

BATTLEFIELD SURVEY MANUAL

American Battlefield Protection Program

Revised 2016

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American Battlefield Protection Program
Battlefield Survey Manual

This manual is designed to focus the attention of battlefield researchers on a standard methodology that will provide state historic preservation offices, local planners, preservation advocates, and others with reliable information. Using this methodology will enable the National Park Service American Battlefield Protection Program (ABPP) to compare information across all wars and all sites. Large parts of the methodology used to study the Civil War can be adapted to address the battlefields of other wars; particularly wars between organized armies where there is written documentation of the events. Researchers of frontier battles, for which there is meager documentation, may be forced to rely more heavily on oral traditions and the work of archeologists to locate and verify sites.

This manual was first drafted to train surveyors for various ABPP studies and was compiled by David Lowe, Historian for Cultural Resources Geographic Information Services in 2000. This new edition changes some of the terminology in order to help the public to better understand and protect our American battlefields.

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American Battlefield Protection Program
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Part One: Introduction

1. Importance of Documentation for Preservation

Historians, archeologists, park staff, preservationists, battlefield friends groups, and other interested parties function as "brokers of history." They have the knowledge of battlefield resources, the library and archives, and access to supporting maps and documentation that reveal the significance of battlefield features. They have the perspective to respond to landowners' questions, to identify historic resources found on private property, and to validate the significance of those resources.

Much destruction of historic and cultural resources occurs through ignorance of significance. A farmer may know of a battle and know of an earthwork on his property but not understand how this relates to other surviving resources in the vicinity. He may not understand that a historian feels that the earthwork is important for its location or function in the battle. To him, it is an interesting curiosity. A developer putting in a housing tract may be unaware of a historic road trace that runs through the property or not understand that this trace functioned as the main route of advance for one of the armies. He may view a line of trenches--if he knows of its existence--as an obstacle to clearing a site for construction and see no harm in bulldozing the trenches. The historian feels the loss, and one more piece of the puzzle of history disappears.

Many landowners might choose to preserve a historic feature on their property if convinced of its importance to the larger picture of history. Many responsible developers would plan around a line of trenches and offer easements if informed of its existence and convinced of its significance. Preserved historic features, a hiking trail along the old road trace, and an open vista for interpreting battle action might enhance the attractiveness of the property to prospective buyers. A local government may decide that encouraging the preservation of historic resources can attract tourists to the community and, therefore, be good for business. Only park staff, historians, or battlefield friends can supply the authoritative information needed for others in the community to make informed decisions about resource protection.

Identification, documentation, and mapping of a battlefield's historic and cultural resources are an essential first step for any preservation outreach. The community cannot protect what it does not know exists. Planners are reluctant to give credence to undocumented features. Landowners cannot be expected to understand how features on their property contribute to the value of the entire battlefield. The preservationists' mission of encouraging the community to protect important resources is supported and made immeasurably easier by comprehensive survey and accurate mapping.

2. ABPP Battlefield Survey Methodology

This approach to researching, documenting, and mapping battlefields was developed to assist the work of the Civil War Sites Advisory Commission, established by Congress in 1990 by the Civil War Sites Study Act (P.L. 101-628). The Commission identified 384 principal military events of

the Civil War and solicited volunteers to visit each of the sites. The goal of these field visits was to locate the historic extent of the battlefields on modern maps and on the actual ground where the battles occurred, determine site integrity, provide an overview of surviving resources, and assess short- and long-term threats to integrity. The baseline data collected during the CWSAC field visits is summarized in the Commission's "Report on the Nation's Civil War Battlefields."[1]

The Commission's work was a good beginning, but much remains to be done before our nation's battlefields are documented properly. The American Battlefield Protection Program (ABPP) of the National Park Service maintains and updates files on the Civil War's principal military events, and the program has expanded its research to encompass other American Wars. In August 1999, the ABPP has revised and updated the survey manual and methodology for use in the Revolutionary War and War of 1812 Historic Preservation Study authorized by Congress. That study was completed in 2007.

Since the inception of the ABPP survey methodology, all our battlefield grantees have been directed to use this manual. Moreover, the approach has been adapted and used by archeologists for site survey, preservationists for completing National Register of Historic Place submissions and even by preservation planners for complete battlefield preservation tools. In short it has become an approach to characterize the use, space and organization of battlefields across the country and through many time periods. This versatile tool however, needed some updated to become a more inclusive manual for use by all battlefield enthusiasts.

Perhaps a weakness of the old manual was the use of the term "study area" to indicate the furthest extent of the historic battlefield boundary. Casual researchers frequently equated the "study area" to the Project Area or Vicinity Area of a general study which may include buffers in the boundary of land that really had little value. Just the term devalued the historic resource. It was difficult for our partners to defend that the "study area" has known, studied and identified historic resources. Worst, even less careful investigators use the term to indicate that there was no value outside of the Core Area as defined by our surveys. For this reason, the ABPP has decided to change the term to indicate that the battlefield boundary is indeed the currently understood boundary of the battlefield.

3. Civil War Sites Advisory Commission Survey Methodology

Because of the pressures of time and funding, the Commission approached the survey of 384 battlefields as a cooperative venture. The purpose of the survey was to gain a broad view of the condition of and threats to Civil War battlefields in the United States. The surveys accomplished this goal and accomplished it very well. Battlefield coordinators were established and funded for the affected park service regions. These coordinators were responsible for accomplishing the surveys and relied on volunteers, and park service or state historic preservation office historians, to conduct the surveys. Because the survey was originally envisioned as a "quick" approach,

[1] Civil War Sites Advisory Commission, *Civil War Sites Advisory Commission Report on the Nation's Civil War Battlefields*. Washington DC: National Park Service, 1993.

surveyors were asked to rely heavily on published sources and local experts to produce maps and documentation. Research in primary documents and unpublished sources was required only when there were discrepancies in existing accounts of a battle.

To compensate for this disadvantage in research, the ABPP developed a methodology that relied heavily on locating features on the ground associated with the battle using readily available sources. These "defining features" (so-called because they helped to define the battlefield on the landscape) serve to pin battle events to identifiable locations. Finding and mapping the structures and structure sites, road traces, topographic features, and other spots mentioned in the accounts, the surveyor was sure to be in the right location. Details of a battle might not be recorded, but the main location or "core" of the battlefield would be recognized.

The CWSAC methodology did have weaknesses, however. First, it relied on many people with different backgrounds and levels of expertise. In most cases, volunteers produced reliable documentation and maps. In other cases, the information on battlefields was less than complete. The quality of information in the files varies according to the knowledge of the surveyor, the sources consulted, time spent in the field, and the reliability of local guides. Second, the information gathered from the field varied substantially in the details. Some surveyors consulted many sources, some only a few; some found a large number of defining features, others found few; some listed and located defining features but did not display them on the map. Perhaps, the largest incomparability across the sites is how boundaries were drawn for the battlefields. Areas tended to expand according to how much a surveyor researched a battle or according to individual inclinations toward generosity or caution.

In 2000 an updated version of the survey manual was drafted by David Lowe, Historian for Cultural Resources Geographic Information Services for the ABPP. It was needed to resolve some of these problems by improving the survey forms and tightening definitions and procedures. Susan Henry Renaud, Tanya Gossett and Steve Strach added material as well to broaden the usefulness of this product. The ABPP learns from everyone who applies the methodology and will continue to add material or make changes, as new information is available.

4. Defining Battlefield Boundaries

The first step toward battlefield preservation is defining exactly where the battlefield is on the ground and what remains to preserve. This requires establishing a boundary of the battlefield on a map. The boundary must be historically defensible; historical and/or archeological evidence and source materials must show that the boundaries encompass legitimate historic resources.

Battlefield areas should be defined as objectively as possible to include the salient places where events occurred and important landmarks, and should accurately reflect the extent of the battle. The initial survey should include all known historic resources associated with the battle. Once the battlefield survey is completed and the final battlefield map marked with defining features and boundaries, informed preservation decisions can be made. Keep in mind, however, that deciding what landscapes and features to preserve and how to preserve them are economic, social and

political processes separate from the survey itself.

Mapping the historic extent of the battlefield stakes a claim on the land in the mind of the public, preservationists, local governments, and landowners. Mapped battlefield boundaries:

- graphically demonstrate the amount and type of land composing the battlefield
- simplify and clarify the preservation message
- give state and county planners a specific land area to consider; and
- serve as a rallying point for grassroots fundraising, and educational and political action.

Using the methodology outlined in this manual, surveyors are asked to create three boundaries for a battlefield:

- *Battlefield Boundary*, which encompasses the ground over which units maneuvered in preparation for combat

- *Core Area*, which defines the area where the most significant combat occurred and

- *Potential National Register Boundary* (PotNR), which contains only those portions of the battlefield that have retained integrity.

Battlefield Boundary and Core Areas are based on historical research and are drawn regardless of how land use has changed since the time of the battle. By definition, the Core Area is always contained within the Battlefield Boundary. The PotNR boundary is based on integrity and may encompass portions of both the Battlefield Boundary and Core Areas.

5. Possibilities for Preservation

The ultimate purposes of battlefield survey, documentation, and mapping are preservation and education. There are no magic solutions for preserving battlefields, only a range of alternatives that must be mixed and matched in ways that are appropriate for each specific site and setting. Some battlefields will remain entirely in private hands; some may become local or state parks; most preservation efforts will require a partnership of public and private interests. Some of the alternatives available to state and local governments and to private individuals and organizations are outlined below:[2]

Outright Purchase of Land or Easements
Pros: Permanent protection of the land.

Cons: Land and easement purchases can be expensive, often beyond the means of local preservation groups. There are ways to minimize expenses, such as buying development

[2] For a full treatment of available preservation measures, see Elizabeth B. Waters, *Civil War Heritage Preservation: A Study of Alternatives*, National Park Service, 1992.

rights, negotiating preservation easements, or purchasing a strip of land along the highway to control access. The danger of acquisition by a small battlefield friends group is that it might find itself the custodian of properties that it cannot afford to protect and maintain. Many land trusts and preservation groups purchase land then transfer their holdings as parkland to authorized agencies, such as a state or county government.

Protective Zoning Ordinances

In many states, local governments have the power to regulate private land use through zoning ordinances. Types of protective zoning include Low-Density Agricultural Protection Zoning, Sliding-Scale Agricultural Protection Zoning, Open Space Zoning, Conservation Development Design, Urban Growth Boundaries, Historic Overlay Zoning, and Agricultural Districts.

Pros: Zoning is flexible and reflective of a community's desire to protect its historic resources. Creative zoning that retains the agricultural or rural character of the land may accomplish two short-term goals. First, the land and its resources are protected from immediate development. Second, creative zoning will often hold real estate prices at agricultural levels, which are generally lower than the prices on property zoned for commercial or multi-family residential use. Fixing land prices at this lower level allows a community or preservation group time to raise the funds necessary to purchase the property in fee or easement to permanently protect the battlefield.

Cons: Partial, often transitory, protection of the land. Protective zoning can be overturned or removed with a change in the local political administration. Increasing pressure from developers or an escalating real estate market often will influence local leaders to rethink and revoke protective zoning measures.

National Register of Historic Places

The National Register of Historic Places is the nation's official list of districts, sites, buildings, and objects significant in American history, architecture, archeology, and culture. Owners of private properties listed in the National Register are free to maintain, manage, or dispose of their property as they choose. The National Park Service administers the National Register.

Pros: This honorary designation often encourages landowners and communities to care for their historic resources. Listed properties are duly considered in the planning for Federal, federally licensed, or federally assisted projects (known as the Section 106 process). Landowners may also be eligible for Federal rehabilitation tax credits. Some states also offer state tax credits for rehabilitation of National Register properties.

Cons: Provides no legal protection for historic resources.

State Registers

Most states have established a statewide register of historic places similar to the National Register. Most state registers are administered by the State Historic Preservation Office.

Pros: This honorary designation often encourages landowners and communities to care for their historic resources. State laws may provide for a state equivalent to the Section 106 process. Some states offer tax credits for rehabilitation of properties in their state register.

Cons: Usually does not provide legal protection for historic resources.

Achieving State or Federal recognition for a battlefield can provide a friends group with considerable political clout at the local, state, and national levels. State or Federal designation leads to an increase in public attention and interest in preservation. Many battlefields and related resources deserve to be recognized by an official designation but are not yet registered. The process may be initiated by the action of government agencies, landowners, or other interested organizations and individuals.

Part Two: Battlefield Resources

1. Historic Landscapes

Battlefields are historic landscapes. Across farmers' fields, through town streets or upon vast prairies armies clashed briefly and moved on, leaving only scarred and blackened earth, hasty burials, scattered bullets and shell fragments, the litter of combat. Residents returning to the site picked up the pieces of their lives, rebuilt their burned-out homes, and planted the fields anew. Hastily buried bodies were unearthed and interred in local and national cemeteries. Relics were collected or discarded. Life went on.

Yet the passing event fundamentally altered the relationship of the community to the land. Once obscure places become associated forever with the momentous events of America's wars. So long as the memory is nourished, people will point and say that is where the battle happened. This is where strangers from all parts of this nation and others came together by choice or by accident to transform their own moment of local history into American history and sometimes world history.

In many places, aspects of the American past lie close to the surface. The land is farmed much as it was a hundred years ago. Old houses, mills, and churches survive, or their foundations may be located. The new road network is congruent in many places with the old, except those old turnpikes have been straightened and widened to become major highways. Paved county roads often follow the winding courses of old farm roads. A village may have grown into a town but may preserve its core as a historic district.

Elsewhere, large-scale re-contouring of land, high-density development, strip malls, quarrying, clear-cutting, or some other drastic change in land use has obliterated the historic landscape. Armies fought for possession of a vital transportation crossroads—locations that continue to spur the necessities of modern growth and development. Only where major modern highways and railroads have bypassed a once important settlement, does the historic landscape stand fully revealed to modern eyes. Often more of the past survives within the modern landscape than is immediately perceived. It is the battlefield researcher's task to identify these surviving features.

Understanding a battlefield demands that a researcher become familiar with the features of the landscape as they appeared at the time of the battle. This provides a context for determining what is significant historically and culturally, what survives, and what is lost. Several good sources are available for learning to "read" the patterns and elements of the historic landscape. *Our Vanishing Landscape* by Eric Sloane provides a useful introduction to agricultural patterns, siting mills, building roads, and recognizing survivals from the past. *Common Landscape of America* by John R. Stilgoe is an in-depth history of the changing landscape with chapters on roads, farmsteads, fences, woodlots, churches, furnaces, and mills. In *War over Walloomscoick*, Philip Lord Jr. analyzes land use and settlement patterns on the Bennington battlefield by

comparing historic maps and battle accounts with the landscape, past and present.[3]

2. Military Terrain

The battlefield surveyor must also learn to view the terrain through the soldiers' eyes. The military has developed a process for evaluating the military significance of the terrain denoted by the mnemonic KOCOA—Key Terrain, Obstacles, Cover and Concealment, Observation and Fields of Fire, Avenues of Approach and Retreat.

Key Terrain is ground—typically high ground—that gives its possessor an advantage. Officers deployed troops to occupy key terrain or to deprive the enemy of the privilege. Possessing the high ground imparted real and psychological advantages to the defending force. Battles were fought over possession of key terrain features.

Obstacles are terrain features that prevented, restricted, channeled or delayed troop movements. These might be rough, impassable ground, a swamp, a dense wood, a river, or even a small stream if swollen by rain at the time of battle, or fences, ditches, and hedges. In general, defenders placed as many obstacles between themselves and the enemy as possible and tried to minimize obstacles that limited their own movements. Commanders sought to anchor their flanks on some local feature—a hill, ravine, stream, or swamp. A flank that could not be anchored was in danger of being "turned" and the battle lost. Battle lines often faced off on opposing ridges with the intervening valley as an obstacle.

Cover and Concealment. Cover is protection from the enemy's fire, e.g. the brow of a hill or a stone fence. Concealment is protection from vigilant eyes. Ravines provided security for massing reserves or deploying for an attack. An intervening hill or a wood lot might conceal one's force from observation. A smaller force might use the terrain to disguise its inferiority in numbers; a larger force might conceal its true size to lure a smaller force to battle. All soldiers sought cover in combat when they could. Soldiers often provided their own cover by constructing earthworks or piling up fence rails.

Observation and Fields of Fire. It was an advantage to observe the movements of the enemy to prevent surprise. This might require occupying high ground that was not necessarily key terrain or utilizing open fields and vistas to the best advantage. In general, it was best to see more of the enemy and allow him to see less. Open terrain in front of the battle lines provided fields of fire for weapons. The intent in establishing a field of fire was to minimize the amount of "dead ground" in front of the lines. Dead ground is an area, a swale or ravine, that cannot be observed or fired directly into, thus a place for the enemy to conceal themselves. Artillery might be posted on some an elevation to the rear of the infantry to command a greater field of fire.

[3] Eric Sloane, *Our Vanishing Landscape*. New York: W. Funk, 1955 (reprinted in paperback). John R. Stilgoe, *Common Landscape of America, 1580-1845*. New Haven: Yale University Press, 1982 (reprinted in paperback). Philip Lord, Jr., *War over Walloomscoick: Land Use and Settlement Pattern on the Bennington Battlefield 1777*. New York State Museum Bulletin No. 473, 1989.

Avenues of Approach and Retreat are primarily defined by the transportation network. Avenues were used for mobility but also had to be defended. Avenues stretch backward to supply lines and forward to objectives. It was important to possess transportation crossroads or bottlenecks--such as mountain gaps, fords, and bridges--in order to increase speed and mobility while limiting the enemy's. By studying the military applications of the terrain, a surveyor develops a basis for judging the merits and flaws of battle accounts.

3. Types of Battlefield Resources

Battlefield resources fall into four broad classes: *natural features, cultural features, military engineering features,* and *artifacts*.

Natural Features
The natural terrain or topography of the landscape is defined by the drainage pattern and relative elevation. Natural features include rivers, streams, swamps, hills and valleys, and the natural land cover—forest, meadow, desert. Often nuances of the terrain that are not apparent on a map influenced how a battle was fought. Rocky outcrops or a simple fold in the ground might have provided cover for attacking troops at a crucial moment. It is important to assess how much the terrain has changed since the battle event. Have streams been diverted or channeled? Have swamps and bogs been drained? Terrain features are typically the most durable of battlefield resources. Terrain can be altered by erosion or erased by the bulldozer and earthmover.

Cultural Features
Cultural features are elements of the historic landscape created by humans. In many cases, the battle landscape was farmland or forest. The features of the American agrarian landscape included the network of turnpikes, farm roads, canals, and railroads, the distribution of small villages and hamlets, isolated farms, mills, churches, and other structures, and the pattern of fields and fences, woodlots, and forests as determined by prevailing agricultural practices. This cultural landscape, in turn, was shaped by topography--natural drainages, elevations, gaps, fords, and soil quality. Based on topography, farmers chose which crops to plant, where to plant, and which farming techniques to employ. Farming practices varied regionally from large-scale plantations utilizing slave labor to small-scale homestead farms using only family labor. Different farming methods shaped population density, the distribution of structures, the road network, and the mosaic of fields and woodlots.

The cultural landscape influenced the location and direction of combat. Road networks determined the collision of armies and influenced the direction and speed that military units could travel to reach the battlefield to extend or support the battle line. The edge of a woodlot or a sunken road among open fields provided both protection and a clear field of fire. Linear resources such as wood and stone fences enabled troops to form up in relative protection. Buildings and structures were singled out for use as headquarters, hospitals, or sniper posts.

Cultural resources are susceptible to decay and alteration: buildings collapse; fields grow up; fences disappear; new roads bypass old roads; natural vegetation reclaims abandoned farmlots, roadways, and even houses. Often, however, historical research will guide the surveyor to

remnants of these features if they do not appear visible at first glance.

Military Engineering Features
Military earthworks (field fortifications, entrenchments, trenches) constructed by soldiers or laborers are an important resource for understanding a battle event. Surviving earthworks often define critical military objectives, opposing lines of battle, and no-man's land. It is important to examine surviving earthworks and document their locations and condition as accurately as possible. Military earthworks were employed to some degree by all of the armies that have fought on American soil, although construction was certainly more extensive during the American Civil War. Many earthworks began to disappear almost immediately after they were abandoned. Farmers filled in ditches to replant their crops or towns expanded into the battlefields. Nevertheless, examples survive from the French and Indian War, the American Revolution, the War of 1812, and the Mexican War.[4] If on the battlefield for a sufficient time, military engineers might construct military roads and logistical facilities in support of front line troops.

Artifacts (Contributed by Sue Henry-Renaud)
Although the visible landscape today may present a quiet, pastoral scene, it belies the relics and debris of a violent, destructive event. Beneath the surface is the physical archeological evidence of the actions that took place there: soldiers waiting, fighting, building and defending fortifications, doctors treating the wounded in hospitals, burial details interring the dead. The archeological record provides a direct physical link to battle events; archeological evidence physically anchors the events to the place.

An artifact's ability to inform us about the past lies in the structure of the archeological site. An artifact is only valuable in terms of its relationship to other artifacts. Undisturbed patterns and relationships among soil layers, artifacts, features, and sites convey important information about past events and connects the physical reality of the battle to its broader landscape. An archeological study may reveal unmarked graves, bullets or cartridge cases, fragments of clothing, traces of lost roadways, old campsites, vanished buildings, lines of earthen fortifications, and even ships sunk in naval battles. Archeologists and historians use this evidence to

- verify troop movements
- map out battle actions in time and space to interpret a battle's progress
- reveal previously unrecorded facets of the battles
- confirm locations and uses of destroyed buildings and structures
- verify or disprove long-believed myths or "official" accounts
- understand the effects of battle on civilians and other noncombatants
- offer a more complete picture of the life of the soldier in camp and in battle
- identify soldiers' graves

[4] Many military engineering textbooks from the 18th and 19th centuries are available. Prominent among these is D. H. Mahan, *A Treatise on Field Fortification,* New York: Wiley, 1863 and various editions.

Archeological evidence on battlefields is fragile and is easily damaged or destroyed. Bulldozers plowing over fields, relic-hunters digging for treasure, and even well meaning battlefield visitors walking in restricted areas can cause damage to the hidden battlefield, and thus lessen our ability to learn more about the battle. Every time someone takes an artifact from a battlefield, it loses much of its meaning. Bullets, buttons, cartridges, and other battlefield relics then become objects without context; they have lost most or all of their larger value.

Archeology is itself most often destructive. Although many people perceive excavation as the main research tool for archeologists, it is actually *only* carried out in special cases where important knowledge is to be gained and shared with the public, or where a site is threatened with destruction. Today archeologists are coming to rely on non-invasive remote-sensing technologies to locate archeological resources in the field. Ground penetrating radar, proton magnetometers, soil resistivity meters, and other similar instruments measure variations in subsurface deposits that allow skilled technicians to distinguish archeological features from naturally occurring soil and rock formations without excavating them.

It is, of course, completely legal in most states to dig for artifacts on private property with the landowner's permission. Hobbyists who collect battlefield artifacts often are willing to discuss their finds and offer an interpretation of battle events. In the past, artifact collectors have provided useful information to battlefield researchers. When possible, battlefield researchers should walk the ground with local collectors so that their observations can be recorded. In this way, some small bit of the pattern of artifact distribution may be rescued from oblivion.[5]

In reference to the archeological record, there are several things to keep in mind during archival research and field survey.

1. Most defining features identified in the historic documents and in the field have archeological resources associated with them. Above ground evidence of these features may have vanished, but subsurface evidence probably remains to tell part of the battle story. Those defining features are often the most important to preserve and protect.

2. During archival research, record information about battlefield burials, the presence and location of hospitals and burial grounds, or activities of reburial details.

3. Only professional archeologists with experience on battlefield should undertake archeological surveys or excavations on battlefields. Archeologist will take the results of the archival research and field survey and assess the potential for finding archeological resources on the battlefield.

4. National Park Service archeological management policies require that researchers *do not dig or pick up artifacts found on the ground*. Record, but do not disturb, the locations and identities of any artifacts or groupings of artifacts on your Defining Features List and on

[5] For a full discussion of archeological resources on private lands see Susan L. Henry, *Protecting Archeological Sites on Private Lands*, Washington, DC: National Park Service, 1993.

your survey map.

5. Archeological information is sensitive. Please do not publicize information about archeological resources that you may find.

Part Three: Battlefield Survey

Goals of Battlefield Survey

The primary goal of battlefield survey is to collect baseline information about the location, condition, and threats to a battlefield landscape and its component resources. The surveyor will:

- research the battle event;
- develop a list of battlefield defining features;
- visit the battlefield;
- locate, document, and photograph features;
- map troop positions and features on a USGS topographic quadrangle;
- define battlefield boundary and core engagement areas for each battlefield;
- assess overall site integrity and threats;
- define a potential National Register boundary for the battlefield; and
- complete documentation.

A minimum level of careful documentation is essential to build the argument for preserving the battlefield landscape and the cultural resources within the landscape. Properly drawn battle maps backed by documentation, particularly of sites that have been poorly studied in the past, can have a powerful influence on the attitudes of a local community as it plans for the future. As many communities strive to define their own unique character, preserved battlefields and related historic sites can add to a community's sense of identity and draw visitors. Battlefield survey is the first step toward educating community leaders and citizens about the existence and significance of a battlefield and about the importance of preserving the battlefield landscape, a non-renewable historic and natural resource.

1. Research the Battle Event

The surveyor begins by gathering available accounts of the battle and comparing versions of the event. Each of the various types of battle accounts must be evaluated according to source, time, intent, bias in the description, and usefulness. Who was the author? How long after the event was the account written? Why was the account written? Would the author have any reason to distort or exaggerate the truth? Which details in the account can be linked to actual ground locations? Combat is among the most complex of human endeavors and among the most confusing to describe. Eyewitnesses at a distance could not know with certainty what was happening at the front; participants at the front saw only their immediate surroundings, a small part of the whole. The "fog of war"—the smoke, excitement, and terror of battle—colored the perceptions of participants and observers alike. As time passed, memories faded, blurring faces and details. It is no surprise that battle reports, eyewitness accounts, and memoirs often vary widely in their descriptions of the same events. Battle accounts should be carefully weighed and compared to identify contradictions. The battlefield researcher faces many of the same problems as the journalist who attempts to separate truth from fiction in informants' accounts.

After-Action Reports and Other Contemporary Accounts

Eyewitness accounts are the source for most of what is written about battles. Officers were

required to submit after-action reports to their superiors (although many did not or their reports have been lost). These range in quality from a terse recital of movements to extremely detailed accounts, depending on the author. Professional officers took care to identify what went wrong, what went right, who performed well, and often who was to blame; this required reporting specifics of unit position and maneuver. Sometimes exhausted writers reported only the barest facts: "The regiment assaulted in the afternoon and was repulsed." Many reports were written long after the event and relied heavily on the reports of subordinates. When using after-action reports, it is important to remember that officers had much to gain by putting their successes and failures in the best light.

One straightforward, detailed battle account is worth ten poor ones. Consider Brig. Gen. Joseph Kershaw's description of the terrain over which his brigade assaulted at Gettysburg on July 2, 1863 (identifiable features and locations are in italics):

> In my center front was a *stone house*, and to the left of it a *stone barn*, both about *500 yards* from our line, and on a line with the crest of the *orchard hill*. Along the front of the *orchard*, and on the face looking toward the stone house, the enemy's infantry was posted. Two batteries of artillery were in position, the one in *rear of the orchard, near the crest of the hill*, and the other some *200 yards farther back*, in the direction of the *rocky mountain*. Behind the stone house, *on the left*, was *a morass*; *on the right* a *stone wall* running parallel with our line of battle. Beyond the stone wall, and in a line with the stony hill, was a *heavy forest*, *extending far to our right*. From the morass a *small stream* ran through this wood along the base of the mountain *toward the right*. Between the stony hill and this forest was an *interval of about 100 yards*, which was only sparsely covered with *scrubby undergrowth*, through which a *small road* ran in the direction of the mountain. Looking down this road from the stone house, a large *wheat-field* was seen. In rear of the wheat-field, and between that and the mountain, was the enemy's main line of battle, posted behind a *stone wall*.[6]

This account was written by an officer who had imprinted the terrain features in his memory. Using this account today one can visit the field at Gettysburg and locate all of the features that Kershaw describes: the orchard hill (Peach Orchard), the stone house and barn (Rose Farm), the rocky mountain (Little Round Top), stone wall, forest, small stream, stony hill, and the Wheatfield. His account of the attack includes details of deployment and maneuver that many officers simply took for granted and never bothered to write down.

Estimates of distances are often at odds in the accounts. Reports from the artillery often were more detailed and reliable because artillery officers had a wider view of the action than many infantry field officers and were trained to accurately judge distances. A good artillery officer who says “a thousand yards” can be depended upon to mean a thousand yards.

Other eyewitness battle accounts may be found in diary and journal entries, letters written home

[6] Report of Brig. Gen. J. B. Kershaw, *Official Records, Armies*, Serial 44:367-368.

by participants, or in contemporary newspapers. Contemporary military records, such as muster roles, casualty lists, and supply inventories can provide important context for research but provide few details of terrain or movement.

Published books and documents can be located by searching the Library of Congress card catalog, which is available on the Internet. Many volumes are available through inter-library loan. Various military records from the American wars are stored by the National Archives and Records Administration in Washington DC, and may be available on microfilm. Academic libraries and genealogical research centers often have microfilm copies of military records. The first stop for researching any Civil War event is the 128-volume, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (U.S. War Department. Washington, DC: 1880-1901), known as the *Official Records* or *Official Records, Armies*, or the O.R.. This work compiles officers' reports, communications, and other materials, related to campaigns and battles.[7] There is no comparable reference for earlier American wars, making research more difficult and time consuming.

Researching the Revolutionary War and War of 1812
As a starting point, researchers of these conflicts should review the *Encyclopedia of the American Revolution* by Mark M. Boatner III and the *Encyclopedia of the War of 1812*, edited by David and Jeanine Heidler. Each of these works contains excellent bibliographic references on various battles, skirmishes, and actions and participant accounts to consult for more detailed information. Also available are several major published bibliographies of printed histories, biographies, and source accounts, including *Revolutionary America, 1763-1789, A Bibliography*, 2 Vols., compiled by Ronald M. Gephart, and *Free Trade And Sailors Rights, A Bibliography of the War of 1812*, compiled by John C. Frederickson.

During the 1970s many state and local Bicentennial Commission offices published detailed guides and lists of Revolutionary War battles and sites. For example, *Battles and Skirmishes in New Jersey of the American Revolution* by David Munn, and *Battles, Skirmishes, and Actions of the American Revolution in South Carolina* by Terry W. Lipscomb are especially worth consulting. Almost every state produced published material about its role in the American Revolution and War of 1812, although the quality and quantity of this literature varies. Massachusetts, New Hampshire, Rhode Island, New York, Pennsylvania, Ohio, Michigan Kentucky, Tennessee, Virginia, Maryland, South Carolina, North Carolina, and Georgia have published their holdings of Revolutionary War and War of 1812 records in large annual volumes issued by the various state archives and historical organizations. Two excellent guides to these are *Locating Your Revolutionary War Ancestor, A Guide To The Military Records*, compiled by James and Lila Neagles, and *War of 1812 Genealogy* by George Schweitzer.

Because the American Revolutionary War and the War of 1812 were international in scope and participation, numerous collections of archival material and printed books pertaining to these two wars can be found in Canada, Great Britain, France, Germany, and Spain. Two especially rich

[7] This reference is available at most public libraries, on CD-ROM, or on the Internet at "http://moa.cit.cornell.edu/MOA/".

sources are the collections at the National Archives of Canada in Ottawa and the Public Record Office in London, England. Surprisingly, one of the best and complete collections of related French and German materials can be found at our own Library of Congress. Many of the available resources are listed in M*anuscript Sources in the Library of Congress for Research on the American Revolution*, compiled by John Sellers, et al. Other foreign records, especially from British participants, can be found at the University of Michigan at Ann Arbor; the Huntington Museum and Art Gallery Library in San Marino, California; Buffalo State University, Buffalo, New York; and at Colonial Williamsburg, Williamsburg, Virginia.

Researchers looking for naval records should consult the *Naval Documents of the American Revolution* (ten volumes to date) and the *Naval Documents of the War of 1812* (two volumes to date). Both sets, published by the Government Printing Office in Washington, DC, cover inland water and open sea actions. Of further use to researchers could be British and American correspondence, many of which are published in various archives such as the Nathanael Greene Papers, Cornwallis Papers and the Clinton Papers.

Post-War Histories, Accounts, and Memoirs by Veterans

Veterans published numerous post-war accounts. These consist of unit histories, secondary works, and interviews with other veterans; campaign and battle histories, many unusually well researched and documented; official or quasi-official biographies of famous (or infamous) officers; and personal memoirs that focus on the war experiences of the author. Many of these post-war accounts were written to defend the honor of the cause or of the participants or to vindicate the author's viewpoint. Some were carefully researched. Most have a built-in bias towards the participation of a single individual or a specific unit. Veterans who returned after the war and walked the battlefields where they fought in the company of other veterans wrote the best accounts. Officers with large egos and reputations to defend generally wrote the worst. Nevertheless, these books can provide details and personal vignettes that may not appear in after-action reports. Pension statements for both the Revolutionary War and the Civil War are another type of document that can be useful when researching a battle.

Secondary Campaign and Battle Books

More than 250 books are published each year on the subject of the Civil War alone, while the rest of America's wars may account for 25-30 volumes. An overwhelming number concentrate on a select number of important military campaigns and battles, although there has been a recent trend toward publishing more social and personal history, including soldiers' diaries and civilian accounts. Campaign and battle books are only as good as the research that went into them. It is wise to study the sources cited in the bibliography to determine if the author conducted primary research or relied heavily on secondary sources. It may be important to obtain copies of original documents cited in the bibliography.

Despite thousands of books on American military history, a large number of smaller but significant actions have never been treated by full-length manuscripts. Some of the smaller engagements might have been described by a local historian and published as a paper, an article in the newspaper, or a pamphlet. The most likely sources for such materials are the state historic

preservation office, the county historical society, or local library.

Orders of Battle

One product of research into the battle accounts should be an order of battle—a list of all the units and officers of both sides involved in an action. Orders of battle are typically broken down by army, corps, division, brigade, regiment, and sometimes battalion. In many cases, orders of battle have already been published in the sources and need only be photocopied. Otherwise, compile one from the available sources. Determine the size and composition of opposing forces. Sizes of units varied by time period, by army organization, length of service, and amount of combat experience. For example, a Civil War regiment numbered about a thousand men on paper, but veteran regiments often fielded only 250-400 soldiers. Include unit strengths on the order of battle when available. Numbers engaged and casualty figures are a useful gauge of the spatial extent and intensity of the conflict. An infantry regiment of 300 soldiers deployed in close-ranked line of battle would cover about 100 yards of front. An artillery battery of four guns would deploy on a front of about 60 yards. Mounted cavalry actions usually covered more ground but resulted in fewer casualties than infantry battles.

Use the order of battle to keep track of units. Star or check every unit whose officer made an official report or of which you have an account. You might find, for example, that only the left wing of the army filed reports, while activities on the right wing remain a mystery. This would suggest delving more deeply into sources that refer to right wing units. An attempt should be made to consult sources that cover the entire battle front.

Historic Maps[8]

Maps are among the most important sources for researching a battlefield landscape. Historic battle maps range from rough sketches that lack scale or perspective to accurately surveyed cartographic masterpieces by accomplished topographical engineers. It is important to differentiate between sketches and maps. A map is a cartographic product with a scale bar and typically a north arrow; information on a map was acquired either from a measured survey or from a previously surveyed base map; locations appear in proper relationship and relative distance on the landscape. Sketches were done quickly without benefit of measurements; distances between features and locations on a sketch may be distorted.

Map scale is important. A scale of one inch to the mile or smaller may be useful for tracing the main road network, comparing the drainage pattern, and locating the most significant features, such as towns, churches, and mills, but will provide less reliable detail for the landscape. Scales of three inches to the mile and better begin to depict more of the topography and land cover and

[8] The *Atlas to Accompany the Official Records of the Union and Confederate Armies* (U.S. War Department. 4 vols. 1891-1895. Reprint [1 vol.]. New York: Fairfax Press, 1983) is the companion work to the *Official Records, Armies*. The Atlas contains 821 maps and sketches many drawn by participants, 106 engravings of fortifications, and 209 drawings of weapons, uniforms, and equipment. Two reference works are especially helpful for locating historic Civil War maps: National Archives. *A Guide to Civil War Maps in the National Archives* Washington: National Archives, 1986. Stephenson, Richard W., comp. *Civil War Maps: An Annotated List of Maps and Atlases in the Library of Congress.* Second Edition. Washington: Library of Congress, 1989.

may show the locations of farm roads and individual dwellings.

Almost any map or sketch produced by an observer during or soon after combat will provide important details of terrain and troop movements. Field sketches were occasionally incorporated into more finished maps, showing a wider geographic area or more detail, and published. Some published maps were conceived merely as illustrations for a battle account and may be loosely based on reality. Any map based on survey will match the terrain to some degree, depending on the scale and skill of the mapmaker. The best maps, even those produced in the 18th century, can be followed in the ground today.

Other historic, non-battle maps are as important as battle sketches or maps. Historic maps from the mid-to-late 19th century, often drafted at the county scale, can be useful in pinpointing mills, fords, old roadbeds, and even residents. The surveyor can use an old map to understand the patterns of the historic landscape, particularly if the landscape has changed drastically since the time of significance, and to find place names that appear in the battle accounts. A 19th century map can provide a conceptual bridge back to the 18th century. The oldest maps of a specific region, county, or town might be stored at the courthouse, at the county historical society, or in a local museum. The Library of Congress, the National Archives, and major academic libraries have collections of local historic maps. Many historic maps are available in digital form over the Internet through the Library of Congress and National Archives home pages. The National Oceanic and Atmospheric Administration (NOAA) inherited the maps of the Coast Survey, whose surveyors mapped much of the coastline and important rivers in the early 19th century. Many are offered on-line.[9]

Revolutionary War and War of 1812 Maps

To date, no definitive or comprehensive compilation exists for either the American Revolutionary War or the War of 1812 on the scale of the *Atlas* accompanying *Official Records* for the Civil War. However, numerous smaller but useful published sources are available. Two good collections of maps, plans, and sketches of individual Revolutionary War battlefields are the *Atlas of the American Revolution* edited by Kenneth Nebenzahl and Don Higginbotham, and *Campaigns of the American Revolution, An Atlas of Manuscript Maps* by Douglas Marshall and Howard Peckham. The former reproduces classic (mostly British and French) printed maps, plans, and sketches. The latter offers a selection of manuscript maps drawn during the battles or very shortly after the conclusion of the actions.

Other very useful guides for the study of Revolutionary War battle maps, plans, and diagrams include *A Bibliography off Printed Battle Plans of the American Revolution 1775-1795* compiled by Kenneth Nebenzahl; *American Maps and Map Makers of the American Revolution* by Peter J. Guthorn; *British Maps of the American Revolution* by Peter J. Guthorn; and *Maps and Plans in the Public Record Office, America and West Indies* edited by P.A. Penfold. Hundreds of other published and unpublished primary and secondary sources also contain useful maps. Some

[9] National Oceanographic and Atmospheric Administration, Historical Map and Chart Collection--- http://chartmaker.ncd.noaa.gov/ocs/text/map-coll.htm.

excellent cartographic studies of particular Revolutionary War battles[10] and major campaigns include the *Atlas of Lake Champlain 1779-1780* by Captain William Chambers, R.N.; *The American Campaigns of Rochambeau's Army 1780, 1781, 1782, 1783*, 2 Vols., translated and edited by Howard C. Rice and Anne S.K. Brown; *The George Washington Atlas* edited by Lawrence Martin; *The Siege of Mobile 1780 in Maps*, by William and Hazel Coker; and *The Siege of Pensacola 1781 in Maps*, by William and Hazel Coker.

Many valuable collections of battlefield maps for the periods 1775-1783 and 1812-1815 exist in repositories across the United States. Two of the best collections are found at the Library of Congress in Washington, DC, and the William L. Clements Library at the University of Michigan, Ann Arbor. Serious researchers should contact these institutions or consult the finding guides for these map collections. Copies of select items from the Library of Congress can be inexpensively obtained with a little patience.

When researching the battles of the War of 1812, individual histories offer a wide but smaller selection of published battle maps and plans. Only two published works by participants in the war include small atlases of the battles and campaigns. These are *Historical Memoir of the War in West Florida and Louisiana in 1814-1815 with an Atlas* by Major A. La Carriere Latour, and *Memoirs of My Own Times*, 4 Vol., by James Willkinson (Volume 4 is the atlas). For modern battle maps of specific sites and campaigns, refer to *The War of 1812, Land Operations* by George Stanley, and the *Encyclopedia of the War of 1812* edited by David and Jeanine Heidler.
Cartographic materials from the Revolutionary War and War of 1812 are vastly different from their Civil War counterparts. In the 18th and early 19th centuries, scales of distance were not universal, color and symbol keys varied, and the quality and detail of the maps differed from cartographer to cartographer. Different countries provided different schools of cartographic training and design. Hence American and British maps are scaled in individual feet; German maps in the common stride pace; and French maps in leagues. Surveyors should remember this when analyzing maps, plans, and diagrams produced by multi-nationals that depict the same event. The following studies help explain the mapping peculiarities of the periods: *Mapping the American Revolutionary War* by J.B. Harley, Barbara Bartz Petchenik and Lawrence Towner, and *Surveyors and Statesmen, Land Measuring in Colonial Virginia* by Sarah Hughes.
An excellent overview of how to analyze historic maps when researching a battlefield is *War Over Walloomscoick: Land Use and Settlement Patterns on the Bennington Battlefield - 1777* by Philip Lord Jr. Copies are available from the New York State Museum in Albany, New York, for a nominal fee.

Modern Mapping
The base map selected for use in battlefield survey is the standard United States Geographical Survey (USGS) topographical quadrangle (quad) produced at a scale of 1:24,000. These maps are available for the entire United States and are periodically updated to reflect new roads and

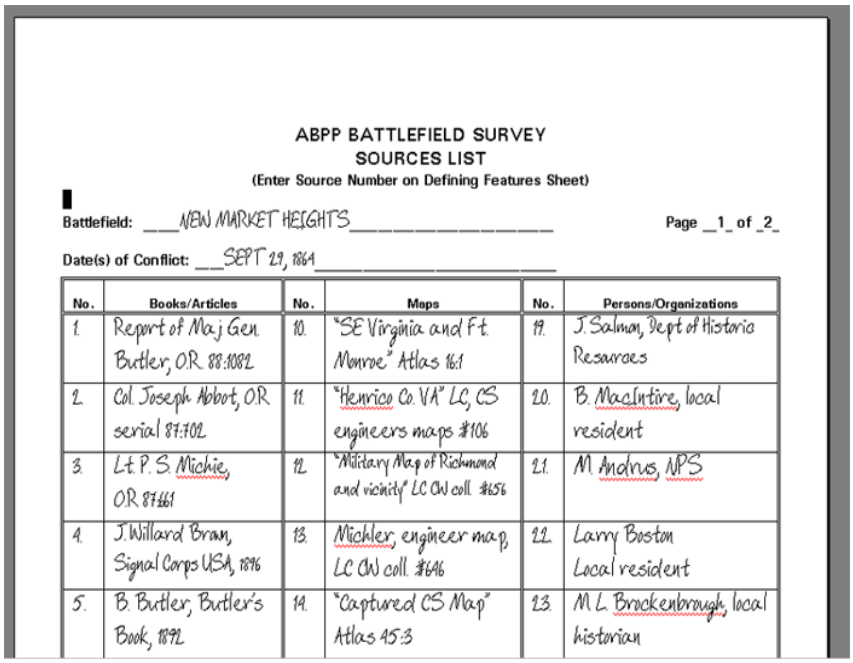
[10] Two unusual primary resources contain a wealth of maps and plans of lesser known actions that occurred in New Jersey, New York, and Virginia are *A History of the Operations of a Partisan Corps Called the Queen's Rangers*, by Lieut. Col. J.G. Simcoe and *Diary of the American War, A Hessian Journal, Captain Johann Ewald*, translated and edited by Joseph P. Tustin.

new land use changes. Currently, only electronic versions of these maps are available. The legend at the bottom of the map will explain when the terrain was actually surveyed and when it was photo-revised, that is, updated from aerial photographs. It is a good idea to research older versions of the USGS quads. These maps were first issued for most of the country in the 1920s; some areas are covered back to the 1890s. These older quads often show original road traces, before widening, straightening, and paving, and reveal other ways in which the landscape has changed over the years.

Compare battle maps and historic maps with modern USGS quadrangles. Which roads are new? Which roads follow the old road beds? Compare battle maps found in primary sources and in secondary sources. Where do they agree and disagree? Working from the historic maps, pencil in potential locations for fords, mills, churches, houses on the USGS quadrangle. Look into contemporary sketches and artwork as well as photographs as additional information resources.

Research Bibliography and Sources List

Create a research bibliography detailing all of the books, documents, maps, and people that were consulted. Transfer the short title for these sources to the Sources List and give each one a number. This number will be used as a reference on the Defining Features List and will save much writing later on. The Sources List should continue to grow as the survey continues. A blank Battlefield Source List and a Defining Features List are included in the appendix for photocopying.



ABPP BATTLEFIELD SURVEY
SOURCES LIST
(Enter Source Number on Defining Features Sheet)

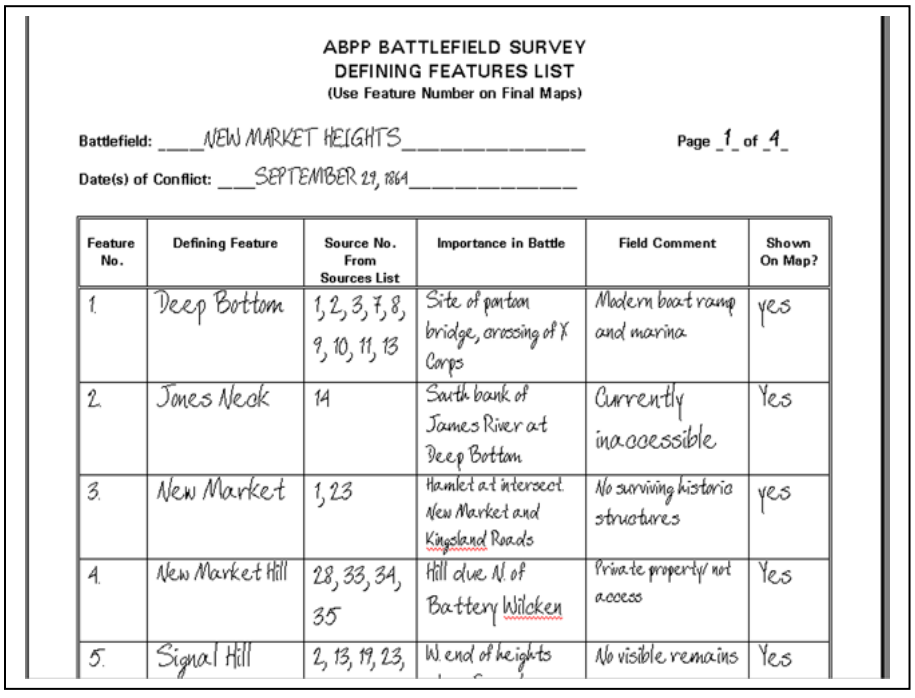
Battlefield: ___NEW MARKET HEIGHTS_____ Page _1_ of _2_

Date(s) of Conflict: ___SEPT 29, 1864_____

No.	Books/Articles	No.	Maps	No.	Persons/Organizations
1.	Report of Maj Gen. Butler, O.R. 88:1082	10.	"SE Virginia and Ft. Monroe" Atlas 16:1	19.	J. Salmon, Dept of Historic Resources
2.	Col. Joseph Abbot, O.R. serial 87:702	11.	"Henrico Co. VA" LC, CS engineers maps #106	20.	B. MacIntire, local resident
3.	Lt. P. S. Michie, O.R. 87:661	12.	"Military Map of Richmond and vicinity" LC CW coll. #656	21.	M. Andrus, NPS
4.	J. Willard Brain, Signal Corps USA, 1896	13.	Michler, engineer map, LC CW coll. #646	22.	Larry Boston Local resident
5.	B. Butler, Butler's Book, 1892	14.	"Captured CS Map" Atlas 45:3	23.	M.L. Brockenbrough, local historian

2. Develop a List of Defining Features

The Defining Features List serves as the surveyor's agenda and guide on the battlefield. A *defining feature* may be any feature mentioned in battle accounts or shown on historic maps that potentially can be located on the ground. A defining feature may be a place such as a town, a structure such as a mill or church, a road, fence, wood lot or corn field; it may be a natural terrain feature, such as a stream, ridge, hill, or ravine. Any description that implies a location can be a defining feature whether or not that feature survives today. Keep a running list of these features as they are encountered in the sources, add to the Defining Features List from each new source, and add the source number (from the Sources List) to a feature that has already been identified by other sources. As this list



ABPP BATTLEFIELD SURVEY
DEFINING FEATURES LIST
(Use Feature Number on Final Maps)

Battlefield: ____NEW MARKET HEIGHTS_____ Page _1_ of _4_

Date(s) of Conflict: ___SEPTEMBER 29, 1864_____

Feature No.	Defining Feature	Source No. From Sources List	Importance in Battle	Field Comment	Shown On Map?
1.	Deep Bottom	1, 2, 3, 7, 8, 9, 10, 11, 13	Site of pontoon bridge, crossing of X Corps	Modern boat ramp and marina	yes
2.	Jones Neck	14	South bank of James River at Deep Bottom	Currently inaccessible	Yes
3.	New Market	1, 23	Hamlet at intersect. New Market and Kingsland Roads	No surviving historic structures	yes
4.	New Market Hill	28, 33, 34, 35	Hill due N. of Battery Wilcken	Private property not access	Yes
5.	Signal Hill	2, 13, 19, 23,	W. end of heights	No visible remains	Yes

builds, and as each feature is located on the ground and on the USGS map, the extent of the battlefield will begin to reveal itself on the landscape.

Soldiers oriented themselves on the battlefield by the cultural and natural landmarks of the historic landscape. Accounts will mention nearby towns and villages, the roads marched upon, a memorable building or a stream crossed while marching into combat. As battle developed, participants might note key terrain elements—a high hill—or obstacles that made their task difficult—struggling through a bog, losing direction in the woods—or cover—hiding behind a stone fence. An officer might mention the location of his headquarters or of the unit's hospital. Individual soldiers took note of landmarks that would guide them back to find their dead and wounded comrades. One account may simply mention a "deep ravine" or "thickly wooded swamp," whereas another account might add the information "through which flows Deep Run Creek." By cross-checking accounts and comparing accounts with maps, it is often possible to give a specific name to an otherwise vaguely described feature. Sometimes, a feature may have to remain vague on the Defining Features List as "deep ravine (crossed by Bartlett's Brigade in afternoon assault)." A visit to the battlefield may enable the researcher to link the defining feature with a specific feature on the ground.

As much as possible, depending on obtaining permission to enter private property, the researcher should plan to identify, locate, and visit every location on the Defining Features List. Online maps, such as Google Maps, can be used to assist in locating defining features and can provide a general idea of what the terrain and landscape look like in the present day.

3. Visit the Battlefield

Plan the Visit

When the research is complete, sources listed, and defining features identified, it is time to get into the field. The battlefield landscape is the laboratory for testing our understanding of how the battle unfolded. Plan to spend at two or three days in the field getting to know a moderately sized battlefield that might encompass 1,000-2,000 acres. Take copies of all battle accounts and maps and copies of USGS quadrangles to encompass the entire area of interest.

If not a local resident, find someone who knows the area to accompany you in the field. There is often more than one local battlefield expert and in small communities in particular they may be competitors, so chose your local guide wisely. It is always best to do your research and keep in mind that all politics are local. To locate a battlefield expert, call the county historical society or the local Civil War Roundtable. Somewhere in the locality, someone has studied the battlefield and probably would be willing to share his or her knowledge. Visiting the battlefield in the company of a local guide or landowner, makes it easier to meet battlefield property owners, who might invite you to tour their site. Most people are suspicious of strangers and understandably so. If you cannot find a local guide and must go into a community "cold," stop at the public library, introduce yourself to the librarian, and find out who may know about the battlefield. The librarian may provide names and telephone numbers or suggest someone else to ask. The local librarian may even know who the local relic collectors are in the area. If the area is rural and

there is little traffic on the roads, you may want to check in with the local sheriff or police department, explain what you are doing, where you are staying, and how long you will be in the vicinity. That way if the sheriff gets a call about a "suspicious person" driving around and taking photographs, he can explain your business and spare you the embarrassment of flashing blue lights.

When contacting local landowners, budget time for conversation. Not only is this polite, it is productive in terms of sharing information and invaluable in terms of cultivating good will. An hour spent drinking ice tea and discussing local sports teams on the porch of a house on the battlefield with a knowledgeable landowner often can save you a day of fruitless thrashing around the neighborhood.

Field Survey Checklist

- **USGS Topographic Quads for Area**
- **Essential References**
- **Filled-in Defining Features Sheets**
- **Photocopies of Historic Maps**
- **Local Contact and Guide**
- **Clip Board and Pencils**
- **Copies of ABPP survey forms**
- **Copy of this survey manual**
- **Compass**
- **Binoculars**
- **Two Cameras**
- **Photo Log Sheets**
- **Field Clothes/Boots**
- **Insect Protection**
- **Personal Identification**
- **GPS unit/Docking Station/Connectors**

Windshield Tour

Start with the big picture. Conduct a "windshield tour" of the area in your vehicle, systematically following all of the public roads through and around the battlefield area. Observe the general character of land use and settlement pattern. Look for survivals and old structures. Identify key terrain, pick out landmarks, and look for the defining features from your list. Use a USGS quad as a guide, making notes and observations directly on the map in pencil. While conducting the windshield survey, pencil or shade in areas where the land use has changed since the USGS quads were last updated. Note new roads, structures, and other intrusions. Attention to detail now will come in handy later when you are working on the final maps and estimating amounts of land in the various land use categories.

Pull off to the side of the road often to consider the lay of the land. Study the terrain. What were each side's objectives? How do the historic maps and sketches compare with the existing terrain? Could you find your way around the area today using only the historic map? Is the road network the same or have the old roads passed into disuse? Has the terrain been recontoured by highway construction?

Stop to take photos where appropriate (see section below on photography). It is important to locate vantage points from which to view a large expanse of the battlefield from the sides of both combatants, if possible. Some battlefield landscapes may be viewed and understood largely from public roads, and this should be noted. These could be ideal sites for self-guided driving tours.

Terrain Study

Because of foliage or topography, many battlefield landscapes or important features cannot be

seen or understood from the highways. Secure permission to enter private property where it is necessary to locate and field-check defining features that cannot be seen from the road. A friendly landowner can be an invaluable source of information on the history of a property, pointing out a house site, the location of a ford, or the route of an old road trace, for example. The landowner may know where concentrations of artifacts have been unearthed and be able to describe them. Many landowners have studied the battle that occurred on their property and can offer their educated opinions about where specific events occurred. Sometimes, their opinion may not agree with the historians' or with your own opinion. Do not feel that you have to argue with someone to prove your point. Listen politely and focus your questions on terrain features and locations of the defining features.

Keep track of the names and addresses of helpful landowners and add these to the Sources Sheet. You may need to contact them later to fill in gaps in your information, or you may wish to send a brief letter of thanks. Many landowners do not like to be disturbed. This is their right. Respect it and move on with a wave and a thank you. You may learn what you need to know from someone else, or be resigned to leaving a blank spot on the map.

Local relic collectors can provide a wealth of information especially when attempting to pinpoint a battlefield location. They often have decades of experience exploring the local terrain and can easily let you know which spots have produced particularly fruitful archaeological finds. They can also give you a lot of information about the quality and quantity of artifacts to be found in the surrounding area.

Read battle accounts on the field and compare descriptions with the landscape. At this point, things should be falling into place. Troop deployments and maneuvers in the accounts should match your understanding of the historic landscape and how soldiers utilize the terrain. If the accounts don't make sense on the ground—if key terrain features are missing, for example—back off and try again. You may have overlooked something. The old road might have diverged from the modern road and taken a different course through the landscape.

Use Inherent Military Probability to "Ground-truth" Battle Accounts

Many contradictions in battle accounts can be reconciled only by visiting the battlefield with the accounts and maps in hand. 19th-century military historian Hans Delbrück demonstrated that intelligent inspection of the terrain could prove or disprove many traditional battle accounts. Following Delbrück's principles, A.H. Burne proposed and tested the concept of Inherent Military Probability, which he defined as "the solution of an obscurity by an estimate of what a trained soldier would have done in the circumstances."[11]

Inherent Military Probability is an important concept for assessing the value of eyewitness accounts. The battlefield researcher must view the terrain with a soldier's eye (KOCOA) and determine whether the events described in the accounts are indeed reasonable and plausible. The researcher must train his or her vision to see the landscape as the combatants saw it. What were

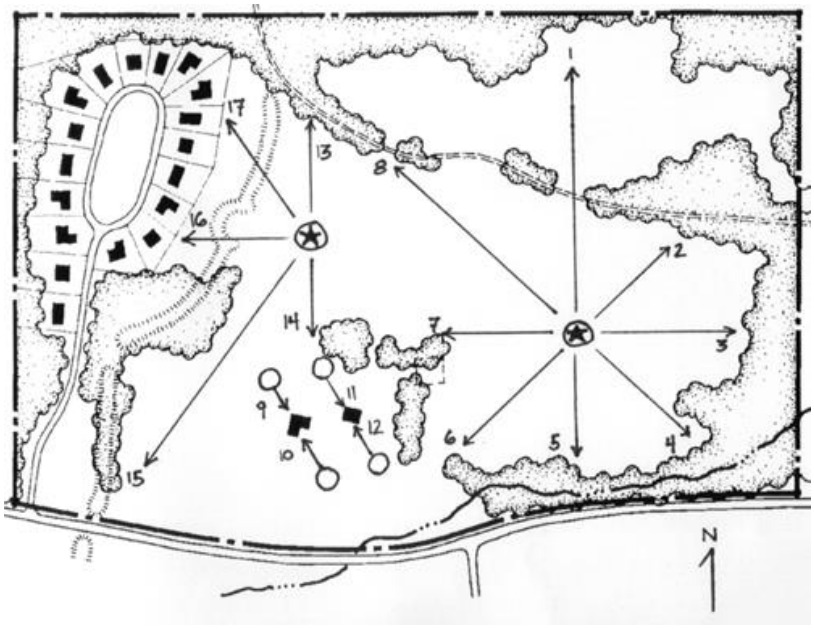
[11] John Keegan, *The Face of Battle*, Viking Press: 1976, 32.

the advantages and disadvantages of the respective positions? What were the possibilities for attack and defense? How were military units shifted from one part of the battlefield to another? Where would batteries have been placed? Where did the soldiers get their water? Viewing the terrain in terms of Inherent Military Probability, can provide answers for many puzzling questions, so long as you are grounded in the sources.

Examine the ground until the movements of the armies reconcile themselves in your mind. The historic roads are of vital importance as these likely determined how forces reached the battlefield and influenced how the battle developed. What were the tactical objectives of both sides? Pay close attention to terrain features that might resolve contradictions in the battle accounts. Use the principle of Inherent Military Probability to test the participants' descriptions of the action. The battle line ran along that ridge and was anchored on the creek. The flanking attack came through that parking lot. Artillery was on that hill. Note these details and observations directly on the USGS quad. Sketch in battle lines and movements that make sense of the accounts and the terrain. You will use this information later when completing the final troop movement maps.

4. Take Photographs (Photo Log Form)

Photographs of the battlefield landscape should be taken as 180° or 360° panoramas from selected vantage points. The panoramic approach prevents unconscious "editing" of the scenery, since the purpose of the survey is not to take pleasing pictures but to capture a balanced coverage of the viewsheds that includes both pristine and compromised areas of the battlefield. Panoramas accomplish this purpose. An average camera lens requires 8-10 frames to cover 360°. If you are in the midst of a wilderness with no clear vista, panorama shots will be of limited use. Use your judgment in these cases.



This site plan illustrates three types of photographic views desired for battlefield documentation. Frames 1-8 show the North-then-clockwise manner in which to capture a 360° panorama. Frames 9-12 show shots of historic buildings from opposing angles at the corners in order to capture as many sides of the subject as possible. Frames 13-17 show the 180° panorama. Note that the 180° panorama captures open viewsheds, a line of earthworks, and modern development beyond the works.[1]

When taking photographs, select two to four vantage points that cover the battlefield from different angles. Mark the locations from where panoramas are

taken on your USGS quads with a circled star (K). When taking 360° shots, begin with the north and return to the north. (This is where your compass comes in handy.) When taking 180° panoramas, note the direction of the center exposure on the USGS quad with an arrow. Number the stars on your map to correspond with each panorama series. As you take photos, be sure to write down the frame number, the subject, and direction on your photo log sheet. You cannot always remember later where a photo was taken, even when it seems obvious while on site. The spot where single photos/slides are taken of structures, areas of special interest, etc., should be marked on the USGS quad as a circle with an arrow pointing in the direction of the shot (♂). Whenever possible and regardless of lighting, take more detailed photographs of building and objects from opposite vantage points so that the photographs capture both front and back of the resource.

A digital camera is idea for field situations in order to tell the story in presentations, posters and for social media. It is not, however, necessarily archivally stable and for in-depth studies of battlefields a professional level SLR digital camera is recommended. Automatic focus "point-and-click" cameras are adequate for survey purposes as are camera phones, although we do not recommend using disposable cameras. For additional tips on photographing cultural resources, see *How to Improve the Quality of Photographs for National Register Nominations,* available free of charge from the National Register of Historic Places, National Park Service at https://www.nps.gov/nr/publications/bulletins/photobul/.

5. Prepare Maps and Survey Form

Map Troop Movements, Positions, and Defining Features

While memory is fresh, transfer information from field maps to clean USGS quads, using conventional symbols. It is essential to use pens with waterproof inks, otherwise the colors begin to fade quickly. Plot and label the defining features. Draw in primary troop movements and positions. Make an effort to estimate exact frontages for deployed troops according to the map scale. Label troop positions by the names of the army, corps, division and/or brigade commanders. Consulting your field maps, block in any land use changes in pencil and label these areas as commercial, industrial, residential, quarry, etc. All this information should be transferred to GIS; however having a paper copy as backup is recommended if paper topographical maps of the study area can be obtained.

Mapping Checklist

- Use Pens with Permanent Ink (No Highlighting Pens)
- Mark American Troop Movements and Positions in Blue
- Mark Opposing Troop Movements and Positions in Red
- Label Military Units at the Division or Brigade Level
- Label Defining Features Located During Field Survey
- Star and Number Photo Points
- Draw Battlefield Boundary following Natural Features
- Draw Core Area following Natural Features and Contours
- Star and Number Photo Points
- Draw Potential National Register (PotNR) Boundaries to exclude portions of the battlefield that have lost integrity
- No Primary Combat Areas Appear Outside of the Core Area boundaries
- Map Edge and Margin are Unmarked
- Lines Crossing Two Adjacent Quads Match Up
- Include Name and Date of Battle, Mapmaker's Name, and Date Map Completed one each map
- Retain Copies of Maps for Personal Files

Defining the Battlefield Boundary and Core Areas

By defining Battlefield Boundary

and Core Areas for the battlefield, you are delineating the original physical extent of the historic site as you understand it. The Battlefield Boundary defines the tactical context and visual setting of the battlefield. The Battlefield Boundary should contain all places related or contributing to the battle event: where troops maneuvered, deployed, and fought immediately before, during, and immediately after combat. Following natural features and contours on the USGS quad, outline a Battlefield Boundary that includes all locations that directly contributed to the development and denouement of the battle. The Battlefield Boundary should include the following:

- Core Areas of combat (see Core Area below)
- Approach and withdrawal routes of the armies (these should be drawn as corridors along the roads if movement was confined to the road);
- Locations of any deployed units of the armies on the field, even if these units were not engaged;
- Preliminary skirmishing if it led directly to the battle; and
- Logistical areas, i.e. locations of ammunition trains, hospitals, and supply dumps

The *Battlefield Boundary* should be restricted to the immediate flow of battle after one side or the other has moved to initiate combat. For example, if a unit left its encampments in the night intending to attack the enemy at dawn, it would be appropriate to include these encampments in the Battlefield Boundary as the initial position of the attacking force. The route of the previous day's march to reach these encampments would not be included. The Battlefield Boundary should end where the armies disengaged. Forces may have disengaged under orders, because of darkness or adverse weather conditions, pursuit of a retreating force was halted by a rear guard action, or because one force accomplished its objective and chose not to pursue its retreating foe.

The *Core Area* of a battlefield is the area of direct combat, often described as "hallowed ground." It includes those places where the opposing forces engaged and incurred casualties. The Core Area should always fall fully within the Battlefield Boundary. Following natural features and contours on the USGS quad, outline a *Core Area* that contains the areas of confrontation, conflict, and casualties. Do not use an arbitrary box. Natural barriers, such as rivers, creeks, swamps, hills and ridges often restricted the movement of the armies, providing a "natural" boundary for the battlefield.

As a rule, the position of any unit that fired weapons or that came under fire should be included within the Core Area. Units held out of range should be included in the Battlefield Boundary but not in the Core Area, unless these units held a position that had a critical influence on the outcome of a battle. For example, if cannons were massed to cover a ford and the mere presence of these guns, although not engaged, forced the attackers to another ford downstream, then the position could be perceived as playing a "core" role in the battle. Such situations only occasionally developed without at least cannonading or a probing attack that would automatically make the position eligible for the Core status. Minor preliminary skirmishing along the roads should not be included in the Core Area, particularly if it skews the size of the event and distracts attention from the primary combat area.

Defining the Potential National Register (PotNR) Boundary

The Potential National Register (PotNR) boundary is perhaps the most important demarcation the surveyor will make on the USGS quads. It depicts those portions of the historic battlefield landscape that continue to retain integrity as of the date of ground survey. The PotNR boundary indicates to preservationists and planners what remains to save. It provides State Historic Preservation Officers and the National Park Service with important information on which to base nominations of the battlefield to the National Register of Historic Places and other historic preservation planning decisions.

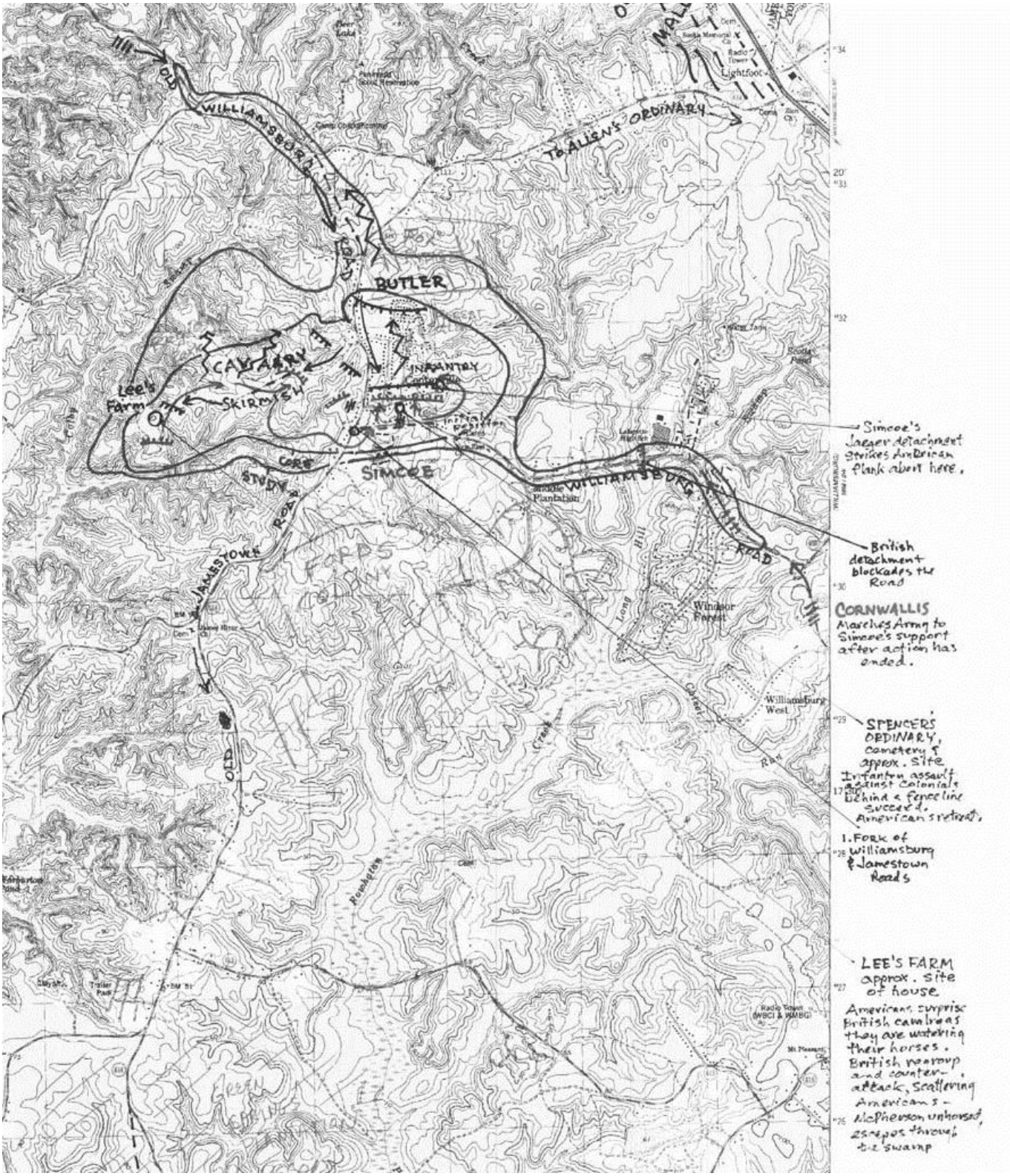
The PotNR should include all parts of the Battlefield Boundary and Core Area that still convey a sense of the historic scene. Any parts of Battlefield Boundary and Core Area that have been compromised by modern development, erosion, or other destructive forces and that can no longer provide a feeling of the historic setting should be excluded from the PotNR boundary. The surveyor must be able to justify why the PotNR was drawn to include some areas and exclude others.[12]

Finally there should be a cautionary note added here about use of the PotNR for Section 106 compliance projects. This area of integrity was arrived at without the benefit of archeological investigation for all our Congressional studies. The PotNR cannot be assumed to be the equivalent to an area that has had adequate National Historic Preservation Act, Section 110 or Section 106 identification, assessment and evaluation. The work was done based on pedestrian surveys and occasionally volunteer estimates. The resource integrity for archeological resources cannot be wholly inferred from the Studies that have been done by the ABPP. Appropriate use of the ABPP mapping resources should be limited to informing the research design and not limiting the boundaries to the narrows of what is seen by visual evaluation.

Mapping with GIS

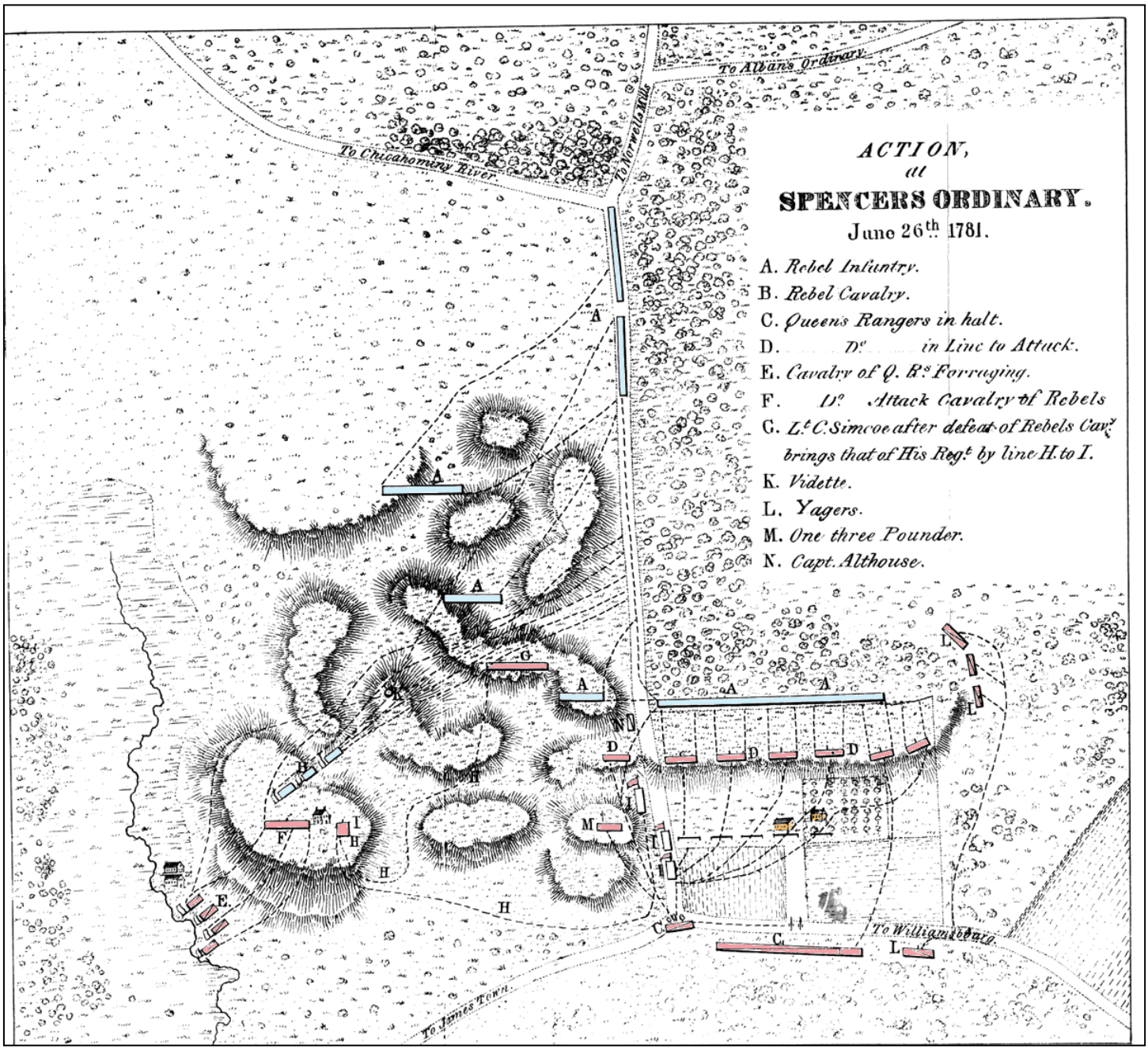
GIS maps which correlate technical data obtained on battlefields are considered standard and are a requirement for any further study on a battlefield. The National Park Service (NPS) has standards for GIS data. Information on the NPS standards can be found on the Cultural Resources GIS website: http://www.nps.gov/crgis/crgis_standards.htm. If the grantee is conducting GIS for their ABPP project, either through themselves or through a contractor, they must view the information on this site to make sure that the standards are met. Grantees can download the guideline document from the website, which explains what is contained in the standards. When submitting Request for Proposals, grantees should include this information when requiring GIS work. Further, the grantee can download a template GeoDatabase to help capture data, document it in the standards, and submit as part of the final product to the ABPP. Any GPS data collected with any receiver is always going to be decimal degrees, WGS84 datum. For the standards, we are using decimal degrees, NAD83 as the datum. You should be sending the ABPP points/lines/polygons in that way. For grantees, refer to your Grant Agreement for what is required for your final product submission.

[12] For additional guidance, see Donna J. Seifert, *Defining Boundaries for National Register Properties*, Washington DC: Department of the Interior, National Park Service, 1995. https://www.nps.gov/nr/publications/bulletins/boundaries/



Detail of a survey map of the battle of Spencer's Ordinary in Virginia. The surveyor has identified defining features in the map margin, drawing lines to the locations. Troop positions and movements are indicated. The surveyor added brief notes to identify different locations and phases of the fighting. Battlefield Boundary and Core Area are defined using natural features.

Historic map showing the Revolutionary War battle of Spencer's Ordinary as drawn by a participant. Although it has defects, this map proved valuable for finding resources in the field. The surveyor discovered the overgrown Spencer family cemetery in the midst of a low-impact residential development near where the Spencer Ordinary building was depicted on the map. Historic maps and sketches like this, as well as early versions of the USGS maps (dating from the 1890s) can provide useful details about place names, routes of old roads, fords, and terrain.



Part Four: Completing the Survey Forms

The ABPP Battlefield Survey Form

The American Battlefield Protection Program's survey form aims to collect baseline land use data and more detailed cultural resource information than most state survey forms request. Recording this important information helps the ABPP evaluate the condition of and threats to the battlefield landscape and make recommendations for its preservation. Most state survey forms can be completed from information collected on the ABPP form. We suggest our partners and grantees use the same approach and this form can be an example.

Battle Information Checklist

This is a cover sheet for the survey forms and attached information. Under duration of engagement, provide an estimate of how long the combatants fought (twenty minutes, two hours, dawn to dusk). Under intensity of engagement, check all listed elements that describe the fighting. The ABPP will use this information to develop an objective scale of engagement types and intensity.

Provide a brief description of the battle; additional narratives, descriptions, and accounts may be appended. For significance of engagement, please describe in two paragraphs the importance of your battlefield. (You may reference the statement of significance on the state survey form to avoid duplication.) Did it play a small or large role in the war? Was it representative of similar types of engagements within the region? Did it have an impact on the way the campaign was conducted? Were there social or political ramifications that transcended the field of battle?

Battlefield Information Box (page 1)

Fill in the name of the battlefield, additional names by which the battle is known, and beginning and ending dates of the event. Campaign information is especially important for non-Civil War events. Note the name of the war or conflict during which the battle occurred. The ABPP uses the following standard names for wars/conflicts on American soil: "French and Indian War", "Revolutionary War", "War of 1812", "Mexican War", "Civil War", "World War II". For battles associated with Indian wars, write "Indian Wars" followed by a more precise name, such as "First Seminole War" or "Great Sioux War." Provide information on battlefield location. List multiple counties/cities if the battlefield straddles jurisdictions. List all USGS topographical quadrangles on which the site appears. Provide the names of nearby towns or major roads. Note if other battles or skirmishes took place here.

Names and Contacts (page 1-2)

Fill in your name, address, and contact information as the battlefield researcher. If possible, provide the name of a local resident or interested party who can be contacted from time to time to update information on a battlefield's status (perhaps the local battlefield guide you worked with). If there is a commemorative area or park at the site, note what agency administers it, the number of acres it protects, and the agency's contact information. Is there a visitor center? Does the park interpret the battle? Is there a local battlefield support group for the site? If so, provide contact information for the group. The ABPP will provide technical assistance and information on

battlefield preservation funding to parks and support groups noted on the survey forms.

Battlefield Registration (page 2)
A number of battlefields that witnessed the most decisive actions in American history have attained National Historic Landmark status. Many other battlefields are listed in or have been deemed eligible for listing in the National Register of Historic Places. Having a battlefield listed in the National Register is a good place to begin to gain recognition for a battlefield site (see page 5). A National Register listing requires more documentation and a more thorough assessment of existing integrity than does the ABPP survey.[13] If your battlefield is listed or if the Secretary of the Interior has determined the site eligible for the National Register (a formal Determination of Eligibility), please note this fact. Find out if the battlefield is listed in State or Local Registers of Historic Landmarks, if these exist. State and local lists can be used to build the case for preserving battlefield land (see page 5). Finally, note whether any "contributing" resources are included in registered national, state, or local historic districts. A contributing building, site, structure, or object adds to the historic associations, historic architectural qualities, or archeological values for which a larger property is significant. For example, several houses used as cover by Union soldiers during the 1862 Battle of Fredericksburg contribute to the city's National Register district, but are not individually listed for their association with the battle.

Certainty of Battlefield Location (page 2)
This series of yes/no questions will help ABPP to identify battlefields where the location is questionable or in debate. For some smaller engagements, the surveyor may know generally where the battle was fought but believes that an archeological assessment will be needed to locate the core of the battlefield. In such cases, it is appropriate to define a Battlefield Boundary for the battlefield but not a Core Area. All additional site information can be filled in for the Battlefield Boundary. The surveyor should exhaust all reasonable lines of inquiry and document his or her efforts before concluding that a site is truly lost to history.

Current Land Use (page 2)
Using the USGS quadrangles and the updated information you collected in the field, estimate the percentage of battlefield Core Area that falls into each of the land use categories. We are looking for a reasonable estimate only. The categories should reflect the dominant land use in the area. This information will enable us to develop general classifications and percentages of land use for various battlefield landscapes. If you have time, visit the county or town planning office for detailed information on land use at the battlefield.

Battlefield Features Inventory (page 3)
Check the most common types of surviving visible or known actual cultural resources of the battlefield. Then tally the number resources of that type found on the battlefield. The ABPP will use this information to compile maps showing concentrations of the various resource types. Use

[13] See Patrick W. Andrus, *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*, Washington DC: Department of the Interior, National Park Service, 1992. https://www.nps.gov/nr/publications/bulletins/nrb40/

the *Describe Other* section to discuss additional features not on the list. All battlefield features will have at least one KOCOA attribute to assign. Some will have more than one KOCOA attribute.

Visual Considerations (page 3)
With an eye to interpreting the battle, determine which landscape elements are present that were there at the time of the battle. Do current road alignments essentially follow the old roads? Could a visitor visualize and understand where and how soldiers were deployed on the terrain and how they maneuvered? Do key features mentioned in the battle accounts or shown on historic maps still survive? If the battlefield is fragmented by incompatible land use, what remains of the original battlefield that could be used to tell the story of the battle? Finally, objectively critique those landscape elements that detract from our ability to understand how the battle was fought and why it was fought on this site.

Rate Overall Condition of Battlefield Landscape (page 3)
The condition assessment applies to the *overall* historic landscape of the battlefield Core Area as it currently exists, including the most important viewsheds. There are four categories that describe the range between an intact landscape and one fragmented by intrusions and developments. Please select an entire condition category. For borderline cases, select a condition then add qualifying comments.

1. Land use is little changed since the period of significance.
2. Portions of landscape have been altered, but most essential features remain.
3. Much of the landscape has been altered and fragmented, leaving some essential features.
4. Landscape and terrain have been altered beyond recognition since the period of significance.

Assessing a landscape's condition and integrity is a matter of degree. The key question to ask is this: *are the changes to the landscape reversible or irreversible?* Reversible land use changes, such as fields becoming forest or forests becoming fields, should not count against the condition. Few sites are pristine. Modern single-family homes or a trailer park spread out along the roads in the Battlefield Boundary should not count unduly against the condition, so long as the historic character of the landscape predominates. A gravel pit or quarry, extensive grading for commercial or industrial or residential purposes, urbanization, stream channelization, a four-lane highway—all impact the original landscape contours in ways that cannot be undone. At some point, these modern intrusions begin to dominate, and the sense of viewing an intact landscape slips away. Conversely, modern roadways might still retain the original road alignment, similar wooded conditions and similar scope and scale of small homes much like the avenue of approach might have had historically. It is a matter thorough historical understanding of the historical setting of the engagement. The more the topography is altered, the larger the intrusions, the greater the fragmentation, the less the historic landscape retains its integrity. Few badly fragmented battlefields are completely gone; some small piece may survive that is worthy of preservation and commemoration. If a small but notable parcel of the total battlefield remains in good condition while the rest must be assessed poorly, please note this fact in your written

description of the current condition. The PotNR boundary line might include only one acre of what was originally a 500-acre battlefield.

Threats to Site Integrity (page 4)
Assess threats two ways: 1) by the relative rate of change over the last ten years (from zero-growth to rapid development); and 2) by the type of change (see the list of building and construction classes). Check all that apply to the battlefield landscape.
Under the *Describe Immediate Threats* section, offer specific examples of land use changes that currently threaten the battlefield landscape. How do these changes threaten the battlefield? What critical areas have been lost or are endangered? How is the ability to interpret the battle affected? Will the scale of change result in an immediate reduction of the overall condition rating?

Discuss the general trend of land use change for the future under the *Describe Long-term Threats* section. Based on what has happened in the last ten years, does it appear that this trend will continue over the next ten years? What new projects are rumored to be on the horizon? What do you think the condition rating of the battlefield will be ten years from now? Will it go from good to worse? Whenever possible, check with the county/city planning office to determine expected land use in and around the battlefield.

Local Planning (page 4)
This section provides information as to the battlefield locality's planning regulations. Is the battlefield included in the locality's Comprehensive Land Use Plan if such a process is in place? Does the county/city implement zoning? If so, how is the battlefield area zoned? Also note if the zoning near or adjacent to the battlefield is markedly different from the zoning for the battlefield, e.g. adjacent land is zoned for commercial development while the battlefield itself is zoned for agricultural use or low density residential use. This may indicate a trend toward development of the battlefield in the future. This information will allow ABPP to conduct cross-site comparisons to identify planning mechanisms conducive to battlefield preservation.

Battlefield Owners (page 5)
Provide a general estimate of the percentage of the battlefield Core Area owned by various categories of owners. Break categories down roughly into 5% or 10% increments, for example, 70% Private (individuals), 20% State (state forest), 10% Federal (national park). This information will enable the ABPP and the SHPO to analyze patterns of battlefield land ownership by state and region and predict which types of preservation efforts might be most successful. Specify the name or any public owner, such the "Smyth County Parks Commission," the "Georgia Department of Natural Resources," or the "U.S. Bureau of Land Management." Also, identify any private non-profit organizations that own battlefield land and make their holdings accessible to the public, such as the "Mill Springs Battlefield Association" or the "Daughters of the American Revolution."

Battlefield Boundary
Surveyors should delineate three distinct battlefield areas on the USGS topographical maps. 1)

The Battlefield Boundary is determined by history, regardless of current integrity. The Battlefield Boundary includes all land over which combatants maneuvered after initial contact was made and skirmishing began. 2) The Core Area is determined by history, regardless of current integrity. The Core Area contains critical land where fighting occurred and where the combatants suffered casualties. It should be wholly contained by or congruent with the Battlefield Boundary. 3) The battlefield's Potential National Register (PotNR) boundary is determined by integrity. It consists of those portions of the Study and Core Areas that retain enough integrity to meet standards of eligibility for the National Register of Historic Places. The PotNR boundary constitutes only the surveyor's best recommendation for a battlefield boundary; it is a *preliminary* boundary, not an official National Register boundary. To make a PotNR recommendation, the surveyor needs to be familiar with the assessment process contained in two National Register publications, *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields* and *Defining Boundaries for National Register Properties.*

Submission Checklist

Have you included the following?

- **Completed ABPP Survey Form**
- **Sources Sheet**
- **Defining Features List**
- **Order of Battle**
- **Troop Movement Maps**
- **Battlefield Boundary/Core/PotNR Maps**
- **Labeled Photographs/Slides**
- **Photo Log Sheet**
- **GPS Data Files and Exported Shapefiles**

Describe the PotNR boundary you have drawn and justify the demarcation. What is included? What is excluded? Why? Refer to your battlefield inventory list and visual considerations (page 3).

8. Submit Documentation

Use the Submission Checklist to be sure that your submission is complete. Be careful to keep copies of your work. Maps should be rolled and sent in a mailing tube. Other materials should be sent in a mailing envelope, stiffened with a piece of cardboard to prevent photographs from being bent. Place slides in numerical order in a plastic slide protector sheet. Label each slide casing using a permanent pen or No.1 or No. 2 pencil. Label black and white prints with a No. 1 or No. 2 pencil. Do not use ballpoint or felt-tip pens to label prints! Do not put adhesive labels on prints! Pen ink and adhesive glue can damage the photographs.

Submit copies of materials to your state historic preservation office and to:

Department of the Interior
National Park Service
American Battlefield Protection Program
1849 C Street, NW (2287)
Washington, DC 20240

APPENDIX A-
BATTLEFEILD SURVEY FORM

BATTLE INFORMATION CHECKLIST

NAME OF BATTLE _____
CAMPAIGN _____
DATE(S) _____
DURATION OF ENGAGEMENT _____
INTENSITY OF ENGAGEMENT (check all that apply)
□ Maneuver (feinting, marching, shifting for position)
□ Surprise attack (enemy overrun, routed)
□ Artillery employed
□ Skirmishing (sharpshooters, sporadic firing)
□ Battle lines advanced (volleys exchanged)
□ Determined assault (battle lines advanced to close range)
□ Repeated attacks (repulsed and renewed, counterattacks)
□ Lines intermingled (attack pierced defense, hand-to hand)
□ Sustained hand-to-hand fighting
□ Investment and siege
□ Routed enemy pursued

PRINCIPAL MILITARY
(USA)_____
LEADERS PRESENT
(Opponent)_____

PRINCIPAL MILITARY
(USA)_____
UNITS INVOLVED
(Opponent)_____

NUMBERS OF TROOPS PRESENT (USA)_____
(Opponent)_____

NUMBERS OF KILLED/WOUNDED (USA)_____
(Opponent)_____

NUMBERS OF CAPTURED/MISSING (USA)_____
(Opponent)_____

DESCRIPTION OF THE ENGAGEMENT (or attached)

SIGNIFICANCE OF ENGAGEMENT IN CONTEXT OF CAMPAIGN/WAR (or attached)

AMERICAN BATTLEFIELD PROTECTION PROGRAM
Name of Battlefield:
Other Names:
Beginning Date of Battle: Ending Date of Battle:
War: Campaign:
State: County/City:
USGS Quadrangle Map(s):
Geographical Relationship to Nearest Main Road Intersection or Town:
Name Any Additional Battles Fought on This Site:
BATTLEFIELD SURVEY FORM
BATTLEFIELD RESEARCHER (Person Completing Form)
Name_____
Organization_____
Address_____
City, State, ZIP _____
Telephone/Email_____

LOCAL CONTACT (Person Who Can Update Changing Battlefield Conditions)
Name_____
Organization_____
Address_____
City, State, ZIP_____
Telephone/Email_____

PARK OR COMMEMORATIVE AREA AT THE SITE (or None)
Name_____ Size of Park (Acres)_____
Superintendent/Site Manager_____
Address_____
City, State, ZIP_____
Telephone/Email_____
Is there a Visitor Center at the Site ? Yes No
Does the Park Interpret the Battle? Yes No

BATTLEFIELD FRIENDS OR SUPPORT GROUP FOR THE SITE (or None)
Group Name_____
Group Contact_____
Address_____
City, State, ZIP_____
Telephone/Email_____
For multiple Friends or Support Groups, please attach additional sheets.

BATTLEFIELD REGISTRATION
National Historic Landmark? Yes No National Register? Yes No
Register Number_____
Determined Eligible for National Register (DOE)? Yes No State Register? Yes No
Local Listing? Yes No Type of Listing_____
Are contributing sites, structures, or other resources listed? Explain:

CERTAINTY OF BATTLEFIELD LOCATION

Do surface remains such as buildings, structures, ruins, objects, natural features, or other physical evidence survive and indicate the site location precisely? Yes No

Does documentary evidence (such as period maps) testify conclusively to location? Yes No

(Please attach copies of sources if applicable.)

Does identification rely primarily on local tradition and/or testimony of local collectors? Yes No
(If yes, please be sure to include these local contacts on the sources sheet.)

Is the selected site one of other possible locations for the battlefield? Yes No

Is an archeological assessment needed before the site can be located? Yes No

CURRENT LAND USE (Percentage of Land Use in Core Area)
□ On-site assessment of percentages □ Local planning office data used for percentages
___% Forest
___% Open Space (non-agricultural)
___% Agricultural (field, pasture, woodlot)
___% Commercial farming (feedlot)
___% Water (lake, river)
___% Urban
___% Residential
___% Industrial
___% Commercial

___% Waste (dump/quarry)
___% Highway/railroad
___% Cemetery
___% Other

Describe Other:

BATTLEFIELD FEATURES INVENTORY (Check All That Apply and tally total number of each)

□ Standing Historic Buildings/Structures _____ □ Structure Sites/Ruins _____
□ Historic Roads/Road Traces _____ □ Water Features _____
□ Stone Fences _____ □ Known Archeological Sites _____
□ Cemetery _____ □ Possible Unmarked Burials _____
□ Earthen Fortifications _____ □ Masonry Fortifications _____
□ Monuments _____ □ Interpretive Signs/Markers_____

Describe manmade or terrain features that should be considered part of the inventory:

VISUAL CONSIDERATIONS

Which Landscape Elements Contribute to the Interpretation of Events?

Which Landscape Elements Detract from the Interpretation of Events?

RATE OVERALL CONDITION OF BATTLEFIELD LANDSCAPE

□ Land use is little changed since the period of significance.
□ Portions of landscape have been altered, but most essential features remain.
□ Much of the landscape has been altered and fragmented, leaving some essential features.
□ Landscape and terrain have been altered beyond recognition since the period of significance.

THREATS TO SITE INTEGRITY

Rate of Land Use Change in the Vicinity within Last Ten Years

- ☐ No Change
- ☐ Occasional Change
- ☐ Slow, Steady Change
- ☐ Steady Change Appears to be Accelerating
- ☐ Rapid, Large-scale Growth or Development

Type of Land Use Change Occurring (Check All That Apply)

- ☐ Highway Construction
- ☐ Dam Building/Impoundment
- ☐ Quarrying/Strip Mining
- ☐ Single Family Homes
- ☐ Housing Subdivisions
- ☐ Mobile Home Park
- ☐ Apartment Buildings
- ☐ School/Church/Institution
- ☐ Cemetery
- ☐ Strip Commercial
- ☐ Regional Retail Center
- ☐ Office Park
- ☐ Industrial Buildings
- ☐ Industrial Park
- ☐ Commercial Agricultural Buildings
- ☐ Clear-cut Logging

Other:

Describe Immediate Threats to the Site's Integrity (within next few years)

Describe Long-term Threats to the Site's Integrity (within ten years)

LOCAL PLANNNING
County/City has Comprehensive Land Use Plan? Yes No
County/City Uses Zoning? Yes No
Describe Comprehensive Plan Recommendation for Battlefield and Vicinity (if applicable):

Describe Current Zoning of Battlefield and Adjacent Areas (if applicable):

BATTLEFIELD OWNERS
___% Private
___% Private/Non-Profit
___% Local Government
___% State
___% Federal

Identify Federal, State, Local Agency Owners and Private Non-Profit Owners:

BATTLEFIELD BOUNDARY

Three distinct battlefield areas should be delineated on the survey map. The Battlefield Boundary should include all land over which combatants maneuvered after initial contact was made, regardless of current integrity. The Core Area Boundary should contain critical land where fighting occurred and casualties were incurred, regardless of current integrity. The Potential National Register (PotNR) Boundary should contain that portion of the Battlefield Boundary and Core Areas that remain after parcels of lost integrity are subtracted. The PotNR Boundary will be considered the present-day boundary of the battlefield.

Describe the PotNR Boundary:

Justify Demarcation of the PotNR Boundary:

Battlefield Sources Form

Battle: _____ Page No.____ of ____

Source No.	Source

Form Completed by: _____ Date _____

DEFINING FEATURES FORM

Battlefield: _____ Page No.____ of ____

Defining Features: sites, natural features, and place names found in battle descriptions or shown on historic maps that can be used to locate significant actions and events in the field. To save space, enter sources number(s) here from the accompanying SOURCES SHEET.

Name of Feature	Relevance to Battle	Source(s)	Field Comment	On Map?

Form Completed by: _____ Date: _____

ABPP BATTLEFIELD SURVEY
PHOTO LOG

Battlefield: _____ **Page ___ of ___**

Slides Prints **Roll # _____** **Date _____**

Exposure	Panorama	Subject	Direction

Photos by: _____ Date: _____

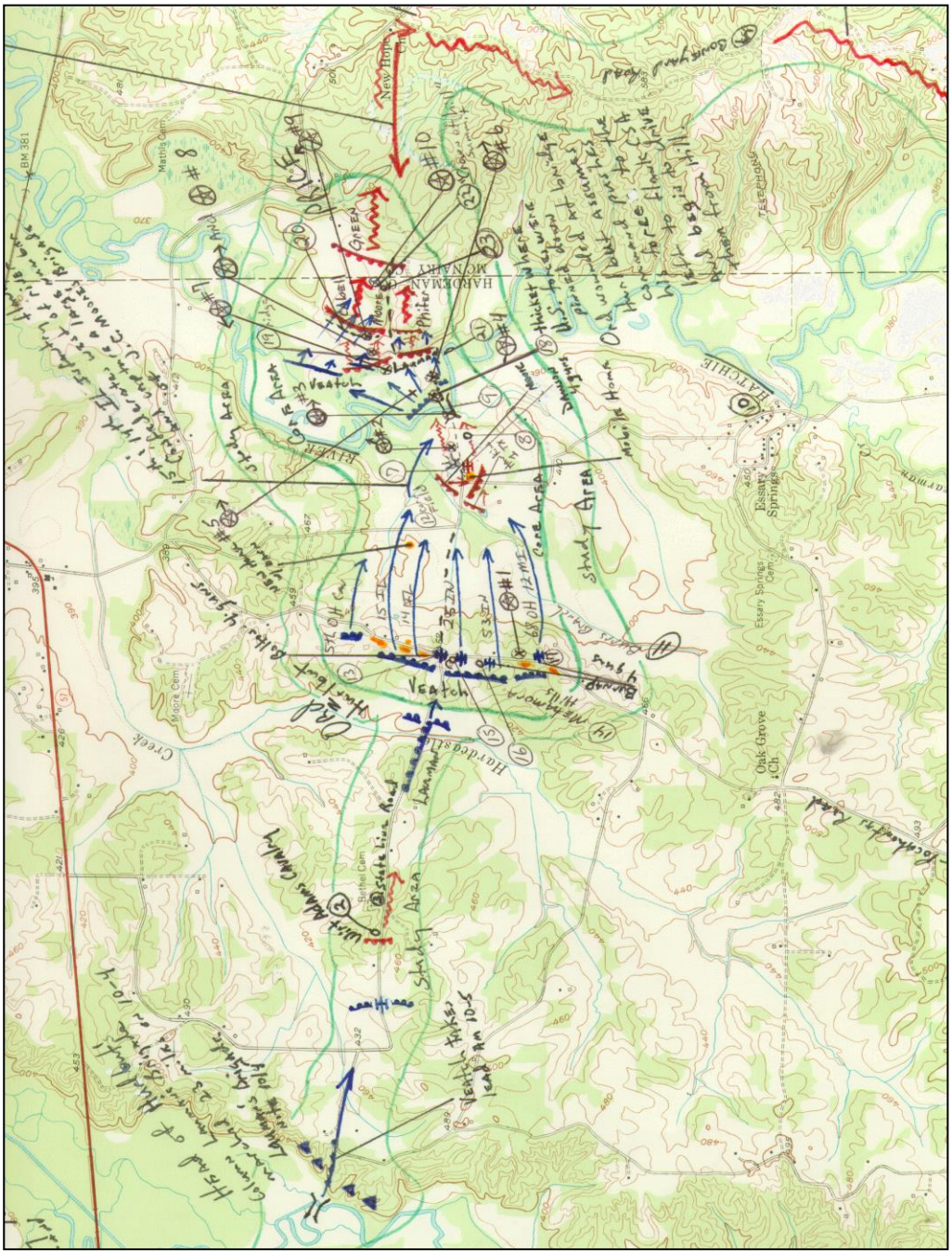
ORDER of BATTLE Army _____ Location _____
Commanding Officer _____ Dates _____

Construct an Order of Battle for your units. If you have a specific report or account from the unit, check the box.

Corps		**Division**		**Brigade**		**Regiment**		**Note**

Page _____ of _____ Pages

SAMPLE SURVEY MAP

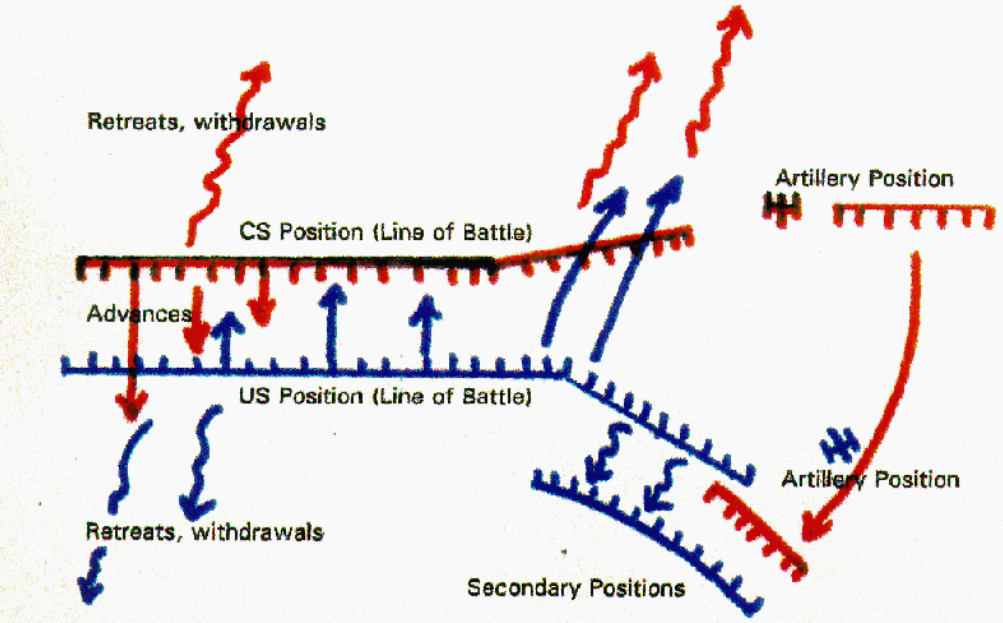


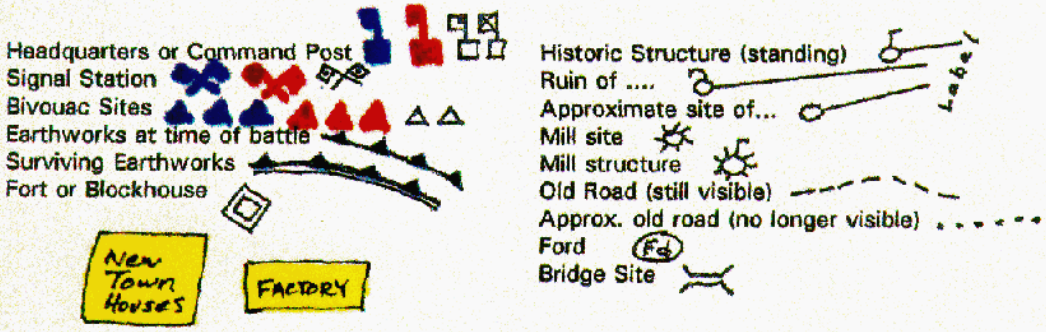
Stacy Allen's map of the Battle of Hatchie's Bridge in Tennessee, showing detailed unit positions, numbered defining features, study and core areas. Allen made detailed notes about times and positions on the map itself. American units and movements are traditionally shown in blue, while opponents' positions (whether Confederate, British, or Native American) are in red.

Civil War Sites Study
American Battlefield Protection Program
National Park Service

KEY TO MAP SYMBOLS

Conventions: US in blue. CS in red. Movements to front, assaults, are straight lines. Movements to rear, retreats, are wavy lines. Yellow highlighter = built-up areas/lost integrity.





See Attached Sample

Simple Civil War Data Dictionary –

This is just an example of a data dictionary the ABPP built for its recent Civil War Sites Update (2010). It is listed here as merely a suggestion, but your creativity is encouraged to build a dictionary that works for your project.

"battle10", Dictionary, version, 6, "comprehensive ddict for all battlefields"
"Hut Site", point, "Hut Site", 1, seconds, 1, Code
  "GPS#", text, 15, required, "GPS#", normal
  "Depression", menu, normal, "Depression", normal
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    "No"
  "Stacked Stone", menu, normal, "Stacked Stone", normal
    "Yes"
    "No"
  "Hearth", menu, normal, "Hearth", normal
    "Yes"
    "No"
  "Confidence", menu, normal, "Confidence", normal
    "Certain"
    "Probable"
    "Possible"
  "Comment", text, 50, normal, "Comment", normal

"Tent Pad", point, "Tent Pad", 1, seconds, 1, Code
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    "No"
  "Stacked Stone", menu, normal, "Stacked Stone", normal
    "Yes"
    "No"
  "Hearth", menu, normal, "Hearth", normal
    "Yes"
    "No"
  "Confidence", menu, normal, "Confidence", normal
    "Certain"
    "Probable"
    "Possible"

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  "Site #", text, 30, normal, "Site #", normal
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    "ditch in front"
    "ditch in rear"
    "ditched both sides"
    "no visible ditch"
  "Ground Cover", menu, required, "Ground Cover", required
    "open ground"
    "evergreen woods"
    "deciduous woods"
    "mixed forest"
    "scrub"
  "Condition", menu, required, "Condition", required
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    "fair"
    "poor"
    "remnant"
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    "covered way"
    "gun ramp"

```
    "firing step"
    "other"
  "Comment", text, 50, normal, "Comment", normal

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    "hump"
    "traverse"
    "balk"
    "magazine"
    "bombproof"
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    "gun ramp"
    "other"
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    "magazine"
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    "end"
    "angle"
    "intersection"
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    "human digging"
    "erosion"
    "compaction"
    "trail impact"
    "tree throw"
    "logging", default
    "other"
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    "leaf litter"
    "moss"
    "turf grass"
    "wild grass"
    "scrub"
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    "50-75"
    "75-100"
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    "surveyed marker"
    "trailhead"
    "site access"
    "bridge"
    "well/cistern"
    "culvert"
    "other"
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    "post-Civil War"
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    "ruin"
    "site confirmed"
    "approx. location"
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    "post-Civil War"
    "antebellum"
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    "warning"
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    "dirt"
    "logging"

    "trace"
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    "historic"

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APPENDIX B-
ABBREVIATED PROGRAM MATERIALS

American Battlefield Protection Program Battlefield Mapping Methodology - Abbreviated

The first step toward preserving a battlefield is defining exactly where the battlefield is located and what landscape remains to be preserved. This entails identifying features associated with the battle and then establishing defensible boundaries around the battlefield on a map. The boundaries encompass legitimate historic resources that are supported by historical evidence and source materials. The ABPP approach to mapping a battlefield is to first identify those features that define the overall battlefield landscape (Defining Features) and then draw historically defensible boundaries for sites(s) of combat and the battlefield at large (Core Area and Battlefield Boundaries). Additionally, a separate boundary is drawn around lands within the battlefield that remain to be preserved and are considered potentially eligible for inclusion on the National Register of Historic Places (Potential National Register [PotNR] boundary).

Defining Features

Defining features aid in establishing legitimate, historically defensible boundaries around a battlefield landscape. They are natural terrain features, manmade features, and place names found in battle descriptions or on historic maps that can be used to locate significant actions and events associated with a battle. A defining feature may be a place such as a town or farm, a structure such as a mill, house or church, a road, wood lot, earthwork, or farm field; it may be a natural terrain feature, such as a stream, ridge, hill, ford, or ravine. These features define the battlefield on the landscape and serve to pin battle events to identifiable locations. Finding and mapping features helps to ensure that the battlefield is defined as objectively as possible and to accurately reflect the full extent of the battlefield.

A defining feature may be any feature mentioned in battle accounts or shown on historic maps that can be visually located on the modern landscape or under the landscape's surface (archeological remains). Defining features must be topographically defensible. Any feature whose existance can be verified through physical evidence can be mapped as a defining feature. Features that no longer exist above or below the surface and therefore have no physical trace are still considered battle features but are not mapped as defining features. Once the defining features are identified and drawn on the map, the battlefield boundaries can be deliniated.

Battlefield, Core and Potential National Register (PotNR) Boundaries

Battlefield Boundary and Core Area boundaries delineate the historical extents of a battlefield. Potential National Register (PotNR) boundaries delineate areas within the Battlefield and Core Area boundaries that still retain integrity and remain to be preserved. The Battlefield and Core Area boundaries define the *historic* landscape of the battlefield while the PotNR boundaries define the *modern* landscape. For example, if a particular farm field was important during the battle but now is covered by a housing development, it would still be included in a Core or Battlefield Boundary because the farm field informs the history of the battle. That same farm field, however, would not be considered for inclusion in a PotNR boundary because it no longer has integrity (i.e. conveys a sense of the historic scene) and there is nothing left of the original farm field to preserve.

When surveying a battlefield the Battlefield and Core Areas are identified first and then the portions of those Areas that retain integrity are identified as potentially eligible for inclusion on the National Register of Historic Places (PotNR boundary).

Defining the Battlefield Boundary

The Battlefield Boundary defines tactical context and visual setting and reflects the historic extent of the battle as it unfolded across the landscape. The Battlefield Boundary contains all resources related to or contributing to the battle event: where troops maneuvered and deployed, immediately before, during, and after combat, and where they fought during combat. The Battlefield Boundary also includes all locations and geographic features that directly contributed to the development and ending of the battle (Defining Features).

The Battlefield Boundary should include the following:

- Core Areas of combat (see Core Area below);
- Minor preliminary skirmishing if it led directly to the battle;
- Approach and Withdrawal routes of the military units. These should be drawn as corridors along the roads if movement was confined to a road, if not they should be drawn as corridors along the landscape if those corridors are known. In order to standardize corridors of movement along the routes, Infantry routes are buffered at 200 yards in width and Cavalry routes are buffered at 400 yards in width. These widths are roughly the frontage of an average regiment;
- Areas of maneuver and locations of deployed units on the field, even if these units were not engaged;
- Routes and locations of any units held off or sent out of range of the fighting (e.g. scouting) during the battle. Units that engaged in combat with enemy forces as a result of being held off or sent out of range should be included in a Core Area;
- Minor post battle skirmishing if it was part of a larger withdrawl;
- Geographic features that contribute to the flow of battle (mountains, ravines, hills, rivers, etc.);
- Encampments (if they were part of the initial position of the attacking/defending force(s); and
- Logistical areas - e.g. locations of ammunition trains, hospitals, headquarters, supply dumps.

The Battlefield Boundary is restricted to the immediate flow of battle after one side or the other has moved to initiate combat. For example, if a unit left its encampments intending to attack the enemy, it is appropriate to include the encampments and the accompanying approach routes in the Battlefield Boundary as the initial position of the attacking force. The route of the previous day's march to reach those encampments, however, would not be included.

The Battlefield Boundary ends where the opposing forces disengaged and withdrew. Reasons for disengagement might include darkness or adverse weather conditions, pursuit of a retreating force being halted by a rear guard action, orders to disengage being received, or one force accomplishing its objective and choosing not to pursue its retreating foe. Withdrawal routes end where, logically, the combatants would not be expected to turn back and continue engaging in battle.

There is only one contiguous Battlefield Boundary per battlefield. The Battlefield Boundary is generally drawn, where practicable, to follow natural features and contours identified on USGS 7.5 minute quadrangle maps.

Defining the Core Area(s) Boundary/Boundaries

The *Core Area* of a battlefield is the area of direct combat on the battlefield. A Core Area includes critical land where fighting occurred and casualties were sustained. There may be multiple Core Area boundaries on a battlefield, but all must fall fully within the Study Area boundary. Of note when drawing Core Area boundaries:

- As a rule, the position of any unit that fired weapons or that came under fire is included within Core Area boundaries; however, minor skirmishing along approach or withdrawal routes is not included as it detracts from the primary area(s) of combat. It is, however, included in the larger Study Area boundary.

- Units held or sent out of range are generally not included within Core Area boundaries unless their being sent out of range caused them to engage in fighting with opposing forces.

  For example, a unit was sent, during the battle, to verify reports of enemy forces being sited at a location removed from the main area of combat. If no enemy forces were found or engaged, the unit's movements from and back to the main area of combat would be included in the Study Area boundary. If the unit found and engaged opposing forces, however, the action would be considered direct combat and would receive its own Core Area boundary.

- Artillery positions are generally not included within Core Area boundaries unless they are attacked, give supporting fire, or are directly engaged in fighting with opposing forces.

  For example, if cannons were massed to cover a road and their position led to an engagement through cannon fire or a direct attack on the guns, then the position would be included in a Core Area boundary. If, however, the cannons were not engaged but their mere presence caused the opposing force to move on a different road, then their position would be considered as playing a strategic role in the overall battle and would be included in the larger Study Area boundary.

Core Area boundaries are generally drawn, where practicable, to follow natural features and contours identified on USGS 7.5 minute quadrangle maps.

Defining a Potential National Register Boundary (PotNR)

Unlike the Battlefield Boundary and Core Area boundaries, which are based only upon the interpretation of historic events (*historic landscape*), the Potential National Register (PotNR) boundary is based on the assessment of current landscape integrity (*modern landscape*). The PotNR boundary defines land that remains to be preserved and would be likely eligible for future listing on the National Register of Historic Places (NRHP) and likely deserving of future preservation efforts. All PotNR boundaries must fall fully within the Battlefield Boundary. In some cases the battlefield landscape will no longer retain any integrity; therefore some battlefields will not have a PotNR boundary.

If a battlefield is already listed in the NRHP, the existing NRHP documentation is reassessed based on current scholarship and resource integrity. As a result, some PotNR boundaries will contain or share a boundary with lands already listed in the NRHP. In other cases, PotNR boundaries will exclude listed lands that have lost integrity.

A PotNR boundary does not constitute a formal determination of eligibility by the Keeper of the National Register of Historic Places. The PotNR boundary is designed to be used as a planning tool for government agencies and the public and places no restriction on private property use.

Assessing a Battlefield's integrity

The degree to which post-war development has altered and fragmented the historic battlefield landscape or destroyed historic features and viewsheds is critical when assessing a battlefield's current integrity to determine whether or not a PotNR boundary is warranted. Of note when assesing integrity:

- Changes in traditional land use over time do not generally diminish a battlefield's integrity. For example, landscapes that were farmland during the battle do not need to be in agricultural use today to be considered eligible for listing in the NRHP so long as the land retains its historic rural character. Similarly, natural changes in vegetation – woods growing out of historic farm fields, for example – do not necessarily lessen a landscape's integrity.

- Some post-battle development is expected; slight or moderate change within the battlefield may not substantially diminish a battlefield's integrity. A limited degree of residential, commercial, or industrial development is acceptable. These post-battle "non-contributing" elements are often included in the PotNR boundary in accordance with NRHP guidelines.

- Significant changes in land use since the time of the battle do diminish the integrity of the battlefield landscape. Heavy residential, commercial, and industrial development; cellular tower and wind turbine installation; and large highway construction are common examples of such changes. Battlefield landscapes with these types of changes are generally considered as having little or no integrity and will be excluded from the PotNR boundary.

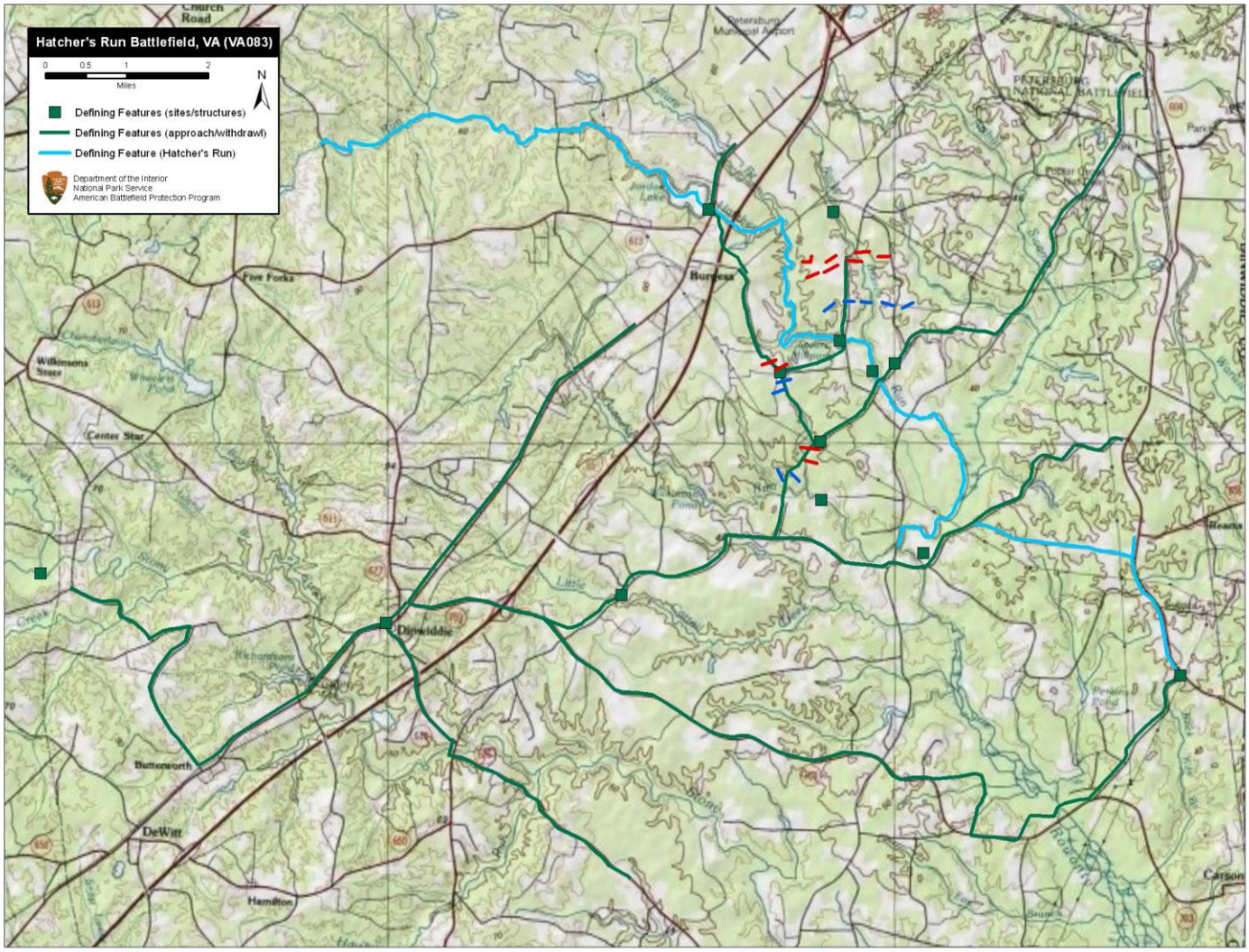
The concept of integrity for the purpose of drawing a PotNR boundary is defined in NRHP Bulletin #40 - *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefield* (Chapter V, Section VII - Assessing Integrity) and NRHP Bulletin #15 - *How to Apply the National Register Criteria for Evaluation* (Chapter VIII).

NRHP Bulletins 40 and 15 can be found on the NRHP website at:

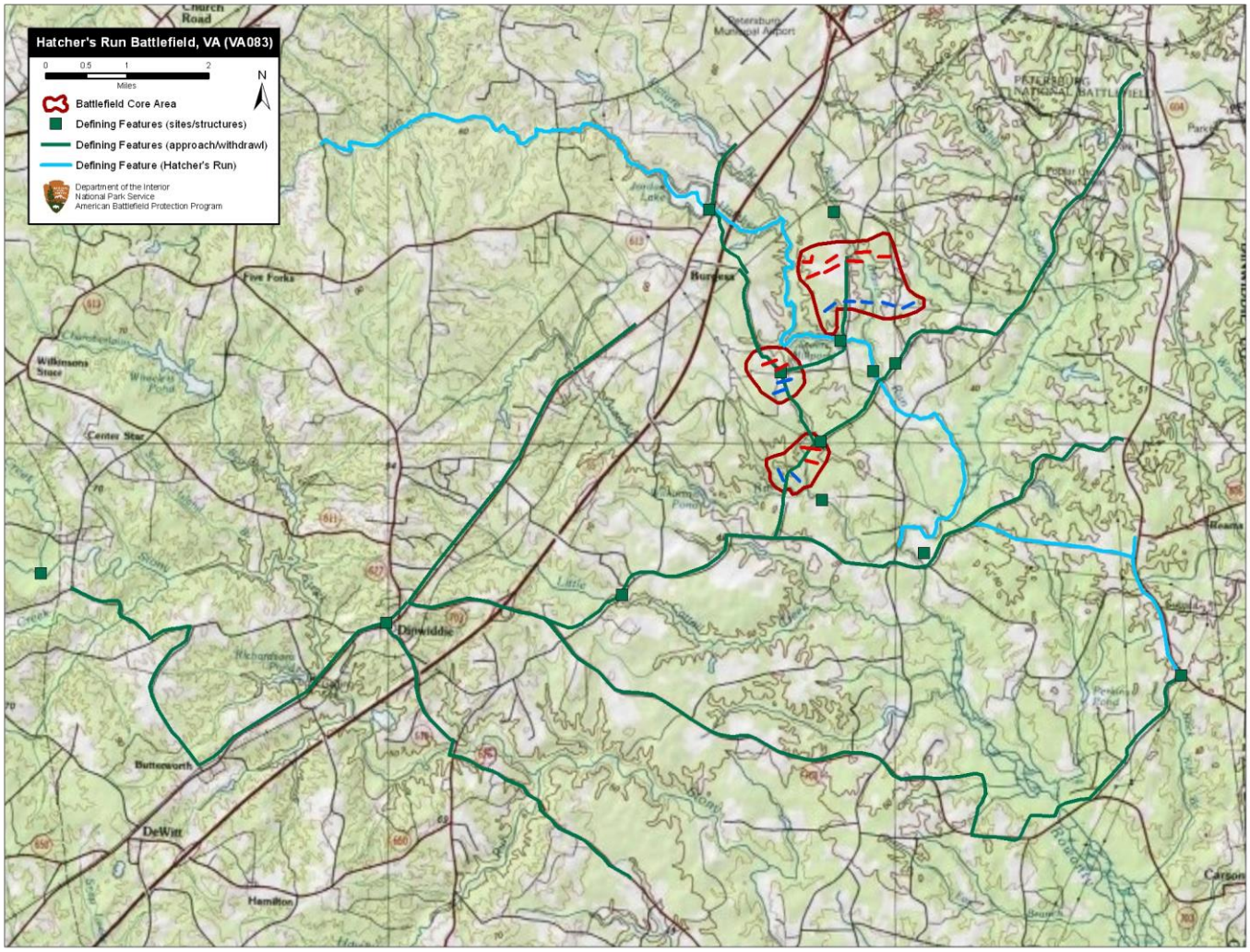
http://www.nps.gov/history/nr/publications/bulletins/nrb40/nrb40_5.htm
http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15_8.htm

Generally when drawing a PotNR boundary, developed or altered portions of the battlefield landscape are omitted. It is sometimes necessary, however, to include these portions as noncontributing elements in order to maintain cohesion amongst the portions of the battlefield that retain integrity. Because the NRHP does not allow holes in the middle of historic district boundaries (battlefields are considered to be historic districts), developed areas in the *midst* of PotNRs are included in accordance with NRHP requirements. For example, if development has occurred on the edge of a Battlefield Boundary, it would be omitted from the PotNR. If, however, development has occurred in the center of the Battlefield Boundary, and that development is surrounded by land with good historic integrity, that development would be included in the PotNR so as not to create a "donut hole" in the middle of the boundary.

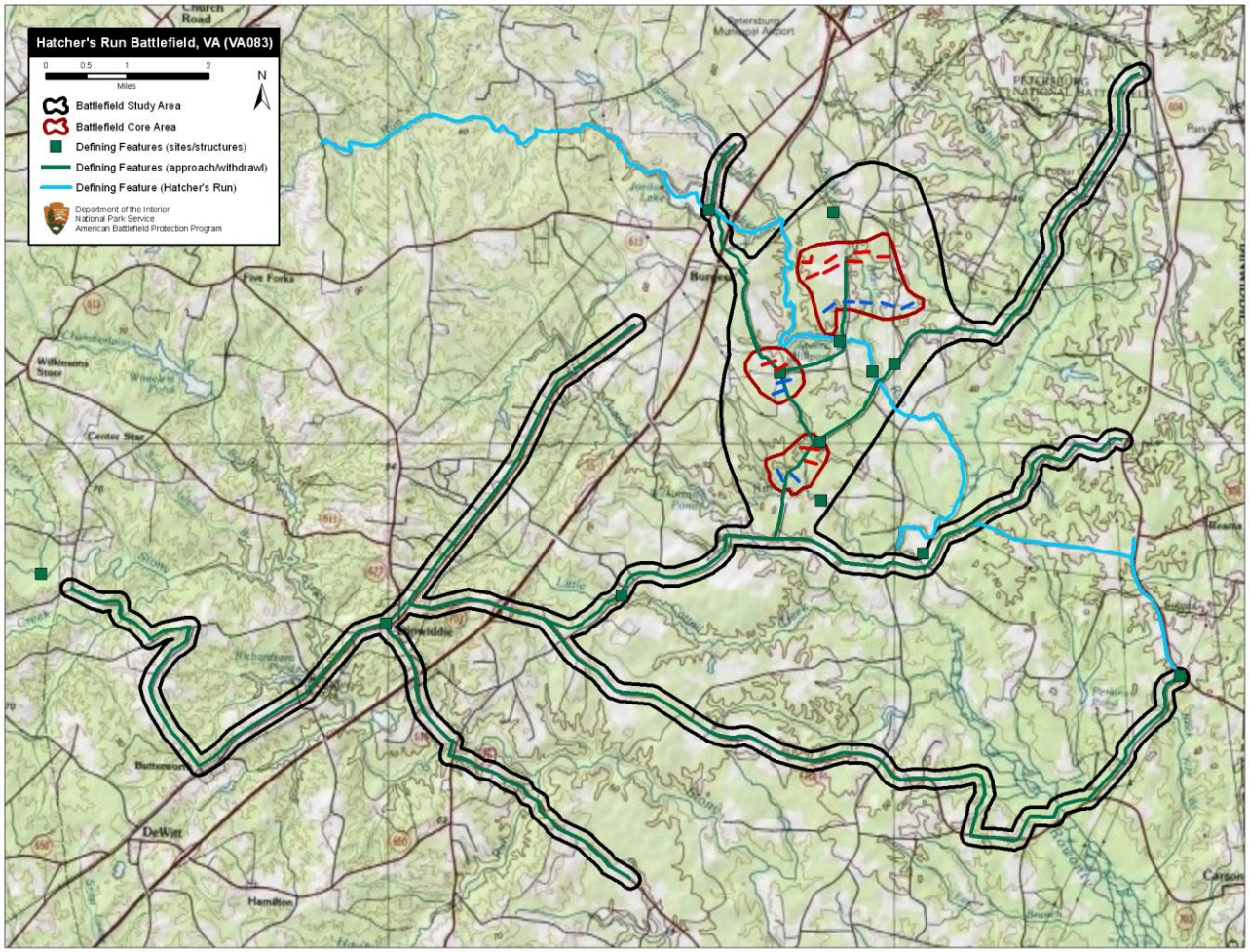
Battlefield Mapping Methodology - Defining Features



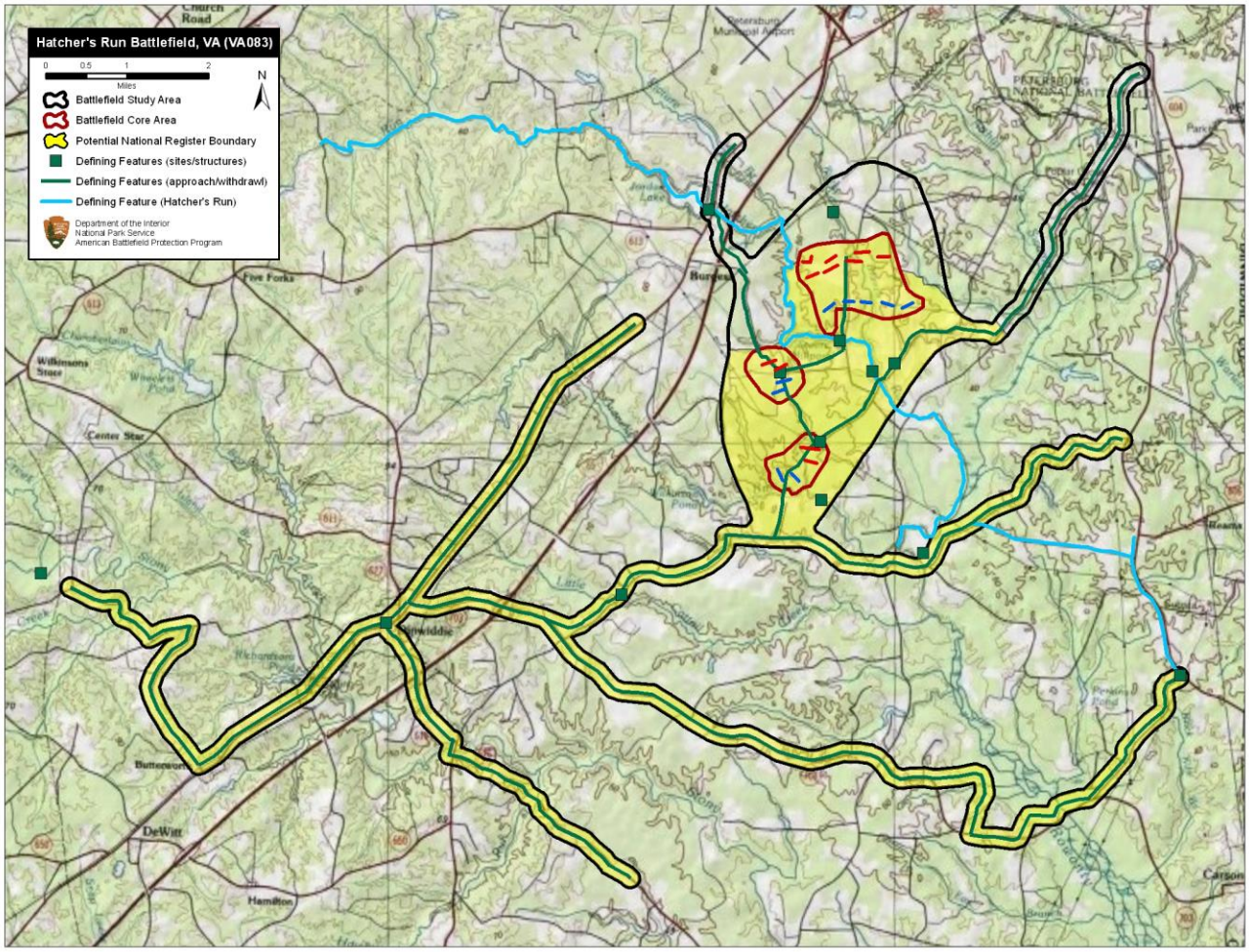
Battlefield Mapping Methodology – Core Area(s) Boundary/Boundaries



Battlefield Mapping Methodology – Battlefield Boundary



Battlefield Mapping Methodology – Potential National Register Boundary



KOCOA (Military Terrain Analysis) - Cheat Sheet

The US military has developed a process for evaluating the military significance of the terrain denoted by the acronym KOCOA. Battlefield surveyors learn to view the terrain through the soldiers' eyes using the five aspects of KOCOA:

Key Terrain/Decisive Terrain
Observation and Fields of Fire
Concealment and Cover
Obstacles
Avenues of Approach/Withdrawal

<u>**K**ey and Decisive Terrain</u>
Key Terrain ~ any local feature that dominates the immediate surroundings by relief or by some other quality that enhances attack or defense.
• High ground with good observation and clear fields of fire
• Transportation choke point such as a water crossing, defile, road junction

Decisive Terrain ~ also called Critical Terrain. Ground that *must* be controlled in order to successfully accomplish the mission. It is relatively rare and is not necessarily associated with a formal Course of Action[14] or present in every situation. Terrain is identified as decisive when it is recognize that the mission depends upon its seizure or retention. *Key terrain typically offers control of a local objective or an important transportation route.*

<u>**O**bservation and Field of Fire</u>
Observation ~ the ability to see friendly and enemy forces and key aspects of the terrain in order to judge strength, prevent surprise, and respond to threats

Field of fire ~ an area that weapons may cover/fire upon effectively from a given position. A unit's field of fire is directly related to Observation

Dead Space ~ an area within the maximum range of a weapon or observer, which cannot be covered or seen from a particular position.

<u>**C**over and Concealment</u>
Cover ~ protection from enemy fire
example - ditches, riverbanks, buildings, walls, entrenchments

Concealment ~ protection from enemy observation and surveillance
example - forests, ravines, dense vegetation, reverse slopes

<u>**O**bstacles</u>
Obstacles ~ natural or manmade terrain features that prevent, impede, or divert military movement
Existing obstacles are already present on the battlefield and not placed there through military effort. They can be natural (swamp, forest, river) or cultural (town, railroad, bridge).

[14] Course of Action - a sequence of activities that would accomplish, or are related to the accomplishment of, a specific mission.

Reinforcing obstacles are placed on the battlefield through military effort and are designed to strengthen the terrain. Reinforcing obstacles include such things as entrenchments, earthworks, and abatis.
The presence and difficulty of obstacles determine whether terrain is:
Unrestricted - fairly open and presents no hindrance to ground movement
Restricted – hinders ground movement. Little effort is needed to enhance mobility
Severely Restricted – unfavorable terrain
Complex – consisting of one or more of the above

Avenue of Approach/Withdrawal
Avenue of Approach ~ relatively unobstructed ground route that leads to an objective or to key terrain

Avenue of Withdrawal ~ relatively unobstructed ground route that leads away from an objective or key terrain

Mobility Corridor ~ area where movement is channeled due to terrain constrictions, e.g., road over a causeway. *The size of an attacking unit is limited by the breadth and difficulty of its Avenue of Approach.*

Definitions

Battlefield Land - Sites where armed conflict, fighting, or warfare occurred between two opposing military organizations (not civil unrest).

Associated Sites - Sites occupied before, during, or after a battle at which events occurred that had a direct influence on the tactical development of the battle or the outcome of the battle. A site must be associated with a battle in order to be considered an Associated Site.

How Many Sites Are There?

There were about 10,500 Civil War armed conflicts, ranging from major battles to minor skirmishes. Using military significance criteria, the 1993 Commission identified 384 such conflicts, or 3.7 percent of the total. These sites encompass virtually all of the principal land battles that were of special strategic, tactical, or thematic importance to local operations, campaigns, theaters, or to the war as a whole. Likewise in 1996, over 2742 Revolutionary War and War of 1812 Sites were considered with only 811 sites and 184 battlefields being surveyed with like criteria.

How Significant Are the Sites?

The Commission ranked military importance of the 384 battles (and their associated battlefield sites) according to the relative influence each had on the outcome of its operation, campaign, or on the war. The Class A and B battlefields represent the principal strategic operations of the war. The Class C and D battlefields usually represent operations with limited tactical objectives of enforcement and occupation.

"A" (having a decisive influence on a campaign and a direct impact on the course of the war);

"B" (having a direct and decisive influence on their campaign);

"C" (having observable influence on the outcome of a campaign);

"D" (having a limited influence on the outcome of their campaign or operation but achieving or affecting important local objectives).

Because of their strategic character and national significance, the Class A and B sites should be an interest or responsibility of the Federal as well as state and local governments, non- profits, and other private entities. Generally, the Class C and D battlefields, representing tactical operations, were of state or local significance and should be a primary interest or responsibility of state or local governments, or of private entities.