Contract Publication Series 13-035

AN ARCHAEOLOGICAL RECORDS REVIEW FOR THE PROPOSED U.S. 60 BRIDGE REPLACEMENT IN LIVINGSTON COUNTY, KENTUCKY (ITEM NO. 1-1142.0)

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CRA Project No.: K13P002

February 28, 2013

Project Background

In February 2013, Cultural Resource Analysts, Inc. (CRA), conducted an archaeological records review of the proposed U.S. 60 Bridge Replacement in Livingston County, Kentucky (Item No. 1-1142.0). The review was conducted at the request of Lindsay Walker of Parsons Brinckerhoff, Inc., on behalf of the Kentucky Transportation Cabinet (KYTC). The bridge crosses the Cumberland River approximately 700 m (2,296 ft) east of its confluence with the Ohio River and 200 m (656 ft) north of the community of Smithland in Livingston County, Kentucky.

Archaeological Records Review

A search of records maintained by the National Register of Historic Places (NRHP) (available online at: http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome) and the Office of State Archaeology (OSA) (FY13_7569) 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. 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. However, an NRHP listed property known as the Gower House and an associated archaeological site (15Lv178) are located immediately adjacent to the project area. Archaeological investigations at this site conducted by Murray State University in 1988 are discussed in the OSA records review below.

OSA geographic information system (GIS) data requested by CRA on January 31, 2013, was returned on February 5, 2013, and was researched by Heather Barras on February 7, 2013. The OSA project registration number is FY13_7569. 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 proposed project. A map of the GIS data from the OSA depicting the locations of the previously documented archaeological sites and previous investigations was also reviewed (Figure 1). The review of professional survey reports and archaeological site data provided basic information on the types of archaeological resources that are likely to occur within the proposed project area. The area included in the records review is depicted most recently on the Smithland, Kentucky, topographic quadrangle (United States Geological Survey [USGS] 1996).

Smithland, KY-IL 1996
USGS 7.5 minute series digital topographic quadrangle. Map Q10, Governor's Office for Technology, Office of Geographic Information.

Burna, KY 1954 (Photoinspected 1973)
USGS 7.5 minute series digital topographic quadrangle. Map Q11, Governor's Office for Technology, Office of Geographic Information.

Study Area

15Lv183
15Lv186
15Lv182
15Lv149
15Lv181
15Lv17
15Lv68
15Lv98
15Lv29
15Lv178

Smithland Lock and Dam
Boat Ramp
Lucy Jefferson Lewis Memorial Bridge
Gaging Station
Communication Towers
CUMBERLAND RIVER
Smithland (BM 344)
Hamletsburg
Cumberland Island
Frozen Knob
Hampton Hill
Livingston Chapel
Red House Bluffs
Vicks Bluffs
Kalberer Quarry
Anderson Cem
Barnett Cem
Ferguson Cem
Lower Ferguson Spring
Rocked Spring
Dunn
McCormick
Hollow
Steep
Gravel Pit
Kolb Quarry
Cemetery
Hill
Creek
POPE CO
LIVINGSTON CO
NORMAL POOL ELEVATION 302
APPROXIMATE LOCATION
APPROX LOC
T 16 S
Mile 920
Mile 922

QUADRANGLE LOCATION
0 1000 2000 feet
0 300 600 meters

LEGEND
- Archaeological Site
- Study Area Boundary
- 2 km Buffer
- Schock 1986
- O'Malley et al. 1983
- Karwedsky 1982
- Carstens 1989
- Gozdzik 1986

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Figure 1. Sites within a 2 km radius of the proposed project.

OSA records revealed that five previous professional archaeological surveys have been conducted within a 2 km radius of the current project area, resulting in the documentation or revisiting of nine archaeological sites, all of which fall within the actual project area. The records search revealed that five of the nine sites (15Lv29, 15Lv68, 15Lv149, 15Lv182, and 15Lv185) are prehistoric open habitations without mounds. The remaining four sites (15Lv17, 15Lv98, 15Lv181, and 15Lv183) are multicomponent prehistoric open habitations without mounds and historic farm/residences.

In the fall of 1981, University of Kentucky (UK) Department of Anthropology personnel conducted a cultural resource survey of proposed navigational improvements along the Cumberland River from Barkley Dam to its confluence with the Ohio River in Crittenden, Livingston, and Lyon Counties, Kentucky. The survey was conducted at the request of the U.S. Army Corps of Engineers (USACE), Nashville District (O'Malley et al. 1983). A total of 454.7 ha (1,123.7 acres) were investigated with pedestrian survey, backhoe trenches, soil coring, and examination of cutbanks and drainage ditches. Five previously recorded archaeological sites (15Lv6, 15Lv14, 15Lv17, 15Lv29, and 15Ly39) and 43 previously unrecorded archaeological sites (15Lv56–15Lv86, 15Lv88–15Lv98, and 15Ly47) were documented during the survey. Four of these sites (15Lv17, 15Lv29, 15Lv68, and 15Lv98) are located within the current project area.

Site 15Lv17 is a multicomponent open habitation without mounds with a possible Archaic occupation and a historic occupation dating from the late eighteenth to the early twentieth century. The prehistoric component was considered eligible for inclusion in the NRHP, and further investigation was recommended due to undisturbed cultural midden and a fairly intensive site occupation. The historic component most likely represents a secondary deposit of debris and did not contain intact structural or occupational remains. It was recommended not eligible for inclusion in the NRHP, and no further work was required (O'Malley et al. 1983). According to the site form on file at the OSA, it was originally reported by Donald Hardesty in 1962. No other information was available.

Site 15Lv29 is an open habitation without mounds and of unknown cultural/temporal affiliation consisting of a dense scatter of cultural materials. The site was considered potentially significant, and further work was recommended to evaluate its eligibility. The site was avoided by the project, however, so no additional work was conducted (O'Malley et al. 1983).

Site 15Lv68 is an open habitation without mounds and of unknown cultural/temporal affiliation consisting of a moderate density lithic scatter. The site was not scheduled to be impacted by the project, and no further work was recommended (O'Malley et al. 1983).

Site 15Lv98 is a multicomponent prehistoric open habitation without mounds and historic farm/residence. The prehistoric component has possible Late Archaic/Early Woodland and Middle Woodland occupations. It had a spatially discrete dark midden and a fairly dense scatter of lithic artifacts. The historic farm/residence dates from the mid-nineteenth to the mid-twentieth century. The foundations of the house had been completely removed, and historic cultural remains were sparse and showed no particular distribution pattern. Although the site was not scheduled to be affected by the project, the prehistoric component was considered eligible for inclusion in the NRHP (O'Malley 1983).

After the O'Malley et al. report was published, it was discovered that Site 15Lv98 had been previously documented. The site form found in OSA records indicated it was initially recorded as an open habitation without mounds by J.D. Nance of Simon Fraser University's Department of Archaeology in 1978. Its NRHP status was not assessed at the time.

In 1982, the USACE, Nashville District, conducted a cultural resource survey of the proposed construction of a 69 kV transmission line consisting of the placement of paired H-pattern transmission poles to the north and south of the Cumberland River at intervals along the proposed corridor in Livingston County, Kentucky (Karwedsky 1982). The survey was conducted at the request of Big Rivers Electric Corporation. An area of unspecified size was investigated with a pedestrian survey supplemented

with shovel tests. One previously documented site (15Lv68) was present within the project area. When originally documented, the site did not have any diagnostic artifacts to determine cultural/temporal affiliation (O'Malley et al. 1983). A Woodland component was identified during the 1982 survey. The portion located within the project area was severely eroded, and artifacts were limited to the plow zone. The site was deemed ineligible for inclusion in the NRHP, and no further work was recommended.

On September 14, 1986, Arrow Enterprises conducted a cultural resource survey of approximately 12.7 ha (31.4 acres) for the proposed Livingston County Park north of Smithland in Livingston County, Kentucky (Schock 1986). The survey was conducted at the request of Rebecca Doom, Livingston County Treasurer. Field methods consisted of pedestrian survey and one trench excavation. One prehistoric open habitation without mounds with a Late Archaic occupation (15Lv161) was documented during the survey. The site was determined ineligible for the NRHP, and no further work was recommended. It was not located within the 2 km radius of the current project area.

Between October 2 and 7, 1986, Horizon Research Consultants personnel conducted a cultural resource survey of the proposed Smithland Lock and Dam Hydroelectric Development project in Livingston and Marshall Counties, Kentucky (Gozdzik 1986). At the request of Noah Corporation in Aiken, South Carolina, approximately 16 km (10 mi) of right-of-way for the proposed transmission line were investigated with a pedestrian survey supplemented with shovel tests. Two previously unidentified prehistoric open habitations without mounds were identified (15Lv162 and 15Lv163). Neither site was considered eligible for the NRHP. Project clearance was recommended. Neither site is located within the 2 km radius of the current project.

In the spring of 1988, Kenneth C. Carstens and Murray State University anthropology students performed surface collections within the grounds of the NRHP listed Gower House in Smithland, Livingston County, Kentucky (Carstens 1989). The archaeological investigations were conducted at the request of David Roberts of Hampton, Kentucky, who had recently purchased the Gower House, known locally as Bell's Tavern. Surface collections were performed in advance of proposed alterations to the house and houselot, which were considered to have the potential to obscure or destroy surface cultural material contexts and patterns. Although the interior of the structure was found to be severely disturbed, it was considered to have potential for buried cultural deposits. The archaeological portion of the Gower House was designated as Site 15Lv178 and was described as a historic farm/residence dating from the late eighteenth century. No recommendations were made.

Sites 15Lv149, 15Lv181–15Lv183, and 15Lv185 located within the project area did not have associated reports. According to the site forms found in the OSA records, Site 15Lv149 was recorded as an Archaic open habitation without mounds by J.D. Nance of Simon Fraser University's Department of Anthropology in 1978. Its NRHP status was not assessed at the time. Sites 15Lv181–15Lv183 and 15Lv185 were recorded by DuVall and Associates, Inc., in 1987. Sites 15Lv181 and 15Lv183 were both multicomponent prehistoric open habitations without mounds and of unknown cultural/temporal affiliation and historic farm/residences dating to the twentieth century. Sites 15Lv182 and 15Lv185 were both prehistoric open habitations without mounds and of unknown cultural/temporal affiliation. All four sites were considered inventory sites.

Map Review

In addition to the file search, a review of available maps in the private collection at CRA was initiated to help identify any historic structures that may have been located within the project area. The following maps were reviewed:

1926 Map of Areal and Structural Geology of Livingston County, Kentucky (Kentucky Geological Survey [KGS]);

1929 Smithland, Kentucky, 15-minute series topographic quadrangle (USGS);

1937 General Highway Map of Livingston County, Kentucky (Kentucky Department of Highways [KDOH]);

1942 Smithland, Kentucky, 15-minute series topographic quadrangle (USGS);

1950 General Highway Map of Livingston County, Kentucky (KDOH);

1954 Smithland, Kentucky, 7.5-minute series topographic quadrangle (USGS);

The reviewed historic maps indicated that at least 32 map structure locations (MSs) older than 50 years are located within the project area (Table 1; Figures 2–4). Although several of the identified map structures (MSs 3, 5–8, and 9–13) appear on the earliest map of the area, dating to 1926 (KGS 1926), the greater accuracy of the 1929 USGS map makes it easier to correlate structure locations between this and later maps. Because of this, the 1929 USGS map was selected as the basemap for assigning map structure numbers.

The 1929 USGS map (Figure 2) depicts 19 map structures (MSs 1–18 and 20) and 1 map structure group (MS 19) within the current project area. One of these structures (MS 20) appears to represent the Gower House, an NRHP listed property dating to the late eighteenth century. All of the map structures identified on the 1929 map appear again on the 1942 USGS map (Figure 3). The subsequent 1954 USGS map (Figure 4), however, indicates some changes: several structures on the north side of the Cumberland River have disappeared by this time, and at least two others (i.e., MS 2 and possibly MS 6) appear to have been abandoned. On the south side of the river, within the community of Smithland, several new structures (MSs 21–32) have been built by 1954, many along the route of the recently constructed KY 70 (e.g., MSs 25–28 and MSs 30–31). Other structures (e.g., MS 16) are now difficult to identify due to the clustering of more recent structures.

Table 1. Map Structure Locations within, and in Close Proximity to, the Project Area.

MS	Map	Comment
1	1929 (USGS), 1942 (USGS), 1954 (USGS)	
2	1929 (USGS), 1942 (USGS), 1954 (USGS)	Appears vacant on 1954 map
3	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
4	1929 (USGS), 1942 (USGS)	
5	1926 (KGS), 1929 (USGS), 1942 (USGS)	Appears vacant on 1954 map
6	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
7	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
8	1926 (KGS), 1929 (USGS), 1942 (USGS)	
9	1926 (KGS), 1929 (USGS), 1942 (USGS)	
10	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
11	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
12	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
13	1926 (KGS), 1929 (USGS), 1942 (USGS), 1954 (USGS)	
14	1929 (USGS), 1942 (USGS), 1954 (USGS)	
15	1929 (USGS), 1942 (USGS), 1954 (USGS)	
16	1929 (USGS), 1942 (USGS), 1954 (USGS)	Multiple structures on 1954 map
17	1929 (USGS), 1942 (USGS), 1954 (USGS)	
18	1929 (USGS), 1942 (USGS), 1954 (USGS)	
19	1929 (USGS), 1942 (USGS), 1954 (USGS)	Multiple structures (3 on 1954 map)
20	1929 (USGS), 1942 (USGS), 1954 (USGS)	
21	1954 (USGS)	
22	1954 (USGS)	
23	1954 (USGS)	
24	1954 (USGS)	
25	1954 (USGS)	
26	1954 (USGS)	
27	1954 (USGS)	
28	1954 (USGS)	
29	1954 (USGS)	
30	1954 (USGS)	
31	1954 (USGS)	
32	1954 (USGS)	

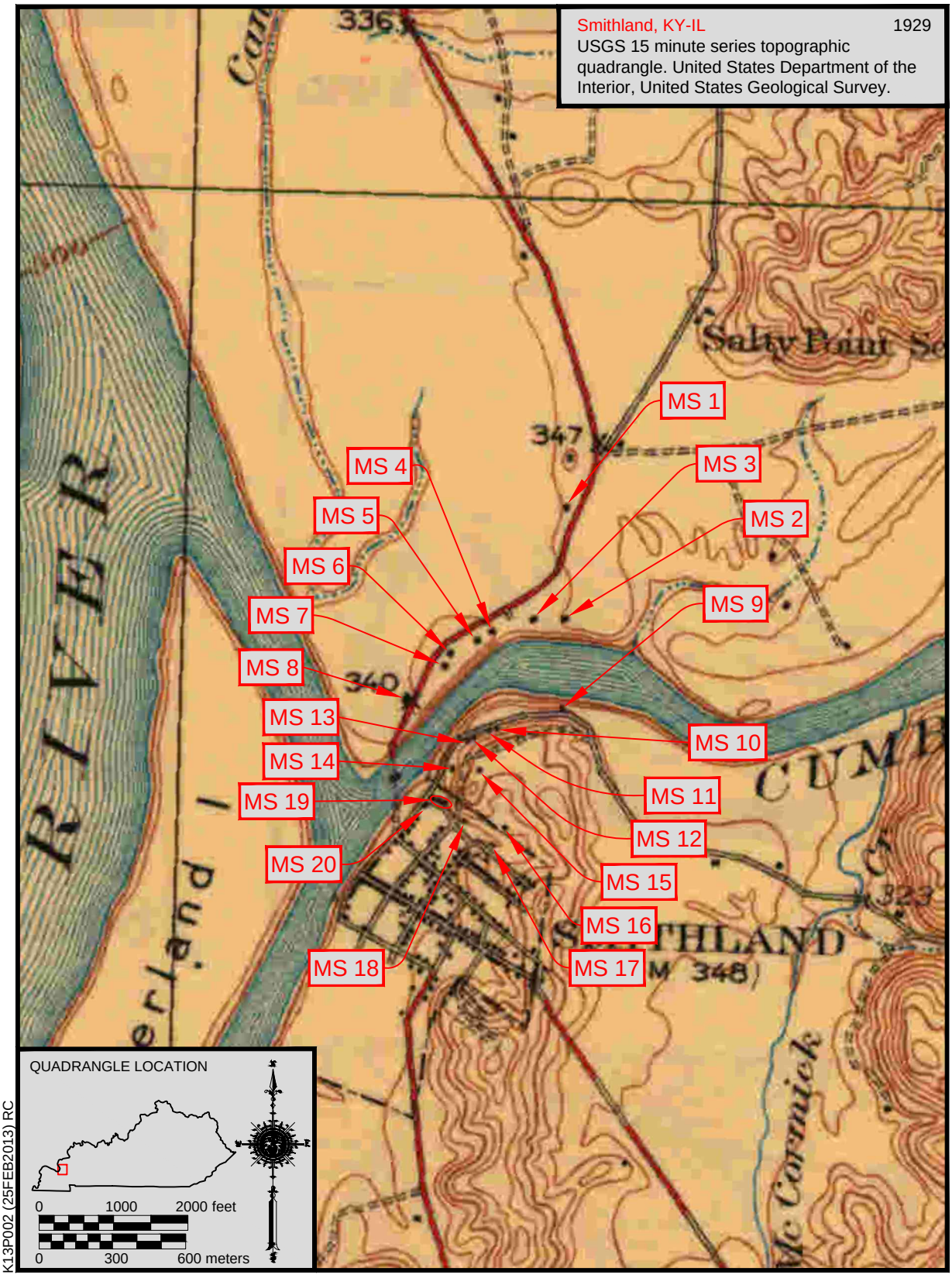

Figure 2. Portion of the 1929 Smithland, Kentucky, 15-minute series topographic quadrangle map showing MSs 1-20.

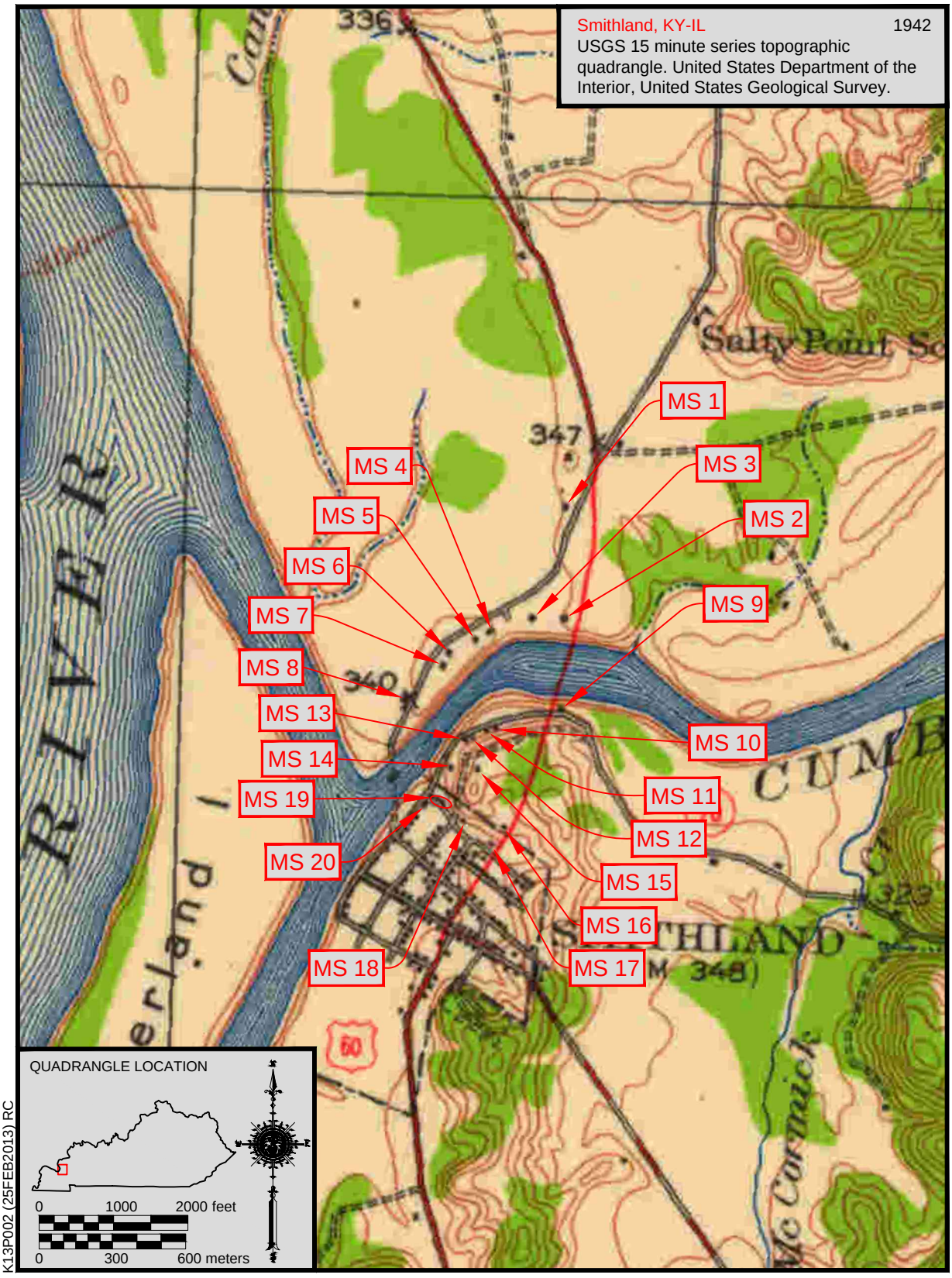

Figure 3. Portion of the 1942 Smithland, Kentucky, 15-minute series topographic quadrangle map showing MSs 1-20.

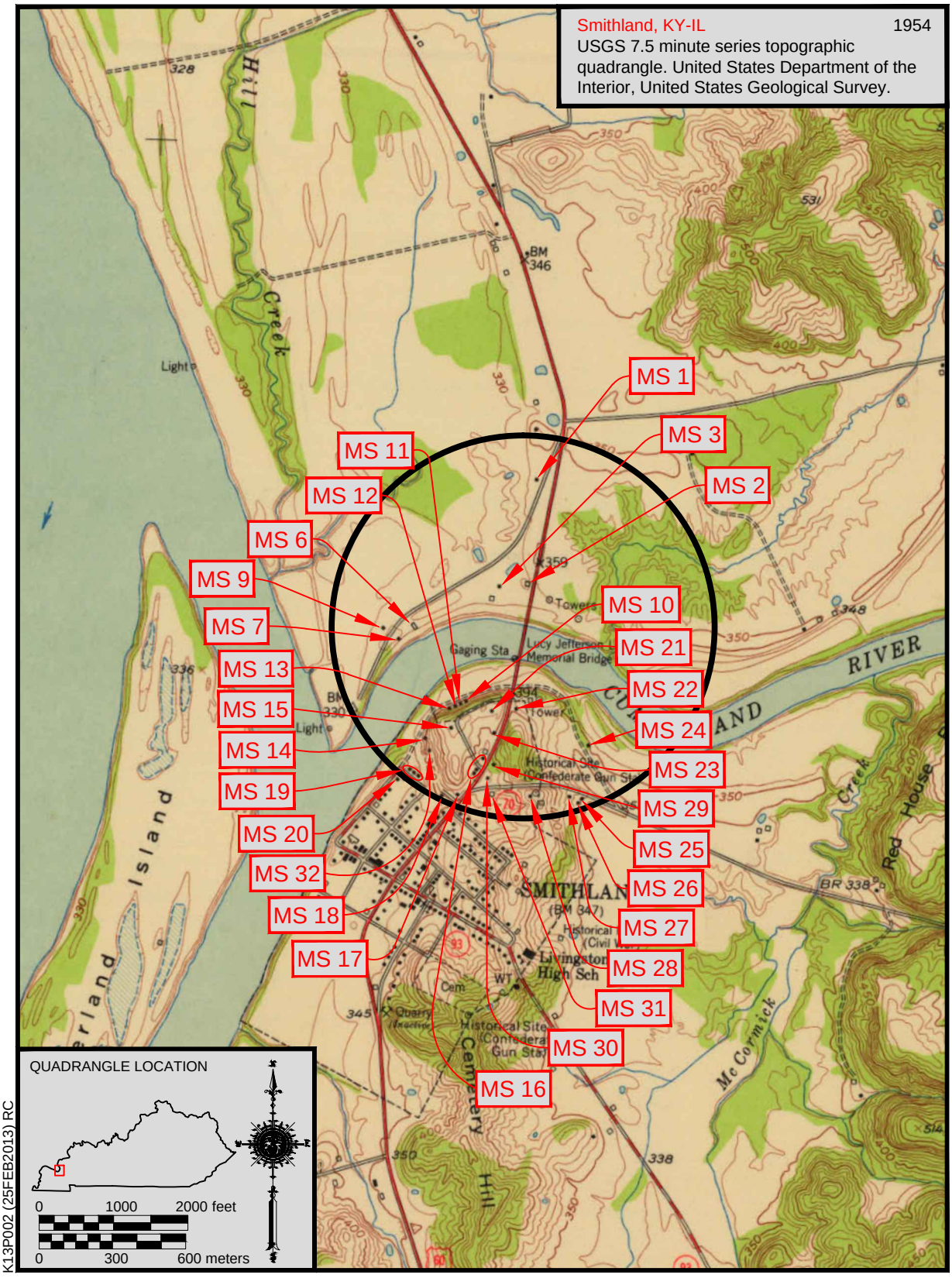

Figure 4. Portion of the 1954 Smithland, Kentucky, 7.5-minute series topographic quadrangle map showing MSs 1-31.

Soils Review

In conjunction with the historic map review, a review of soil types in the project area was undertaken to help determine where buried archaeological deposits may occur. Eighteen soil series (Ashton, Chavies, Elk, Frondorf, Henshaw, Huntington, Karnak, Lindside, Loring, McGary, Nelse, Newark, Nolin, Otwell, Peoga, Wellston, Wheeling, Zanesville) have been defined within the project area (Figure 5). The soil series are classified by the amount of time it has taken them to form and the landscape position they are found on (Birkland 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 majority of the soil series identified within the project area (Chavies, Elk, Frondorf, Henshaw, Loring, McGary, Otwell, Peoga, Wellston, Wheeling, and Zanesville) are classified as alfisols. Alfisols are found on landforms that formed during the Late Pleistocene or earlier (Soil Survey Staff 1999:163–165). Archaeological deposits would only be expected on or very near the ground surface on landforms mapped with these soils.

Three soil series identified within the project area (Karnak, Lindside, Newark, and Nolin) are classified as inceptisols. Inceptisols 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).

Two soil series identified within the project area (Ashton and Huntington) are classified as mollisols. Mollisols are formed on sloping to steep hillsides in late-Wisconsinan deposits, and they supported boreal forests during the Pleistocene that were later replaced by tall grass prairies during the Holocene (Soil Survey Staff 1999). They have the potential to contain deeply buried and intact archaeological deposits on level landforms.

Finally, one soil series identified in the project area (Nelse) is classified as an entisol. Entisols are found on steep, actively eroding slopes and on floodplains that receive new deposits of alluvium at regular intervals (Soil Survey Staff 1999:389). These soils have good potential for containing deeply buried and intact archaeological deposits on level landforms.

Summary

The reviewed archaeological, map, and soil data indicate that there is a high potential for encountering both prehistoric and historic archaeological resources within the project area. The available OSA records indicate that nine previously recorded archaeological sites are situated within the project area, two of which (15Lv17 and 15Lv98) are considered eligible, and one of which (15Lv29) is considered potentially eligible for inclusion in the NRHP. These sites should be considered red flags. Additional archaeological investigations should be expected if any of these sites are to be impacted by the current project. In addition to these known sites, the soils data indicates that undisturbed landforms within the project area have good potential to possess additional prehistoric sites or to extend the boundaries of known sites. Floodplain and terrace landforms on the north side of the Cumberland River should be considered as having the highest potential for containing prehistoric archaeological sites.

The review of historic maps identified at least 32 map structures older than 50 years within the project area. One of these (MS 20) represents the Gower House, an NRHP listed property dating to the late eighteenth century, which has an associated archaeological site (15Lv178). If it is scheduled to be impacted, further work should be expected at Site 15Lv178 to evaluate its eligibility for NRHP inclusion. The remaining map structure locations have not been field surveyed to determine if archaeological remains are present, so their current conditions and potential significance are unknown. The cultural historic survey which is currently underway will provide more detailed information on the cultural historic resources within the project area, including their research potential and NRHP eligibility.

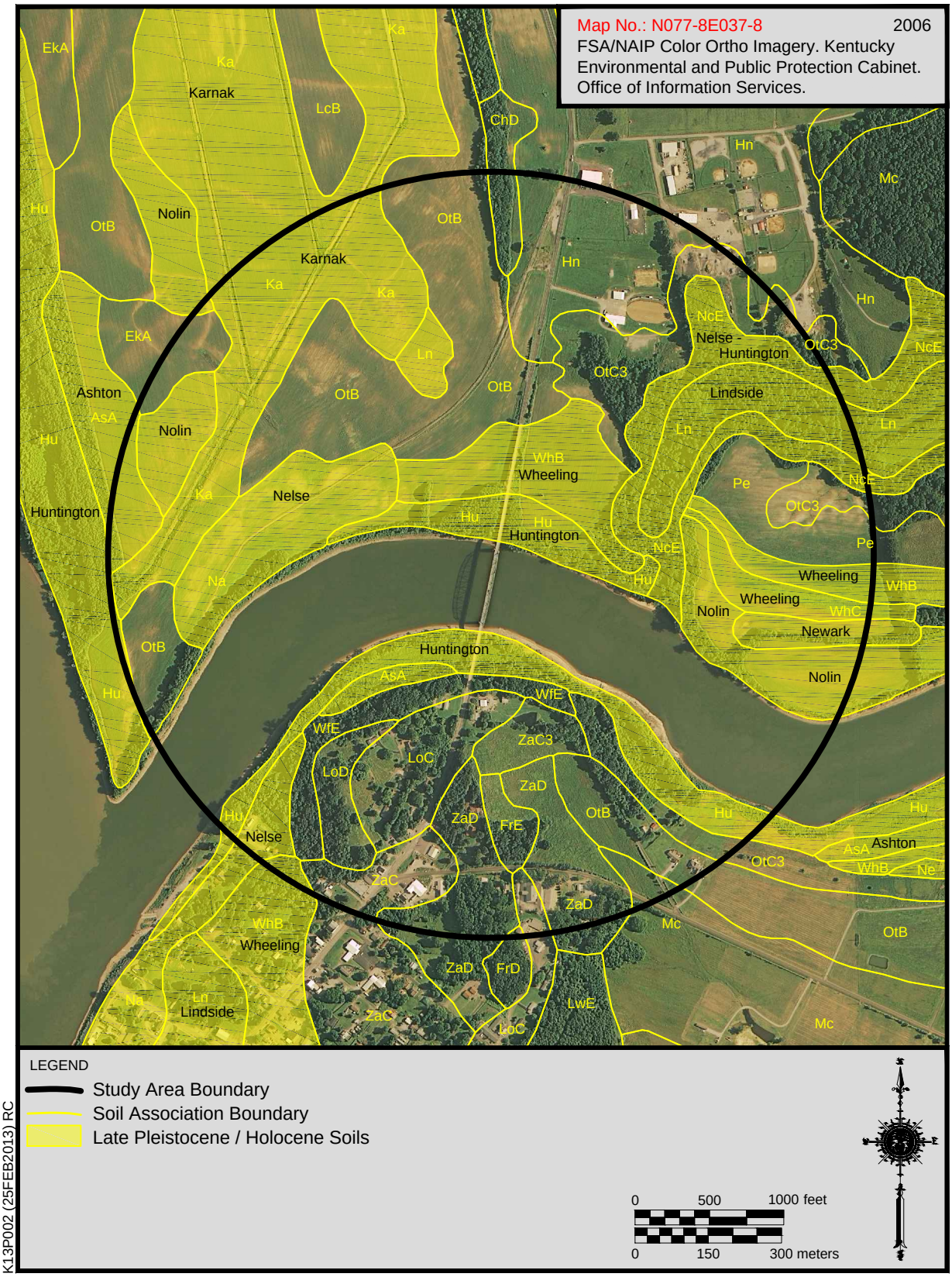

Figure 5. Soils mapped within project area.

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