Contract Publication Series 17-528

AN ARCHAEOLOGICAL SURVEY OF THE UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTIONAL PERMIT AREAS ASSOCIATED WITH THE PROPOSED PROJECT TO ADDRESS SAFETY, CAPACITY AND ACCESS MANAGEMENT ALONG KY 363 FROM KY 1006 TO KY 192 IN LAUREL COUNTY, KENTUCKY

(ITEM NUMBER 11-147.10)

by
J. Howard Beverly, Jr., RPA # 12745

Prepared for

KENTUCKY TRANSPORTATION CABINET

Prepared by

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ABSTRACT

On January 23, 2018, Cultural Resource Analysts, Inc., personnel completed an archaeological survey of the United States Army Corps of Engineers jurisdictional permit areas associated with the proposed project to address safety, capacity, and access management along KY 363 from KY 1006 to KY 192 in Laurel County, Kentucky (Item No. 11-147.10). The survey was conducted at the request of Daniel R. Peake of the Kentucky Transportation Cabinet, Division of Environmental Analysis.

The current project area consisted of the United States Army Corps of Engineers jurisdictional areas containing a proposed 1.1 ha (2.8 acres) detention basin located off the southwest corner of the existing Lowe's Home Improvement Store, and a 1.0 ha (2.5 acres) ditch/drainage connected to the detention basin and extending east from it toward KY 363 near where it splits into two segments. The project area measured 2.1 ha (5.3 acres) in total size. The field methods used in the survey consisted of an intensive pedestrian survey supplemented by screened shovel testing in low visibility areas. The project area was surveyed in its entirety.

A records review conducted at the Office of State Archaeology in January 2018 showed that 12 professional archaeological surveys had been conducted within a 2.0 km (1.2 mi) radius of the project area. Within this same area, two archaeological sites were recorded (Site 5Ll26 and 15Ll312) and are prehistoric open habitations without mounds. All of the previous surveys and archaeological sites were situated outside of the project area.

No archaeological sites were recorded as a result of this survey. Therefore, no archaeological sites listed in, or eligible for listing in, the National Register of Historic Places will be affected by the proposed construction activities, and archaeological clearance is recommended.

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I. INTRODUCTION

On January 23, 2018, Cultural Resource Analysts, Inc. (CRA), personnel conducted an archaeological survey of the United States Army Corps of Engineers (USACE) jurisdictional permit areas associated with the proposed project to address safety, capacity, and access management along KY 363 from KY 1006 to KY 192 in Laurel County, Kentucky (Item No. 11-147.10) (Figure 1). The field investigations were conducted by J. Howard Beverly and Karen Clark. The fieldwork required approximately 16 person hours to complete. The survey was conducted at the request of David Waldner of the Kentucky Transportation Cabinet (KYTC), Division of Environmental Analysis.

The project area was located approximately 2.2 km (1.4 mi) southwest of the downtown area of London, Kentucky (Figure 2). The project area consisted of two USACE jurisdictional areas – a proposed detention basin and a supply ditch/drainage. The 1.1 ha (2.8 acre) detention basin will be located off the southwest corner of the existing Lowe's Home Improvement Store and the 1.0 ha (2.5 acres) supply ditch/drainage will extend east from it toward KY 363 near where it splits into two segments. The project area measured 2.1 ha (5.3 acres) in total size. The project area does not include an approximately 1.0 ha (2.5 acres) area situated across the front of the Lowe's Home Improvement Store, which consists of a retention basin and paved areas (Susan Neumeyer, personal communication 2017). The project area was subjected to an intensive pedestrian survey supplemented by systematic shovel testing in low visibility areas and was surveyed in its entirety. None of the current project area had been previously surveyed.

Office of State Archaeology (OSA) Geographic Information Systems (GIS) data was requested by CRA on December 20, 2017, and was returned on December 22, 2017. The results were researched by Heather Barras of CRA at the OSA on January 10, 2017. The OSA project registration number is FY18_9481.

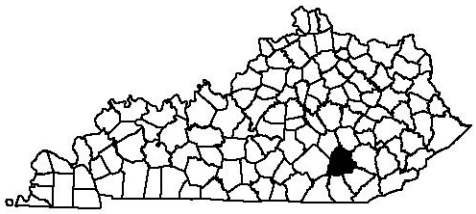

Figure 1. Map of Kentucky showing the location of Laurel County.

Prior to the field investigations, an 811 locate was submitted for the project area. Several underground utilities were marked within the project area, and were found to be concentrated along the edges of the existing ROW. Shovel testing was not conducted within close proximity of the marked utilities. Parcels were only surveyed after landowner permission was granted.

Project Description

The project consists of an archaeological survey for a state funded project that proposes to address safety, capacity, and access management along KY 363 from KY 1006 to KY 192 in Laurel County, Kentucky (Figure 3). The limits of the project area consisted of the USACE jurisdictional areas containing a proposed 1.1 ha detention basin located off the southwest corner of the existing Lowe's Home Improvement Store, and a 1.0 ha ditch/drainage connected to the detention basin and extending east from it toward KY 363 near where it splits into two segments. The total USACE jurisdictional area measured 2.1 ha in size.

Purpose of Study

This study was conducted to assist the KYTC in complying with Section 106 of the National Historic Preservation Act of 1966 by identifying and evaluating all archaeological sites within the project area. The Act requires any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking to take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP) (16 U.S.C. 470f). An undertaking is a project, activity, or program funded in whole

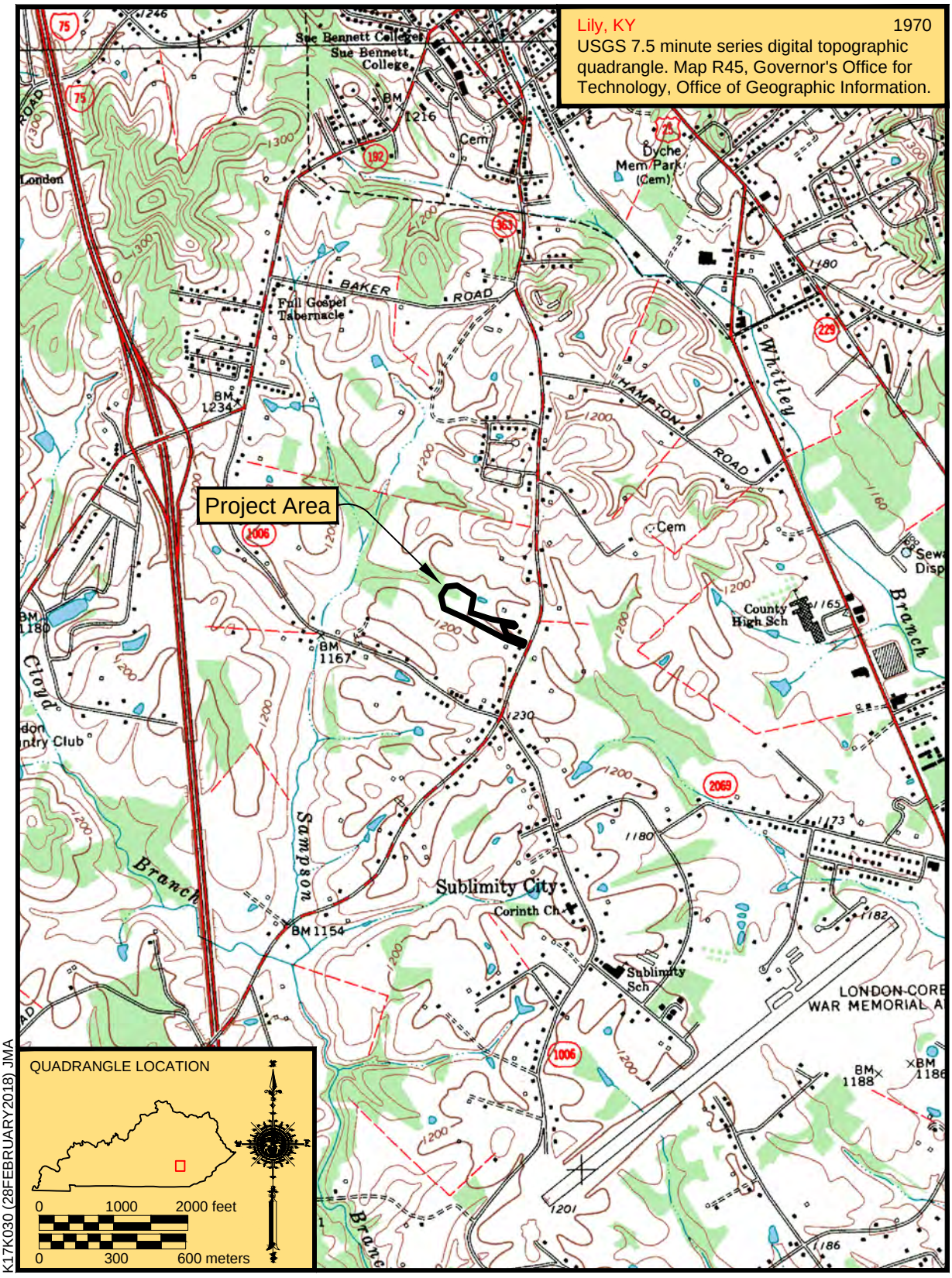

Figure 2. Location of project area on topographic quadrangle.

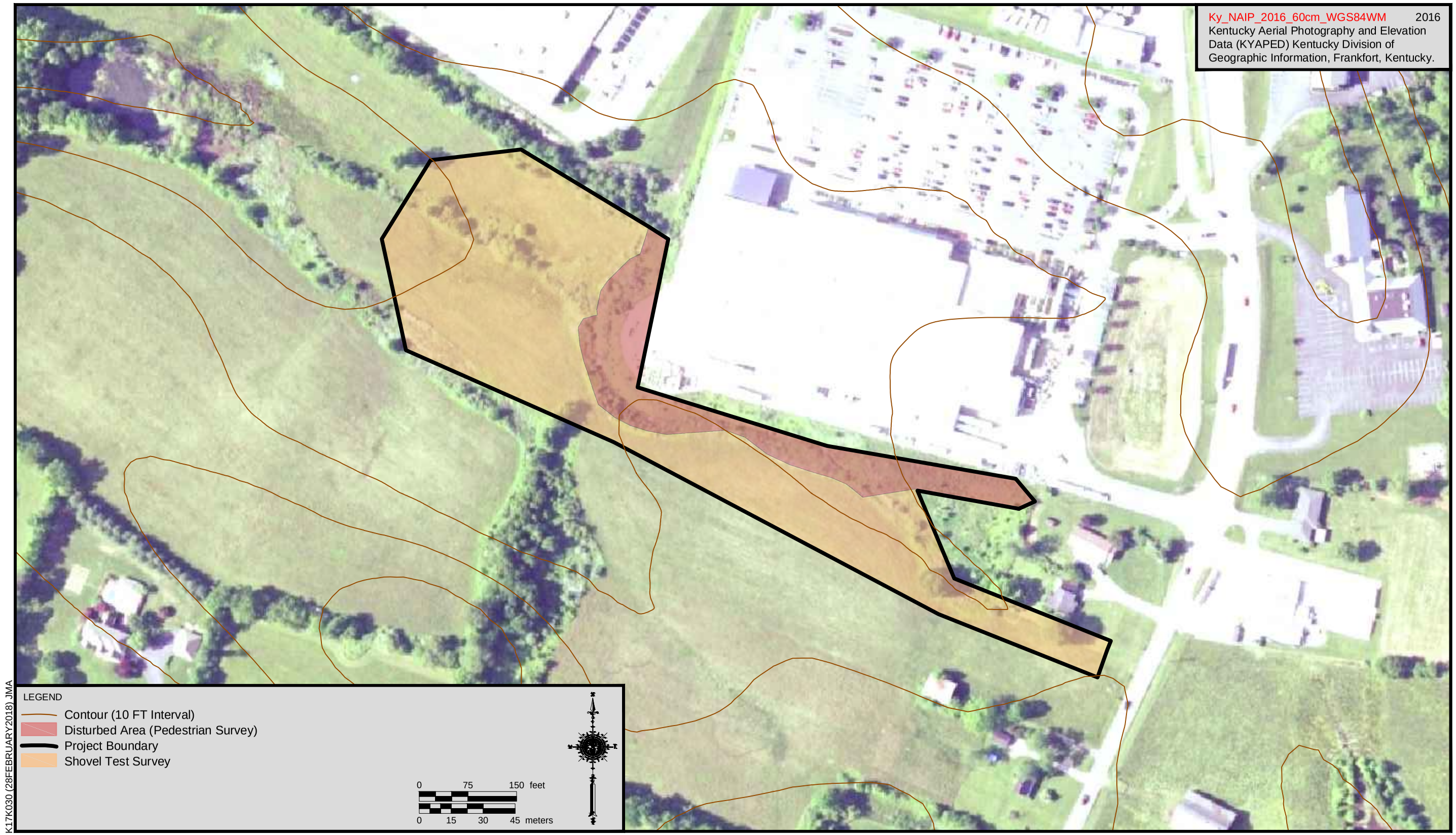

Figure 3. Project area plan map.

or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license, or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency (36 CFR Part 800.16[y]). Because the proposed KYTC project will receive federal financial assistance, it is considered an undertaking subject to Section 106 review.

The purpose of this archaeological survey was to locate, describe, evaluate, and determine the effects of the undertaking on all archaeological sites within the project area, if present; and consider ways to avoid, minimize, or mitigate any adverse effects by making appropriate recommendations for their future treatment.

For the purposes of this archaeological survey, an archaeological site is 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 to be sites.

Summary of Findings

Prior to initiating the field investigations, a records review was conducted at the OSA. The OSA records revealed that 12 previous professional archaeological surveys had been conducted within a 2 km radius of the project area and that 2 archaeological sites had been identified within the same area. None were within the current project area

No archaeological sites were identified as a result of the current field investigations. 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. DESCRIPTION OF THE PROJECT AREA

The project area was located approximately 2.2 km (1.4 mi) southwest of the downtown area of London, Kentucky (see Figure 2). The project area consisted of a USACE jurisdictional area measuring 2.1 ha in total size (see Figure 3). Located in Laurel County, the topography of the project area is one of low hills and ridges on rolling uplands currently in hay. A small-unnamed tributary of Sampson Branch had been previously relocated to run parallel along the Lowe's Home Improvement Store southern property boundary. It empties west of the store into a field to continue along its original course. Elevations within the project area range from 360 m (1,182 ft) above mean sea level (AMSL) to 370 m (1,214 ft) AMSL. The highest elevations were found in the east portion of the project area near KY 363, and the lowest elevations were found in the west portion of the project area where the drainage exits out from under the Lowe's Building. The Little Laurel River and one of its tributary, an unnamed tributary of Sampson Branch, drain the project area.

Soils

Soil associations consist of two or more dissimilar major components occurring in a regular and repeating pattern on the landscape. General soils maps use soil associations because they are at scales much smaller than 1:24,000 and can depict only the characteristic landscapes of associated soils, not the individual soils. The major components are sufficiently different in morphology or behavior that the map unit cannot be a consociation (Soil Survey Staff 2017:259). One association has been defined in the project area. It consists of the Whitley-Latham-Lily Association (Table 1) (Ross 1981). This association is found on gently sloping to steep slopes on ridgetops and sideslopes in the central and south-central portions of Laurel County. It consists of moderately deep and deep, well-drained soils that have a loamy or clayey subsoil (Ross 1981:4–5).

Table 1. Soil Families, Series, and Phases Identified within the Project Area.

Soil Unit	Soil Family	Soil Association	Soil Series	Soil order	Sum of sq m	Sum of sq m2
Latham silt loam, 6 to 12 percent slopes consociation	Fine, mixed, semiactive, mesic Aquic Hapludults	Whitley-Latham-Lily	Latham	Ultisols	18051.31	0.84
Whitley silt loam, 2 to 6 percent slopes consociation	Fine-silty, mixed, semiactive, mesic Typic Hapludults	Whitley-Latham-Lily	Whitley	Ultisols	3522.06	0.16

A soil series is a group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement (Soil Survey Staff 2017:250–252). They can also be 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. There are two soil series within the project area. These are the Latham and Whitley soil series. The Latham soil series consists of moderately deep, moderately well drained soils found on upland ridgetops and sideslopes, formed in residuum weathered mainly from acid shale and also weathered partly from sandstone or siltstone or both (Ross 1981:25).

A typical Latham profile shows an Oe horizon of partly decomposed mixed hardwood leaf litter, extending from 0 to 5 cm (2 to 4 in) below ground surface (bgs). Below that is an A horizon of brown (10YR 4/3) silt loam with 10 percent fragments of limestone, extending from 5 to 10 cm (2 to 4 in) bgs. Below that is an E horizon of yellowish brown (10YR 5/4) silt loam with 10 percent fragments of siltstone, extending from 10 to 25 cm (4 to 10 in) bgs. Below that is a Bt1 horizon of strong brown (7.5YR 5/8) silty clay loam with 5 percent fragments of siltstone, extending from 25 to 43 cm (10 to 17 in) bgs. Below that is a Bt2 horizon of strong brown (7.5YR 5/6) silty clay with common fine prominent pinkish gray (7.5YR 6/2) iron depletions and common fine distinct yellowish red (5YR 5/8) iron-manganese masses, and 5 percent fragments of siltstone, extending from 43 to 61 cm (17 to 24 in) bgs. Below that is a Bt3 horizon of light olive brown (2.5Y 5/4) channery silty clay with many fine prominent pinkish gray (7.5YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/8) iron-manganese masses, and 3 percent fragments of siltstone and 15 percent fragments of soft shale, extending from 61 to 91 cm (24 to 36 in) bgs. Below that is a Cr light olive brown (2.5Y 5/4) and light brownish gray (2.5Y 6/2) soft shale interbedded with thin layers of yellowish brown (10YR 5/6) siltstone (Soil Survey Staff 2018a).

The Whitely soil series consists of deep, well drained soils found on stream terraces, foot slopes, and alluvial fans, formed in residuum or alluvium weathered from acid siltstone, sandstone, shale or a mixture of all three (Ross 1981:39-40). A typical Whitley profile consists of an Ap horizon of dark grayish brown (10YR 4/2) silt loam, extending from 0 to 23 cm (0 to 9 in) bgs. Below that is a Bt1 horizon of yellowish brown (10YR 5/6) silty clay loam with 2 percent subrounded sandstone gravel, extending from 4 to 46 cm (9 to 18 in) bgs. Below that is a Bt2 horizon of yellowish brown (10YR 5/8) silty clay loam with 3 percent subrounded sandstone gravel, extending from 7 to 14 cm (18 to 91 in) bgs. Below that is a 2BC horizon of yellowish brown (10YR 5/6) gravelly silt loam with 25 percent subangular sandstone gravel, extending from 14 to 127 cm (36 to 50 in) bgs. Below that is a 2C horizon of variegated yellowish brown (10YR 5/6), pale brown (10YR 6/3), and light gray (10YR 7/1) gravelly silt loam with 17 percent subangular sandstone gravel, extending from 127 to 157 cm (50 to 62 in) bgs.

Both the Latham and Whitley soil series are classified as Ultisols, which are found on landforms that formed during the Pleistocene or earlier time periods (Soil Survey Staff 1999). Archaeological deposits would only be found on, or very near, the ground surface on landforms mapped with these Ultisols.

Soil types, or map units, is an area dominated by one or more major kinds of soil or miscellaneous areas. The map unit is identified, and named, according to the taxonomic classification of the dominant soils (Soil Survey Staff 2017:248–249). There are two soil types (map units) within the project area. These are the Latham silt loam, 6 to 12 percent slopes consociation and the Whitley silt loam, 2 to 6 percent slopes. The Latham silt loam, 6 to 12 percent slopes consociation soils are made up of one major component, Latham (85 percent), and three minor components (Whitley [5 percent], Lily [5 percent], and Sequoia [5 percent]). They are found on ridges on mountains where slopes

are between 6 and 12 percent, and the parent material consists of clayey residuum weathered from acid shale. The soils are moderately well drained, and not ponded or flooded (Soil Survey Staff 2018b).

The Whitley silt loam, 2 to 6 percent slopes consociation soils are made up of one major component, Whitley (80 percent), and three minor components (Tilsit [10 percent], Lily [5 percent], and Latham [5 percent]). They are found on ridges on mountains where slopes are between 2 and 6 percent, and the parent material consists of fine-silty residuum weathered from interbedded sedimentary rock. The soils are well drained, and not ponded or flooded (Soil Survey Staff 2018b).

The soils identified during the current investigations varied throughout the project area. The soils identified and described during the current investigations generally matched the profiles and descriptions provided for the various soils identified in the project area (Ross 1981; Soil Survey Staff 2018a, 2018b). The minor differences observed in the profiles (i.e., color, texture, depth) were due, in part, to the differences caused by the geographical location of the type pedon and local pedological conditions in the Laurel River drainage. Moisture content of the soil would also account for significant differences in the color of a soil (e.g., Harden 1982; Birkeland 1984; Buol et al. 1989).

Although soils varied from one location to another, the vast majority of the shovel tests revealed the presence of a two-horizon soil profile. Most of the soils were relatively shallow, generally reflecting some form of erosion of the upper-most sediments. A typical shovel test consisted of a yellowish brown (10YR 5/6) silty clay loam Zone I over a dark yellowish brown (10YR 4/4) clay loam Zone II. The lower boundary was generally identified at a relatively shallow depth of approximately 18 cm (7 in) bgs. All of the shovel tests were negative for the presence of cultural materials.

Land Use

Present land use for the project area was derived from the National Land Cover Database (NLCD) compiled in 2011 (Homer et al. 2015). The land cover classification data was created by a combination of Landsat imagery and ancillary data. The combined image data is then generalized to a .4 ha (1.0 acre) minimum mapping unit. An algorithm is used to compare the pixel data against known values resulting in a product that identifies land cover type for the pixel.

Three types of land cover are identified within the project area. These include developed open space areas, developed high intensity areas, and pasture/hay areas. Developed open space areas include areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses (Figure 4). Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes (NLCD 2011).

Developed high intensity areas are highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial (Figure 5). Impervious surfaces account for 80–100 percent of the total cover (NLCD 2011).

Pasture/hay areas are areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle (Figure 6). Pasture/hay vegetation accounts for greater than 20 percent of the total vegetation (NLCD 2011).

The vegetation within the project area is indicative of recent human activities. Most of the project area consists of fallowed fields containing an assortment of herbaceous and weedy growth. The vegetation in these areas were, in some places, quite dense and commonly consisting of thorny plants. A small-unnamed tributary of Sampson Branch had been previously relocated to run parallel along the Lowe's Home Improvement Store southern property boundary. It empties west of the store into a field to continue along its original course. Overall, the project area had poor ground surface visibility due to the presence of various types of vegetation.

Figure 4. General view of project area showing typical developed open space areas, facing east.

Figure 5. General view of project area showing typical developed high intensity space areas, facing east.

Figure 6. General view of project area showing typical pasture/hay space areas, facing east.

III. RESULTS OF THE FILE AND RECORDS SEARCH AND SURVEY PREDICTIONS

Prior to initiating fieldwork, a search of records maintained by the NRHP (available online at: https://npgallery.nps.gov/nrhp) and the OSA (FY18_9481) 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 in the NRHP were situated within the project area.

OSA data was requested by CRA on December 20, 2017, and was returned on December 22, 2017. Background research consisted of a review of professional survey reports and records of archaeological sites for an area encompassing a 2 km radius of the project area was conducted on January 10, 2018. 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 likely to contain these resources. The results are discussed below.

Previous Archaeological Surveys

Heather D. Barras

OSA records revealed that 12 previous professional archaeological surveys have been conducted within a 2 km radius of the project area. Two archaeological sites have been recorded in this area also. Neither of these sites are located within the actual project area. The records search revealed that both sites in the file search area (15Ll26 and 15Ll312) are prehistoric open habitations without mounds. The 2 km radius included areas within the Lily quadrangle (United States Geological Survey [USGS] 1970).

On September 9, 1977, Archaeological Services, Inc., of Kentucky conducted an archaeological survey of a proposed industrial park and housing project in Laurel County, Kentucky (Turnbow et al. 1977). The survey was conducted at the request of G. Reynolds Watkin Consulting Engineers, Inc. A total of 75 ha (185 acres) were surveyed using pedestrian survey supplemented with screened shovel testing. Four prehistoric sites were recorded as a result of this survey (15Ll26–15Ll29), one of which was located within 2 km of the current project area (15Ll26).

Site 15Ll26 was a prehistoric open habitation without mounds of indeterminate temporal affiliation consisting of one biface fragment and four flakes. None of these sites were considered eligible for inclusion in the NRHP, and no further archaeological work was recommended (Turnbow et al. 1977).

On March 16 and 17, 1978, Terry L. Weis and Jack M. Schock of Arrow Enterprises conducted an archaeological survey of a proposed sewer line project in Laurel County, Kentucky (Weis and Schock 1978). The survey was conducted at the request of the engineering firm of Parrott, Ely, and Hurt on behalf of the Utilities Commission in London, Kentucky. A total of 6.0 km (3.7 mi) were investigated by pedestrian survey. The project identified three archaeological sites (15Ll310–15Ll312) and a historic cemetery (no site number). One of the sites was located within a 2 km radius of the current project area (15Ll312).

Site 15Ll312 was a prehistoric open habitation without mounds of indeterminate temporal affiliation. Due to disturbance at the site and a low density of materials, no further archaeological work was recommended. NRHP eligibility was not specified for any of the sites, but no further work was recommended for the entirety of the project area (Weis and Schock 1978).

On October 15, 1985, CRA personnel conducted an archaeological survey of a proposed subdivision in Laurel County, Kentucky (Niquette 1985). The survey was conducted at the request of Tilman Taylor of Taylor Construction Company. The project was to be funded in part by the Farmers Home Administration. A total of 2 ha (7 acres) were investigated by intensive pedestrian survey supplemented with shovel testing. No sites were recorded as a result of this survey, and no further work was recommended.

On May 5, 1989, CRA personnel completed an archaeological survey of a proposed office building site in London, Laurel County, Kentucky (Hobson 1989). At the request of Timothy M. Schwendeman of the Cumberland Valley Area Development District, 3.7 ha (9.2 acres) were investigated with an intensive pedestrian survey supplemented with shovel testing. No archaeological sites were identified and project clearance was recommended.

In August 1989, Charles R. Cobb, Guy G. Weaver, and Charles H. McNutt of Garrow & Associates, Inc., conducted a cultural resource survey of a 95 km (59 mi) long corridor of unknown width at the request of American Telephone and Telegraph Communications, Inc. (Cobb et al. 1989). The survey was conducted for a proposed free-to-air lightguide cable line. The project area was investigated by pedestrian survey supplemented with shovel testing. Eighteen previously unidentified archaeological sites were recorded (15Pu216–15Pu220, 15Ll112, 15Wh67–15Wh78) and two previously recorded sites (15Pu322 and 15Pu328) were revisited. None of these sites were located within 2 km of the current project area.

On November 9, 1998, CRA personnel conducted an archaeological survey for the proposed upgrade of KY 192 in London, Laurel County, Kentucky (Hand 1998). At the request of Clyde Brown of T.H.E. Engineers, Inc., approximately 7.54 ha (18.64 acres) were investigated with pedestrian survey and shovel testing. No archaeological sites were encountered and project clearance was recommended.

Between September 26 and 30, 2004, CRA personnel conducted an archaeological survey of the proposed KY 192 to KY 80 frontage road in Laurel County, Kentucky (Anderson 2004). The survey was conducted at the request of Palmer Engineering on behalf of the Kentucky Transportation Cabinet (KYTC) (Item Number 11-139.00). Approximately 26.98 ha (66.66 acres) were investigated by pedestrian survey and screened shovel testing. One previously unidentified archaeological site (15Ll354) was recorded. Site 15Ll354 was not located within 2 km of the current project area.

On October 25, 2006, Kentucky Archaeological Survey (KAS) personnel conducted an archaeological survey of proposed renovations and expansion of two military buildings in Laurel County, Kentucky (Mabelitini 2006). The survey was conducted at the request of the Commonwealth of Kentucky, Department of Military Affairs. A total of 8.78 ha (21.69 acres) were investigated by pedestrian survey supplemented with screened shovel testing. No sites were recorded as a result of this survey, and no further work was recommended.

In 2007, KAS personnel completed an archaeological survey of National Guard Armories in Kentucky (Schlarb and Winter 2007). The survey was requested by the Department of Military Affairs. An area of unspecified size was investigated by pedestrian survey and screened shovel tests. Five new sites (15Ne93, 15Ml453, 15Jf712, 15Bl116, and 15Lo228) and five isolated finds were identified during the course of the survey. None of the sites were eligible for nomination to the NRHP and no further work was recommended. None of the sites were located within the 2 km radius of the current project area.

On October 15 and 30, 2009, Daniel Boone National Forest personnel, in partnership with the Laurel County Fiscal Court and Laurel County PRIDE, conducted an archaeological survey of proposed wetlands and rain gardens on the London Ranger District Administration Site in Laurel County, Kentucky, to be used as an interpretation site for schools, nonprofit organizations, and the general public (Martin 2009). Approximately 2.8 ha (7.0 acres) were investigated via pedestrian survey supplemented with screened shovel testing. No archaeological sites were encountered, and project clearance was recommended.

On August 18, 2015, Weller & Associates, Inc., personnel completed an archaeological survey for the proposed LV Main Street London wireless cellular tower location in Laurel County, Kentucky (Weller 2015). At the request of TriLeaf Environmental and Property Consultants, Inc., approximately .27 ha (.67 acre) was investigated by pedestrian survey supplemented with screened shovel testing. No archaeological sites were identified, and no further archaeological work was recommended.

On February 17 and 18, 2016, Amec Foster Wheeler Environment & Infrastructure, Inc., personnel conducted an archaeological survey for the proposed improvements to U.S. 25 in Laurel County, Kentucky (Stallings 2016). The survey was conducted at the request of Gary Sharp of Palmer Engineering on behalf of the Kentucky Transportation Cabinet (Item No. 11-147.0). The proposed improvements encompassed 39.0 ha (96.5 acres) and were investigated via pedestrian survey supplemented with screened shovel testing. No archaeological sites were documented, and no further work was recommended.

Archaeological Site Data

Based on OSA data, a total of 373 archaeological sites have been recorded in Laurel County (Table 2). The data indicates that rockshelters (n = 189; 50.67 percent), open habitations without mounds (n = 77; 20.6 percent), historic farms/residences (n = 61; 16.4 percent), undetermined (n = 12; 3.22 percent), industrial (n = 11; 2.95 percent), and cemeteries

(n = 10; 2.68 percent), are the most numerous archaeological site types identified in the county. Other site types include other specialty areas (n = 3; .8 percent); isolated finds (n = 2; .54 percent), military related sites (n = 2; .54 percent), mound complexes (n = 2; .54 percent), stone mounds (n = 2; .54 percent), earthen mounds (n = 1; .27 percent), and quarries (n = 1; .27 percent).

Table 2. Summary of Selected Information for Previously Recorded Archaeological Sites in Laurel County, Kentucky. Data Obtained from OSA and May Contain Coding Errors.

Site Type:	N	%
Cemetery	10	2.68
Earth Mound	1	0.27
Historic Farm/Residence	61	16.35
Industrial	11	2.95
Isolated Find	2	0.54
Military	2	0.54
Mound Complex	2	0.54
Open Habitation without Mounds	77	20.64
Other Special Activity Area	3	0.8
Quarry	1	0.27
Rockshelter	189	50.67
Stone Mound	2	0.54
Undetermined	12	3.22
Total	373	100
Time Periods Represented	N	%
Paleoindian	1	0.24
Archaic	27	6.47
Woodland	36	8.63
Late Prehistoric	21	5.04
Indeterminate Prehistoric	218	52.28
Historic	118	28.3
Total	417*	100
Landform	N	%
Dissected Uplands	196	52.55
Floodplain	32	8.58
Hillside	109	29.22
Other	1	0.27
Terrace	30	8.04
Undissected Uplands	1	0.27
Unspecified	4	1.07
Total	373	100

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

According to the OSA records, most of the sites have been documented on dissected uplands (n = 196) and hillsides (n = 109), followed by floodplains (n = 32), terraces (n = 30), unspecified (n = 4), other (n = 1), and undissected uplands (n =1) settings.

In terms of temporal/cultural affiliation, most of the sites in the county were identified as indeterminate prehistoric (n = 281; 52.28 percent). These sites lacked the presence of temporally sensitive artifacts precluding a more precise temporal assignment. The second most common cultural/temporal component was historic (n = 118; 28.3 percent), followed by Woodland (n = 36; 8.63 percent), Archaic (n = 27; 6.47 percent), Late Prehistoric (n = 21; 5.04 percent), and Paleoindian (n = 1; .24 percent).

Map and Aerial Data

In addition to the OSA site file search, a review of the available historic maps and aerial photographs was conducted to assist with the identification of potential historic properties (i.e., structures) or historic archaeological sites within the proposed project area.

Because of their large scale, the general highway map dating to the 1930s (Kentucky Department of Highways [KDOH] 1937) is difficult to correlate to generally more accurate USGS topographic quadrangles. As such, this map was only briefly consulted and is not illustrated in this overview.

1893 London, Kentucky, 30-minute series topographic quadrangle (USGS)

1897 London, Kentucky, 30-minute series topographic quadrangle (USGS)

1937 Highway and Transportation Map of Laurel County, Kentucky (KDOH)

1952 Lily, Kentucky, 7.5-minute series topographic quadrangle (USGS)

1951 Aerial photograph (United States Department of the Interior [USDOI])

1960 Aerial photograph (USDOI)

1961 Lily, Kentucky, 7.5-minute series topographic quadrangle (USGS)

1969 Aerial photograph (USDOI)

1970 Lily, Kentucky, 7.5-minute series topographic quadrangle (USGS)

The reviewed historic maps and aerial photographs provided useful information concerning the general locations of current and former structures, including those for primary human use such as dwellings or places of employment, and those for secondary human use such as barns, warehouses, etc., located within, and adjacent to, the project area. It should be noted 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 7.5-minute series topographic quadrangle map is ± 12 m (40 ft), and associated mapping errors may result in the misplacement of map structures.

The historic maps and aerial photographs indicate that no map structures are located within the current project area.

In general, historic maps may provide useful information about the general location of former structures in an area. All areas near possible map structures were examined for archaeological deposits, depending on the visibility of the ground surface, as described above. No remaining historic structures or associated sites were recorded.

Survey Predictions

Considering the known distribution of archaeological sites in Laurel County, the available information on site types recorded, the reviewed map data, and the nature of the present project area, certain predictions were possible regarding the kinds of sites that might be encountered within the project area. Both rockshelters and open habitations without mounds located on dissected uplands and hillsides may be expected given they are commonplace throughout the county. Historic farms/residences may be expected given the project area's close proximity to London, Kentucky.

IV. 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 in the area. An iPad Mini tablet coupled with a Garmin GLO Bluetooth global positioning system (GPS) receiver capable of real-time 2−3 m (7–10 ft) horizontal accuracy, was used to record pertinent archaeological data. The location of the project area was also determined by its relative position along existing interchange, various side roads, 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 subjected to an intensive pedestrian survey supplemented by systematic screened shovel testing (see Figure 3). All undisturbed, relatively flat terrain possessing poor surface visibility within the project area was subjected to screened shovel testing. A total of approximately 1.7 ha (4.2 acres) was shovel tested during the current investigations.

All slopes greater than 15 percent were subjected to intensive pedestrian survey at 20 m intervals. Areas of disturbances, including land grading, 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 underground utilities. Approximately .4 ha (1.1 acres) were subjected to pedestrian survey and included both sloped areas as well as disturbed portions of the project area (including extant infrastructure and other disturbed areas).

Shovel tests were excavated at 20 m (66 ft) intervals with spacing of transects set at 20 m. In all cases, shovel tests measured not less than 35.0 cm (1.1 ft) in diameter and extended well into the subsoil. Shovel tests were excavated in levels. The topsoil was removed as one level. After the topsoil was removed, 10 cm (4 in) arbitrary levels within natural horizons were excavated. All fill removed from the tests was screened through .64 cm (.25 inch) mesh hardware cloth, and the sidewalls and bottoms were examined for cultural material and features.

Soils within the project area are described as being Ultisols. The shovel probes placed throughout the project area were shallow, and did not indicate the presence of buried and intact archaeological deposits. No auger testing was conducted.

No cultural materials, artifacts, or features were identified as a result of the current archaeological investigations.

V. CONCLUSIONS AND RECOMMENDATIONS

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

CRA personnel completed an archaeological survey of the USACE jurisdictional permit areas associated with the proposed project to address safety, capacity, and access management along KY 363 from KY 1006 to KY 192 in Laurel County, Kentucky (Item No. 11-147.10). The limits of the project area consisted of the USACE jurisdictional areas containing a proposed 1.1 ha detention basin located off the southwest corner of the existing Lowe's Home Improvement Store, and a 1.0 ha ditch/drainage connected to the detention basin and extending east from it toward KY 363 near where it splits into two segments. The total USACE jurisdictional area measured 2.1 ha in size.

The project area was investigated using an intensive pedestrian survey supplemented with systematic screened shovel tests in low-visibility areas. Areas of disturbances were examined by pedestrian survey.

No archaeological resources were identified as a result of the current investigations. No previously recorded sites were located within the project area. Because no sites listed in, or eligible for, the NRHP will be affected by the proposed construction, archaeological clearance is recommended.

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

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