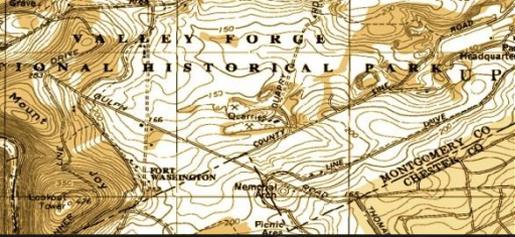


# Mapping Battlefields: Survey and Inventory



# **ABPP Battlefield Survey Philosophy:** *Importance of Identification, Documentation, Mapping*

Destruction of historic and cultural resources occurs through ignorance of location and significance. Identification, documentation, and mapping of a battlefield's resources are an important first step in the battlefield preservation effort. The mission of encouraging the community to protect important resources is supported and made easier by comprehensive survey and accurate mapping.





# ABPP Battlefield Survey Philosophy: *Battlefields are Multi-layered Historic Landscapes*

Battlefields are not just discrete areas of combat, they are also the surrounding land areas. Taken together they form a landscape associated with an historic event, making an *historic landscape*.

The land may be associated with history, but it does not freeze in time. The landscape continues to build up in layers. It changes and grows, retaining clues to the past.

## Steady Growth and Modern Overlay ~ Appearance of the Landscape Today

Cumulative vs. Destructive Change  
Memory and its Reconstruction  
Integrity

## Battle Layer ~ Traces of a Passing Event

Earthworks, Other Engineered Structures  
Artifacts

## Period of Significance ~ Cultural Features

Settlement Pattern  
Transportation Network

## Underlying Terrain Features

Relief and Drainage Pattern  
Vegetation







# ABPP Battlefield Survey Philosophy: *Identify and Survey*

After trial, error, and field testing the ABPP has developed a two tiered approach to battlefield identification and survey. The surveyor must...

## **Ask the Questions:**

Where is the battlefield?

What portions retain integrity/remains to preserve?

## **Find the Answers:**

Identification – research, terrain analysis

Defining Features – inventory of sites, terrain features, cultural resources

Drawing Boundaries:

*Study Area* - historic extent of the battle

*Core Area* - main area of fighting

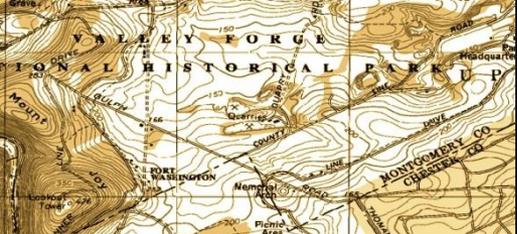
*Areas of Integrity (AOI)* – portions of the battlefield that still remain  
and that retain integrity/can be preserved

## **Reach the Goal:**

Inventory and Documentation

Priorities and Planning

Protect the Battlefield



# Ask The Questions: *Battle, Landscape, Cultural Features*

When surveying a battlefield the surveyor starts with two primary questions – *Where is the battlefield* and *What remains to preserve?*

## **Where is the battlefield?**

- What were the objectives of the combatants?
- What were the important terrain features?
- What were the important cultural resources?
- Where did the combatants start from (town, camp, port, etc.)?
- What were the avenues of approach/withdrawal?
- Where did the fighting begin?
- Where were the areas of heaviest combat?
- Where did the fighting end?

## **What remains to preserve?**

- What features and resources remain?
- What portion of the battlefield retains integrity?
- Is the surviving battlefield threatened by destructive change?





# Find The Answers

## Identification, Military Terrain Analysis, Boundaries

### Find the Answers:

In order to find the answers to the two questions (*Where is the battlefield, What remains to preserve*) the surveyor must identify the battle event through research and location of defining features, apply Military Terrain Analysis, and draw battlefield boundaries on a map.

**Identification** – research, defining features (terrain features, cultural resources)

**Military Terrain Analysis** - analyze the significance of battle terrain

**Drawing Boundaries:**

*Study Area* - historic extent of the battle

*Core Area* - main area of fighting

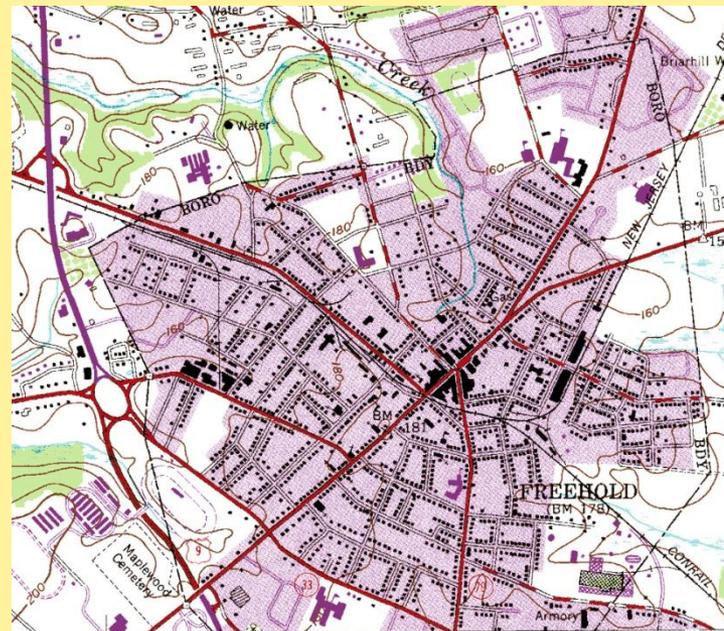
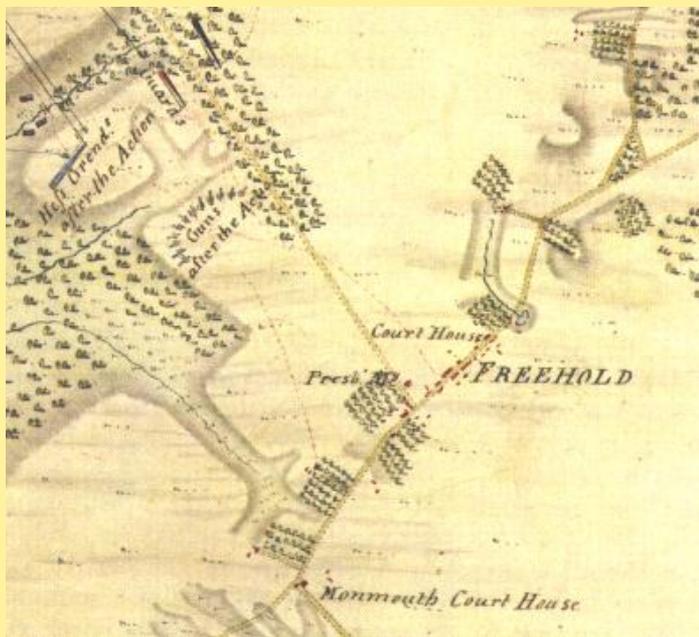
*PotNR (Potential National Register area)* – portions of the battlefield that still remain and that retain integrity visually/can be preserve

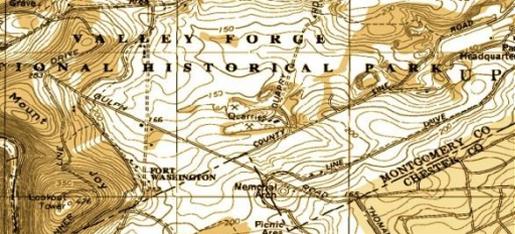


# Find The Answers: Identification through Research

## Research the Battle Event

- Eyewitness accounts - official documents, reports, maps, muster rolls, tactical manuals
  - Personal accounts - letters, diaries, oral histories
  - Contemporary newspaper accounts
  - Contemporary battle maps and sketches
  - Contemporary photos/drawings
  - Battle maps, accounts in secondary works
- Early county maps
  - Early USGS Series c. 1890
  - Aerial photographs (pre-WWII)
  - Post-WWII planning & development records
  - CRM and archeological reports





# Find The Answers: *Identification through Defining Features*

## Define the Battle Features (Defining Features)

*Defining features* are sites, natural features, and place names found in battle descriptions or on historic maps that can be used to locate significant actions and events in the field.

These features define the battlefield on the landscape and serve to pin battle events to identifiable locations.

Finding and mapping features mentioned in the accounts helps to ensure that the battlefield surveyor is in the right location and can draw defensible boundaries.

*Examples:* fords, gaps, hills, roads, towns, churches, camps, rivers, streams, farms, bridges, mills, swamps, and valleys.



# Find The Answers: Identification through Defining Features

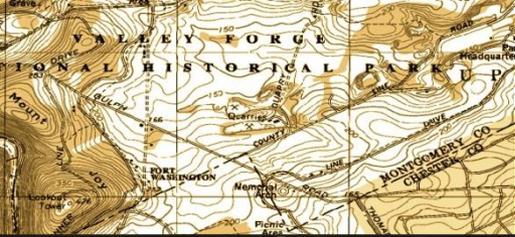
## Identify Defining Features

### Battle Description

Excerpt of Official Report of Brigadier General George D. Wagner, USA, commanding Second Division, IV Corps  
From *A Compilation of the Official Records of the Union and Confederate Armies*

Nashville, Tenn., December 2, 1864 [*excerpt refers to the Battle of Columbia, Nov. 24-29, 1864*]

Pursuant to orders from Major-General Stately, commanding the corps, the division marched from Pulaski at 8 a. m. on the 22nd day of November, 1864, and reached the village of Lynnvilleville, about thirteen miles distant, early in the afternoon. The division remained at Lynnvilleville till 2 a. m. of the 24th, when orders were received directing the command to march, with all possible haste, to Columbia, as the enemy was reported to be marching upon that place. The division was on the road by 3 o'clock and arrived at Columbia by 10 a. m., having marched eighteen miles. When we reached the town we found the enemy had already attacked and driven in our cavalry outposts on the Mount Pleasant road and was already seriously threatening the garrison. Our infantry advance, General Cox's division, of the Twenty-third Army Corps, coming up in the nick of time, the advance of the enemy was effectually checked. The division was at once put in position on a range of hills southwest of the town and every precaution taken to put the place in a defensible condition. Friday, November 25, was spent in constructing an interior line of defenses, and after night-fall the troops were withdrawn from the outer line and took position on the new line, the right of the division resting on Duck River, about three-quarters of a mile below the railroad bridge. This line was at once put in a good state of defense. On the 26th we received orders from General Stately to get ready for crossing Duck River that night, but owing to a break in the pontoon bridge the movement was postponed. [...] by 1 o'clock on the morning of the 28th this division was safely over the river and in camp on the railroad about half a mile from the railroad bridge. In the afternoon of the 28th I received orders from General Stately to move up the river about two miles and go into position on the north side of Duck River opposite to Columbia. The command remained here over night, constant skirmishing being kept up on the lines.

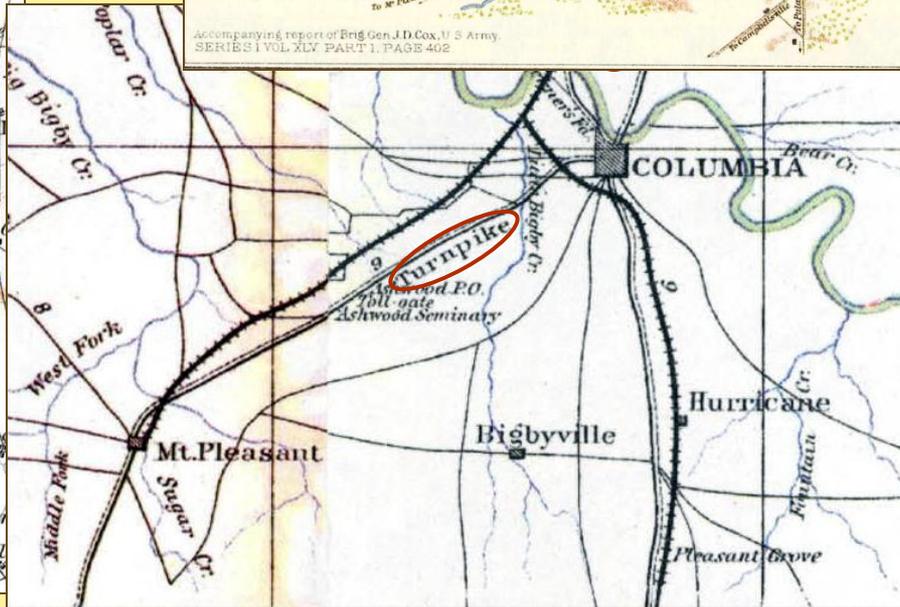
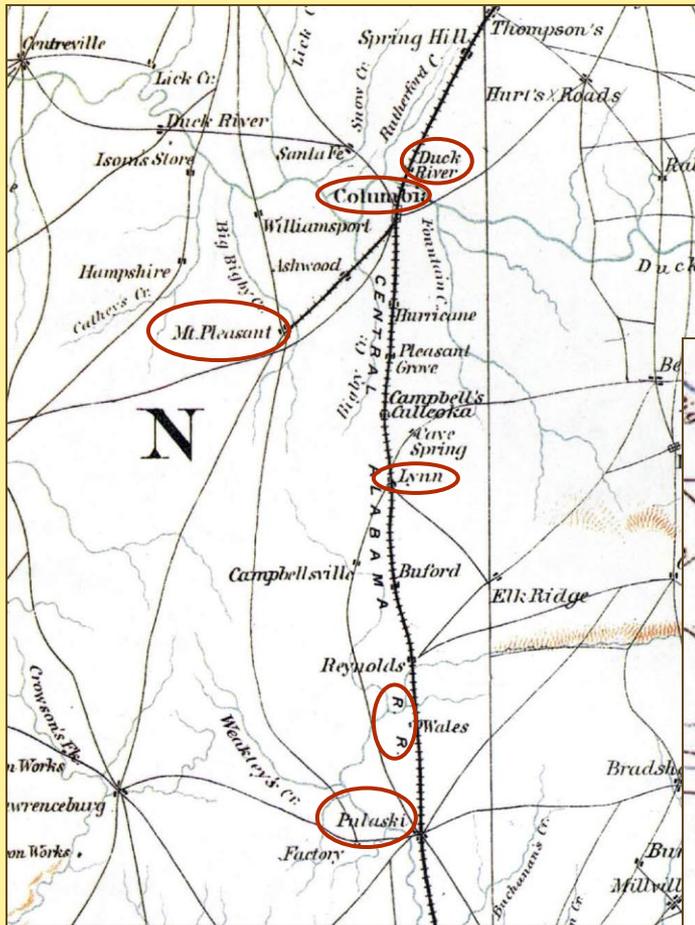
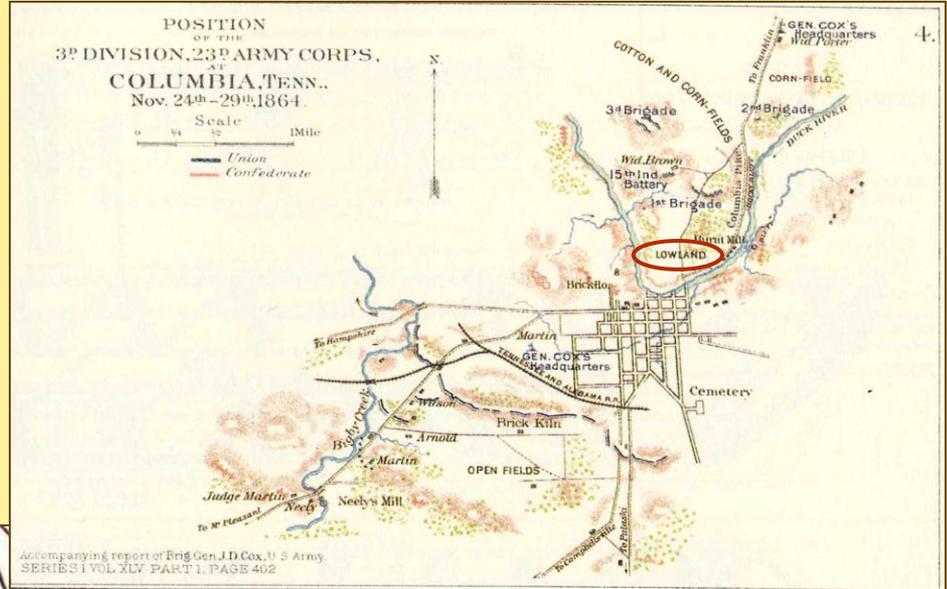


# Find The Answers: Identification through Defining Features

## Identify Defining Features

### Historic Maps

Clockwise from upper right; Civil War Atlas battle map, 1850's  
Tennessee map, 1860's Maury County map





# Find The Answers: Identification through Defining Features

## Inventory Defining Features

For the purposes of identifying and listing defining features in a coherent manner, ABPP uses a Defining Features form.

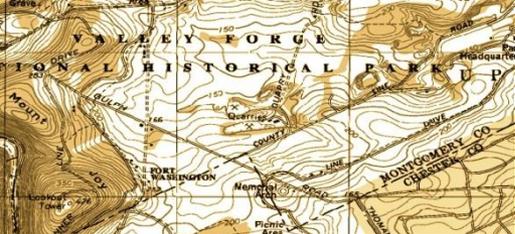
### BATTLEFIELD DEFINING FEATURES

**Battle:** Columbia, TN

**Page No.** 1 **of** 1

**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.

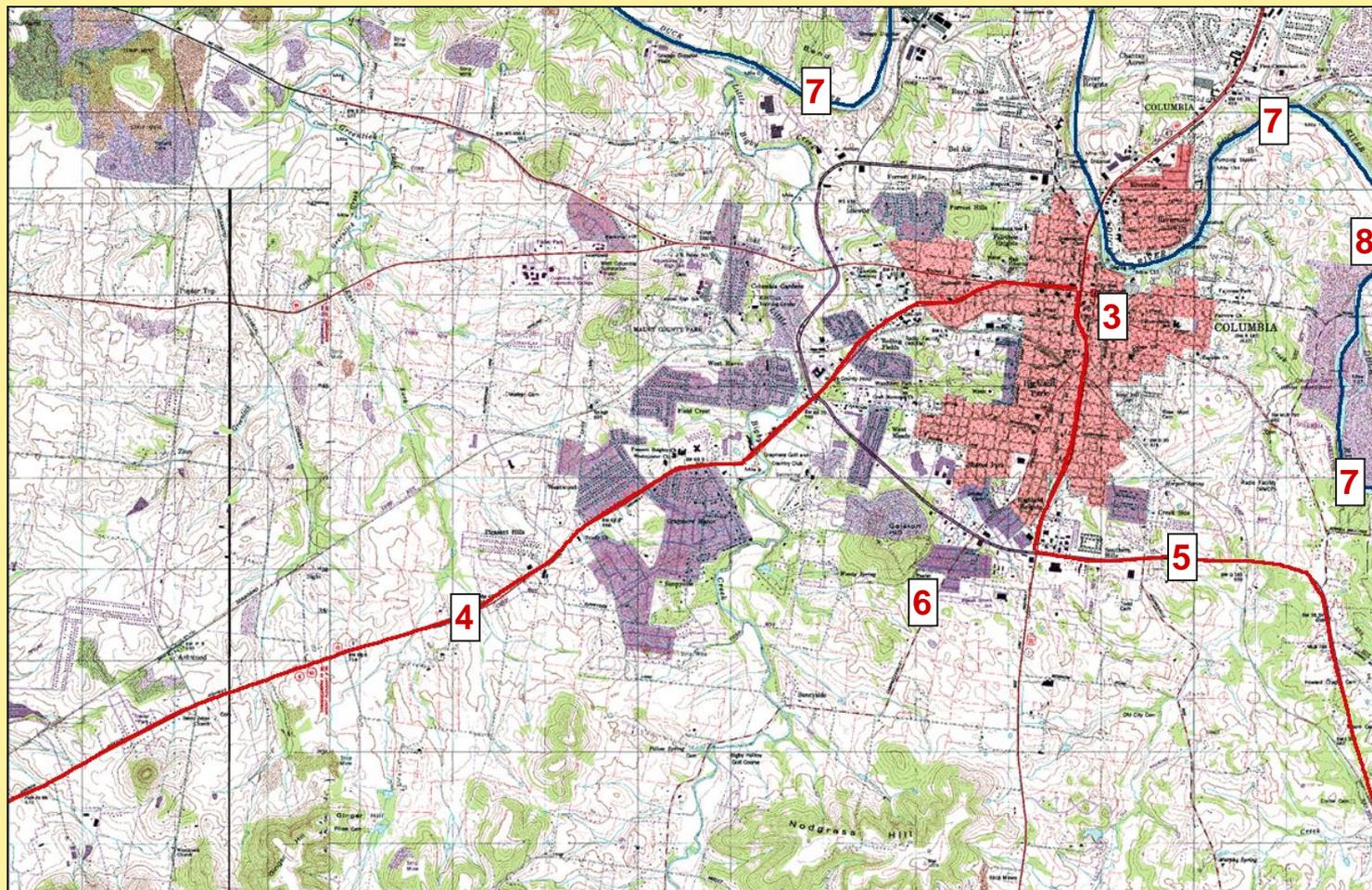
No.	Name of Feature	Location	Relevance to Battle	Source Name	Field Comment
1	Pulaski	Tennessee	Starting point of troop movements	OR	Still exists
2	Lynnville	Tennessee	Troops left Lynnville for Columbia	OR	Still exists – also referred to as Lynn
3	Columbia	Tennessee	Battle takes place in/around Columbia	OR	Still exists
4	Mount Pleasant Road	Between Mount Pleasant and Columbia	Avenue of Approach	OR	Original road intact. Is called Rte 40/Mount Pleasant Road
5	Road	Between Lynnville and Columbia	Avenue of Approach	OR	Portions of original remain. Was straightened in the 1930's and overlaid with Interstate 70
6	Range of hills	SW of town (Columbia)	Troop position	OR	Hills exist, have housing development on them
7	Duck River	North, NE, and NW of Columbia	Both armies had to cross river to reach Nashville. Reason battle was fought .	OR	Still exists. River is original/unengineered
8	Railroad Bridge	NW of Columbia on the Duck River	Geographic location	OR	Bridge no longer exists, abutments still visible
9	Camp	½ mile from RR bridge/Duck River	Camp after the battle	OR	Located on family-owned farm



# Find The Answers: Identification through Defining Features

## Locate Defining Features

Defining Features are located on a modern map (USGS Quadrangle) to aid in field surveying of the battle. The numbers refer to specific features on the Defining Features form.





# Find The Answers: KOCOA Analysis – Five Aspects

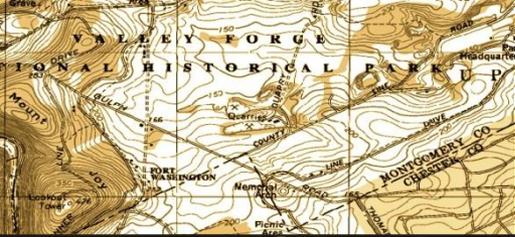
## Analyze the Military (Battle) Terrain

The US military has developed a process for analyzing the significance of terrain. By studying the military significance of the terrain a surveyor can identify the battlefield terrain “hidden” in the modern landscape and view it through the soldiers’ eyes. KOCOA uses five aspects:

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

“The terrain has a direct impact on selecting objectives; location, movement, and control of forces; effectiveness of weapons and other systems; and protective measures.”

*US Army Field Manual No. 6-0*



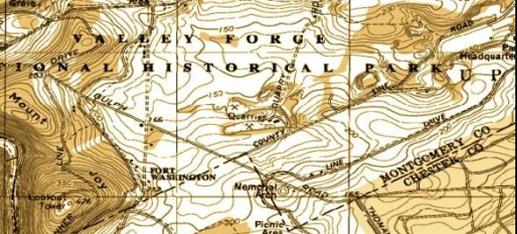
# Find The Answers: Military Terrain Analysis – Five Aspects

## Key Terrain and Decisive Terrain

**Key Terrain** ~ Any ground which, when controlled, gives a marked advantage to either combatant. Two factors can make terrain key: how a commander wants to use it, and whether his enemy can use it to defeat the commander's forces.

*Key terrain typically offers control of a local objective or an important transportation route. Examples: high ground with good observation and fields of fire; transportation choke-point such as a water crossing, mountain gap, or road junction.*

**Decisive Terrain** (Critical Terrain ) ~ Ground that *must* be controlled in order to successfully accomplish the mission. It is relatively rare and is not present in every situation. Terrain is identified as decisive when it is recognized that the mission depends upon its seizure or retention.

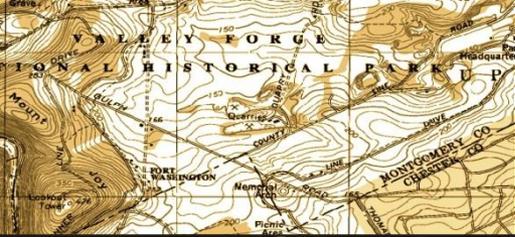


## Find The Answers: *Military Terrain Analysis – Five Aspects*

### Key Terrain (Battle of Monmouth, NJ)

To an understanding of the extraordinarily confused and confusing battle now imminent, a clear comprehension of its terrain is essential. The road from Englishtown to Monmouth Court House came first to Freehold Meeting House. Thence it continued in a southeasterly direction to the Court House, where it stopped at a right angle against a road which ran northeast to Middletown and Sandy Hook and was the route of the British retreat. Another road from the Court House ran north to Amboy. The principal points otherwise to be noted are three “ravines.” The first of these, the west “ravine,” a morass through which ran a branch of Wemrock Brook, was crossed by a bridge on the Freehold-Monmouth road about two and a half miles from the Meeting House. A mile to the southeast on that road was the middle ravine, another morass through which ran the main stream of Wemrock Brook. A causeway crossed it. These morasses, it must be noted, were on the road by which the American troops advanced to Monmouth. The third morass, the east “ravine,” was parallel to the road from Monmouth to Middletown and Sandy Hook and some distance west of that road. No road crossed it, but it played a part early in the battle.

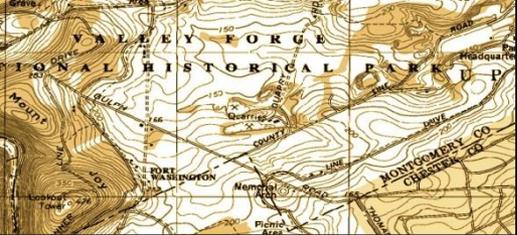
The camp of the British army stretched in a line along the road from Allentown, which continued past Monmouth through Middletown to Sandy



# Find The Answers: Military Terrain Analysis – Five Aspects

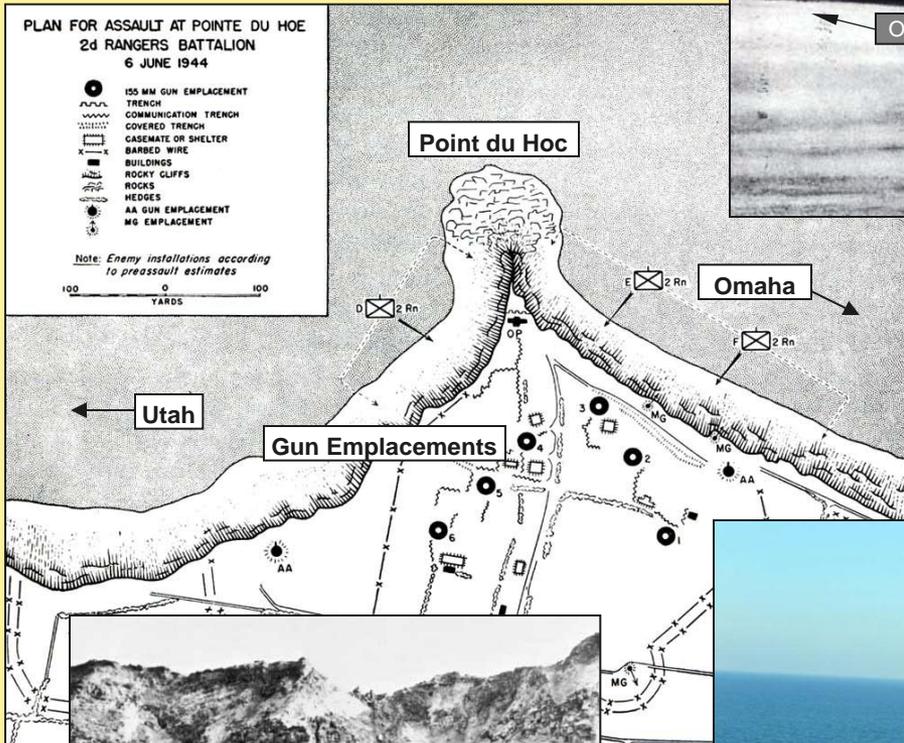
## Key Terrain (Battle of Monmouth, NJ)

A detailed topographic map of the Monmouth Battlefield area in New Jersey. The map shows the MANTWAUGH RIVER and the MONMOUTH BATTLEFIELD. Key terrain features are labeled: Amboy, Middletown, Elizabethtown, East Ravine, West Ravine, Middle Ravine, and Monmouth Court House (modern Freehold). Three road photos are included: one showing a bridge over a road, one showing a road with a guardrail, and one showing a street intersection with a sign. Orange lines on the map indicate specific routes or terrain features.

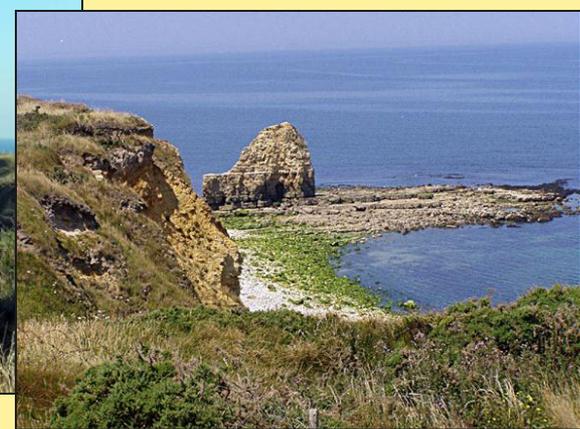
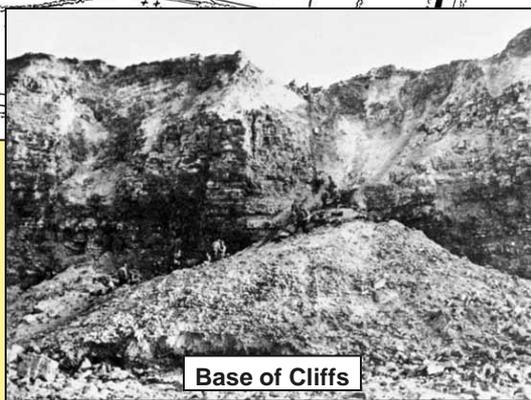


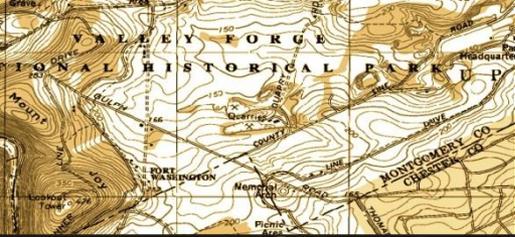
# Find The Answers: Military Terrain Analysis – Five Aspects

## Decisive Terrain: Pointe du Hoc, Normandy, France



Pointe du Hoc, Normandy beach landings, June 6, 1944. Fortified gun emplacements on the cliffs enabled German artillery fire to be directed over Omaha and Utah beaches. The terrain *had* to be controlled in order for the landings to take place and the mission to be accomplished.





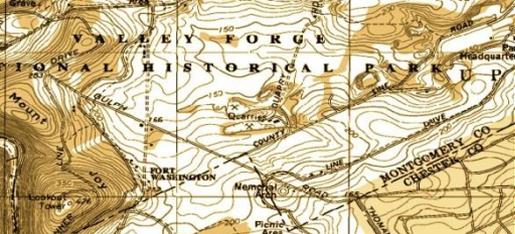
## **Find The Answers:** *Military Terrain Analysis – Five Aspects*

### **Observation and Fields of Fire**

**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.

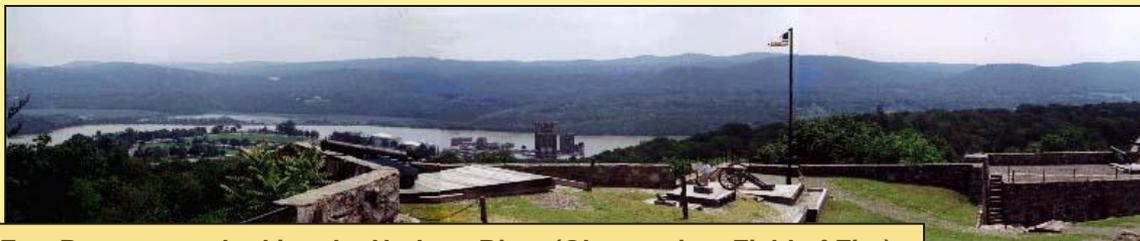
**Fields of fire** ~ An area that weapons may cover/fire upon effectively from a given position. A unit's field of fire is directly related to Observation.

**Dead Space (ground)** ~ Ground within range of weapons that cannot be observed or fired upon.

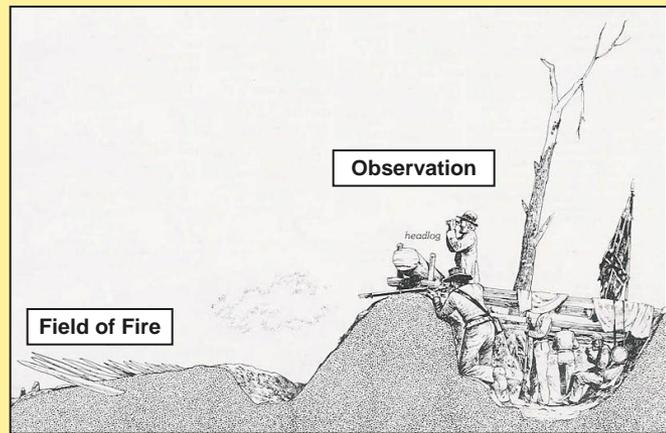


# Find The Answers: Military Terrain Analysis – Five Aspects

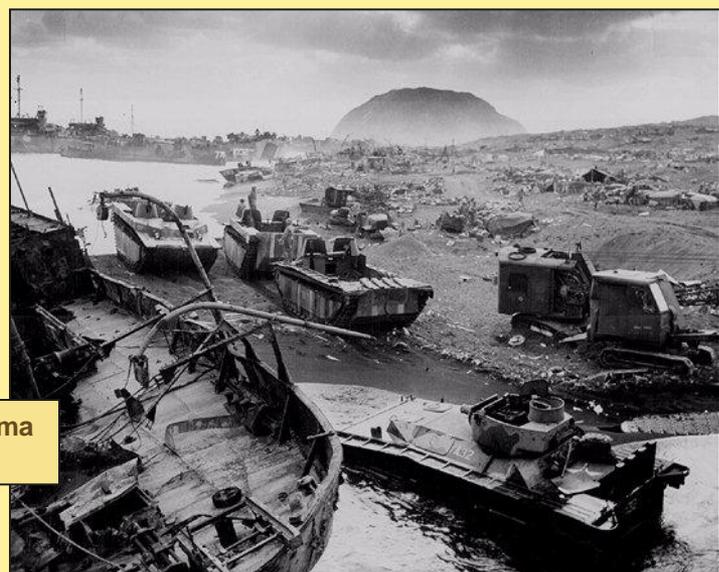
## Examples of Observation and Field of Fire



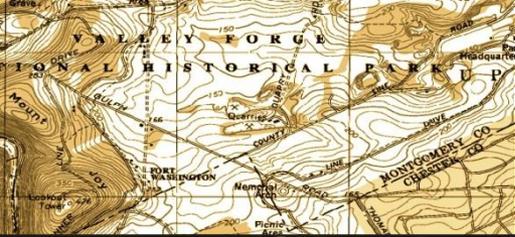
Fort Putnam overlooking the Hudson River (Observation, Field of Fire)



Mt. Suribachi overlooking the landing beaches at Iwo Jima (Observation)



The landing beaches at Iwo Jima (Mt. Suribachi's Field of Fire)



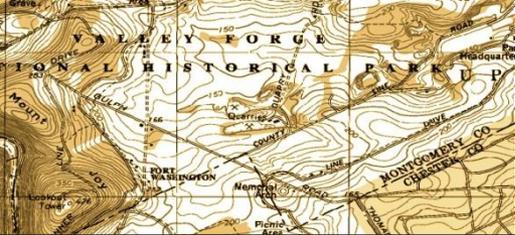
# Find The Answers: *Military Terrain Analysis – Five Aspects*

## Concealment and Cover

**Concealment** ~ Protection from enemy observation and surveillance. Examples: forests, ravines, dense vegetation, reverse slopes.

**Cover** ~ Protection from enemy fire. Examples: ditches, river banks, buildings, walls, entrenchments

Concealment and Cover limit both the ability for Observation and the Field of Fire.

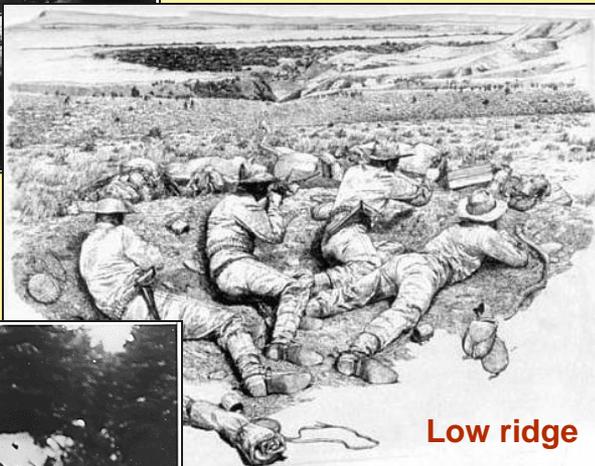


# Find The Answers: Military Terrain Analysis – Five Aspects

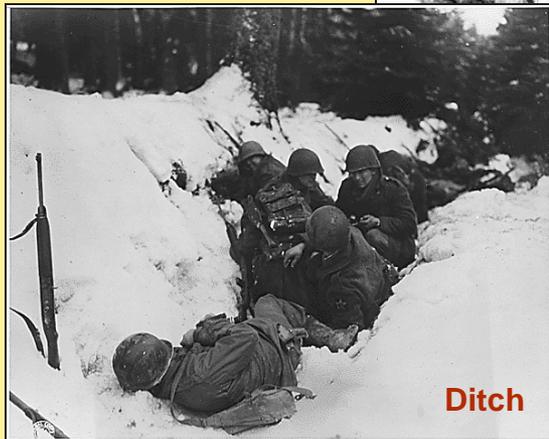
## Examples of Cover



**Embankment**

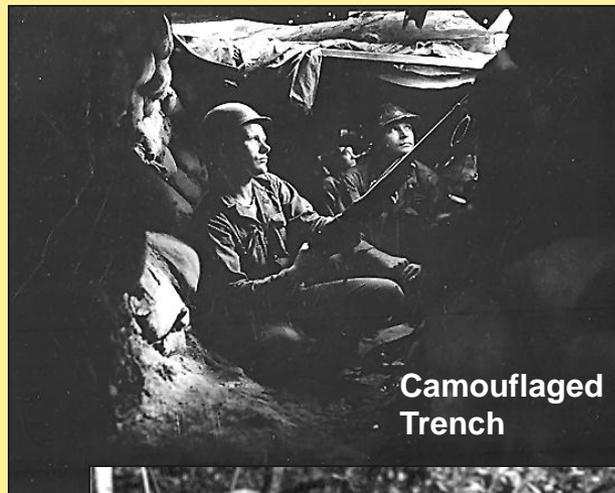


**Low ridge**



**Ditch**

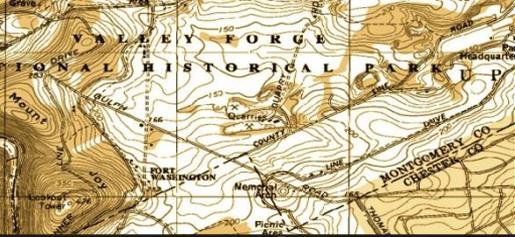
## Examples of Concealment



**Camouflaged Trench**



**Dense Vegetation**



## **Find The Answers:** *Military Terrain Analysis – Five Aspects*

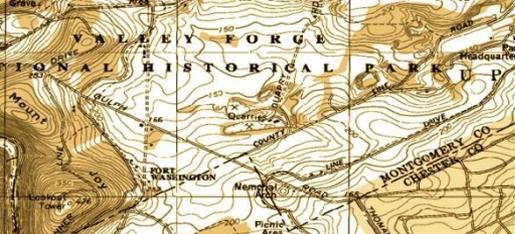
### **Avenue(s) of Approach/Withdrawal**

**Avenue of Approach** ~ Relatively unobstructed ground route that leads to an objective or to key terrain.

**Mobility Corridor** ~ Area where movement is channeled due to terrain constrictions. Example: a road over a causeway.

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

The mobility of an attacking unit is affected by the breadth and difficulty of its Avenue of Approach.



# Find The Answers: Military Terrain Analysis – Five Aspects

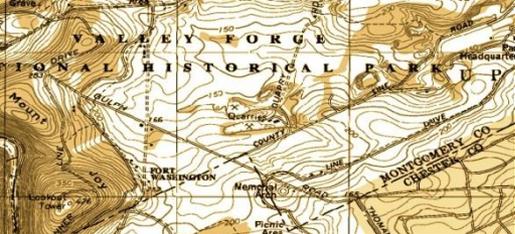
## Obstacles

Natural or manmade terrain features that prevent, restrict, divert, or delay military movement.

There are two categories of Obstacles: *existing* and *reinforcing*.

*Existing obstacles* are already present on the battlefield and not placed there through military effort. Natural examples: swamp, woods, river. Cultural examples: town, railroad, bridge, fenced field.

*Reinforcing obstacles* are placed on the battlefield through military effort to slow, stop, or control enemy movement. Examples: entrenchments, earthworks, abatis, and log cribs.



# Find The Answers: Military Terrain Analysis – Five Aspects

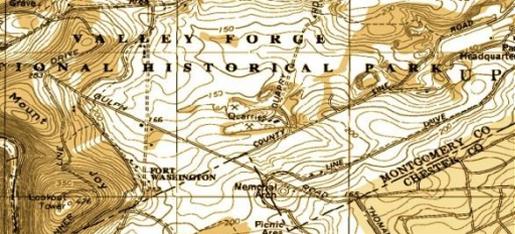
## Obstacles

The presence and difficulty of obstacles determine whether terrain is:

*Unrestricted* - Fairly open and presents no hindrance to ground movement.

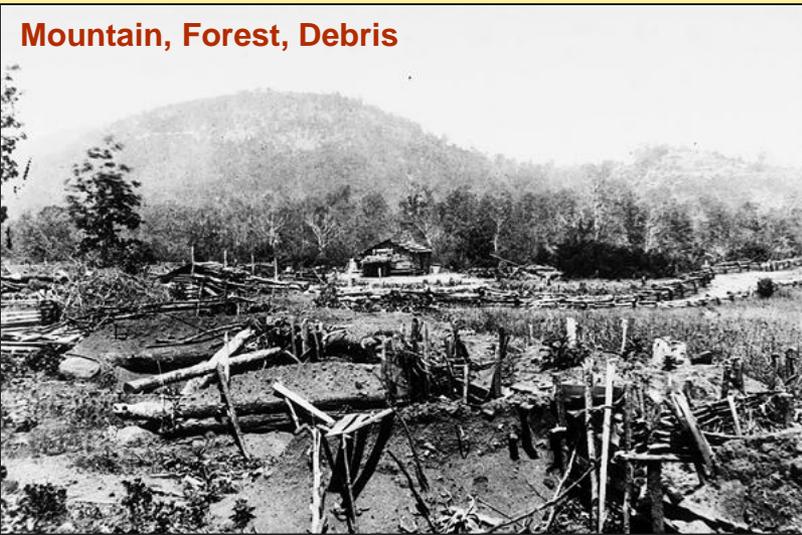
*Restricted* - Hinders ground movement. Little effort is needed to enhance mobility.

*Severely Restricted* - Unfavorable terrain. Much effort needed to improve mobility, if at all.

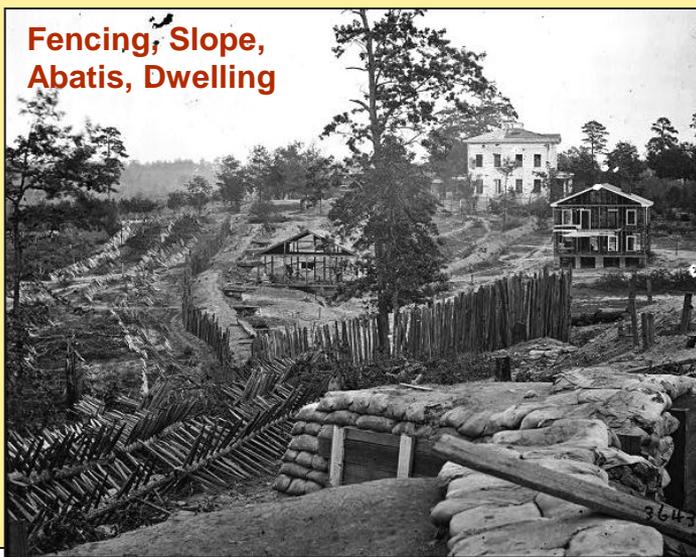


# Find The Answers: Military Terrain Analysis – Five Aspects

## Examples of *Obstacles*



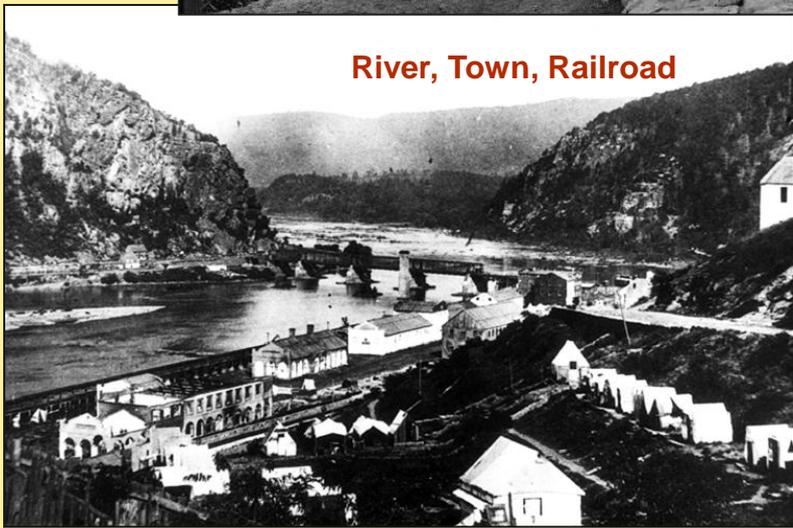
Mountain, Forest, Debris



Fencing, Slope, Abatis, Dwelling



Entrenchment



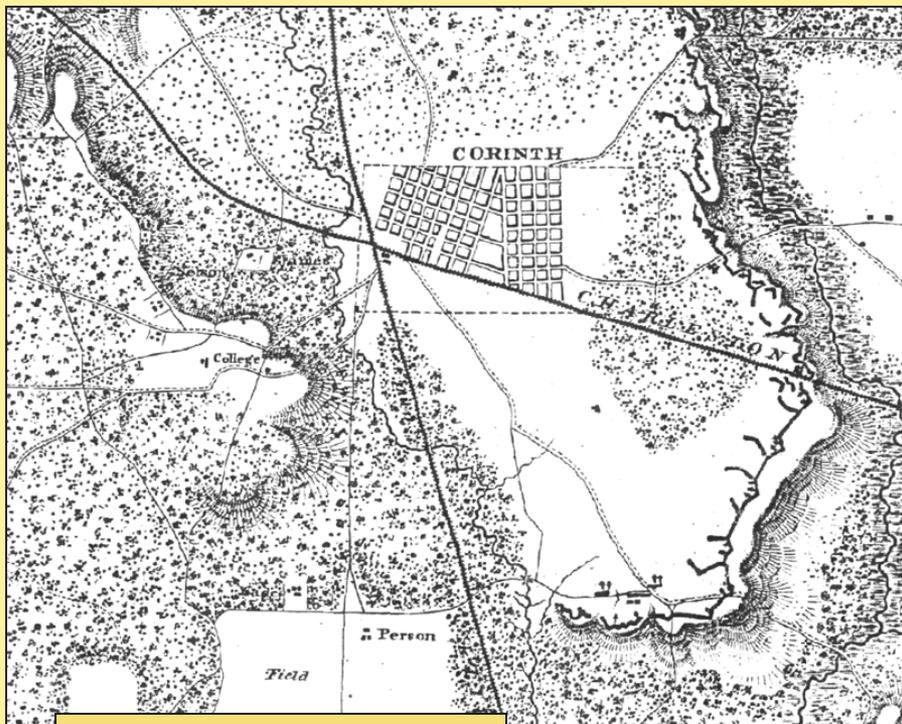
River, Town, Railroad



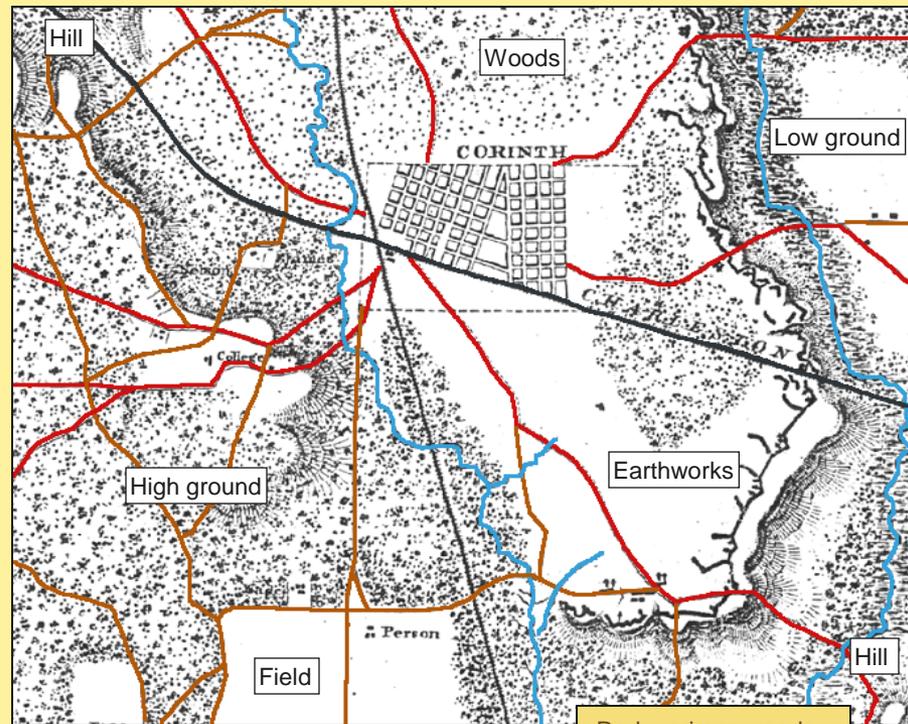
# Find The Answers: Military Terrain Analysis – Five Aspects

## Example of Avenues

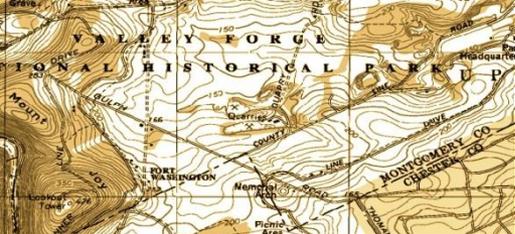
At Corinth, Mississippi, armies were restricted to roads for movement. Deployments were limited by terrain and ground cover. Primary roads were used whenever possible as Avenues of Approach and Withdrawal.



Military Map of Corinth, Mississippi



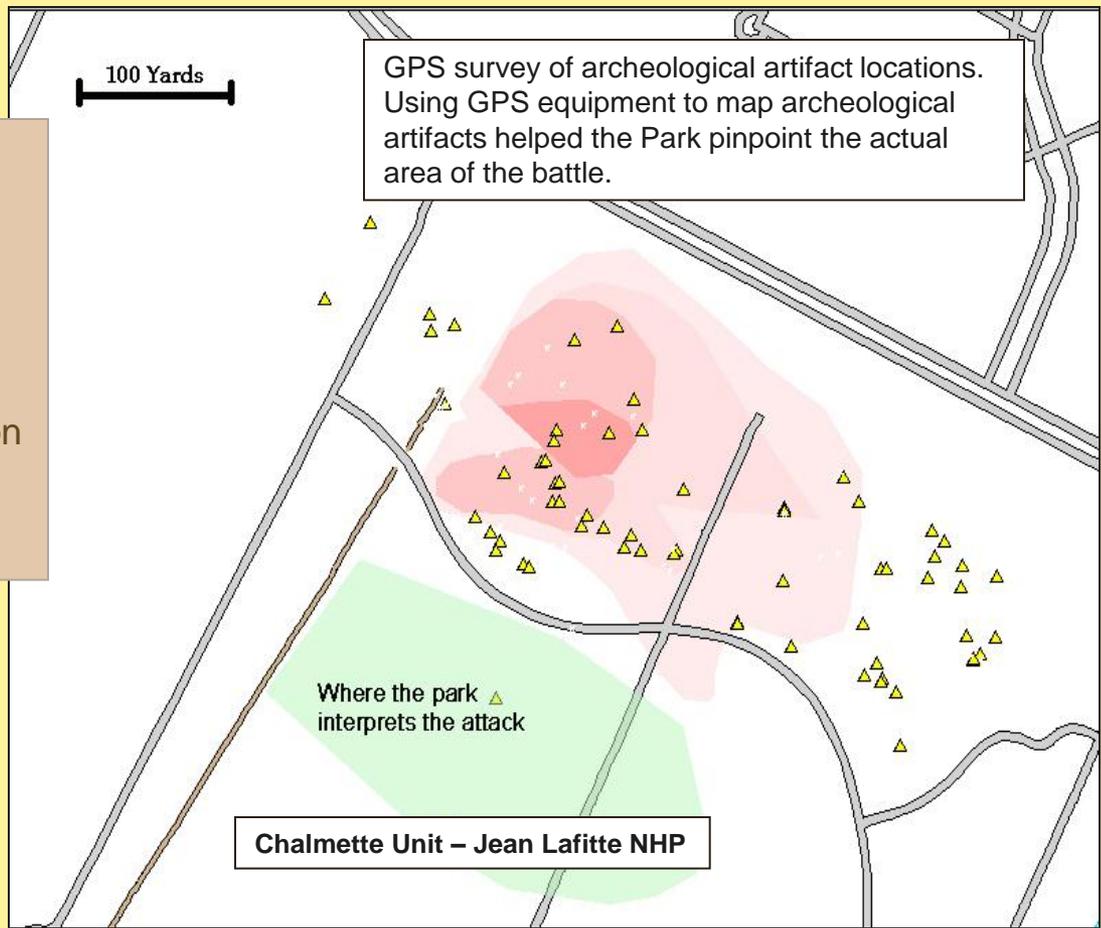
Red – primary roads  
Brown – minor roads  
Blue – water  
Black/Grey - railroad



# Find The Answers: Tools – Global Positioning System

**Global Positioning System (GPS)** is a space-based satellite navigation system developed and operated by the U.S. Department of Defense that uses the position of satellites to determine precise locations on earth.

- GPS provides:**
- Navigational aides**
    - Locate a single point
    - Navigate between points
  - A basis for mapping**
    - Track changing location information
    - Collect coordinates of features
    - Collect information about features

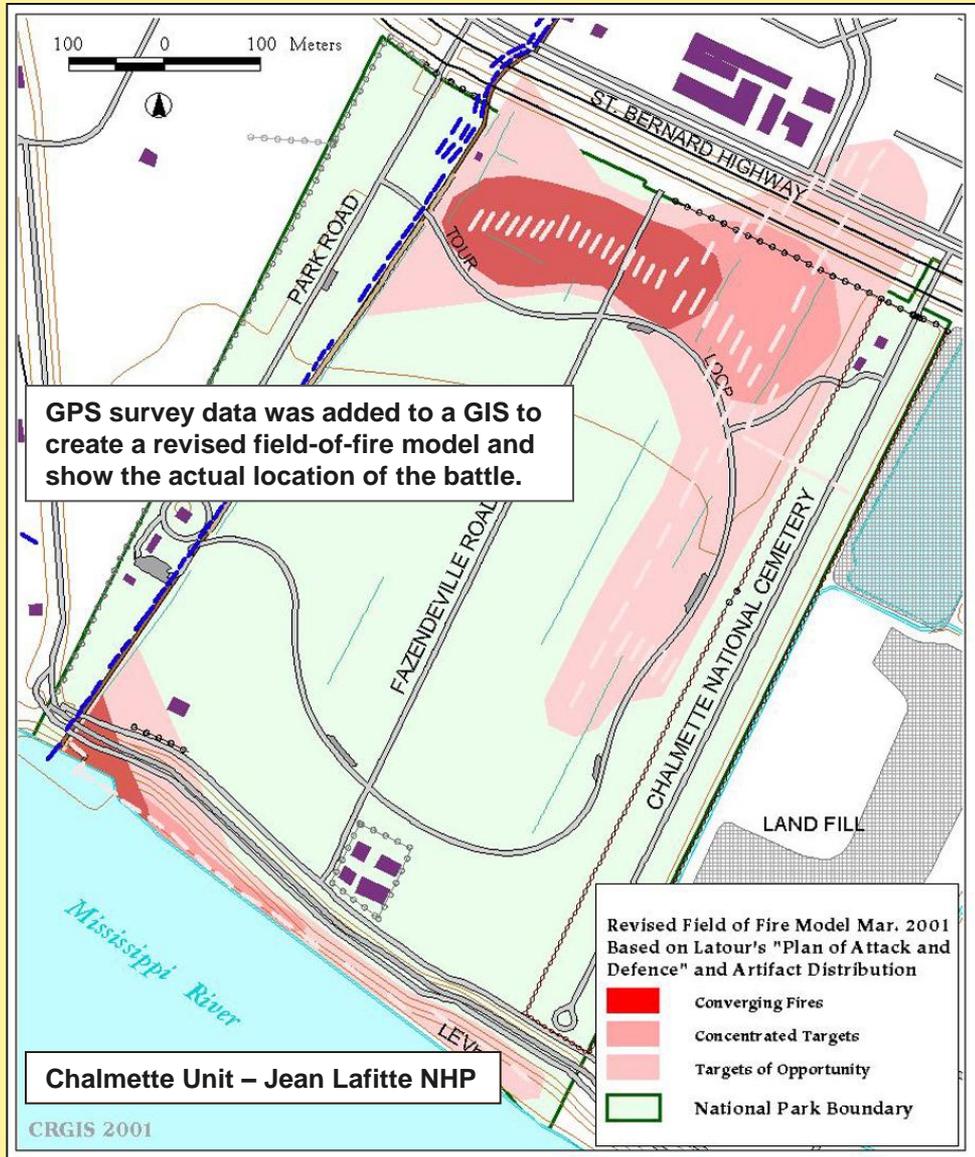


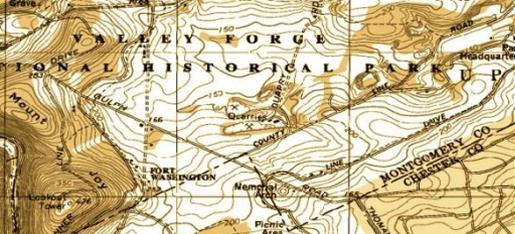


# Find The Answers: Tools – Geographic Information System

A **Geographic Information System (GIS)** is a computer-based tool that merges cartography, statistical analysis, and database technology. GIS systems are designed to capture, store, manipulate, analyze, manage, and present all types of geographical data.

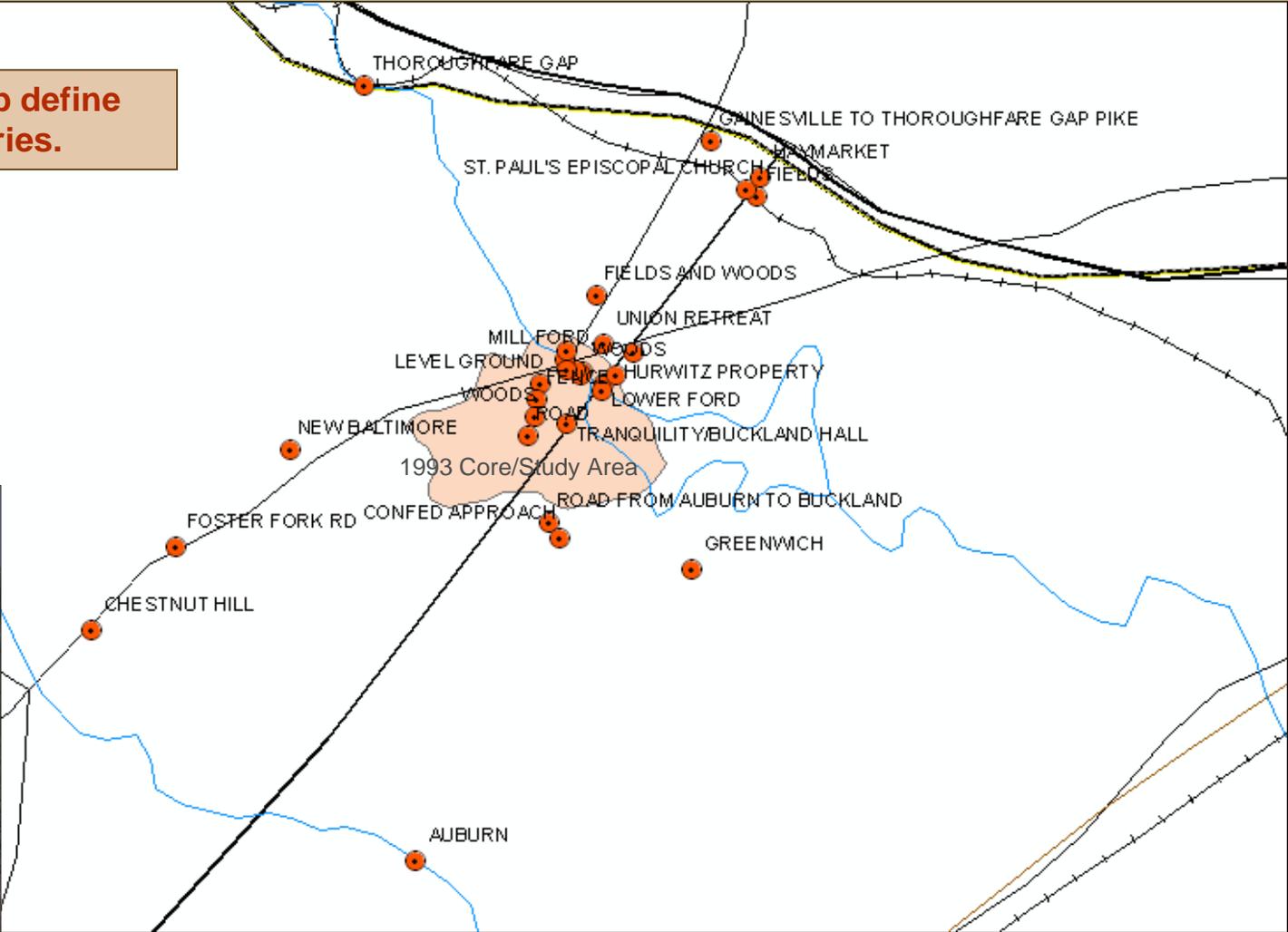
- Geographic** – spatial location(s)
- Information** – visualization of analysis of data
- System** – software, hardware, data





# Find The Answers: Drawing Boundaries – Mapping the Defining Features

Gather features to help define the battlefield boundaries.

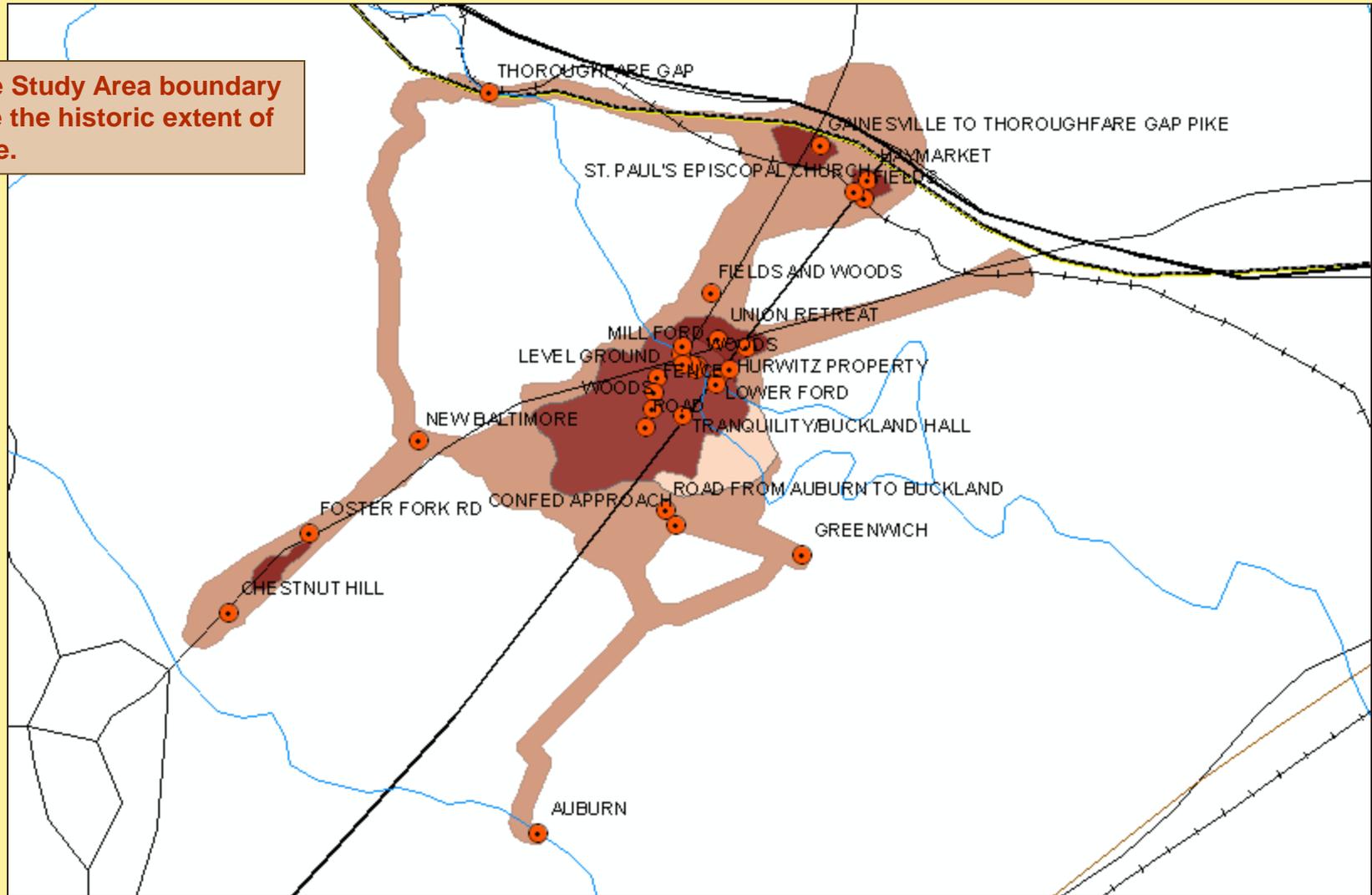


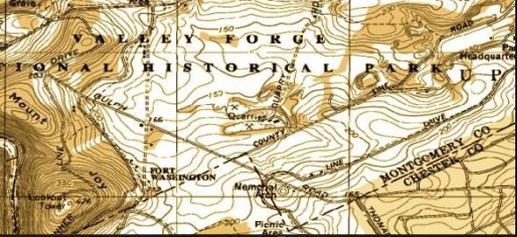




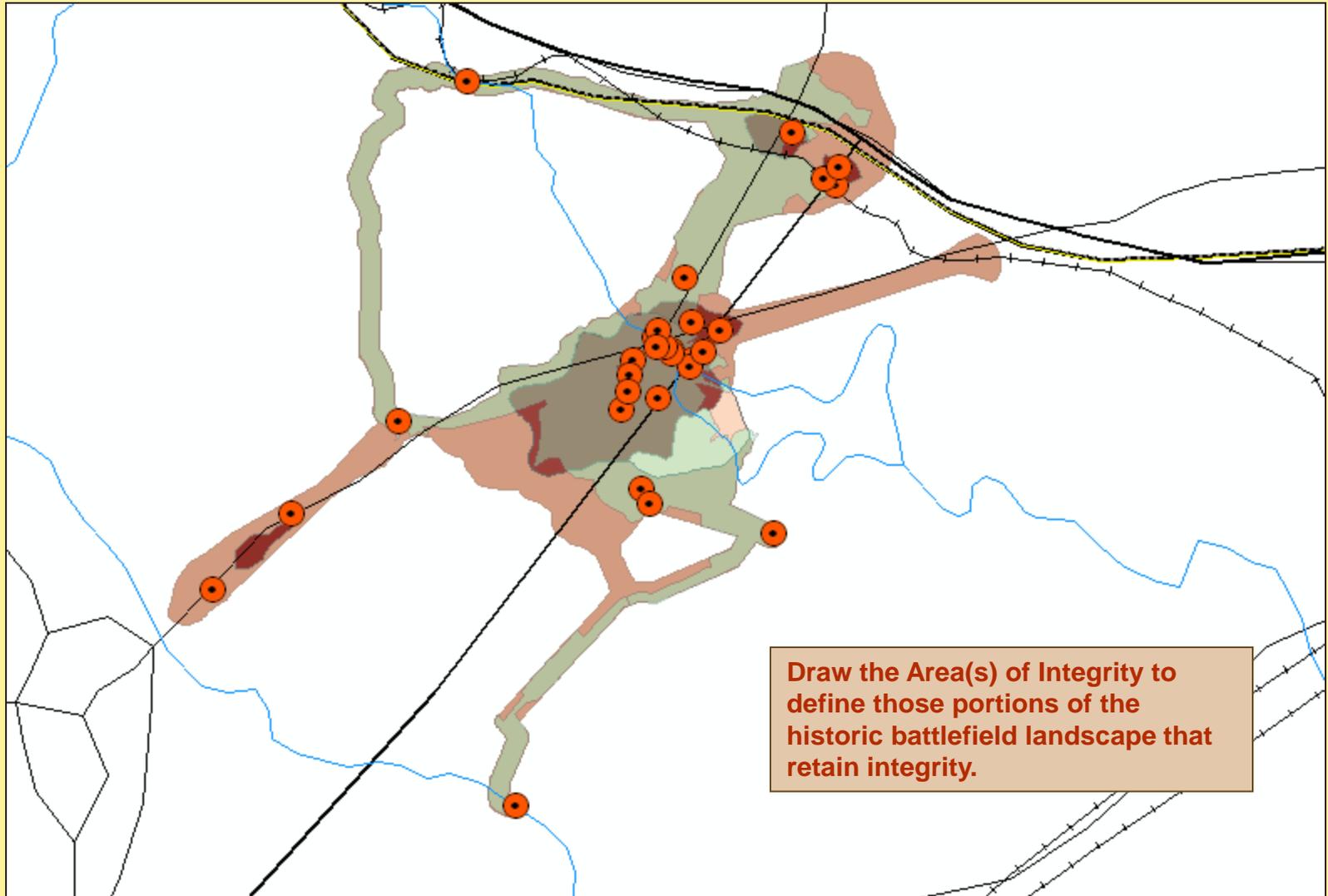
# Find The Answers: Drawing Boundaries – Study Area

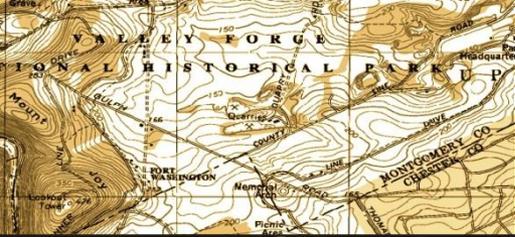
**Draw the Study Area boundary to define the historic extent of the battle.**



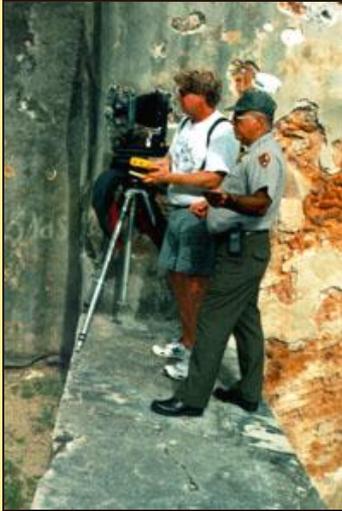


# Find The Answers: Drawing Boundaries – Areas of Integrity (AOI)

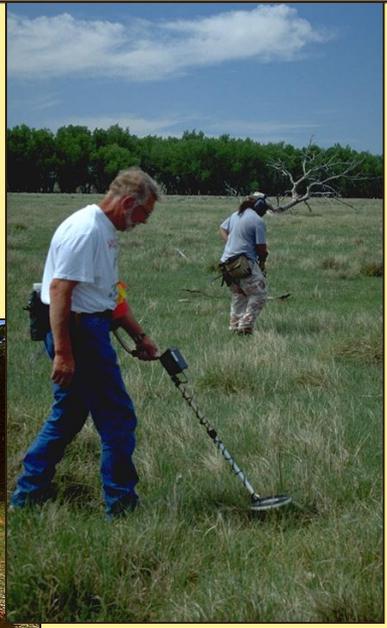




# Reach for the Goal: Inventory and Documentation of Existing Resources



Site Intensive GPS/GIS Resource Inventory



Phased Archeological Investigations

1629

United States Department of the Interior  
National Park Service

### National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in Guidelines for Completing Register Form. Complete each item by marking "X" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, mark "N/A" or "not applicable." For locations, street names, landmarks, and areas of significance, enter only the categories and subdivisions listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

**1. Name of Property**  
Historic name: Byram's Ford Historic District  
Other name(s) number: Byram's Ford, Byram's Ford Road, Big Blue Battlefield, Battle of Weasport

**2. Location**  
Street Number: 63rd Street & Manchester Trafficway N/A [ ] not for publication  
City, town, or village: Kansas City N/A [ ] not applicable  
State: Missouri code MO county: Jackson code 073 zip code: 64132

**3. Classification**

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
<input checked="" type="checkbox"/> private	<input checked="" type="checkbox"/> building(s)		
<input type="checkbox"/> public-federal	<input type="checkbox"/> district		
<input type="checkbox"/> public-state	<input type="checkbox"/> site	2	
<input type="checkbox"/> public-federal	<input type="checkbox"/> structure		
	<input type="checkbox"/> object		
		2	0
Name of related multiple property listing: N/A		Number of contributing resources previously listed in the National Register: 0	

**4. State/Federal Agency Certification**

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this [ ] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, this property [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Tracy Mahan III, Director  
Department of Natural Resources and State Historic Preservation Officer  
State of Missouri Agency and bureau.

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of contributing or other official: \_\_\_\_\_ Date: \_\_\_\_\_

State or Federal agency and bureau: \_\_\_\_\_

**5. National Park Service Certification**

I, hereby, certify that this property is:  
 entered in the National Register.  
 See continuation sheet.  
 determined eligible for the National Register. [ ] See continuation sheet.  
 determined not eligible for the National Register.  
 removed from the National Register.  
 other: (explain) \_\_\_\_\_

Signature of the Keeper: Beth Bland Date of Action: 11/12/09

Service REGISTER PUBLICATIONS NR HOME RESEARCH TRAVEL EDUCATION

### NATIONAL REGISTER BULLETIN

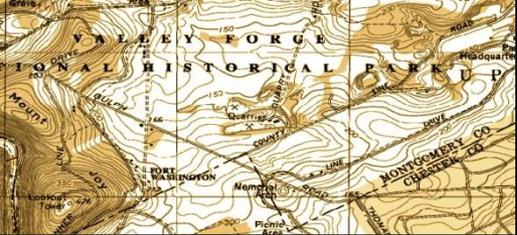
GUIDELINES FOR IDENTIFYING, EVALUATING, AND REGISTERING AMERICA'S HISTORIC BATTLEFIELDS

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U.S. Department of the Interior, National Park Service  
National Register, History and Education

National Register of Historic Places nomination





# Reach for the Goal: Priorities and Planning

## Preservation is a Political Decision

Deciding what landscapes and features to preserve and how best to preserve them are economic and political processes separate from the survey itself.

- Research and consensus -- **build credibility**
- Define the battlefield -- **“stake a claim”**
- Resource inventory -- **broaden the constituency**
- Priorities and Planning -- **protect and manage the battlefield**

NATIONAL REGISTER PUBLICATIONS NR HOME RESEARCH TRAVEL EDUCATION

**NATIONAL REGISTER BULLETIN**  
GUIDELINES FOR IDENTIFYING, EVALUATING, AND REGISTERING AMERICA'S HISTORIC BATTLEFIELDS

U.S. Department of the Interior, National Park Service  
National Register, History and Education

467/D-

**CHALMETTE BATTLEFIELD AND  
CHALMETTE NATIONAL CEMETERY**  
CULTURAL LANDSCAPE REPORT

**LONG-RANGE INTERPRETIVE PLAN**

**NEZ PERCE NATIONAL HISTORICAL PARK**

**INTERPRETIVE PLAN**  
Borough of Gettysburg

California Home  
Welcome to California

**Office of Historic Preservation**

**California Register**  
Registration Programs

The State Historical Resources Commission has designed this program for use by state and local agencies, private groups and citizens to identify, evaluate, register and protect California's historical resources. The Register is the authoritative guide to the state's significant historical and archeological resources.

The California Register program encourages public recognition and protection of resources of architectural, historical, archeological and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under the California Environmental Quality Act.

**Criteria for Designation**

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
- Associated with the lives of persons important to local, California or national history (Criterion 2).
- Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
- Has yielded, or has the potential to yield, information important to the prehistory

**Information Packet:**  
California Register Nomination Instructions (PDF, 55 pages)

**DPR 523 Forms**  
DPR 523A Property Record  
DPR 523B Building, Structure, Object Record

