

Archaeological Field Testing of Potential Grave Locations, Kettle Creek Battlefield, Wilkes County, Georgia

Prepared for:

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Introduction

The Kettle Creek Battlefield Association, Inc. (KCBA) is a non-profit organization founded in 2011 and dedicated to the preservation and better understanding of the important Revolutionary War battle that took place in today's southwestern Wilkes County on February 14, 1779 (Figure 1). Known as the battle of Kettle Creek, the battlefield today is synonymous with a prominent, 80-foot high knoll directly abutting Kettle Creek that is known as War Hill (Figure 2). In 1930 the Kettle Creek chapter of the Daughters of the American Revolution (DAR) successfully lobbied the United States War Department to place a large stone monument on the crest of War Hill, to mark and commemorate this battle site. The DAR had acquired about 14 acres of War Hill around 1900. According to the KCBA web site, in 1958 the Georgia Historical Commission placed two historical markers atop the hill, and additional monuments were placed in 1962, 1973 and 1974. In 1979 the Washington-Wilkes Historical Foundation placed a low stone monument with the names of soldiers involved in the battle on the hill top, and in 1988 the Georgia Department of Natural Resources placed a brass historical marker on the hill top. At some point a number of tombstones were placed within granite coping on the hill top, but these are cenotaphs and are not atop buried human remains. Kettle Creek Battlefield was listed in the National Register of Historic Places on June 26, 1975, encompassing a 40-acre tract that contains War Hill and a small amount of adjoining land that at the time was in private hands.

In spite of the clustering of all these monuments on the crest of War Hill, almost no archeological field investigation had been conducted to learn where the various aspects of the battle actually took place. Historic accounts and analyses of these accounts in light of modern topographic maps could paint a fairly detailed picture of the fierce, one-day battle, but without contemporary battle maps or corroborating archeological evidence there has been uncertainty and imprecision in trying to reconstruct the battlefield. This lack of archaeological research was significantly remedied with a comprehensive document review and extensive metal detector survey directed and authored by Dan Elliott in 2008. Elliott's (2008) study, grounded in previous historic research by Robert Scott Davis and Ken Thomas, showed that a "core area" of the battlefield would encompass about 200 acres around War Hill. In cooperation with the Kettle Creek chapter of the Daughters of the American Revolution, the Georgia Chapter of the Sons of the American Revolution, and the City of Washington, Georgia, the KCBA began supporting a long-term program of archeological research on the battlefield site that was spurred by Elliott's ground breaking work in 2008.

As will be discussed on the following pages, the present report follows on several other recent field investigations that were focused on locating precisely where those who died at the Battle of Kettle Creek on February 14, 1779 were buried. It is widely assumed that the dead were quickly and shallowly buried very close to where they fell in battle. Locating these burials can provide a great deal of important information on the nature and course of the battle. Any artifacts or human remains that might remain in the burials can provide even more information. Finally, knowing exactly where the remains of those who died are located gives greater meaning to the monuments on top of War Hill. In a pioneering effort in 2015 and 2017, the KCBA sponsored the use of Human Remains Detection dogs, or cadaver dogs, to locate battlefield graves of the dead, and after each round they sponsored ground penetrating radar survey to pinpoint grave pits associated with the scent of burials

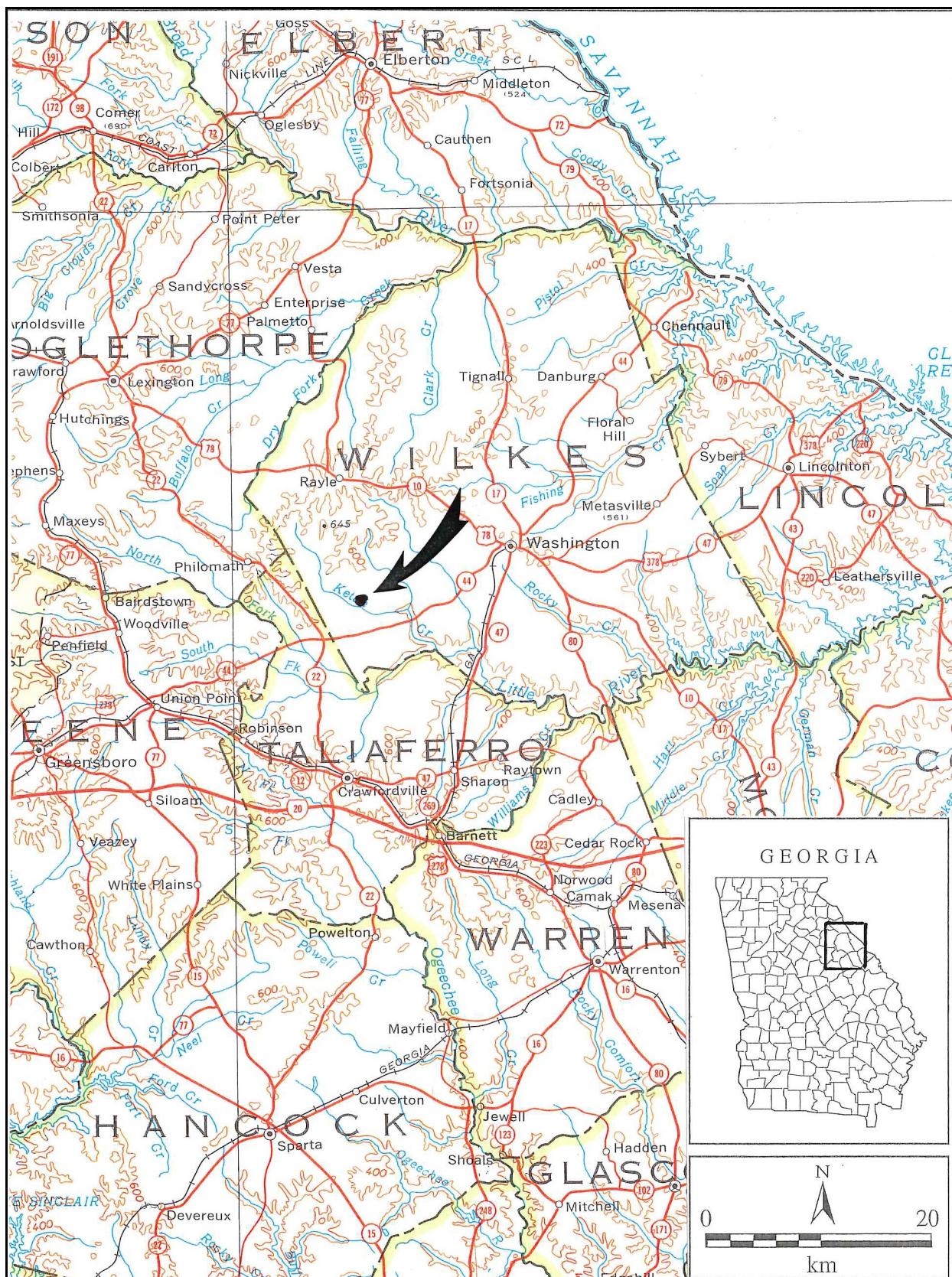


Figure 1. Location of Kettle Creek Battlefield (source: USGS 1:500,000 Base Map of Georgia).

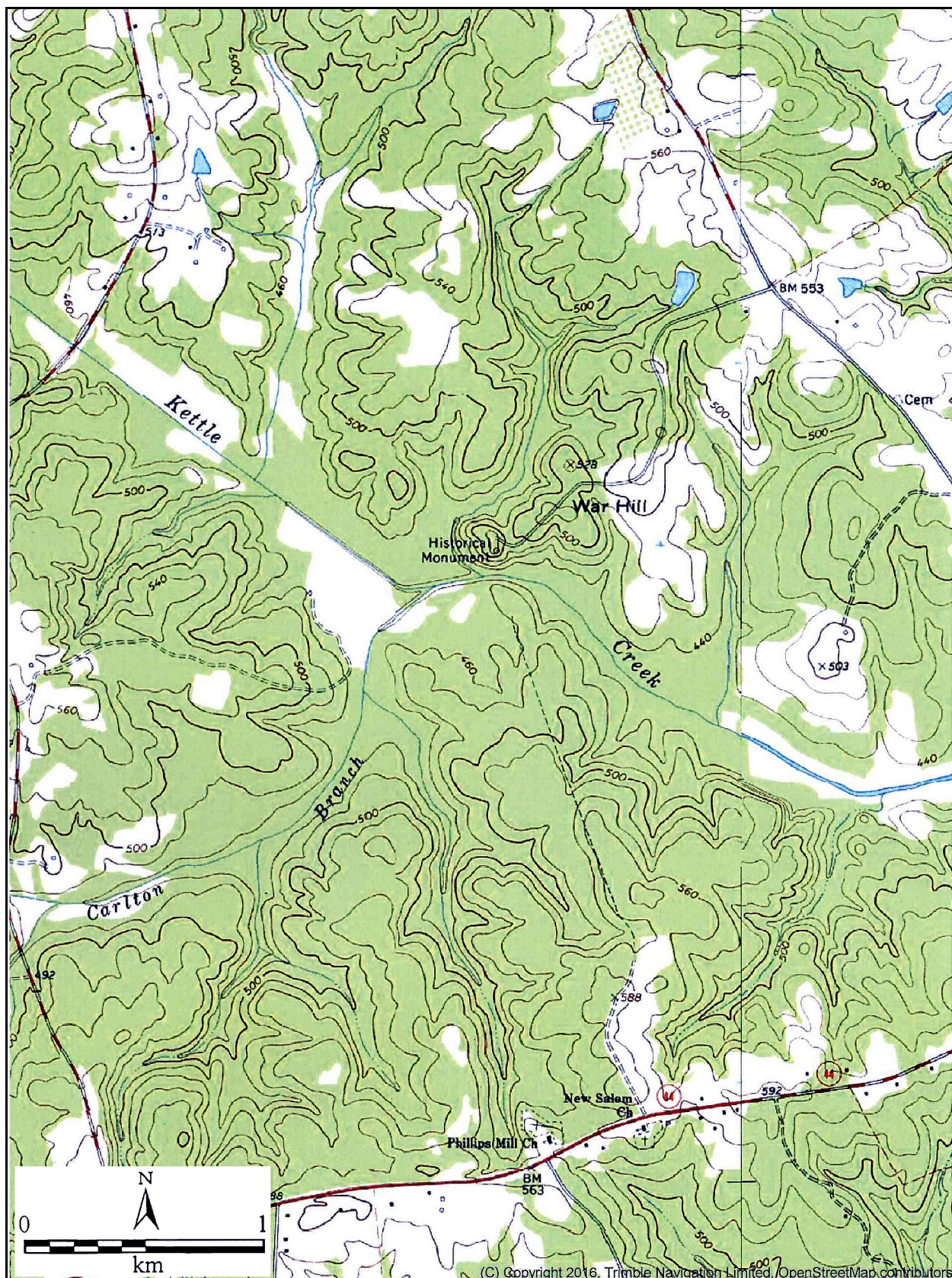


Figure 2. USGS topographic map of Kettle Creek Battlefield locale, with War Hill in center of map (source: USGS 7.5' Philomath quadrangle).

detected by the dogs. In about a dozen cases, dog-detected scents and GPR indications of a pit coincided spatially. A sample of five of these were selected for the final phase of the study, excavation to see what artifacts, human remains, features or other indications of graves actually exist in the soil. Southeastern Archeological Services, Inc. (SAS) was selected to carry out this ground-truthing phase of the project. This report presents the results of these excavations that took place in October and November, 2017. The artifacts and soil samples recovered from this project will be curated with the Washington-Wilkes Historical Foundation at the Washington-Wilkes Historical Museum at 308 E. Robert Toombs Avenue, Washington, Georgia 30673. Recovered artifacts and soil samples taken are listed in the Appendix.

Previous Research

As mentioned, there had been no professional archeological investigations at Kettle Creek until Elliott's metal detector survey of 2008. In his report Elliott (2008) notes that the only archeology done prior to his work was a visual reconnaissance by Matt McDaniel in 2002 as part of a survey of many battlefields in southeastern states. McDaniel (2002) noted that timbering activity all around War Hill posed a threat to the integrity of the greater battlefield area. Elliott noted that as of 2008 no archaeological sites or surveys had been recorded at the Georgia Archaeological Site File within a 3-mile radius of War Hill.

Elliott's metal detector survey project began with extensive documentary research into descriptions of the battle. The documentation began just two weeks after the battle, with a Charleston, South Carolina newspaper account. Most of the contemporary, eighteenth century descriptions were based on letters and field reports of personnel who were at the battle. Later researchers re-examined these and other sources to reinterpret the battle. Elliott examined a variety of sources to compile lists of men involved in the battle, and then he was able to provide more biographical information on many of the participants. Elliott neatly sums up what is generally understood about the Battle of Kettle Creek, which is that an encampment of about 600 Loyalists at Kettle Creek under the command of Colonel John Boyd was attacked from the north by about 340 Patriots in a multi-pronged maneuver on the morning of February 14, 1779. The Patriots were led by Colonel Andrew Pickens, with officers Elijah Clarke and John Dooly leading two flanks. The Patriots prevailed, mortally wounding Boyd, and the Loyalists fled south that afternoon, later followed by Pickens (Figure 3). A more detailed view of the battle, based on documentary research and the results of his metal detecting, has been composed by Elliott (Figure 4). This map shows the Loyalists main camp to the north (# 1 in Figure 4), Boyd's

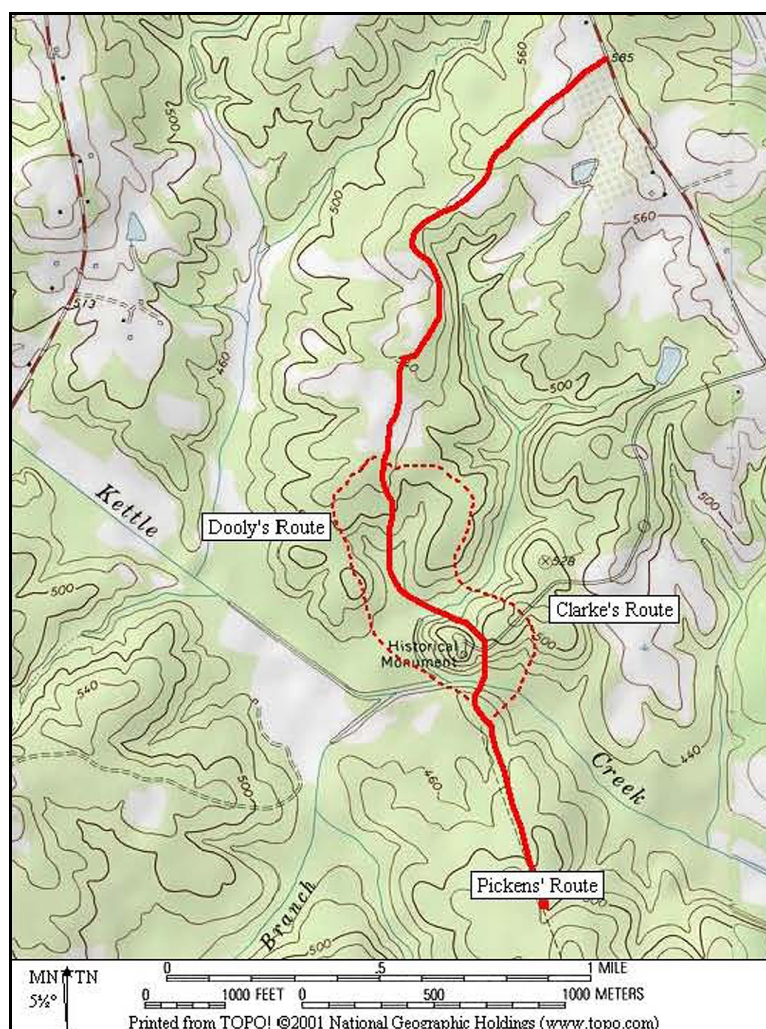


Figure 3. Overview of Patriots movements in Battle of Kettle Creek (from Elliott 2008:135).

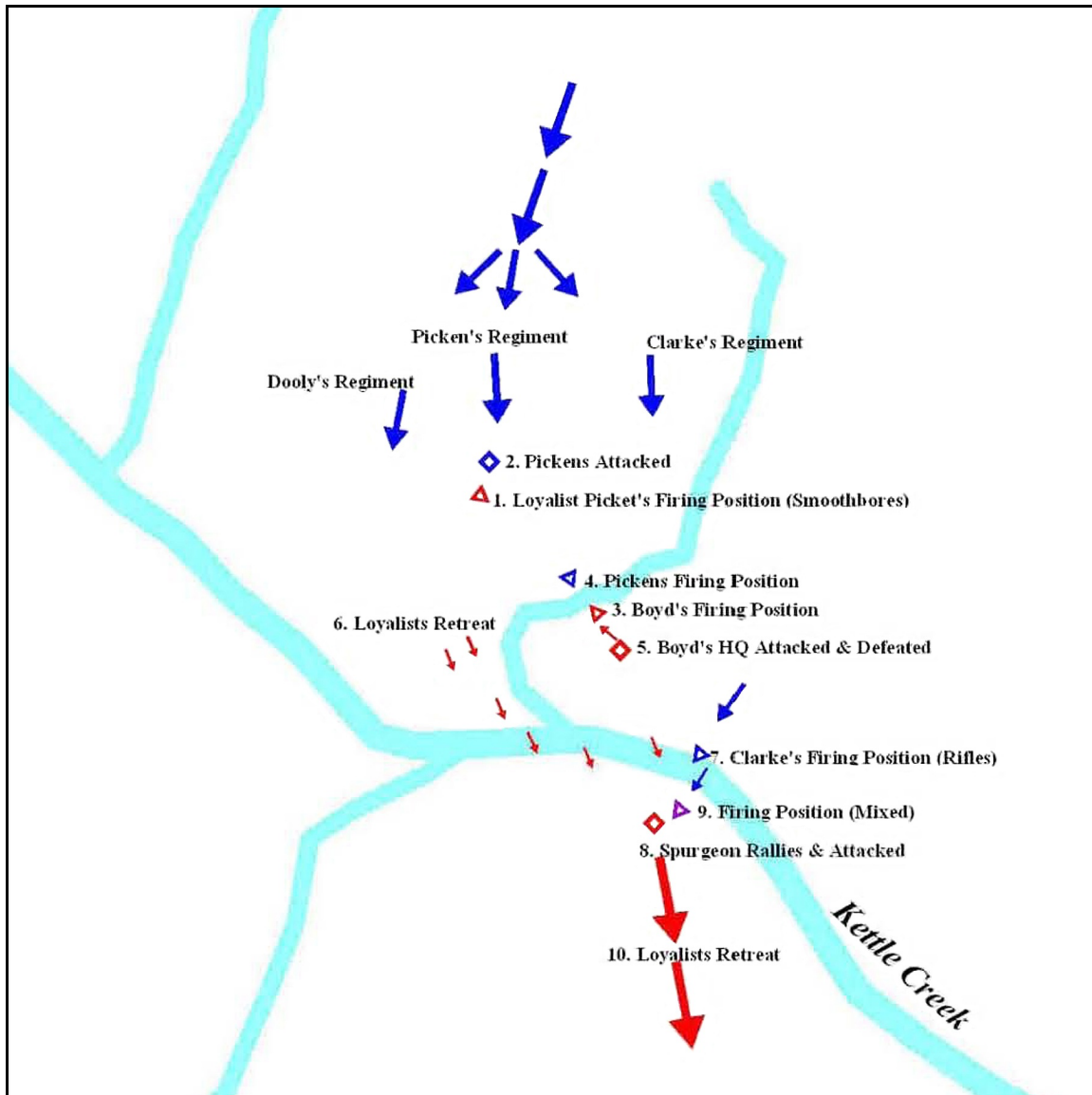


Figure 4. Schematic of firing positions and troop movement at the Battle of Kettle Creek (from Elliott 2008:137).

Loyalist headquarters on top of War Hill (# 5), a low-lying canebrake that was an important factor in the battle (#'s 3 & 4), and other battlefield features. The battle lasted from one to three hours, and while it is not well documented, it was reported that Loyalist commander Colonel Boyd and about 70 of his men were killed in the battle, while many fewer Patriots were killed. Some post-battle reports indicate that the battlefield dead might have been buried in a cemetery on the hill north of War Hill, where a brick pile and field stone grave markers had been observed in the twentieth century, but the more likely scenario is that the dead were buried hastily on the afternoon of the battle on the battlefield, as presented in Stevens' 1847 account:

Several Loyalist prisoners, who were captured by the Patriots in the battle, were left behind as a burial crew. In exchange for burying the battlefield dead, these men were to report to Colonel Andrew Pickens, where they were to receive their parole and return to their homes in the Carolinas [Elliott 2008:1].

Elliott's metal detector survey, begun in February of 2008, was conducted at two levels. First, two metal detectorists conducted a preliminary survey of the entire approximate 1-square mile (640 acre) target area (Figure 5). Using topographic maps and GPS units they thoroughly visually inspected the entire area seeking out landforms and features (old roads, rock piles) that hinted at possible historic period use so that these could be metal detected. In this manner, 14 activity loci, places where metal artifacts were concentrated to some degree, were discerned (Figure 6). These loci included old house sites, late nineteenth century house sites and clusters of musket balls and/or other metal likely dating to the eighteenth or early nineteenth century. The second level of investigation involved more detectorists and applied systematic (transect) detecting to certain landforms and sites where material had been located initially. In all, about 600 artifacts were located and 14 activity loci were distinguished. From this metal detector work and his archival research, Elliott delineated a core area of the Kettle Creek Battlefield (Figure 7). Elliott's work was not geared to locating grave sites, and none were identified. After completion of his report, Elliott submitted a site form for the battlefield and it has been assigned the Georgia Archaeological Site File number 9WS370. The limits of the site as defined by Elliott on the site form have been superimposed in red in Figure 7.

The next archeological work to be conducted at Kettle Creek was a series of field investigations aimed at locating possible battlefield burials using human remains detection (HRD) dogs (also known as cadaver dogs) to locate subtle chemical markers of buried humans, followed up with ground penetrating radar (GPR) to locate ground disturbances/anomalies associated with field burials. Bigman Geophysical, LLC, out of Suwanee, Georgia was hired by the KCBA to devise and conduct this investigation. As described by principal investigator Dan Bigman (2015), Tracy Sargent, principal of K9 Search & Rescue Specialists, Inc. was hired to search three areas with her HDR dogs: the crest of War Hill (about 2.8 ac), the foot of War Hill (about 7.0 ac) and the "church/cemetery" area on the hill north of War Hill (about 4.0 ac). Bigman (2015) explains the science behind using HRD dogs for detecting very old and even totally decomposed burials, citing recent scientific articles. Still, the technique is new and the data base of results is relatively small, and

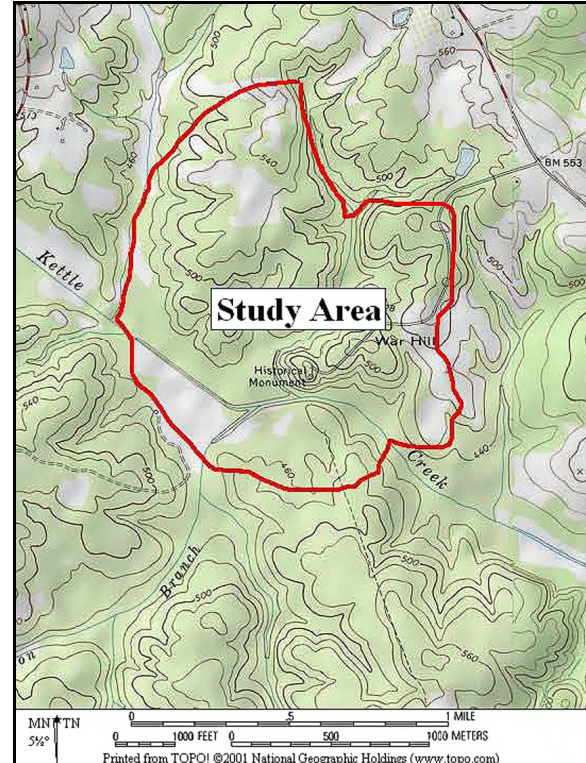


Figure 5. Target area of Elliott's 2008 metal detector survey (from Elliott 2008:11).

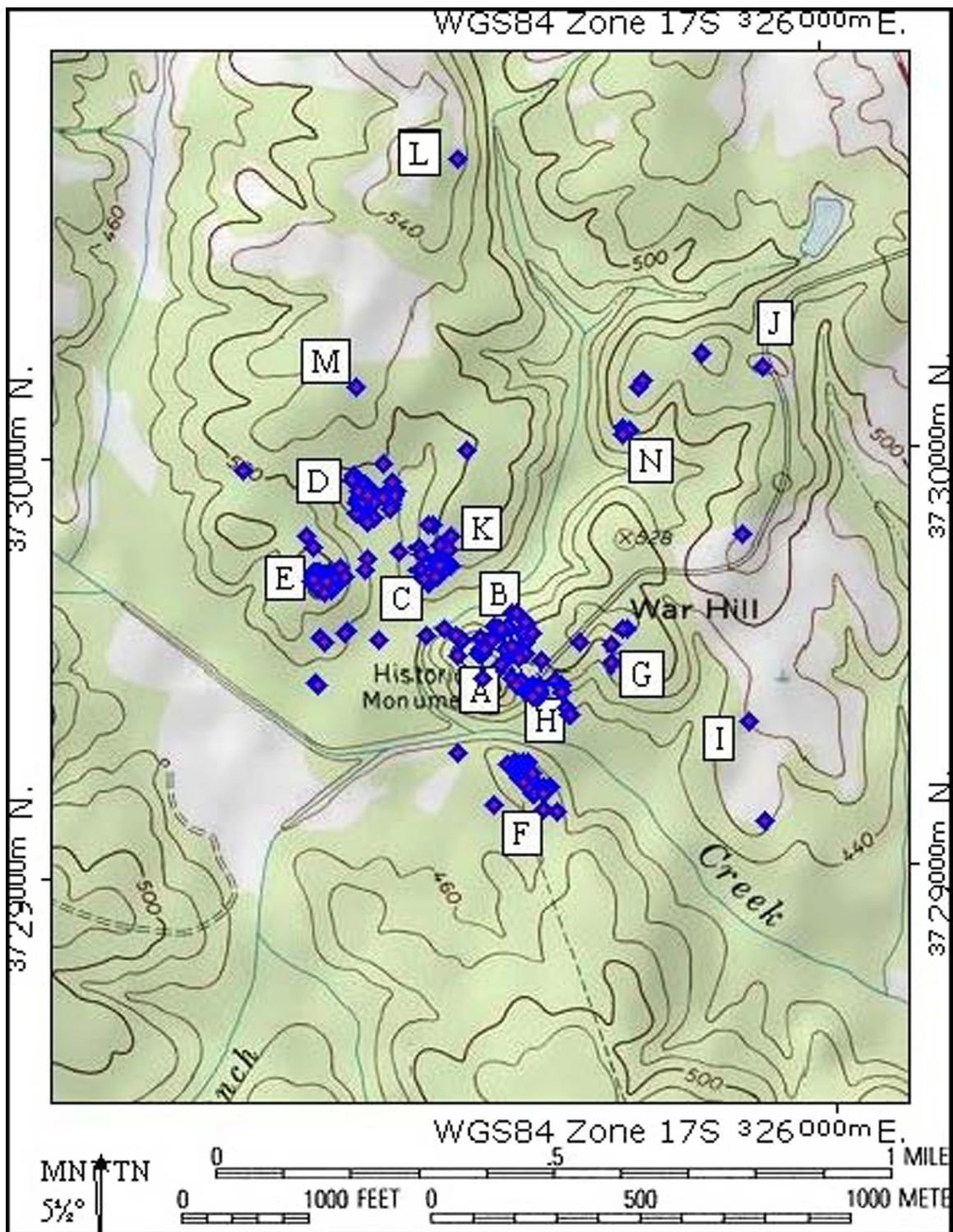


Figure 6. Results of Elliott's metal detector survey, showing artifact locations (blue diamonds) and activity loci (capital letters in boxes) (from Elliott 2008:134).



Figure 7. Elliott's delineation of core area of Kettle Creek Battlefield (from Elliott 2008:140).

so the precision and reliability is not yet firmly established. Mainly, it is not consistently clear how precise a “hit” from a dog is; that is, how far from a dog’s alert signal the body actually may be or was. We have not reviewed the literature, but understand that the chemical scent in the ground can migrate tens to hundred of meters, particularly down slope. Another set of HDR dogs were used at a late nineteenth century cemetery in Bibb County, Georgia, and when graves were close to one another, the dogs had difficulty, and when further apart, the dogs could generally mark a grave within 10 ft of its actual location (Matternes et al. 2012:155). Analysis of the results showed that the rate for accurate detection (defined as within 0.5 m of an actual grave) was about 10 to 13 percent; that is, either 10 or 13 of the confirmed 101 burials were accurately detected by the dogs to within 0.5 m. The dogs delivered more false alerts than positive alerts. The graves dated from the mid- to late nineteenth century (Matternes et al. 2012).

The December 2015 survey of three search areas with Sargent’s K9 dogs resulted in two alerts on the hill to the north where the ca. 1780’s Liberty Church and its likely church cemetery were located. These two hits were about 125 m apart. On War Hill the dogs did not alert to a mass grave, or any graves, on the crest, but did alert to a location at the south end of the War Hill search area, in a gully well down slope of the crest. Bigman stated that this could be the result of scent accumulating in the gully as a result of downslope migration. Six alerts were recorded at the base of War Hill, just a few meters east of an unnamed creek, and nearly due west of the crest of the hill. Bigman (2015:2) states that these may be individual graves of the battlefield dead. It is not stated how the alerts were marked or measured, but presumably a hand-help Trimble GPS unit accurate to within 2-3 m was used, and probably the alerts were flagged in the field.

In a follow-up study, Bigman (2016) returned to the site in January 2016 to conduct ground penetrating radar (GPR) investigation of the HDR alert locations. He notes that due to topographic variation, tree cover and water-saturated soils, the conditions were non-ideal. Also, he notes that graves lacking caskets are harder to detect and unconsolidated soils, such as in floodplains and where plowing has occurred, are harder to reliably survey. Bigman (2016) placed GPR transects to cover

areas where the dogs had alerted. He also used a probe to test some of the locations where GPR indicated a potential burial pit. He states that probing was not used in the flood plain area (next to a small creek due west of the crest of War Hill) because the unconsolidated alluvium here allowed the probe to sink in without discrimination. This applied only to GPR reflections west of the branch. His transect data were recorded with a GPS unit with a precision of between 1.4 and 11.4 ft, with most data points at between 2 and 6 ft. His GPR results “correlate well” with the HRD dog results. All but one of the HRD dog alerts had a corresponding GPR reflection event (Bigman 2016a:2). Most of these reflections were within 3 to 6 ft of an HRD dog alert, which must have been marked, probably with a white cross (Bigman 2016:6). All of the GPR reflections were generally uphill from the HRD dog alerts. There was variation in clarity of the GPR reflections, which is attributed to the great age of the burials, the lack of coffins, and the resultant homogenizing of the soils. In sum, GPR recorded some HRD dog alerts as well defined reflection events, some as poor and some not at all.

Bigman (2016:3) adds that the GPR indicates that the apparent burials were usually not more than 60 cm deep, but occasionally as much as 100 cm deep. The GPR results at the two HRD dog alerts on the hill north of War Hill were of poorer quality, possibly a result of greater water saturation and different land use practices. However, Bigman used a probe to locate an area of softer, deeper soil immediately uphill from one of the HRD dog alerts, and he probed this to measure 2 ft, 3 inches by 5 ft. Here, the probe penetrated 2 ft, while in the surrounding matrix it went in only 6 inches. At the other HRD dog alert on this northern hill, in Bigman’s search area 1B from the 2015 project, he encountered a clear reflection event indicative of a possible burial uphill from the dog alert, but it did not probe as a burial, was next to a tree and was considered likely related to tree roots (Bigman 2016:3). Bigman (2016:3) concludes that the GPR performed well and that the strategy of using HRD dogs to cover a large area followed by GPR and hand probing to confirm actual graves was very effective. The correlation between HRD dog alerts and GPR reflection events was very high. Bigman depicts 11 HRD dog alerts on his map of the project area, all but one of which have a GPR reflection very close by (Bigman 2016:7). The dog alerts and GPR reflections are depicted with unlabeled dots of differing colors.

In 2017 Bigman was contracted by the KCBA to expand the HRD dog survey and follow-up GPR survey of the greater core battlefield area. In this survey two HDR dogs worked independently in the area of War Hill, all of its slopes, along the branch to the west (which Bigman [2017] labels as Kelly Branch), and up the slopes to the crest of the hill north of War Hill, where Liberty Church once stood. It is stated that areas covered by the 2016 survey were not resurveyed, although the 2017 maps don’t make this clear. Twelve HRD dog alerts, which are numbered in Bigman’s (2017) report, were recorded and marked with flags, four on War Hill, two near the branch west of War Hill, and six around the slopes of the hill north of War Hill. These 12 alert locations were then assessed with the GPR unit and flags were placed at potential targets of interest, which numbered ten. These ten GPR reflections are interpreted as possible unmarked graves. Figure 8 is Bigman’s composite illustration showing the location of the HRD dog alerts from 2015 and 2017 conjoined with the GPR reflections from 2016 and 2017 that appear to indicate possible graves.

In 2016 New South Associates conducted a Phase I/II archeological survey of 3,237 ft of proposed trail in and around War Hill (Patch 2016). A small number of battle related artifacts were recovered but no archeological features. No further work was recommended.

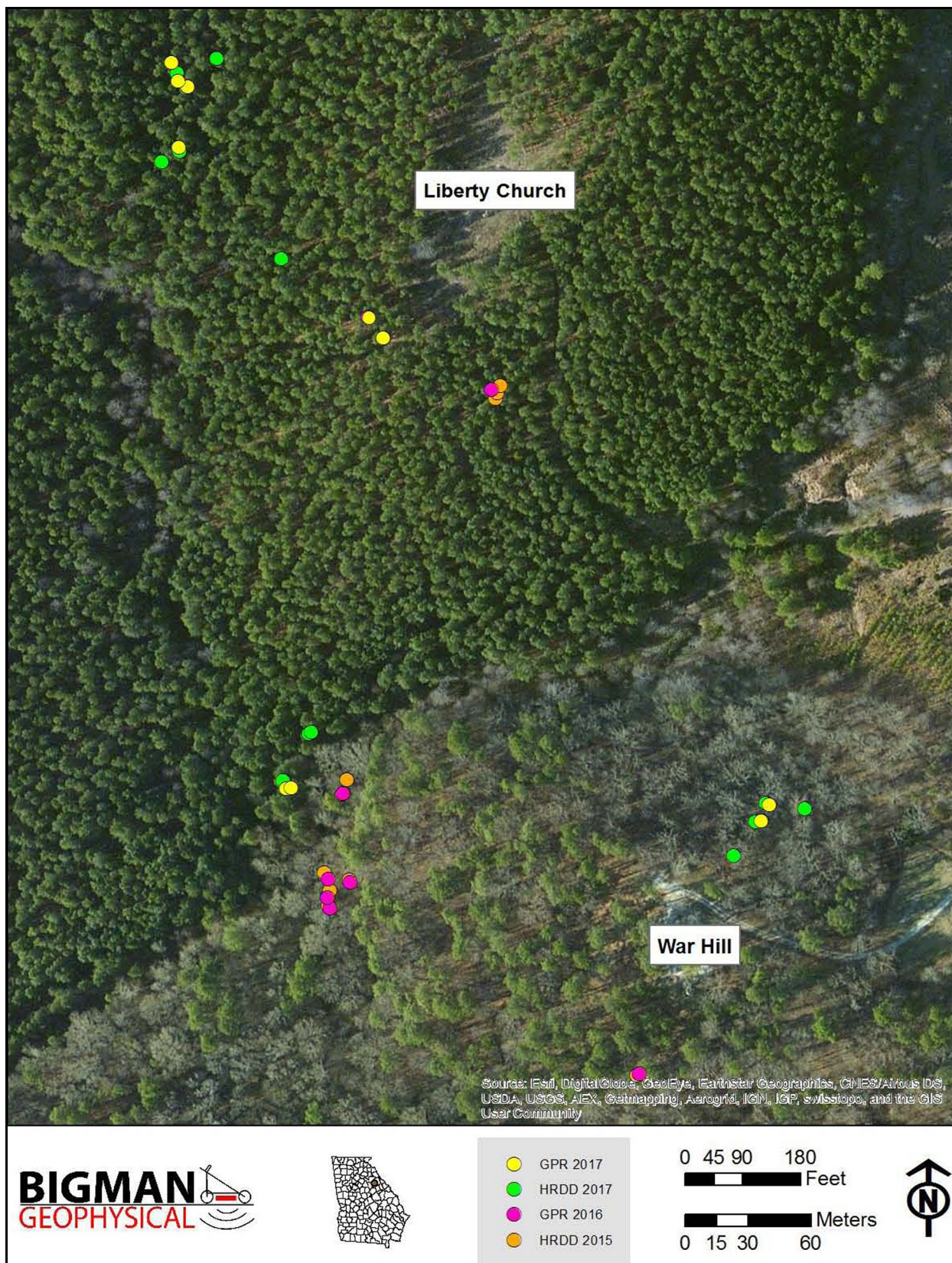


Figure 8. Location of HRD dog alerts and GPR reflections of possible unmarked graves (from Bigman 2017:12).

Excavations

Southeastern Archeological Services, Inc. (SAS) began discussing the excavation project with the KCBA in February 2017. The Board of KCBA was negotiating the acquisition of additional acreage on which some of the targets were located, and so excavation was postponed until the fall of 2017 to allow for the unencumbered excavation of targets anywhere on the property. Discussions about how to conduct the excavations ensued between the KCBA Board, represented by Board Chairman Dr. Joseph Harris, KCBA President Walker Chewning and Board member Dr. David Noble, and SAS, represented by project director Joel Jones and project Principal Investigator Tom Gresham. Dr. Noble was the primary KCBA contact for the project, and was present, along with Walker Chewning, for all of the fieldwork.

The project was given notice to proceed in early October, 2017. At that time the KCBA asked Dan Bigman to prioritize the GPR/HRD targets he had gathered in 2016 and 2017 to create a map of the most promising five to ten targets, and this map included seven numbered priority targets proposed for excavation (Figure 9). The selection of priority targets to be excavated was primarily a joint decision by David Noble and Dan Bigman, and they created a priority list of 1 through 7 (Table 1; Figure 9). In our October/November 2017 excavations we used this set of priority target numbers to identify our test units. In consultation with the KCBA during the project, we excavated five of the priority targets, 1, 3, 4, 5 and 7 (Figure 10). Bigman provided UTM coordinates for the seven priority targets using WGS 84 datum. In regard to Priority Targets 2 and 3, they are depicted in Figure 9 as exactly coinciding with one another, while Bigman's coordinates reveal a 1-m difference in location. In the field the orange pin flag for Priority Target 3 was adjacent to the white cross of the HRD dog alert, and so the unit was positioned more squarely over Priority Target 3. The Priority Target 2 HRD dog alert cross was about 1.5 m to the southeast, and was close to the southeast corner of the unit, such that if a burial pit was present it could have extended into the unit. The GPR pin flag for Priority Target 2 was another meter to the southeast. Regarding the location of Priority Targets 4 and 7 depicted in Figure 10, inaccuracy of the USGS topographic map in depicting the course of the unnamed branch west of War Hill makes it appear that these are west of the branch, when in fact they are 1 to 3 m east of the branch.

With a set start date of October 18, 2017, Joel Jones met David Noble on the battlefield site on October 13 to inspect the project area, locate the first few priority targets to be excavated and plan for the excavations. The priority targets were marked with white crosses over the HRD dog alerts and orange pin flags over Bigman's GPR reflection events (possible grave pits) (Figure 11). Often the cross and pin flag were very close to one another (within 30 cm), but in some cases they were a meter to as much as 2 m apart. None of the crosses or flags were labeled, and so Noble and Jones had to spend some time comparing the markers on the ground with the Bigman map to make sure that the correct priority targets were identified.

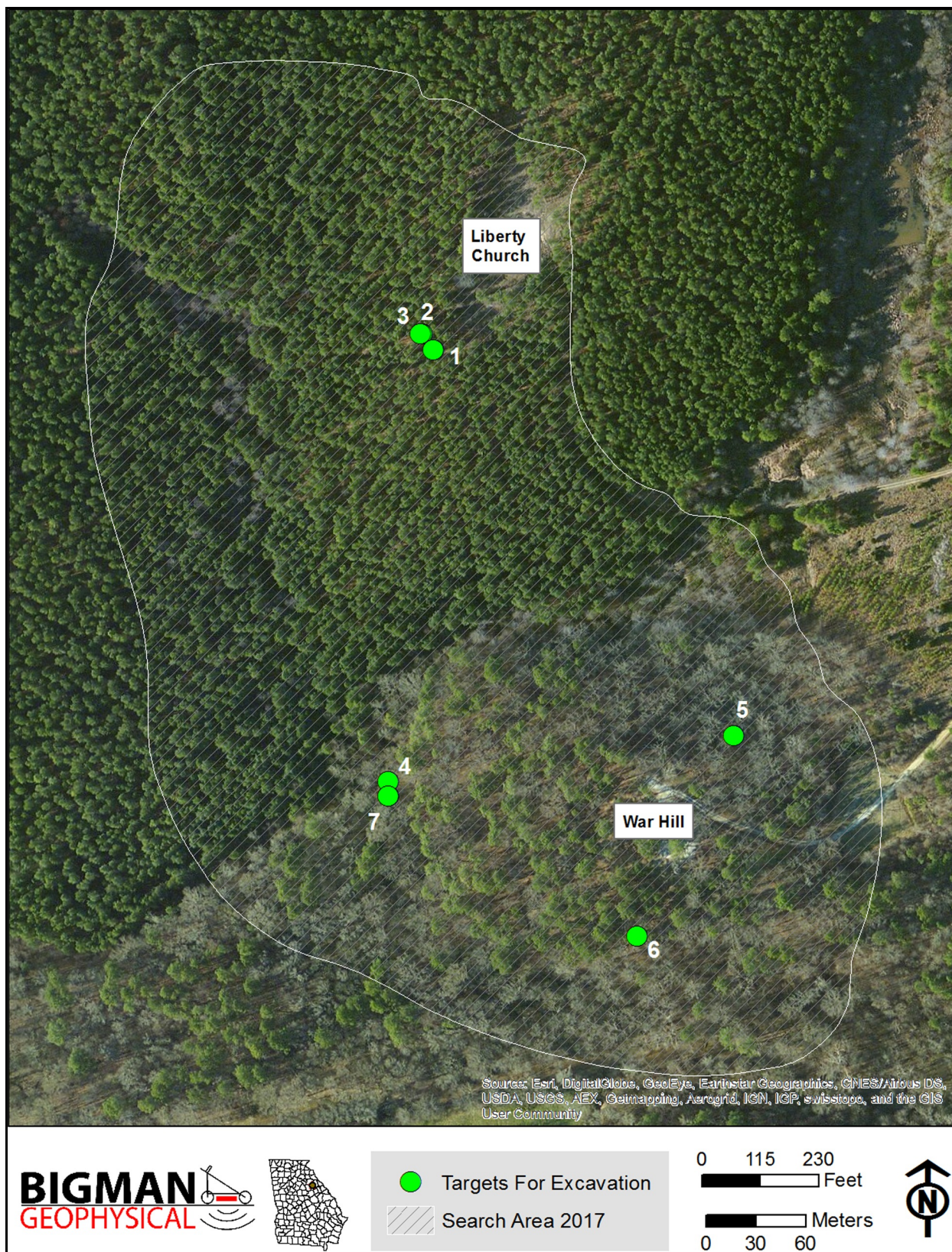


Figure 9. Aerial photograph showing the location of the seven Priority Targets selected by Bigman and Noble (courtesy of Bigman Geophysical LLC).

Table 1. Correlation of Priority Target numbers and UTM coordinates.

Bigman (2017) Target No.	Depth of Target (Bigman 2017)	Bigman/Noble Priority Target No.	Bigman UTM's WGS 84	SAS UTM's NAD 27
GPR 3	1.0 m			
GPR 4A	0.4 m			
GPR 4B	0.4 m			
GPR 4C	0.32 m			
GPR 7	0.6 m	5	0325237 E 3729528 N	0325219 E 3729325 N
GPR 8	0.45 m			
		4	0325030 E 3729504 N	0325010 E 3729294 N
		7	0325029 E 3729494 N	0325009 E 3729290 N
GPR 12 A	0.35 m	1	0325060 E 3729763 N	0325043 E 3729553 N
GPR 12B	0.47 m	3	0325052 E 3729772 N	0325034 E 3729560 N
GPR 12B	0.47 m	2	0325053 E 3729772 N	
_*		6	0325178 E 3729409 N	

* un-numbered GPR hit from 2016

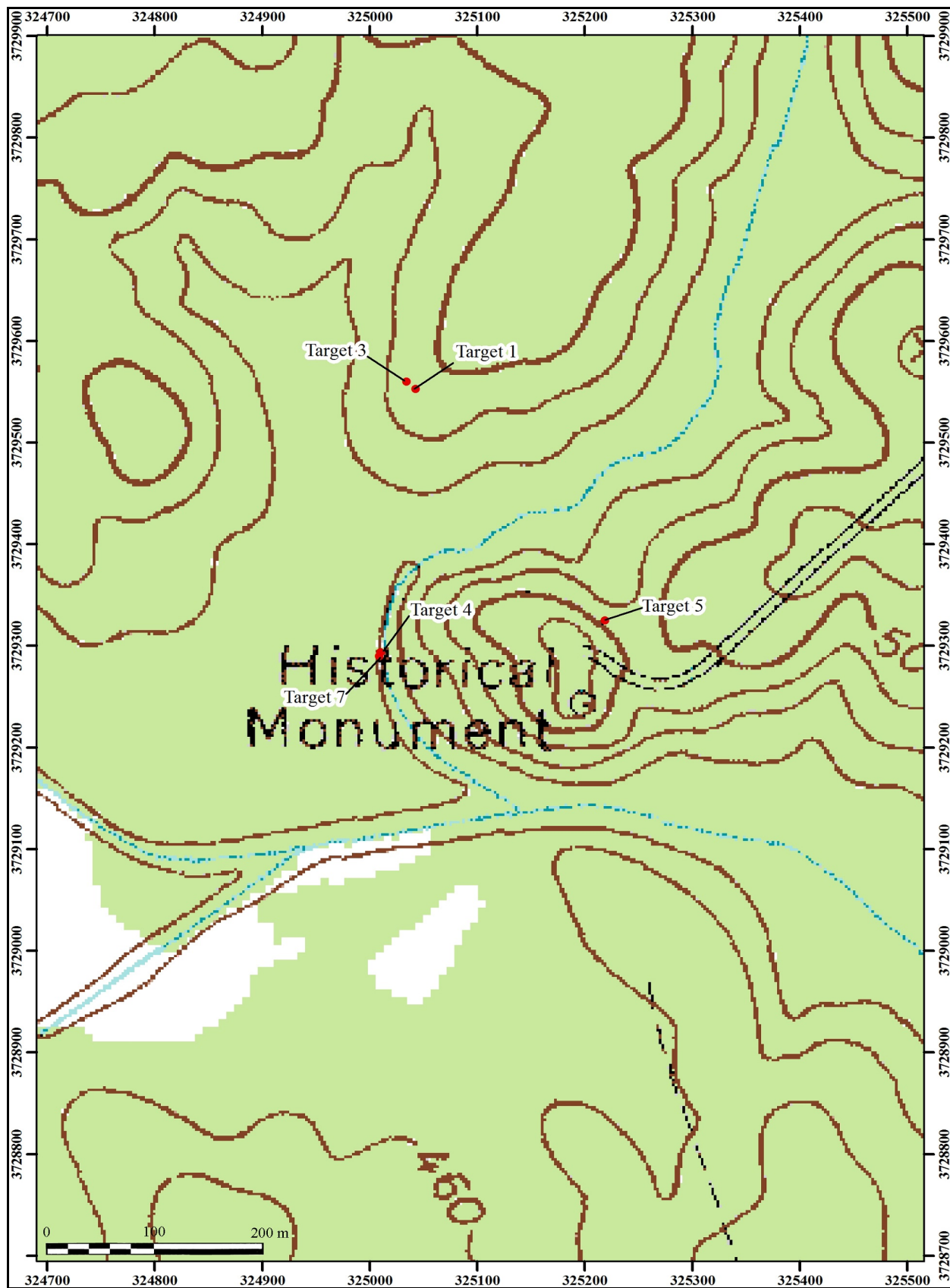


Figure 10. Map showing the location of the five Priority Targets excavated (source: USGS 7.5' Philomath quadrangle).



Figure 11. View of Priority Target 4, showing HRD dog alert marked by white cross and GPR reflection marked by orange pin flag, looking west-northwest.

The excavation strategy was to perform traditional archeological hand excavation and screening of 2-x-2-m test units over each selected priority target in hopes that at least a portion of a grave would be intercepted and recognized. It was generally agreed and discussed that we did not know exactly what we were looking for, and in fact actually had no idea how these graves might appear archeologically. Archival records do not specify how the bodies were buried, and there is no clear consensus among historians and archeologists on how the bodies would likely have been buried, or even if they really were buried at all. It is generally believed that the burying took place on one afternoon in February, and thus probably was completed in only a few hours of daylight. It is generally believed that most bodies were buried very close to where they fell in battle. This probably would not be true of those killed in the substantial, low-lying cane brake along the branch west of War Hill, where it would be very difficult to dig even a shallow grave. It is not known how many bodies were buried, but battlefield accounts state that about 70 Loyalists were killed, and a smaller number of Patriots. It is not known how many Loyalist prisoners were engaged in the burying, nor what tools they may have had at their disposal. It is quite possible that the digging of burial pits was done with improvised tools, such as bayonets, pieces of metal or digging sticks. Some historians (Carol Faz, personal communication, 2017) believe they may have had shovels, as supply wagons were at the battlefield. Taking into account all of these variables, it is generally believed that the burials were hastily, crudely and shallowly dug. Some theorize that natural depressions might have been used to augment a burial pit. As shown in Table 1, Bigman's GPR survey indicates that the possible burial pits he detected extended from 0.2 to 1.0 m below surface. Our operating assumption was that a shallow (less than 0.5 m), body-length, irregular pit would have been hastily dug and covered with heaped spoil dirt. We do not know if, or to what extent, bodies were stripped

of clothing, boots and accouterments, and thus whether buckles, buttons and boot nails would be present. We did assume that most soldiers were killed by bullets, not shrapnel or infection, and that most bodies would have contained fired bullets. However, David Noble pointed out that at some Revolutionary War battles many soldiers were killed by stabbing and not by bullets. It must also be considered that the battle field has been metal detected many times, including systematically by archaeologists (Elliott 2008). Bullets in shallowly buried bodies could easily have been detected and removed.

David Noble guided the precise placement of the units, which in a few cases required a decision on whether to center a unit over the HRD dog alert cross, or the GPR pin flag, or in between. Since scent is well documented to migrate through soils, the decision mainly leaned toward centering the unit over the GPR pin flag. We decided to not rigidly orient the units to uniform or cardinal directions, but rather orient each to fit the local topography and avoid larger trees while still staying as nearly centered on the priority target as possible. Before the unit was marked, a 5-m area around it was carefully metal detected, with special focus on the unit area itself. Metal artifacts were detected in the close vicinity of two of the units, and recovered from within only one unit, Priority Target 1. Also prior to laying out a unit, we would probe to detect the deeper soft soils of a shallow grave shaft (Figure 11). No such soft spots were encountered and thus probing was not a factor in the final positioning of test units.

Once the location and orientation of the unit had been selected, the leaf mat was removed and a 2-x-2-m unit was laid out and marked with string around corner nails. A vertical datum nail and line level string was established at the high corner of the unit, and surface elevations were recorded for the corners and center point. Excavation of the humus proceeded with square shovels and trowels. The entire unit was excavated as one unit; that is, we did not excavate by individual 1-x-1-m squares. We excavated by natural strata, but not exceeding 10 cm in thickness. The generally rocky nature of most of the units naturally slowed the excavation so that anomalies, soil colors and artifacts were observed during excavation. Soil was screened through quarter-inch hardware cloth, which accounting for the thickness of the wire has a span of 7/32 inch, or 6 mm. At the completion of each level the floor was shovel shaved and/or troweled to better expose variations in soil color and texture. Plan drawings and photographs of levels were done on an as-needed basis, if stains, features, rocks or other aspects of the level needed documentation. Excavation continued until it was absolutely clear that subsoil had been reached. The plan view and one profile view of each completed unit was drawn and photographed. Each unit was then backfilled.

Excavations began on October 18, 2017 with a crew of six, Joel Jones, Tom Gresham, Ron Schoettmer, Kathy Mulchrone, Dan Elliott, and Greg Beavers, who were assisted by KCBA members David Noble and Walker Chewning. Units were begun at Priority Target 5, on the lower, northeastern flank of War Hill, and Priority Target 7, next to the branch due west of War Hill (Figure 10). The unit at Priority Target 5 was completed the next day, October 19, and the unit at Priority Target 7 was completed on October 20. Two school buses of Middle School students from Elbert County arrived on the morning of October 19 to have a tour of the natural and cultural resources of the Kettle Creek Battlefield led by Dr. Joseph Harris. Taking advantage of their well-timed arrival, we guided them to the two open units and explained the goals, methods and results so far of our excavations.

On November 8 a crew of four, Joel Jones, Tom Gresham, Ron Schoettmer and Kathy Mulchrone, assisted by David Noble, began and completed units at Priority Target 1 and Priority Target 3, located about 10 m apart just off the crest of the hill north of War Hill, where Liberty Church once was located. On November 9 the crew of Jones, Gresham and Schoettmer, assisted by Noble, began and completed a unit at Priority Target 4, which was just 1 m from Priority Target 7, near the branch on the west side of War Hill.

On December 7, 2017 Jones and Gresham joined Noble to obtain soil core samples from several of the unexcavated targets and to prepare topographic maps of the terrain around the five excavated targets. With the autumn leaf fall and a few rains, it was already difficult to discern the precise location of some of the units.

Priority Target 1

Priority Target 1 is located on a gentle slope at the end of a ridge crest on which the ca. 1780s Liberty Church once stood (Figure 10). This is an area, Locus K, where Elliott (2008:134) encountered numerous battlefield artifacts, mostly bullets (see Figure 6). This target was detected by the HRD dogs in 2017 as HRDD 12, and was confirmed with a GPR reflection in 2017 as GPR 12A, which had a reflection depth of 0.35 m (Bigman 2017:8, 9, 12). The HRD dog alert cross and GPR reflection pin flag were nearly touching one another. In preparation for this ground-truthing phase of the project, it was assigned Priority Target #1 by Dan Bigman and David Noble, which is how it was identified in field notes, on the photo board and in this report. This target is in an area that had several other HRD dog alerts and GPR reflections, as shown in Figure 12. Priority Target 2/3 is 10 m to the north-northwest, and about 1.0 m down slope. An unnumbered HRD dog alert cross and GPR pin flag are 10 m to the north-northeast, and almost 1.0 m up slope (Figure 12). This area is devoid of underbrush and has a scatter of mature pine trees (Figure 13). The unit was excavated by Joel Jones and Kathy Mulchrone on November 8, 2017.

The test unit at Priority Target 1 was oriented with grid north at 18°. Maximum relief of the surface of the unit was 29 cm, from the high point at the northeast corner to the low point at the southwest corner. There was a slight hump of several centimeters at the central portion of the south edge of the unit, just north of a visible hole from a rotted tree 30 cm south of the unit. Probing around the white cross and pin flag was inconclusive, but generally indicated no grave shaft. While vague, the probing went slightly deeper in the east central portion of the unit, but not to a depth to indicate an excavated grave pit. Metal detecting in and around the unit prior to excavation resulted in the recovery of two metal artifacts from within the unit (Figure 14). One was a piece of iron that is triangular in cross section, is 38 mm long and weighs 20.0 g (Figure 15 a). The other is a curved piece of iron that is round in cross section, is about 30 mm long and 8 mm in diameter, and weighs 7.5 g (Figure 15 b). We do not know what either of these pieces are. A third artifact was metal detected after the excavation of Level 1, this being a slender, burned cut nail (Figure 15 c) found very close to the piece of curved iron. This cut nail likely dates to the latter half of the nineteenth century. As will be discussed, both this unit and Priority Target 3 encountered mid- to late nineteenth century household artifacts that almost certainly derived from a house that was located further up the ridge, perhaps about 70 to 90 m to the northeast.

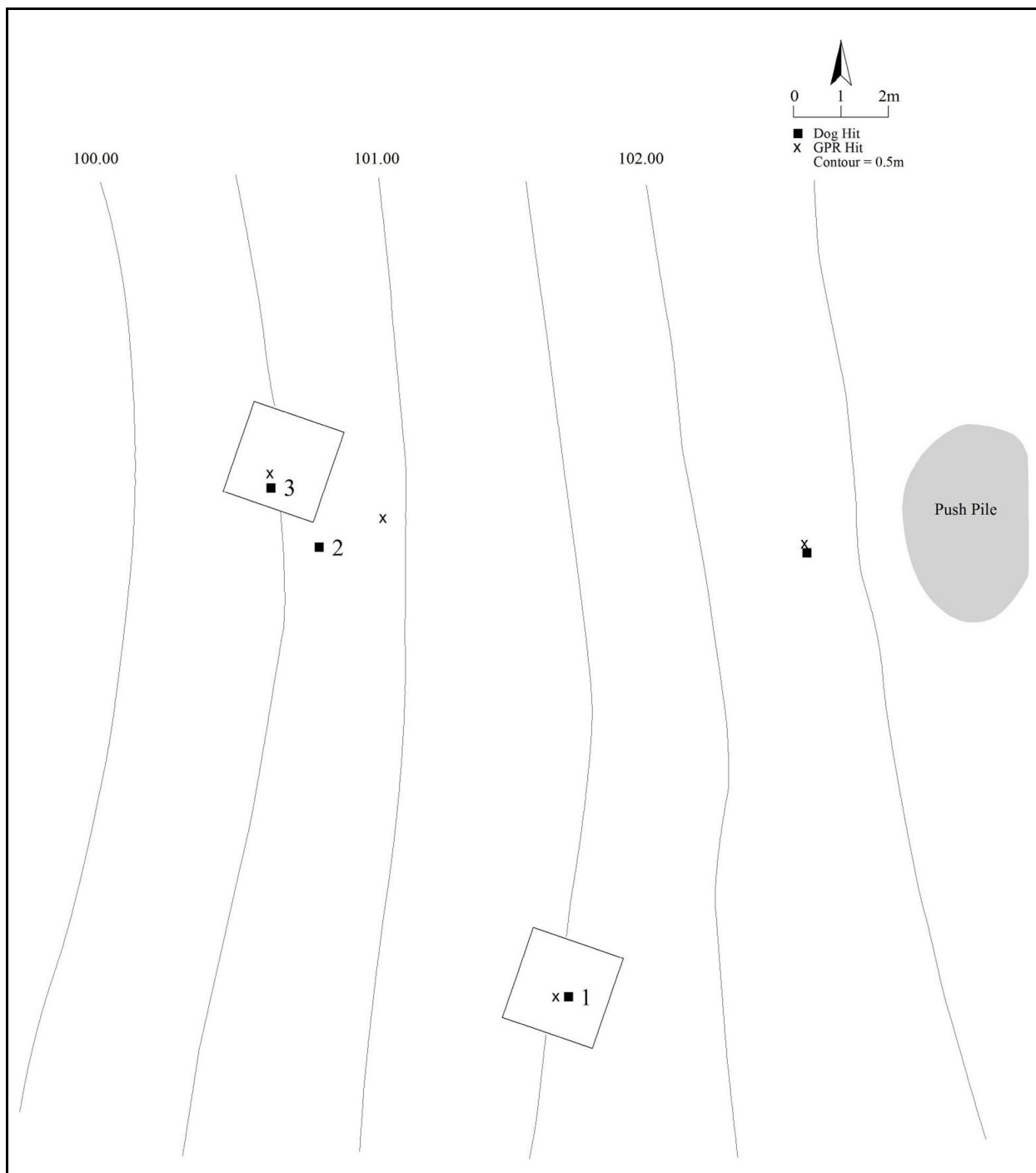


Figure 12. Topographic map of area around Priority Target 1 and Priority Target 3.



Figure 13. View of Priority Target 1 test unit prior to excavation, looking north-northwest, with Priority Target 3 in background.

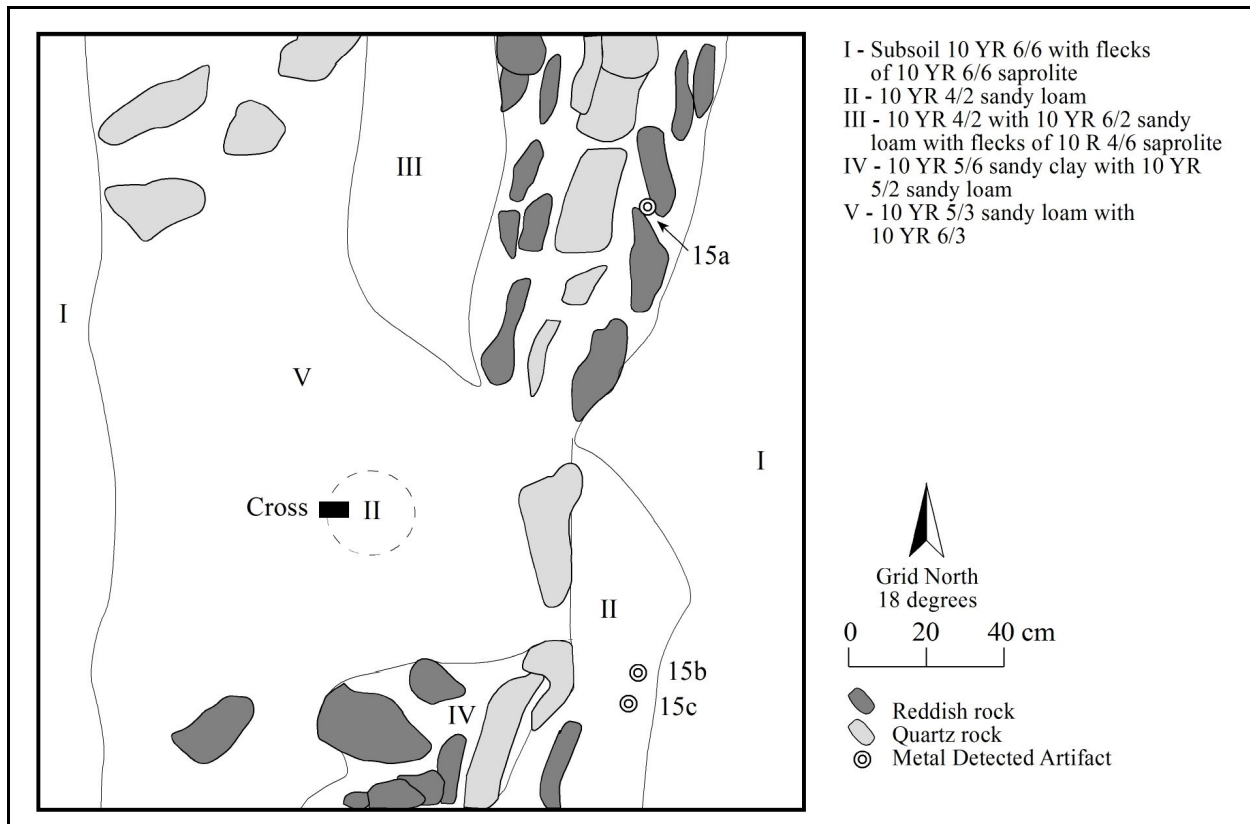


Figure 14. Plan view of Priority Target 1, at base of Level 2, with metal detected artifacts added.

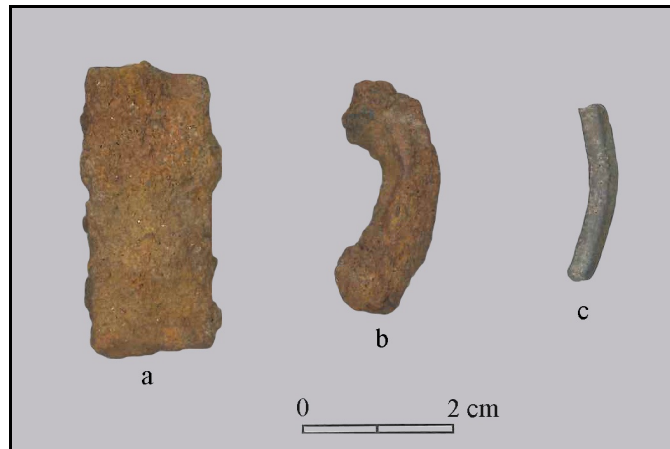


Figure 15. Metal Detected artifacts from Priority Target 1; recovery locations depicted in Figure 14.

Level 1 at Priority Target 1 was composed of a yellowish brown (10YR5/4) very rocky sandy loam that ranged from 11 to 14 cm in thickness. The level terminated when dense rock and slightly darker soil was encountered in much of the unit. While not uniform in soil color or density of rock, it was not possible to clearly discern any natural or cultural features. However, an ill-defined area in the north central portion of the unit exhibited slightly darker brown soil (10YR5/3) and was noted as a possible feature. The surface hump of soil at the midpoint of the southern edge was seen in Level 1 to be rockier and more mottled than most of the unit, and it contained two rotting tree roots. We believe this is some sort of tree disturbance, possibly a tree throw that has weathered down to being almost level. It seemed that the level was terminating at rocky subsoil. The level yielded one small fragment of clear bottle glass and one unidentifiable, highly rusted piece of iron. A large angular quartz rock and several small pieces of angular quartz were retained as possible prehistoric artifacts, but upon washing and analysis in the lab, we conclude that these are not cultural artifacts.

In Level 2 apparent natural veins of bedrock were exposed, running roughly north-south through much of the unit (Figure 16). This was composed of a reddish brown rock and quartz rock. The slightly darker soil in the north central part of the unit became darker, identified as dark grayish brown (10YR4/2), and more diffused in the unit. Hard subsoil composed of brownish yellow clayey sandy loam with saprolitic rock was encountered at the east and west edges of the unit. The excavation of the level focused on removing the dark grayish brown soil, which was mostly amid and just west of the apparent natural vein of bedrock. This vague lens of dark grayish brown soil pooled to a small area near the center of the unit that at the base of the level was about 20 to 23 cm in diameter (Figure 14). This divot of darker soil is where the white cross marker for the HRD dog alert was placed. It was excavated by trowel and found to be about 6 cm lower than the rest of the floor of Level 2. The entire contents were placed in a sealed plastic bag as a soil sample, which weighs 680 g. No artifacts were observed and no charcoal, indicative of a burned tree, was observed. The soil sample has not been processed, but David Noble also obtained a small sample of this soil for future testing. The deepest part of the dark grayish brown lens, at the divot, was 26 cm below surface. At the completion of Level 2, the unit was again metal detected, and no signals were given.

The unit exposed soil and rock formations that are oriented to the north-northeast, generally following the contour of land (Figure 16). We believe this reflects natural veins, or dikes, of resistant



Figure 16. View of Priority Target 1 after excavation of Level 2, looking south.

rock amid weathered soils, but we cannot rule out that cultural land use practices related to farming, such as terracing, or timbering, such as skidder trails, might have modified the formations. It appears that darker, more organic soil collected or formed in between veins of rock and hard subsoil, possibly as a result of ground water flowing down the ridge slope over natural veins of rock. It appears that the deepest pocket of this lens of organic soil is what the HRD dogs were detecting, as the marker for their alert is directly above this pocket. We cannot rule out that this shallow, amorphous, approximately 20-cm thick lens of darker soil was the result of the digging of a shallow grave pit in 1779, but it does not seem likely. The presence of mid- to late nineteenth century artifacts in the unit suggests that most, and likely all, of the artifacts are of this period, and are not Revolutionary War burial objects. The smaller artifacts, and especially those found at nearby Priority Target 3, suggest that some artifacts may have washed down slope from the likely home site on the crest of the ridge to the northeast. In sum, there is no apparent archaeological evidence of a burial in this unit, other than the HRD dog alerts and the GPR reflection.

Priority Target 3

Priority Target 3 is located 10 m to the north-northwest of Priority Target 1, also on a gentle slope at the end of a ridge crest on which the ca. 1780s Liberty Church once stood (Figure 10). This is an area, Locus K, where Elliott (2008:134) encountered numerous battlefield artifacts, mostly bullets (Figure 6). We believe this target was detected by the HRD dogs in 2015 as “Alert Target 1, Possible Cemetery” as shown in Figure 4 of Bigman’s (2015) report. It may have been confirmed with a GPR reflection in 2016, but was not assigned a number in the report of that investigation

(Bigman 2016), and we cannot tell if this reflection is for Priority Target 3 or Priority Target 2, which are very close to one another. It also may have been recorded as a GPR reflection in Bigman's (2017) investigation where a reflection here is labeled as GPR 12B. Because the two GPR reflections are very close here, it is difficult to sort the various dots on Bigman's maps out, but this was clarified in the map of priority targets prepared by Bigman (see Figure 9) and a table Bigman prepared with UTM coordinates of the various priority targets. These show that the target to the west is Priority Target 3 and the other is Priority Target 2. In the field, the white cross marking a HRD dog alert for Priority Target 3 is about 1.5 m north-northwest of the cross for Priority Target 2 (Figure 12). In Bigman's table the two GPR reflections here are 1 m apart, east-west. The reflection depth for GPR reflection 12B, which most likely is Priority Target 3, is 0.47 m (Bigman 2017:8, 9, 12). The HRD dog alert cross and GPR reflection pin flag were nearly touching one another at Priority Target 3. To the southeast, at Priority Target 2, the dog alert and GPR reflection were about 1.5 m apart. As has been mentioned, this target is in an area that had several other HRD dog alerts and GPR reflections, as shown in Figure 12. Priority Target 1 is 10 m to the south-southeast, and about 1.0 m up slope, and an unnumbered HRD dog alert cross and GPR pin flag are 10 m to the east, and about 2.0 m up slope (Figure 12). This area is devoid of underbrush and has a scatter of mature pine trees (Figure 17). The unit was excavated by Ron Schoettmer, Tom Gresham and David Noble on November 8, 2017.



Figure 17. View of Priority Target 3, looking north with Priority Target 3 dog alert cross at left, and tip of Priority Target 2 dog alert cross in bottom foreground; pine tree is in northeast corner of 2-x-2-m unit.

The test unit at Priority Target 3 was oriented with grid north at 15°. Maximum relief of the surface of the unit was 40 cm, from the high point at the northeast corner to the low point at the southwest corner. The surface of the unit exhibited no undulations. A standing pine tree occupied the northeast corner of the unit. Metal detecting in and around the unit prior to excavation failed to locate any metal artifacts in or near the unit. Level 1 at Priority Target 3 was composed of a light yellowish brown (10YR6/4) rocky sandy loam that ranged from 6 to 9 cm in thickness. The level terminated when north-south trending veins of unconsolidated rock (subsoil) were encountered in most of the unit on its eastern and western sides. An area of dark grayish brown (10YR4/2) sandy loam lay in between the two veins of rock, and was treated as a potential feature (Figure 18). A burned tree, with bits of charcoal, was observed in the northwest quadrant of the unit. Level 1 yielded two historic period artifacts (Table 2), a small fragment of plain ironstone and a piece of aqua bottle glass (Figure 19, a and e).

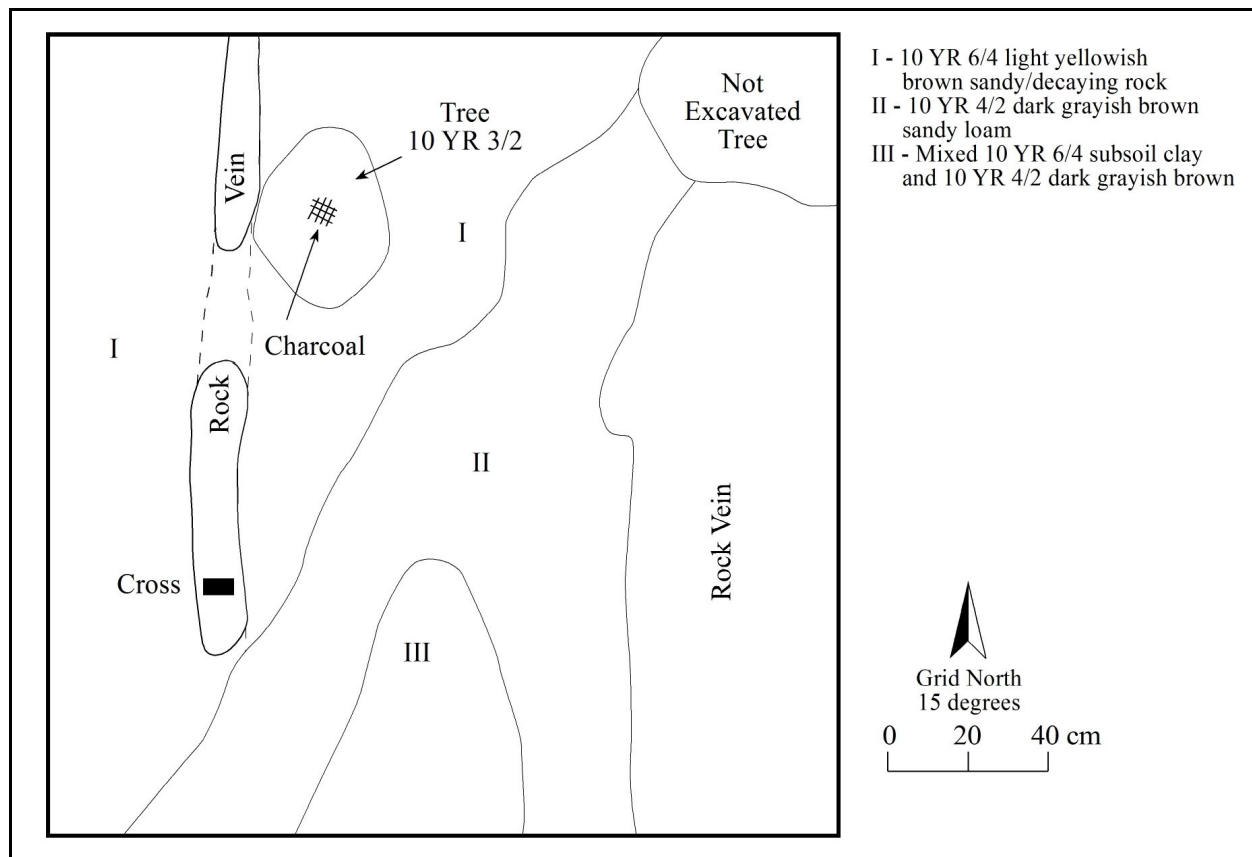


Figure 18. Plan view of Priority Target 3 at base of level 1.

Table 2. Artifacts from Priority Target Unit 3.

	Level 1	Level 2
plain ironstone	1	2
stoneware		1
clear bottle glass		2
brown bottle glass		1
aqua bottle glass	1	
amethyst bottle glass		1
cut nail		1
Total	2	8



Figure 19. Selected artifacts from Priority Target 3; (a, b) ironstone; (c) burned stoneware; (d) brown bottle glass; (e) aqua bottle glass; (f) amethyst bottle glass; (g) clear bottle glass. Artifacts (a) and (e) from level 1; (b-d, f, g) from level 2.

The excavation of Level 2 consisted of carefully removing the dark grayish brown zone of sandy loam, the potential feature (II in Figure 18), from the central portion of the unit. None of the corners of the unit were lowered by the excavation of Level 2. This deposit of soil (II) was sinuous in plan view and was 5 to 10 cm thick, with a maximum depth of about 18 cm below surface. A clayey lens that extends from the southern edge of the unit into Zone II was some sort of interface

between the darker soil of Zone II and a clayey subsoil. The level terminated at a rocky light yellowish brown slightly clayey sandy subsoil throughout the unit, except for the standing tree in the northeast corner and the burned tree in the northwest quadrant. Two ironstone sherds were observed in the northern part of the soil zone, at about 140 cm north and 130 cm east from the southwest corner of the unit. Six other historic period artifacts were recovered from the screening of the fill dirt of Level 2 (Table 2). It is believed that all of these artifacts came from the dark grayish brown Zone II soil. A 677 g soil sample was recovered from Zone II, at about 38 cm below datum, which was about 16 cm below surface. The soil sample has not been processed, but a sample from the same area of this Zone II was taken by David Noble and submitted for testing. After excavation of Level 2, the unit was scanned with a metal detector and no metal was detected.

The ten artifacts recovered from the unit at Priority Target 3 (Table 2; Figure 19) broadly date from the mid- or late nineteenth to the early twentieth century. The single most chronologically diagnostic piece is the fragment of amethyst bottle glass (Figure 19 f), a type of glass that was manufactured from the 1880s to about 1918, during World War I. The bottle glass and ceramics clearly point to a residential function, and indicate the nearby presence of a house, and not a church. These artifacts are also much too late (by nearly a century) to be associated with Liberty Church. Based on the typical siting of late nineteenth century houses, it is likely that the house was on the crest of the ridge, which has been bulldozed and lightly graded. We wonder if the brick pile feature described by Robert Scott Davis, Jr. (1974) on this ridge top, as reported by Elliott (2008:30), was a remnant of a brick chimney base.

The principal aspect of the unit was the sinuous zone of darker soil that angles through the unit, essentially between two veins of saprolitic rock and its surrounding rocky subsoil. Our conclusion is that this is a natural, gully-like feature between linear veins of resistant bedrock, and that natural erosion, perhaps accelerated or altered by human factors such as plowing and perhaps agricultural terracing, created a slight pool in this erosional feature, in which topsoil and a few artifacts from the house site further uphill collected. We could discern no regular, apparent edges of a man-made burial pit, and no human remains or burial artifacts were encountered.

Priority Target 4

Priority Target 4 is one of two excavated targets that are located adjacent to the small branch that encircles the western base of War Hill (Figure 10). Priority Targets 4 and 7 are just 2 m apart and are situated on the sloping foot of War Hill, on a 3-m high bank above and east of the branch (Figure 20). The ground surface here is rocky, indicating that it is an upland landform, and not an alluvial formation. The ground surface around Priority Targets 4 and 7 slopes 3 m over a 14-m length, which is a 11° slope. The branch bed is also very rocky, indicating that it is cutting into a naturally rocky landform. Priority Target 4 is located 3 m from the edge of the branch, due west of the crown of War Hill. It is where a cluster of five HRD dog alerts and four GPR reflections were recorded by Bigman (2016). In Bigman's 2015 report, this cluster of dog alerts (plus one other hit further to the north) are labeled as "Alert Targets 4-9 Possible Individual Interments from Battle" (Bigman 2015:6). In his next report Bigman (2016:7) superimposes GPR reflection events over the northern four of the five clustered dog alerts, but these are not individually numbered. Because of the scale, this cluster of dog alerts and GPR reflections is not individually depicted or numbered in



Figure 20. View of Priority Target 4 near edge of branch bank, looking southwest with deeply entrenched branch in background.

Bigman's (2017) final report. With additional UTM coordinates and mapping provided by Bigman, David Noble identified the pairs of dog alerts and GPR reflections that had been marked in the field (white crosses marking dog alerts and orange pin flags marking GPR reflections), and thus pointed out to us which pair was Priority Target 4 and which pair was Priority Target 7 (Figure 21). As shown in Figure 21, three other pairs of hits are within 10 m of Priority Target 4. As mentioned, none of these dog alerts or GPR reflections were given identifying numbers until just prior to the current, ground-truthing investigations, when Bigman and Noble identified Priority Targets 4 and 7 on project maps. Priority Target 4 was excavated by Joel Jones, Ron Schoettmer and Tom Gresham on November 9, 2017.

Priority Target 4 was marked with an HRD dog alert white cross immediately next to a GPR reflection orange pin flag. The area around the markers had been metal detected earlier, and three pieces of iron of unknown age were found within or very close to the unit. In addition, several pieces of barbed wire, a fencing staple and a modern piece of metal were detected in the vicinity and not retained. Two of the recovered pieces at Priority Target 4 are round in cross section (6 mm diameter), about 8 cm long, and slightly curved at their ends (Figure 22, a and b). The third piece is squared in cross section, tapered in thickness, gracefully curved, and about 7.5 cm in length (Figure 22, c). We cannot be sure if any of these are hand wrought, nor can we discern the function and age of them. The rounded, slightly curved pieces could be handles and the squared curved piece could be a hook.



Figure 21. Topographic map of area around Priority Target 4 and Priority Target 7.



Figure 22. Metal detected artifacts near Priority Target 4.

Since no houses are documented in this area, it is possible that these artifacts relate to the battle. Loyalist leader Colonel Boyd had his headquarters on top of War Hill, and he may have had defensive positions around the base of the hill. However, as the other clearly modern artifacts that were detected indicate, they could also be associated with much later activities, such as farming or timbering.

Prior to laying out the unit, the area around the markers was probed. Compacted, rocky soil was encountered throughout, with the probe usually only able to penetrate about 10 to 15 cm. The probing detected some small areas of slightly greater depth, but not of sufficient size, uniformity or depth to indicate a burial pit.

The unit was laid out over the markers and to avoid trees. It was oriented at 345°. Maximum relief of the surface of the unit was 41 cm, from the high point at the southeast corner to the low point at the northwest corner. Level 1 was excavated to follow the slope of the ground surface and removed the top zone of very rocky sandy loam that varied in color from dark brown (7.5YR3/4) to reddish brown (5YR4/4). It was roughly 10 cm in thickness, but measured from 8 to 12 cm in thickness at the corners. Although the entire level was rocky, upon completion of the level it was evident the eastern edge and southwestern portion of the unit were less rocky (Figure 23). The interior majority of the unit was rockier and slightly darker in color than the east and west edges of the unit. We proceeded with Level 2 believing the central rocky zone could be a burial feature. The soil of Level 2 was not substantially different than that of Level 1, and our focus was on exposing the extent and borders of the central rocky zone. The level averaged 7 cm in thickness, with corners ranging from 4 to 11 cm. At the conclusion of Level 2, a distinct boundary between a nearly rock-free eastern zone (III in Figure 24) and the rest of the unit was obvious. The eastern rock-free zone, composed of reddish brown sandy clay loam, was believed to be subsoil. A line of rocks along the straight-line border of Zones II and III in Level 2 was encased in darker colored soil and was thought to be some sort of natural vein of rock (Figure 25). The interior portion of Zone II remained slightly



Figure 23. View of Priority Target 4, base of Level 1, looking west.

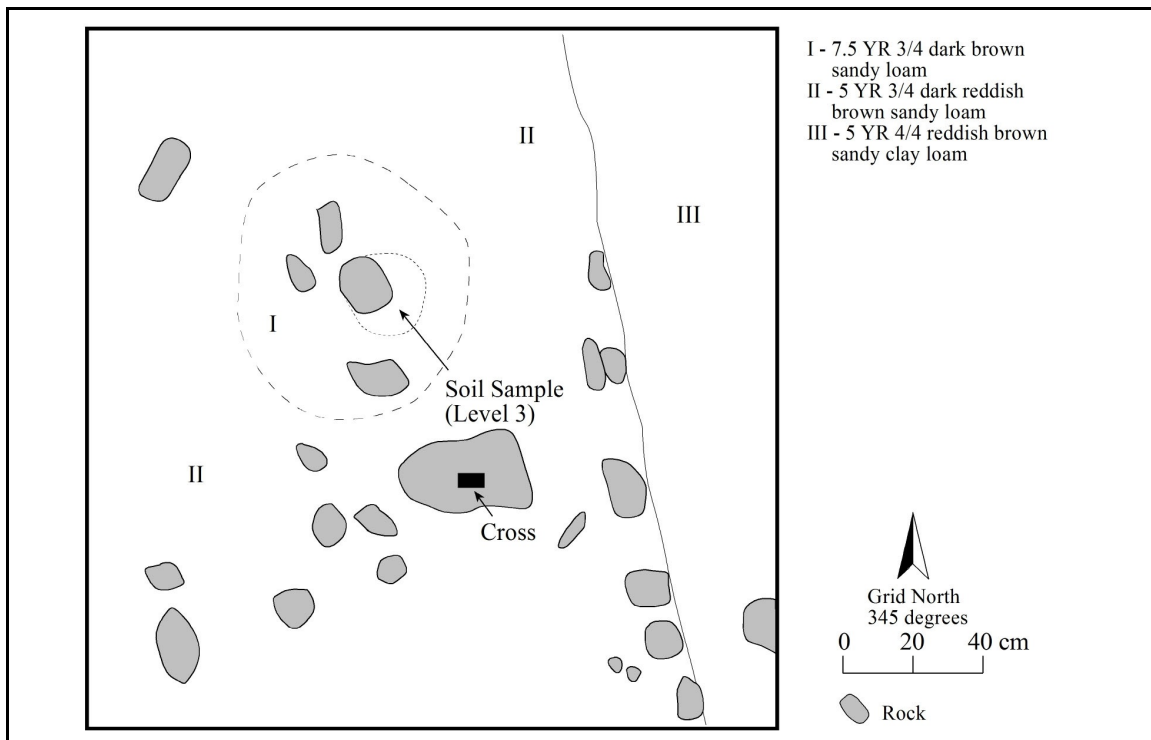


Figure 24. Plan view of Priority Target 4, base of Level 2.



Figure 25. View of Priority Target 4, base of Level 2, looking west.

darker in color than the rest of the zone, and was recorded as Zone I, dark brown (7.5YR3/4) sandy loam.

Believing that Zone II was the remaining layer of top soil overlying subsoil and would quickly give way to subsoil, we obtained a soil sample from this Zone II before excavating Level 3. This sample, weighing 1,484 g, was from underneath a large rock where the HRD dog alert cross had been placed. This did not appear to contain any artifacts or bone, but it has not been processed. David Noble also obtained a soil sample from this zone at this time.

The excavation of Level 3 consisted of the removal of Zones I & II down to uniform subsoil, which was a reddish brown (5YR4/4) sandy clay loam. For the eastern third of the unit and northwestern corner, this required removing only 1 or 2 cm. For the interior and southwest corner, up to 11 cm of soil was removed. As subsoil was reached over almost the entire floor, one small divot of darker soil remained about 50 cm to the north-northwest of the cross (Figure 24) and this was gathered as a second soil sample from the unit, weighing 1,117 g. This sample has not been processed. The resulting floor of the unit sloped downward fairly uniformly from east to west, generally matching the surrounding ground surface. The excavation revealed that the thin band of dark soil that coincided with a line of rocks across the bottom of Level 2 and which separated Zones II and III (Figure 24), was a result of a large, straight, rotted tree root (Figure 26). The tree root grew along the top of the hard subsoil, and when it died and rotted it created a linear depression that captured nearby rocks. The total depth of the unit ranged from 16 to 25 cm below ground surface.



Figure 26. View of Priority Target 4, base of Level 3, looking west, with rotted tree root stain in foreground.

The bottom of the unit was nearly rock free, with no visible or textural indications of a burial pit. No artifacts or human remains were observed or collected.

Priority Target 7

Priority Target 7 is the other of two excavated targets that are located adjacent to the small branch that encircles the western base of War Hill (Figure 10), and was the first unit excavated. It is just 2 m to the southeast of Priority Target 4, right at the brink of the branch bank (Figure 27). Like Priority Target 4, it is situated on the rocky, sloping foot of War Hill, and is not in an alluvial setting. Also like Priority Target 4 (see discussion above), Priority Target 7 was one of five HRD dog alerts coupled with four GPR reflections that were recorded by Bigman (2016) in a 15-x-20-m area (see Figure 21). In the field, this is marked by an HRD dog alert cross immediately adjacent to a GPR reflection event orange pin flag. These markers were not individually numbered, but with additional UTM coordinates and mapping provided by Bigman, David Noble identified this pair of markers (dog alert cross and GPR pin flag) as Priority Target 7. Priority Target 7 was excavated by Joel Jones, Dan Elliott, Kathy Mulchrone, Greg Beavers and David Noble on October 18, 19 and 20, 2017.

Prior to the laying out of the unit, the area was metal detected by Greg Beavers. A moderate amount of metal was encountered in the general vicinity, most of which was modern. No metal artifacts were found within 2 m of the markers. The 2-m area around the markers was then probed



Figure 27. View of Priority Target 7, looking west-southwest.

for indications of the softer soil of a grave shaft. The probe encountered impenetrable rocky soil almost everywhere, with only a few probe attempts penetrating more than 15 to 20 cm. No burial pit, not even a shallow one, was discernible with the probing. The unit was laid out over the dog alert and GPR reflection and was oriented due north. Maximum relief of the surface of the unit was 46 cm, from the high point at the northeast corner to the low point at the southwest corner. This was the most steeply sloping of the units.

Excavation began by removing the top zone of rocky brown (7.5YR4/3) sandy loam with shovel and trowel. Excavation would follow the slope of the ground surface. Almost immediately after the humus and root mat was removed a slight concentration of rocks was observed in 30-x-40-cm area along the north wall of the unit, and these were mapped and photographed (Figure 28). As the unit was taken down another 10 cm, the concentration of rock ended, and a large oval stain became faintly visible in the center portion of the unit at about 20 cm below surface. There were still scattered rocks throughout the unit, but a slightly greater density was observed in the large, oval stain, which at the conclusion of Level 1, at about 20 to 25 cm below surface, was designated as Feature 2 (Figure 28). At its detection Feature 2 was barely distinguishable from the surrounding matrix in color (Figure 29), with the feature being brown to dark brown (7.5YR4/4 to 7.5YR3/4) with a mottling of matrix soil, which was strong brown (7.5YR5/6). At the conclusion of Level 1 the unit, and especially Feature 2, was metal detected, and no metal was signaled. No artifacts were recovered from Level 1.

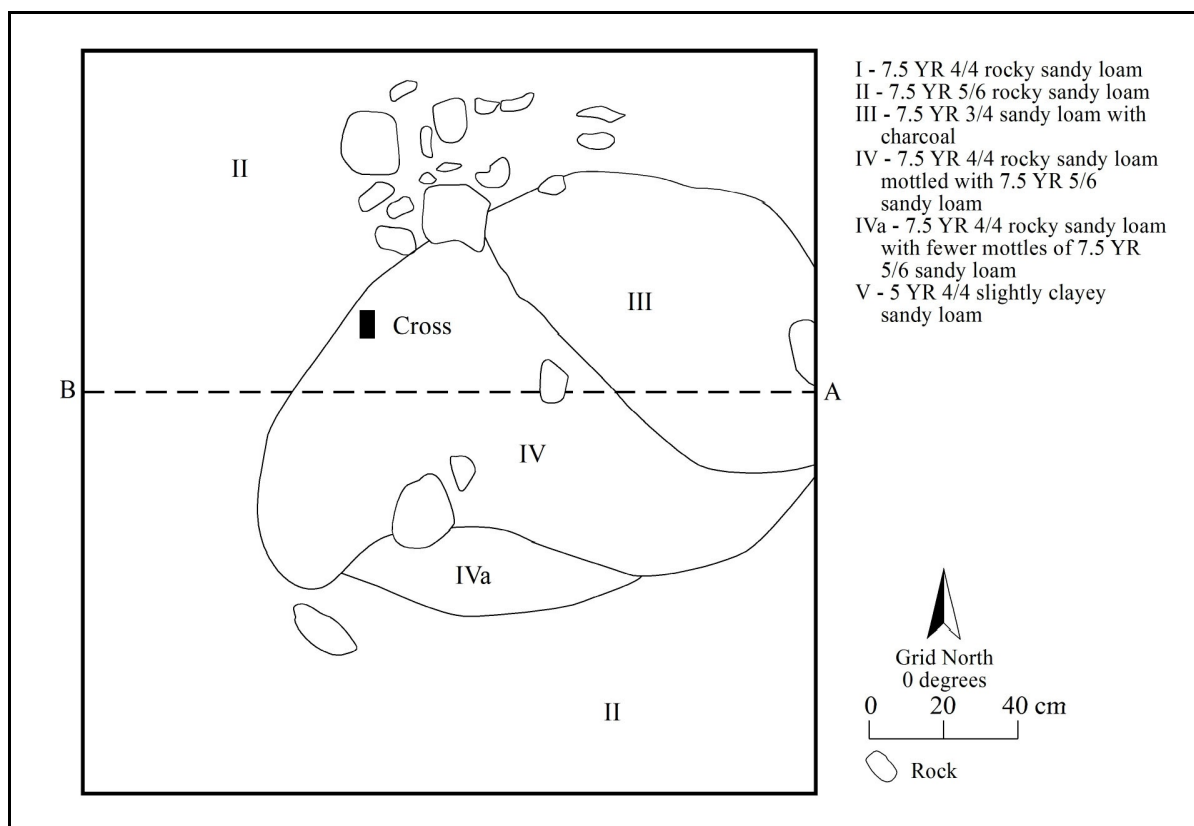


Figure 28. Plan view of Priority Target 7, Level 1.



Figure 29. View of Priority Target 7, Base of Level 1, looking east.

Since Feature 2 occupied most of the unit, we decided to forgo a Level 2 and instead simply excavate the large feature, aware that it was poorly defined and barely distinguishable from the surrounding matrix in soil color and texture and density of rock. We bisected the feature east-west at 105 cm north of the south wall of the unit (Figure 30) and began excavating the south half of the feature. This consisted largely of mapping and then removing the larger rocks in the south half, and then troweling out the soil for screening. After removing the top layer of larger rocks, we obtained a 489 g soil sample from underneath the large rock just south of the dog alert cross, which was about 33 cm below ground surface. With only a slight difference in soil color and texture between the feature and matrix, the edges of the feature were largely determined by the extent of larger rocks. Figure 31 shows the south half of Feature 2 partially excavated. At this point we explored the darker stain at the east edge of Feature 2, which was a dark brown (7.5YR3/4) sandy loam with few rocks and some flecks of charcoal. We excavated the portion in the south half of the feature, and then the remainder that extended northward into the north half of Feature 2. It contained no artifacts and is interpreted as a burned tree. We then completed the excavation of the south half of Feature 2 (Figure 32), down to a reddish brown (5YR4/4) sandy clay subsoil. Figure 33 shows the amount of rock removed from the south half of Feature 2. No artifacts, internal anomalies or human remains were encountered in the south half of Feature 2. The rocks that largely comprise Feature 2 sloped with the ground surface; that is, the rocks at the west edge, nearer the creek, were lower than those to the east, as shown in the Feature 2 profile in Figure 30. The plan view of Feature 2 in Figure 30 is a composite view of the entire feature, in that it depicts all of the larger rocks encountered in the 21- to 24-cm thick feature.

After the excavation of the south half of Feature 2, we still were not confident about what we were seeing. Essentially Feature 2 was a 20- to 24-cm thick concentration of fist- to softball-sized rocks (with two or three larger rocks) in a roughly oval shape. We could detect no textural difference at the edge of the feature, as might exist at the edge of a burial pit. If this were a burial pit, it extended to about 45 cm below present ground surface, which is deep enough to contain an average body below surrounding ground level.

We then excavated the north half of Feature 2, from which the tree stain at the east end had already been excavated. However, a portion of this eastern tree stain extended down in a constricted area to subsoil (Figure 34). The northern half contained fewer rocks than the south section, and had a second tree stain, ca. 20-cm diameter stain that was present at the first detection of the Feature, and that persisted through the feature and into the subsoil below. This tree stain exactly coincides with the HRD dog alert cross (Figure 34). The northern half of Feature 2 also contained no artifacts or human remains. A 524 g soil sample was gathered from the base of the feature, at the tree stain that coincides with the dog alert cross at about 43 cm below ground surface. David Noble also obtained soil samples from Feature 2. The final excavation of Feature 2 was rather amorphous in shape (Figure 34 and 35).

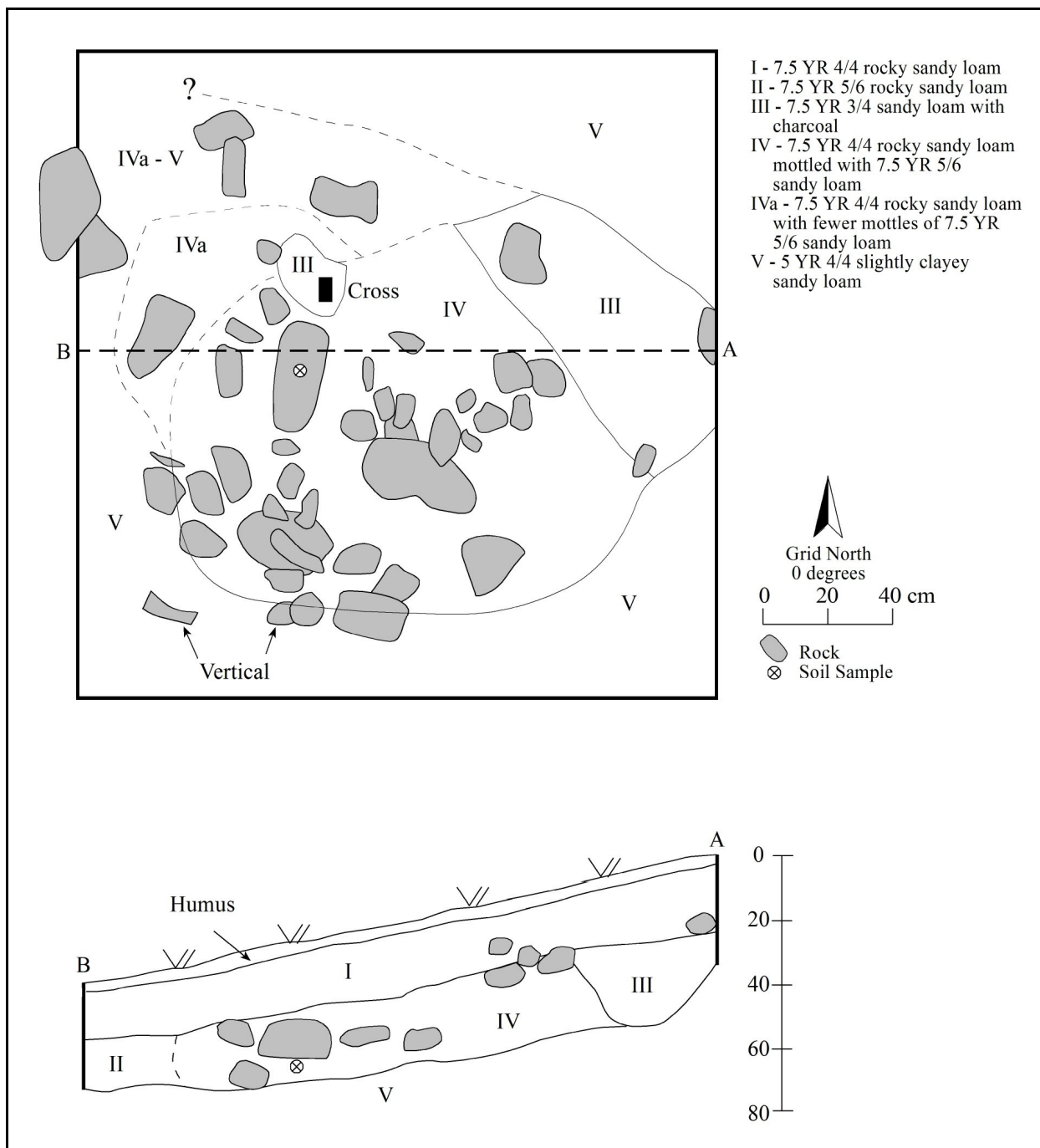


Figure 30. Plan view and profile of Feature 2 in Priority Target 7 test unit.



Figure 31. View of Feature 2 in Priority Target 7 test unit, with south half of feature partially excavated, looking north.



Figure 32. View of Feature 2 in Priority Target 7 test unit, with south half of feature completely excavated, looking north.



Figure 33. View of rocks removed from south half of Feature 2 in Priority Target 7 test unit.

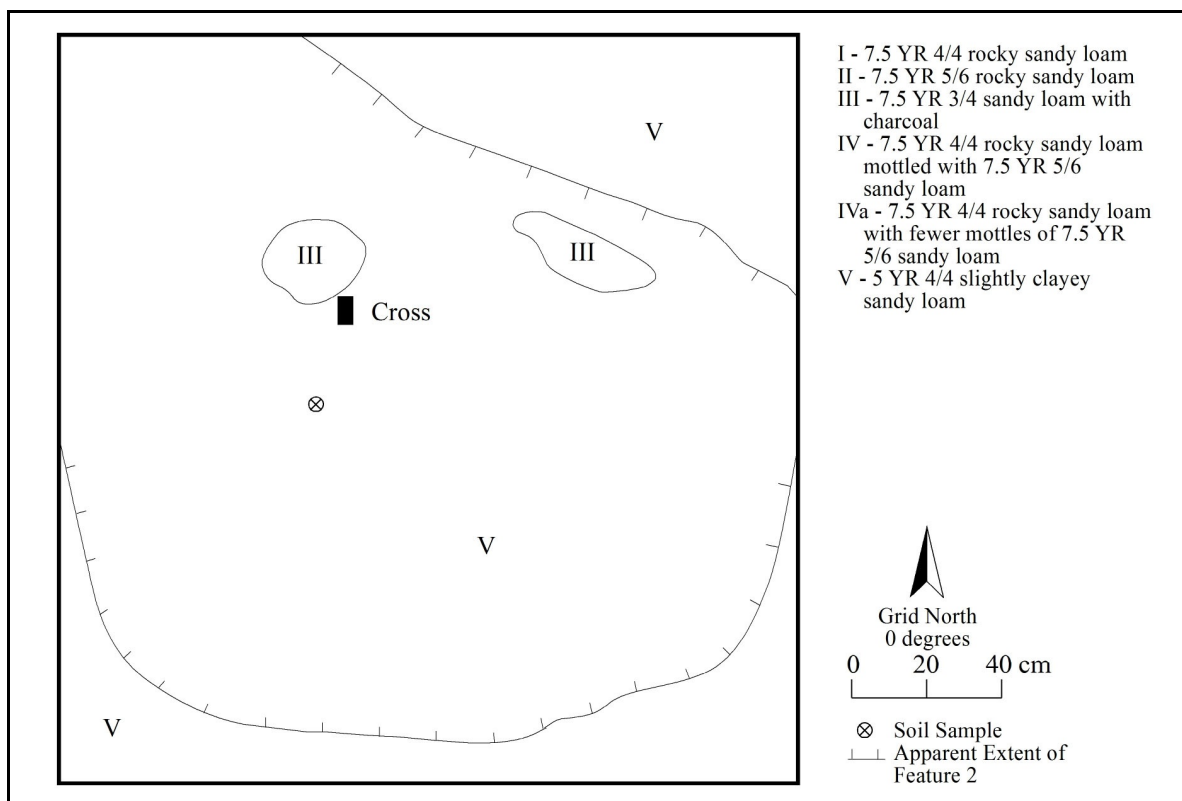


Figure 34. Plan view of completed excavation of Feature 2, Priority Target 7.



Figure 35. View of completed excavation of Feature 2, Priority Target 7, looking north.

Priority Target 5

Priority Target 5 is located on the gently sloping lower flank of War Hill, on its northeast side (Figure 10). It is about 5 m above a saddle between War Hill and another ridge top to the northeast. This is an area where Elliott (2008:134) encountered numerous battlefield artifacts, mostly bullets (Figure 6). This target was detected by the HRD dogs in 2017 as HRDD 7, and was one of four dog alerts on this northeast slope of War Hill (Bigman 2017:8). Two GPR reflection events were located near the four dog alerts, the closest being GPR 7 (Bigman 2017: 9). GPR 7 had a reflection depth of 0.6 m (Bigman 2017:7). In the field we saw that this was the only priority target where the HRD dog alert cross and GPR reflection pin flag did not essentially coincide spatially. The dog alert was 2.5 m to the west and slightly uphill from the GPR reflection (Figure 36). Because scent is known to migrate in soils (although not so much uphill), David Noble advised us to place our unit on top of the GPR reflection pin flag, which was done. HRD dog alert 8 and GPR reflection 8 are located 10.6 m to the north-northeast and about 2.5 m downslope from Priority Target 5 (Figure 36). This area is devoid of underbrush and has a scatter of mature pine trees (Figure 37). The slope around the unit was measured to be 12°. The unit was excavated by Tom Gresham and Ron Schoettmer on October 18 and 19, 2017.

The test unit at Priority Target 5 was oriented with grid north at 30°. Maximum relief of the surface of the unit was 29 cm, from the high point at the northwest corner to the low point at the southeast corner. The ground surface was smooth and uniformly sloping downward to the northeast. Probing around the white cross and pin flag was inconclusive, but generally indicated no discernible grave shaft at or between either marker. Probing concentrated on the area around the GPR reflection,

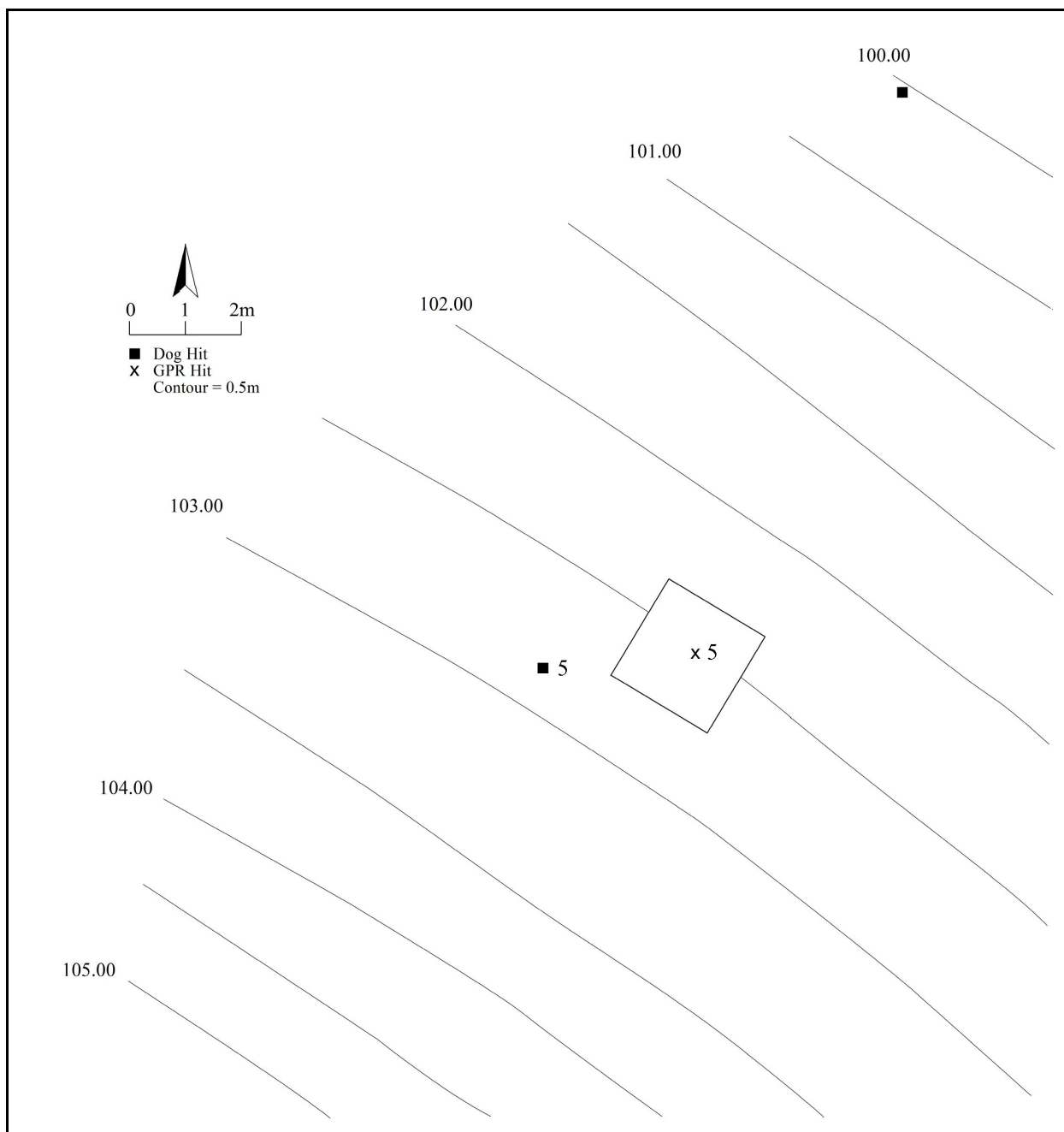


Figure 36. Topographic map of area around Priority Target 5.



Figure 37. View of Priority Target 5, looking southwest.

where the test unit was intended to be placed. As at other units, the probing went slightly deeper in certain areas, but not to a depth or with a consistency to indicate an excavated grave pit. Metal detecting in and around the unit prior to excavation resulted in one response about 80 cm southwest of the HRD dog alert cross, well beyond the limits of the proposed unit that would overlay the GPR hit. However, we could not isolate a piece of metal and conclude it was either very small or the signal was indicating a rock with iron in it.

The test unit at Priority Target 5 was oriented to be perpendicular to the slope of the ground surface, and was excavated in roughly 10-cm levels following the slope of the ground surface. Level 1 included the root mat/humus and top soil zone of grayish brown (10YR5/2) sandy loam. Unlike all other units, this one had very few rocks. Level 1 terminated when a lighter color soil was encountered, at 10 cm below surface. It had no artifacts. Level 2, which averaged 9 cm in thickness, was composed of yellowish brown (10YR5/4) sandy loam and one or two rocks. No features or unusual attributes were observed in Level 2, but it did yield three artifacts, a projectile point made of dark red-colored jasper and two small quartz flakes (Figure 38). The projectile point has its tip and both ears of the stem broken off, but the body is intact and is beveled with serrated edges. It is an Early Archaic, corner notched point that we type as Kirk Corner Notched (Whatley 2002:57). The point is 27 mm wide and we extrapolate that it was 52 mm long. Whatley (2002:58) dates Kirk Corner Notched points from 9,500 to 8,500 B.P.

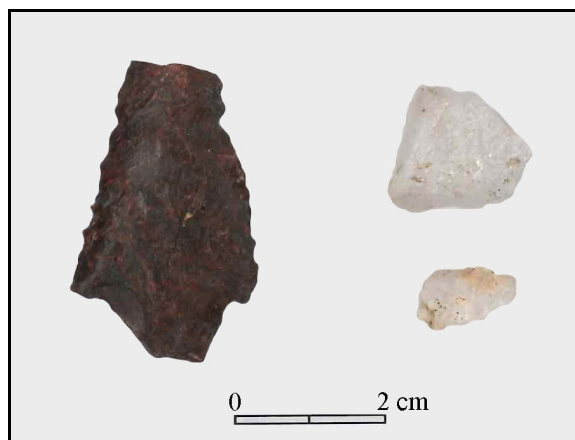


Figure 38. Kirk Corner Notched Point (left) and quartz flakes from Level 2, Priority Target 5.

Prior to the excavation of Level 3, the unit was metal detected again, and no metal was signaled. Level 3, a 10-cm thick continuation of the yellowish brown sandy loam from above, was devoid of artifacts and rocks, but did exhibit a small, irregular stain of darker soil in the northwest corner (Figure 39). This was composed of loosely packed dark yellowish brown (10YR4/6) sandy loam amid a compacted matrix that was becoming lighter (towards 10YR6/6) and more clayey. The looseness of the soil indicated that this was a relatively recent, natural feature, possibly a rotted tree root/stump. However, to be cautious it was labeled and treated as a potential cultural feature, and was labeled as Feature 1. No other stains or possible features were noted in the unit. To investigate this stain, the western half of the unit was taken down another 10-cm level, with the feature excavated separately. A large (5.31 kg) soil sample was taken from the portion of the feature within the unit, from 35 to 38 cm below surface. No artifacts or charcoal were observed as this soil was troweled out of the feature. The soil sample has not been processed. The rest of the feature was removed and screened, and then the unit was taken down another 8 to 10 cm as Level 4, so that the west half of the unit bottomed out at subsoil, a brownish yellow (10YR6/6) clayey sandy loam, at 36 to 40 cm below surface (Figure 40). The irregularly shaped but somewhat oblong feature extended below the bottom of Level 4, and was 38 cm in thickness, 60 cm long and 21 cm wide. A soil sample (369 g) was recovered from the base of Level 4 at the near center of the test unit, not associated with any stain or feature, but where the GPR reflection had been observed. It has not been processed, but was observed to not contain artifacts or human remains. David Noble also took a soil sample from this lowest level at the center of the test unit.

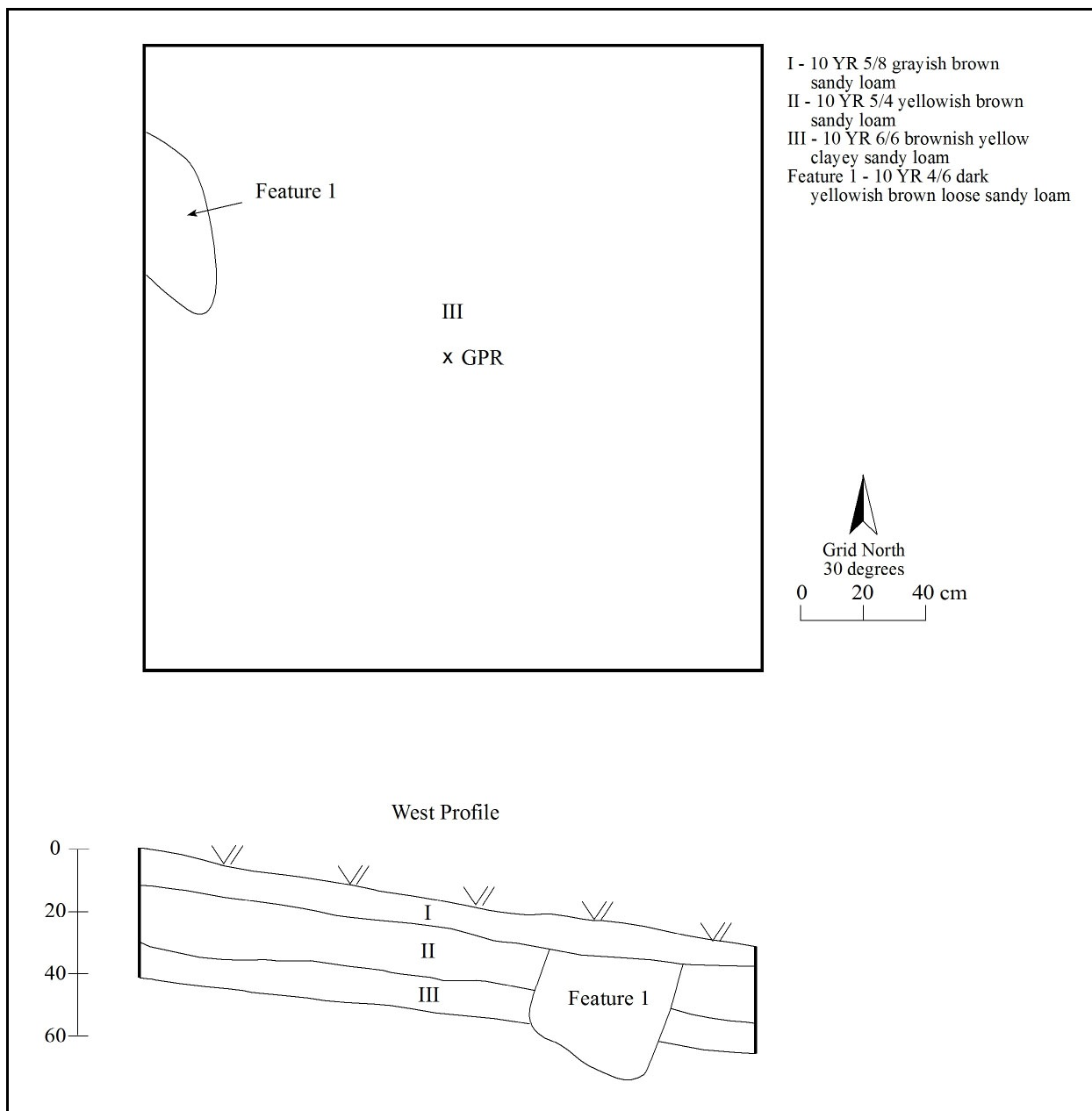


Figure 39. Plan view of base of Level 3, Priority Target 5, and west profile of unit.



Figure 40. View of Priority Target 5, Level 4, showing excavated Feature 1, looking north-northeast.

We remain convinced that Feature 1 is a natural, relatively recent feature and is not a cultural feature associated with a field burial. Priority Target 5 had no clearly discernible indicators of a burial. No artifacts, human remains, or stains or textural indicators of a burial pit were observed.

Summary and Conclusions

In October and November 2017 Southeastern Archeological Services conducted ground-truthing excavations at five locations where two previous rounds of remote sensing investigations had indicated the presence of the possible remains from the field burial of soldiers killed in the Battle of Kettle Creek on February 14, 1779. All of these rounds of investigation have taken place in the past ten years, when the local governments of Wilkes County and the City of Washington began working with archaeologists and historians, often in concert with the Kettle Creek Battlefield Association, to gather facts and archaeological data about the battle. This modern professional attention to the battlefield can be viewed as beginning with a cursory study of Kettle Creek, and many other battlefields, by historian/preservationist Matt McDaniel in 2002, as part of a National Park Service battlefields protection program. This was followed by a comprehensive historic documents review by Dan Elliott in 2008, undertaken to gather information that guided his comprehensive metal detector survey of a core area of the battle site. His report (Elliott 2008) remains the primary document that has gathered historic documentation and wide-area archaeological survey data to present the most comprehensive understanding of the battle.

With Elliott's (2008) report as a foundation, the KCBA began a multi-phased program in 2015 to try to locate evidence of the burials of those who died on the Kettle Creek battlefield and a possible former church cemetery that would have been within the battle area. There was not much secure archival information on the number, nature or location of the field burials. It was generally believed that more than 70 soldiers, mostly Loyalists, were killed and buried on the battlefield that day, February 14, 1779. It has been generally assumed that the burials were completed in one day, and thus would have been shallow and rather hastily dug. Dan Bigman, of Bigman Geophysical LLC, was brought on to direct a remote sensing survey that consisted of using human remains detecting dogs, often referred to as cadaver dogs, to seek out the faint scent of human bodies that had been buried long ago. In late 2015 Bigman brought in Tracy Sargent of K9 Search & Rescue Specialists, Inc. to conduct an HRD dog survey of three key areas in the battlefield, and the dogs did indeed locate about ten locations of possible human remains scent. There is an ever increasing body of scientific and popular literature on the use of HRD dogs, some of which is summarized in Bigman's (2015) first report. We are not well acquainted with the capabilities and limitations of HRD dogs for locating very old burials, but understand that searching for 238-year old shallow burials is near the limit of HRD dogs' demonstrated capabilities. We have read and heard that scents of volatile organic compounds that signal a human body, even if totally decomposed, can migrate in the soil for at least 3 to 4 m, and as much as hundreds of meters. Since this is an area with which we have had little experience, we leave the interpretation of the results of the HRD dog survey to others, including Dan Bigman and KCBA member David Noble.

In 2016 Bigman used ground penetrating radar to locate potential grave pits (soil anomalies) at the HRD dog alert locations, and he did indeed detect an anomaly at or near most of the alert locations (Bigman 2016). Based on these promising results, another round of HRD dog survey was undertaken, followed by GPR confirmation, with more dog alert locations and GPR anomalies marked in the field (Bigman 2017). Thus, by spring of 2017 Bigman had documented about 20 HRD dog alerts and about 20 GPR anomalies, many of which exactly or approximately coincided spatially.

These were marked in the field with white crosses marking HRD dog alerts and orange pin flags marking GPR anomalies. None of the field markers were labeled or numbered, and only the dog alerts and GPR anomalies from the second round were labeled in Bigman's (2017) report.

By the summer of 2017, the KCBA was ready to initiate the next phase of the project, which would be hand excavation of a sample of the remote sensing "hits" to reveal what was actually in the ground at these select locations. KCBA's David Noble and Dan Bigman conferred and developed a priority list of the most promising seven "targets". Most of these were where a GPR reflection (pin flag) closely coincided with a dog alert (white cross), but in two cases the two markers were 2 to 3 m apart. The dog alerts and GPR reflections for Priority Targets 2 and 3 were only about 2 m apart, and thus were essentially one target. In October and November 2017 five of the Priority Targets, 1, 3, 4, 5, and 7, were ground-truthed with hand-excavated 2-x-2-m test units. The units were excavated with standard archaeological techniques, by natural strata not exceeding 10 cm, using shovels and trowels, maintaining vertical control with a line level and rule, screening soil through quarter-inch hardware cloth, and treating stains and anomalies as potential cultural features. An interesting aspect of the project was that we had very little idea what exactly we were looking for. None of us knew what the burials would have looked like in 1779, or what they would look like today. Mainly, we knew we would be looking for artifacts indicative of field burials of soldiers (buttons, buckles, boot tacks, fired bullets), evidence of an excavated shallow burial pit, and possibly human remains that would be very fragmentary and degraded. Beyond that, we were looking for anything unusual or possibly indicative of a burial, while not knowing exactly what that might be.

The five targets selected for test excavation were all located on upland (non-alluvial) landforms, and all were on sloping ground surfaces. Two (1 and 3) were near the crest of a ridge on which the ca. 1780s Liberty Church was once located, two (4 and 7) were at the western foot of War Hill next to a small branch, and one (5) was on the northeast side slope of War Hill. All were in areas of heavy fighting, where Elliott (2008) recovered numerous bullets and battle artifacts. Four of the units, all but Priority Target 5, encountered very rocky soils from just below the ground surface. Priority Targets 1 and 3, on the ridge north of War Hill, encountered north-south trending veins of bedrock at just 6 to 15 cm below surface. In Priority Targets 4 and 7, next to the branch, soils were naturally rocky from just below the humus zone. At about 10 to 15 cm below surface the rock in Priority Target 7 began to be seen as more dense in an oval-shaped area that occupied most of the unit. This concentration of rock also coincided with slightly darker soils (7.5YR4/4) than the surrounding matrix (7.5YR5/6). This poorly defined, oval-shaped feature of rock and soil was excavated as Feature 2, and was seen to be about 25 cm thick and possibly extending the width of the 2-x-2-m unit. It extended to about 45 cm below the sloping ground surface. This feature is the most convincing evidence we encountered of a possible burial pit, but it is not at all clear that it is indeed a 1779 burial. It appears that the concentration of rock is not a purely natural feature, and that the feature is sufficiently deep to have contained a body. If the feature extends a little further east or west of the unit, which is possible and hinted at, then it would be large enough to contain a body. Like all of the test units, this one lacked burial objects (buttons, buckles, bullets) and visible human remains. Ignoring the HRD dog alert and GPR indications, we believe there is not sufficient archaeological evidence to demonstrate that Feature 2 in Priority Target 7 is a Revolutionary War field burial. However, with virtually no firm basis of comparison, we cannot rule it out. Based on the dog alert and subsequent positive testing of the soil sample from this unit by David Noble, we conclude that Feature 2 is more likely than not to be a burial from the Kettle Creek battle. We can

interpret it as a 45- to 50-cm deep pit, of irregular shape and poor definition, in which a body with no durable objects was placed and covered with a layer of naturally occurring rocks. The lack of visible human remains and artifacts could be explained by a complete degradation of the organic remains in the past 238 years and the stripping of the body's coat and boots prior to its burial. The lack of a bullet could be explained by the soldier having been stabbed to death rather than shot, or by a prior round of metal detecting having removed a bullet from this feature.

Priority Target 4 was just 1.5 m from Priority Target 7, and just 3 m from the edge of the creek bank. It was almost as rocky, but exhibited no concentration of rock or feature stains. It did have three metal artifacts with no indication that a house or building existed nearby. While they could be Revolutionary War artifacts, we believe that more likely they are associated with late nineteenth to twentieth century farming and timbering. The unit encountered a uniform, sloping subsoil that was from 16 to 25 cm below surface.

No other priority target presented any archaeological evidence (again, aside from dog alert, GPR and subsequent soil testing data) for burials. Priority Targets 1 and 3 both contained mid- or late nineteenth to early twentieth century household artifacts, including bottle glass, ironstone, stoneware and metal, in pockets of slightly darker soils tucked in between veins of natural bedrock. We believe the house site would have been located 50 m or more to the northeast, on the crest of the ridge, where more such artifacts and brick can be seen on the surface. It appears that some artifacts, perhaps mostly small ones, were washed down slope along with anthropogenic soils from the house site to settle in deeper pockets amid the veins of rock. There were no pits or other indicators of burials in these two units.

Priority Target 5, on the northeast slope of War Hill, was the one target excavated where the HRD dog alert was not immediately adjacent to the GPR reflection. The dog alert was about 2.5 m uphill from the GPR reflection, and our unit was placed over the GPR reflection. The unit contained no historic period artifacts or cultural features, and was the only unit that had almost no rocks. It did yield an Early Archaic (ca. 9,500 to 8,500 B.P.) projectile point made of dark red jasper.

One aspect of the excavations was our attempt to correlate the HRD dog alert crosses and/or GPR reflections to physical features (such as depressions or pits) in the units that could be remnant burial pits. In one of the first units excavated, Priority Target 7 next to the small creek, the final excavation of the large, rock-infused Feature 2 that may be a burial pit, revealed that the HRD cross was directly over a tree stain that was visible within and below Feature 2. We wondered if this rotted tree had accumulated surrounding organic soil and created an organics-rich target that the dogs detected. However, this idea was discounted because the unit contained another, larger tree stain that apparently was not noted by the dogs or GPR unit. The HRD dog alert cross and GPR flag in Priority Target 1, on the ridge to the north that once had a house, was directly over the lowest pocket of darker soil (a slight divot) amid surrounding rocky subsoil. We wondered if this low spot served as a sump where organic soils accumulated and thus became a target for the dogs. The nearby Priority Target 3 had a similar, but more linear and less well defined low spot, and here the HRD dog alert cross was slightly off to the side, by about 30 cm. Priority Target 4, the second one next to the small creek, revealed a low spot, or divot, of darker soil at the interface with the subsoil, and the HRD dog alert cross had been placed about 40 cm away. Priority Target 5, on the northeast side slope of War

Hill, was excavated over a GPR reflection, and no tree stain, cultural feature or low spot was observed near the GPR pin flag.

The fundamental objective of this investigation was to expose archeological evidence of field burials of those killed in the Battle of Kettle Creek on February 14, 1779. It was hoped that this evidence would include some combination of human remains, clothing artifacts (buttons, buckles, boot tacks), impacted bullets, and a discernible burial pit (shallow grave shaft). We were aware of many arguments for why some or all of these might not be present. Thus, the secondary objective was to simply reveal and record what was in the ground at these locations where HRD dogs and/or GPR survey had indicated a possible burial. We found no clear, indisputable evidence of burials at any of the five targets. That is, no human remains, personal artifacts, bullets, or grave shafts were revealed. However, we do believe that it is more likely than not that the shallow, poorly defined depression that contained a greater-than-normal amount of rock in Priority Target 7 was a Revolutionary War field burial. Certainly the dog alert and subsequent, forthcoming soil testing data strongly support this. It is possible that this is as conclusive and as well preserved as burials will be in the Kettle Creek Battlefield, given the 238-year span since the battle and the ensuing land use and erosion of the battlefield's hilly landscape. However, it is also very possible that we have simply missed, perhaps by just a meter, or several meters, where the burials the dogs were detecting actually are. Also, this has been only a sample of the twenty or more such identified targets, and with more excavation one of the targets could have the conclusive evidence we seek.

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Appendix

Site Form

GEORGIA ARCHAEOLOGICAL SITE FORM

Official Site Number: 9WS370 REVISIT

Institutional Site Number: 9WS370 Site Name: Kettle Creek Battlefield

County: Wilkes Map Name: Philomath USGS OR USNOAA

UTM Zone: 17 UTM East: 325196 UTM North: 3729438

Owner: City of Washington, Plum Creek Timber (others) Address: Washington, GA

Site Length: 1132 meters Width: 841 meters Elevation: + - 168 meters

Orientation: 1. N-S 2. E-W 3. NE-SW 4. NW-SE 5. Round 6. Unknown

Kind of Investigation: 1. Survey 2. Testing 3. Excavation 4. Documentary
5. Hearsay 6. Unknown 7. Amateur

Standing Architecture: 1. Present 2. Absent

Site Nature: 1. Plowzone 2. Subsurface 3. Both 4. Only Surface Known
5. Surface 6. Unknown

Midden: 1. Present 2. Absent 3. Unknown Features: 1. Present 2. Absent 3. Unknown

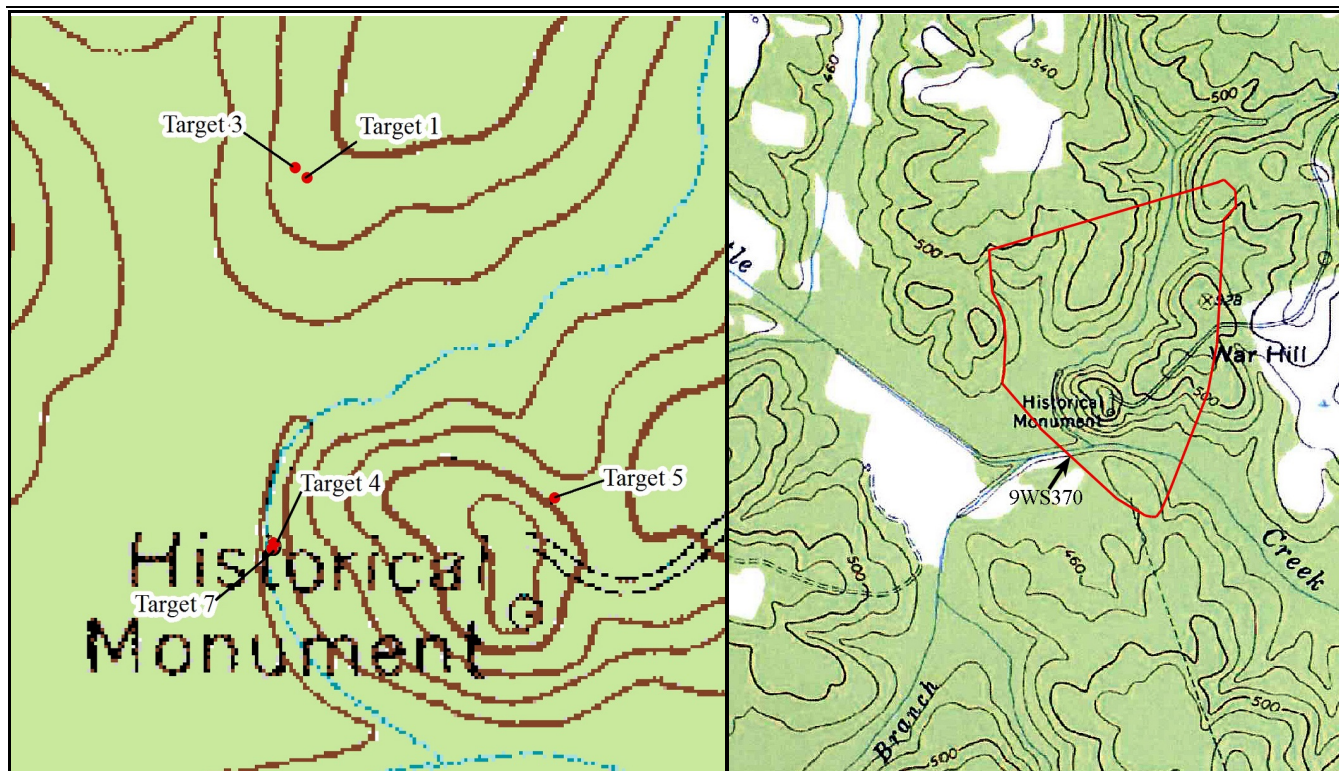
Percent Disturbance: 1. None 2. Greater than 50 3. Less than 50 4. Unknown

Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): Historic Battlefield Scatter

Topography (Ridge, Terrace, etc.): Ridge

Current Vegetation (Woods, Pasture, etc.): Pines and hardwoods

Additional Information: In October and November 2017 we excavated 2-x-2-m test units at five locations where cadaver dogs and GPR had indicated potential field burials of 1779 battle dead. All are within the bounds of site 9WS370. In the course of these excavations artifacts were found within and near the units. One unit had a cluster of rocks suggestive of a burial.



SKETCH MAP

(Include sites, roads, streams, landmarks)

OFFICIAL MAP

(Xerox of proper map)

State Site Number: 9WS370

Institutional Site Number: 9WS370 REVISIT

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed 6. Unknown
7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed 2. Cultivated 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed 11. Logging/replanting

Preservation Prospects: 1. Safe 2. Endangered by: _____
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: Thomas H. Gresham **Affiliation:** Southeastern Archeological Services. **Date:** 10/18/2017

Report Title: Archeological Field Testing of Potential Grave Locations, Kettle Creek Battlefield, Wilkes County, Georgia

Other Reports: Stirring Up a Hornet's Nest: The Kettle Creek Battlefield Survey (Elliott 2008); Ashmore & Olmstead 1926; Davis and Thomas 1975; Rausch 2006

Artifacts Collected: 1 amethyst glass, 1 stoneware, 3 plain whiteware, 3 clear bottle glass, 2 brown bottle glass, 1 aqua bottle glass, 2 cut nail, 5 unidentified metal, horse shoe fragment, Ud brass, 1 Kirk corner Notched PP/k (Red Jasper), 2 quartz flakes (list attached)

Location of Collections: Washington-Wilkes historical Museum, Washington, GA

Location of Field Notes: Washington-Wilkes historical Museum, Washington, GA

Private Collections: _____

Name: _____ **Address:** _____

CULTURAL AFFINITY

Cultural Periods: Historic; prehistoric

Phases: Late 18th century to 20th century; Early Archaic

FORM PREPARATION AND REVISION

Date	Name	Institutional Affiliation
<u>February 5, 2018</u>	<u>Thomas H. Gresham</u>	<u>Southeastern Archeological Services, Inc.</u>