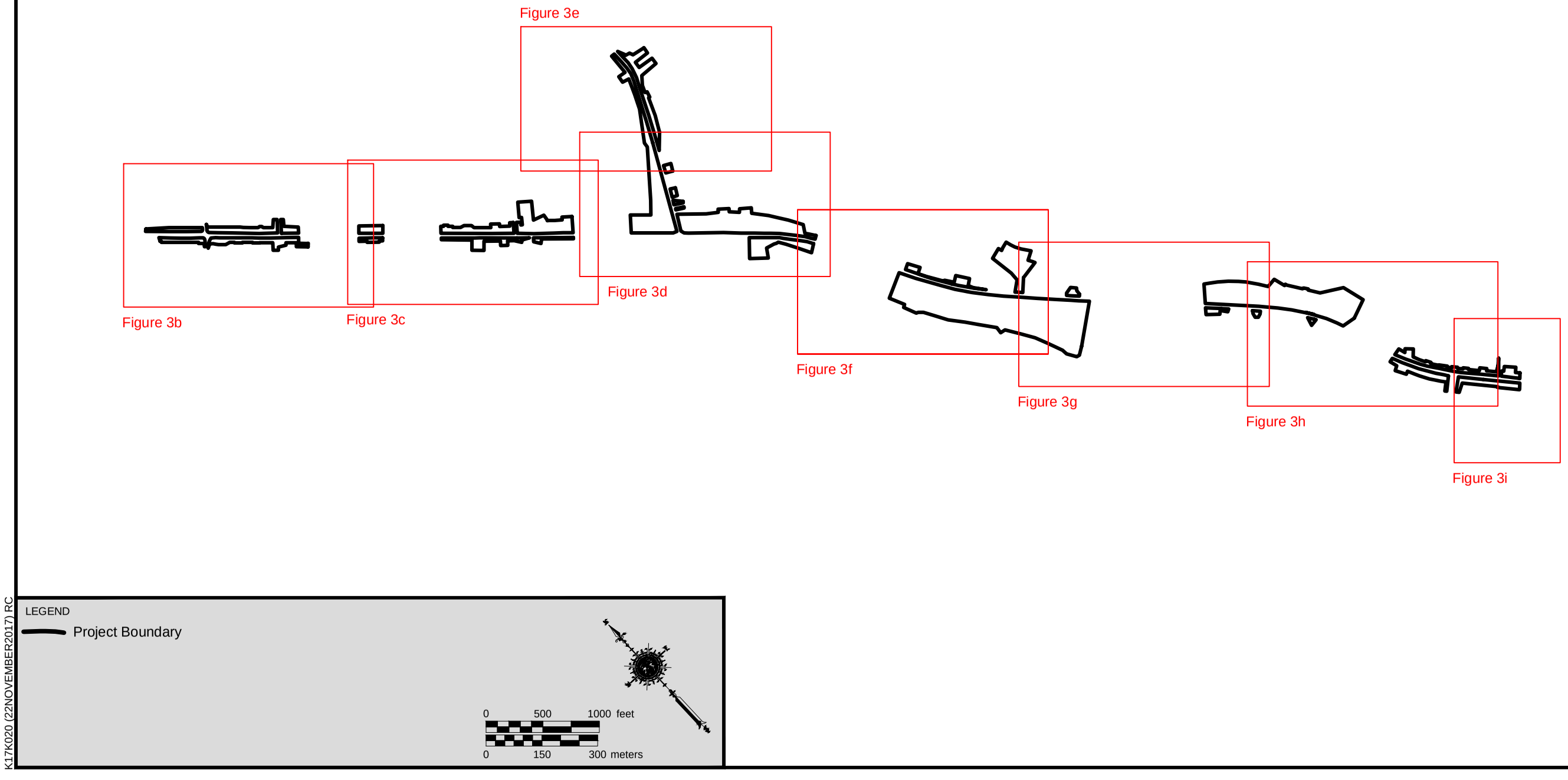

Figure 3a. Project area plan map [KEY].

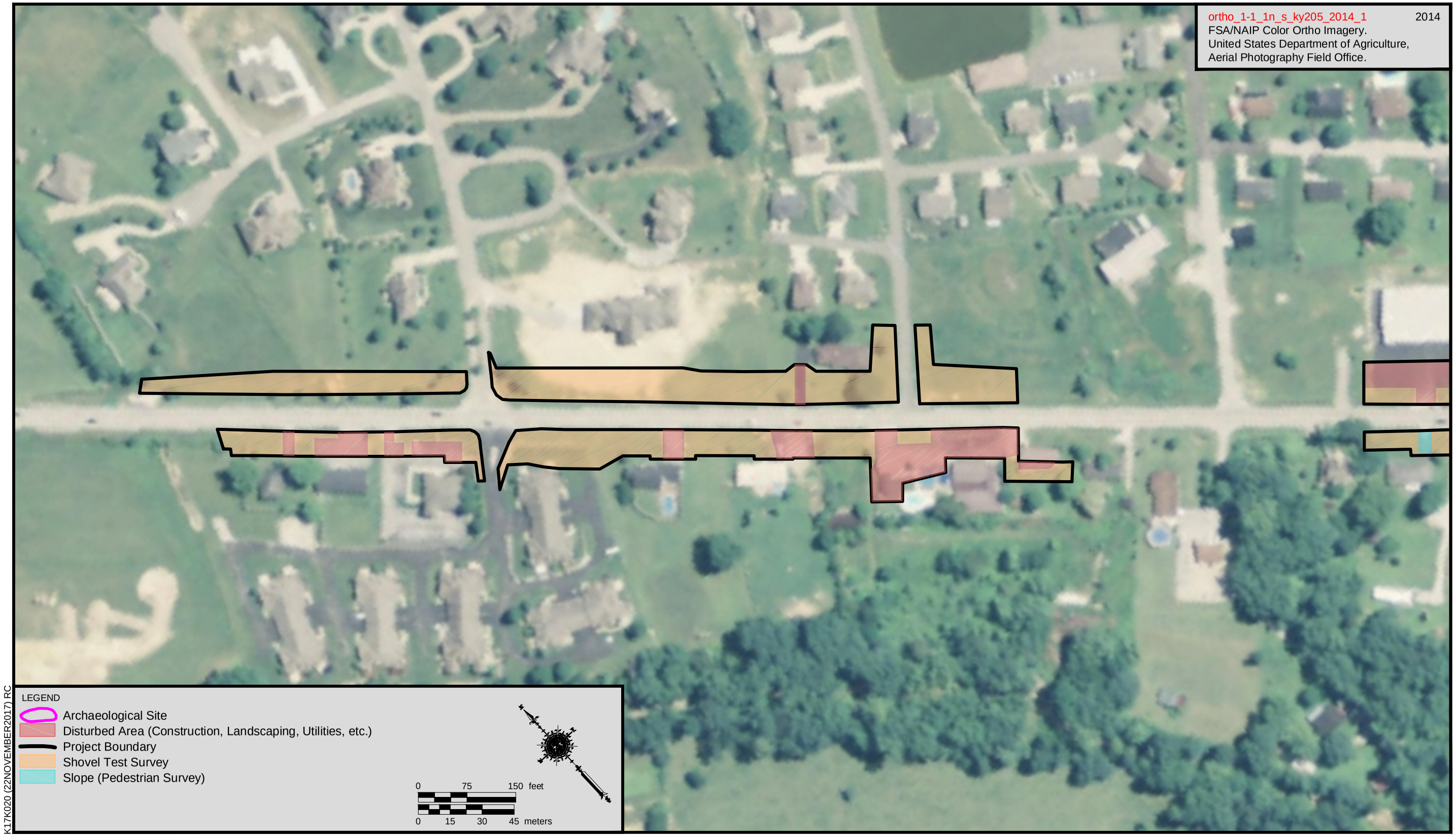

Figure 3b. Project area plan map.

ortho_1-1_1n_s_ky205_2014_1 2014
FSA/NAIP Color Ortho Imagery.
United States Department of Agriculture,
Aerial Photography Field Office.

LEGEND
Archaeological Site
Disturbed Area (Construction, Landscaping, Utilities, etc.)
Project Boundary
Shovel Test Survey
Slope (Pedestrian Survey)

0 75 150 feet
0 15 30 45 meters

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Figure 3c. Project area plan map.

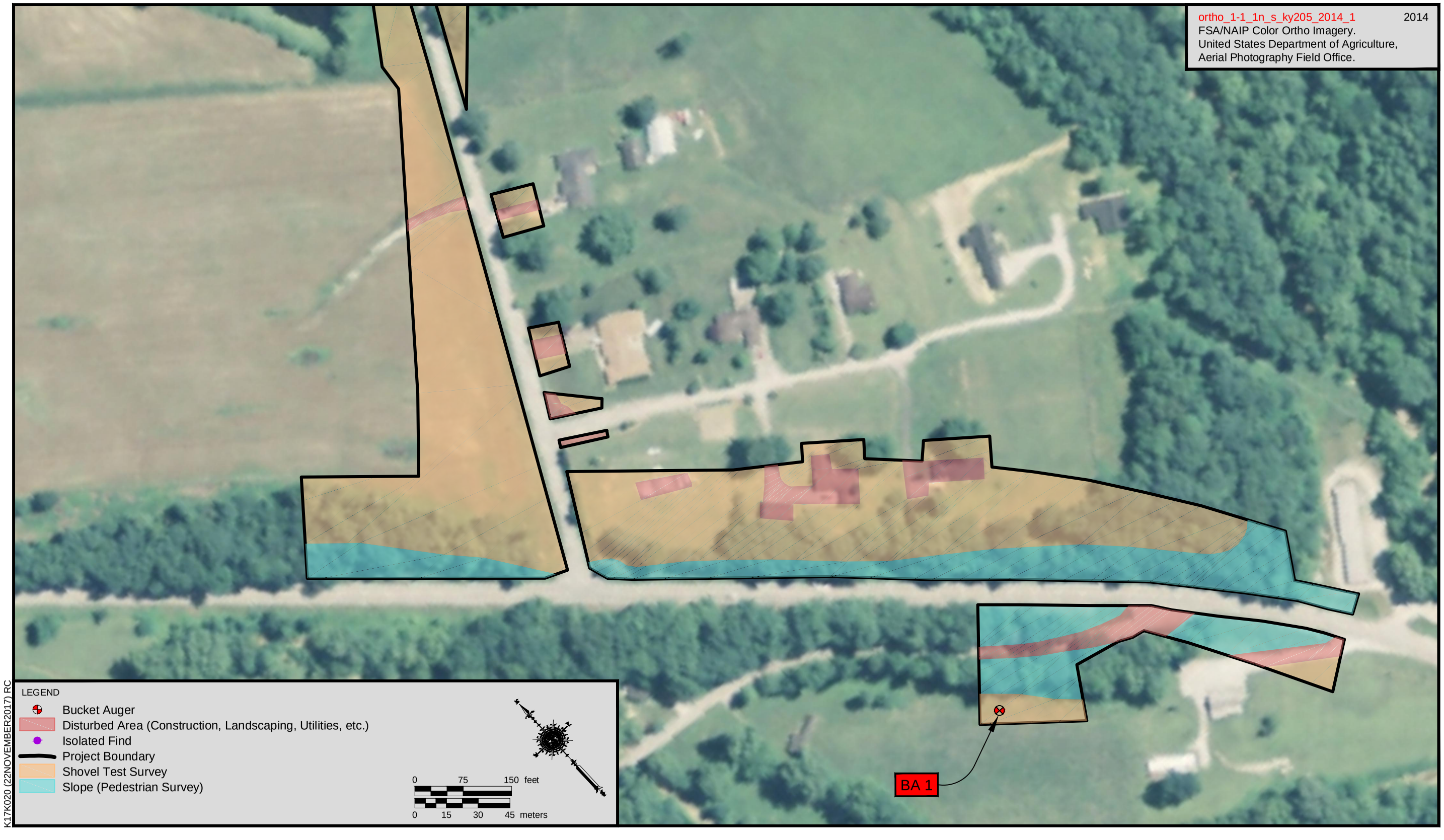

Figure 3d. Project area plan map.

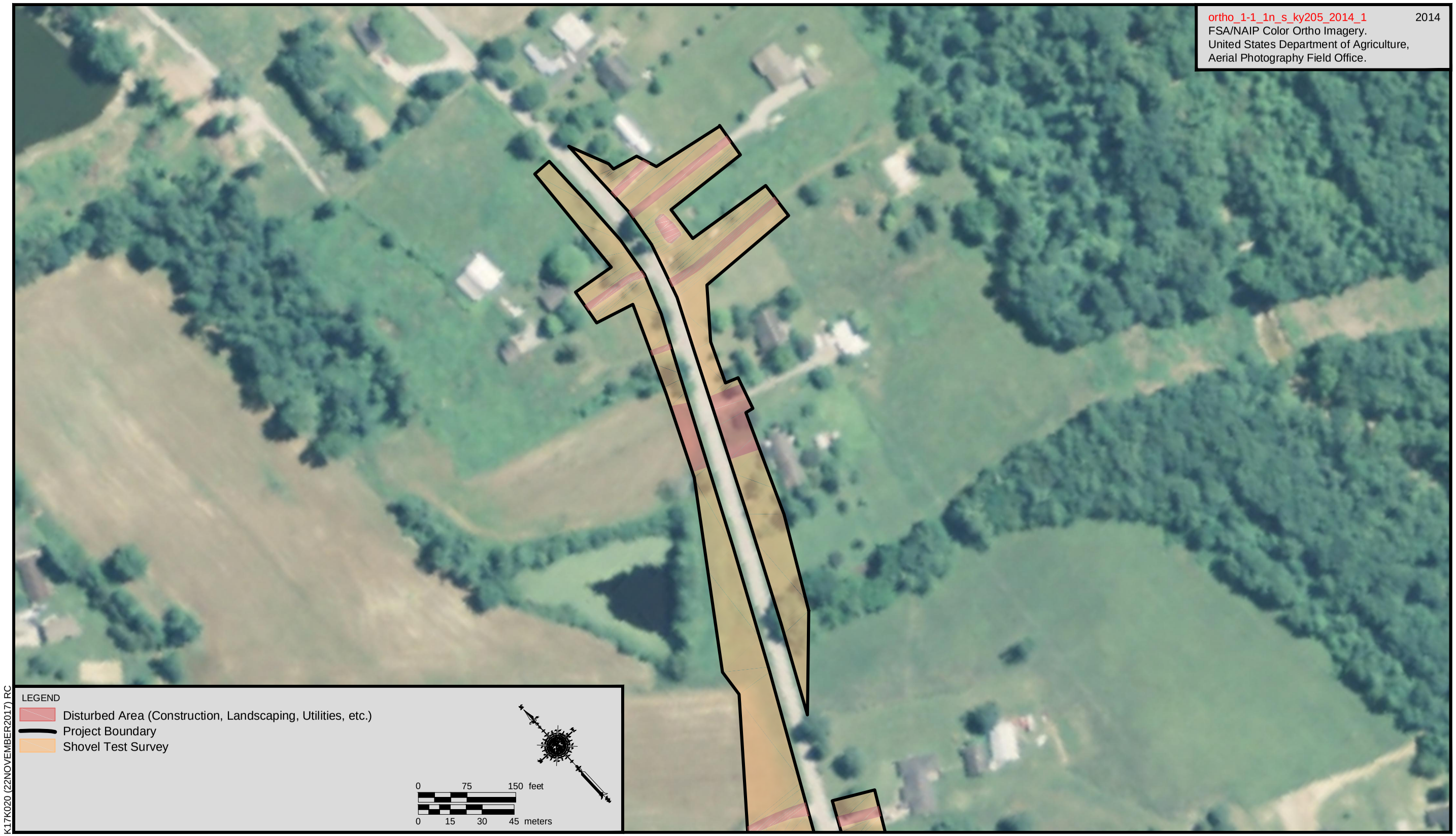

Figure 3e. Project area plan map.

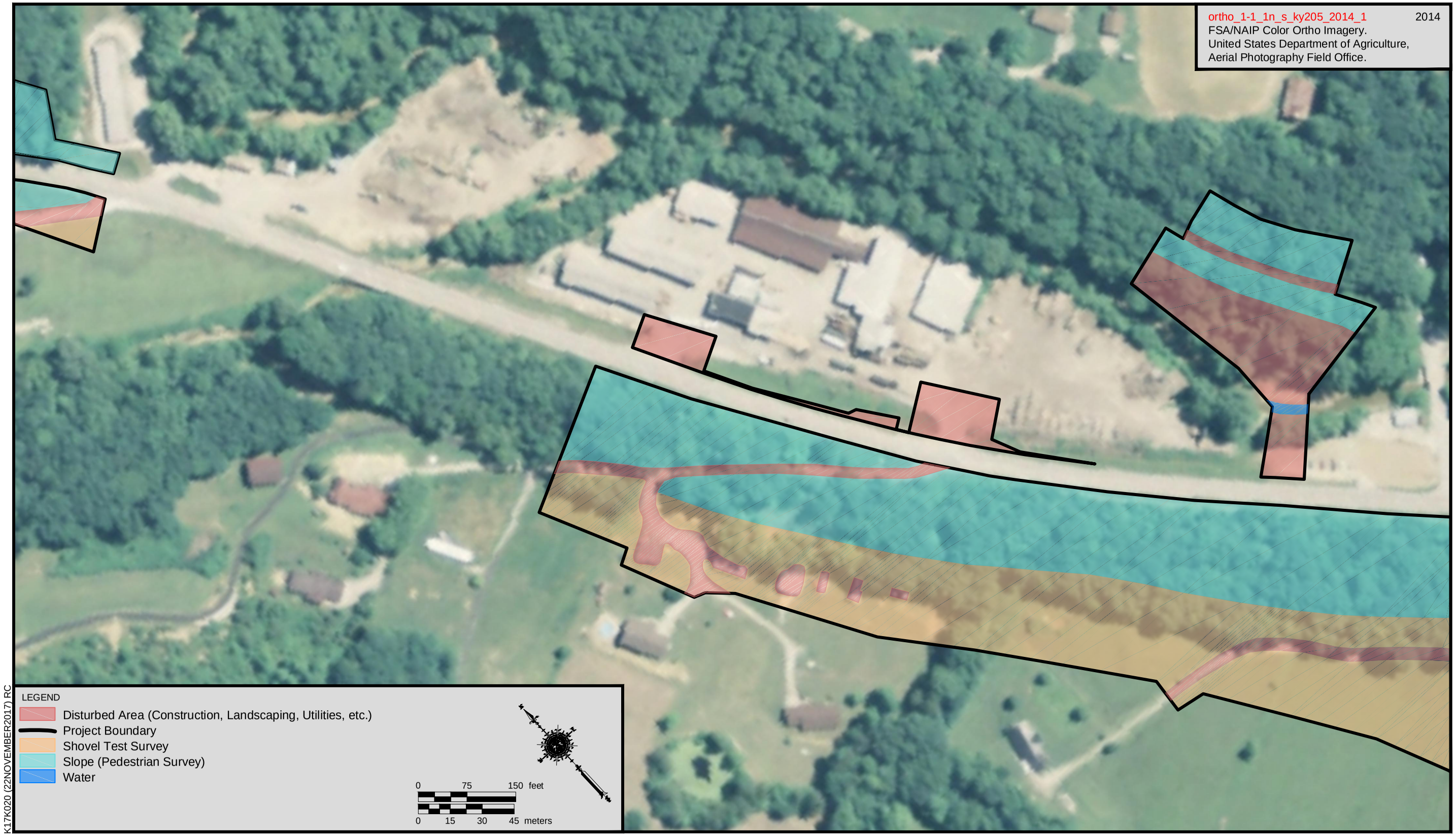

Figure 3f. Project area plan map.

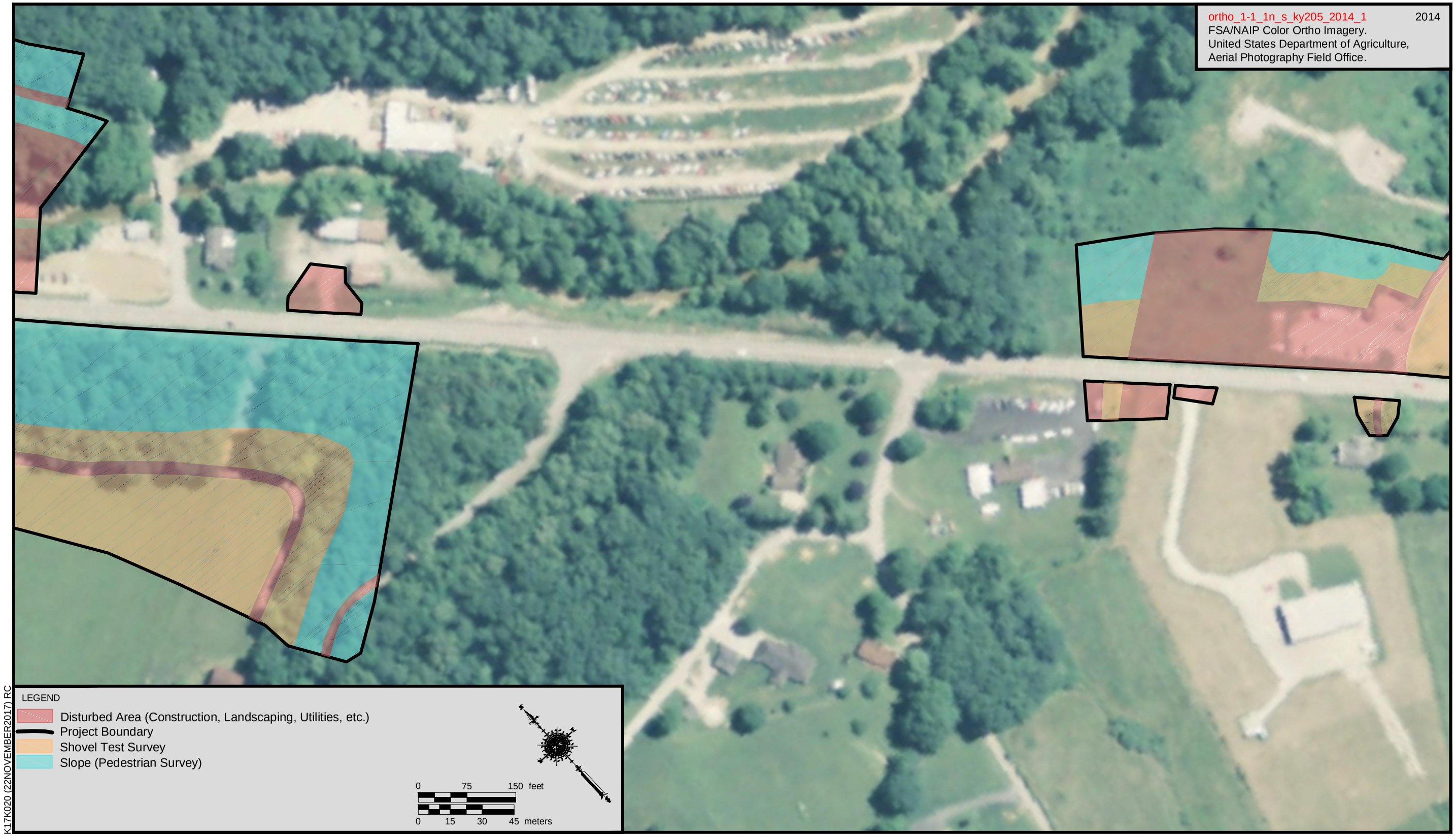

Figure 3g. Project area plan map.

Figure 3h. Project area plan map.

Figure 3i. Project area plan map.

For the purposes of this assessment, a site was defined as "any location where human behavior has resulted in the deposition of artifacts, or other evidence of purposive behavior at least 50 years of age" (Sanders 2006:2). Cultural deposits less than 50 years of age were not considered sites.

The following is a description of the project area, previous research and cultural history of the area, field and laboratory methods, materials recovered, and results of this study. It conforms to the Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports (Sanders 2006). Cultural material, field notes, records, and site photographs will be curated with the William S. Webb Museum of Anthropology, University of Kentucky, in Lexington.

Summary of Findings

Prior to the fieldwork, a records review was conducted at the Office of State Archaeology. The review indicated that 17 previous professional archaeological surveys have been conducted and 5 archaeological sites had been recorded within a 2.0 km (1.2 mi) radius of the project area. Neither the sites nor the previous surveys were located within the current project area.

The current survey resulted in the identification of three archaeological sites. Sites 15Ro240, 15Ro241, and 15Ro242 were historic farmsteads/residences. Site 15Ro240 was an artifact scatter associated with a historic farmstead/residence that was occupied in the mid-twentieth century that correlates with two residential structures depicted on a historic map from 1953 (United States Geological Survey [USGS] 1953a). Site 15Ro241 was a sparse artifact scatter associated with a no longer extant historic farmstead/residence that was occupied from the early to mid-twentieth century that correlates with a residential structure depicted on a historic map from 1935 (USGS 1935). Site 15Ro242 was an artifact scatter associated with a no longer extant historic farmstead/residence that was occupied from the mid- to late-twentieth century that correlates with a residential structure depicted on historic maps from 1953 and 1970 (USGS 1953a, 1970a).

Site 15Ro240 and the portions of Sites 15Ro241 and 15Ro242 within the current project area are recommended not eligible for listing in the National Register of Historic Places (NRHP) due to the paucity of cultural materials and the lack of research potential. As a result, no further work is recommended for any of the sites. However, as the site boundary for Sites 15Ro241 or 15Ro242 potentially extend outside of the current project area, NRHP eligibility could not be assessed for those unrecorded portions of the site. Therefore, if the project corridor is rerouted at the locations of Sites 15Ro241 or 15Ro242, then additional archaeological investigations will be needed to assess the potential impacts to the unrecorded portions of the sites.

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

II. ENVIRONMENTAL SETTING

This section of the report provides a description of the modern and prehistoric environment and considers those aspects of the environment that may have influenced the settlement choices of past peoples. Attributes of the physical environment also often guide the methods used to discover archaeological sites. The project area is located in the Eastern Kentucky Coal Field Region. Topography, bedrock geology, vegetation, hydrology, soils, lithic resources, and climate for the project area are discussed below.

The Eastern Kentucky Coal Field region (Figure 4) is a rugged and maturely dissected area that is underlain by sandstone, shale, and coal (Bladen 1973:23, 31; Pollack 2008:16–18). There are 35 counties situated either entirely or partially within this region: Bell, Boyd, Breathitt, Carter, Clay, Elliott, Estill, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, McCreary, Magoffin, Martin, Menifee, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Rowan, Wayne, Whitley, and Wolfe Counties (Bladen 1973:23).

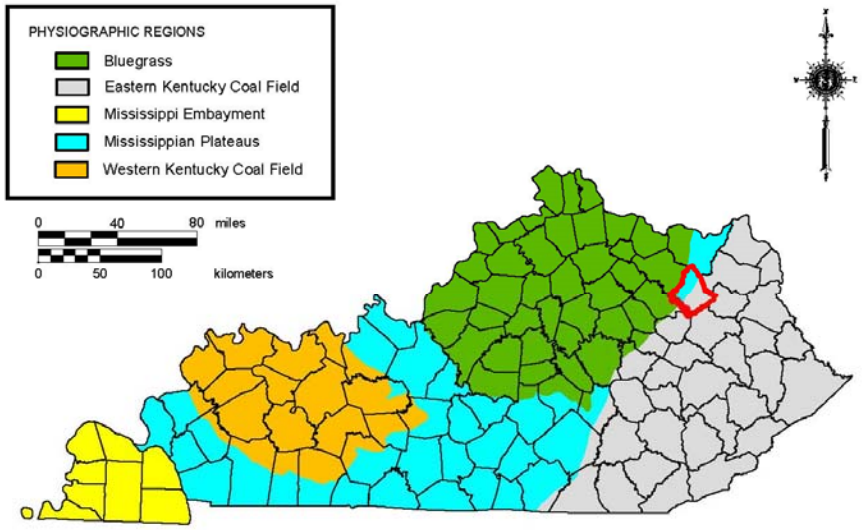

Figure 4. The Eastern Kentucky Coal Field region.

Lewis and Rowan Counties in northeastern Kentucky encompass a portion of the Knobs, a wedge of the Mississippian Plateaus, and a portion of the Eastern Kentucky Coal Field. Rockcastle County is situated partially within the Knobs subregion, partially within the Mississippian Plateaus, and partially within the Eastern Kentucky Coal Field region. Pulaski and Wayne Counties are situated partially within the Mississippian Plateaus and partially within the Eastern Kentucky Coal Field regions. Finally, Estill and Powell Counties overlap portions of the Knobs and the Eastern Kentucky Coal Field as well.

This region holds the highest elevations in Kentucky, culminating with Black Mountain in Harlan County, which has an estimated elevation of over 1,250 m (4,100 ft) above mean sea level (AMSL) (Bladen 1973:23; Schwendeman 1979:27). The region is bordered to the west and north by the Pottsville Escarpment and to the east and south by the state lines of West Virginia and Virginia, respectively. Ridge crests and valley bottoms are typically very narrow, and the majority of the terrain is steeply sloped.

The Big Sandy, Cumberland, Kentucky, Licking, Little Sandy, and Ohio Rivers and their tributaries, along with Tygarts Creek, drain the Eastern Kentucky Coal Field region (Figure 5). Locally, the major river valleys are very wide, and most of the human habitation is on the floodplains and low terraces (Newell 2001). High terraces are remnants of earlier valley bottoms.

The Eastern Kentucky Coal Field is located in the Mixed Mesophytic Forest region, which is described as the most complex and oldest association of the Deciduous Forest Formation (Braun 2001:39). Mixed mesophytic refers to a climax association in which dominance is shared by a number of species, and the dominant trees are beech, tuliptree, basswood, sugar maple, chestnut, sweet buckeye, red oak, white oak, and hemlock (Braun 2001:40). Historically, ridgetops contained various pines (black, white, and yellow) and chestnut, and slopes were typically covered in hemlock and rhododendron (Davis 1924:19). Originally, the valleys were heavily forested with oak, hickory, walnut, yellow poplar, and beech, but by the early 1920s, the forest had been almost entirely removed (Davis 1924:25). In the modern Eastern Kentucky Coal Field region, north and east slopes are dominated by white basswood, while beech and oaks are dominant on south and west slopes. Modern ravines are often dominated by hemlock and rhododendron, but magnolia is also generally abundant. The uppermost slopes and ridges contain oak-chestnut and oak-hickory communities (Braun 2001:91–92).

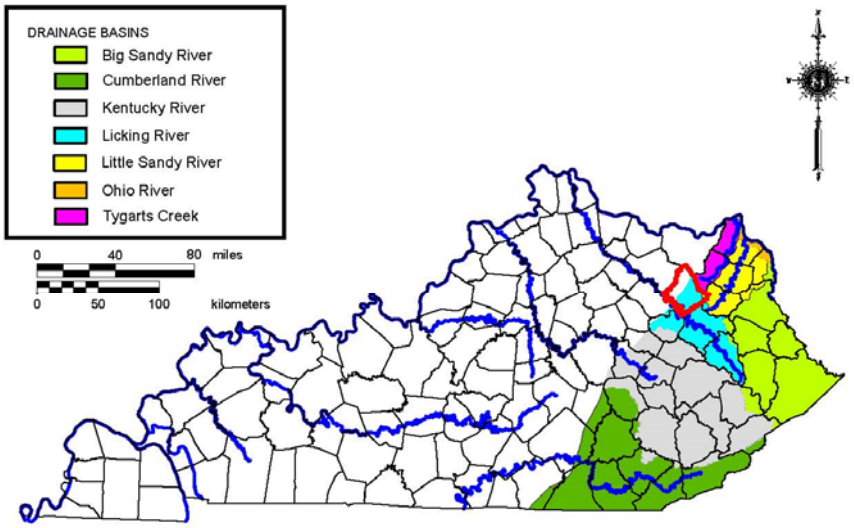

Figure 5. Rivers that drain the Eastern Kentucky Coal Field region.

Soils of the Eastern Kentucky Coal Field

The Eastern Kentucky Coal Field region is predominantly mapped as the Ultisols order of soils. Ultisols formed in completely weathered colluvium or residuum of the underlying bedrock, which in eastern Kentucky is predominantly shale, siltstone, and sandstone, and they occurred on Late Pleistocene or older surfaces. They are found on nearly level to very steep landforms. These soils display a light-colored or thin or low organic-carbon content, grayish-colored surface horizon and a clay-enriched subsoil. They are relatively infertile due to being strongly leached. Ultisols are typically red to yellow in color, resulting from the accumulation of iron and aluminum oxides. They are not characterized by any specific soil temperature, and they exhibit all but aridic soil moisture regimes (Soil Survey Staff 1999:721–726). Ultisols may contain buried and intact archaeological deposits as a result of colluvium, depending upon the landform on which they formed (e.g., footslope vs. bench), but most cultural deposits contained in these soils will be on or near the surface.

The region is predominantly mapped as the Udults suborder of soils, which are the more or less freely-drained and humus-poor Ultisols found in areas with well-distributed rainfall and that form in humid climates. Udults are thought to have developed under forest vegetation, but some developed under a savanna associated with, or influenced by, human activity. Many are cultivated with the addition of nutrient amendments or by allowing a fallow period following very few years of use. Udults can exhibit a compacted zone, or fragipan, in or below the clay-enriched subsoil (Soil Survey Staff 1999).

Portions of the Eastern Kentucky Coal Field that are predominantly mapped as Inceptisols occur to a lesser extent. Inceptisols developed in silty, acid alluvium during the Late Pleistocene or Holocene time periods on nearly level to steep surfaces. Inceptisols may contain deeply buried and intact archaeological deposits, depending upon the landform on which they formed (e.g., sideslope vs. alluvial terrace). Inceptisols exhibit a thick, dark-colored surface horizon rich in organic matter and a weakly developed subsurface horizon with evidence of weathering and sometimes of gleying (Soil Survey Staff 1999:489–493).

When Inceptisols are the predominantly mapped soil order, they are typically mapped as the Udepts suborder of soils, which are mainly the more or less freely-drained Inceptisols in areas with well-distributed to excessive rainfall. In the

areas where rainfall was excessive, the soils formed in older deposits. Most of the soils are thought to have developed under forest vegetation, but some supported shrubs or grasses. Most of the soils have either a thinner or thicker but leached surface horizon and a weakly developed subsoil or B-horizon. Some also have a sulfuric acid-enhanced horizon, which commonly occurs as a result of artificial drainage, surface mining, or other earthmoving activities. Some also exhibit a cemented zone subsurface, such as a duripan, and some have a compacted zone, such as a fragipan (Soil Survey Staff 1999).

There are also smaller areas predominantly mapped as Entisols in the region. Entisols are sandy soils that formed very recently in unconsolidated parent material and have not been in place long enough for pedogenic processes to form distinctive horizons aside from an A-horizon. They are located on steep, actively eroding slopes or on floodplains or glacial outwash plains that frequently receive new deposits of alluvium. They do not have a compacted zone, such as a fragipan, and do not have accumulated clays or aluminum or iron oxides, but they may be sodium enriched (Soil Survey Staff 1999:389–391). Because of their young age, Entisols rarely contain buried and intact prehistoric archaeological deposits.

Several suborders dominate the Entisol order. They include the Aquents, Orthents, and Psamments suborders. Aquents are found along margins of lakes or along streams where the water table is at or near the surface for much of the year. Many Aquents have bluish or grayish colors and redoximorphic features caused by alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Most Aquents support vegetation that tolerates permanent or periodic wetness. Orthents are located on recent erosional surfaces that are the result of geologic erosional processes or are caused by mining, cultivation, or other factors. The upper horizons have been either truncated or completely removed. Some are in areas of recent loamy or fine eolian deposits, in areas of glacial deposits, or in areas of debris from recent landslides and mudflows. Orthents occur in any climate and under any vegetation. Finally, Psamments are very sandy soils formed in poorly graded (well sorted) sands on shifting or stabilized sand dunes, in cover sands, in sandy parent materials that were sorted in an earlier geologic cycle, or in material weathered from sandstone or granitic bedrock. They are generally found on outwash plains, lake plains, natural levees, or beaches, and they generally exhibit a wide range of vegetation (Soil Survey Staff 1999).

Lithic Resources

Chert resources in the Eastern Kentucky Coal Field region are somewhat localized, and many portions of the region are devoid of chert resources. Chert is more common along the western border of the region. The vast majority of the area is underlain by Pennsylvanian-age sandstone, shale, and siltstone deposits (USGS 2011). Breathitt chert primarily outcrops in the central portion of the region in the area of Breathitt County. Breathitt chert can also be found in portions of Knott, Magoffin, Owsley, and Perry Counties. Minor sources also occur in Bell, Leslie, and Harlan Counties. Brush Creek chert can be found in the northeastern portion of the region in Boyd, Carter, and Lawrence Counties. Mississippian-age Newman limestone, containing Newman chert, is found in outcrops along the northwestern and southeastern edges of the region. Ste. Genevieve and St. Louis cherts of the same age are found along the western edge of the region, predominantly in Clinton, Estill, Menifee, Powell, and Wayne Counties. Mississippian-age Fort Payne, Monteagle, and Bangor cherts are found in sandstone or limestone outcrops, mostly in the southern counties. Finally, there are several Ordovician and Cambrian Formations along the Kentucky-Virginia-Tennessee border in Harlan and Bell Counties that contain chert. The Ordovician Formations are noted as containing olive-black to black chert, referred to as Poteet or Chickamauga chert. Lower Ordovician and upper Cambrian Formations contain Knox chert. Although often of small size, the chert is a high quality material.

Prehistoric and Historic Climate

Climatic conditions during the period of human occupation in the region (Late Pleistocene

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

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

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

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

Pollen records for the Younger Dryas indicate that vegetation shifts were sometimes abrupt and characterized by oscillations. These shifts were not uniform over the entire southeast and indicate that a variety of factors were at play. At Jackson Pond in Kentucky (Wilkins et al. 1991), for example, several pronounced reciprocal oscillations occurred in a large number of spruce and oak. According to Meeks and Anderson, "these oscillations reflect shifts between boreal/deciduous forest ecotones associated with cool/wet and cool/dry conditions, respectively" (2012:113).

Meeks and Anderson (2012:126–130) define five population events for the Paleoindian–Early Holocene transition. Population Event 1 (circa 15,000–13,800 cal. B.P.) is a pre-Clovis

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

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

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

The earliest distinguishable Late Holocene climatic episode began circa 5000 B.P. and ended around 2800 B.P. This Sub-Boreal episode is associated with the establishment of essentially modern deciduous forest communities in the southern highlands and increased precipitation across most of the mid-continental United States (Delcourt 1979:271; Maxwell and Davis 1972:517–519; Shane et al. 2001; Warren and O'Brien 1982:73). Changes in local and extra-local forests after approximately 4800 B.P. may also have been the result of anthropogenic influences. Fredlund (1989:23) reports that the Gallipolis pollen record showed increasing local disturbance of the vegetation from circa 4800 B.P. to the present, a disturbance that may have been associated with the development and expansion of horticultural activity. Based on a study of pollen and wood charcoal from the Cliff Palace Pond in Jackson County, Kentucky, Delcourt and Delcourt (1997:35–36) recorded the replacement of a red cedar–dominated forest with a forest dominated by fire-tolerant taxa (oaks and chestnuts) around 3000 B.P. The change is associated with increased local wildfires (both natural and culturally augmented) and coincided with increases in cultural utilization of upland (mountain) forests.

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

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

Modern Climate

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

Description of the Project Area

The project area is located 3.95 km (2.45 mi) north of Morehead, beginning near the intersection of Viking Drive, moving northwest toward Flemingsburg, and terminating a little past Park Hills Drive (see Figures 2 and 3). It is 17 ha (42 acres) in size. Elevations in the project area range from 220 m (722 ft) AMSL along Big Bushy Creek in the south to around 269 m (883 ft) AMSL in the northern portion of the project area near Hickory Drive. Big Bushy Creek and its tributaries drain the majority of the project area.

Landforms in the project area consisted primarily of terraces and sideslopes, along with floodplains. Landforms dictated land use. Residential and commercial properties were primarily on terraces, with industrial and agricultural on both terraces and floodplain. Sideslope landforms were primarily undeveloped mixed forest area. Vegetation varied by land use, with residential areas and commercial properties generally exhibiting short grass, ornamental plants, shrubs, and trees. Agricultural properties consisted of fallow fields and pastures with short and tall grass and weeds. Forested areas consisted of deciduous and coniferous trees with scrub and briar undergrowth. Ground surface visibility was obscured by vegetation or leaf litter throughout the project area.

The majority of the land parcels were residential lots, many of which held modern structures that were outside the project corridor (Figure 6). The project corridor along several of these lots consisted only of small areas between the existing roads and the facades of the houses. The majority of the residential yard areas had been disturbed through road construction or the installation of below ground utilities (Figure 7). Other areas were used for industrial and commercial purposes, and the portions of the

Figure 6. Overview of project area with modern residences, facing southeast.

Figure 7. Disturbance and utilities, facing west.

project area in these areas typically exhibited disturbed sediments (Figure 8). Agricultural fields and pastures, also had been disturbed through agricultural uses (i.e., plowing) (Figure 9). The remaining areas were all mixed forest sideslope (Figure 10).

Chert resources for the region have been previously discussed. For a more detailed analysis of chert resources, see the Lithic Analysis section of this report.

Six soil series have been defined in the project area. They consist of Tilsit, Berks, Whitley, Cuba, Cranston, and Bonnie soil series. The soil series are classified by the amount of time it has taken them to form and the landscape position they are found on (Birkeland 1984; Soil Survey Staff 1999). This information can provide a relative age of the soils and can express the potential for buried archaeological deposits within them (Stafford 2004). The soil order and group classifications for each soil series are used to assist with determining this potential.

The Tilsit and Whitley soil series are classified as Ultisols, which are found on landforms that formed during the late Pleistocene or earlier (Soil Survey Staff 1999:721–726). Furthermore, the Cranston soil series is an Alfisol, which is found on landforms that formed during the late Pleistocene or earlier (Soil Survey Staff 1999:163–165). Archaeological deposits would only be found on or very near the ground surface on landforms mapped with these Ultisols and Alfisols.

Tilsit series soils are moderately well drained, derived from residuum of siltstone, soft shale, and sandstone, and are located on ridges. The typical soil profile consists of an O horizon over an Ap horizon of grayish brown (10YR 5/2) silt loam to 13 cm (5 in) below ground surface (bgs) followed by a BA horizon of light yellowish brown (10YR 6/4) silt loam to 23 cm (9 in) bgs. These are underlain by Bt1 and Bt2 horizons of yellowish brown (10YR 5/6 and 10YR 5/4) silty clay loam to 48 and 61 cm (19 and 24 in) bgs, respectively. Most of the northern portion of the project area was mapped as the Tilsit series.

Figure 8. General overview of commercial property and utilities within the project area, facing northwest.

Figure 9. Overview of pasture, facing northwest.

Figure 10. General overview depicting slopes, vegetation, and visibility within the project area, facing south.

Whitley series soils are very deep, well drained, and are located on stream terraces, foot slopes and fans. They formed in mixed alluvium weathered from siltstone, shale and sandstone. The typical soil profile consists of an Ap horizon of dark grayish brown (10YR 4/2) silt loam to 23 cm bgs followed by a Btl horizon of yellowish (10YR 5/6) silty clay loam to 46 cm (18 in) bgs. This is underlain by a Bt2 horizon of yellowish brown (10YR 5/8) silty clay loam extending to 91 cm (36 in) bgs. Most of the terraces in the project area were mapped as the Whitley series.

Cranston series soils are deep and very deep, well drained, and are located on sideslopes, footslopes, and fans. They formed in colluvium and slopes range between 2 and 60 percent. The typical soil profile consists of an O horizon over an A horizon of brown (10YR 4/3) gravelly silt loam to no more than 13 cm bgs followed by a BE horizon of light yellowish brown (10YR 6/4) gravelly silt loam to 33 cm (13 in) bgs. This is followed by Bt1 horizon of yellowish brown to brown (10YR 5/4) gravelly silt loam to 58 cm (23 in) bgs. Cranston series soils were mapped for the steeply sloped hillside above waterways in the project area.

The Berks and Cuba soil series are classified as Inceptisols that are found on landforms that formed during the late Pleistocene or Holocene time periods (Soil Survey Staff 1999:489–493). These may have deeply buried and intact archaeological deposits, depending upon the landform on which they formed (e.g., sideslope vs. alluvial terrace).

Berks series soils are moderately deep, well drained soils. They formed in residuum from shale, siltstone and fine grained sandstone and are located on rounded and dissected uplands. The typical soil profile consists of an Ap horizon of brown (10YR 4/3) loam extending to 25 cm (10 in) bgs. This is underlain by Bw1 and Bw2 horizons of yellowish brown (10YR 5/6) loam to silt loam that transitions at 43 to 53 cm (17 to 21 in) bgs to a Cb horizon. Much of the side slope in the project area was mapped as Berks series.

The Cuba series are very deep, well drained soils derived from acid, silty alluvium, and are located on floodplains, floodplain steps and natural levees. The typical soil profile consists of an Ap horizon of brown (10YR 4/3) silt loam extending to 25 cm bgs. This is underlain by Bw1 horizon of dark yellowish brown (10YR 4/4) silt loam that extends to a depth of 53 cm (21 in) bgs. Cuba series soils found in the project area were located on low-lying landforms flooded by Big Bushy Creek.

The Bonnie soil series is classified as Entisols, which formed very recently in unconsolidated parent material, such as sandy or recent water-deposited sediments or disturbed soil and rock material, and has not been in place long enough for pedogenic processes to form distinctive horizons except an A horizon (Soil Survey Staff 1999:389–391). Because of their recent age, Entisols rarely have buried and intact prehistoric archaeological deposits.

Bonnie series soils are very deep, poorly to very poorly drained soils formed in silty alluvium on floodplains. The typical soil profile consists of an Ap1 horizon of brown (10YR 5/3) silt loam extending to 13 cm bgs over an Ap2 horizon of light brownish gray and dark grayish brown (10YR 6/2 and 10YR 4/2) silt loam to 25 cm bgs. This is underlain by a Cg1 horizon of gray and light gray (10YR 6/1 and 10YR 7/1) silt loam that extends to 69 cm (27 in) bgs.

Sediments observed in shovel probes on terraces and ridges in the project conformed to the description of Whitley silt loam or Tilsit silt loam. Probes revealed a dark yellowish brown or olive brown (10YR 4/4 or 2.5Y 4/3) silty clay loam Zone I that extended to approximately 16 cm (6 in) bgs. Below Zone I, a yellowish brown to olive brown (10YR 5/6 to 2.5Y 6/6) clay loam to silty clay loam, with fine manganese concretions, was present to at least 30 cm (12 in) bgs. The soil profiles on these landforms varied greatly and were not always consistent with Whitley and Tilsit mapped soil series; rather, it appears that the sediments had been heavily disturbed through nearby road and residence maintenance/construction.

Soils found in shovel probes on floodplains in the project area conformed to the description of Cuba silt loam. These probes generally revealed a dark grayish brown (10YR 4/2) silt loam Zone I that extended to approximately 15 cm (6 in) bgs. Below Zone I, a dark yellowish

brown (10YR 4/4) silt clay loam, with fine iron/manganese concretions, was present to at least 35 cm (14 in) bgs. While not the typical profile, the soils fit within the range of characteristics for the Cuba series.

Bucket augers on floodplains were in soils mapped as Cuba soil series. The bucket auger revealed a yellowish brown (10YR 5/4) silt clay loam Zone I, with fine iron/manganese concretions, that extended to 25 cm bgs. This was underlain by a yellowish brown (10YR 5/6) silt clay loam Zone II, with fine iron/manganese concretions, which increased in moisture content until terminated at the water table 125 cm (49 in) bgs. While not exhibiting the exact profile, the soils did fit within the range of characteristics for the Cuba series.

III. PREVIOUS RESEARCH AND CULTURAL OVERVIEW

Prior to initiating fieldwork, a search of records maintained by the NRHP (available online at: http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome) and the OSA (FY18_9387) was conducted to: 1) determine if the project area had been previously surveyed for archaeological resources; 2) identify any previously recorded archaeological sites that were situated within the project area; 3) provide information concerning what archaeological resources could be expected within the project area; and 4) provide a context for any archaeological resources recovered within the project area. A search of the NRHP records indicated that no archaeological sites listed on the NRHP were situated within the current project area or within a 2 km radius of the project area. The OSA file search was conducted on October 17, 2017. The work at OSA consisted of a review of professional survey reports and records of archaeological sites for an area encompassing a 2 km radius of the project footprint. To further characterize the archaeological resources in the general area, the OSA archaeological site database for the county was reviewed and synthesized. The review of professional survey reports and archaeological site data in the county provided basic information on the types of archaeological resources that were likely to occur within the project area and the landforms that were most likely to contain these resources. The results are discussed below.

Previous Archaeological Surveys

Heather Barras

OSA records revealed that 17 previous professional archaeological surveys have been conducted within a 2 km radius of the project area (Table 1). Three of these surveys are partially within the project area and are described below. Five archaeological sites have been recorded in this area also (Table 2). None of these sites fall within the actual project area for the KY 32 reconstruction. The records search revealed that 2 of the 5 sites in the file search area (15Ro124 and 15Ro184) are historic farm/residences. One site (15Ro185) is a historic cemetery, and one site (15Ro226) is a historic isolated burial. The remaining site (15Ro208) is a prehistoric open habitation without mounds. The 2 km radius included areas within the Farmers and Morehead, Kentucky quadrangles (USGS 1970a, 1970b).

On September 11, 1983, University of Kentucky's (UK) Program for Cultural Resource Assessment (PCRA) personnel completed an archaeological survey for a proposed sewer extension in Rowan County, Kentucky (Rossen 1983). At the request of the City of Morehead, 2,438 m (8,000 ft) were investigated by pedestrian survey supplemented with shovel testing. No archaeological sites were documented and no further archaeological investigations were recommended.

On November 19, 1992, UK’s PCRA personnel completed an archaeological survey for a proposed industrial park development near Morehead in Rowan County, Kentucky (Sussenbach 1992). A total of 21 ha (53 acres) were investigated by pedestrian survey supplemented with shovel testing at the request of Coblin, Porter and Associates. No archaeological sites were encountered and project clearance was recommended.

Between October 19 and 27, 2015, ASC Group, Inc., personnel conducted an archaeological survey of proposed work and improvements at facilities, construction yards, and associated access roads in Allen, Carter, Greenup, Madison, Powell, and Rowan Counties, Kentucky (Mustain and Klinge 2015). At the request of Tennessee Gas Pipeline Company, LLC, 35.09 ha (86.72 acres) were investigated by pedestrian survey and screened shovel testing. One previously recorded site (15Cr271), four previously unrecorded sites (15Cr280–15Cr283), and two isolated finds were documented. None of these sites were located within a 2 km radius of the current project area.

Archaeological Site Data

OSA records showed that prior to this survey, 214 archaeological sites had been recorded in Rowan County (Table 3). Most of the sites were open habitations without mounds (n = 84; 39.25 percent), historic farms/residences (n = 65; 30.37 percent), and rockshelters (n = 41; 19.16 percent). Other site types identified in the county consisted of cemeteries (n = 4; 1.87 percent), industrial sites (n = 3; 1.40 percent), quarries (n = 3; 1.40 percent), prehistoric workshops (n = 3; 1.40 percent), other special activity areas (n = 2; .93 percent), and an isolated burial (n = 1; .47 percent). Other (n = 2; .93 percent) and undetermined (n = 6; 2.80 percent) site types were also recorded.

Temporal periods for sites identified in Rowan County consisted of Paleoindian (n = 1; .41 percent), Archaic (n = 14; 5.79 percent), Woodland (n = 6; 2.48 percent), Late Prehistoric (n = 6; 2.48 percent), Indeterminate Prehistoric (n = 121; 50 percent), and Historic (n = 93; 38.43 percent). One site was from an unspecified temporal period (.41 percent).

Sites in Rowan County have been identified most often on terraces (n = 90; 42.06 percent) and dissected uplands (n = 68; 31.78 percent). Sites have also been identified on hillsides (n = 28; 13.08 percent), floodplains (n = 17; 7.94 percent), undissected uplands (n = 1; .47 percent), other landforms (n = 1; .47 percent), and unspecified landforms (n = 9; 4.21 percent).

The current project area primarily consists of terraces, floodplains, and hillsides. Terraces account for 90 sites recorded in Rowan County. Most terrace sites had been recorded as historic farm/residence (n = 45; 50 percent) and open habitation without mounds (n = 42; 46.67 percent). Floodplains account for 17 sites recorded in Rowan county and most are open habitation without mounds (n = 8; 47.06 percent) and historic farm/residence (n = 6; 35.29 percent). There are 28 sites that are recorded on hillsides. Most hillside sites are recorded as rockshelters (n = 14; 50 percent) and open habitation without mounds (n = 9; 32.14 percent).

Map Data

In addition to the file search, a review of available maps was initiated to help identify potential historic properties (structures) or historic archaeological site locations within the proposed project area.

Because of their large scale, the general highway maps dating to the 1940s and 1950s (Kentucky Department of Highways [KDOH] 1948, 1958) are difficult to correlate to generally more accurate USGS topographic quadrangles. As such, these maps were only briefly consulted and are not illustrated in this overview.

The following maps were reviewed during the current investigations.

1929a Morehead, Kentucky, 15-minute series topographic quadrangle. (USGS);

1929b Salt Lick, Kentucky, 15-minute series topographic quadrangle (USGS);

1934 Salt Lick, Kentucky, 15-minute series topographic quadrangle. (USGS);

1935 Morehead, Kentucky, 15-minute series topographic quadrangle (USGS);

1948 General Highway Map of Rowan County, Kentucky (KDOH);

1953a Farmers, Kentucky, 7.5-minute series topographic quadrangle (USGS);

1953b Morehead, Kentucky, 7.5-minute series topographic quadrangle (USGS);

Table 1. Summary of Previously Conducted Professional Archaeological Surveys within 2 km of Project Area.

Survey requested by	Requested on behalf of	Purpose of survey	Date of survey	Size	Methods	Results	Recommendations	NRHP eligibility	Reference
Howard K. Bell, Consulting Engineers, Inc.	-	proposed Bluestone Sewage Treatment Plant in Rowan County, Kentucky	May 17, 1977	area of unspecified size	limited surface collection, shovel testing, plow zone removal, 1 m x 1 m test unit excavation	1 previously recorded site (15Ro35) and 1 new site (15Ro36)	15Ro35: further excavation 15Ro36: should receive 3 one-meter test units within the portion to be impacted	15Ro35: potentially eligible 15Ro36: not assessed	Turnbow and Allen 1977
not specified	-	two timber sale projects on the Morehead District of the Daniel Boone National Forest in Rowan County, Kentucky	1982	area of unspecified size	pedestrian survey, shovel testing	no sites found	no further work	n/a	Knudsen 1986
City of Morehead	-	proposed sewer extension in Rowan County, Kentucky	September 11, 1983	2,438 m (8,000 ft)	pedestrian survey, shovel testing	no sites found	no further work	n/a	Rossen 1983
Coblin, Porter & Associates	-	proposed industrial park development near Morehead in Rowan County, Kentucky	November 19, 1992	21 ha (53 acres)	pedestrian survey, shovel testing	no sites found	no further work	n/a	Sussenbach 1992
Daniel Boone National Forest	-	proposed timber sales in Bath, Menifee, Morgan, and Rowan Counties within the Morehead Ranger District, Daniel Boone National Forest	November 30, 1992–January 22, 1993	520.8 ha (1286.9 acres)	pedestrian survey, screened shovel testing	33 sites (15Bh176–15Bh183, 15Mf468–15Mf484, 15Mo116–15Mo119, 15Ro103, and 15Ro124–15Ro126)	15Bh176–15Bh183, 15Mf468–15Mf479, 15Mf483, 15Mo116, 15Mo118, and 15Ro103: avoid or test 15Mf478, 15Mf484, 15Mo117, 15Mo119, and 15Ro124–15Ro126: no further work	15Bh176–15Bh183, 15Mf468–15Mf477, 15Mf479–15Mf483, 15Mo116, 15Mo118, and 15Ro103: not assessed 15Mf478, 15Mf484, 15Mo117, 15Mo119, and 15Ro124–15Ro126: not eligible	Bodkin 1993
Morehead Economic Development Council	-	proposed industrial park development near Morehead in Rowan County, Kentucky	January 8, 1993	2.8 ha (7.0 acres)	pedestrian survey, shovel testing	no sites found	no further work	n/a	Sussenbach 1993
Tom Calvert of the Morehead/Rowan County Development Council	-	proposed water tank site in Rowan County, Kentucky	July 27, 1995	area of unspecified size	pedestrian survey, shovel testing	no sites found	no further work	n/a	Schock 1995
not specified	-	25 woodland ponds in the Morehead Ranger District of the Daniel Boone National Forest in Bath, Menifee, Morgan, and Rowan Counties, Kentucky	February–April 1997	5.2 ha (12.8 acres)	pedestrian survey, screened shovel testing	no sites found	no further work	n/a	Bodkin 1997
Morehead Area Habitat for Humanity	-	proposed housing construction	June 1 and 2, 1998	7.6 ha (18.7 acres)	general surface collection, pedestrian survey, shovel testing	1 site (15Ro184) and a single isolated find (blue container glass)	no further work	not eligible	Davis 1998
not specified	-	proposed realignment of KY 32 in Rowan County, Kentucky (Item Number: 9-142.00)	April 7, 1999	approximately 14.0 ha (34.7 acres)	pedestrian survey, shovel testing	1 site (15Ro185)	no further work (15Ro185 adjacent to ROW)	15Ro185: not assessed	Hixon 2000
Stacey Epperson of Frontier Housing, Inc. (Morehead, KY)	-	proposed housing project	March 19, 2002	.4 ha (1.0 acre)	pedestrian survey, screened shovel testing	no sites found	no further work	n/a	Schock 2002
Neil Guthals of Redwing Ecological Services, Inc.	-	proposed Morehead Wal-Mart Supercenter in Rowan County, Kentucky	May 18, 22, and 25, 2006	approximately 12.54 ha (31.00 acres)	intensive pedestrian survey, systematic screened shovel testing, backhoe trenching	1 site (15Ro208)	15Ro208: no further work	15Ro208: not eligible	Davies and Kerr 2006
Tennessee Gas Pipeline Company, LLC	Utica Marcellus Texas Pipeline, LLC	proposed facilities associated with the Abandonment and Capacity Restoration Project and the Utica Marcellus Texas Pipeline Project in Allen, Barren, Bath, Boyle, Carter, Clark, Garrard, Green, Greenup, Hart, Lewis, Madison, Marion, Montgomery, Powell, Rowan, Simpson, and Taylor Counties, Kentucky	November 2013–November 2014	approximately 221.38 ha (547.03 acres)	pedestrian survey, screened shovel testing, hand excavated 50 cm x 50 cm test units at Sites 15Bh140 and 15Cr273	7 previously identified sites (15Bh140, 15Cr252, 15Gp200, 15Gp201, and 15Gp203–15Gp205), 9 new sites (15Bn180, 15Bo113, 15Cr271–15Cr275, 15Mn124, and 15Po474) and 6 isolated finds	15Bh140, 15Bn180, 15Bo113, 15Cr252, 15Cr273, and 15Cr275: avoid or further work to assess the eligibility of the sites 15Cr271, 15Cr272, 15Cr274, 15Mn124, and 15Po474: no further work 15Gp200, 15Gp201, and 15Gp203–15Gp205: will need to be relocated through archaeological survey to determine their location in relation to the Ohio River HDD workspace	15Bh140, 15Bn180, 15Bo113, 15Cr252, 15Cr273, 15Cr275, 15Gp200, 15Gp201, and 15Gp203–15Gp205: not assessed 15Cr271, 15Cr272, 15Cr274, 15Mn124, and 15Po474: not eligible	Barrett and McKeighen 2015
The Kentucky Transportation Cabinet (Item Number 9-8406.00)	-	proposed reconstruction of a portion of KY 377 between KY 32 and the Lewis County Line in Rowan County, Kentucky	January 26–February 13, 2015	45.3 ha (111.8 acres)	pedestrian survey, screened shovel testing, deep auger testing	1 previously recorded site (15Ro194), 5 new sites (15Ro226–15Ro230), and 6 isolated finds	15Ro194: avoid site 15Ro226: site unlikely to be disturbed, no further work 15Ro227–15Ro230: no further work	15Ro194, 15Ro226–15Ro230: not eligible	Rinker et al. 2015
Columbia Gulf Transmission, LLC	-	proposed compressor station sites and alternatives in Garrard, Metcalfe, and Rowan Counties, Kentucky, proposed modifications to a pipeline meter station in Boyd County, Kentucky, and proposed modifications to an existing compressor station in Carter County, Kentucky	July, September, October 2015, January and March 2016	98.9 ha (244.3 acres)	phase I: pedestrian survey, screened shovel testing phase II at 15Gd158: mechanical stripping of the plow zone, feature excavation	2 sites (15Gd157 and 15Gd158)	no further work	15Gd157: not eligible 15Gd158: portion of the site within the proposed compressor station boundaries not eligible	McKee et al. 2016
Tennessee Gas Pipeline Company, LLC	-	proposed work and improvements at facilities, construction yards, and associated access roads in Allen, Carter, Greenup, Madison, Powell, and Rowan Counties, Kentucky	October 19–27, 2015	35.09 ha (86.72 acres)	pedestrian survey, screened shovel testing	1 previously recorded site (15Cr271), 4 new sites (15Cr280–15Cr283), and 2 isolated finds	15Cr271 and 15Cr280–15Cr283: avoid or further work to assess potential	15Cr271 and 15Cr280–15Cr283: not assessed	Mustain and Klinge 2015
Josh Young of East Kentucky Power Cooperative	-	proposed Big Woods 69 kV Substation and Tap project in Rowan County, Kentucky	March 7 and 8, 2016	approximately 2.2 ha (5.5 acres)	pedestrian survey, screened shovel testing	no sites found	no further work	n/a	Bybee 2016

Table 2. Summary of Previously Archaeological Sites within 2 km of Project Area.

Site	Site Name	Site Type	Cultural Affiliation	Surveyed by	Date of Survey	NRHP Status	References
15Ro124	-	historic farm/residence	indeterminate historic	Forest Service	January 20, 1993	inventory site	Bodkin 1993
15Ro184	Deharte Farmstead	historic farm/residence	1801-1950	UK Program for Cultural Resource Assessment	June 1, 1998	inventory site	Davis 1998
15Ro185	Johnson (Quisenberry) Cemetery	cemetery	1851-1950	Kentucky Transportation Cabinet	April 7, 1999	NR status not assessed	Hixon 2000
15Ro208	-	open habitation w/o mounds	indeterminate prehistoric	CRA	March 18 and 22, 2006	inventory site	Davies and Kerr 2006
15Ro226	-	isolated burials	1851-1900	UK Program for Archaeological Research	February 2, 2015	NR status not assessed	Rinker et al. 2015

Table 3. Summary of Previously Recorded Archaeological Sites in Rowan, Kentucky. Data Obtained from OSA and May Contain Coding Errors.

Site Type:	N	%
Cemetery	4	1.87
Historic Farm/Residence	65	30.37
Industrial	3	1.4
Isolated Burials	1	0.47
Open Habitation without Mounds	84	39.25
Other	2	0.93
Other Special Activity Area	2	0.93
Quarry	3	1.4
Rockshelter	41	19.16
Undetermined	6	2.8
Workshop	3	1.4
Total	214	100
Time Periods Represented	**N**	**%**
Paleoindian	1	0.41
Archaic	14	5.79
Woodland	6	2.48
Late Prehistoric	6	2.48
Indeterminate Prehistoric	121	50
Historic	93	38.43
Unspecified	1	0.41
Total	242*	100
Landform	**N**	**%**
Dissected Uplands	68	31.78
Floodplain	17	7.94
Hillside	28	13.08
Other	1	0.47
Terrace	90	42.06
Undissected Uplands	1	0.47
Unspecified	9	4.21
Total	214	100

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

1958 Highway and Transportation Map of Rowan County, Kentucky (KDOH);

1970a [photoinspected 1975] Farmers, Kentucky, 7.5-minute series topographic quadrangle (USGS);

1970b [photorevised 1978] Morehead, Kentucky, 7.5-minute series topographic quadrangle (USGS);

The reviewed historic maps provide useful information concerning the general locations of current and former structures located within, and adjacent to, the project area, and can alert the crew to the possible existence of historic deposits within a general area. The historic maps indicate that 19 map structures (MS) were located within the current project area (Figures 11–14; Table 4). These areas were investigated for archaeological deposits according to accepted methodology, as described in the Methods section of the report.

The map structures identified include those for primary human use such as dwellings or places of employment (MS 1–15, MS 18, and MS 19) and those for secondary human use such as barns, warehouses, etc. (MS 16 and MS 17). The map structures associated with archaeological sites are identified in Table 4. It should be noted, however, that the symbols used on the USGS topographical maps are constantly being refined to better relate to features they represent, to improve the appearance or readability of the map, or to reduce production cost. Consequently, maps of the same series, but of different production dates, may have slightly different symbols for the same feature. Symbol differences may also be present between standard edition, new or replacement standard editions, and provisional editions maps. The horizontal accuracy of a USGS topographical map is ±12 m (40 ft), and associated mapping errors may result in the misplacement of map structures.

Cultural Overview

Early Human Occupation (before 11,500 B.C.)

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

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

Paleoindian Period (11,500–8000 B.C.)

The Paleoindian cultural tradition in the northeastern United States has been recognized as part of the Clovis culture, a widespread, homogeneous New World culture typified by a distinctive lithic assemblage. The most distinctive members of this assemblage are lanceolate shaped, often fluted, hafted bifaces (Maggard and Stackelbeck 2008). The presence of other artifact types in these Paleoindian assemblages, such as chert knives, scrapers, unifacial tools, and blades, is consistent across the eastern United States. These types of artifacts have been recovered from Clovis sites such as Holcombe Beach in Michigan (Fitting et al. 1966), Debert in Nova Scotia (MacDonald 1968), Martens in Missouri (Martens et al. 2004; Morrow 1998, 2000), and Topper in South Carolina (Goodyear and Steffy 2003).

Clovis components are not well represented in Kentucky, but they have been identified at sites such as Adams, Adams Mastodon, Big Bone Lick, Clay's Ferry Crevice, and Parrish

Figure 11. 1929b Salt Lick, Kentucky, 15-minute series topographic quadrangle map showing the location of MS 1.

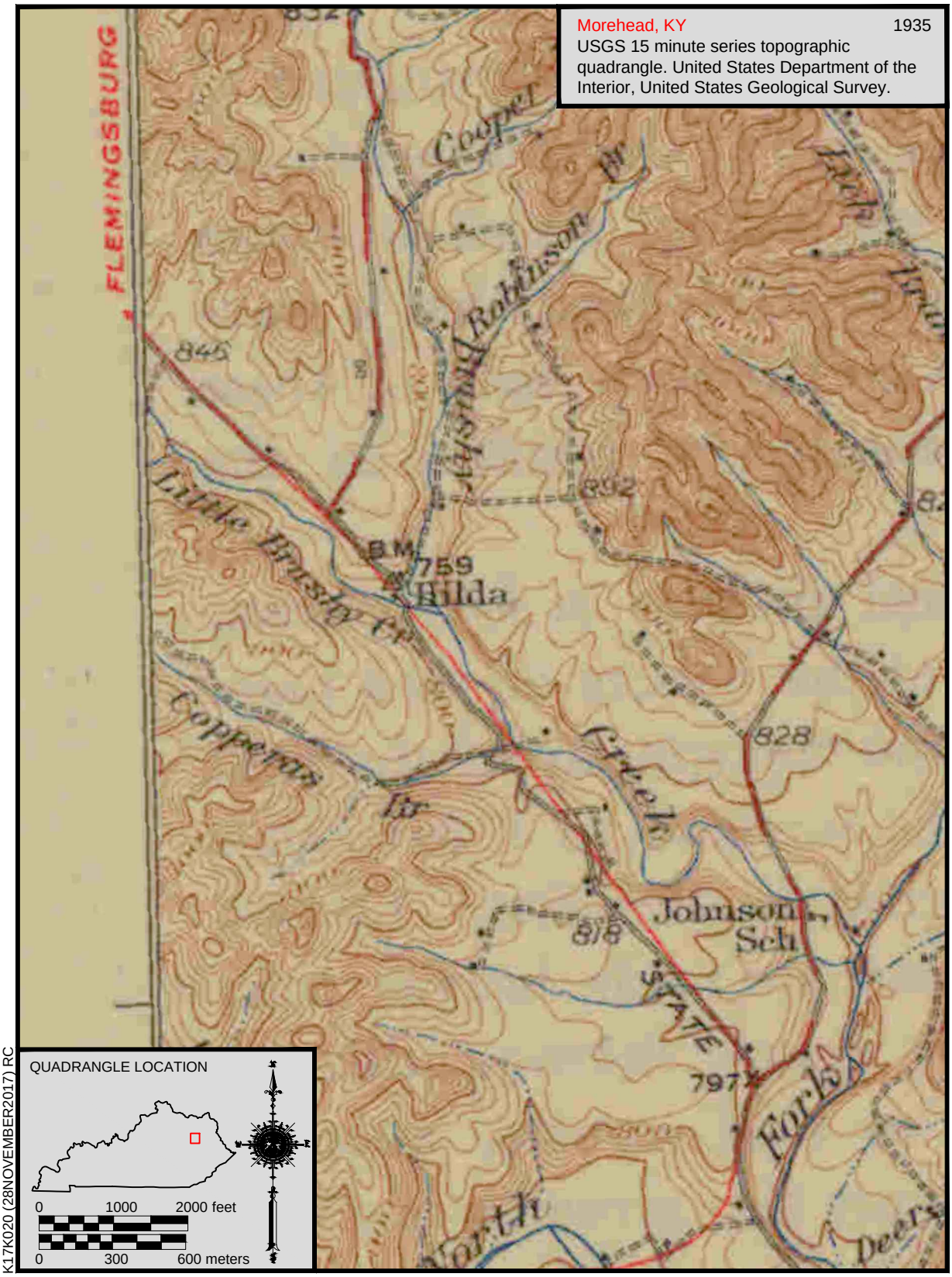

Figure 12. 1935 Morehead, Kentucky, 15-minute series topographic quadrangle map showing the locations of MS 2–5.

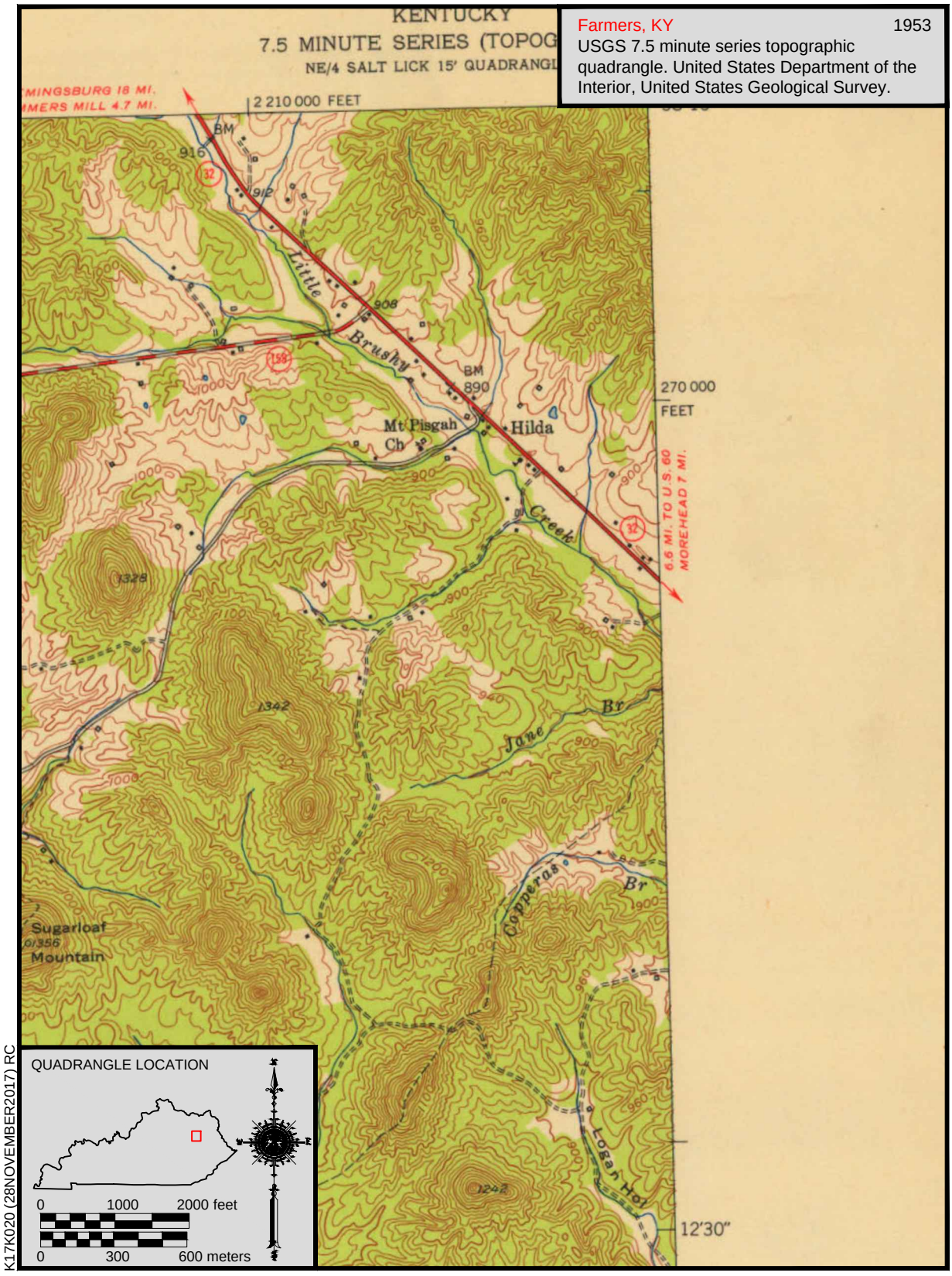

Figure 13. 1953a Farmers, Kentucky, 7.5-minute series topographic quadrangle map showing the locations of MS 1 6–9.

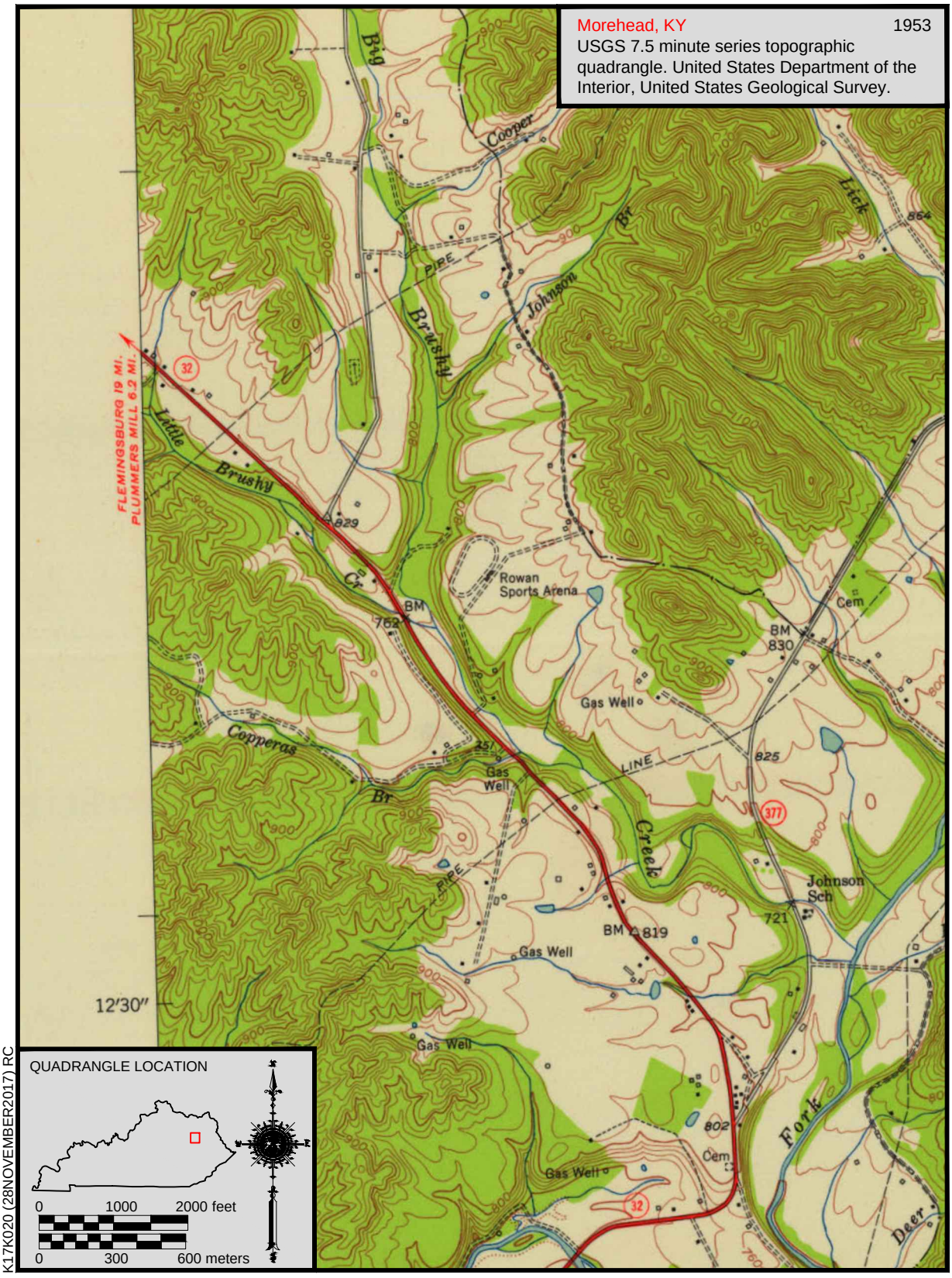

Figure 14. 1953b Morehead, Kentucky, 7.5-minute series topographic quadrangle map showing the locations of MS 4, 5, and 10–19.

Table 4. Historic Map Review Results.

Map Structure	Map References	Site	Description	Location	Investigation Results
1	1929a, 1934, 1953a, 1970a		Dwelling or Place of Employment	outside project area	not present (destroyed)
2	1929b, 1935	15Ro241	Dwelling or Place of Employment	inside project area	not present (destroyed)
3	1935, 1953b, 1970b		Dwelling or Place of Employment	inside project area	not present (destroyed)
4	1929b, 1935, 1953b, 1970b		Dwelling or Place of Employment	inside project area	present
5	1929b, 1935, 1953b, 1970b		Dwelling or Place of Employment	inside project area	not present (destroyed)
6	1953a, 1970a	15Ro242	Dwelling or Place of Employment	inside project area	not present (destroyed)
7	1953a	15Ro240	Dwelling or Place of Employment	inside project area	not present (destroyed)
8	1953a		Dwelling or Place of Employment	inside project area	not present (destroyed)
9	1953a, 1970a		Dwelling or Place of Employment	inside project area	present
10	1953b, 1970b		Dwelling or Place of Employment	outside project area	not present (destroyed)
11	1953b, 1970b		Dwelling or Place of Employment	outside project area	present
12	1953b, 1970b		Dwelling or Place of Employment	outside project area	present
13	1953b, 1970b		Dwelling or Place of Employment	outside project area	not present (destroyed)
14	1953b, 1970b		Dwelling or Place of Employment	outside project area	not present (destroyed)
15	1953b, 1970b		Dwelling or Place of Employment	inside project area	present
16	1953b, 1970b		Barn, Warehouse, etc.	inside project area	not present (destroyed)
17	1953b, 1970b		Barn, Warehouse, etc.	inside project area	not present (destroyed)
18	1935, 1953b, 1970b		Dwelling or Place of Employment	outside project area	not present (destroyed)
19	1953b, 1970b		Dwelling or Place of Employment	inside project area	present (abandoned)

(Tankersley 1996). The artifacts in the Clovis toolkit represent predominantly hunting, butchering, and hide-working activities. Bone tools (e.g., awls, needles, flakers, and possibly shaft straighteners) and ornaments are assumed to have been used, but have not been recovered because of unfavorable environmental conditions (Griffin 1978:226).

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

Archaic Period (8000–1000 B.C.)

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

The typical artifact assemblage representative of the Archaic period is composed of corner- and side-notched, or stemmed, hafted bifaces, increasing in both quantity and stylistic variation through time but accompanied by a

decrease in quality of individual workmanship. Corner- and side-notched forms appear earlier in the sequence, whereas stemmed bifaces appear later (Jefferies 2008).

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

Woodland Period (1000 B.C.–A.D. 900)

Griffin (1978:231) notes that during the Late Archaic subperiod there was "considerable evidence for the long distance movement of goods." The interregional movement of goods provided a structure for the transmission of information as well. During this period of interregional dynamism, there was a trend towards a more sedentary lifestyle with increasingly elaborate burial ceremonialism and, possibly, stratified social organization. These trends, along with the appearance of fired ceramic vessels, mark the transition between Archaic and Woodland peoples (Griffin 1978).

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

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

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

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

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

Historic Period

The first Europeans to visit Kentucky included explorers, trappers, traders, and surveyors. It was in the 1750s, when the English Crown attempted to colonize the Ohio Valley, that the first organized attempt to settle Kentucky

occurred. This attempt stimulated the formation of land companies that sent surveyors into the area (McBride and McBride 2008:909). One of these, the Ohio Land Company, sent Christopher Gist into Kentucky in 1751. The French and Indian War that erupted in 1754 disrupted this early exploration (Talbert 1992:689).

In 1763, England's King George III set aside the land west of the Appalachians for native populations and English fur traders and closed the area to permanent settlement. His decree was ignored, and further colonial exploration and development could not be stopped. One man who took advantage of the commercial expansion westward was Daniel Boone. Boone first explored Kentucky in 1767, and by 1769, he had explored much of the Red and Kentucky River valleys. Harrodsburg was established soon after in 1774, followed by Boonesboro in 1775. The western movement of the American frontier pushed the Native Americans further and further west, and Kentucky was one of the places where they decided to take a stand. In response, Governor Dunmore (of Virginia) waged two large campaigns in the Ohio Valley (later known as Dunmore's War), and the Native Americans were defeated. Dunmore's War opened Kentucky for settlement, although some hostilities continued after this time (Nickell 1992:96–98; Stone 1992:571).

Historic Overview of Rowan County, Kentucky

In 1776, the Virginia General Assembly had created Kentucky County from its western lands. The newly created Kentucky County had approximately the same boundaries as the state of Kentucky does today. This county in 1780 was divided into three separate counties (Fayette, Lincoln, and Jefferson), which would collectively become the District of Kentucky in 1783 (Hammon 1992:495). Then, in 1792, the Kentucky District would dissipate in favor of the Commonwealth of Kentucky, and the counties that comprised the district would eventually be divided and subdivided into the 120 counties that presently make up Kentucky (Kleber 1992a:xix).

Rowan County is located in the foothills section of the Appalachian Mountains cultural landscape. Located in the northeastern portion of the state, the county is bordered by Lewis County to the north, Carter and Elliott Counties to the east, Morgan and Menifee Counties to the south, and Bath and Fleming Counties to the west. Formed in 1856 out of portions of Fleming and Morgan Counties, Rowan County is the 106th Kentucky county in order of formation. The county was named for John Rowan because of his representation of Kentucky in the U.S. House of Representatives from 1807 to 1809 and the U.S. Senate from 1825 to 1831. Morehead, the largest city in the county, is the county seat. It was named for James T. Morehead, who was the first native born Kentuckian to serve as governor (1834–1836) (Kleber 1992b:648–649; Sprague 1992:783–784).

The first Euro-American explorers of the area of Rowan County likely came from Pennsylvania led by George William Thompson in 1773. The first permanent settlers of the land which is now Rowan County largely came to claim land grants received for their service in the Revolutionary War. The valleys of the Licking River and Triplett Creek provided fertile lands which the early settlers gravitated towards. Farmers was one of the first established communities of the county and grew around the Licking River. Next to form were the communities of Clearfield and Morehead, which both developed around sawmills. Timber had quickly become a major resource for the county. The Licking River provided easy transport for lumber, which was floated down the river. By 1860, small communities were scattered throughout and the county had a population of 2,282 residents (Sprague 1992:784; United States Bureau of the Census [USBC] 1860, Washington, D.C.).

The budding county was faced with the trials of the Civil War very shortly after its establishment. No major battles were fought in Rowan County, but guerilla activity was pervasive throughout the Civil War years. The county seat of Morehead, on November 10, 1863, was briefly captured by guerilla men. On March 21, 1864, a band of guerillas burned the new courthouse down (Kleber 1992b:649; Sprague 1992:784).

The end of the Civil War brought population growth to Rowan County. There were 2,991 residents living in the county in 1870 (USBC 1870). Industry was booming with stone, coal, and timber providing for most of the county's economy. Due to the economic opportunities the county had to offer in the extractive industry, population nearly doubled by 1880 with 4,420 inhabitants in the county by that time (USBC 1880). The county's rich resources were further exploited with the expansion of the Elizabethtown, Lexington & Big Sandy Railroad in the early 1880s. The railroad provided Rowan County easier access to larger markets (Sprague 1992:784).

The rapid expansion of Rowan County led to a disruption of local politics (Kleber 1992b:649). Growing tensions between Democrats and Republicans paved the way for a violent feud headed by Democrat Floyd Tolliver and Republican John Martin. The feud became known as the Martin-Tolliver Feud, or the Rowan County War. The feud, which earned the county national infamy, resulted in 20 deaths and 16 injuries throughout the years of 1883–1887. An unsuccessful attempt to restore order to the county was made by the Generally Assembly by threatening to dissolve Rowan County if the feud continued (Sprague 1992:784). The violence was finally put to an end by the formation of a citizen's protective association, the Law and Order League, as well as the arrival of the Kentucky State Guard to keep the peace (Williams 1992:784–786).

Coinciding with the end of the Rowan County War was the creation of Morehead Normal School, which would later become Morehead State University. The school's doors opened on October 3, 1887, with the intention of stabilizing the county through religion and education after the damage brought by the formidable feud. The school was run by the Kentucky Christian Missionary Society and then later by the Christian Women's Board of Missions; it became a state school in 1922. As the growth of the extractive industries slowed as the county's resources were depleted, the university provided new jobs for the residents of Morehead and Rowan County at large (Duncan 1992:649).

Education further played a role in the history of Rowan County with the founding of "Moonlight Schools" by Cora Wilson Stewart in 1911. Stewart recruited volunteer teachers to provide lessons in the evenings so adults could attend after their days at work, with the goal of reducing illiteracy. The Rowan County Messenger was created by Stewart, which along with the news, provided lessons for adult students to supplement their Moonlight School education. Enrollment greatly exceeded expectations year after year, and eventually Stewart's work provided the framework for literacy programs nationwide (Estes 1992:646).

The Rowan County population continued to increase throughout the early twentieth century. The population in 1920 was 9,467 people (USBC 1920). By 1930, the county had 1,426 new residents, a population increase of approximately 15 percent (USBC 1930). The population further increased to 12,734 people by 1940. The year 1950 was the first in the county's history to see population decline with 12,708 people residing in the county (USBC 1950). This same year, tobacco exceeded corn in being the leading county crop produced, also for the first time in the county's history (Sprague 1992:784).

A slight spike in industrial growth was experienced by the county with the completion of I-64 in 1969. Abundant clay had become an important resource to Rowan County, and the Lee Clay Products company operated in the county until the 1970s. The tourism industry also increasingly began to contribute to the Rowan County economy with the creation of Cave Run Lake in 1974. At 8,200 acres, it is the largest in eastern Kentucky (Sprague 1992:784).

The population of Rowan County reached 19,049 people in 1980 (USBC 1980). Population continued to gradually increase with populations of 20,353 people in 1990; 22,094 people in 2000; and 23,333 people in 2010 (USBC 1990, 2000, 2010). There are an estimated 24,451 current residents of Rowan County.

IV. METHODS

This section describes the methods used during the survey. Site-specific field methods are discussed in further detail in the Site Description section of this report. General laboratory methods are described below, whereas methods specific to the individual analysis are discussed in Section V of this report, Materials Recovered.

Field Methods

Prior to the survey, CRA was provided with mapping of the project area. This mapping depicted the project boundary, contours, and other natural and cultural features. An iPad Mini tablet coupled with a Garmin GLO Bluetooth global positioning system (GPS) receiver capable of real-time 2−3 m horizontal accuracy, was used to record pertinent archaeological data. The location of the project area was also determined by its relative position along KY 32, and other ancillary secondary roads and structures. The project area was also examined based on aerial photographs, satellite imagery, and historic maps.

The entire project area was subject to intensive pedestrian survey supplemented with systematic screened shovel testing and bucket augering. All undisturbed, relatively flat terrain possessing poor surface visibility within the project was subjected to screened shovel testing. All slopes greater than 15 percent also were subjected to intensive pedestrian survey by walking transects parallel to the contours at 20 m (66 ft) intervals. Steep sideslopes were inspected for natural benches and overhangs. Areas of disturbances, including land grading and benching, existing impervious surfaces (such as roads), and underground utility corridors, were also subjected to pedestrian survey. No shovel testing was conducted within close proximity to the underground utilities (see Figure 3). Bucket augering was conducted in alluvial formations and floodplains to identify the potential for buried cultural resources. Augering was terminated at a depth of 2.0 m (6.6 ft) or when the water table was encountered.

Shovel tests were excavated at 20 m intervals with spacing of transects set at 20 m. If a historic map structure was depicted, intervals and transects were reduced to a 10 m (33 ft) grid. In all cases, shovel tests measured no less than 35 cm in diameter and extended well into the subsoil. Shovel tests were excavated in levels. The topsoil was removed as one level. After the topsoil was removed, 10 cm (4 in) arbitrary levels within natural horizons were excavated. The walls and base of each shovel test were examined for cultural material and features. All sediments were screened through .64 cm (.25 in) mesh hardware cloth. All artifacts recovered from shovel tests were logged and collected by shovel test number and level.

Laboratory Methods

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

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

V. MATERIALS RECOVERED

The current investigations recovered cultural materials from three historic archaeological sites (15Ro240, 15Ro241, and 15Ro242) and a single historic/prehistoric multicomponent isolated find (IF 1). The assemblages from each site are described below. In addition, an inventory

of materials recovered from the sites listed by provenience is presented in the individual site descriptions section of this report.

Historic Analysis

J. Howard Beverly, Jr.

Methods

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

South's system was widely accepted and adopted by historical archaeologists. However, some have criticized South's model on theoretical and organizational grounds (Orser 1988; Wesler 1984). One criticism is that the organization of artifacts is too simplistic. Swann (2002) observed that South's groups have the potential to be insufficiently detailed. She suggested the use of sub-groups to distinguish between, for example, candleholders used for religious purposes and those used for general lighting. Others, such as Sprague (1981), have criticized South's classification scheme for its limited usefulness on late-nineteenth- and early-twentieth-century sites, sites which include an array of material culture—such as automobile parts—not considered by South. Despite its shortcomings, most archaeologists recognize the usefulness of South's classification system to present data.

Stewart-Abernathy (1986), Orser (1988), and Wagner and McCorvie (1992) have subsequently revised this classification scheme. For the purposes of this assessment, artifacts are grouped into the following categories: domestic, architecture, arms, furnishings, clothing, personal, communication and education, maintenance and subsistence, biological, and unidentified. The artifacts recovered during this project are summarized in Table 5.

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

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

Table 5. Historic Artifacts Recovered According to Functional Group.

Group	Site 15Ro240	Site 15Ro241	Site 15Ro242	IF 1	Percent
Architeture	4		2		54.5%
Domestic		2	2	1	45.5%
Totals	4	2	4	1	100%

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

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

Materials Recovered by Functional Group

There were 11 historic artifacts recovered during the current project (see Table 5). The following provides a descriptive discussion of the types and age of artifacts recovered from Sites 15Ro240, 15Ro241, 15Ro242 and IF1.

Architecture Group (N = 6)

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

Flat Glass (n = 3)

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

Cylinder window glass has been shown to gradually increase in thickness through time and can be a useful tool for dating historic sites. Several dating schemes and formulas have been devised that use average glass thickness to calculate building construction or modification dates. These include Ball (1984), Roenke (1978), and Chance and Chance (1976) to name a few. Like previously derived formulas, Moir (1987) developed a window glass dating formula to estimate the initial construction dates for structures built primarily during the nineteenth century. Although Moir (1987:80) warns that analysis on structures built prior to 1810 or later than 1915 have shown poor results, most research in this area shows the regression line extending back beyond 1810 (Moir 1977; Roenke 1978). Hence, dates calculated back to 1785 were considered plausible. Sample size is also a consideration when using the Moir window glass regression formula. According to Moir (1987:78), sample sizes also need to be "reasonable and not collected from a point or two" in order to accurately date the construction of a building. Moir (1987:80) indicates sample sizes as small as 15 sherds are acceptable, but recommends larger sample sizes for better accuracy, and we agree with his assessment. For the purposes of this assessment, a "reasonable" sample size is considered 25 window glass sherds. It should be noted that for window glass assemblages with less than 25 sherds, however, "tentative" dates based on measurements are still presented for the purpose of reporting and providing additional information regarding the material collected. Individual sherd/small assemblage measurements/dates are not

presented as "absolute" dates for sites, and as a general principle, any window glass dates derived using the Moir (1987) method should be contextualized utilizing other artifact dating methods whenever possible. Although Moir (1987:80) states that dating window glass after 1915 is not as reliable for dating sites, for our purposes, window glass that measures 2.41 mm (dating to 1916) is included in our calculations because according to Roenke (1978:11), plate glass does not become widely or successfully produced in the United States until 1917.

Three fragments of flat glass were recovered (Table 6, Figure 15a). Two window glass fragments and one plate glass fragment were recovered from the project area. The two fragments of window glass measured less than 2.41 mm thick. According to the Moir (1987) formula, the window glass has an average date of 1894. However, because the sample of window glass is small, it is not considered reliable for contributing to the overall assessment of the temporal period of the site. The remaining shard of plate glass was thicker than 2.41 mm and not suitable for use in the Moir formula.

Nails (n = 3)

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

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

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

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

Three wire nails were recovered from the project area (see Table 6). One was an indeterminate fragment with no identifiable pennyweight (Figure 15b), and the other two were unaltered, 2d roofing nails (Figure 15c). In general, smaller pennyweight nails are utilized for roofing, lathing, moulding, and finishing (2d–5d), while 6d nails are commonly used for light framing. Pennyweights of 7d–9d commonly are utilized for siding, and flooring and interior fittings, and nails with pennyweights of 10d and above are most often utilized for flooring, boarding, wooden studding, rafters, and heavy framing (Faulkner 2000; Wentworth 1979).

Table 6. Summary of Historic Materials Recovered.

Class	Type	Site 15Ro240	Site 15Ro241	Site 15Ro242	IF 1	Total
Nails						
	Wire Nail	2		1		3
Flat Glass						
	Window Glass	1		1		2
	Plate Glass	1				1
Ceramics						
	Whiteware			1		1
	Ironstone		1			1
Container Glass						
	Automatic Bottle Machine		1	1	1	3
	Totals	4	2	4	1	11

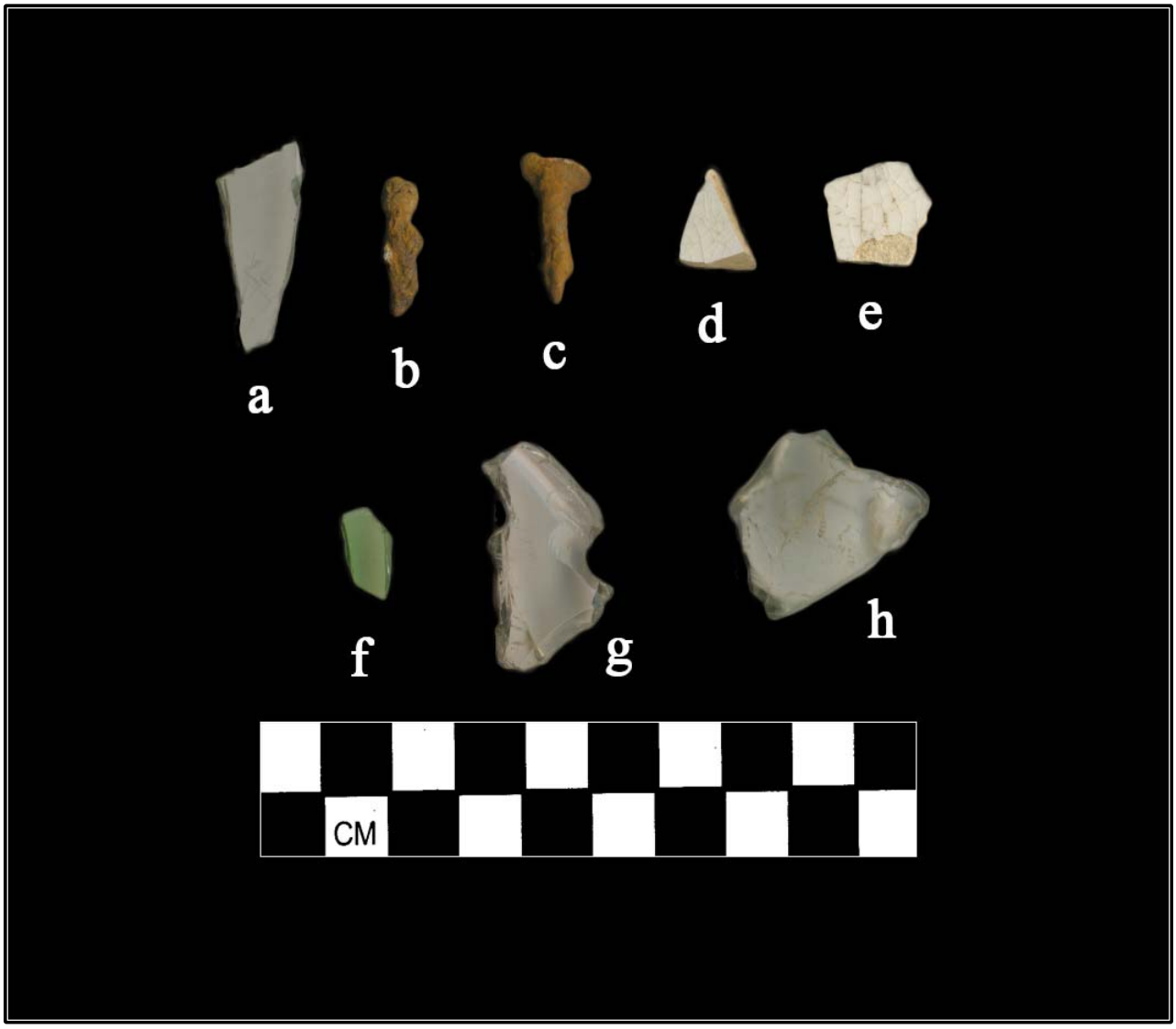

Figure 15. Sample of historic artifacts recovered. a) flat glass from Site 15R0242, STP 1, Zone II; b) indeterminate wire nail fragment from Site 15R0242, STP 1, Zone III; c) 2d roofing nail from Site 15R0240, STP 2, Zone I; d) plain ironstone from Site 15R0241, STP 1, Zone I; e) plain whiteware from Site 15R0242, STP 1, Zone III; f) ABM green body fragment from Site 15R0242; g) ABM clear base fragment from Site 15R0240, STP 1, Zone I; h) ABM aqua body fragment from Site 15R0242, STP 1, Zone III.

Domestic Group (N = 5)

Artifacts included in the domestic group consisted of ceramics (n = 2) and container glass (n = 3) (see Table 6).

Ceramics (n = 2)

The ceramic recovered from the project area consisted of ironstone (n = 1) and whiteware (n = 1).

IRONSTONE (N = 1)

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

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

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

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

One ironstone sherd was recovered from the project area (see Table 6). The sherd is a body fragment from a plain, indeterminate vessel (see Figure 15d). Plain ironstone dates from between 1860 and 1930 (Majewski and O'Brien 1987:119). However, ironstone continues to be

produced into the twentieth century (Miller 1991:10).

WHITEWARE (N = 1)

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

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

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

PLAIN (N = 1)

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

Purity crusades also indirectly helped increase the popularity of plain, white vessels in the late nineteenth and early twentieth centuries as social reformers—many of whom were white and middle class—focused on cleaning up city streets, improving sanitation, and ridding cities of disease epidemics. Part of this crusade was the public promotion of purity at the dinner table. Unfortunately, many of these white public health reformers were also motivated by Social Darwinist ideas, and sanitation problems and disease epidemics were often blamed on African Americans and East-European immigrants who were stereotyped as being the harbingers of disease and social decay (Friedman 1970:123).

One plain whiteware sherd was recovered from the project area (see Table 6, Figure 15e). It is an undecorated body sherd with no discernable decorative attributes, from an indeterminate vessel, and dates from 1860 to 1930 (Majewski and O'Brien 1987:119). It should be noted that while these sherds may have come from plain vessels, they may also be undecorated portions of decorated vessels.

Container Glass (n = 3)

Research by Baugher-Perlin (1982), Jones and Sullivan (1985), Lindsey (2017), and Toulouse (1971) was used to analyze and date the container glass assemblage. Glass color was the only attribute that could be used for dating those fragments that were not identifiable as to type of manufacture.

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

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

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

Color also is an important aspect of container glass identification, and oftentimes it is used to date vessels/sherds in conjunction with other diagnostic characteristics. In the event that no other manufacturing characteristics are observable, glass color alone can be used to date container glass. Jones and Sullivan (1985) observed that chemicals color glass, either as natural inclusions or additions by the manufacturer. "Black glass" is one of the earliest glass colors, possibly dating back to mid-seventeenth-century Europe. It was not actually black, but more of a very dark olive green or olive amber. The coloring of the glass was usually the result of high iron concentrations as well as carbon, copper with iron, and/or magnesia (Jones and Sullivan 1985). It was called black because the color was so deep as to appear black unless held up to direct lighting (McKearin and Wilson 1978:9). "Black glass" protected contents from the effects of direct light and was strong and resilient. Typically, black glass was utilized for liquor, wine, and ale/beer, and was mass produced for ale and beer between 1840 and the 1880s (Lindsey 2017; Wilson and Wilson 1968). According to McKearin and Wilson (1978:229–232), black glass container sherds are not typically found on sites dating after 1880.

According to Lockhart (2006), amethyst glass began to be manufactured around 1870, when manganese was being added to the glass recipe. Although initially colorless, the glass will turn a distinctive purplish color when exposed to sunlight over time. It was previously thought that amethyst glass production ceased by 1914 due to a shortage of manganese from Germany during World War I; however, the change was actually a result of technological advancements in the glass industry, mainly the conversion to automatic bottle machines (Lockhart 2006:53). Although manganese was more difficult to obtain after World War I, and selenium was often less expensive, the improvement in technology was the major reason for the change. The use of selenium proved to be an inexpensive decolorant in glass production and ultimately displaced manganese as a decolorizer by 1920 (Lockhart 2006:53). Amber glass had a general application

in the mid-nineteenth century, but was not widely used until after 1860. Cobalt glass is produced with the addition of the coloring agent cobalt oxide to the glass batch (Lindsey 2017). The introduction of what Lindsey (2017) calls "true blue" glass began in 1840 with the production of soda, mineral water, and ink bottles.

With the growing public desire to see the contents of the bottles, clear glass came into demand and was popular beginning in the 1860s with the burgeoning public health movements following the Civil War (Baugher-Perlin 1982:261; Wiebe 1967). However, it should be noted that clear glass was available to a limited degree before this time, especially colorless leaded glass, which dates between 1827 and 1875 (Jones 2000:149, 161; Miller and Sullivan 1984). Opaque white, or "milk," glass has been manufactured as long as glass has been made, but milk glass became common in the late nineteenth and twentieth centuries as it became frequently used in "containers, tablewares, and lighting devices" (Jones and Sullivan 1985:14). Aqua and olive colored glass were also used for many different containers, but they generally are not assigned specific dates due to their long period of use over the last several centuries. In some cases, however, aqua glass blown in mold sherds with no other diagnostic characteristics are assigned a date range of 1800–1920, and olive green sherds are given a date range of 1780–1920.

The manufacturing process can be roughly divided into three basic groups including free blown, blown in mold (BIM), and automatic bottle machine manufactured (ABM) vessels (Baugher-Perlin 1982:262–265). Only ABM glass was recovered during the current project.

AUTOMATIC BOTTLE MACHINE (ABM) (N = 3)

The Owens automatic bottle-making machine was patented in 1903 and creates suction scars and distinctive seams that run up the length of the bottle neck and onto the lip. Bottles were being manufactured regularly with this machine by 1905, and by 1907, it was utilized to produce significant quantities of container glass vessels (Lindsey 2017; Miller and McNichol 2002). Hence, the ABM mold provides a firm manufacturing date at the beginning of the twentieth century. Another automatic bottle machine called the Individual Section was also used in the commercial production of bottles. This machine was widely used starting in 1925 and by 1940 became the most widely used bottle manufacturing device (Jones and Sullivan 1985:39). This bottle machine was more cost effective than the Owens machine, which was no longer used after 1955.

Three glass fragments were assigned to the ABM category during the current project, and only one of these had distinguishing characteristics (see Table 6). One base type was found, and it was a clear Owens mold indeterminate bottle base (see Figure 15g). The remaining 2 ABM sherds were body sherds and could only be classified according to color (see Figure 15f and h). These included green (n = 1), and aqua (n = 1). Unless otherwise noted, glass assigned to the ABM category dates from 1903 to the present.

Discussion

There were 11 historic artifacts recovered during the current survey. Four were recovered from Site 15Ro240, 2 from 15Ro241, 4 from 15Ro242, and 1 from IF1.

All four of the artifacts recovered from Site 15Ro240 were architectural in nature. Two were fragments of window glass, and two were unaltered, 2d roofing nails that date after 1880. The historic artifacts recovered from Site 15Ro240 had a date range of 1785–1917 with an average date of 1851, and a Moir window glass thickness date of 1893.8. While the date range suggests the site dates as early as 1785, the site was most likely occupied during the mid- to late twentieth century. The assemblage represented a light scatter of architectural artifacts consistent with the presence of a structure, probably residential. The 2d roofing nails indicate possible repair/maintenance activities took place. Based on the artifact types and overall view of the assemblage, the historic materials appear to represent a mid- to late-twentieth-century structure, probably residential. Little can be said regarding the lifeways of the occupants of Site 15Ro240 other than that maintenance/repair activates were conducted.

The artifact assemblage recovered from Site 15Ro241 consisted entirely of domestic artifacts. One was a plain ironstone body that dates after 1830 and the other was an ABM base with an Owen's scar that dates between 1903 and 1955. The historic artifacts recovered from Site 15Ro241 had a date range of 1830–1955, with an average date of 1866. While the date range suggests the site dates as early as 1830, the site was most likely occupied during the early to late twentieth century. The initial date range is skewed by the presence of ironstone that can have an early date. However, ironstone itself was produced into the twentieth century (Miller 1991:10). The assemblage represented primarily a light scatter of domestic and architectural artifacts. The presence of these items is consistent with a domestic residence. Based on the artifact types and an overall view of the assemblage, the historic materials appear to represent an early- to late-twentieth-century domestic residential site. Little can be said regarding the lifeways of the house occupants from a historic perspective except that the occupants utilized commercially available domestic products and architectural materials.

Approximately 50 percent of the artifact assemblage recovered from Site 15Ro242 was architectural in nature. A single piece of window glass was recovered with a date of 1895. One indeterminate wire nail fragment with no identifiable pennyweight was also recovered, and date after 1880. The other half of the assemblage consisted of artifacts from the domestic group, including a fragment of plain whiteware and an ABM body sherd from an indeterminate bottle/jar. The whiteware has a general date range of 1830 to the present and the ABM glass dates after 1903. The historic artifacts recovered from Site 15Ro242 had a date range of 1785 to the early twentieth century with an average date of 1844, and a Moir window glass thickness date of 1894.6. While the date range suggest the site dates as early as 1785, the site was most likely occupied during the late eighteenth to mid–twentieth century. The initial date range is skewed by the presence of whiteware that can have an early date. However, whiteware itself was produced into the twentieth century (Miller 1991:10). The rest of the artifacts have an incept date in the late nineteenth century and some, like the wire nail, continues to see usage. The assemblage represented primarily a light scatter of domestic and architectural artifacts. The presence of these items is consistent with a domestic residence. Based on the artifact types and overall view of the assemblage, the historic materials appear to represent a late–nineteenth- to early-twentieth-century domestic residential site. Little can be said regarding the lifeways of the house occupants from a historical perspective except that the occupants participated in commercial materialism.

IF 1 is comprised of one green ABM glass fragment dating after 1903.

Lithic Analysis

D. Randall Cooper

The single lithic artifact from IF 1 is a small, thin flake fragment of Brassfield chert. It measures approximately 9x15 mm and weighs .2 g. The flake is most likely a byproduct of stone tool manufacture or maintenance. The platform is missing, but at least three flake scars are visible on the dorsal surface. These scars suggest that the flake was detached during a later stage of production, or possibly during the re-sharpening of a finished tool.

Determination of raw material type was made by comparison with a sample collection of locally occurring chert housed at CRA. The raw material for this flake could have been obtained from outcrops of Brassfield Dolomite approximately 10 km (6 mi) west of the point where the flake was found (McDowell 1975). Brassfield chert was probably also present in stream gravels along the Licking River, downstream from these outcrops (i.e., further west). None of the cortex from the original chert nodule is present on the flake, so it is not clear whether the material came from a primary or secondary source.

The flake indicates at least brief prehistoric activity in this area, but it was found in plow zone context and was not associated with any dateable material. Therefore, a more specific time frame for the prehistoric use of this locality cannot be determined.

VI. RESULTS

During the course of the current survey, three previously unrecorded archaeological sites (15Ro240, 15Ro241, and 15Ro242) were documented. A description of each of the sites is presented below, and the location of each site is depicted in Figure 2.

Site 15Ro240

Elevation: 259 m (850 ft) AMSL
Component(s): historic
Site type(s): farmstead/residence
Size: 250 sq m (2,691 sq ft)
Distance to nearest water: 140 m (459 ft)
Direction to nearest water: southwest
Type and extent of previous disturbance: 76–99 percent disturbed due to road and residence construction
Topography: terrace
Vegetation: manicured lawn
Ground surface visibility: none, 0 percent
Aspect: level
Recommended NRHP status: not eligible

Site Description

Site 15Ro240 was a twentieth-century historic farm/residence located in Rowan County, Kentucky. The site is located on a flat terrace above the X, approximately 8.16 km (5.07 mi) northwest of Morehead, Kentucky. The site is characterized by manicured lawn between a modern residence and KY 32 (Figure 16). The manicured grasses provide no ground surface visibility. The terrace is located at an elevation of 259 m (850 ft) AMSL.

The site was identified by a historic scatter in the topsoil of two positive shovel tests. The site dimensions measured 25 m (82 ft) north–south by 10 m east–west, coving an area of 250 sq m (Figure 17).

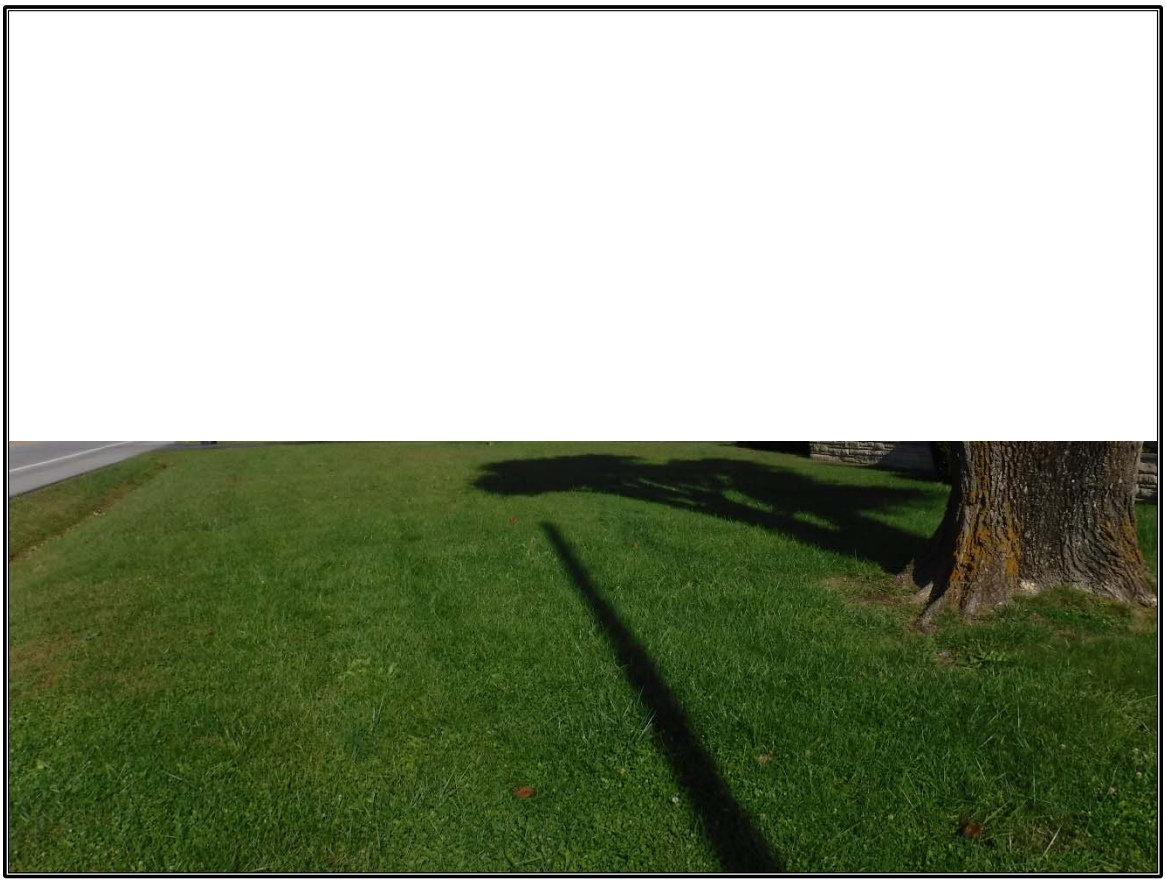

Figure 16. Overview of Site 15Ro240, facing northwest.

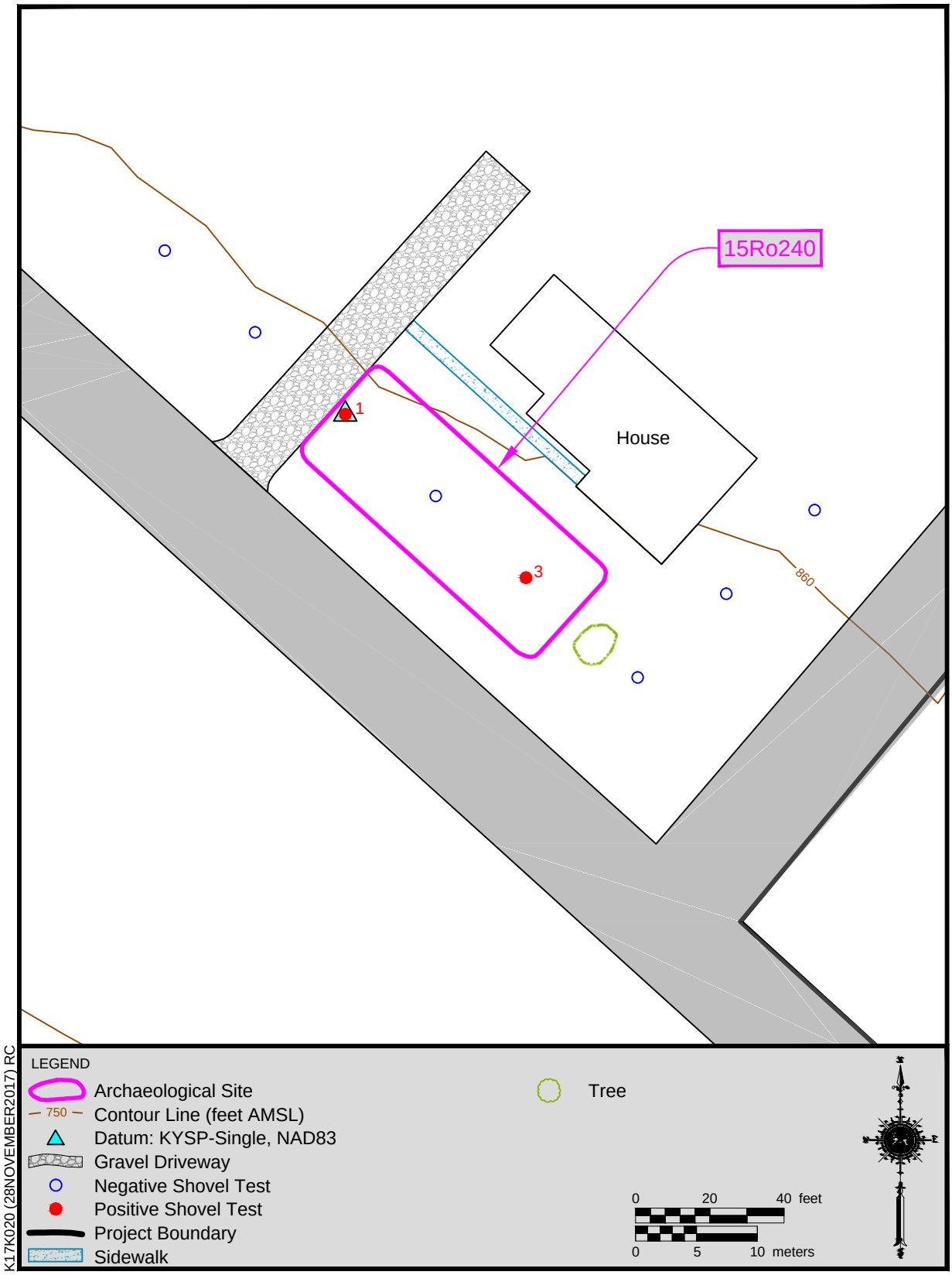

Figure 17. Schematic plan map of Site 15Ro240.

The site is located in the vicinity of two map structures (MS 7 and 8) that first appear on the 1953 topographic map (see Figure 13; USGS 1953). However, MS 7 did not appear on the 1970 map, and MS 8 was replaced with the now extant residence, which was constructed in the 1960s (USGS 1970a, 1970b; R. Ginter, landowner, personal communication, October 30, 2017). The site was bounded by negative shovel tests to the north, south, and east, and KY 32 to the west.

Investigation Methods

Due to the presence of the previously mapped structure, field methods consisted of screened shovel testing on a 10 m grid across the landform within the project boundaries. Eight screened shovel tests were excavated at the site. The shovel tests were placed in the manicured lawn between the modern residence and KY 32. Of the excavated shovel tests, two were positive for historic artifacts. All artifacts were recovered from Zone I, topsoil. All sediment from each of the shovel tests was visually inspected for cultural material and screened through .25 inch hardware mesh.

The artifacts from the positive shovel tests (STP) were collected and logged according to shovel test number and level. The site location was recorded on appropriate maps and a site map was sketched to show position of shovel tests in relation to structures and topography. A site datum was established (STP 1) and its UTM coordinates were recorded on a GPS.

Depositional Context

Tilsit soils are mapped in the location of the site. The shovel test soil profiles were consistent throughout the site. The soil profile showed a Zone I of dark yellowish brown (10YR 4/4) silty clay loam with fine charcoal flecking and common rock extending to 6 cm bgs and 16 cm bgs (Figure 18). Zone II was a light red (2.5YR 6/6) with dark yellowish brown (10YR 4/4) clay mottles and small to medium gravel that was terminated at 20 cm bgs and 26 cm bgs. Artifacts were only found in Zone I. There were no signs of structural remains that could have been associated with the historic map structure, and no signs of subsurface features or midden in the shovel tests.

The soils observed at the site fall within the observed range of characteristics for Tilsit soils. However, the site has been heavily disturbed from the removal of the map structure and the construction of the current dwelling.

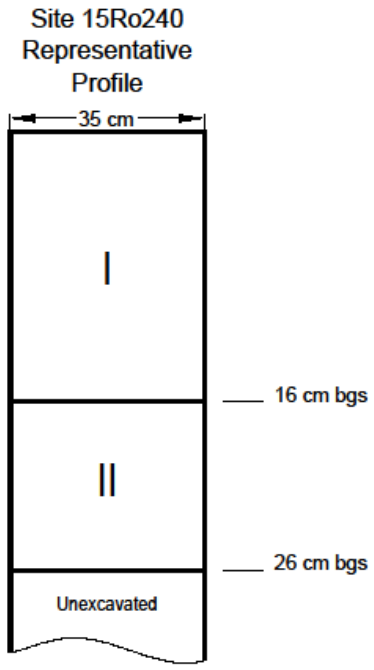

Figure 18. Representative soil profile from Site 15Ro240.

Artifacts

Investigations recovered an exceptionally sparse artifact assemblage from Site 15Ro240, consisting entirely of historic items. A total of four artifacts were recovered from Site 15Ro240. The artifacts were all recovered from Zone I and were architectural in nature (Table 7). The architectural artifacts, from two shovel tests, were comprised of two wire nails and two flat window glass sherds. The artifacts from Site 15Ro240 had a date range of 1785–1917 with an average date of 1851, and a Moir window glass thickness date of 1893.8. While the date range suggests the site dates as early as 1785, the artifacts have an open terminus date and were likely used much later. Additionally, Moir analysis is only effective with a sample size of more than 25 sherds, making the Moir date unreliable. According to the historic

Table 7. Artifacts Recovered from Site 15Ro240.

Unit	Zone	Depth	Group	Class	N
STP 1	I	0-6 cm bgs	Architecture	Flat Glass	1
STP 2	I	0-16 cm bgs	Architecture	Nails	2
STP 2	I	0-16 cm bgs	Architecture	Flat Glass	1
				Total	4

map data and the continued use of these artifacts, the site was most likely occupied during the mid-twentieth century. The assemblage represented a light scatter of architectural artifacts consistent with the presence of a structure, probably residential. It is unknown if the site is associated with MS 7 or MS 8 since both structures were mapped on the property. The only inference from the artifacts is that the residents performed maintenance on their home; any additional interpretation of the site based on the recovered artifacts could not be made given the small sample size.

Features

No evidence of intact, sub-surface cultural features, midden, or other cultural deposits was identified at the site during current investigations.

Archival Data

The earliest confirmed known landowners associated with the property containing 15Ro240 are James and Mary Ham (Table 8). In 1880, James, age 30, and Mary Ham, age 26, lived on Brushy Creek with their four children: Martha, age 7; Nancy, age 6; Benjamin, age 3; and David, age 7 months (USBC 1880). James and Mary purchased land on Brushy Creek from George and Rettie Calvert, for an unknown price, on August, 25, 1888 (Rowan County Clerk's Office [RCCO], Deed Book [DB] 1:37, Morehead, Kentucky). It is not known how the Calvert's came to own the land, or who owned it before them, due to a fire at the Rowan County Court House in 1880 that destroyed most of the land records up to that time. There is no listing for Ham in the 1890 census. This is likely the result of most of the 1890 census' population schedules being badly damaged by a fire in 1921.

By 1900, James and Mary Ham, along with their six children, daughter-in-law, and grandchild, were living near James's family in the community of Pine Grove, Rowan County, Kentucky (USBC 1900). In the same year, James, age 31, and Rebecca Little, age 25, rented and farmed the Ham's property on Brushy Creek with their two son and three daughters: Willie, age 8; Ora, age 4; Ida, age 6; Stella, age 2; and Sarah, age 5 months (USBC 1900). James and Mary Ham decided to sell the property on Brushy Creek to James and Rebecca Little for $90.00 on April, 11, 1906 (RCCO DB 12:546). A little over a year later, James and Rebecca Little sold 26 ha (65 acres) to E.T. and Rosa Eldridge for $235.00 on April, 23, 1907 (RCCO DB 13:522). In 1908, E.T. and Rosa Eldridge sold the 65 acre farm to Daniel Lewis for $250.00 (RCCO DB 15:270).

In 1880, Daniel, age 21, and his wife, Sarah, age 19, lived with his widowed mother in Elliot County, Kentucky (USBC 1880). Daniel's father, Andrew Jackson Lewis, died when Daniel was only 11 years old, leaving him to take care of the family farm and his mother. In 1908, the Lewis family moved to Rowan County and began farming on Brushy Creek. In 1910, Daniel and Sarah lived and worked the farm on Little Brushy Creek, with four of their children (USBC 1910). Daniel's eldest son, Andrew J. Lewis, age 26, and family lived on a farm adjacent to his parents. Daniel and Sarah Lewis, with their two adult sons, sold the property and decided to move to Cary Branch on the Licking River by 1920 (USBC 1920). Daniel and Sarah Lewis sold the farm to George M. and Linda Hall on February 2, 1915 (RCCO DB 24:21).

George M. and Linda Hall did not own the property for long. On February, 29, 1916, they sold 30 ha (75 acres) to Wes Prather for $500.00 (RCCO DB 24:82). In January 1920, Andrew J. Lewis purchased the 75 acre property, which was once his father's farm, from Wes Prather for $600.00 (RCCO DB 31:253).

The 1920 census shows that Andrew, age 36, and his wife, Maggie, age 34, lived on Little Brushy Creek with their son and five daughters (USBC 1920). It is likely that the dwelling associated with

Table 8. Historic Ownership and Occupation Data for Site 15Ro240.

Year	Owner	Acreage	Price/Value	Occupant
?-1888	G.W. and Rettie A. Calvert	unknown	unknown	unknown
1888-1906	James and Mary Ham	unknown	unknown	James and Mary Ham with children: Martha, Nancy, Benjamin, and David
1906-1907	James and Rebecca Little	65	$90.00	James and Rebecca Little with children: Willie, Ida, Ora, Stella, and Sarah
1907-1908	E.T. and Rosa Eldridge	65	$235.00	unknown
1908-1915	Daniel and Sarah Lewis	75	$250.00	Daniel and Sarah Lewis with children: Howard, Clisty, Enoch, and Lurana
1915-1916	George M. and Linda Hall	75	unknown	unknown
1916-1920	Wes Prather	75	$500.00	unknown
1920-1943	A.J. and Opal Lewis	75	$600.00	Andrew J. and Maggie Lewis with children: Norman, Eva, Virgie, Edna, Anna, Ethel. Andrew J. and Opal G. Lewis with children: Ester and Mabel

t

15Ro240 was constructed during this ownership. Andrew continued to farm with Maggie and their expanding family on Little Brushy Creek through the next decade (USBC 1930). However, Andrew remarried shortly after 1930, to an Opal Gilliam (Ancestry.com 2017). Andrew and Opal were living in Morehead by the 1940 census and Andrew was working as a manager of a used clothing store (USBC 1940). After the brief foray into city life, Andrew, age 58, registered for the draft in 1942, listing his address as the community Hilda on Little Brushy Creek, the location of the family farm.

Summary and National Register Evaluation

Site 15Ro240 was a historic farmstead/residence. The site consisted of a small scatter of historic artifacts associated with the remains of two mapped structures (MS 7 and 8). The artifact data suggest a mid- to late-twentieth-century occupation and the historic map data, along with landowner testimonial, suggests the site was constructed before 1953 but demolished by the 1960s. Artifacts identified with earlier incept dates could have been manufactured more recently as they have open-ended terminal dates. While some of the artifacts could suggest an occupation of the site as early as the late nineteenth century, no other evidence of an earlier occupation was discovered. Therefore, the suggested occupation date is during the mid-twentieth century for Site 15Ro240.

All of the cultural materials were recovered from the topsoil. This site has very limited potential due to poor depositional integrity, paucity of cultural materials, and the absence of sub-topsoil artifacts and features. Additional archaeological work would not produce significant information beyond that which has been collected; therefore, no further work is recommended for this site. The site is not

considered to have the potential to provide important information about local or regional history and it is recommended not eligible for inclusion in the NRHP (Criterion D). Therefore, archaeological clearance is recommended.

Project Impacts

This site is located within the proposed Right of Way (ROW) along the northeastern edge of the project area. Additional archaeological work would not likely produce significant information beyond what has been collected. As noted above, the site is recommended as not eligible for listing in the NRHP and no further work will be needed. Although the reconstruction of this portion of KY 32 will have a direct negative impact on the site, it will not alter the NRHP eligibility of the site.

Site 15Ro241

Elevation: 256 m (840 ft) AMSL
Component(s): historic
Site type(s): farmstead/residence
Size: 375 sq m (4,036 sq ft)
Distance to nearest water: 165 m (541 ft)
Direction to nearest water: southwest
Type and extent of previous disturbance: 51–75 percent disturbed, residential construction
Topography: terrace
Vegetation: manicured lawn
Ground surface visibility: none, 0 percent
Aspect: 6–10 percent, gently sloping southwest
Recommended NRHP status: not assessed

Site Description

Site 15Ro241 was a twentieth-century historic farm/residence located in Rowan County, Kentucky. The site is located on a gently sloping terrace above the Little Brushy Creek, approximately 6.67 km (4.14 mi) northwest of Morehead, Kentucky. It is located in the front lawn of a residence on the east side of KY 32 (Figure 19). The site is characterized by a manicured lawn that provides no ground surface visibility. The terrace is located at an elevation of 256 m (840 ft) AMSL.

Figure 19. Overview of Site 15Ro241, facing north.

The site was identified by a historic scatter in the topsoil of two positive shovel tests. The site dimensions measured 25 m north-south by 15 m (49 ft) east-west, coving an area of 375 sq m (4,036 sq ft).

The site is located in the vicinity of a previously mapped structure (MS 2). The map structure was present on the 1929 and 1935 topographic maps, but was not present on the 1953 map (see Figures 12 and 14) (USGS 1929b, 1935, 1953b). According to historic map data, the currently occupied residence was likely constructed in the area of MS 2 between 1953 and 1970 (USGS 1970). The site is located in the lawn 24 m (79 ft) east of a currently occupied residence, an asphalt driveway bisects the site, and a well, 15 m (49 ft) from the residence, sits right inside the project boundary (Figure 20). The site boundary was determined by negative shovel tests to the north, south, and west, and the project boundary to the east. The site may continue to the east toward the extant dwelling.

Investigation Methods

Due to the presence of the previously mapped structure, field methods consisted of screened shovel testing on a 10 m grid across the landform within the project boundaries. Twenty-one screened shovel tests were excavated at the site. The shovel tests were placed in the manicured lawn between the occupied residence and KY 32. Of the excavated shovel tests, two were positive for historic artifacts. All artifacts were recovered from Zone I, topsoil. All sediment from each of the shovel tests was visually inspected for cultural material and screened through .25 inch hardware mesh.

The artifacts from the positive shovel tests were collected and logged according to shovel test number and level. The site location was recorded on appropriate maps and a site map was sketched to show the position of shovel tests in relation to structures and topography. A site datum was established (STP 1) and its UTM coordinates were recorded on a GPS.

Depositional Context

Tilsit soils are mapped in the location of the site. Shovel testing presented consistent horizon soils throughout the site. The shovel tests exposed a Zone I of light olive brown (2.5Y 5/4) silt loam with yellowish brown (10YR 5/6) mottles, along with manganese and charcoal flecking, extending to 20 cm (8 in) bgs (Figure 21). The subsoil was consistent throughout the site with a transition to a yellowish brown (10YR 5/6) silty clay loam. All artifacts were recovered from Zone I. No evidence of intact, subsurface cultural features, midden, or other cultural deposits was identified at the site during current investigations.

The soils observed at the site fall within the observed range of characteristics for Tilsit soils. However, the site has been moderately disturbed from the removal of the map structure and the construction of the current dwelling.

Artifacts

Investigations recovered an exceptionally sparse artifact assemblage from Site 15Ro241, consisting of historic items. A total of two artifacts were recovered from Site 15Ro241. The artifacts were all recovered from Zone I and were domestic in nature (Table 9). The domestic artifacts, from two shovel tests, were comprised of one ironstone sherd and an ABM glass sherd. The artifacts from Site 15Ro241 had a date range of 1830–1955, with an average date of 1866. While the date range suggests the site dates as early as 1830, the artifacts have an open terminal date and were likely used much later. Particularly, ironstone was first manufactured in 1830 but continued to be manufactured and used through the twentieth century. According to the historic map data and the continued use of these artifacts, the site was most likely occupied during the early to mid-twentieth century. The assemblage represented a light scatter of domestic artifacts consistent with the presence of a domestic residence. The only inference from the artifacts is that the residents utilized commercially available domestic products; any additional interpretation of the site based on the recovered artifacts could not be made given the small sample size.

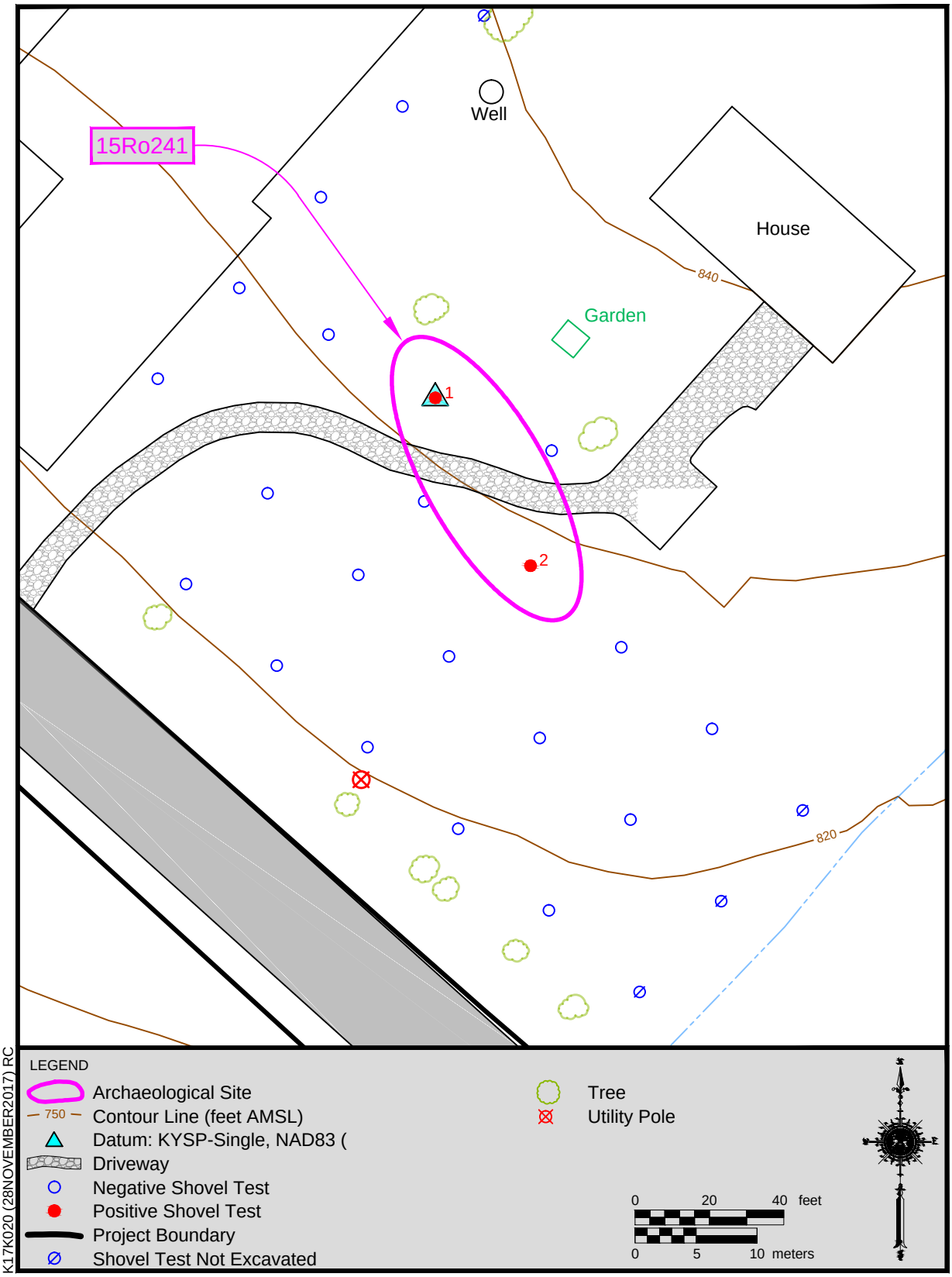

Figure 20. Schematic plan map of Site 15Ro241.

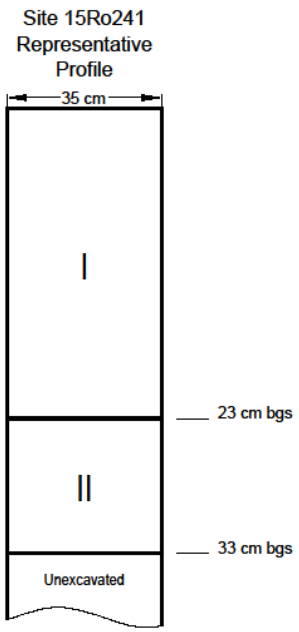

Figure 21. Representative soil profile from Site 15Ro241.

Table 9. Artifacts Recovered from Site 15Ro241.

Unit	Zone	Depth	Group	Class	N
STP 1	I	0-23 cm bgs	Domestic	Ceramics	1
STP 2	I	10-20 cm bgs	Domestic	Container Glass	1
				Total	2

Features

The only cultural feature observed in the site proximity and potentially associated with the site was a well (Figure 22). The well superstructure is a 90-x-90-x-90 cm (35-x-35-x-35 in) brick construction supported by a 60 cm (24 in) circular concrete base. A wooden frame, roof, and pulley structure rises another 120 cm (47 in) above the brick superstructure. While the wooden frame and superstructure are modern, it is unknown if the substructure of the well is contemporary to the occupied dwelling or historic map structure. Given that the relationship of the well to the archaeological site is somewhat tenuous, it was not included in the current site boundary.

Archival Data

The earliest confirmed known landowner associated with the property containing 15Ro241 is Hiram Purvis (Table 10). In 1880, Hiram, age 40, and Sarah Purvis, age 35, lived on Brushy Creek with their eight children (USBC 1880). Hiram inherited interest in the land on Brushy Creek from his father Frank Purvis Sr.'s estate and he bought out his siblings for an unknown price on December 14, 1891 (RCCO DB 3:396). It is not known how Frank Purvis Sr., came to own the land, or who owned it before them, due to a fire at the Rowan County Court House in 1880 that destroyed most of the land records up to that time. However, the 1880 census indicates that Hiram and his family were living on the property then.

Hiram Purvis passed in 1910 and left the property to his children. The 1910 Census indicates that Hiram's daughter, Maggie, age 24, and her husband Jordan Curtis, age 35, lived on the property with her mother, Sarah Purvis, age 63; and three brothers: James, age 29; Hiram Jr., age 28; and Harrison, age 22 (USBC 1910). Heirs of Hiram Purvis, James Purvis and Lula Purvis Hill, are named as the owners of the land on the deed. A few years later they decided to sell the property to their co-brother-in-law George M. Hall. James Purvis and Lula Purvis Hill sold 24 ha (60 acres) to George M. and Lynda E. Hall for $34.00 on January 12, 1914 (RCCO DB 21:558).

It is during this ownership that the dwelling associated with 15Ro241 was constructed. In 1920, James Purvis and his brother-in-law, Jordan Curtis, and young nephews, Charlie and James, rented the home associated with 15Ro241 (USBC 1920). By 1930, however, another tenant had taken up residence on the property. Norman, age 22, and Thelma Lewis, age 17, rented the home for $5.00/month (USBC 1930). Landowners, George and Linda Hall, lived on another tract of land that they owned on Big Brushy Road (USBC 1930). Tired of maintaining over 500 acres, George and Linda Hall transferred the 32 ha (80 acre) tract, along with another 162 ha (400 acre) parcel, to David C. Caudill for $1.00 on May 1, 1934 (RCCO DB 47:67).

David C. and Eva Caudill earned an income from the property by renting the home and farming the land. Norman and Thelma Lewis continued to rent the dwelling through 1940 (USBC 1940). David and Eva Caudill transferred the 80 acre

Figure 22. Overview of well possibly associated with 15Ro241, facing northeast.

Table 10. Historic Ownership and Occupation Data for Site 15Ro241.

Year	Owner	Acreage	Price/Value	Occupant
1880-1891	Frank D. Purvis, Sr. and Sarah Ann Purvis	unknown	unknown	unknown
1891-1910	Hiram and Sarah Purvis	unknown	inherited	Hiram and Sarah Purvis and their 11 children: Queen Anne, Mary, John, Arrie, Lizzie, Rebecca, Frank, Hiram Jr, Maggie, Harrison, Lula
1910-1914	James Purvis and Lula Purvis Hill	60	inherited	Jordon and Maggie Curtis; mother, Sarah Purvis, and three brothers: James, Hiram Jr, and Harrison
1914-1934	George M. and Linda Hall	80	$ 34.00	Jordon Curtis and sons, Charlie and James; James Purvis
		80	$1.00	Norman and Thelma Lewis

property to

Summary and National Register Evaluation

Site 15Ro241 was a historic farmstead/residence. The site consisted of a small scatter of historic artifacts associated with the remains of a mapped structure (MS 2). The artifact dates suggest a twentieth-century occupation and the historic map data suggests the site was constructed before 1929. Artifacts identified with earlier incept dates could have been manufactured more recently as they have open-ended terminal dates. While some of the artifacts could suggest an occupation of the site by the late nineteenth century, no other evidence of an earlier occupation was discovered. Therefore, this suggests an occupation of Site 15Ro241 from early to mid-twentieth century.

All cultural materials were recovered from the topsoil. This site has very limited potential due to poor depositional integrity, paucity of cultural materials, and the absence of sub-topsoil artifacts and features. Additional archaeological work would not produce significant information beyond that which has been collected. As such, the portion of Site 15Ro241 within the project area is not considered to have the potential to provide information about local or regional history, and, therefore, is recommended not eligible for listing in the NRHP (Criterion D). However, as the site possibly extends to the east, further survey may be necessary if project boundaries change to extend further in that direction.

Project Impacts

This site is located within the proposed ROW along the eastern edge of the project area. Additional archaeological work would not likely produce significant information beyond what has been collected. As noted above, the portion of the site in the project area is recommended as not eligible for listing in the NRHP and no further work will be needed. If the project boundaries are altered, additional investigations may be required. Although the reconstruction of this portion of KY 32 will have a direct negative impact on the site, it will not alter the suggested NRHP eligibility of the portion of the site within the project boundaries.

Site 15Ro242

Elevation: 259 m (850 ft) AMSL
Component(s): historic
Site type(s): farmstead/residence
Size: 100 sq m (1,076 sq ft)
Distance to nearest water: 145 m (476 ft)
Direction to nearest water: southwest
Type and extent of previous disturbance: 76–99 percent disturbed, modern road and residential construction
Topography: terrace
Vegetation: Manicured grass lawn
Ground surface visibility: none, 0 percent
Aspect: level
Recommended NRHP status: not assessed

Site Description

Site 15Ro242 was a twentieth-century historic farm/residence located in Rowan County, Kentucky. The site is located on a flat terrace above the Little Brushy Creek, approximately 8.23 km (5.11 mi) northwest of Morehead, Kentucky. The site is characterized by manicured lawn (Figure 23). The manicured grasses provide no ground surface visibility. The terrace is located at an elevation of 259 m (850 ft) AMSL.

The site is located in the vicinity of a 1953 map structure (USGS 1953a). The structure (MS 6) is no longer extant and was bounded to the north and south, and KY 32 to the west, but, due to the project boundary, no shovel tests were excavated to the east. It is possible that the site extends eastward, toward the modern residence.

The site was identified by a historic scatter in a single positive shovel test. The site dimensions measured 10 m north-south by 10 m east-west, coving an area of 100 sq m (Figure 24).

Figure 23. Overview of Site 15Ro242, facing northwest.

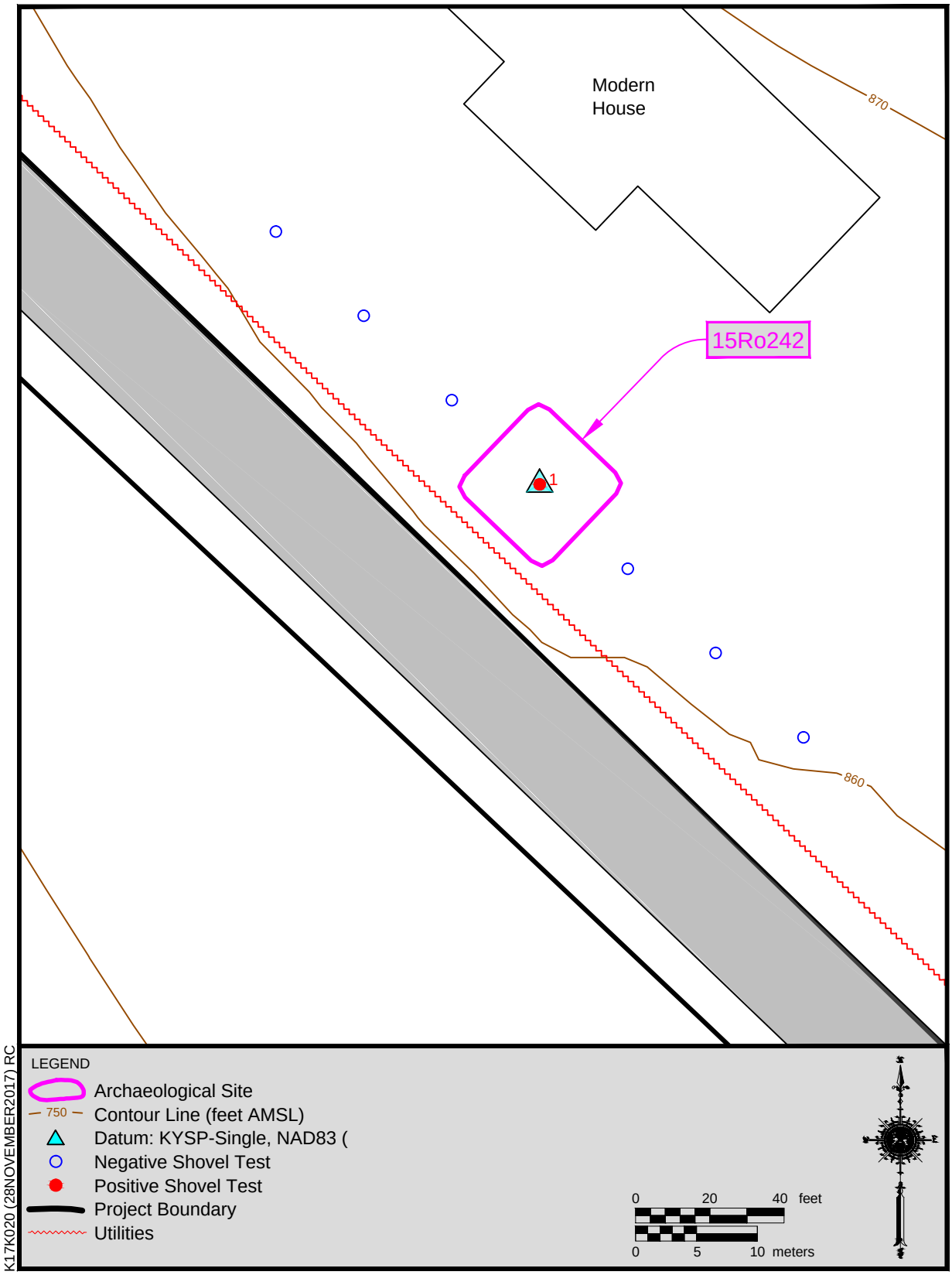

Figure 24. Schematic plan map of Site 15Ro242.

Investigation Methods

Due to the presence of the previously mapped structure, field methods consisted of screened shovel testing on a 10 m grid across the landform within the project boundaries. Seven screened shovel tests were excavated at the site. The shovel tests were placed in the manicured lawn between the modern residence and KY 32. Of the excavated shovel tests, one was positive for historic artifacts. All sediment from each of the shovel tests was visually inspected for cultural material and screened through .25 inch hardware mesh.

The artifacts from the positive shovel test were collected and logged according to shovel test number and level. The site location was recorded on appropriate maps and a site map was sketched to show the position of shovel tests in relation to structures and topography. A site datum was established (STP 1) and its UTM coordinates were recorded on a GPS.

Depositional Context

Tilsit soils are mapped in the site location. The shovel tests showed a profile with four zones. Zone I was a light olive brown (2.5Y 5/4) silty clay loam with olive yellow (2.5Y 6/6) mottles extending to 12 cm (5 in) bgs. Zone II was an olive brown (2.5Y 4/3) silty clay loam with manganese concretions extending to 22 cm (9 in) bgs. Zone III was a light yellowish brown (2.5Y 6/4) silty clay loam with manganese concretions extending to 35 cm (14 in) bgs. Zone IV was a brownish yellow (10YR 6/6) silty clay that was terminated at 45 cm (18 in) bgs (Figure 25). Artifacts were recovered from Zones II and III. There were no signs of structural remains that could have been associated with the historic map structure, and no signs of subsurface features or midden in the shovel tests.

The soils throughout the site do not fit the typical profile for Tilsit soils, however, the profile does fall within the range of observed characteristics. Discrepancies are likely due to disturbance. The site has been heavily disturbed from the removal of the map structure and the construction of the mansion.

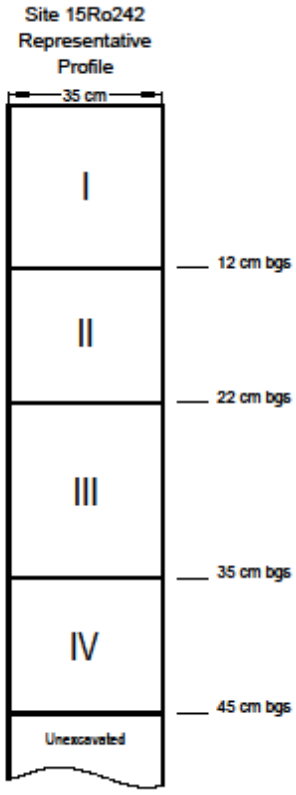

Figure 25. Representative soil profile from Site 15Ro242.

Artifacts

Investigations recovered an exceptionally sparse artifact assemblage from Site 15Ro242, consisting of historic items. A total of four artifacts were recovered from Site 15Ro242. The artifacts were recovered from a single shovel test and were half architectural and half domestic in nature (Table 11). The architectural artifacts were comprised of a wire nail and a flat window glass sherd. The domestic artifacts consisted of a plain whiteware fragment and an ABM glass body sherd. The artifacts from Site 15Ro242 had a date range of 1785 to the early twentieth century with an average date of 1844, and a Moir window glass thickness date of 1894.6. The whiteware fragment skews the date range as it was produced as early as 1785, however, plain whiteware usually dates from 1830 to present. While the date range suggests the site dates as early as 1785, the artifacts have an open terminal date and were likely used much later. Additionally, Moir analysis is only effective with a sample size of

Table 11. Artifacts Recovered from Site 15Ro242.

Unit	Zone	Depth	Group	Class	N
STP 1	II	12-22 cm bgs	Architecture	Flat Glass	1
STP 1	III	22-35 cm bgs	Architecture	Nails	1
STP 1	III	22-35 cm bgs	Domestic	Ceramics	1
STP 1	III	22-35 cm bgs	Domestic	Container Glass	1
				Total	4

more than 25 sherds, making the Moir date unreliable. According to the historic map data and the continued use of these artifacts, the site was most likely occupied during the early to mid-twentieth century. The assemblage represented a light scatter of architectural and domestic artifacts consistent with the presence of a residential structure. The only inference from the artifacts is that the residents maintained their home and utilized commercially available domestic products; any additional interpretation of the site based on the recovered artifacts could not be made given the small sample size.

Features

No evidence of intact, sub-surface cultural features, midden, or other cultural deposits was identified at the site during current investigations.

Archival Data

The earliest confirmed known landowners associated with the property containing Site 15Ro242 are Isaac N. and Elizabeth Caudill. In 1900, Isaac, age 28, and Elizabeth, age 26, lived in the Rowan County community of Hoggtown with their four children (USBC 1900). By 1902, Isaac had begun purchasing land on Brushy Creek. In 1902 and 1903, he acquired two parcels of land from Rutha A. Johnson and Moses Little for $165.00 (RCCO DB 14:154 and 15:104). Isaac and Elizabeth never lived on the property that they owned on Little Brushy Creek and sold the land five years later. Isaac N. and Elizabeth Caudill transferred 24 ha (60 acres) to Andrew J. Lewis in exchange for land valued at $500.00 on February 15, 1908 (Table 12; RCCO DB 17:206).

As noted previously in the archival research for Site 15Ro240, Andrew J. Lewis moved to Rowan County at the turn of the twentieth century and purchased several tracts of land on Little Brushy Creek. Andrew would spend the next forty years exchanging real estate on Little Brushy Creek. Andrew J. and Maggie J. Lewis sold 60 acres to G.G. Maloney for $300.00 on September 17, 1909 (RCCO DB 17:330). In three months, Maloney sold the same parcel of land back to Lewis for the same price for unknown reasons (RCCO DB 17:524). The 1910 census shows that Andrew, age 26, and his wife, Maggie, age 24, lived on Little Brushy Creek with their two children, residing on a different plot of land than Site 15Ro242 (USBC 1910). Andrew continued to farm with Maggie and their expanding family on Little Brushy Creek through the next two decades (USBC 1920, 1930). However, Andrew remarried shortly after 1930, to an Opal Gilliam (Ancestry.com 2017). Andrew and Opal were living in Morehead by the 1940 census and Andrew was working as a manager of a used clothing store (USBC 1940). No longer farming, Andrew and Opal Lewis transferred 39 ha (97 acres) to Roy Cornette for $1.00 on June 19, 1938 (RCCO DB 50:246).

It is during this ownership that the dwelling associated with Site 15Ro242 was constructed. Roy and wife, Elsie Lee Cornette, lived on the property for six years. Roy was a school teacher and Elsie kept house. They built a modest home on their property. However, Roy and Elsie Cornette sold the 97 acres of land and home to Elmer and Myrle Kinder for $4,100 on February 14, 1944 (RCCO DB 55:193).

Table 12. Historic Ownership and Occupation of Site 15Ro242.

Year	Owner	Acreage	Price/Value	Occupant
1902-1908	Isaac N. and Elizabeth Caudill	50	$165.00	unknown
1908-1909	A.J. Lewis	60	$500.00	vacant
1909	G.G. and Margret Maloney	60	$300.00	vacant
1909-1938	A.J. And Opal Lewis	97	$507.50	vacant
1938-1944	Roy E. and Elsie Lee Cornette	97	$ 1.00	Roy E. and Elsie Lee

Summary and National Register Evaluation

Site 15Ro242 was a historic farmstead/residence. The site consisted of a small scatter of historic artifacts associated with the remains of a mapped structure (MS 6). The artifact dates suggest a twentieth-century occupation and the historic map data suggests the site was constructed after 1935 but before 1953. Artifacts identified with earlier incept dates could have been manufactured more recently as they have open-ended terminal dates. While some of the artifacts could suggest an occupation of the site by the late nineteenth century, no other evidence of an earlier occupation was discovered. Therefore, a mid-twentieth-century occupation for Site 15Ro242 is suggested.

This site has very limited potential due to the paucity of cultural materials and poor depositional integrity due to heavy disturbance. No charcoal was noted during shovel testing. Additional archaeological work would not produce significant information beyond that which has been collected. As such, the portion of

Site 15Ro242 within the project area is not considered to have the potential to provide information about local or regional history, and, therefore, is recommended not eligible for listing in the NRHP (Criterion D). However, as the site possibly extends to the east, further survey may be necessary if project boundaries change to extend further in that direction.

Project Impacts

This site is located within the proposed ROW along the northeastern edge of the project area. Additional archaeological work would not likely produce significant information beyond what has been collected. As noted above, the portion of the site in the project area is recommended as not eligible for listing in the NRHP and no further work will be needed. If the project boundaries are altered, additional investigations may be required. Although the reconstruction of this portion of KY 32 will have a direct negative impact on the site, it will not alter the suggested NRHP eligibility of the portion of the site within the project boundaries.

Isolated Find 1

UTM Coordinate:

Elevation: 257 m (843 ft) AMSL

Distance to nearest water: 190 m (626 ft)

Direction to nearest water: southwest

Type and extent of previous disturbance: agricultural, disturbance extent unknown

Topography: terrace

Vegetation: soybeans and plant litter, short grass

Ground Surface Visibility: Poor, 0–20 percent

Aspect: level

Description: Two artifacts, one prehistoric and one historic, were recovered from a single shovel test in the east portion of the project area along the northern side of Big Bushy Road (see Figure 3). The shovel test was located on a small rise on the edge of a fallow soybean field (Figure 26). The isolated find is located approximately 12 m (40 ft) east of Big Bushy Road. Isolated Find 1 consisted of a late stage flake fragment of Brassfield chert (.2 g) and one ABM green glass sherd dating after 1903. The nondiagnostic flake

Figure 26. Overview of IF1, facing south.

and glass fragment were recovered from a shovel test in the upper 16 cm (6 in) of the ground surface within the topsoil. A total of four radial screened shovel tests were excavated within the project area at 10 m intervals in each of the cardinal directions. No additional cultural materials were recovered at the location.

VII. CONCLUSIONS, RECOMMENDATIONS, AND TREATMENT

Note that a principal investigator or field archaeologist cannot grant clearance to a project. Although the decision to grant or withhold clearance is based, at least in part, on the recommendations made by the field investigator, clearance may be obtained only through an administrative decision made by the Federal Highway Administration and KYTC, Division of Environmental Analysis, in consultation with the Kentucky Heritage Council/State Historic Preservation Office (the KHC).

The archaeological survey of the proposed KY 32 reconstruction project in Rowan County, Kentucky, consisted of pedestrian survey supplemented by screened shovel probing of the proposed project area. The total project area encompassed approximately 17 ha (42 acres) of residential lots and commercial property, terraces, sideslope, and small alluvial landforms, as well as agricultural fields.

The current survey resulted in the documentation of three previously unrecorded historic archaeological sites (15Ro240, 15Ro241, 15Ro242). In addition, one isolated find (IF1) was recorded. Newly recorded site 15Ro240 is the sparse remains of a historic farmstead/residence dating to the mid-twentieth century that correlates with residential structures depicted on a historic map from 1953. The site is highly disturbed and appears to contain no intact cultural deposits, and no further work is recommended. The newly recorded archaeological site 15Ro241 is a sparse artifact scatter from a no longer extant historic farmstead/residence dating to the early to mid-twentieth century that correlates with a residential structure depicted on maps dating to 1929 and 1935. Newly recorded site 15Ro242 was a sparse historic scatter associated with a farmstead/residence that was likely occupied from the mid- to late twentieth century that correlates with a residential structure depicted on maps dating to 1953 and 1970. The boundaries of Sites 15Ro241 and 15Ro242 likely extend outside the current project area. The recorded portion of both sites are highly disturbed and neither appears to contain intact cultural deposits. Therefore, no further work is recommended within the portions of the sites recorded in the current project area, and archaeological clearance is recommended for those portions. Since the boundaries of Sites 15Ro241 and 15Ro242 appear to extend outside the project area, neither site can be accurately evaluated for inclusion in the NRHP as currently defined. In the event the project boundaries change, additional work will be required at both sites in order to delineate the true extent of their boundaries. The isolated find (IF1) identified during the survey was a single prehistoric lithic flake and a fragment of bottle glass. No further work is recommended for IF1. So long as construction activities are kept within the boundaries of the current project area, the proposed construction activities will result in no adverse effect on any archaeological sites. Therefore, no archaeological sites listed in, or eligible for listing in, the NRHP will be affected by the proposed construction activities of the current project, and archaeological clearance is recommended.

If any previously unrecorded archaeological materials are encountered during construction activities, the KHC should be notified immediately at (502) 564-7005. If human skeletal material is discovered, construction activities should cease, and the KHC, the local coroner, and the local law enforcement agency must be notified, as described in KRS 72.020.

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APPENDIX A. HISTORIC MATERIALS INVENTORY

Table A-1. Historic Materials Inventory.

Bag	Site	Unit #	Zone	Dep	Cat #	Group	Class	Type	Attr 1a Def	Attr 1b Def	Attr 1c Def	Attr 2a Def	Attr 2b Def	Burned	Count	Wt (g)	Vessel Part	Vessel Type	Min Date	Max Date	References	Comments
001	15Ro242	STP 1	II	12-22 cm bgs	1	A	Flat Glass	Window Glass	0.86 - 2.41 mm thick					FALSE	1				1785	1917	Moir 1987	Moir date 1894.6
002	15Ro242	STP 1	III	22-35 cm bgs	2	A	Nails	Wire Nail	Fragment	Indeterminate		Common		FALSE	1				1880		Nelson 1968	
002	15Ro242	STP 1	III	22-35 cm bgs	3	D	Ceramics	Whiteware	Plain					FALSE	1		Body	Indeterminate	1860	1930	Majewski and O'Brien 1987:119	
002	15Ro242	STP 1	III	22-35 cm bgs	4	D	Container Glass	Automatic Bottle Machine		Aqua glass		Plain		FALSE	1		Body	Indetermiate bottle/jar	1903		Jones & Sullivan 1985; Lindsey 2017	
003	15Ro240	STP 1	I	0-6 cm bgs	1	A	Flat Glass	Window Glass	>2.41 mm thick					FALSE	1							
004	15Ro240	STP 2	I	0-16 cm bgs	2	A	Flat Glass	Window Glass	0.86 - 2.41 mm thick					FALSE	1				1785	1917	Moir 1987	Moir 1893.8
004	15Ro240	STP 2	I	0-16 cm bgs	3	A	Nails	Wire Nail	2d	Unaltered		Roofing		FALSE	2				1880		Nelson 1968	
005	15Ro241	STP 1	I	0-23 cm bgs	1	D	Ceramics	Ironstone	Plain					FALSE	1		Body	Indeterminate	1830		Majewski and O'Brien 1987:122	
006	15Ro241	STP 2	I	10-20 cm bgs	2	D	Container Glass	Automatic Bottle Machine	Owens mold	Clear glass				FALSE	1		Base	Indetermiate bottle/jar	1903	1955	Miller & Sullivan 1984:85-93; Jones & Sullivan 1985:39; Lindsey 2015	
007	IF1	STP 1	I	0-16 cm bgs	1	D	Container Glass	Automatic Bottle Machine		Light green glass		Plain		FALSE	1		Body	Indetermiate bottle/jar	1903		Jones & Sullivan 1985; Lindsey 2017	