

# “THE ARMY MARCH'D AT DAY BREAK IN TWO COLUMNS”

---

## MILITARY TERRAIN ANALYSIS AND PLANNING RECOMMENDATIONS FOR TWO BRANDYWINE BATTLEFIELD STRATEGIC LANDSCAPES CHESTER COUNTY, PENNSYLVANIA

### AMERICAN BATTLEFIELD PROTECTION PROGRAM GRANT # GA2287-15-005



Prepared for The Chester County Planning Commission  
601 Westtown Road, Suite 270  
West Chester, PA 19380

by Wade P. Catts, RPA, Robert A. Selig, Ph.D., and Kevin Bradley, RPA  
Commonwealth Heritage Group, Inc.  
535 North Church Street  
West Chester, Pennsylvania

1777 Map Depictions by Chester County Archives Department

Recommendations by Chester County Planning Commission

**FINAL December 2017**

*This material is based upon work assisted by a grant from the Department of the Interior, National Park Service. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Department of the Interior.*

For distribution copies:

Kristen L. McMasters, Archeologist and Grants Manager, National Park Service, American Battlefield Protection Program. 1849 C Street NW – Room 7228, Washington, DC 20210 (202) 354-2037

## ABSTRACT

This report provides detailed military terrain analyses for two Brandywine Battlefield Strategic Landscapes representing the Royal Army's movements on September 9 and 10, their Encampment on September 10/11 and the movement of the Two Columns on the morning of September 11. The study builds upon earlier Chester County studies and current work, particularly work focused on the settlement pattern and the road network. Extensive historical and topographical research contributes to the analyses and interpretations. Notable among the documentary sources is the use of previously unavailable Hessian letters and journals.

The analyses focused on a short period of time, the afternoon of September 9 through the morning hours of September 11, in all approximately 36 hours of time. Previous studies of the battle, while addressing the movements of the Crown Forces to reach Kennett Square on September 9 and 10, and as they approach Brandywine, have not specifically focused on the actual movements of the formations. The present study has focused on those movements and has identified the general routes, in some cases confirmed sources or locations, and in other cases refined and/or discovered new routes.

The analysis provides some new and/or revised interpretations for the battle. Important among these is a better understanding of the routes used by Howe's Army on September 9 and 10, the extent and layout of the Crown Forces camp at Kennett Square, the refinement of the Northern Column's route on the morning of September 11, and the movement of the Crown Forces Baggage Column on September 11.

Recommendations are offered for future research, including additional historical and topographic research into the movements of Cornwallis' Division on the night of September 9/10, actions of American forces west of the Brandywine in the days before, the battle, further investigation into the reported skirmish near New Garden Friends Meetinghouse, and possible archeological study to confirm skirmish locations along the route of von Knyphausen's advance on September 11.

The project was funded by the American Battlefield Protection Program (ABPP) of the National Park Service and met the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (see 36 CFR 61).

---

## TABLE OF CONTENTS

List of Figures

List of Tables

1.0	Introduction.....	1
	1.1 Goals of this Study	
	1.2 Location Setting	
	1.2.1 Encampment of September 10/11	
	1.2.2 Two Columns September 11	
2.0	Historical Overview.....	9
	2.1 Summary of Battle Actions	
	2.2 Army Movements September 8 to September 10, 1777	
	2.2.1 September 8	
	2.2.2 September 9	
	2.2.3 September 10	
	2.3 Army Logistics – Moving and Feeding the Invasion Force	
3.0	Military Terrain Analysis.....	28
	3.1 Physical Geography	
	3.2 Settlement and Land Use	
	3.3 Communications	
	3.4 KOCOA Analysis	
	3.5 Von Knyphausen’s Division (Eastern Column)	
	3.6 Cornwallis’ Division (Northern Column)	
4.0	Summary, Interpretations, and Recommendations.....	67
	4.1 Interpretations	
	4.2 Archeological Assessment	
	4.2.1 Two Columns Movement	
	4.2.2 Kennett Square Encampment September 10	
	4.2.3 Burials	
	4.3 Recommendations for Future Historical and Archeological Research	
	4.4 Recommendations for Planning	
	4.5 Recommendations for Historical and Archeological Resources Protection	
	4.6 Recommendations for Land Conservation	
	4.7 Recommendations for Heritage Tourism	
5.0	References Cited.....	77

## LIST OF FIGURES

Figure		Page No.
Figure 1.	Locations of the Strategic Landscapes (CCPC). The area covered by this technical report is outlined in red. The limits of the Brandywine Battlefield Boundary are shown in purple. The Two Columns Strategic Landscape combines the Lower Flanking “Northern Column” Study Area and the “Eastern Column” Study Area. The Baggage Column is part of the Eastern Column.	2
Figure 2.	Map showing the Brandywine Battlefield Strategic Landscape Phased Planning. Phase 2 is the subject of this report, and includes Crown Forces Encampment, Lower Flank “Northern Column” Strategic Landscape, and “Eastern Column” Advance Strategic Landscape. The Baggage Column discussion is part of the Eastern Column (CCPC).	4
Figure 3.	The initial Battlefield Boundary (purple) and the Core Area (blue) for the Brandywine Battlefield, as defined by windshield survey and preliminary documentation in 2010 (CCPC).	5
Figure 4.	Detail, <i>Part of the modern counties of Philadelphia, Bucks, Montgomery, Delaware, Chester, Lancaster, in Pennsylvania....</i> (circa 1777/78). Map #556, William L. Clements Library, Ann Arbor, Michigan.	10
Figure 5.	Detail, <i>A Plan of the Progress of the Royal Army from their landing at Elk Ferry to Philadelphia 1777....</i> (Blaskowitz 1777).	10
Figure 6.	Overview map of the Battle of Brandywine, September 11, 1777 (CCPC 2010).	29
Figure 7.	1777 road network as reconstructed by Cliff P. Parker, Chester County Archives. (CCPC).	33
Figure 8.	Defining Features for the Crown Forces’ movements, September 9 and 10, 1777 (CHG).	39
Figure 9.	Defining features for von Knyphausen’s Division (Eastern Column), September 11, 1777 (CHG).	39
Figure 10.	Defining Features for Cornwallis’ Division (Northern Column), September 11, 1777 (CHG).	40
Figure 11.	New Garden Road “loop,” (formerly part of the Lancaster Road) looking north towards the intersection with Newark Road (CHG).	42
Figure 12.	New Garden Friends Meetinghouse, circa 1915 (Thomas C. Marshall photographs, Accession 1990.270, Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).	42
Figure 13.	New Garden Townships, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).	44
Figure 14.	Portion of the earlier road trace of the Great Nottingham Road, now bypassed by US Route 1. Image looking east (CHG).	45
Figure 15.	US Route 1, view looking west from intersection of Pennsbury Way. Barns-Brinton House is visible in left distance (CHG).	45
Figure 16.	Detail, <i>Plan de l’Affaire de Brandewein gagné le 11me 7bre 1777 par l’Armée Britanique sous les ordres du General Howe sur les Rebelles</i> , by F.W. Werner and Reinhard J. Martin (Hauptstaatsarchiv Marburg WHK 29/54b, -55, -56).	47
Figure 17.	Detail, <i>Plan der Passage von Brandweinscreek nach Chadsesford und die Auseinandersetzungen der britischen Armee unter dem Befehl von General Hoise mit den Amerikanern, 11. 11 September 1777</i> , by F.W. Werner (Hauptstaatsarchiv Marburg WHK 29/54b, -55, -56).	47
Figure 18.	US Route 1 at site of former Anvil (Welch’s) Tavern. View to the west. The tavern stood to the right of the image near the white wall. Longwood Gardens overpass is visible in the distance (CHG).	49

Figure 19.	Anvil (foreground) marking the location of the former Anvil (Welch's) Tavern. US Route 1 is to the right of the image. Breast-high wall reputedly marks the cellars for the former tavern. View is looking east towards location of woods (CHG).	49
Figure 20.	Anvil Tavern, circa 1907. The road bed of Great Nottingham Road (modern US Route 1) in foreground (P.S. du Pont Longwood photograph collection, Accession 1969.002, Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).	50
Figure 21.	Anvil Village Site Mapping Evaluation, from the 2013 Preservation Plan (CCPC 2013).	50
Figure 22.	View looking west to the Brewer-Miller House, showing the original wine cellars of the Anvil Tavern, 1918 (P.S. du Pont Longwood photograph collection (Accession 1969.002), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).	51
Figure 23.	Detail of Anvil Village intersection, 1910-1930, from Map of Longwood Gardens and Surrounding Area (P.S. du Pont Longwood photograph collection (Accession 1969.002), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).	51
Figure 24.	Old Kennett Meetinghouse and burial ground. View to the west. The high ground occupied by the retreating American light infantry is located beyond the Meetinghouse. US Route 1 is visible to the left (CHG).	53
Figure 25.	View to the east from the Old Kennett Meetinghouse burial ground. US Route 1 on the right. The Porterfield-Heth detachment retreated to the high ground visible in the far distance (CHG).	53
Figure 26.	Former road trace of the Great Nottingham Road at the Barns-Brinton House. US Route 1 to the left (rear) of the house. Former road trace is to the front of the house (CHG).	55
Figure 27.	Pennsbury Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).	56
Figure 28.	View to the south from Union Hill Cemetery. Route 82 (Unionville Road) in center. Cornwallis' Division was bivouacked along this road on the night of September 10 (CHG).	58
Figure 29.	East Marlborough Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).	59
Figure 30.	Kennett Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).	60
Figure 31.	Unionville Road (Route 82) view looking north. This portion of the road is south of the intersection with Street Road (CHG).	62
Figure 32.	Unionville Road (Route 82), view to the north. This portion of the road is immediately north of the intersection with Street Road (CHG).	62
Figure 33.	East Doe Run Road, view to the east (CHG).	64
Figure 34.	Northbrook Road, view to the north (CHG).	64
Figure 35.	View to the north towards the high ground at the intersection of Red Lion Road and Street Road. This elevation was an excellent observation platform for American forces to observe the flanking movement of Cornwallis' Division (CHG).	66
Figure 36.	View to the west from the high ground near Red Lion Tavern, looking along Street Road. Northbrook Road intersects Street Road from the right in the middle distance (CHG).	66
Figure 37.	Commemorative Stone, "In Memory of Hessian Soldiers," Old Kennett Meetinghouse Burial Ground (CHG).	71

**LIST OF TABLES**

Table		Page No.
Table 1.	Regulations for Carriages and Horses of the Army, September 23, 1776.	21
Table 2.	Summary of livestock lost as reported in the Depredation Claims, September 9 through 16, 1777.	23
Table 3.	KOAOA Definitions (From McMasters 2009).	35
Table 4.	List of Defining Features.	37-38

---

## 1.0 INTRODUCTION

### 1.1 GOALS OF THIS STUDY

A National Historic Landmark (designated 1961), Brandywine Battlefield is listed as endangered resource at both federal and state levels. Ongoing development pressure is the major long- and short-term threat. The strong development pressure on Brandywine battlefield lands extends from the nearby employment center of New Castle County, Delaware, as well as from commercial and suburban growth in southern Chester County. Within the current Battlefield Boundary, the 2010 Census population for the 15 battlefield municipalities was 111,234, an increase of 17 percent from 2000.

The ABPP's *Report to Congress on the Historic Preservation of Revolutionary War and War of 1812 Sites* ranked the Brandywine Battlefield as "Class A, Preservation Priority 1, Intact and largely unprotected principal Revolutionary War sites," one of only four such battlefields identified nationwide (Gossett and Mitchell 2007). The authors of *National Historic Landmarks at the Millennium: A Report to Congress and the American People 2000-2001*, listed the Brandywine Battlefield National Historic Landmark as "threatened" due to "incompatible new construction, looting, and vandalism" (NPS 2001:15).

Threats to the battlefield have been long recognized in the Commonwealth. In 1994, prior to the first ABPP-funded study of the battlefield, Preservation Pennsylvania listed the Brandywine Battlefield as an "At-Risk Site," and the battlefield was designated as the first "Pennsylvania Commonwealth Treasure" (Preservation Pennsylvania 1994; Webster 1997). Through the ABPP-funded projects, the battle's scope and significance in American history have been more clearly identified, and the battlefield is gaining in public awareness, stewardship, and support. However, opportunities for education, interpretation, and public access remain limited and at a critical juncture. Most interpretation, research, planning, and public access for the battlefield has focused in the Birmingham-Chadds Ford areas, where the State Park is located, while there is virtually no interpretation of the other approximately 33,000 acres of the battlefield and still unverified information about the important northern flank.

The overall goal of this technical Strategic Landscape report is to verify and build upon previous planning efforts, confirming and/or updating information and adding to the understanding of the battle and its future planning, education, interpretation, and preservation (Figure 1). The analyses presented in this technical report were incorporated into a larger Strategic Landscape Preservation Plan prepared by the Chester County Planning Commission (CCPC). The project was funded through a grant from the American Battlefield Protection Program (ABPP) (grant GA-2287-15-005). The 2013 Brandywine Battlefield Preservation Plan (CCPC 2013) prioritized significant areas and elements of the battle and battlefield for further study, planning, and possible protection and/or interpretation. These areas contain defining features key to the battle that include: land areas used by troops (for campsites, marching routes, and combat) and civilians; natural features (topography, streams, wetlands, and landforms); and built features (roads, fords, buildings, farms, and cultural/ commerce centers). In evaluating such defining features, the 2013 Plan identifies and recommends thirteen battlefield strategic landscapes for further consideration and planning. Those Strategic Landscapes are illustrated in Figure 1.

Strategic battlefield landscapes and their defining features are areas to focus local planning, land conservation, and historic resource protection efforts. Given the complexity of the battle and large size of the battlefield (approximately 35,000 acres, 15 municipalities and two counties), the strategic landscapes are being considered in phases. Trimble's and Jefferis' Fords Strategic Landscapes, along with plans for Marshallton and Sconnelltown/Strode's Mill, represents Phase 1 (ABPP grant GA-2287-13-004) of the strategic landscapes planning and these landscapes have already been studied and reported (Catts et

al. 2016a, 2016b). Phase 2 of the plans is the subject of this report. Phase 2a (ABPP grant GA-2287-17-002) will consider the Crown Forces Approach out of New Castle County, Delaware, as well as the American Encampment and Defense area along the Brandywine Creek, from September 8 through September 11. Phase 3 will examine the Core Area of the Battlefield (Figure 2).

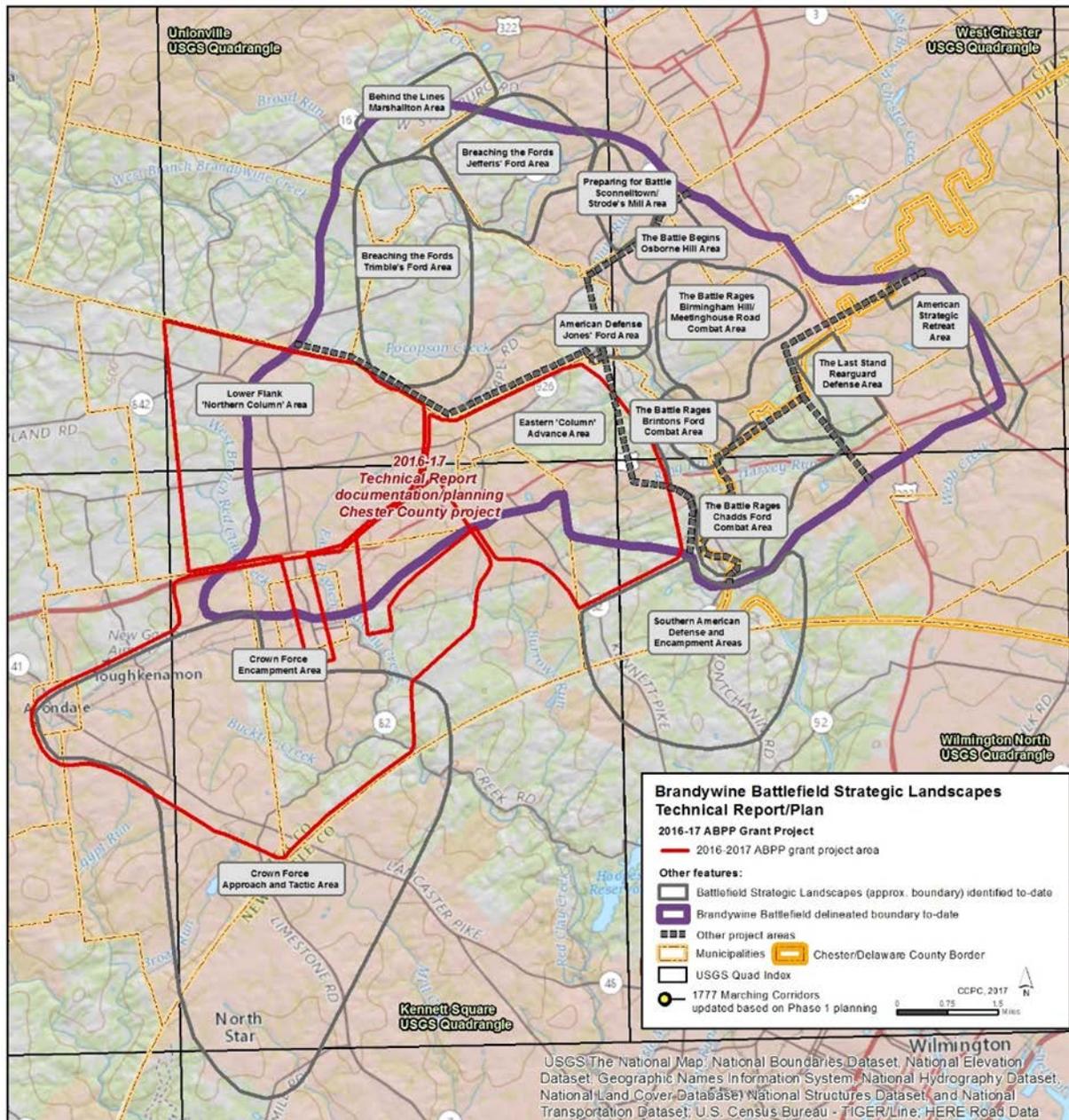


Figure 1. Locations of the Strategic Landscapes (CCPC). The area covered by this technical report is outlined in red. The limits of the Brandywine Battlefield Boundary are shown in purple. The Two Columns Strategic Landscape combines the Lower Flanking “Northern Column” Study Area and the “Eastern Column” Study Area. The Baggage Column is part of the Eastern Column.

The present technical report builds on earlier battlefield studies funded by the ABPP. The CCPC received an ABPP grant in 2010 (grant GA 2287-09-002) which resulted in the initial identification of the Battlefield Boundary (termed “Study Area” in 2010) and the Core Area for Brandywine Battlefield. The initial boundaries were based on documentation, mapping, and a windshield survey of the battlefield (Figure 3). The subsequent Strategic Landscape plans, as stated above, are intended to confirm and/or revise the boundaries by focusing research in specific areas of the Battlefield Boundary that are less well understood or researched. The analyses were research-based and did not require physical access to private lands or ground disturbance. The KOCO method of military terrain analysis was used, as required by ABPP grants. Commonwealth Heritage Group’s project team utilized historic maps and aerials, in addition to available descriptive texts, to attempt to identify key defining features related to several strategic battlefield landscapes identified as part of an overall project directed by the CCPC related to the Brandywine Battlefield.

From the British perspective, the focus of the present project is on the Royal Army’s Obstacles and Avenues of Approach from September 9 to the midmorning of September 11, 1777, while from the American perspective the focus is on the Obstacles, Avenues of Retreat, Cover and Concealment, and Observation and Fields of Fire for their forces on the morning of September 11. The area covered by this analysis is located within the Battlefield Boundary of the Brandywine Battlefield and in areas beyond the Battlefield Boundary, particularly south and west of Kennett Square. The area beyond the Battlefield Boundary was deemed important for study by CCPC and the local municipalities. While the 2010 Study mapped the initial Battlefield Boundary and Core Area as part of a windshield survey, the detailed Strategic Battlefield Landscape Plans that have been funded by the ABPP, undertaken since 2010, have provided or will provide more detailed mapping describing important elements of the battle. The boundaries are subject to revision based on the results of the Strategic Landscape Plans, and a final Battlefield Boundary and Core Area will be a principal outcome of the various studies and addressed in a final plan.

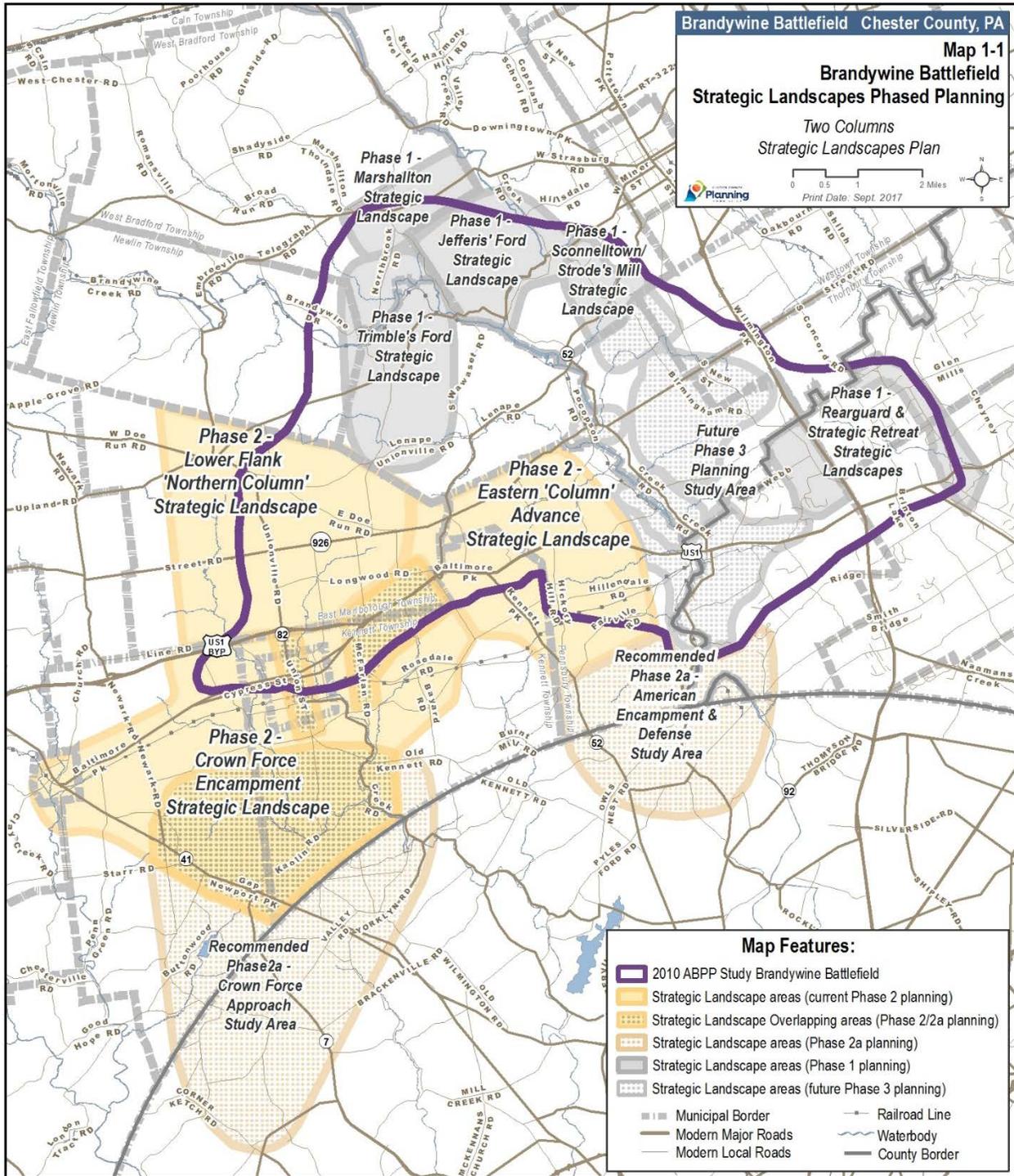


Figure 2. Map showing the Brandywine Battlefield Strategic Landscape Phased Planning. Phase 2 is the subject of this report, and includes Crown Forces Encampment, Lower Flank “Northern Column” Strategic Landscape, and “Eastern Column” Advance Strategic Landscape. The Baggage Column discussion is part of the Eastern Column (CCPC).



## 1.2 LOCATION SETTING

The Brandywine Battlefield is unusual for an American War of Independence battlefield. In North America, most eighteenth-century battles were fought in relatively compact combat zones. Brandywine Battlefield, by contrast, extends through 15 municipalities in two counties. The Battlefield includes not only colonial-era buildings and historical resources, but also natural features and traditional elements like the Chester County Quakers who lived in the Battlefield in 1777, and still live there today.

### *1.2.1 Encampment of September 10/11*

The Crown Forces or Royal Army Encampment Landscape (Encampment Landscape) is located in New Garden and Kennett Townships and Kennett Borough. It is a part of the southern battlefield encompassing staging events leading up to Core Area of the battle, which occurred in the eastern battlefield later that day. The British Encampment Landscape lies just north of the Mason-Dixon Line separating Pennsylvania from Delaware. Two major east-west roads crossed this region, the 1743 Great Nottingham Road (today's Route 1) that connected Baltimore and Philadelphia, the 1773 Newport-Gap Road (modern Route 41) connecting Wilmington and Lancaster and the north/south 1710/1733 Newark Road connecting Newark, Delaware to Chester County's Great Valley.

The Encampment Landscape contains rural landscapes south of the Old Baltimore Pike that links the communities of Avondale and Kennett Square. These landscapes are situated along much of the route that von Knyphausen's troops followed in 1777 along the Great Nottingham Road toward the Village of Kennett Square on September 9 and 10. At the time of the battle, the village of Kennett Square was essentially just a crossroad and consisted of Joseph Shippen's brick mansion and Peter Bell's Unicorn Tavern. Bell's Tavern was used by General von Knyphausen for his headquarters on September 10/11. There were likely several log structures on the three lots that had been subdivided adjoining and south of the Shippen residence. There is no further record of dwellings or businesses in the village.

On September 9, Howe's two divisions left their overnight camp in Mill Creek Hundred, Delaware, and began crossing the Mason-Dixon Line into Pennsylvania late in the afternoon into the evening. Hessian Jäger Captain Johan Ewald, who often served as the Royal Army's "point man," commented that, while the region was extremely mountainous and traversed by thick forests, it was well cultivated and very fertile (Ewald 1979:167). The night march was difficult and the roads poor. While the division commanded by Lieutenant General von Knyphausen marched northwest on the Lancaster Road, then turned east to reach Kennett Square, the division commanded by Lord Cornwallis used country paths and byways to traverse the Red Clay Creek. Firsthand accounts provide insight on the role of the landscape in the British march from Delaware into New Garden and Kennett Townships and in particular local intelligence about the Continental position. Ewald noted, "The inhabitants of this region are generally Quakers, who, since they did not want to participate in the war, did not flee, but arrived in crowds and asked for protection." He goes on to note, "We received positive information here that the greater part of the American army had entrenched behind the left bank of the Brandywine" (Ewald 1979:167).

The documentation of local intelligence offered to the British is consistent with the thesis that one of the reasons for the American defeat at Brandywine was the superior intelligence the British received from locals. The two divisions of Howe's Army reunited at the village of Kennett Square mid-morning on September 10. Von Knyphausen's Division bivouacked east of the village along the line of McFarlan Road, while Cornwallis' Division encamped along Route 82 extending north and south through the village. The army essentially was arranged in two north-south trending parallel lines, one behind the other. Arranged thus, the Crown Forces remained around Kennett Square until 4-5 AM on September 11. From their positions, the two divisions formed their columns which would launch the attack against Washington's army defending the line of the Brandywine.

The Encampment Landscape retains a high degree of integrity of setting and location. There are no longer any standing historic resources dating to the time of the battle in Kennett Borough, a municipality created after the War. There has been a great deal of urban and suburban growth within the Borough and the immediately surrounding land in Kennett Township. The intersection of the Great Nottingham Road (Old Route 1) and Route 82 still exists and there are markers that indicate areas where encampments took place such as Kennett High School and Union Hill Cemetery. Kennett Township, on the other hand, has preserved a number of colonial-era farmsteads and sites despite suburban infill. Mills, crossroads, and the ford at Chandler Mill (Lewis Mill in 1777) are still preserved and tell the story of the encampment of 8,500 soldiers within a township which had a population of 617 in 1783. The Kennett Meetinghouse is well preserved and listed on the National Register of Historic Places. Kennett Township still displays the Brandywine Valley colonial landscape, including structures and lands that Crown Forces occupied and pillaged. The Township also retains cultural roots and identity, including the local Quaker community and continuously used eighteenth-century meetinghouses and properties.

The significance of the Encampment Landscape to the battle is threefold: 1) The region south of the Borough of Kennett Square retains the integrity of location, feeling, and setting to a large extent. The rugged and wooded character of the Red Clay Valley is readily apparent to travelers and visitors. This level of integrity is lacking within the borough, as no eighteenth-century structures remain. 2) The modern road configuration, particularly McFarlan Road and Route 82, mark the two division lines occupied by von Knyphausen's and Cornwallis' divisions, respectively, while they rested on September 10. While the borough lacks built resources that assist in interpreting the Encampment Landscape, the area around Union Hill Cemetery retains a rural character. 3) The region centered on New Garden Friends Meetinghouse, including the road system and the agricultural character of the area, retains integrity of location and setting, so that the western route of the Crown Forces movement in the township is clear.

### ***1.2.2 Two Columns September 11***

The Two Columns Strategic Landscapes represents the initial phases of General Howe's strategy for the battle. Dividing his army, Howe intended to hold General Washington's attention along the Brandywine Creek with one division, while outflanking the Continental forces with the other division. Just before dawn around 5 AM on September 11, Lieutenant General Wilhelm von Knyphausen's Division (the Eastern Column, which included the Baggage Column) moved due east from today's Kennett Square along the Great Nottingham Road where they would create the illusion of the full army on the western bank of the Brandywine Creek, engaging the Continental Forces to distract them until General Cornwallis' Division (the Northern Column) turned their flank. This march took place in the southern battlefield in Kennett and Pennsbury Townships. As von Knyphausen's Division, headed by Capt. Patrick Ferguson and his company of British riflemen moved east, General Howe and Cornwallis headed due north along today's Route 82 into the northern battlefield to affect the flanking march that would win the battle that day. The Northern Column Landscape also begins in Kennett Borough and travels north on Route 82 into East Marlborough Township, along East Doe Run Road, to Northbrook Road-Red Lion Road. By sundown, Howe had outflanked the American army and forced a major battle. Washington's army was compelled to retreat, but not to surrender, in what would be called the "Battle of Brandywine." This day-long series of troop movements and firefights covered 35,000 acres of Chester and Delaware Counties in Pennsylvania. Brandywine was one of the two largest battles of the Revolutionary War. It was the first major engagement of the Philadelphia Campaign of 1777.

The Two Columns Strategic Landscape contains a minimal expanse of rural lands that convey the colonial-era setting. Both elements of the Strategic Landscape are largely developed, but in some areas agricultural use continues and a number of associated period buildings are extant. The military significance of the Eastern Column landscape and numerous preserved properties compensates for this loss. The actual

marching route within the Northern Column Strategic Landscape leads to the well-preserved approach route to the Trimbles Ford Strategic Landscape and resolves a number of strategic questions about the marching route taken by Generals Howe and Cornwallis.

The Eastern Column's landscape has been altered since 1777. Although today's US Route 1 (the colonial Great Nottingham Road) going east toward the Brandywine Creek has been significantly enlarged and the actual roadbed replaced a number of times, the road still passes by the preserved colonial-era historic structures that were directly and indirectly associated with the battle. This is a suburbanized landscape that contains the preserved Abraham Taylor farmhouse at Miller's Hill which was plundered, archeological remains of the Welch's Tavern, and the extant Old Kennett Meetinghouse where the first skirmishes of the battle took place. In Pennsbury Township, the property owned by the Pierce family was damaged by advancing British forces. There are two colonial structures attributed to Dr. Joseph Pierce that were plundered and two properties attributed to his brother and his son Joshua Pierce II and III. James Brinton held the remaining property in Pennsbury Township within this strategic landscape on both sides of the Great Nottingham Road and four colonial structures are attributed to his family. His son made a claim for plunder. What is remarkable about the Southern Column landscape is the fact that skirmishes between the advancing troops commanded by General von Knyphausen and Maxwell's Light Infantry can still be clearly traced in the landscape in relationship to these colonial residences.

There is not much remaining of the Northern Column landscape other than the roads that the troops followed. This portion of the battlefield has been highly developed with suburban infill, small commercial developments, and the middle and high schools for the Chadds Ford Unionville School District.<sup>1</sup> There is still a question as to why the route that has been documented was selected, no doubt to avoid the numerous scouting divisions that crisscrossed the roads searching for sign of British activity. Once East Doe Run Road meets Northbrook Road-Red Lion Road (the Road to the Great Valley in 1777), the landscape begins to be more rural with several important historic residences still on the route owned by the Wickersham family. East Marlborough at the time of the revolution was almost entirely Quaker-owned land. The war effort found little support in this area, particularly for the American side.

The significance of these Landscapes to the battlefield is threefold. 1) The route of Cornwallis' Northern Column is remarkably intact, particularly from East Doe Run Road to Northbrook/Red Lion Road. The area along this latter road retains integrity of location and setting, and is evocative of the rural character of East Marlborough Township. This portion of the Landscape illustrates why Cornwallis' Division was able to successfully flank the American Army by maneuvering approximately 9,000 troops on a 9-hour circuitous march through difficult terrain that included fording both branches of Brandywine Creek. 2) The route of Knyphausen's Eastern Column retains diminished material integrity within the road corridor, due to the widenings and improvements of US Route 1. However, the locations of the four skirmishes – Anvil Tavern, Hamorton, Old Kennett Meetinghouse, and an unnamed hill east of the meetinghouse – are still apparent to the visitor. 3) The route of the Baggage Column along Hillendale/Fairville Road passes through farms of Pennsbury Township, and retains integrity of setting and location. Taken together, these two road corridors form the basis for the southern battlefield where General von Knyphausen successfully engaged the Continentals and deployed troops along the Brandywine Creek, holding Washington's attention long enough to allow Cornwallis' flanking maneuver to be completed.

---

<sup>1</sup> Over time, Chadds Ford has been spelled differently. In this report, "Chads' Ford" will be used for historical and battle-era discussion, while "Chadds Ford" will be used for the modern place name and for modern references and discussion.

## 2.0 HISTORICAL OVERVIEW

The late summer of 1777 in the upper Delmarva Peninsula witnessed the start of the military campaign that resulted in the capture of Philadelphia by the Royal Army (September 26, 1777). Two years of warfare had preceded the Philadelphia Campaign, with much of the principal military action on land occurring in New England, New York, and New Jersey. Crown Forces setbacks occurred in December 1776 (First Battle of Trenton), and in early January 1777 (Battle of Princeton). These reversals resulted in the Royal Army wintering in New York City, and in the vicinity of New Brunswick, and Perth Amboy, New Jersey, and American forces taking up winter quarters around Morristown, New Jersey.

During the months of May and June 1777, the inability of General Sir William Howe to force a decisive battle or outmaneuver General George Washington in New Jersey led to the movement by sea of the balance of the Royal Army from Staten Island to Elk Neck in Maryland. Numbering approximately 15,000 men, the Royal Army was transported by the British fleet up the Chesapeake Bay, and landed at the Head of Elk on August 25. Their intent was to advance overland to capture Philadelphia, the fledgling capital of the United States (Black1998:124). Figures 2 and 3 are Royal Army manuscript maps depicting the region.

One week after landing in Maryland, Howe's advance guard clashed with American Light Infantry at the Battle of Cooch's Bridge, Delaware (September 3). The short, but sharp, engagement was a Royal Army tactical victory, and allowed Howe some maneuvering room (Catts et al. 2014). The Royal Army encamped in the Cooch's Bridge area for five days while Washington's army fortified positions along the Red Clay Creek and in Wilmington in Delaware.

Cooch's Bridge was the first in a series of engagements – Brandywine (September 11), the Battle of the Clouds (September 16), and Paoli (September 20/21) – as the Royal Army moved to capture Philadelphia. Over the month between August 25 and September 26, the Royal Army fought with and maneuvered the Continental Army towards the colonial capital of Philadelphia, which was taken on September 26 (McGuire 2006).

By far the largest of these engagements – both in terms of land area covered and numbers of troops involved – was the Battle of Brandywine, when on September 11, 1777, Sir William Howe's army launched a two-pronged attack on the American position along Brandywine Creek. One column commanded by Hessian General Wilhelm von Knyphausen departed Kennett Square along the Great Nottingham Road (approximately the current US Route 1), and attacked General George Washington's troops stationed at Chadds Ford. A second column, commanded by Howe and Lord Charles Cornwallis, followed a more circuitous route, travelling north from Kennett Square, and then turning east and fording the Brandywine Creek on two fords near what is now a bridge at old Jefferis Ford. The column arrived at an area near Birmingham Road in Birmingham Township, and from there they attacked Washington's northern flank from the right rear. American formations responded to this maneuver by forming a series of defensive lines, but were out-maneuvered. The final action of the day occurred along the Old Wilmington Road south of Dilworthtown when Major General Nathanael Greene positioned his brigade and the remnants of other Continental formations in a semi-circular line that was able to blunt the Royal Army's advance. As evening approached and daylight waned, Washington's Army retreated east along modern US Route 1. His forces reformed near the City of Chester in what is now Delaware County, Pennsylvania.



Figure 4. Detail, *Part of the modern counties of Philadelphia, Bucks, Montgomery, Delaware, Chester, Lancaster, in Pennsylvania....* (circa 1777/78). Map #556, William L. Clements Library, Ann Arbor, Michigan.



Figure 5. Detail, *A Plan of the Progress of the Royal Army from their landing at Elk Ferry to Philadelphia 1777....* (Blaskowitz 1777).

## 2.1 SUMMARY OF BATTLE ACTIONS FOR THE TWO COLUMNS STRATEGIC LANDSCAPE

On September 10, after reaching Kennett Square, less than seven miles west of Chadds Ford, Sir William Howe's Royal Army of about 15,200 soldiers went into an overnight bivouac. Howe's plan for the next day was for Hessian Lieutenant General von Knyphausen's "grand division" of 6,800 to make a secondary attack against Chadds Ford while he and Cornwallis' grand division of 8,400 made a turning movement around Washington's right (strengths of the two columns found in Harris 2014:190-194).

Before 5 AM on September 11, von Knyphausen's Division formed column along State Street, coming out of bivouac locations stretching from the Great Nottingham Road (modern US Route 1) south roughly on the line of McFarlan Road. Leading the column were Captain Patrick Ferguson's Rifle Company and the Queen's Rangers, followed by the British First and Second Brigades, commanded by Major General James Grant, Major General Johann von Stirn's Hessian Brigade, the British artillery, the three battalions of the British 71st Regiment, and the 16th Light Dragoons. Accompanying von Knyphausen's column was the Royal Army baggage train, provision train, and livestock herd.

The two Royal Army columns moved out at dawn, between 4:30 and 5 AM, on September 11. Cornwallis's Division formed column on the Unionville Road leading north from Kennett Square. This Northern flanking column proceeded along Unionville Road, then along East Doe Run Road, then north along Northbrook Road/Red Lion Road. From Red Lion Road, the Division proceeded to Trimble's Ford.

West of the Brandywine Creek, General Washington had deployed Brigadier General William Maxwell's Light Infantry Corps. The Light Corps was a relatively recent creation, having come into being in late August, and it would be disbanded at the end of the campaign season in late September. The unit was composed of Continental soldiers drawn for the various brigades from New Jersey, North Carolina, Pennsylvania, and Virginia, militiamen from different Pennsylvania counties including Chester, York, and Cumberland, and detachments of light dragoons (Catts forthcoming). Maxwell's Corps of Light Infantry were tasked with scouting the various routes leading to the Brandywine Creek, including the Great Nottingham Road (the most direct route), but also Street Road and the Great Valley Road. Along the Great Nottingham Road leading to the Brandywine, these men were posted at a series of locations, with the western-most position at the Anvil Tavern on US 1 near Lenape Road.

The weather was foggy until about 7 AM, after which a hot sun burned through. Washington learned early in the morning that the enemy was advancing toward Chadds Ford, and his troops were alerted. About 8 AM the American Light Infantry Corps commanded by Brigadier General William Maxwell was in contact with the Royal Army, and conducted a skillful fighting withdrawal towards Chadds Ford, intended to slow von Knyphausen's Division (Eastern Column) advance. A series of defensive positions were occupied by Maxwell's detachments, each successive position forcing the advancing column to deploy, and remove the Americans. None of these positions was intended to bring on a general engagement, but instead were intended to delay the Royal Army advance.

The exchange of fire at some of these skirmish points was short but intense in several instances. The most significant fighting during the morning occurred at an American log breastwork supported by artillery, situated on rising ground near the intersection of modern Hillendale Road and Sunny Ridge Road. By about 10 AM, four hours after the initial firing at Welch's/Anvil Tavern, the American light infantry and supporting militia had withdrawn across the Brandywine Creek. By 10:30 AM von Knyphausen was in position along the creek, and his activity was then limited to an artillery exchange with Proctor's American artillery on the left (east) bank of the Brandywine. By then the baggage, provisions, and livestock herd accompanying von Knyphausen had shifted its position to the south onto Hillendale Road/Fairville Road. The baggage would remain in this location until late afternoon of September 12.

## 2.2 ARMY MOVEMENTS SEPTEMBER 8 TO SEPTEMBER 10, 1777

The Battle of Brandywine itself has been analyzed repeatedly, but the troop movements during the week from the Battle of Cooch's Bridge (also known as the Battle of Iron Hill) on September 3, 1777, and the Battle of Brandywine on September 11, are often only cursorily mentioned. Knowledge and appreciation of General Howe's strategic planning underlying these movements, and conversely General George Washington's failure to read and counter his opponent's intentions, is however of crucial importance to understanding why the battle was waged where, and how it was fought, and why it ended the way it did. Due to the geographical and chronological framework set by the current ABPP grant, this study of the movements of Crown forces under Generals Howe and von Knyphausen begins when Crown forces cross into Pennsylvania from Delaware late in the afternoon of September 8, and ends in the morning of September 11, 1777.

Following the Battle of Cooch's Bridge, General Howe's forces remained in the vicinity of Iron Hill for eight days, providing rest to the troops still recovering from the long sea journey from New York while collecting cattle, forage, horses, and wagons for the march on Philadelphia. Continental Army forces under General Washington used the time to fortify Wilmington, Delaware, and to establish earthworks along the Red Clay Creek. Convinced that Howe would march directly on Philadelphia, Washington on September 5 told his troops that "they will put the contest on the event of a single battle: If they are overthrown, they are utterly undone—the war is at an end", and moved his headquarters to Newport. But the attack that Washington expected, and actively sought, never came. Accepting the reality that collecting enough draft animals, and wagons, to transport all of the supplies, and equipment, for his army would be a difficult, and time-consuming, undertaking, Howe issued orders on September 4, "...that all surplus baggage and tents should be boarded on ships which was carried out in the greatest hurry. The officers of each company were permitted to take along one musketeer tent; the non-commissioned officers and common soldiers, however, had to lie in the open air from then on" (Jung-Loßberg: fol. 25r; Howe 1777:486).

There were not many weeks left in the campaign season, and Howe needed to move on Philadelphia. On September 6, the Second Division under Major General James Grant re-joined the main army. That same day a convoy of "270 wagons loaded with provisions," for the army *i.e.*, the same wagons that had transported the surplus baggage and tents to the Royal Navy two days earlier, returned to camp (Knyphausen: fol. 54r). As the rank and file received five days' provisions, and another week's worth of supplies ("provided with provisions for 13 days" Lengerke I:83) accompanied the troops on the wagon train, the officers were told to supply themselves from ship stores, but since "the fleet had already left ... those who had not made use of the privilege before remained unprovided for" (Lengerke I:82). Howe had posted Brigadier General Matthew on Iron Hill to guard British access to the Royal Navy, but once the Royal Navy had sailed, and Matthew had left Iron Hill and re-joined the main army on September 7, Howe was ready to move.

On the eve of departure, the evening of September 7, 1777, Howe organized his forces into four separate brigades: The 1st English Infantry Brigade consisted of the 4th, 23rd, 28th, and 49th Regiments of Foot. The 2nd English Infantry Brigade consisted of the 5th, 10th, 27th, 40th and 55th Regiments of Foot. The 1st and 2nd brigades stood under the command of Major General James Grant. The 3rd English Infantry Brigade consisted of the 15th, 17th, 42nd (Scottish) and 44th Regiments of Foot. The 4th English Infantry Brigade consisted of the 33rd, 37th, 46th and 64th Regiments of Foot. The 3rd and 4th brigades stood under the command of Major General Charles Grey. British infantry regiments typically only had two battalions but for the purposes of the campaign the 71st Regiment under Brigadier General Alexander Leslie, 1,200 Gaelic-speaking genuine Highlanders from the Outer Hebrides, had been divided into three battalions on August 6, 1776. Besides two artillery brigades, British forces under Lord

Cornwallis also included the Brigade of Guards, two battalions of grenadiers, light troops, Ferguson's Rifles, mounted dragoons, pioneers and the Queen's Rangers. Britain's Hessian allies (including the Jäger from the Ansbach contingent) consisted of the Brigade of Major General Johann Daniel Stirn, *i.e.*, the Fusilier Regiments Mirbach and Donop and the Leibregiment and the so-called "Combined Battalion," the remnants of the Hessian regiments surprised at Trenton, (the Garrison Grenadier Regiment von Rall and the Fusilier Regiments von Knyphausen and von Lossberg) (Howe 1777: 488/9; Londahl-Smidt 2004/2005).

### 2.2.1 September 8

Howe's marching orders for September 8, issued at Pencader, ordered that the army "be in readiness to move at an hour's notice, and to march by the left in three Divisions and the following order:

First Division under the Command of Lieut.-Gen. Earl Cornwallis. 1st. and 2d. Light Infantry with an Officer and 12 Mounted Yagers. 1st. and 2d. British Grenadiers. Hessian Grenadiers. Yagers Infantry. 1st. and 2d. Guards. Mounted Yagers.

Second Division under the Command of Maj.-Gen. Grant. Two Squadrons of Queen's Dragoons. 1st. Brigade of Artillery. 1st. and 2d. Brigades British. 3d. Brigade Artillery. 3d. and 4th. Brigades British. Pay Master's Waggons. General Officers' Waggons. Baggage Waggons of the Army according to the line of March. The Provision Train. The 3d. Battalion of 71st. Regiment to take the Right Flank of the Baggage. The Cattle of the Army to follow in the rear of the Waggons.

Third Division under the Command of His Excellency Lieut.-Gen. Knyphausen. Dismounted Yagers. 2d. Brigade of Artillery. Brigade of Stirn. One Squadron of Queen's Dragoons. 40th. Regiment British with two 3 pounders. 1st. and 2d. Battalions 71st. Regiment. Queen's Rangers and British Rifle Men. Lieut.-Col. Musgrave will give orders to the British of the 3d. Division during the March, under Lieut.-Gen. Knyphausen. The Corps of Pioneers to be divided into four Divisions, One Division at the head of the British Grenadiers, and One to each of the Brigades of Artillery" (Howe 1777:488/89).

The orders did not stipulate a time for departure, which, depending on where the regiment stood in the line of march, lay between 3 AM and 6 AM or "daybreak." Civil Twilight (the Sun is less than 6 degrees below the horizon) in the Philadelphia-Wilmington area on September 8 is at 6:07 AM, sunrise at 6:35 AM. Cornwallis' column, which was to march first, was "under arms by 3 o'clock" (Peebles 1998:131). The Division began to march "about 4 AM" with the Second and Third Divisions following (Downman 1898:156; Muenchhausen 1974:30).

Not all units could set out concurrently, however; it took a while until all of Cornwallis' men began their actual march. Captain Montrésor reported that it was "2 hours before daylight," (approximately 4:30 AM) while Archibald Robertson and other British officers recorded the movement "at Daybreak march'd with the whole Army" (approximately 6:30 AM) (André 1904:82; Anonymous 1777; Montresor 1881:414; Robertson 1930:145). The units in Knyphausen's column that lay farthest from the road broke camp early as well, with the first regiments setting out as early as "3 o'clock in the morning" (Von Knyphausen 1777: fol. 54r; Erbprinz 1777:8). Here, too, departure occurred in stages over the next few hours: "We broke camp very early and marched off at 5 AM," and 6 AM when the Regiment Jung-Loßberg set out (Freyenhagen 2011:65).

The first units of Cornwallis' units marched through Newark "about 7" (Peebles 1998:132), "¼ past 7" (Montrésor 1881:415), *i.e.*, about three hours after departure. Newark, a market town about four miles from the encampment, was a "deserted and destroyed village" and "totally abandoned by the Inhabitants" (Downman 1898:156; Anonymous 1777). Robertson, who had departed the Cooch's Bridge camp at

daybreak, reached Mill Creek Hundred at “about 10 o’clock” (Robertson 1930:145). Maintaining that pace of about 3 miles per hour for the whole distance of about “12 miles,” Montrésor reached the camp near New Garden Meeting House “at 1 o’clock at Nibblas’s [Nichols] house which is from Aiken’s Tavern to Cooch’s Bridge round Iron Hill by way of Newark and so into the road from Newport to Lancaster in the way to New Garden” (Montresor 1881:416). Cornwallis and Howe made their headquarters at “Nicolson’s, the only house on the main road from Newport and Wilmington to Lancaster” (Muenchhausen 1974:30). General Grant, who “was followed by all the cattle, baggage, hospital and supply wagons of the army” (Von Knyphausen 1777: fol. 54r), had a longer distance to cover, “a handsome Move of 14 Miles” (Grant 1777).

Delayed by the hundreds of wagons, cattle and sheep ahead of him and “almost suffocated” from the dust of the trains, Knyphausen’s units quickly fell behind schedule (Downman 1898:156). Ensign Freyenhagen of Donop Regiment wrote that having “marched off at 5 AM, around noon passed the village of Newark” (Freyenhagen 2011:65). Once on the road “We left Christian Bridge and Newport to our right, marched through Newark, passed over the White Clay Creek, and encamped on the so-called Society Hills two miles this side of New Garden Meetinghouse, where the road to Lancaster and Chester split” (Von Knyphausen 1777: fol. 54r; Baurmeister 1935:402). Noting “constant, unpleasant” delays caused by the baggage, the first regiments as indicated by Freyenhagen, marched through Newark only at noon. Since Freyenhagen’s regiment had also departed at 5 AM, it had taken the unit a full seven hours to move four or five miles and to reach Newark. Other regiments were still hours behind, and marched through Newark “the afternoon around 2” when Cornwallis’ units were already in camp. The scribe of Jung-Loßberg’s daily journal recorded that they “passed through a very pretty but uninhabited little town consisting of 60 houses called Newark” (Jung-Loßberg 1777: fol.25v).

Having marched around 18 hours to cover 12 to 14 miles, the first of Knyphausen’s units did not reach their camp until almost midnight of September 8/9. Downman, and “the rear guard” to which he belonged, “with the 2nd brigade of artillery, did not reach our ground until 11 o’clock at night, after a very disagreeable march of 16 hours without anything to eat” (Downman 1898:156). Right behind Downman followed the regiment Jung-Loßberg, which also arrived “In the evening at 11 o’clock ... in New Garden” (Jung-Loßberg 1777: fol 25v). Behind Jung-Loßberg followed the Regiment Donop, which, “Having been made the rear guard we arrived at 11 PM to camp at Nicolaus Haus [Nicholl’s House in Hockessin, Delaware] near Millbrook Hundred [Millcreek Hundred], which was also headquarters” (Freyenhagen 2011:65; Chiquoine 2016). Other units took even longer: “Today we passed the border between Maryland and Pennsylvania. We set up camp only at 12:00 o’clock at night” (Alt-Loßberg 1777:135). In his report to the Landgrave prepared in October 1777, General von Knyphausen noted that he, too, “arrived only at night 12 o’clock with my division” (Von Knyphausen 1777: fol. 54r).

The encampment covered a large geographic area (Chiquoine 2016). One British officer reported that “part of the Army Encamped at Casket in Newcastle County” (Anonymous 1777). Major André wrote that the troops marched “to the New Garden Road, where they were encamped” (André 1904:82).

### **2.2.2 September 9**

While the army spent much of the daylight hours of September 9 resting from its strenuous march and collecting livestock, Howe formulated his battle plan and re-organized his forces for the attack on Washington. Jäger captain Johann Ewald wrote on September 9 that “since we received intelligence that Washington had crossed the Brandywine Creek and was drawing up” his forces there in defensive position on the heights of the Brandywine beyond Chadds Ford, Howe decided to accept the battle Washington was offering (Ewald 1979:80). Howe’s forces were to approach the enemy in the following line-up:

Head Quarters, Cascot [Hockessin], Newcastle Co., 9th. Sept. 1777.

The Order respecting the three Brigades of Artillery and Baggage given out this morning is Countermanded. It is to March as follows: The whole of the three Brigades of Artillery are to March with the Army; The First and Third Brigades of Artillery in front of the first Brigade British. Second of Artillery in Front of the 4th. Brigade British. The Baggage of the General Officers, Staff Hospital, and of the 1st. and 2d. Divisions, to follow the 4th. Brigade British, according to the line of March. The Spare Artillery, Ammunition Waggons, Provision Waggons, Waggons belonging to the 3d. Division, and Cattle of the Army, to March with the Division under the Command of Lieut.-Gen. Knyphausen. The Paymaster's Waggons in front of the Baggage of the 3d. Division; two Squadrons of Queen's Dragoons to march with Lieut.-Gen. Knyphausen's Division and One Squadron with the 1st. and 2d. Division. The Quarter Master of each Battalion or Corps, and a Captain from each Brigade, to March with their Baggage, and to be answerable for the Regularity of their Men. When fresh Provision is Issued to the Army, the Commissary General is directed to Issue double Rations to the Officers” (Howe 1777:490).

The scribe of the Hessian Regiment Erbprinz recorded the following marching order:

1. First Division under General von Knyphausen’s column lined up as English Jäger Corps, Queen’s Rangers, 2<sup>nd</sup> Battalion 71<sup>st</sup> Regiment of Foot, Regiment von Mirbach, Baggage, Supply wagons, cattle, Regiment von Donop, Combined Battalion, 40<sup>th</sup> Regiment of Foot [with its two 3lb Cannon?], 1 officer and 20 Dragoons as rear guard, the 1<sup>st</sup> and 3<sup>rd</sup> Battalion 71<sup>st</sup> Regiment of Foot to cover the left flank;
2. Second Division under Lord Cornwallis and General Howe in the same marching order as the day before yesterday with the only difference that the communication between the two division was maintained [line missing in text; by the Jäger and Light Infantry as per von Knyphausen letter] marched between them and the division of Major General Grant of the day before yesterday joined this Second Division except the 40<sup>th</sup> Regiment of Foot (Erbprinz 1777:10).

Grant’s division was organized into two brigades, *i.e.*, the 4th Foot, 23rd Foot, 28th Foot, and 49th Foot formed the Third British Brigade and the 5th Foot, 10th Foot, 27th Foot, 40th Foot and 55th Foot formed the Fourth Brigade for a total of around 2,700 men. “At one o’clock in the afternoon of September 9<sup>th</sup>, after General Howe had obtained sufficient information about the enemy, the army set out on the march in two columns” (Baurmeister 1935:403). Howe knew where Washington was and had formulated his plan of attack accordingly. On September 8, Cornwallis and von Knyphausen marched consecutively on the same roads. On September 9, to speed up the movement, Howe ordered them to march on separate route to their destination. As he had done before, *e.g.*, at New York the previous year, Howe was planning to turn Washington’s flank with one fast-moving column led by himself. The second, much slower column encumbered with the wagon train, cattle, and artillery, under von Knyphausen would hold Washington in place at the crossings of the Brandywine while Howe was completing his march. Based on this information Howe “gave such marching orders that both columns were to arrive at the place of rendezvous, namely, Welch’s Tavern, at the same time” (Baurmeister 1935:403).

Welch’s Tavern is located only about four miles from Chadds Ford, the approximate center of Washington’s position on the Brandywine. By repositioning his forces on September 9, and into the early afternoon of September 10, Howe had them in the proper the line-up for the Battle of Brandywine on September 11.

Shortly after departure from camp Howe received information about the movements of Washington’s army that confirmed the soundness of his plans and the march routes he had assigned to his two divisions.

“At ½ past 5 this afternoon the Commander in Chief received accounts of the rebel army having evacuated Newport and Wilmington and taken post at Chad’s ford on the Brandywine Creek” (Ewald 1979:80; Montrésor 1881:414). The time and place of this information, crucial for the execution of Howe’s battle plan, were confirmed by other participants. Archibald Robertson wrote that “After marching two miles to a Place call’d Okerson Meeting”, *i.e.*, Hockessin Meeting House, Howe learned from an American prisoner that the main American army “had moved from Wilmington” (Robertson 1930:146). Another account by an unknown British officer said the prisoner was “a Country man was taken up by the 1<sup>st</sup> Light Inf[antr]y. as a Spy, who after Examination reported the Rebel Army was in motion to cross the Brandy Wine” (Anonymous 1777).

In the early afternoon, the troops began their march. “At one o’clock in the afternoon, [...] Knyphausen was ordered to march with his division, including baggage, cattle, provisions etc., on the road to Kennett Square. It was almost six o’clock before his rear guard left the camp grounds” (Muenchhausen 1974:30). The journals of individual regiments confirm this long, drawn-out departure. The Leibregiment set out “at 1 o’clock” while the Lossberg regiment moved out “around 2 o’clock” (Dincklage 1777: fol.78v; Jung-Loßberg 1777: fol. 25v). Engineer officer Montrésor said he moved “At 2 o’clock P.M” (Montrésor 1881:415). Von Knyphausen informed the Landgraf that it was “at 3 o’clock in the afternoon the army departed again” (Von Knyphausen 1777: fol. 54r). Marching behind the baggage, supply wagons, and the cattle, the Regiment von Donop did not get off until “6 PM [when] we broke camp and marched until at last arrived near Casiket [Hockessin] in New Castle County” (Freyenhagen 2011:66).

A few hours later Cornwallis set out on what was supposed to be a much shorter march, both in terms of distance as well as time spent on the road. Primary sources agree that Cornwallis too had a difficult time to get his troops moving. Major André recorded this, unplanned, late departure when he wrote that like Knyphausen, “...The Army received Orders to be in readiness to march at 1 o’clock in the afternoon in two columns. The troops, however, did not move till sunset” (André 1904:83). Sunset in Philadelphia on September 9 occurs at 7:18 PM, and by 8 PM or shortly thereafter it is dark. Individual accounts confirm this late departure. One British officer reported: “The Army mov’d at four in the Afternoon,” (Anonymous 1777). Hessian regiments Minnigerode and Lengerke reckoned the time of departure as “late on the 9<sup>th</sup>” or about 5 PM (Minnigerode 1777fol.88v; Lengerke I:83). Four hours after the Knyphausen’s column, led by the Leibregiment, had begun its march, that Cornwallis column finally set out on what would prove to be a difficult night march.

Cornwallis was led by a knowledgeable local guide coerced into serving as such. “In the night of the 9<sup>th</sup> to the 10<sup>th</sup>, the guide who took General Washington across the Brandywine was captured and gave us good information. The guide knew the way through an area where all houses are occupied, where there are many loyalists and there will be no shortage of news” (Wurmb 1998:10). While the planned movement appeared straightforward, there were simply too many troops for a successful march over “undefined,” “bad,” “County roads,” and by midnight Howe was forced to call a halt. “Lord Cornwallis and Major-General Grant marched from Headquarters at Nichols’s House Mill Creek Hundred by a bye road to Hockessin Meeting House – Quaker Meeting 4 miles distance and encamped” (Montrésor 1881:415). John Peebles of the Grenadiers wrote in his diary that “army order’d to move at 1 o'clock but was 4 or 5 before they got in motion & march’d about 3 miles by County road” to the east (Peebles 1998:132). Friedrich von Muenchhausen wrote that “The road that we took was so bad, and it was getting so dark, that the General halted five miles from Kennett Square,” while the anonymous diarist of the Lengerke Grenadiers wrote “after having gone 6 miles a halt was made” (Muenchhausen 1974:30; Lengerke I:83). Captain Ewald recorded that the march “occurred during a very dark night” (Ewald 1979:80). Montresor recorded “The roads bad for both routes of the Army & under many halts” (Montresor 1881:515). The Minnigerode scribe noted that “after we had covered 6 miles we made a rendezvous” (Minnigerode 1777: fol.88v).

We should not be too concerned about the variations in distance – the camp on September 8/9 had stretched out over quite a distance along the road, and the marching distances for the different formations varied – but the important questions remains; there was Cornwallis’ column and how many hours had they marched? General von Knyphausen provides some evidence in his letter to the Landgraf of October 17, 1777, when he wrote “At 12 o’clock at night the General in Chief had ordered the right-hand column to halt about four miles from the old encampment” (Von Knyphausen 1777: fol.54v). André traveling with the Third Brigade, and Muenchhausen traveling with headquarters, both put the departure time at around 5 PM.; if we accept midnight as the time when Howe ordered a halt, the time given in von Knyphausen’s letter, it had taken Howe’s column six or seven hours to move four or five miles (Figure 3). Grenadier officer Peebles noted that the troops in Cornwallis’ column “Encamp’d on a hill in the Dark” (Peebles 1998:132). While the column fumbled about in the dark of the Red Clay Creek Valley, Muenchhausen recorded that “General Howe sent me and one of my comrades, Captain Knight, together with 12 dragoons, back with orders for Knyphausen’s division to stop at New Garden Meeting, which we would have to pass” (Muenchhausen 1974:30).

### 2.2.3 September 10

Howe had realized that it would be impossible for his forces to reach Welch’s Tavern with any semblance of organizational structure or military order from which he could stage an attack on Washington, and reacted accordingly. The prime reason for rescheduling and rerouting the columns and for ordering von Knyphausen to stop at New Garden Meeting House was to give Cornwallis’ column time to march north and reach Kennett Square well ahead of von Knyphausen in the morning of September 10. Without getting his forces mixed up with von Knyphausen’s Division, Cornwallis’ Division would pass through town and camp north of Kennett Square along the Unionville road extending toward what members of the Royal army called “Marlborough Meeting.” This route was the new route Howe wanted to take to turn Washington’s right flank on the heights of Chadds Ford. For this plan to succeed, von Knyphausen had to be ordered to camp west of Kennett Square until Cornwallis Division, marching a much shorter distance, crossed in front of von Knyphausen and reached his destination north of Kennett Square.

Trying to find von Knyphausen, Muenchhausen and Knight “rode for 10 miles in territory we did not control, and twice came upon rebel dragoons who fired at us, we luckily got through,” but by then von Knyphausen was well past New Garden Meeting House (Muenchhausen 1974:30). Encounters with American dragoons and militia were frequent on the march towards the Brandywine. As New Castle County militiaman, Isiah Mann, recalled in his pension application, he was “engaged in a slight skirmish near New Garden Meeting House the day before the Battle of Brandywine....” (Mann 1834). Further evidence of skirmishing among enemy patrols was reported by 1st Virginia Light Dragoon Isaac Dehaven in his sworn application for a pension. “The night before the battle of Brandywine,” Dehaven wrote, he “and others of the country had taken a parcel of British prisoners and the day of the battle he was guarding them, and was consequently prevented from sharing in that battle....” (Dehaven 1832).

It was now around 1 AM on September 10. Von Knyphausen’s vanguard was already at Kennett Square, and it was absolutely impossible for him to return to New Garden Meeting because of the loaded wagons and the ravined roads. As they rode back to report to Howe, Muenchhausen and Knight “met two English brigades with heavy artillery and the baggage, that General Howe’s corps had taken along. They were on their way to General von Knyphausen at New Garden” (Muenchhausen 1974:30). Howe had detached Grant with the Third and Fourth Brigade and the artillery and baggage “to take the same Route with General von Knyphausen to support him in case of necessity, as Washington’s Route was uncertain” (Robertson 1930:146). These were the troops Muenchhausen encountered. Von Knyphausen confirmed Howe’s order in his letter to the Landgraf:

The column on the right [i.e. Cornwallis] had marched in the same direction through undefined/unbeaten side paths at a distance of about 2 miles from mine and in order to maintain

the communication between the two columns the Jäger and Light Infantry had taken their route in-between. At 12 o'clock at night the General en Chef had ordered the right-hand column to halt about four miles from the old encampment and detached the brigade of Major General Grant to the left to my column (Von Knyphausen 1777: fol.54v).

Major André, who was riding with the Third Brigade, recorded that "The 3<sup>rd</sup> and 4<sup>th</sup> Brigades were at first in the right-hand column, but the road being found very bad, were ordered, together with a brigade of artillery and the baggage of that column, to turn back and take the road General von Knyphausen had marched. This movement was attended with a great deal of trouble and protracted the march of the Brigade in the rear till near 3 o'clock the next day" (André 1904:82).

As Grant's Third and Fourth Brigades picked their way along in the middle of "a very dark night" (Ewald 1979:80), Baurmeister even claimed there was "a steady downpour" during the early morning hours, (Baurmeister 1957:105 – he is the only contemporary writer to report rain on that night). "The line of baggage was produced, by the badness of the road and insufficiency of the horses, to a very great length, and the 4th Brigade, which was in front of it, had by quickening their pace to reach General von Knyphausen, gained so much upon the carriages that there was a space of two or three miles between them. It was with some difficulty at a crossroad that it was ascertained which way the front of the column had passed." (André 1904:82). The crossroad André is describing is likely the intersection of the Lancaster Road and Newark Road, where the New Garden Meetinghouse is located (Figures 2 and 3).

After a few hours of rest, Howe's remaining forces also broke camp and completed their march to Kennett Square. John Peebles wrote that "Lord Cornwallis division of the army moved about 6 this mornng. back a piece of the road we came yesterday & then turn'd to the right & march'd to Kennetts [sic] Square where we found Kniphausens [sic] Division" (Peebles 1998:132). As they covered the remaining five or six miles "General Howe's Column had reached Kennett's Square early in the morning and the whole was encamped there," wrote André, who had traveled with the Third British Brigade, after having marched a total of 10 miles in more than 14 hours (André 1904:82).

The movements are also recorded in the journals of the various Hessian regiments in von Knyphausen's column. The Regiment Erbprinz recorded that "The second division marched to the right of it [von Knyphausen's Division] over undefined roads and made halt at midnight 4 miles from the old camp, detached Major General Grant with the artillery and the 3<sup>rd</sup> English Infantry Brigade to the division of General von Knyphausen where it arrived toward daybreak" (Erbprinz 1777:12). The British artillery officer Downman, sent to join von Knyphausen in the middle of the night, "made a forced march all night through bad roads. Halted in the morning [of 10 September] about 6 at Kennett Square" (Downman 1898:156).

Von Knyphausen told the Landgraf that his column "marched via New Garden Meetinghouse, left the road to Lancaster on its left and advanced on the road to Chester to Kennett's Square, where it arrived only at 3 o'clock in the morning of the 10<sup>th</sup>" (Von Knyphausen 1777: fol.54v). The Erbprinz Regiment had "arrived toward 3 o'clock in the morning," and Dincklage had arrived at about the same time as well, noting "We had to make a big detour and arrived in camp in the morning of the 10<sup>th</sup> near a small town by the name of Kingssquare [Kennett Square]. The other column 3<sup>rd</sup> and 4<sup>th</sup> Brigade under General Howe arrived here at almost the same time," around 3:00 AM, as André recorded (Dincklage 1777: fol.79r). But von Knyphausen and Dincklage brought up the rear. The van had arrived more than three hours earlier. Jung-Loßberg had already arrived "Around 12 o'clock" (Jung-Loßberg 1777: fol. 26r).

Following a few hours' rest in the early morning of September 10, Howe's column broke camp and "resumed its march at 5 o'clock in the morning and joined the First Division at 9 o'clock in the morning at Kennett Square" (Erbprinz 1777:12). Muenchhausen's diary confirms the 5 AM march time, and notes

that they reached Kennett Square about 8 AM, noting that “Knyphausen’s rear guard had not arrived until just then because of the many wagons and cattle” (Muenchhausen 1974:30). Von Knyphausen reported that Cornwallis’ Division “united with mine at 9 o’clock at Kennett’s Square” (Von Knyphausen 1777: fol. 54v). Heinrich von Feilitzsch of the Ansbach Jäger marching with Cornwallis recorded in his diary that “At nine o’clock in the morning we arrived at King’s Crossing [Kennett Square]” (Feilitzsch 1997:17). Robertson records that “At Daybreak we march’d A short way to Kennet’s [sic] Square and Join’d General Von Knyphausen at 10 o’clock” (Robertson 1930:146). The Minnigerode Grenadiers wrote that it was “the next morning we marched to Kennett’s Square” (Minnigerode 1777: fol. 88v), and the Lengerke scribe reported reaching Kennett Square “On the 10<sup>th</sup>” (Lengerke II: fol.11r), and “the following morning we marched as far as Kennetsquare” (Lengerke I:83).

After Howe’s arrival, the two divisions camped “in unequal lines ... on the heights beyond” Kennett Square. “On the 10<sup>th</sup> of September the army pitched a regular camp in two lines at Kennett Square” (Baurmeister 1957:105). Ewald wrote that “Meanwhile, we arrived on the morning of the 10<sup>th</sup> at Kennett Square, where the army brigades rested one behind the other” (Ewald 1979:80). These heights are the ridge near Schoolhouse Road located east of Kennett Square. “The right wing” of Howe’s army “ran toward Louis [Lewis] Mill and its left toward Marlboroug [sic] Meeting House, the Jäger, however, occupied the road toward Chester” (Erbprinz 1777:12). “Louis Mill” has been identified as the Gavin Hamilton Mill on 728 Creek Road, which Hamilton, a tobacconist from Philadelphia, had purchased from the estate of Ellis Lewis a year earlier, in 1776. “Marlborough Meetinghouse” is today’s London Grove Meeting House, a preparative meeting of New Garden Monthly Meeting in 1777.

Identifying these locations is of great importance in answering the question as to whose troops lay encamped to the southward toward Lewis Mill, and which troops had marched north through Kennett Square toward the location the army called Marlborough Meeting. Hessian journals record that their regiments changed camps on September 10: “On the 10<sup>th</sup> we moved into camp on a height near Kennetts Tavern” (Alt-Loßberg 1777:135). “At 12 at noon we moved ahead by about an hour and encamped” (Jung-Loßberg 1777: fol. 26r). An hour’s march is the equivalent of about 3 miles. On October 17, von Knyphausen wrote to the Landgraf that this movement occurred after the arrival of Howe and Cornwallis, and that as a result he “camped on the heights beyond the aforesaid village,” namely Kennett Square. This move places the encampment site of September 10 along the high ground east of Kennett Square, and uses the north-south McFarlan Road as the approximate line of von Knyphausen’s camp. The high ground is clearly delineated on the Blaskowitz map (Figure 3). While Blaskowitz depicts the Royal Army’s camp as along the Nottingham Road, the depredation and damage claims of Kennett Township residents, coupled with the contemporary descriptions of the camp in two irregular lines, one behind the other, suggests that the army occupied two north-south lines when it encamped.

For Cornwallis’ exhausted column, the bivouac location for September 10 was along the Unionville Road. Some regiments, such as Peebles’ grenadiers, not only “march’d to Kennetts Square” but continued on through the village, and “Encamp’d about ½ mile to the [north]” (Peebles 1998:132). The majority of Howe’s troops, however, were still south of Kennett Square on the morning of September 10. As soon as von Knyphausen’s troops had reached their new campsite, however, Howe’s forces also moved again from their encampment just south of Kennett Square to the north side of the village. Based on Howe’s plan of attack, von Knyphausen’s forces had to move east through Kennett Square in the direction of Chadds Ford. This they accomplished in the early afternoon. Around 3:00 PM the road seems to have been clear and open again, since Feilitzsch recorded that “At three o’clock in the afternoon we again moved out and again entered camp not far from that place” (Feilitzsch 1997:17). Downman and the artillery moved even later: “September 10th – About 5 o’clock this afternoon moved forward and encamped” (Downman 1898:157). “General Knyphausen remained here with the left column, while the column under Lord Cornwallis marched a good hour to the right,” *i.e.*, north, “as far as East Marlborough,

where it camped along the highway to Philadelphia with the Jäger Corps covering the right flank” (Ewald 1979:81).

By the time Howe’s forces had finally reached their jump-off point for the attack on General Washington’s forces on the heights above the Brandywine, it was late afternoon and getting dark. Muenchhausen noted in his diary that, when the Royal Army reunited at Kennett Square, Howe wanted to march towards Washington’s Army “... at once, in two columns, one under Howe and one under Knyphausen, but this was impossible, since the men, and even more the horses, were completely exhausted” (Muenchhausen 1974:30-31). The battle would have to wait until the next day. All Howe could do was issue orders for the troops to get ready to march “...in two Columns at 4 o’Clock to-morrow morning and receive their Orders of March from their respective Lieutenant Generals. ... The 1st. and 2d. Brigades British, under the Command of Maj.-Gen. Grant, are to be attached to the Corps Commanded by His Excellency, Lieut.-Gen. Knyphausen. One Squadron of Dragoons is to remain with that Corps, and two Squadrons with the Corps under the Command of Lieut.-Gen. Earl Cornwallis. The whole of the Baggage, Provision train and Cattle (except One Waggon per Battalion or Corps, and ten Spare Waggons with Earl Cornwallis's Division) are to march with Lieut.-Gen. Knyphausen's Corps” (Howe 1777: 491). In his letter to the Landgraf of 17 October 1777, von Knyphausen provided information on the order of march:

With the left column under Lt.Gen. Lord Cornwallis, where the commanding general was as well

One officer and 12 mounted Jäger, Capt. Ewald with 60 Jäger on foot, one company Scots from the 42d Regiment and one company light infantry as the advance guard – the two battalions light infantry, two squadrons light dragoons, the Third Artillery Brigade, the English Grenadiers, the Jäger on foot, the Hessian Grenadiers, the Guards, the mounted Jäger, the Third and Fourth Brigade English Infantry under Major General Grey. Of the mounted Jäger Captain Lorey commanded the First Platoon and Lieutenant von Heister the Second Platoon.

With the right column under my command:

One officer and 15 dragoons, the English riflemen, the Queen’s Rangers as the advance guard. the First and Second English Infantry Brigades under Major General Grant, the brigade of Major General Stirn, the rest of the dragoons, the First and Second Artillery Brigades under Brigadier General Cleveland, the baggage and provisions train of the whole army, the 71st Regiment, of which the Second Battalion formed the rear guard and the First and Third Battalions had to cover the right and left flank of the baggage (Von Knyphausen 1777: fol.55r and v).

### 2.3 ARMY LOGISTICS – MOVING AND FEEDING THE INVASION FORCE

How many wagons accompanied Howe in his march to Pennsylvania? We know that 270 wagons brought supplies on September 6, and Baurmeister reports that two days later the provision train consisted of 276 wagons “...loaded with rum, flour, and salt meat” (Baurmeister 1935:402). But those wagons did not constitute the whole wagon train. Howe had not brought enough wagons with him from New York, but as the number of horses and wagons stipulated in September 1776 British regulations was enormous (Table 1). If this regulation of four to six wagons per battalion was still in effect a year later in September 1777, Howe’s wagon train would have consisted of at least 150 wagons for the baggage alone.

At Amboy on June 25, 1777, Howe ordered that two wagons “are to be allowed on this March to each Regiment of Dragoons, and two to each Battalion of Infantry, with four horses to each, one Waggon to carry the Officer’s Provisions and two days’ Rum for the Men; the other to be a spare Waggon to be kept empty” (Kemble 1884: 447-9). Compared to the previous year, Howe had reduced the number of wagons per company to two but probably due to the poor state of roads in the Middle Atlantic region he doubled the number of horses to four.

A British infantry regiment in 1777 consisted of ten companies, but the grenadiers and light infantry companies were detached, and formed into battalions of their own, leaving eight companies (referred to as line companies) per regiment. Since the “Baggage of each Battalion Regiment” was to consist of four wagons, two infantry companies shared one wagon. The official baggage of a regiment varied somewhat, depending upon the regiment’s strength. On the average, an infantry regiment would have had one to two field officers, two to three staff officers, 30 to 35 commissioned officers, and 60 to 80 squads, each with a tent, kettle, etc. (This is an estimate that allows for a regiment being under its regulation strength as most British units were during the American war). Based on the discussion above, equipment for the officers’ mess, and the canteens of individual officers should be added to this total, bringing the regulation total to five wagons.

**Table 1: Regulations for Carriages and Horses of the Army, September 23, 1776**

Rank/Unit	Wagons	Horses
Lieutenant General	3	6
Major General	2	4
Brigadier General	1	2
Aide de Camp		2
Major of Brigade		2
Adjutant General		4
Deputy Adjutant General		3
Assistant [Adjutant General]		2
Deputy Quartermaster General		4
Assistant [Quartermaster General]		2
Baggage of each Battalion	4	8
Baggage of each Hessian Regiment	6	12
Field Officer commanding regiments		3
Majors		2
Under the rank of Field Officer commanding regiments		2
Each staff officer		1
A company of Hessian Chasseurs	1	

Source: Glynn 1777:10. Note: It was stated in the regulation that each wagon had two horses.

While the number of wagons per British and Hessian regiment in early September 1777 is unknown, it had to have been at least two. On September 3, Howe ordered that “Each regiment and Corps in the Army will at the same time send a wagon to Head Quarters to be employed by the Quarter Master General till further Orders” (Howe 1777:485). Howe could hardly have ordered the regiments to send their only wagon to headquarters. Based on the number of units in Howe’s army (including von Knyphausen’s Hessians) and the 276 wagons loaded with supplies – a week’s worth of supplies accompanied the troops on the wagon train - and wagons loaded with equipment, the treasury etc, a minimum of 350 wagons drawn by around 1,400 horses seems a reasonable estimate.

What was the length of Howe’s wagon train? As von Knyphausen marched out of Philadelphia in June 1778, he noted that his 12-mile-long wagon train consisted of around 1500 wagons (Clinton 1778). In the best of all possible worlds, all things being even, this amounts to around 125 wagons per mile and 42 feet per wagon on average. In the case of Howe’s wagon train during the march to the Brandywine, if the wagons were all lined up along the same road one after the other, this would mean a hypothetical column

of between 2.5 and 3 miles in length, not counting the artillery pieces, and the thousands of troops marching in these columns. At night, and over difficult roads, this column could be considerably longer and even lose contact. During the night of 9/10 September, Major André reported that “The line of baggage was produced, by the badness of the road and insufficiency of the horses, to a very great length, and the 4th Brigade, which was in front of it, had by quickening their pace to reach General von Knyphausen, gained so much upon the carriages that there was a space of two or three miles between them” (André 1904:83-84).

The actual number of large animals, however, was much larger than the approximately 1,500 horses needed to pull the wagons and artillery pieces since it does not include the thousands of horses for the officers and their servants. At almost 40 officers per regiment, Howe’s army, including staff and aides numbered around 1,250 officers (Howe 1778). Since all officers had at least one servant, and even simple lieutenants often had two and three servants (*cf.*, Lieutenant Hale of the 45th Grenadiers had a black and a white servant, Lieutenant Richard St. George of the 52nd had two black servants and an Irish servant), at least another 2,000 servants and their horses need to be added to this total. Historian Thomas McGuire estimates Howe’s army at 17,000 to 18,000 musket men and NCOs plus probably another 5,000 camp followers, teamsters, farriers for all those horses and 800 to 900 musicians (fifes and drums) (McGuire 2017). Including the thousands of officer servants, wagoners, and camp-followers, approximately 22-23,000 British and Hessian soldiers and 15,000 or more American soldiers descended on Chester County in the summer of 1777. At a time when the total population within the battlefield area was less than 5,000, probably half of them minors, the combined total of the two armies added up to more than six times this number: it was as if almost the whole city of Philadelphia and its population of close to 40,000 inhabitants, the largest city in the nascent United States when the Declaration of Independence was signed in the summer of 1776, and their 4,000 or more horses had descended upon southeastern Pennsylvania.

The logistical needs of these men and women and their animals were enormous. Howe’s troops thoroughly scoured the countryside and found ample supplies. As British officer Loftus Cliffe noted: “fortunately the Enemy had no Idea of our reaching up by Water so far and left this Country well Stocked for us” (Cliffe 1777). Not all of the animals reached the quarter-master department. Shortly after landing in Elkton, John André wrote on August 26, “No method was as yet fixed upon for supplying the Troops with fresh provisions in a regular manner. The soldiers slaughtered a great deal of cattle clandestinely” (André 1904:81). Cliffe lamented the waste that occurred during these early days, writing “had we had the precaution of reserving our Salt we should have lived like Nabobs on this March; we have thrown away many a good piece of Beef for want of that” (Cliffe 1777). The scribe of the Erbprinz Regiment entered in his journal on September 2 that “...it had not been possible [for the inhabitants] to drive off their cattle as quickly...” as they had fled, so that livestock “...was picked up for the benefit of the army and a large number of horned cattle and sheep had already been collected...” (Erbprinz 1777:2). Troops picked up whatever they could as Howe’s order of September 8 could almost be interpreted as an invitation to plunder: “All Horses and Waggon taken up by the Troops on this March to be sent to the Quarter Master General near Head Quarters, at 8 o’Clock to-morrow morning,” Howe ordered, “A Guinea will be paid for every good Horse so delivered, and for indifferent ones in proportion. Five Dollars for every good Waggon and Harness” (Howe 1777:490). As he lay at Kennett Square on September 10, Ewald wrote that “Here, in this area, the army found an abundance of everything, through which the insatiable appetite of the soldier was satisfied to the greatest extent” (Ewald 1979:81). Throughout its march across Chester County the British Army – and the Continental Army as well - continued to collect cattle and sheep for food and horses as draft animals. Depredation claims filed by some of the inhabitants of the townships in southeastern Chester County listing 110 horses, 189 head of cattle and a few hundred sheep most likely barely scratch the surface of actual losses to farmers in the area (Table 2.) Purchase, confiscation and theft leading to “clandestine” slaughter on both sides denuded the countryside of supplies crucial to the survival of the local population during the upcoming winter.

British army regulations, which applied to von Knyphausen’s forces as well as the loyalists under Howe’s command, set daily rations that a soldier was supposed to receive, but the vagaries of war always impacted what and how much food a soldier received each day. On August 28, Howe ordered that “The Troops are to receive provisions to-Morrow forenoon at the landing place, to the 1st. September inclusive,” and again on September 5 that “Four days’ Provision (two days’ salt, two days’ fresh) to the 5<sup>th</sup>. Inst. inclusive, to be issued to the troops tomorrow” (Howe 1777:479, 482). Baurmeister wrote on August 31, 1777, that the British commissaries had “Already acquired a large cattle and sheep park, wherefrom it furnished the army twice weekly with fresh meat, instead of salt provisions, in addition to the flour and good rum” (Baurmeister 1937:400). A few days later Captain August Eberhard von Dincklage, a Captain in the Leibregiment, confirmed this abundance of supplies when he recorded that on September 3 “we joined up with the army again not far from Iron Hill and brought with us more than one thousand head of cattle and a lot of sheep and horses for the use of the army” (Dincklage 1777: fol. 78v). These cattle, sheep, and horses had been collected from the farmers in Cecil County and in portions of New Castle County.

**Table 2: Summary of livestock lost as reported in the Depredation Claims, September 9 through 16, 1777. Note: These claims are only against the Royal Army.**

<b>Township</b>	<b>Horses</b>	<b>Sheep</b>	<b>Cattle/Cows</b>	<b>Hogs/Pigs</b>	<b>Fowl</b>	<b>Beehives</b>
Kennett	8		14	14		
East Marlborough	3					
Newlin	7					
Pennsbury	13	49	10	9	24	
Thornbury	6	58	16			
West Town	5	1		29		
West Bradford	24	5				
Birmingham	32	196	108	141		
Chads Ford	3	48	29	28		
Concord	9	56	12	1		5
<b>TOTAL</b>	<b>110</b>	<b>413</b>	<b>189</b>	<b>222</b>	<b>24</b>	<b>5</b>

It seems reasonable, however, to assume allowances for Howe's forces to have been similar to those in other British garrisons at the time such as in the orders issued at Three Rivers in Canada on June 11, 1776, which set this allowance of provisions:

"A compleat Ration for one Man for one day in every Species  
 Flour or Bread. . . . . 1 ½ Pounds  
 Beef . . . . . 1 Pound or  
 Pork. . . . . ½ Pound  
  
 Pease. . . . . ¼ Pint  
 Butter. . . . . 1 Ounce  
 Rice . . . . . 1 Ounce

Whenever the situation of the Army prevents this Distribution of Provisions, it will be delivered in the following manner which is to be the Compleat Ration,

Flour or Bread. . . . . 1 ½ Pounds  
 Beef . . . . . 1 ½ Pounds  
 or Pork . . . . . 10 Ounces

Should it happen that no provisions except Flour or Bread or Rice can be issued, a Compleat Ration is

Flour or Bread . . . . . 3 Pounds  
 or Rice . . . . . 1 ½ Pounds

Whenever fresh Provisions can be procured for the Army, the Rations to be the same Allowance..." (Curtis 1926).

Writing from Montreal on May 31, 1777, Nathaniel Day informed General John Burgoyne that the contracts made by the Treasury Board for 1777 had set per diem allowances per soldier as:

"1 lb Broad or Flour  
 1 lb Beef or 9 1/7 oz. pork  
 3/7 pints pease [peas]  
 6/7 oz. Butter or in lieu 1 1/7 oz. Cheese  
 2 2/7 oz., flour or in lieu 1 1/7 oz. Rice or 1 1/7 oz. Oatmeal."

A typical American early-war ration based on British practice was specified in General William Heath's orders issued in Boston on July 12, 1777. In them he set the food allowance per man per day as: "1 lb Flour or Bread," "1 ½ lb Beef or 18 oz Pork," and "1 Quart of Beer." Per man per week: "5 pints of Pease," "1 pint of Meal," and "6 oz Butter." Per 100 men per week: "6 lb Candles ... for Guards," and "8 lb Soap." In addition, there was issued "Vinegar occasionally" and "1 Jill of Rum Pr. Man each Day on Fatigue [work detail] ... such Articles as cannot be procured the Commissary is to pay Money in Lieu thereof agreeable to the established Rules in the Army" (Heath 1777).

These rations may not have been issued at exactly the required amounts while the army was on the march and on campaign and that the soldiers engaged in some supplementary foraging, the daily need in beef at 1 lb per man still adds up to over 20,000 lbs of meat alone for Howe's army. The average weight of live cattle in Connecticut in the late eighteenth century was around 900 lbs but could pass 1,000 lbs. In December of 1780, David Trumbull bought four oxen with an average weight of 634 lbs; on 2 January 1781, he purchased an ox weighing 600 lbs, but the next day he estimated the weight of two oxen at 1,050 lbs each. When Jeremiah Wadsworth bought cattle for the French forces in Newport, Rhode Island, in July 1780, he calculated it to "average 400 lbs each of Meat Beef," i.e., slaughtered, after the "Fifth Quarter" (the dressed carcass makes up about 60 percent of the live-weight of cattle; the remaining live-weight is taken up by the hide, blood, bones, horns, hoof, tallow, intestines/casings, fat and organs such as the tongue, heart, kidney and liver known as the fifth quarter) is subtracted. That, however, is only about half the weight of a head of cattle today (Wadsworth 1780). For sheep, comparable numbers are around 100 lbs useable mutton per sheep. Since Connecticut was reputed for the high quality of its beef cattle during the eighteenth century, similar weights can be applied to cattle in south-western Pennsylvania as well. At one pound of beef per soldier and day and 400 lbs of meat beef per head of cattle Howe's forces consumed a minimum of 50 head per day; at 1 ½ lbs per man per day between 75 to 80 head.

Much of the meat was also delivered salted and in barrels measuring "28 Inches in length & 17 ½ Inchs wide at the Heads" also weighing around 200 lbs. or eight barrels of salted meat per wagon, though a sizeable portion of the weight was salt rather than meat (Dowset 1808). On June 18, 1781, Nathaniel Blackman, now working as a wagon conductor for Jeremiah Wadsworth, certified that he had "Received of the town of Stratford nine barrels Pork Containing two hundred & Twenty pounds each, also eight barrels beef Containing two hundred & forty pounds each" (Fisher 1781). Since weight of the barrels needs to be added to this total the actual number of barrels per wagon, be that meat, flour or peas, was closer to five or six.

The draft animals pulling the hundreds of wagons of Howe's army as well as the officer and dragoon mounts needed to be fed, too. On September 11, 1777, the day Howe's forces fought the Battle of Brandywine, "General Orders, Rhode Island" for the 22nd Regiment of Foot specified these

"Rations of Forage, as they are to be delivered to the Troops in future

To the Light Dragoons only.

15 lbs of Hay

6 D[itt]o. of  
Oats

2 D[itt]o. of  
Oatmeal

To Artillery, Waggon, and Draught Horses.

14 lbs of Hay

3 Do. of Peas

3 D[itt]o. of  
Oatmeal

To Officers Horses.

10 lbs of Hay

3 D[itt]o. of Peas

3 D[itt]o. of Oatmeal"

(source: Hagist 2001).

Today's fresh sweet corn weighs 70 pounds to the bushel; dried corn on the cob equals about 32-35 pounds to a bushel. A horse doesn't need to have shelled corn; it will shell the cob itself and it might even eat the cob as well. Hay was the primary food for horses while oats, weighing 32 pounds to a bushel, and corn, were fed to horses as a supplement to provide extra nutrients. A four-horse team would thus need 75 to 80 pounds of fodder/day – 75,000 to 80,000 pounds if we assume just for purposes of scale that Howe's army included 4,000 horses - or 525 to 560 pounds of fodder for the same seven days, e.g. from September 6 to 13, 1777, they carried officers or pulled supplies for the troops. 500-plus pounds, however, constitutes around one third of the weight a wagon could transport. Even if we assume that much, or at least some, of the horse feed was purchased, confiscated, or simply stolen from local farmers, the need to bring along animal feed greatly reduced the loads carried along by the 270+ wagons of provisions, one week's worth of supplies, Howe took with him. Besides fresh and dried beef and pork the troops also needed flour and bread. This load for a four-horse wagon has been estimated from Quartermaster General Nathaniel Greene's statement in October 1778, that one such wagon held 7 ½ barrels; six barrels held 1,000 flour rations, which at 1 ¼ pounds of flour per ration measures out at 166.7 flour rations per barrel. In this case a full barrel held 208.39 lbs., a half barrel 104.20 lbs, but depending on the flour and the amount of humidity in it a barrel contained anywhere between 196 and 224 lbs of flour. Based on these figures a full wagon load weighed between 1,500 and 1,600 pounds. Assuming that a British and Hessian musket man received a similar 1 ¼ lb ration of flour, one wagon-load theoretically carried around 1,250 rations or, put differently, it took around 20 wagonloads to feed Howe's army for one day, or correspondingly more if we subtract the amount of space needed to carry along feed for the animals and the weight of the barrel (Greene 1778).

How many bushels of wheat grown on how many acres were required in the second half of the eighteenth century to produce that amount of flour? Miller Thomas Lea in Wilmington, Delaware, (Rochefoucault 1799:254) informed the *duc de la Rochefoucault-Liancourt* that 100 bushels of wheat yield

“19 barrels of fine four  
2 barrels of second quality  
3 barrels of third quality  
30 bushels of bran  
Or 5,920 lbs flour and 90 lbs waste”

During the second half of the eighteenth century, yields were only a fraction of those harvested by farmers today. Traveling from Norristown to Philadelphia in the early 1790s, François Alexandre Frédéric, *duc de la Rochefoucault-Liancourt*, estimated five bushels of wheat yielding a barrel of fine flour weighing 196 lbs besides some inferior flour and waste. According to Rochefoucault, farmers around Reading in Berks County harvested 10 bushels of wheat, 20 of rye, 20 of barley, 40 of oats and 80 of Indian corn per acre. At Lancaster, he reported yields 15 bushels of wheat and the same in Northumberland (Rochefoucault 1799: 340, *et passim*). In Chester County in 2014, winter wheat yielded 82 bushels per acre and 69 bushels per acre in 2015. In the 1770s, it took 10 acres, seven or eight times the amount of land needed today, to grow 100 bushels of wheat, which, based on Lea's numbers, yielded around 25 barrels or 5,000 lbs of flour of varying quality. At a ration of 1¼ lbs per man per day, roughly 25,000 lbs or 125 barrels per day (transported on 20+ wagons), constituted the equivalent of the yield of 50 acres of wheat per day.

Similarly, the yields of corn and oats for horses were only a fraction of those harvested today. Rochefoucault reported 20 bushels of oats (“because its “is sown on the best land”) around Vansville, but considerably less around Bush Town where only “five to six (bushels of) corn” were harvested per acre as opposed to “seven to eight” bushels of corn around Vansville and 40 bushels of oats and 80 bushels of

Indian corn in Northumberland and Berks Counties. (Rochefoucault 1799:346) In 2015, farmers in Chester County harvested 195 bushels of corn for grain per acre, while Northumberland harvested 73.4 bushels of oats in 2014, and 65 bushels of winter wheat. Berks County had yields of 174.5 bushels corn and 65.7 bushels of winter wheat per acre in 2014. In 2014, the national average stood at 174 bushels of corn per acre though some fields in Illinois grew as many as 280 bushels per acre. (USDA Bulletin 1015-2016). 4,000 horses at 6 lbs of oats (or 3 lbs of oatmeal) equal 24,000 lbs of oats or, at 32 lbs per bushel, 750 bushels, which even at the best yields in Berks County would still require almost 20 acres of farmland to grow in 1777.

These numbers are not meant to, and cannot, provide exact information about the logistics surrounding Howe's march, but once the pay-load of a wagon is considered in relation to the numbers of men and animals to be fed, the need for 270 and more wagon-loads of supplies to feed Howe's army for just one week becomes clear. Throughout its march across Chester County, the Royal Army continued to collect cattle and sheep for food and horses as draft animals. Purchase, confiscation, and theft leading to "clandestine" slaughter by both armies denuded the countryside, barns, farmyards, and cellars of the agricultural harvest of 1777. These numbers provide in broad outlines the devastating impact the presence of the two armies had on the long-term food supply of the local population, its livestock and grain harvested and stored for the winter of 1777/78.

## 3.0 MILITARY TERRAIN ANALYSIS

As initially established in the 2010 study funded by the ABPP, the Battlefield Boundary (called the “Study Area” at that time) for Brandywine is large, covering approximately 35,000 acres. This size is due principally to the wide flanking maneuver conducted by Cornwallis’ Division. The Core Area of the battlefield is considerably smaller (Figure 6). The Encampment Landscape and the Two Columns Landscape are located within the currently defined Battlefield Boundary. Following English battlefield archeologist Glen Foard’s analysis of the battlefield at Sedgemoor and adapting it for application for battlefields in North America, the primary terrain elements affecting the battlefield are physical geography, settlements, land use, and communications (Foard 2003:33-35). The following Military Terrain Analysis uses these three elements to place the landscape of the Brandywine Battlefield, particularly the area defined as the Battlefield Boundary, in a broader historical context.

### 3.1. PHYSICAL GEOGRAPHY

The Battle of Brandywine was one of the largest combat actions of the Revolutionary War (Figure 4). Despite ongoing development pressures, the Brandywine Battlefield still retains many significant features it had in 1777, such as historic buildings and open spaces that were crossed by troops. Unlike the battles in Boston or New York City, the Battle of Brandywine was fought in a rural setting of farms and small villages, some of which still exist. This day-long series of troop movements and firefights covered 35,000 acres of Chester and Delaware Counties in Pennsylvania. Farms in southeastern Pennsylvania, many of them Quaker-owned, were highly productive agricultural complexes. The Brandywine Creek and Red Clay Creek valleys also supported numerous Quaker-owned mills, over 130 at the height of use. These mills were powered by fast flowing waters that course through the valley’s gently rolling topography (CCPC 2013).

The battlefield is located on the southern reaches of the Brandywine Creek Watershed which covers 352 square miles, with 567 miles of streams. The main stem of the Brandywine Creek flows through the middle of the battlefield. The Creek is fed from the north by its East and West Branches which meet in the northern part of the battlefield. Land along the West Branch tends to be more rural while the East Branch communities are more suburbanized. Prior to World War II, the entire watershed was largely agricultural and highly productive. The Brandywine Creek flows south into northern New Castle County, Delaware, where it once powered the many water mills that operated in the Wilmington, Delaware area. South of Kennett Square, the Red Clay Creek Valley figured prominently in the movements of the Royal Army in the days leading up to the battle.

The geology of the Brandywine Battlefield is characterized by hard, mostly metamorphic rock formations that have resulted in a combination of flat and sloping terrains. This topography is generally flatter to the north, gradually becoming hillier to the south. There are steep hillsides and cliffs along the lower reaches of the main stem of the Brandywine Creek (CCPC 2013).

### 3.2 SETTLEMENT AND LAND USE

Geographer James Lemon has divided the eighteenth century in the Philadelphia region into three periods of urban or town growth (Lemon 1967). The first period, from 1700 to 1729, was one of urban stagnancy after the initial rapid growth of the seventeenth century. However, hamlets - unplanned towns that sprang up at crossroads and around taverns, ferries and mills did begin to appear. The second period of urbanization that Lemon recognizes, 1730 to 1765, saw a renewal of town growth based on internal trade. In the area around Philadelphia, the towns of Lancaster, Reading and Wilmington, as well as those towns further away but still accessible to Philadelphia such as York and Carlisle, were examples of this period of urban growth.

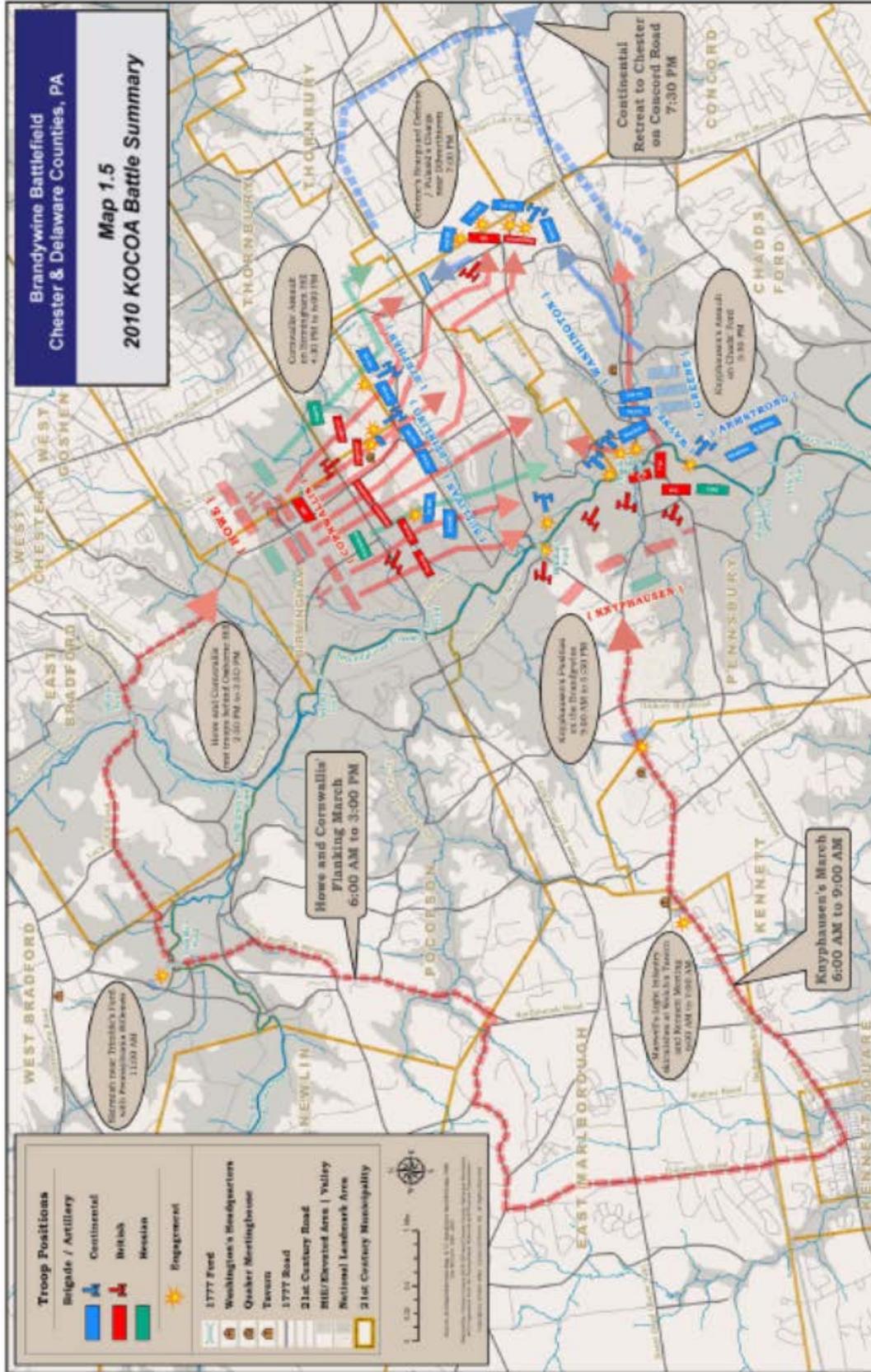


Figure 6. Overview map of the Battle of Brandywine, September 11, 1777 (CCPC 2010).

Chester County lacked towns of any real size, and thus nodal places such as Kennett Square, Trimbleville, Chadds Ford, Sconnetown, and Dilworthtown, developed during this period. Lemon's third period of urban development, 1766-1800, was marked by less noticeable town growth that paralleled a more erratic economic pattern. The few hamlets or villages that were present in this part of Chester County were generally focused on taverns, ironworks, mills, and ferries (Kennedy 2000:591; Warden 1989:2).

By the start of the Revolution, Chester County had a population of approximately 30,000 (Warden 1989:1). Quakers were the largest religious group in the county, accounting for approximately 40 percent of the population. Their early settlement in the eastern portions of the county meant that considerable numbers of members of the Society of Friends resided in the Brandywine Creek and Red Clay Creek valleys (Warden 1989:4).

The influence and importance of the Society of Friends in the Brandywine Valley region is highly significant for the study of the battle. Author Henry Siedel Canby wrote that the area he called "The Quaker Country," "...sheltered what was perhaps the most characteristic Quaker society in the country" (quoted in Brinton 1962:70). In his brief examination of the middle Brandywine Valley, an area ranging from Downingtown to Rockland, historian Howard Brinton hypothesizes that "...there was anywhere a society as homogeneous and as closely bound together by marriages and common customs as that of the middle Brandywine Valley in the middle [eighteenth] century of our Quaker history" (Brinton 1962:70).

In southeastern Chester County, dwellings and their associated farmsteads were generally sited on well-drained soils with small agricultural fields located close-by. Farmsteads were generally set on smaller fields with the house, barn and other structures grouped in clusters off main roads. Based on the depredation claims filed by residents of the Chester County townships affected by the battle in 1777, fields ranged in size from less than an acre for potatoes and turnips, to generally 3 to 7 acres of Indian corn, wheat, buckwheat, and rye. Separating the cultivated fields and pasture lands were hedgerows sited along property lines as boundary markers, although contemporary documents suggest that worm fences and post and rail fences made from chestnut were not unknown. Fences would also be used to contain cattle, horses, and other livestock, keeping them from ravaging the crops and gardens (Rhoads et al. 1989:51-53). There were woodlots that provided wood for fuel, material for the construction of farmhouses and other structures, and forage for livestock. It is estimated that a farmer could clear approximately 5 to 10 acres of woodland annually during this period (Williams 1989:63). In the decade preceding the American Revolution (circa 1767-1777), cleared land generally accounted for close to half of the total property. The average size of farms declined throughout the eighteenth century in Chester County, dropping from about 500 acres in 1693 to less than 130 acres by 1791 (Ball and Walton 1976:105; Kulikoff 2000:134-135). By 1750, it appears that the density of rural settlement in southeast Pennsylvania was approximately five households per square mile (Ball 1976:628).

Structures present on agricultural complexes dating to the war years included small dwelling houses generally built of wood (log and frame), and/or stone, or less likely brick. Dwelling plans included a range of traditional options, such as hall, hall-parlor, double-cell, cross-passage, and four-room. Surviving foundations of this period are most often constructed of stone or occasionally brick, but some may have been of earthfast or impermanent construction, a building style that characterized much of the architecture in British North America during this period (Carson et al. 1981). A range of outbuildings such as kitchens, granaries, barns, springhouses, smokehouses and meat houses would have been present on farmsteads.

Farming and agricultural pursuits were the most significant occupations for 80 to 90 percent of the region's population (Egnal 1975:201). In the Brandywine Valley farming took the form of mixed husbandry, combining the cultivation of grains and the raising of livestock. More than 60 percent of farms in colonial Pennsylvania were on holdings of 125 acres or less (Kennedy 2000:597). Research into

southeast Pennsylvania indicates that on an average farm of 125 acres, twenty-six acres would be in grain; thirteen in meadow for hay; twenty for pasture; eight or nine in flax or hemp, roots, other vegetables, fruits, and tobacco; three for the farmstead; and the remaining sixty acres would be fallow and woodland (Ball 1976: 628; Lemon 1972:167).

The farms in the Brandywine River Valley were part of a broader regional economy that was centered in Philadelphia, a major urban center that in the last quarter of the seventeenth century began to dominate the economic scene in the lower Delaware Valley (Walzer 1972). Farmers in the region sent their grains to the local milling centers, where the wheat flour and bread were then shipped to Philadelphia for export to the West Indies, other North American colonies, and southern European countries. The area's farmers quickly adapted to this market system of agriculture. It is estimated that over one-half of the farmsteads in the area were situated within eight miles (or a half-day's journey) of a mill or shipping wharf (Walzer 1972:163).

Historian Jackson Turner Main categorizes southeastern Pennsylvania as a commercial farm community, or a community that sold a high proportion of its agricultural produce. Quaker farmers in the Brandywine Valley were prominent players in the regional economy (Warden 1989). For this type of community to exist, good farmland and accessibility to markets were necessary. Main's research found that these communities were characterized by high percentages of wealth, rich men, artisans, professionals and merchants, and a high proportion of large vs. small farmers (Main 1973:33-34).

Studies of the economic development of the region through the eighteenth century have found the period to be one of modest changes in agricultural productivity (Ball 1976; Ball and Walton 1976; Egnal 1975; Kulikoff Lemon and Nash 1968; Sachs 1953). These changes, based on population growth and the rise in per capita income, can be seen in two distinct periods; 1720 to 1745, and 1745 to 1760. Minor fluctuations throughout the century were caused by King George's War, the French and Indian War, and the non-importation agreements of 1766 and 1769-1770. In addition, colonists were affected by alternating periods of prosperity and depression. Philadelphia continued to be the major urban center in the region, and from about 1750 until the end of the century was the dominant commercial and social center of the eastern seaboard, with a population second only to New York City.

Agricultural practices in southeastern Pennsylvania followed an extensive, rather than an intensive, use of the land (Lemon 1972:169). Not until the 1750's did three-field or four-field rotational patterns of planting, and only occasionally six-field rotation, become prevalent and widespread. By the start of the Revolution, the use of field rotation patterns was common throughout the Middle Atlantic. Post-war contemporaries reported that, through the use of these rotational patterns, yields ranging between six and twenty bushels of wheat per acre were harvested (Bausman and Munroe 1946; Strickland 1801:42-45). The extensive use of the land was based on wheat production as one of the most valuable and important trading commodities that the region could export. It has been suggested that this pattern of land use was the result of a lack of adequate labor supply, the availability of inexpensive land, household consumption, the market, and the attitudes of the people of the region (Lemon 1972:179).

From a study of wills, inventories, tax assessments and other legal documents related to various farmsteads specific to the project area as well as in Chester County, it can be determined that farmers of the Revolutionary era cultivated wheat, oats, rye, Indian corn, potatoes, turnips, pumpkins, flax and hemp (Michel 1981). In a study of the farms that comprised the Valley Forge encampment, Rhoads, Ryan and Aderman also discuss the likelihood that "all period farmsteads included a prominent kitchen garden...located near the house with good soil and full sun [that were] important factors in the choice of a site" (Rhoads et al. 1989:49-50). The region boasted sizeable aggregations of fruit trees; apple orchards and peach orchards were not unknown on farmsteads in the area. Most farms also had varying kinds of livestock, including horses and oxen, used for both transportation and cultivation purposes; cattle, used

“primarily for home needs,” hogs and pigs; sheep; various types of fowl, including chickens; and occasionally bees. Apparently, livestock was kept primarily for home use (Rhoads et al. 1989:53-55).

### 3.3 COMMUNICATION

Roads and road traces, as avenues of approach and retreat for military troop movements, are important KOCOA defining features for battlefield analysis. A well-planned transportation system was established throughout the rural communities surrounding Philadelphia to move goods and families to the Yearly Meeting. For the terrain analysis of these strategic battlefield landscapes, roads are the key defining features. Understanding where roadways were located at the time of the battle is necessary for understanding primary reports from the field of battle and locations where historic battle activities would likely have occurred. For local planning purposes, this information is needed to craft guided planning and interpretation strategies. One extraordinary outcome of this project is the research undertaken by Chester County Archives, whereby an approximated 1777 road network could be mapped for this project using the best known primary source material at the time of this plan (Figure 7).

The eighteenth-century road network was generally formed through a system of approved roads (via road petitions) that typically connected destinations such as mills, taverns, crossroad villages, and places of worship. Two important, roughly parallel, east-west trending roads traversed the Kennett Square area, The Great Nottingham Road and Street Road. Both were established relatively early in the eighteenth century, Street Road in 1706 and the Great Nottingham Road (approximately modern US Route 1) by the 1740s. Both roads included important crossing points on the Brandywine Creek; Jones’s or Painter’s Ford on Street Road, and Chad’s Ford on the Nottingham Road. Often roads with similar destinations shared the same road name, creating confusion for people (including soldiers in both armies) who were unfamiliar with the road system. For example, there were several "Roads to the Great Valley," which led to the industrial corridor in the colonial-era Caln Township and Great Valley.

While public roads were the primary means of moving through the landscape, the records of the British and Hessians in Cornwallis’ Division show that the movement of the army on the afternoon and evening of September 9 did not use principal roads. “They thought we had to move on the main road to reach Chadds Ford,” wrote jäger officer Ludwig von Wurmb. “The Americans think everything that isn’t a main road is impassable” (Wurmb 1998:10). General Von Knyphausen described the roads used by Cornwallis’ column as “undefined/unbeaten side paths” (Von Knyphausen 1777: fol.54v). The use of “bye” roads by the Royal Army during the approach to the Brandywine is likely due to local residents loyal to the Crown, who were willing to guide the army through the region, particularly the Red Clay Valley.

### 3.4 KOCOA ANALYSIS

Military-historical research is integral to the battlefield interpretive process developed by the ABPP. As part of the ABPP methodology surveyors adapted the precepts of KOCOA military terrain analysis to the battlefield environment. The KOCOA acronym stands for the analytical concepts of **K**ey Terrain/Decisive Terrain, **O**bservation and Fields of Fire, **C**over and Concealment, **O**bstacles, and **A**venues of Approach and Withdrawal. KOCOA elements were defined using a variety of sources including historical documentation, previous battlefield surveys, maps, and the extant natural landscape. The interpretation of these features was conducted using the quantitative capabilities of the GIS in conjunction with the knowledge of team historians and other experts.

Analysis of these aspects of military movement, position, and combat – as they apply to a given battle location – combines documentary research and field survey and enables identification of the battlefield’s **Defining Features**. Identification of a battlefield’s defining features, in turn, allows for the establishment



of an appropriate boundary. The research examines and analyzes primary sources for the battle (*e.g.*, participants' letters, journals, and memoirs, and early post-battle accounts based on direct experience of the terrain) to discern locational references for KOCOAs elements. The KOCOAs process, and the supporting research, is directly applicable to archeological investigation at battle locations, providing documentation for the military actions that took place at those locations (Lowe 2000).

The KOCOAs analysis is applied to all ABPP projects (Lowe 2000). KOCOAs terrain analysis is applied to the study of historic battlefields to help identify the historic battlefield in the modern landscape, to understand the course of a military engagement, and to assess how a given landscape influenced the course of a battle.

Unlike a painter or a farmer, a soldier looks at terrain for military value – how terrain integrates into offensive or defensive positions and how terrain fits into plans for offensive or defensive action. This is not only important for understanding why a commander would (or would not) position infantry, artillery, and cavalry at a certain place on the terrain at a certain point during the engagement but also helps to interpret the authenticity of battlefield maps. Evaluation of terrain from a military point of view also can help to provide reasonable explanations to fill in gaps in our knowledge of events caused by a scarcity of primary sources (*e.g.*, in the case of troop movements). Effective military usage of terrain would demand that forces be re-deployed under cover of ridges or through low-lying ravines outside the view of the enemy. Similarly, depending on the task assigned to a force during any stage of the engagement, troops might be redeployed via a causeway or road (if speed is of the essence) or through a forest or circuitously (if the element of surprise is paramount). Terrain is an integral part of battle interpretation. For effective results, factors must be analyzed in light of the mission of the unit, the type of operation, the level of command, the composition of forces involved, and the weapons and equipment expected to be encountered.

To understand and interpret actions on a battlefield, both a detailed familiarity with the topography and conditions on the ground and a critical reading of a wide range of primary sources must be combined with a military analysis of the battlefield (Andrus 2004). We also applied the principle of "Inherent Military Probability" to the study of the Brandywine strategic landscapes (Keegan 1977:33-34). As initially developed by the German military historian Hans Delbrück and further refined by British historian Alfred H. Burne, this principle holds that when accounts of a particular battle are found to be impossible given the constraints of terrain, timing, and other factors, the researcher needs to consider what a soldier of the period was likely to have done in the circumstances (Burne 2005:xx; Foard and Morris 2012:18). It is important for the researcher to understand relevant historical military practices which were in force at the time of the engagement. As English archeologist Glenn Foard suggests, the principle should be termed *Inherent Historical Military Probability* (Foard 2009:141). The manuals available at the time of the American War of Independence provide specifics regarding the spacing between and among formations, rates of marching, and the specific methods applied to deploy companies, battalions, and other maneuvering or firing formations. These manuals provide a framework of the "limits of the possible" that governed the actions of commanders in the field, keeping in mind that variations to the manuals were always possible, and most likely probable, given opportunities arising from such factors as terrain, visibility, and other battlefield conditions. As one scholar puts it, "Soldiers, not manuals, fight and win battles" (Graves 1986:51).

The KOCOAs process is founded on the principle that terrain has a direct impact on selecting objectives, the location, movement, and control of forces, on the effectiveness of weapons and other systems, and defensive measures. In the following section, each of the key defining features is presented, along with their relevance to the battle, their KOCOAs analysis, and their location/status.

**Table 3. KOCOA Definitions (From McMasters 2009)**

<b>Term</b>	<b>Definition</b>
Key terrain	Any local feature that dominates the immediate surrounding by relief or another quality that enhances attack or defense
Decisive terrain	Ground that must be controlled in order to successfully accomplish the mission
Observation	The ability to see friendly and enemy forces and key aspects of the terrain to allow management of the conflict
Field of fire	An area that weapons may effectively fire upon from a given position
Dead space	An area within the maximum range of a weapon or an observer, but which cannot be seen or fired upon from a given position
Cover	Protection from enemy fire
Concealment	Protection from enemy observation
Obstacles	Natural or man-made terrain features that prevent, impede, or divert military movement
Avenue of approach	Relatively unobstructed ground route that leads to an objective or key terrain
Avenue of withdrawal	Relatively unobstructed ground route that leads away from an objective or key terrain
Mobility corridor	Area or location where movement is channeled due to terrain constrictions

Battles are temporary, albeit seminal, events fought on cultural landscapes that had a variety of cultural actions – transportation routes, agricultural development, settlement patterns, population change – already occurring before the battle and that continued to exert influences on the field after the battle. Field patterns and farmsteads are changed and subsequently replaced by subdivisions or industry; roads are altered, vacated, rerouted or widened; and woodlands are reduced or removed from the landscape. Natural disaster such as floods or avalanches can also change a landscape, and their impact also needs to flow into any interpretation of a battle since “[u]nderstanding the historic terrain of a battlefield as it was at the time of the action is critical to the understanding of any battle” (Foard 2009: 136).

The KOCOA parameters, however, define a battlefield more broadly as not just as the terrain where blood was shed. The parameters Obstacles, and Avenues of Approach and Retreat also integrate the obstacles along the way to and from the battlefield. Of particular importance for the current project is the focus on the British encampment during the night of September 10/11, 1777, and the march of the Royal Army in two columns the following morning from today’s Kennett Borough and Kennett Township through the East Marlborough and Pennsbury Townships to attack Continental Army forces deployed along Brandywine Creek in Chad’s Ford Township. In terms of KOCOA military terrain analysis principles the focus of this project is therefore on the Obstacles and Avenues of Approach used by the Royal Army, while from the American perspective the focus is on the Obstacles, Avenues of Retreat, Cover and Concealment, and Observation and Fields of Fire for their forces on the morning of September 11, 1777. The area covered by this analysis is located within the Battlefield Boundary of the Brandywine Battlefield and in areas beyond the Battlefield Boundary, particularly south and west of Kennett Square.

Obstacles are defined as “natural or manmade terrain features that prevent, restrict, divert, or delay military movement. There are two categories of obstacles: existing and reinforcing. The presence and difficulty of obstacles determine whether terrain is unrestricted, restricted, or severely restricted. Examples include vegetation, topography, fences, stone walls, fortification features such as parapets and ditches, battle events, urban areas, drainage characteristics (natural and man-made), micro-relief, surface materials (wet and dry), abatis, ravines, and bluffs. The hindrance level of obstacles can be analyzed as “go,” “slow-go,” or “no-go.” Existing Obstacles are already present on the battlefield. Natural examples include swamps, woods, and rivers. Cultural examples include towns, railroads, bridges, and fences. Existing obstacles are already present on the avenues of approach and/or battlefield. *Reinforcing Obstacles* are placed on the

avenues of approach and/or the battlefield through military effort to slow, stop, or control the approach of the enemy. The KOCO A parameters, however, define a battlefield more broadly as not just as the terrain where blood was shed. The parameters Obstacles, and Avenues of Approach and Withdrawal also integrate the obstacles along the way to and from the battlefield. At Brandywine on September 11, for example, von Knyphausen's approach march was obstructed by felled trees, slowing the movement of artillery and wagons. Similar statements about road obstructions can be found in the first-person accounts for the days leading up to the battle.

As stated above, these viewpoints are of particular significance for the current project since the length, state and condition of the avenues of approach and withdrawal, including the obstacles along these avenues, invariably influence the outcome of a battle, an influence that sometimes can even be decisive, both short-term (tactically), as well as long-term (strategically). An arrival on the battlefield late in the day due to the particular avenue of approach selected by the attacker, be that because the road is too long, too difficult geographically, or too easily blocked by man-made obstacles, may make it impossible for the victor to completely consummate his victory, viz. Continental Army forces at Brandywine were saved by the arrival of darkness and the exhaustion of British forces and survived to fight again three weeks later at Germantown.

The character and condition of avenues of approach, the number and severity of obstacles, strength and equipment of army using them, are mutually-reinforcing factors. A large number of troops with an extended artillery and wagon train pulled by hundreds of draft animals, a livestock herd for food, a train of bat (or baggage) horses for the officers, and a multitude of camp followers stretching for miles across the countryside, mutually hindering and delaying each other's movements on too narrow roads laid out for the occasional trip to the market or Court House by a farmer but not to lead an army to battle, can wreak havoc with the best battle plan. The clouds of dust raised by long columns on a hot, dry summer day will alert the enemy of an attacker's approach, while roads muddied by rain and made impassable by hundreds of carriage and wagon wheels and thousands of hoofs will exhaust the troops besides greatly delaying their arrival on the battlefield where they may be anxiously awaited.

While battles do indeed leave a lasting impact on the battlefield, the sheer presence and the movements of sometimes tens of thousands of men and their animals leaves a lasting impact on the entire region. Man and beast need to be fed and forage over a wide area, often indiscriminately taking from friend and foe alike. Barns and houses burnt by foraging troops leave as much an archeological footprint as buildings destroyed because they happened to stand in the line of battle. These aspects, chronologically part of the run up to the Battle of Brandywine, mutually interact and reinforce each other. They impact the course and outcome of battle.

The defining features for the Crown Forces movements on September 9 and 10, and the Eastern and Northern Columns on September 11 were developed from the historical research and onsite landscape analysis (Figures 8, 9, and 10). Based on current research, the following resources formed the basis for defining features (Table 4). The list of defining features was refined as additional historical research was completed. Table 4 presents the defining feature and offers a level of assessment of integrity for the landscape based on the revised ABPP Survey Manual (McMasters 2016). Note that as defined in the manual, the assessment of integrity is focused on the overall condition of the battlefield and it is recognized as a subjective assessment. Qualities of integrity as defined for determinations of National Register of Historic Places eligibility include the elements of location, setting, design, feeling, association, workmanship, materials. In Table 4, the Defining Features all retain the elements of location and setting, but vary in the qualities of feeling and association. Table 4 also include the defining feature's KOCO A analysis, which Crown Forces Column was affected by the feature, and notes regarding the feature's historical documentation or topography. The table is focused on the Crown Forces column movements, but includes American force responses and movements where applicable. The figure for each defining feature is included in the notes section.

**Table 4. List of Defining Features**

<b>Defining Feature/ Integrity Assessment</b>	<b>KOCSA Analysis</b>	<b>Column</b>	<b>Notes</b>
Newport-Gap Pike (Route 41), "Road to Lancaster"/ altered integrity, but some essential features retained	Avenue of Approach	Von Knyphausen	Avenue of approach used by von Knyphausen's column on September 9/10. (FIGURE 8, NUMBER 1)
Newark/Limestone Road/ altered integrity, but some essential features retained	Avenue of Approach	Von Knyphausen	Avenue of approach used by some detachment of von Knyphausen's Division on night of September 9/10. (FIGURE 8, NUMBER 2)
Undefined farm roads/ unknown integrity, likely low	Avenue of Approach	Cornwallis	Avenue of approach used by Cornwallis' Division on the night of September 9/10. (FIGURE 8, NUMBER3)
New Garden Meetinghouse/ retains high degree of integrity	Avenue of Approach, Field of Fire	Von Knyphausen	American militia engage in a skirmish with elements of von Knyphausen's Division on September 10. (FIGURE 8, NUMBER4)
Red Clay Creek/retains high degree of integrity	Obstacle	Cornwallis	Red Clay Creek and Valley were major obstacle in Cornwallis' Division movement on the night of September 9/10. (FIGURE 8, NUMBER 5)
Great Nottingham Road (US Route 1)/ highly altered, low integrity, but road trace is identifiable	Avenue of Approach	Von Knyphausen	Principal avenue of approach used by von Knyphausen's column on September 10 and 11. (FIGURE 8, NUMBER 6)
High Ground East of Kennett Square/ retains some integrity, particularly moving south from US Route 1	Avenue of Approach	Von Knyphausen	Location of overnight camp of von Knyphausen's Division. Generally, follows the line of McFarlan Road. (FIGURE 8, NUMBER7)
Woods east of Welch's Tavern ( <i>aka</i> Anvil Tavern)/ low integrity, area significantly altered	Cover and Concealment, Field of Fire	Von Knyphausen	First American position, commanded by Captain Charles Porterfield. Von Knyphausen reports that first shots of battle fired from woods east of the tavern. Welch's Tavern/Anvil Tavern site located at 300 Greenwood Road). Harris (2014:223) reports that the entrance to Longwood Gardens is near the site of the tavern. (FIGURE 9, NUMBER 1)
Elevation north of The Great Nottingham Road/ low integrity, area significantly altered	Cover and Concealment, Field of Fire	Von Knyphausen	Second defensive American position, commanded by Lt. Colonel William Heth. Position is west of where modern Route 52 intersects with US Route 1 (today's village of Hamorton). (FIGURE 9, NUMBER 2)
Wooded elevation southeast of Kennett Meetinghouse/ retains some integrity, particularly at the Meetinghouse	Cover and Concealment, Field of Fire	Von Knyphausen	Third defensive American position. The hill was removed during the construction of US Route 1). Kennett Meetinghouse

			still extant. (FIGURE 9, NUMBER 3)
Wooded elevation and fencing east of the Kennett Meetinghouse/ retains some integrity	Cover and Concealment, Field of Fire	Von Knyphausen	Fourth defensive American position, commanded by Major Charles Simms. Reported to be ambush. Close to location of current intersection of Hickory Hill Road and US Route 1. (FIGURE 9, NUMBER 4)
Brandywine River/ landscape feature still apparent, retains some integrity	Obstacle, Key Terrain	Von Knyphausen	Main American battle line is formed along Brandywine Creek, September 9-11.
Brintons Bridge Road and Route 1 Intersection/ retains some integrity	Avenue of Approach	Von Knyphausen	Von Knyphausen sent the British 1 <sup>st</sup> Brigade along this road.
Wilmington Road/Hillendale Road/Fairville Road/ road trace readily apparent, retains integrity	Avenue of Approach	Von Knyphausen	Avenue of approach used by the Baggage Column on morning of September 11. (FIGURE 9, NUMBER5)
Union Hill Cemetery/Hessian Hill/ location is apparent, but modern intrusion, low integrity	Avenue of Approach	Cornwallis	Location of overnight camp of Cornwallis' Division on September 10/11. (FIGURE 8)
Union Street/Unionville Road (Route 82)/low integrity	Avenue of Approach	Cornwallis	Avenue of approach of General Cornwallis' Division on September 10 to reach Kennett Square and on September 11 for the flank march. (FIGURE 10, NUMBER 1)
East Doe Run Road/some integrity, road trace unchanged	Avenue of Approach	Cornwallis	Avenue of approach of General Cornwallis' Division on September 11. (FIGURE 10, NUMBER 2)
Northbrook Road/high degree of integrity	Avenue of Approach	Cornwallis	Avenue of approach of Cornwallis' Division on September 11. (FIGURE 10, NUMBER 3)
Red Lion Road/high degree of integrity	Avenue of Approach	Cornwallis	Avenue of approach of General Cornwallis' Division September 11. (FIGURE 10, NUMBER 4)
Corrine Road/high degree of integrity	Field of Fire, Avenue of Approach	Cornwallis	General location where Ross' light infantry engaged the rear guard of the Northern Column on September 11. (FIGURE 10, NUMBER 5)
High ground at Red Lion and Street Road intersection/some integrity, position still readily apparent	Observation	Cornwallis	Hypothesized observation point for American light infantry. (FIGURE 10, NUMBER 6)

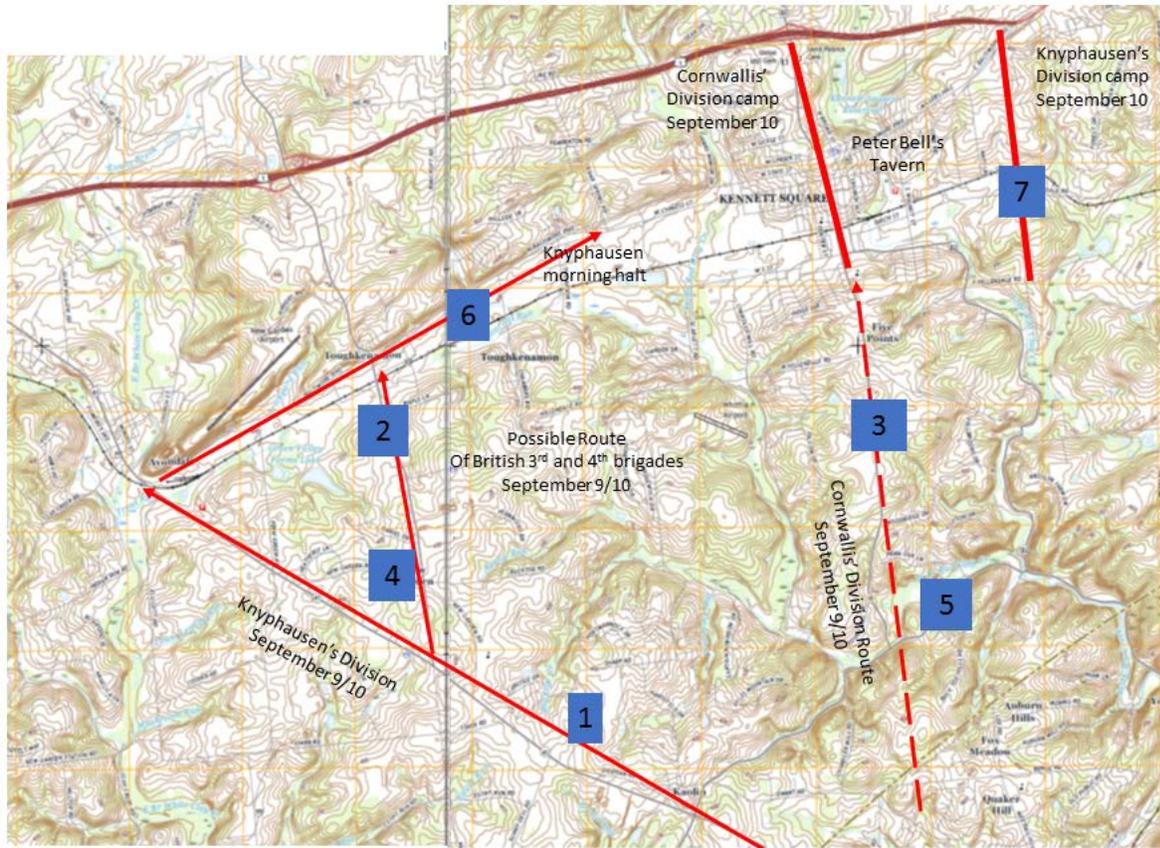


Figure 8. Defining Features for the Crown Forces' movements, September 9 and 10, 1777 (CHG).



- 1. Welch's Tavern (Anvil Tavern) – 1<sup>st</sup> Skirmish
- 2. Elevation north of the Nottingham Road – 2<sup>nd</sup> Skirmish
- 3. Old Kennett Meeting House – 3<sup>rd</sup> Skirmish
- 4. Wooded elevation and fencing – 4<sup>th</sup> Skirmish
- 5. Wilmington Road/Hillendale Road/Fairville Road Corridor (Baggage Route)

Figure 9. Defining features for von Knyphausen's Division (Eastern Column), September 11, 1777 (CHG).

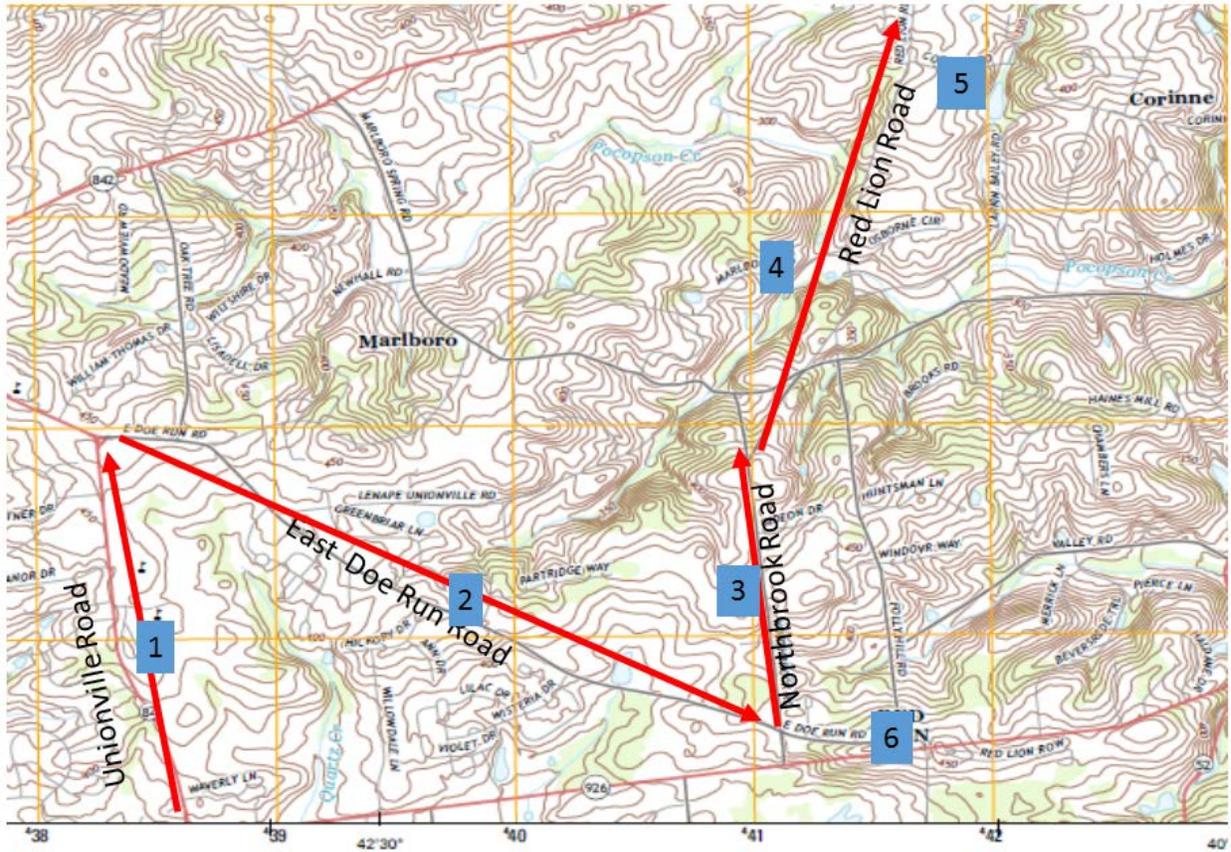


Figure 10. Defining Features for Cornwallis' Division (Northern Column), September 11, 1777 (CHG).

### 3.5 KNYPHAUSEN'S DIVISION (Eastern Column)

#### **Newport-Gap Pike (Route 41) “The Lancaster Road”** (*Avenue of Approach*)

The Lancaster Road, known today as Route 41 or the Newport-Gap Pike, was used by von Knyphausen's Division on the afternoon and evening of September 9 into the early morning hours of September 10 as they approached the Borough of Kennett Square. The movement of von Knyphausen's Division began about 3 PM from the division's overnight bivouac along modern Route 7 in Mill Creek Hundred, New Castle County. The Division moved past the New Garden Friends Meetinghouse and marched to the modern intersection at Avondale. At this intersection, the Division turned east (or right) onto the Great Nottingham Road and continued their march towards Kennett Square (Figure 8, number 1).

The Lancaster Road was established by the early years of the eighteenth-century, linking the village of Newport, Delaware, on the Christiana River to the important hinterland town of Lancaster. Much of the modern Route 41 follows the original trace of the Lancaster Road. The setting of the road is still relatively rural and agricultural, but considerable light industrial development is present, particularly in the vicinity of Avondale. There is a 1.39-mile section of the original road that remains, centered roughly on the New Garden Meetinghouse (established 1715) at the intersection of the Newark Road/Limestone Road (see below) and the New Garden Road (Figure 11). This stretch of road retains a rural setting with agricultural fields, and is likely little changed from its appearance in 1777. The “bypass” of this loop was created in 1773.

A second section of the original road, today called Sheehan Road, has also been bypassed by the modern Route 41. Damage claims by several farmers along this route indicate that the Royal Army moved along this road. In the Sheehan Road section, damages at the tavern owned by Isaac Allen, and tenanted by Joshua Jackson, included loss of horses and other “sundries” valued at £50. Allen's son, James, claimed the loss of items used in blacksmithing, suggesting that a blacksmith shop was situated at or near the tavern.

#### **Newark/Limestone Road** (*Avenue of Approach*)

Based on the contemporary documentation and the evidence provided by depredation and damage claims, some portion of von Knyphausen's Division appears to have used the Newark Road/Limestone Road to approach the Great Nottingham Road (Figure 8, number 2). The Newark Road was established by 1733, intersecting with the 1710 Limestone Road (not to be confused with the much larger and longer “Limestone Road – modern DE Route 7, in adjacent New Castle County). At the intersection of these roads is the New Garden Friends Meetinghouse (Figure 12).

On the evening of September 9/10, von Knyphausen's Division left its bivouacs in Mill Creek Hundred and proceeded northwest on the Lancaster Road to Miller's grist and saw mill. The British and Hessian accounts of the movement indicate that two British brigades, the 3<sup>rd</sup> and 4<sup>th</sup> Brigades, were detached from Cornwallis' Division, at that time struggling to move forward in the Red Clay Creek Valley, and sent west to join von Knyphausen's column. Major John André of the 3<sup>rd</sup> Brigade wrote that the march that night was dark and the march particularly hard. The two brigades, attempting to catch up with von Knyphausen, had problems finding the right road, and “...it was with some difficulty at a crossroad that it was ascertained which way the front of the column had passed” (André 1904:82). On their route, there were only a few intersections or crossroads that would be encountered, the most important being the one at New Garden Friends Meetinghouse.

It is no coincidence that five New Garden Township property owners claimed damages in the immediate vicinity of the Newark Road/Limestone Road crossroad mentioned by André. It is likely that two British brigades did not proceed all the way to Miller's grist and saw mill, but instead turned north on the



Figure 11. New Garden Road “loop,” (formerly part of the Lancaster Road) looking north towards the intersection with Newark Road (CHG).



Figure 12. New Garden Friends Meetinghouse, circa 1915 (Thomas C. Marshall photographs, Accession 1990.270, Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).

Newark/Limestone Road, a route that would bring them to the Great Nottingham Road at Stephen Anderson's Hammer and Trowel Tavern. The damages caused at this intersection may also be due to the firefight reported by New Castle County militiaman Isaiah Mann, who declared in his pension that he was in a "slight skirmish" near New Garden Meetinghouse the day before the battle of Brandywine (Mann 1834).

The damages reported by the people in the vicinity of New Garden Meeting were generally loss of horses, cattle, sheep, and wagons or carts. One resident along the Newark/Limestone Road, Isaac Miller at modern 101 Maple Lane, claimed £200 in damages caused by the Royal Army, including seven horses, sixteen sheep, eighty bushels of oats, one calf, a nearly new cart and gears, two saddles, and household goods (Figure 13).

#### **High Ground East of Kennett Square** (*Avenue of Approach*)

After allowing much of Cornwallis' Division to proceed through Kennett Square on modern Route 82, von Knyphausen's Division resumed its march around noon on September 10 from west of the Peter Bell Tavern to the high ground east of the borough. Based on the depredation and damage claims of Kennett Township residents, the heaviest damages reported were concentrated in the area between South Union and South Broad Streets north of Kennett Square High School, and McFarlan Road to the east. As the scribe of the Erbprinz Regiment noted in the battalion journal, "The right wing" of Howe's army "ran toward Louis [Lewis] Mill and its left toward Marlboroug [sic] Meeting House, the Jäger, however, occupied the road toward Chester" (Erbprinz 1777:12). From this description, it is clear that Howe's Army established two parallel, north-south trending lines, one behind the other, using the Unionville Road for Cornwallis' Division and McFarlan Road for von Knyphausen's Division (Figures 8, number 7).

McFarlan Road, established in 1723, marks the approximate north-south line of von Knyphausen's overnight camp. The reported damages and depredation claims range along McFarlan Road from Abraham Taylor's property along The Great Nottingham Road south towards Hamilton's(Lewis') mill on the Red Clay, a distance of approximately 2.5 miles. The British Headquarters map and the Blaskowitz map clearly depict the high ground east of the borough (Figures 4 and 5).

#### **Great Nottingham Road** (*Avenue of Approach*)

The Great Nottingham Road, sometimes referred to by contemporaries as the Chester Road, The Post Road, or Baltimore Pike, was the direct route to Chad's Ford and the Brandywine River. The road was established as early as 1743 and extended from Chad's Ford in a westerly direction passed the Kennett Friend's Meeting House, Welch's Tavern, Peter Bell's Tavern in Kennett Square, and continued west until it intersected the road linking Lancaster and Newport in New Castle County (Figure 8, number 6).

The trace of modern U.S. Route 1 follows much of the course of the former Great Nottingham Road. In some locations, the old road bed is still discernible, but for much of the distance between Kennett Square and Chad's Ford, the old road bed has been subsumed under the current dualized highway (Figures 14 and 15). Several of the contemporary accounts of the battle note that the road passed through wooded and hilly terrain; as Major Baurmeister reported the road from Welch's Tavern to the Brandywine "has many defiles between hills and woods" (Baurmeister 1935:404).

The Great Nottingham Road was the principal Avenue of Approach for Lieutenant General von Knyphausen's Column as it approached the village of Kennett Square on September 10 and again as it moved towards the American position along the Brandywine on the morning of September 11. During the early morning hours of September 10, von Knyphausen's Division halted west of the Borough of Kennett Square, probably in the general vicinity of modern Cedar Spring Road. This area today is relatively developed, but the wide, broad valley of Scarlett Run, a tributary of the Red Clay, is still



Figure 13. New Garden Townships, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG). Green stars indicate landowners who filed depredation claims, and yellow markings indicate Quakers who recorded damages in the Book of Suffering.



Figure 14. Portion of the earlier road trace of the Great Nottingham Road, now bypassed by US Route 1. Image looking east (CHG).



Figure 15. US Route 1, view looking west from intersection of Pennsbury Way. Barns-Brinton House is visible in left distance (CHG).

apparent, as is the high ground on which the Borough of Kennett Square is sited. Von Knyphausen's Division halted for several hours in this area, before proceeding through the borough to the high ground east of the town.

At about 4 AM on the morning of September 11, 1777, von Knyphausen's column formed up with its lead elements standing around the current intersection of School House Road, about 1.3 miles east from the center of Kennett Square. The column consisted of "...Captain Ferguson's British Riflemen, one battalion of Queen's Rangers, the 71<sup>st</sup> (Highland) Regiment, which consisted of three battalions, the 1<sup>st</sup> and 2<sup>nd</sup> English brigades under General Grant, Stirn's brigade (*i.e.*, the Lieb Regiment, Donop's, Mirbach's, and the Combined Battalion), the other half of the 16<sup>th</sup> Regiment of [Light] Dragoons, two brigades of heavy artillery, the entire artillery and provision train, the baggage, and the cattle" (Baurmeister 1935:404). The unpublished Erbprinz Regimental journal noted that "...the 2<sup>nd</sup> Battalion of the 71<sup>st</sup> Regiment...formed the rear guard while the 1<sup>st</sup> and 3<sup>rd</sup> Battalion of the regiment covered the right and left flank" (Erbprinz 1777).

Two contemporary maps depicting von Knyphausen's column show the baggage wagons as flanked by the three battalions of the 71<sup>st</sup> Regiment (Figures 16 and 17). Attributed to Hessian artilleryist Friedrich W. Werner and engineer Reinhard J. Martin, it is likely that these map depictions of the baggage train are stylized, since the baggage and livestock herd would have occupied considerably more ground than shown on the maps. The baggage train itself would have been at least 2.5 miles in length. The important point is that the baggage train was moving at the rear of von Knyphausen's Southern Column. Attaching the baggage to the column reinforced the intended deception of the complete Royal Army moving towards Chad's Ford, and would have been so reported to the American forces east of the Brandywine.

The advance guard of von Knyphausen's column consisted of British Captain Patrick Ferguson's 90-man company of riflemen, 15 mounted dragoons, and the Queen's Rangers, a Loyalist unit commanded by Captain James Weyms and numbering perhaps 398 men (Harris 2014:223; McGuire 2006:175; Smith 1976:29). This advance guard would bear the brunt of the skirmishing and the casualties in the early morning hours as von Knyphausen approached the Brandywine.

#### **Woods east of Welch's Tavern** (*Cover and Concealment, Fields of Fire*)

Welch's Tavern, or the Anvil Tavern (300 Greenwood Road), was located about 700 feet east of the entrance to the modern Longwood Gardens (Harris 2014:223) (Figure 9, number 1). The location today is marked by a small stone with an anvil near what are described as the cellars for the former tavern (Figures 18 through 23). By the early twentieth century, the tavern was an expansive, two-story stone building. The 2013 Battlefield Preservation Plan notes that this intersection, known as Anvil Village, "...has since been largely demolished and covered by a highway interchange. Furthermore, the land on which the tavern likely stood appears to have been originally located in East Marlborough Township but later became part of Kennett Township. The changes in land use and boundary designation make this a complex site to evaluate" (CCPC 2013:3-30).

At 6 AM, two hours after von Knyphausen's column began its advance, the first shots of the battle were fired from a wooded area located across the Great Nottingham Road to the east of the tavern. The American light infantry commanded by Brigadier General William Maxwell had an advanced position at Welch's Tavern. According to Major General Johann Daniel Stirn, "the column under the command of General von Knyphausen marched via Welch's Tavern where the Rebels had an outpost" (Stirn 1998:6). This first American position was held by a detachment of approximately 150 men commanded by Captain Charles Porterfield of the 11<sup>th</sup> Virginia Regiment (McGuire 2006:175). Porterfield's men had likely been posted at the tavern since some time on September 10; a Hessian report commented that the English

riflemen encountered American riflemen “...in the wood on the other side of the tavern where they [the Americans] had spent the night” (Letter Z 1777).



Figure 16. Detail, *Plan de l'Affaire de Brandewein gagné le 11<sup>me</sup> 7bre 1777 par l'Armée Britanique sous les ordres du General Howe sur les Rebelles*, by F.W. Werner and Reinhard J. Martin (Hauptstaatsarchiv Marburg WHK 29/54b, -55, -56).



Figure 17. Detail, *Plan der Passage von Brandweinscreek nach Chadsesford und die Auseinandersetzungen der britischen Armee unter dem Befehl von General Hoise mit den Amerikanern, 11. 11 September 1777*, by F.W. Werner (Hauptstaatsarchiv Marburg WHK 29/54b, -55, -56).

For both armies, Welch’s Tavern functioned as a significant landmark not only on September 11, but also in the days leading up to the battle. Several British and Hessian accounts indicate that Welch’s was well-known to them as early as September 9 as they approached Kennett Square. Muenchhausen wrote in his journal that we “...were instructed to inform General von Knyphausen that he should march early the next morning towards Kennett Square with the greatest precaution, because Washington’s foreposts were already at Welch’s Tavern, two miles from Kennett Square” (Muenchhausen 1974:30). Baurmeister, in his

report for September 9, notes that Howe anticipated the two columns, Cornwallis' and von Knyphausen's, would reunite east of Kennett Square, at Welch's Tavern. Howe, he wrote, "...gave such marching orders that both columns were to arrive at the place of rendezvous, namely Welch's Tavern, at the same time" (Baurmeister 1935:403).

On the American side, Colonel Moses Hazen of Congress's Own (or the Canadian) Regiment, posted at Jones Ford on the Brandywine, reported that on September 10 he had a detachment operating "about one mile from Welch's Tavern and six miles from this place" that seized 28 sheep and 17 head of cattle "from the Enemy" (Hazen 1889:161). Hazen also reported that the livestock were taken by Captains Patterson and Chambers of the 12<sup>th</sup> Pennsylvania Regiment. Patterson was Alexander Patterson of Northampton County and Chambers was Stephen Chambers of Northumberland County. Recruited from Pennsylvania's western counties, the members of the 12<sup>th</sup> Pennsylvania were largely rifle-armed, and the unit was often called upon to serve in scouting (Trussell 1977:134-136). It is likely that Patterson and Chambers commanded detachments that were assigned to Maxwell's Light Infantry Corps and were active in reconnoitering west of the Brandywine.

Another member of the Light Corps, Pennsylvania militiaman Andrew Cummings, identified Welch's Tavern as a landmark in his pension application. Attached to Colonel Dunlap's Partisan Regiment, Cummings related that "...the evening before the battle of Brandywine, the company to which the applicant belonged [under the command of Captain John Scott] were ordered to take position, about half way between Welsh's tavern and Chad's ford and the Brandywine about four miles apart, where we stood on picket guard that night, and were ordered to fire on the British flankers as they passed next morning and then to retreat across the Creek, this we did, and then were sent about a quarter of a mile above Chad's ford to guard a pass where the creek could be forded, there we remained until the battle was over..."(Cummings 1832). In the time leading up to the engagement, Cumming's company, like other American units positioned west of the Brandywine, was "employed some time in scouting through the Country and between the lines of the British and American forces" (Cummings 1832). Light Infantryman Jesse Nicholson of the 15<sup>th</sup> Virginia Regiment recalled that they "hovered upon the lines of the Enemy" (Nicholson 1832). These units ensured that the movements of the Royal Army would be contested.

On the morning of September 11, 1777, von Knyphausen reported that he had barely reached Welch's Tavern with the advance guard of his column when they came under fire from the woods east of the Tavern (McGuire 2006:175). Porterfield's company fired into Ferguson's riflemen and the dragoons. Porterfield himself reportedly killed "the first men...who fell that day" (Heth 1931:33). Captain Ferguson wrote that "the first party we had to do with was an advanced Post of 150 men and some light horse, who threw away their fire and ran off, with the loss of three or four men and a horse whom we shot flying" (Harris 2014:224). Sergeant Stephen Jarvis of the Queen's Rangers commented that "The first discharge of the discharge of the enemy killed the horse of Major [sic] Grymes, who was leading the column, and wounded two men in the Division directly in my front, and in a few moments the Regiment became warmly engaged and several of our officers were badly wounded" (Jarvis 1907:449).

Virginian Jesse Nicholson recollected in his pension that "...at Brandywine it was our lot to bring on the Battle" (Nicholson 1832). Captain Porterfield's orders were to "deliver his fire as soon as he should meet the van of the enemy, and then to fall back" (Lee 1998:89). After the initial firing and inflicting casualties, Porterfield's detachment withdrew, having no intention of bringing on an engagement. They retreated east along the Great Nottingham Road towards the next already-manned defensive position.



Figure 18. US Route 1 at site of former Anvil (Welch's) Tavern. View to the west. The tavern stood to the right of the image near the white wall. Longwood Gardens overpass is visible in the distance (CHG).



Figure 19. Anvil (foreground) marking the location of the former Anvil (Welch's) Tavern. US Route 1 is to the right of the image. Breast-high wall reputedly marks the cellars for the former tavern. View is looking east towards location of woods (CHG).

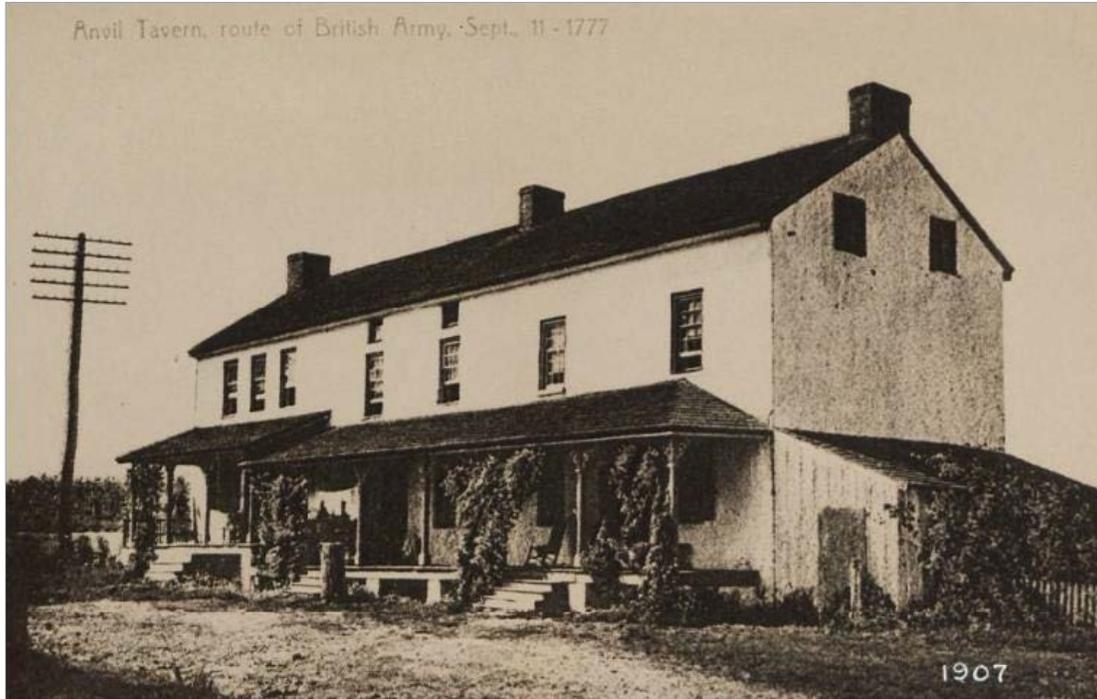


Figure 20. Anvil Tavern, circa 1907. The road bed of Great Nottingham Road (modern US Route 1) in foreground (P.S. du Pont Longwood photograph collection, Accession 1969.002, Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).

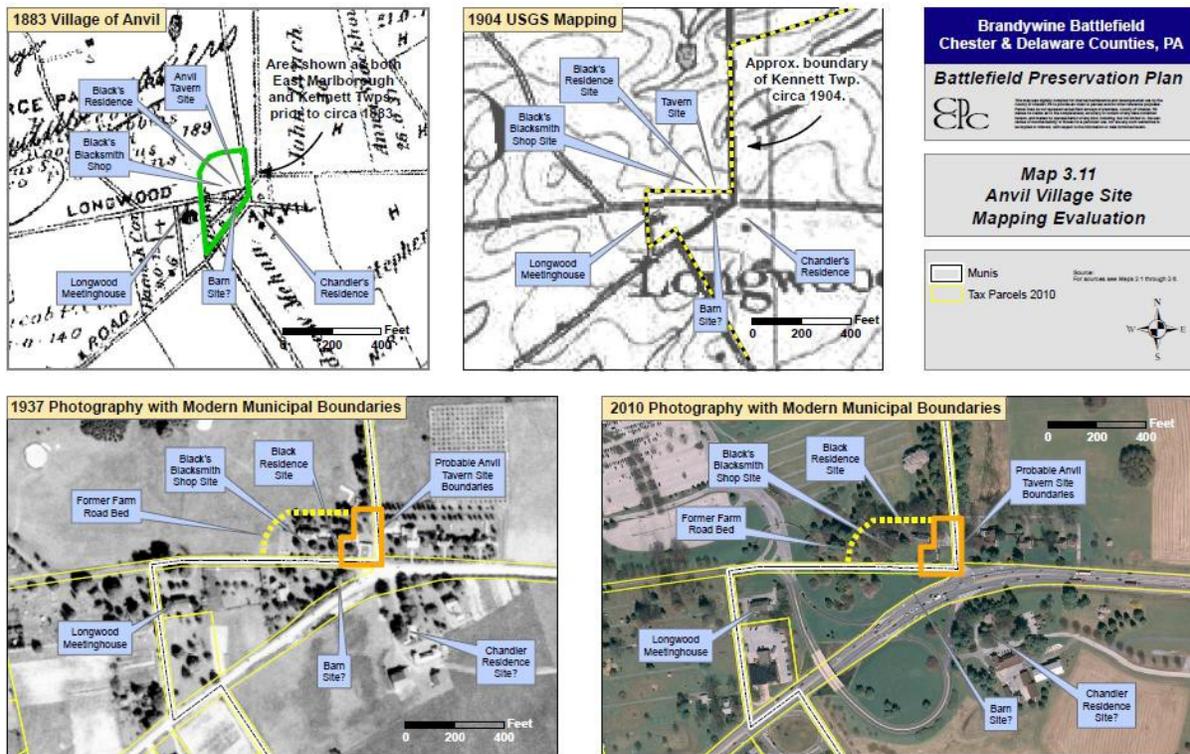


Figure 21. Anvil Village Site Mapping Evaluation, from the 2013 Preservation Plan (CCPC 2013).



Figure 22. View looking west to the Brewer-Miller House, showing the original wine cellars of the Anvil Tavern, 1918 (P.S. du Pont Longwood photograph collection (Accession 1969.002), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).

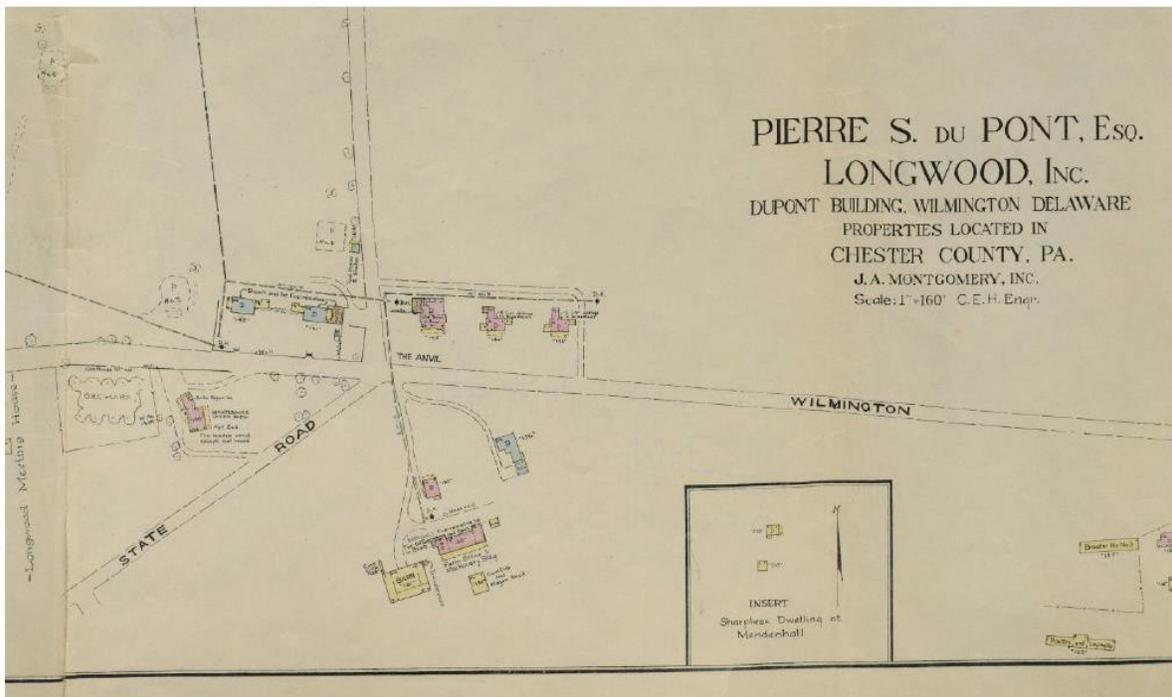


Figure 23. Detail of Anvil Village intersection, 1910-1930, from *Map of Longwood Gardens and Surrounding Area* (P.S. du Pont Longwood photograph collection (Accession 1969.002), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807).

The location east of the modern U.S. Route 1 where this brief encounter took place has been altered by road widening and other twentieth century ground disturbance. The current high ground in this area today is approximately 460 feet in elevation.

**Elevation north of The Great Nottingham Road** (*Cover and Concealment, Field of Fire*)

Porterfield's detachment retreated about 4,000 feet to the east to the second defensive American position, joining another light infantry detachment of about 200 men commanded by Virginian Lt. Colonel William Heth. Virginian Jesse Nicholson of Maxwell's Corps remembered that "Colonel [Richard] Parker and Colonel Heath (sic) commanded Virginians of that Corps on the south side of Chad's Ford" (Nicholson 1832). The road forked at this location, with a side road coming from Wilmington intersecting the Great Nottingham Road from the south. Heth's men occupied an elevation (approximately 470 feet asl) on the north side of the road. This position is west of where modern Route 52 intersects with US Route 1 in the modern village of Hamorton (Harris 2014:226). When von Knyphausen's advance guard came within range, Heth's men fired a volley, then again withdrew to the east.

The modern village of Hamorton has altered this location somewhat. While the village topography is relatively unchanged, the elevation north of the road is currently occupied by residences (Figure 9, number 2).

**Wooded elevation southeast of Old Kennett Meetinghouse** (*Cover and Concealment, Field of Fire*)

The combined detachments of Porterfield and Heth withdrew approximately 1,000 feet to the southeast, taking up a third defensive position on a wooded and elevated piece of ground across from the Old Kennett Meetinghouse (Harris 2014:226) (Figure 9, number 3).

The Great Nottingham Road descends from the Hamorton intersection as it continues to the east. Modern US Route 1 has smoothed this descent by raising the roadbed and cutting the hill, so the elevation of the Old Kennett Meetinghouse is not as apparent as it would have been in 1777. The original road bed of the Great Nottingham Road passed to both sides of the Old Kennett Meetinghouse at that time (Figure 24).

The American light infantry discharged one volley from this position, inflicting casualties on the Queen's Rangers. While the American troops were forming deliberate defensive lines as they withdrew towards the Brandywine, the appearance of the fighting to a contemporary British soldier was of a "running fire, mixed with regular volleys [sic]" (Sullivan 1997:130).

**Wooded elevation and fencing east of the Kennett Meetinghouse** (*Cover and Concealment, Field of Fire*) (Figure 9, number 4)

Heth and Porterfield withdrew again, descending to a small creek valley along the Great Nottingham Road and then climbing to a rise about 2,300 feet east of the Old Kennett Meetinghouse. A small round elevation of approximately 430 feet asl is situated here, on the north side of the road. The fourth defensive American position is likely situated in this vicinity (Figure 25). At this place, the Porterfield-Heth detachments joined another light infantry detachment commanded by Virginian Major Charles Simms of the 12<sup>th</sup> Virginia Regiment. Simms troops were under good cover on the elevation, and the withdrawing Americans took up a position behind a fence but near Simm's concealed position (Harris 2014:228; Smith 1976:10).

The advance guard of the British came forward along the Great Nottingham Road, "rapidly and incautiously, until it lined the front of the detachment commanded by Lieutenant-Colonel Simms, who poured in a close and destructive fire" (Lee 1998:89). Sergeant Thomas Sullivan of the 49<sup>th</sup> Regiment of Foot described this same encounter, writing that "The Queen's Rangers and Riffle [sic] Corps...advancing to the foot of a hill, saw the Enemy formed behind the fence [Porterfield's detachment], were deceived by the Rebel's telling them, that they would deliver up their Arms, but upon their advancing they fired a volley upon our men..." (Sullivan 1997:130).



Figure 24. Old Kennett Meetinghouse and burial ground. View to the west. The high ground occupied by the retreating American light infantry is located beyond the Meetinghouse. US Route 1 is visible to the left (CHG).



Figure 25. View to the east from the Old Kennett Meetinghouse burial ground. US Route 1 on the right. The Porterfield-Heth detachment retreated to the high ground visible in the far distance (CHG).

The American volley was quite effective, as about thirty men of the Queen's Rangers and Riflemen were killed or wounded. After this fire, the American light infantry withdrew once again, heading east towards the Brandywine.

This series of four short, but sharp, skirmishes or clashes served to slow von Knyphausen's advance towards Chad's Ford. Each action caused the Royal Army's leading formations to deploy, engage, chase the retreating Americans, then reorganize before moving forward. By the time the fourth American position had been overcome, Ferguson's Riflemen and the Queen's Rangers were tired and disorganized. They had taken relatively heavy casualties, particularly among officers (Heth 1931:33; Sullivan 1997:130; Lee 1998:89).

Von Knyphausen's advance to Chad's Ford became more cautious after these encounters. As he moved closer to Chad's Ford and Ferry, his movement was further hampered by obstructions that the Americans had placed along the Great Nottingham Road (Figure 26). Pennsylvania soldier Alexander Beggs recalled in his pension application that "he and some others were sent in the morning before the battle [September 10], to fell trees in the road for the purpose of obstructing the march of the enemy" (Beggs 1832). Beggs' timbering was effective. Captain Francis Downman of the Royal Artillery wrote that "...we galloped our horses some time, but were prevented from continuing the [Great Nottingham] road by reason of trees being cut down and laid across" (Downman 1898:157).

#### **Wilmington Road/Hillendale Road/Fairville Road Corridor** (*Avenue of Approach*)

When von Knyphausen's Eastern Column started its march toward the Americans along the Brandywine, "the entire artillery and provision train, the baggage, and the cattle" was part of his division (Baurmeister 1935:404). Contemporary maps depicting von Knyphausen's column show the baggage wagons as flanked by the three battalions of the 71st Regiment (Figures 16 and 17). The Baggage Train itself would have been at least 2.5 to 3 miles in length. The three battalions of the 71st Regiment totaled about 1,200 officers and men (Harris 2014:193). While one of these battalions took part in the fighting west of the river in the morning of September 11, the other two remained as baggage guards.

The felled timber in the Great Nottingham Road, mentioned by both American and British writers, likely served as the catalyst for moving the Baggage Column south to Hillendale Road.

The route of the Baggage Train and its supporting three-battalion guard is known principally through the depredation claims and plunder reports submitted by the residents of Pennsbury Township. The maps mentioned above show the train along the Great Nottingham Road, but its movement is not shown. Given the length of column and the difficulty that von Knyphausen's artillery had in moving on the road due to felled trees, it appears that the baggage was shifted south to the Hillendale Road/Fairville Road corridor. This shift probably occurred when the baggage reached the intersection of the Great Nottingham Road and the Wilmington Road. The intersection of the Wilmington Road and Hillendale Road (this section of Hillendale road was laid out in 1754) is situated about 1.25 miles south of modern Hamorton. An alternative approach to the Hillendale Road corridor would have been to turn south on Hickory Hill Road, but no damage reports or other historical evidence supports this interpretation (Figure 9, number 5).

Damage reports, sufferings, and depredation claims exist for a number of properties along the Hillendale Road corridor. The family farms of Isaac, Thomas, Joseph, and Noah Mendenhall along Hillendale/Fairville Road reported considerable damage, as did Peter Harvey (tenant of William Harvey, Jr.), and Caleb and Moses Mendenhall along modern Stabler Road.

The Crown Forces Baggage Column remained west of the Brandywine River throughout the day on September 11. It did not cross to the east side of the Brandywine Creek until late afternoon/evening of

September 12. The Baggage Column therefore sat along Hillendale Road for more than 24 hours. Thus, the wagons, livestock, wagoners, wagon guards, and others attached to the baggage had ample time to damage private property, damage or carry off household items including furniture, tablewares, books, clothing, and personal items, and commandeer wagons and livestock (Figure 27).



Figure 26. Former road trace of the Great Nottingham Road at the Barnes-Brinton House. US Route 1 to the left (rear) of the house. Former road trace is to the front of the house (CHG).

### 3.6 CORNWALLIS' DIVISION (Northern Column)

#### **Red Clay Creek** (*Obstacle*)

Red Clay Creek and its valley posed a significant obstacle to the movement of Cornwallis' Division on September 9/10. The deeply incised creek was heavily wooded, with numerous ravines. The road network in the valley was poor, and there were only fords for crossing the creek (Figure 8, number 5). British light infantry officer Henry Stirke lamented that, after getting on the move at 4PM on September 9, the army had “a very disagreeable march, through swamps, and rivers, in many places up to ye middle; and after several halts, took post on a hill, at 2 O’Clock in the morning” (Stirke 1961:169). The difficulty of moving in the Red Clay valley was evident, as Stirke reported that they covered only three miles in those 10 hours.

#### **Undefined Farm Roads** (*Avenue of Approach*)

On the late afternoon and evening of September 9/10, Cornwallis' column, accompanied by Howe, attempted to reach Kennett Square by using farm lanes and backroads. Contemporary descriptions by Howe's officers of these roads include “undefined,” “Country,” and “unbeaten side paths.” An unidentified resident, reported to be the same man who guided General Washington to Chad's Ford on the Brandywine, guided Cornwallis' Division.

The lanes used are located in the area south of the modern Five Points intersection (Kaolin Road, Hillendale Road, and Old Kennett Road) in Kennett Township (Figure 8, number 3). British officer Charles Blaskowitz depicts these roads on a contemporary map (Blaskowitz 1777) (Figure 5). These roads match no formally laid out roads in Chester County. They likely followed property lines and field edges. It

is highly unlikely that their precise locations will ever be known.



Figure 27. Pennsbury Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG). Blue dots indicate owners who reported plundering for tax filing, green stars indicate landowners who filed deprecation claims, and yellow markings indicate Quakers who recorded damages in the Book of Suffering.

It is clear from the descriptions provided by British and Hessian officers that the route chosen by the local guide, while perhaps shortening the distance to Kennett Square, was extremely difficult to navigate on a dark night. Howe called a halt to the march around midnight September 9/10. His exhausted troops rested until about 5 AM, then, in daylight, resumed their march into Kennett Square, striking Union Street/Unionville Road/Route 82 at or near the Five Points intersection.

#### **Union Hill Cemetery/Hessian Hill (*Avenue of Approach*)**

On the morning of September 11, 1777 Cornwallis' Division was in column formation along today's Route 82 (Unionville Road) extending from Kennett Square northward.

The previous day, September 10, the Royal Army had taken up positions east of the village of Kennett Square. Several accounts note that the overnight encampment was in two lines. Johann Ewald of the Hessian Field Jäger Corps recorded that at Kennett Square “...the army brigades rested one behind the other” (Ewald 1979:81). Major Baurmeister commented on the camp in his journal, noting that “...the army pitched a regular camp in two lines at Kennett Square” (Baurmeister 1935:403). The scribe for the Regiment Erbprinz reported that both divisions of the Royal Army camped “on the heights beyond” the village of Kennett Square “in uneven lines” (Erbprinz 1777). The configuration of the army in two parallel lines meant that Cornwallis’ Division was encamped along the line of modern Route 82, extending north beyond the crossroads of the village of Kennett Square by approximately a half-mile towards Marlborough Meeting House (Peebles 1998:132).

The distance of a half-mile placed the elements of Cornwallis’ Division in the area known today as Union Hill Cemetery, an elevation north of Kennett Square and south of the interchange with US Route 1 (Figure 8). The elevation has a local name of Hessian Hill. Two landowners in this area, Jesse Miller and Francis Way reported that their properties were damaged. However, properties immediately north of Miller’s and Way’s tracts in East Marlborough do not indicate any damages, suggesting that either the general vicinity of modern US Route 1 was the limit of the overnight encampment of September 10/11, or that the Quakers in neighboring East Marlborough Township farms chose to not report any losses or damages (Figures 28 and 29).

The Hessian jäger occupied the approaches to the bivouac along modern Route 82, but they saw none of the enemy save some light dragoons. The damages and sufferings reported by Henry Neal, Thomas Vernon, Francis Windle, and Caleb Johnson may be associated with the positions occupied by the jäger. The need for flank guards and patrols was constant and caused a certain level of anxiety among the soldiers of the Royal Army. Major Johann Christian Du Buy of the Fusilier Regiment von Truembach wrote that “...we were always surrounded by [American forces]” and “we had to take precautions when encamping and marching, as the van-guard, side-patrols to the right and left and also the rear-guard were constantly encountering them...” (Du Buy 1777). Baurmeister reported that “the enemy patrols could advance further than ours because they were known and feared by the inhabitants, whereas ours risked being shot from ambush or cut off at every house, bush, woods, and fence – which happened more than once...” (Baurmeister 1935:403).

#### **Union Street/Unionville Road (Route 82) (*Avenue of Approach*)**

On September 10, following a difficult night march through the Red Clay Creek Valley, Cornwallis’ Division was in column formation along today’s Route 82 (Unionville Road). The evening of September 10, the column bivouacked along Route 82, extending from the modern overpass over US Route 1 south through the center of the village to the hill where the Kennett High School is located, a distance of approximately 1.7 miles.

Union Street or the Unionville Road was established in 1720. The road linked Marlborough Street Road to the north, passed Peter Bell’s Tavern (the Unicorn) in the center of Kennett Borough, and reached Gavin Hamilton’s mill on the Red Clay Creek. Hamilton had purchased the mill from Ellis Lewis in 1776, which is why the mill was still referred to as “Louis Mill” by Hessian officers in 1777.

Damages in Kennett Township are concentrated in an area roughly bounded by Union Street/Unionville Road and McFarlan Road (Figure 30). It was in this area that Howe’s Army gathered on September 10 and went into camp. Damages and depredations claimed by residents in this area were significant, including horses, livestock, wagons, household furnishings, clothing, personal items, and property damage. The mother of Dr. Absalom Baird of Kennett Square, wrote to her son in December 1777 about the destruction caused by the Royal Army. “You are anxious to know how the times are affected,” she

penned. “I think I have not heard of any of them wishing for the British Tartars since they left us—which was Sept 11<sup>th</sup>[.] they came here Sept 9<sup>th</sup> and they ravaged the place as completely as a horde of savages would have done.” She continued in detail:

They took from my landlord James Walter, six horses sixteen head of cattle, and twenty sheep, being his whole stock—plundered his barn of wheat, rye, oats, and hay, and his house of between three and four hundred weight of cheese and all the provisions we had except some wheat (which we boiled and lived upon for some time) and household goods and clothes They took many of my clothes, my tea kettle, china, bottles, sugar pocket-book, money and papers—besides several other things they took your fine linen shirts, your breeches and regimental coat. William Hutchinson was in danger of his life by this last it was at his house, and they tried but could not get it on him so he was saved, but they took the coat!—They used the rest of the neighbourhood no better, and some much worse. Some they stripped— They entirely destroyed all that James Ellis had and Joseph Walter (The house where you went to see the lame girl) they stripped him his wife and the lame girl, cut the drawers and desk open with their hatchets and left it like a waste (Baird 1909:7-8).



Figure 28. View to the south from Union Hill Cemetery. Route 82 (Unionville Road) in center. Cornwallis’ Division was bivouacked along this road on the night of September 10 (CHG).



Figure 29. East Marlborough Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).

On the morning of September 11, the Unionville Road (modern Route 82) was the Avenue of Approach for Lord Cornwallis' flanking column of Hessian and British soldiers (Figure 10, number 1). Sir William Howe's Hessian aide de camp, Friedrich von Muenchhausen, recorded in his journal that "At five o'clock in the morning General Howe marched off to his left, up the Brandywine. Our column consisted of two battalions of English light infantry, two battalions of English grenadiers, two battalions of English Guards, two brigades of English infantry, two squadrons of dragoons, the Hessian jägers and the Hessian grenadiers. Since our column had no baggage, but did have a number of sappers in the van, we moved forward quickly in spite of the great heat" (von Muenchhausen 1974:31). Captain Johann Ewald of the Hessian Field Jäger Corps led this column, and he noted that "...The column on the left, under Lord Cornwallis, which General Howe personally accompanied, began marching to the left toward Jefferis's Ford, where the Brandywine Creek has two branches which are very good for crossing, in order to outflank the fortified position of the enemy [along Brandywine Creek]" (Ewald 1979:81).



Figure 30. Kennett Township, distribution of damages, 1777. Chester County Archives map superimposed on modern aerial (CHG).

Ewald was the point man for the Northern Column's flanking movement and he described the general character of the Brandywine Valley landscape that the Royal Army was moving through. Taking his role as the point guard for the army, Ewald wrote that "I was ordered to march as slowly as possible, and to use all caution in order not to fall into an ambush, as the area was traversed by hills, woodlands, marshes, and the steepest defiles" (Ewald 1979:83). The landscape was a general topic of note for several of the Hessian and British officers, who commented on woods, hills, and unevenness of the ground (Anonymous 1777; Burgoyne 1987:48; Montresor 1881:416).

British and Hessian officers report encountering American forces soon after they began the flanking march. Ewald noted that "...I led the advanced guard of the column under Lord Cornwallis, which consisted of sixty foot jägers, Lieutenant Hagen with fifteen mounted jägers, a company of Highlanders

from the 42nd Regiment under Captain McPherson, and a company of light infantry under Captain Scott. I had hardly marched half an hour when I ran into a warning post of the enemy, five to six hundred men strong, who withdrew from one favorable position to another under constant skirmishing until around noontime (Ewald 1979:83). Ewald used a calculation of 3,300 feet per quarter hour (see Ewald 1979:378, n25). Based on Ewald's estimate, the front of Cornwallis' Division would have advanced no more than 6,600 feet, or about 1.25 miles, before encountering American skirmishers. It is more likely that he travelled even less, since he was ordered to move slowly to avoid ambushes. If Ewald's estimate is correct, skirmishing with the American forces may have begun about where the Unionville Road intersects Street Road.

Two contemporary sources elaborate further on this skirmishing with American forces, but the number of Americans reported was considerably lower than what was reported by Ewald. The Field Jäger Corps reported that: "...about two miles this side of the Brandywine we met an enemy patrol of one hundred men, which retreated into the woods, leaving a few prisoners behind. This force was the one which notified General [George] Washington of our approach and convinced him to change his belief, which up till now, was that our army really intended to cross at Chad's Ford, and to detach the largest part of his army to oppose us..." (Burgoyne 1987:48). A letter from Major Du Buy echoes the Field Jäger statement, writing that after a march of two "English miles" the advanced guard under Captain Ewald "...came across a body of the enemy consisting of about 100 men, who, however, retired speedily..." (Du Buy 1777). Muenchhausen is the only source to note that American mounted troops were encountered on the march, writing that "at noon our vanguard came upon 200 rebel dragoons, who wounded some of our men by their fire, but they soon retreated" (Muenchhausen 1974:31). He is almost certainly referring to Colonel Bland's dragoons.

Route 82 today substantially follows the road trace of its eighteenth-century ancestor. Some road changes have occurred near the intersection of Street Road. In general, the landscape along Route 82 north from Kennett Square is suburban with residences, schools, and businesses present (Figures 31 and 32).

#### **East Doe Run Road** (*Avenue of Approach*)

Cornwallis' Division turned southeast when it reached the modern East Doe Run Road. Doe Run Road was in existence at least by 1774 when it was resurveyed. Cornwallis' Division marched on this road for approximately 2 miles. The road trace today is little changed from its eighteenth-century appearance, and is substantially the bed that was present at the time of the battle (Figures 10, number 2, and Figure 33).



Figure 31. Unionville Road (Route 82) view looking north. This portion of the road is south of the intersection with Street Road (CHG).



Figure 32. Unionville Road (Route 82), view to the north. This portion of the road is immediately north of the intersection with Street Road (CHG).

**Northbrook Road and Red Lion Road** (*Avenue of Approach*)

Cornwallis' Division turned nearly due north when it reached today's Northbrook Road. Northbrook Road and its northern extension, Red Lion Road, were laid out in 1728 as the "Road to the Great Valley." The march route followed by Cornwallis' Division moved onto Red Lion Road beyond the modern Lenape-Unionville Road (Northbrook and Red Lion intersect at this point, and the road name changes). The Division followed the Northbrook Road-Red Lion roads northward for 2.45 miles, to the modern intersection with Wawaset Road (Route 842) (Figures 10, number 3, and Figure and 34).

Northbrook Road and Red Lion Road continue to follow their eighteenth-century roadbeds. The setting and landscape surrounding both Red Lion Road and Northbrook Road are evocative of the rural character of the region. Both roads are deeply incised in some locations and have no shoulders.

**Corrine Road Intersection** (*Field of Fire*)

Corrine Road, laid out in 1742, is hypothesized to be the location where a 70-man party from Lt. Colonel James Ross' light infantry detachment engaged the Northern Column's rear (Figure 10, number 4). Corrine Road is located about 5,000 feet north from Lenape-Unionville Road.

American Forces arrayed on the west side of the Brandywine Creek consisted of detachments from Maxwell's Light Infantry Corps comprising Continental soldiers and Pennsylvania militia, as well as patrols of Continental light dragoons under the command of Colonel Theodorick Bland (cf., DeHaven 1832). Maxwell's light troops were intended to serve as a reconnaissance force to slow enemy movements and provide information about enemy formations and maneuvers. Troops in Maxwell's Light Corps were drawn from Continental regiments and battalions (a term used interchangeably during the War) within the army, including regiments from Pennsylvania, New Jersey, Virginia, and North Carolina. In addition to the Continentals, the American Light Infantry Corps included a large proportion of riflemen, many of whom were volunteers from the county militias of Lancaster, York, North Hampton, and Cumberland in Pennsylvania. These Pennsylvania militia company volunteers were attached to the Light Corps specifically because they were armed with rifles. To further supplement the Light Corps, General Washington also ordered a volunteer battalion of Chester County militia to join Maxwell on September 1 (Catts 2004). This unit, the 8th Battalion Chester County Militia commanded by Patterson Bell, was ordered to join with Maxwell's light troops on September 1, but it is possible that Bell's men did not actually organize until 6 September (Smith 1976:9).

About a week earlier, on September 2, Washington had provided guidance to Maxwell regarding the role of his light corps, and this advice can be applied to the method of patrolling used by the light troops on the morning of September 11. Washington advised Maxwell to "keep small parties upon every Road that you may be sure of the one they take."

American formations were attempting to cover the various avenues of approach to the battle. It is likely that small groups of light troops and dragoons were deployed along the principal west-to-east roads leading from the general Kennett Square vicinity towards the Brandywine Creek, such as the modern US Route 1 corridor and the roughly parallel Street Road (PA Route 926). Patrols were also stationed along the Road to the Great Valley that crossed at Trimble's Ford and led to Martin's Tavern.

Ross' light infantry detachment, like those of captains Porterfield, Scott, Chambers, and Armstrong, Lt. Colonel Heth, and Major Simms described above, was likely positioned south of the west branch of Brandywine Creek, patrolling roads, as were other light detachments. It is known however, that at 11am, Ross – identifying his position as on the Great Valley Road and listing his unit affiliation as D.P.R, or Dunlap's Partisan Regiment, elements of which were attached to Maxwell's Light Corps – penned a message to Washington:



Figure 33. East Doe Run Road, view to the east (CHG).



Figure 34. Northbrook Road, view to the north (CHG).

Sept. 11 '77 Great Valley Road

Eleven oclock AM –

Dear General,

A large body of the enemy—from every account 5000, with 16 or 18 field pieces, marched along this road just now. this Road leads to Taylor's & Jeffries ferries on the Brandywine, and to the Great Valley at the Sign of the Ship [tavern] on the Lancaster Road to Philada. There is also a road from Brandywine to Chester by Dilworth's Tavern. We are close in their rear with about 70 Men. Capt. Simpson lay in ambush with 20 men, and gave them three rounds within a small distance, in which two of his men wase wounded, one mortally. I believe Genl. Howe is with this party, as Joseph Galloway is here Known by the inhabitants, with many of whom he spoke, and told them that Genl Howe was with him. Yours, James Ross Lieut. Col. D. P. Regt.

Ross's note can be read as a warning to Washington that the road Cornwallis' Northern Column was following – identified as the Great Valley Road (also termed "Road to the Great Valley" per Chester County Archives) – presented multiple avenues of approach to the American position. He says that from this road Cornwallis' Division can reach Jefferis' Ford (which they did) or Taylor's Ford, go even further north into the Great Valley and strike the Lancaster Road at the Sign of the Ship Tavern, or head southeast towards Dilworth village; this last-mentioned route is the route that the Northern Column ultimately used. The rear of the Northern Column came under fire from a portion of Ross' command, but was not seriously impeded. Ross' detachment seems to have hung on to the rear of the Crown Forces column until after the battle, when he is reported in East Bradford Township at night fall (McGuire 2006:264).

#### **High ground at Red Lion and Street Road intersection** (*Observation*)

An elevation of 462 feet asl is located where the modern Red Lion Road and Street Road (Route 926) intersect (Figures 10, number 6, and Figures 35 and 36). This high ground is a prominent elevation and observation point. From this location, American observers could survey the lands to the west and south along the possible principal approach route to the Brandywine River to the east. American troops posted on this rise would have been able to observe enemy movements along Street Road and along East Doe Run Road.

It is hypothesized herein that elements of Maxwell's Light Infantry Corps were posted on this high ground. The location is about 1 mile north of Welch's Tavern, another of the advanced posts for American light infantry. The movement of Cornwallis' flanking column was known and contested by skirmishers soon after the column began its march. Cornwallis' march along East Doe Run Road would have led directly to the high ground near the Red Lion Road/Street Road intersection. The northern turn that Cornwallis' column took onto Northbrook Road-Red Lion Road would certainly have raised concerns on the part of the Americans, and it is likely that Colonel Ross' message back to General Washington was due to the change in course of the Royal Army column onto the "Road to the Great Valley" that led to Trimble's Ford.



Figure 35. View to the north towards the high ground at the intersection of Red Lion Road and Street Road. This elevation was an excellent observation platform for American forces to observe the flanking movement of Cornwallis' Division (CHG).



Figure 36. View to the west from the high ground near Red Lion Tavern, looking along Street Road. Northbrook Road intersects Street Road from the right in the middle distance (CHG).

## 4.0 SUMMARY, INTERPRETATIONS, AND RECOMMENDATIONS

This report provides detailed military terrain analyses for two Brandywine Battlefield Strategic Landscapes representing the Royal Army's movements on September 9 and 10, their Encampment on September 10/11 and the movement of the Two Columns on the morning of September 11. The study builds upon earlier County studies and current work, particularly work focused on the settlement pattern and the road network. Extensive historical and topographical research contributes to the analyses and interpretations.

### 4.1 INTERPRETATIONS

The analyses focused on a short period of time, the afternoon of September 9 through the morning hours of September 11, in all approximately 36 hours of time. Previous studies of the battle, while addressing the movements of the Crown Forces to reach Kennett Square on September 9 and 10, and as they approach Brandywine, have not specifically focused on the actual movements of the formations. The present study has focused on those movements and has identified the general routes, confirmed sources or locations, refined and/or discovered new routes.

This military terrain analysis has provided some new and/or revised interpretations for the battle. Important among these is a better understanding of the routes used by Howe's Army on September 9 and 10, the extent and layout of the Crown Forces camp at Kennett Square, the refinement of the Northern Column's route on the morning of September 11, and the movement of the Crown Forces Baggage Column on September 11. Specifically, some of the new insights and/or revised interpretations are:

- Historical documentary sources that have not been previously used in interpreting the battle and its movements are significant new sources, particularly the von Knyphausen report of October 17, 1777 and its associated letters and reports.
- Using historical sources and contemporary mapping, and building on the 1777 road network map prepared by Chester County Archives, conclude that the movement through on September 9/10 in the Red Clay Creek Valley was on "undefined, indefinite" roads – ie., farm lanes. The importance of the Red Clay Valley in Howe's and Washington's operations in the days leading to the Battle of Brandywine is significant new information.
- Confirmed that von Knyphausen's Division marched to Avondale, but a detachment, possibly the 3rd and 4th British brigades, used the Newark/Limestone Road on September 9/10.
- Identified a possible skirmish site at New Garden Meetinghouse on September 10.
- Defined and identified the overnight camp or bivouac of Cornwallis' and von Knyphausen's Divisions in Kennett Square. The study has determined that the camp was in two parallel lines, running north-south, focused on Route 82 and McFarlan Road. "Hessian Hill," while occupied by Crown Forces, may be something of a misnomer, since both British and Hessian forces bivouacked in this general location on the night of September 10/11.
- Revised the route of Cornwallis' Division (Northern Column) to the Unionville Road to East Doe Run Road movement. This is an alteration from the earlier 2010 and 2013 plans, which depicted the march route to continue on the Unionville Road to the modern-day Route 842, before it turned east.

- American pension sources have been reviewed to supplement already existing American sources. The pensions and other period documents provide more detail regarding the movement of American forces on the west side of the Brandywine in the period September 10-11. Maxwell's light infantry, local militia units, and dragoon detachments were quite active west of the Brandywine in the days before the battle, hovering on the flanks of Howe's Army.
- Identified a possible American observation point near the intersection of Red Lion Road and Street Road.
- Identified the route of the Baggage Column along Hillendale Road, based on damage claims.

## 4.2 ARCHEOLOGICAL ASSESSMENT

Assessment of archeological potential for resources associated with the battle is also presented below. Since no formal archeological survey was conducted as part of this study, this assessment is intended to review potential for battle-related artifacts. Prior to the development of KOCOA analysis and the growth of the field of Conflict Archeology, the 1989 Brandywine Battlefield Preservation Plan (Webster et al. 1989:43-58) devoted a chapter to the archeological potential of the battlefield. The authors identified several categories of potential archeological resources that could be the result of a military action; arms and ordnance; personal weapons and possessions; headquarters, rear echelon support, and camp sites; medical facilities; burials, and; prehistoric and other historic resources (Webster et al. 1989:48-50). The archeological potentials were focused principally on the portable material culture of soldiers – knapsacks, weaponry, uniforms, accoutrements, etc. – and were less concerned with the actual lead shot, iron balls, and general detritus of military action. Their conclusion was that little would remain of the portable material culture. More recent studies of battlefields using metal detection as a method of survey have revealed that considerable amounts of battlefield debris, such as lead shot, buckles, buttons, etc., do survive and can be useful in determining the course of the battle.

Fields of conflict are temporary, albeit seminal, events, superimposed on preexisting cultural landscapes. This landscape witnessed a variety of cultural actions - transportation systems, agricultural development, settlement patterns, population change – that exerted influence on the land prior to the engagement and that continue to exert influences on the field after the battle. Land use such as pasture and field patterns, farmsteads and husbandry buildings change as they give way to sub-divisions; roads are altered, vacated, rerouted or widened, woodlands are reduced or removed from the landscape. Despite these landscape alterations, the archeological evidence of conflict is often quite resilient and can be discovered through archeological investigation.

For many years the prevailing view of battlefields and archeological potential was dominated by the opinion put forward by Ivor Noël Hume that battle sites could offer little beyond metal artifacts and burials, certainly nothing archeologically or historically significant (Noël Hume 1968:188), and it was this narrow view of conflict archeology that influenced the archeological interpretations and recommendations of the Brandywine Battlefield Cultural Resources Management Study (Webster et al. 1989). In the last twenty years this view has changed dramatically, beginning with the work at the Little Big Horn National Park in the mid-1980s and now occurring with increasing regularity at Revolutionary War sites (cf. Babits 1998; Catts and Balicki 2007; Catts et al. 2014; Connor and Scott 1998; Espenshade et al. 2002; Fox 1993; Geier and Winter 1994; Geier and Potter 2000; Mancl et al. 2013; Martin and Veit 2005; Orr 1994; Scott et al. 1989; Scott and McFeaters 2011; Selig et al. 2013; Sivilich 2009).

### 4.2.1 *Two Columns Movement*

The potential for archeological evidence of military activities with the Two Columns Strategic Landscape is generally low for the overall march and movement of the columns. The principal military action that occurred on September 11 within the Two Columns Landscape was the movement of nearly 15,000 men,

artillery, and horses through the Chester County countryside. The archeological character of the Northern Column is different than a formal battle or combat situation. No temporary or short-term encampments are present along the march route, and no major combat occurred during the march. Such a movement, while extremely impressive to witness, was likely ephemeral when considering the physical evidence (*ie.*, military artifacts) that it would leave as an archeological "footprint."

However, the location of the skirmishing that occurred at New Garden Friends Meetinghouse on September 10, and the four locations along von Knyphausen's Eastern Column approach to the Brandywine on September 11 retain moderate potential for archeology. These fire-fights were quick musket and rifle discharges followed by withdrawal by the Americans. First-person accounts indicate that skirmishing began soon after both Cornwallis' and von Knyphausen's columns started their respective movements. These actions would have generated primarily dropped and fired lead balls (musket and rifle balls) and may exhibit an archeological signature in the location where the skirmishing was most intense – Welch's Tavern, the Old Kennett Meetinghouse, and the elevation east of the Old Kennett Meetinghouse. The potential for skirmish-related artifacts along the route of the Northern Column is likely lower than for the Eastern Column. On a comparative basis with the main combat that occurred later in the day at Birmingham Meeting, Sandy Hollow, Chadds Ford, and the Painter-Craig Farm, the number and density of military-related artifacts would be extremely low, but the potential exists.

#### 4.2.2. Kennett Square Encampment September 10

The pre-battle Crown Forces encampment in Kennett Township was a temporary, short-term overnight camp. The camp was also a tactical position with advanced pickets and avenues of approach, and influenced by the limitations imposed by the local terrain (*cf.*, slope, woods, water supply).

On the night of September 9/10, General von Knyphausen's column moved from its position in Mill Creek Hundred, passed the New Garden Meetinghouse, to a temporary location immediately west of Kennett Square Borough, probably in the vicinity of modern Cedar Spring Road. The halt at this location was for several hours, and was necessary for Cornwallis' Division to move through Kennett Borough on the Unionville Road (modern Route 82). After waiting from about 10 AM to noon for the arrival of Cornwallis' regiments, von Knyphausen's Division moved through Kennett Square Borough on the Old Baltimore Pike to the high ground east of the village.

Contemporary descriptions of the camp note that the overnight encampment was in two lines, "one behind the other" (Ewald 1979:81). One regimental scribe called the lines "uneven" suggesting that the regimental camp areas conformed to the local topography and conditions (Erbprinz 1777).

An important clue as to the character of the two division camps is provided by Major Baurmeister, who commented that "...the army pitched a *regular camp* in two lines at Kennett Square" (Baurmeister 1935:403 – emphasis added). Baurmeister's observation indicates that, while the camp lines were uneven, they followed standard military practice for overnight camps. As such, archeological distinctions may be possible to make regarding the camp layouts (known as 'castramentation') and the level of military standardization (Whitehorne 2006:29).

Short-term temporary camps occupied for several days are distinguishable by their comparatively more robust archeological signature, since large numbers of soldiers and camp occupants leave physical evidence of their passing in the form of lost or discarded ammunition, uniform parts, and food remains, and that signature can be present for years. For example, the American camp occupied by Washington's Army for eight days (18-26 September 1777) in New Hanover Township, Montgomery County, was still marked by physical remains nearly six decades after the event. In a reminiscence of the "camp at Pottsgrove" written at the beginning of the twentieth century, the landowner recalled that in his childhood

(circa 1820s) the area occupied by the American camp was characterized by “...enough leaden musket balls and grape and canister balls and pieces of shell to fill an old straw bread basket full” and that the butchering area for livestock to supply the troops was still readily apparent (Bertolet 1903:3).

Researchers conducting archeological surveys of the series of short-term camps occupied by the French Army as it marched through Connecticut in 1781-82 developed an archeological “signature” for identifying French encampments (Harper et al. 1999:135-136, 145-153). Based on field investigations and historical data, the researchers concluded that short-term camps – in this case usually about four days in duration – would contain artifacts associated with uniforms (buttons, buckles), arms and ammunition (including sword and scabbard parts), personal items (coins, knives, lead seals, eating utensils, ceramics and glass), iron animal shoes, a variety of iron hardware, and artillery parts. As the authors noted, “short-term camps had minimal impact on the landscape and their remains are ephemeral” (Harper et al.:1999:153). Given the nature of these camps, artifacts marking these places are likely to exhibit a wide distribution and a low density and to be found “quite shallow [in the ground], having been simply dropped on the ground surface” (Harper et al. 1999:136).

These two examples are for camps that were occupied for several days, unlike the overnight camp at Kennett Square. Though temporary and transient, overnight bivouacs and short-term camps are often distinguished by the presence of lost ammunition or discarded items, such as reported from a post-battle Crown Forces camp near Monmouth, New Jersey, at the Neuberger Site (Sivilich and Philips 1998). At Kennett Square, there were no tents or shelters, unless small temporary wood “bowers” were built by the men. The army’s heavy baggage had been sent back to the Royal Navy at the Head of Elk when Howe began his march into Pennsylvania several days earlier. Fires were not allowed the night before the battle, since the light of the fires would betray the position of the army. Food consumed in the camps would have been previously prepared and carried with the troops.

Taking these conditions into consideration, the archeological potential for the overnight camp at Kennett Square is likely to be low to moderate. Physical evidence, such as regimental and/or plain buttons of various sizes, metal fixtures for polearms and flags, unfired lead shot, sword and scabbard parts, cannon balls, horse furniture (saddle or bridle parts, horseshoes), wagon furniture, and personal artifacts may be present, but the short period of time that the camp was occupied likely limits the potential. With the exception of obviously military artifacts (marked regimental buttons, accoutrement plates, etc.), it will be difficult to distinguish other types of artifacts dating from the period of the camp from local civilian artifacts of the same period such as ceramics and glass.

The best evidence for where the overnight encampment was situated comes from the depredation claims and other damage claims reported in Kennett Township. The overnight camp did have a significant impact on the immediate physical surrounds in the form of damaged real estate and personal property. The locations of the plundered properties clearly delineate the size of the encampment. Of the thirty-three landowners in Kennett Township residing west of the Red Clay Creek, twenty-one (nearly 64 percent) reported plundering by the Royal Army through Depredation Claims, Plunder Claims, and Sufferings (Figure 28). Reported damages are especially heavy among the farms located along the McFarlan Road Corridor, extending south from the Great Nottingham Road. This corridor likely marks the overnight position of General von Knyphausen’s Division and extends as far south as the Gavin Hamilton Mill. Other property damage is centered along the Route 82 Corridor, and likely relates to the overnight camp of Cornwallis’ Division.

#### *4.2.3 Burials*

Casualties at the Battle of Brandywine have been variously reported but are generally accepted to have been heavy. The 1989 cultural resources management study estimates approximately 2,000 men as casualties, with no more than 350 of those potential burials accounted for (Webster et al. 1989:50). Burial

parties were employed following the battle for several days. Royal Army burial details and the local Quaker residents likely gathered dead bodies, excavated pits or trenches, and buried these in groups (McGuire 2006:268).

Given the extensive amount of land encompassed by the Brandywine battlefield, burial sites are found in a number of locations on the battlefield. Battlefield burials are known to be present at Birmingham Meeting House, the Old Kennett Meetinghouse, and "at a few smaller grave sites scattered in or near the battlefield" (Webster et al. 1989:50) A small commemorative stone erected to the memory of the Hessian soldiers is found in the burial ground of the Old Kennett Meetinghouse (Figure 35). The discovery of human remains has been reported at seemingly random locations around the battlefield. In 1893, the *Wilmington New Journal* published a story about recognition of the 116<sup>th</sup> anniversary of the battle, and included a discussion of a skeleton found in Eli Harvey's cornfield on the battlefield. The remains had been found a dozen years earlier (circa 1881) and were determined to be those of an American soldier, "because of a button found close to it" (Anonymous 1893). A few years later, in May 1900, *The Times* of Philadelphia reported that a single burial was found near the Sconnelltown schoolhouse by Brinckley Haley while working to "excavate a driveway on the premises of Mrs. Freeman, of East Bradford Township." The remains were assumed to be those of a British soldier, and the burial included an "old Revolutionary musket" (Anonymous 1900). The artifacts, consisting of a portion of the gun barrel and a gun flint, were kept by Mr. Haley. A supposed burial trench nearly 500 feet long, situated in an alfalfa field near Sandy Hollow, was reported in the *Wilmington Morning News* in 1924. The trench was reputedly the grave for "hundreds of Revolutionary soldiers who fell in the fight (Anonymous 1924; Long 1924).



Figure 37. Commemorative Stone, "In Memory of Hessian Soldiers," Old Kennett Meetinghouse Burial Ground (CHG).

Other battlefield burials have reputedly been found, but not verified, on one of the properties near the intersection of Oakland Road and Harvey Road (Webster et al. 1989). The reported discovery on this property may coincide with the 1893 article noted above.

#### **4.3 RECOMMENDATIONS FOR FUTURE HISTORICAL AND ARCHEOLOGICAL RESEARCH**

This document has led to a number of further research questions. The following provides research related recommendations; some of these will be addressed in the next phase of battlefield planning, the Phase 2 ABPP funded project. Who or how each recommendations may be addressed is identified in ( ) as follows.

1. The route followed by Cornwallis' Division as it moved into the Red Clay Valley needs further definition, if possible. It is now known that the march on the night of September 9/10 was on "bye" roads, or undefined paths. How the Division reached those roads from its bivouac along the Limestone Road in Mill Creek Hundred, New Castle County, Delaware should be researched. (This topic will be part of the Phase 2a Project since the strategic importance of the Red Clay Valley in the days leading to the battle has not been previously recognized.)
2. The military terrain analysis identified a possible skirmish at or near the New Garden Friends Meetinghouse on September 10. The identification is based on the account in a militiaman's pension declaration. Further research into this skirmish could be undertaken and perhaps archeological survey to determine the actual location of the event. (Battlefield Municipalities, working with Military historian. The Phase 2a project may further address this topic)
3. The movements of American forces on the west side of the Brandywine Creek could be further investigated. It is clear that small parties of American scouts were in contact with Howe's army, and additional information regarding these patrols and their activities may be available in pensions, or previously unexamined letters and correspondence. (The Phase 2a project will address this topic, and will examine the American encampment at Chadds Ford and their troop movements west of Brandywine Creek.)
4. The role and locations of the American Army, including militia formations, as they guarded the Brandywine fords south of Chadds Ford. (Phase 2a project)
5. Possible archeological survey at skirmish locations along Route 1 (The Great Nottingham Road), to determine if any physical evidence of these firefights is still extant. Of these skirmish locations, the fourth location may have the most potential for archeological remains. (Route 1 improvement projects, Property Owners, and/or Battlefield Municipalities, working with Military historian)
6. The concern for possible battlefield burials is always present, particularly in the skirmish locations. Any ground disturbing activities at these locations should be carefully monitored. (Battlefield Municipalities working with Military historian)

#### **4.4 RECOMMENDATIONS FOR PLANNING**

The KOCOA analysis presented in this document is a valuable tool for planning and interpretation purposes, as it identifies extant features that still define the battle/battlefield. Protecting those battle-related resources is paramount among efforts to preserve and/or interpret the battlefield, examine the battle's role in the American Revolution, and understand the battle as a foundational element of Chester County's legacy. Future actions affecting lands within the Battlefield Boundary of Brandywine Battlefield should be made with consideration and focus on protection of KOCOA identified features and battle-era resources, their associated context, and historic landscapes and open spaces, including those within a half-

mile troop movement and troop action buffer as a first priority. This document recommends expanding on the planning that has occurred to date, as follows with parties that may be involved identified in ( ).

1. Update 2013 Plan mapping to reflect the findings herein. This includes the probable location of the skirmishes along the Great Nottingham Road and the 1728 Road to the Great Valley, the formation points of both columns, the importance of the high ground centered around the (former) Red Lion Tavern, and the movement of the Baggage Column along Hillendale/Fairville Road Corridors. (Chester County Planning Commission (CCPC))
2. Update 2010 KOCOA analysis and other battle mapping to reflect the findings herein. (CCPC)
3. Provide updated information to the following stakeholders: (CCPC, Battlefield Historical Commissions, Brandywine Battlefield Task Force (BBTF))
  - Battlefield communities, particularly those where the Landscapes are located. This information can be used in municipal histories, for historical commission resources identification and documentation purposes, and for educational and outreach efforts (e.g. Chester County Towns Tours & Village Walks).
  - BBTF members, particularly its Steering Committee members who guide and lead BBTF efforts.
  - Local heritage sites (e.g. Chester County Historical Society, and Brandywine Battlefield Park), so they can incorporate the information into their historic interpretation, education, and outreach.
  - Environmental stewardship organizations (e.g., Brandywine Red Clay Alliance), so they can incorporate the information into their education, stewardship, and outreach efforts.
  - Land conservation groups (e.g., Brandywine Conservancy and Natural Lands) and Chester County Department of Open Space Preservation (CCDOSPP) for use in coordinating and bolstering land conservation and open space preservation to enhance quality of life, and possible public access and interpretation of historic landscapes.

The updated information will allow these organizations to more accurately understand the geography and significance of the battlefield and battle actions, enabling them to better protect, interpret, and convey information to stakeholders and the public.

#### **4.5 RECOMMENDATIONS FOR HISTORICAL & ARCHEOLOGICAL RESOURCE PROTECTION**

This report recommends expanding on the successful historical resource protection that has occurred to date. All municipalities in the Landscapes promote historical resources protection policy, and the following recommendations build upon this. Parties that may be involved are identified in ( ).

1. Develop a strategy to undertake a Thematic/Multiple Property National Register eligibility nomination for the battlefield, which could include archeological resources, historical resources, historic districts, roads, fords and other battle-related built features. The strategy should outline funding and hiring an architectural historian to assist. (BBTF, Battlefield Historical Commissions, PHMC, Architectural Historian, with planning assistance by CCPC)
2. Research extant battlefield historic resources from the 2013 Plan and update municipal historic resource inventories to reflect these contributing battlefield resources. (Battlefield Historical Commissions)

3. Research 18th-century families in the Landscapes. Focus on families named in this plan to understand the dynamics between them and their motivations to support the Revolutionary War effort or live by the Quaker Testimony of Peace. (Battlefield Historical Commissions working with Military historian)
4. Determine how to integrate newly attributed and/or associated resources into their respective historic districts. This could entail including them in the municipal historic resources inventory as such and designating them as locally significant resources. This could also include updating National Register documentation, whether or not the updated information is officially submitted to the National Register. (Battlefield Historical Commissions, with planning assistance by CCPC)
5. Continue to refine 1777 property and road network mapping. (CC Archives with volunteer researchers)
6. Advance developing battlefield design guidelines. Such an effort could provide guidance for redevelopment, rehabilitation, reuse, infill, or new construction that considers archeological resources and preserves the character and scenic values of the Landscapes and battlefield overall. (Battlefield Municipalities, BBTF)
7. Consider applying to become a Certified Local Government (CLG). The CLG program provides technical assistance and small grants to municipalities for historic resource projects. (Battlefield Municipalities)
8. Include specific battlefield and Landscape references and protection policy during the next update to municipal Comprehensive Plans. (Battlefield Municipalities)
9. Encourage adoption of consistent or at least compatible definitions for historic resources in ordinances. This can be promoted through the municipal continued participation in BBTF and its historic resources subcommittee, and would require regulatory amendments by municipalities. (Battlefield Municipalities)
10. Consider adopting a historic battlefield protection zoning overlay. This overlay could supplement existing municipal historic resources provisions and would address protection of historic resources in the Landscapes. Consider possible land conservation options for battlefield lands via this overlay as well. Thornbury and Pennsbury Townships, Chester County have a battlefield zoning overlay, which should be consulted as a starting point. (Battlefield Municipalities)
11. Include the battlefield as a key feature that is to be addressed in land development design. (CCPC, Battlefield Municipalities)

#### **4.6 RECOMMENDATIONS FOR LAND CONSERVATION**

This report recommends expanding on the land conservation efforts that have occurred via linking existing protected lands to form an interconnected network. Many battlefield communities promote land conservation in their municipal policy. These recommendations focus on historic landscape conservation intertwined with historic resources protection, with parties that may be involved identified in ( ).

1. Work to protect battlefield lands within the Landscapes, and particularly lands within the half-mile flanking column buffer and those containing battle-era archeological and historical resources. Tracts outlying the boundaries of the Landscapes provide a transition area between the Landscapes and possible future development and intrusion. (BBTF, Property Owners, Land Trusts, Battlefield Municipalities, CCDOSP, Civil War Trust)

2. Protect smaller parcels to link larger conservation tracts. In the coming years, many larger open lands in these Landscapes may either be protected or developed, leaving smaller lots available for conservation. Such lots are already beginning to become more of a conservation priority in villages and other more established settings. While the available acreage may be relatively minimal, the value of conservation can be significant due to extant historic resources, battlefield interpretation opportunities, and/or the ability to link existing protected lands. (Property Owners, Land Trusts, Battlefield Municipalities, CCDOSP, Civil War Trust)
3. Work to protect lands as part of a larger open space network that extends throughout the battlefield. There are protected and unprotected lands throughout the battlefield without a specific battle-related story, but these lands serve to form a larger network to link key areas of the battlefield and display a representation of the battle-era landscape feel/setting. Southern battlefield communities with significant success and experience in land conservation would benefit this larger battlefield-wide effort. (Property Owners, Land Trusts, Battlefield Municipalities, CCDOSP, Civil War Trust)
4. Protect and promote agriculture as an industry and historic land use in the battlefield. (CCPC, CCADC, Landowners, Land Trusts, Battlefield Municipalities, CCDOSP, Civil War Trust)
5. Coordinate with Land Trusts and other stakeholders to investigate options for establishing programs that protect natural features as key battlefield elements. Programs can be explored that enhance, restore, and maintain the battlefield's natural features and take into account the importance of these features in battle strategy and its outcome. For example, Brandywine Creek is a critical natural feature as an obstacle for battle troop maneuvering as well as key terrain as part of the British flank and Washington's defense. (Land Trusts, Battlefield Municipalities, Property Owners, CCDOSP, Civil War Trust, BBTF, with planning assistance by CCPC)
6. Publicize and celebrate land conservation efforts to publicly display the inherent relation between battlefield protection and land conservation. (BBTF, Heritage Sites).

#### **4.7 RECOMMENDATIONS FOR HERITAGE TOURISM**

This report recommends building on successful heritage tourism and interpretation efforts in the region. This is a tool that can provide outreach, develop a stewardship ethic, raise awareness of the role of the battle in the nation's founding, provide key economic development in appropriate public areas. BBTF's Historic Resources and Interpretation Subcommittee meets several times annually and includes members from municipal historical commissions and local historical sites within the battlefield. The key to successful implementation of interpretation is for the BBTF to identify a southern battlefield gateway Heritage Interpretation Subcommittee consisting of Historical Commissions, Historic Kennett Square, residents, and merchants. The following are ideas for such a Subcommittee to consider in developing a cohesive interpretation program for a southern Battlefield Heritage Center in Kennett Square. Parties that may be involved are identified in ( ).

1. Create a southern battlefield gateway Heritage Center in/near Kennett Square Borough. (BBTF, CCPC, Heritage Interpretation Subcommittee)
2. Identify Interpretive Sites and undertake heritage interpretation with emphasis on interpretation from public corridors and places. (BBTF, CCPC, Heritage Interpretation Subcommittee)
3. Build the historic themes for the Heritage Center into public events in the Kennett Square area. (Heritage Interpretation Subcommittee, Heritage Center, Historic Kennett Square)

4. Build Heritage Center themes into the menus of local restaurants. (Heritage Interpretation Subcommittee, Heritage Center, Historic Kennett Square)
5. Create thematic brochures and information for a Heritage Center webpage and to be available at the Heritage Center and Interpretive Sites. This could include developing a historic walking, bicycling, and/or driving tour of the Landscapes that focuses on the battlefield Colonial landscape. (Heritage Interpretation Subcommittee, Heritage Center, Historic Kennett Square)
6. Work with Longwood Gardens and other major sites to include on-site battle interpretation. (BBTF, CCPC, Heritage Interpretation Subcommittee, Historic Kennett Square)
7. Publicize and celebrate battlefield history, the role of the battle in the founding of the nation, and other battlefield efforts at the Heritage Center and Interpretive Sites. (BBTF, CCPC, Heritage Interpretation Subcommittee, Heritage Center, Interpretive Sites, Historic Kennett Square)

---

## 5.0 REFERENCES CITED

**Note:** The names of the regiments under General von Knyphausen are given as they appear on the cover of the journals in the Murhard Library in Kassel, which is not always identical with their name during the Philadelphia Campaign. Some of the journals are paginated by folio r and/or v, others by page numbers.

Unless otherwise indicated all translations are by Robert Selig.

Alt Lossberg

- 1777 *Tagebuch des Füsilierregiments von Alt-Lossberg*  
Shelf mark: 4° Ms. Hass. 169, Murhard Library, Kassel, Germany.

André, John

- 1904 *Andre's Journal: An Authentic Record of the Movement and Engagements of the British Army in America from June 1777 to November 1778 as recorded from day to day by Major John Andre*. Volume 1: 1777. Henry Cabot Lodge, editor. Bibliophile Society of Boston.

Andrus, Patrick

- 2004 Identifying, Evaluating and Registering America's Historic Battlefields. Paper presented at the American Battlefield Protection Program 7<sup>th</sup> National Conference on Battlefield Preservation, Nashville, Tennessee.
- 1999 *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*. National Register Bulletin 40, Washington, D.C.

Anonymous

- 1777 British Journal, Officer B. Manuscript 409, Sol Feinstone Collection, David Library of the American Revolution.
- 1893 Brandywine Day – Celebration of the 116<sup>th</sup> Anniversary of the Battle of Brandywine. *The News Journal* (Wilmington, Delaware), Tuesday, September 12.
- 1900 Found the Bones of Brandywine Victim – Supposed to be those of a British Soldier who died on the Battlefield. *The Times* (Philadelphia), Thursday, May 10.
- 1924 Death Trench is Neglected – Move Underway to Dedicate Brandywine Battlefield – Flags Mark Spot in Field of Oats. *The Evening Journal* (Wilmington, Delaware), Friday, June 13.

Babits, Lawrence E.

- 1998 *A Devil of A Whipping: The Battle of Cowpens*. University of North Carolina Press, Chapel Hill, North Carolina.

Baird, Absalom

- 1909 *Copies of Authentic Letters and Papers Throwing Some Light on the History of Doctor Absalom Baird, of the Army of the Revolution*. Reed & Witting Press, Pittsburgh.

- 
- Ball, Diane E.  
1976 Dynamics of Population and Wealth in Eighteenth Century Chester County, Pennsylvania *Journal of Interdisciplinary History* 6 (4): 621-644.
- Ball, Diane E. and Gary M. Walton  
1976 Agricultural Productivity Change in Eighteenth Century Pennsylvania. *Journal of Economic History* 36 (1): 102-117.
- Baurmeister, Carl  
1935 Letters of Major Baurmeister During the Philadelphia Campaign, 1777-1778. Bernard A. Uhendorf and Edna Vosper, editors. *Pennsylvania Magazine of History and Biography* 59(4): 392-419.
- Bausman, R.O., and John A. Munroe  
1946 James Tilton's Notes on the Agriculture of Delaware in 1788. *Agricultural History* 20: 176-187.
- Beggs, Alexander  
1832 Pension Application S32,114. M804 Revolutionary War Pension and Bounty Land Warrant Application Files, Record Group 15. National Archives and Records Administration, Washington, D.C.
- Bertolet, Benjamin  
1903 *Camp Pottsgrove, September 18<sup>th</sup> to 26<sup>th</sup>, 1777: General Washington with his Continental Army at Fagleyville, New Hanover Township, Montgomery County, Pennsylvania*. Philadelphia.
- Bischhausen  
1777 *Tagebuch des Grenadierregiments von Bischhausen* (Rall at departure in 1776)  
Shelf mark: 4° Ms. Hass. 168, Murhard Library, Kassel, Germany.
- Black, Jeremy  
1998 *War for America: The Fight for Independence 1775-1783*. Wrens Park Publishing, WBC Limited, Bridgend, UK.
- Blaskowitz, Charles  
1777 *Progress of the Royal Army from their Landing at Elk Ferry to Philadelphia 1777, Under the Command of his Excellency Sir William Howe, Knight of the Most Honourable Order of the Bath, Commander-in-Chief, &c., &c., &c. Surveyed and drawn under the direction of Sir William Erskine, &c., &c., &c., by Charles Blaskowitz, Captain of the Corps of Engineers*. Privately owned.
- Brinton, Howard H.  
1962 Friends of the Brandywine Valley. *Quaker History* 51 (2):67-86.
- Bueltzingsloewen, Carl Wilhelm von  
2013 Henry J. Retzer, "My Journal of the Mirbach Regiment from the day of my Departure in 1776 to the end of 1777, by 2<sup>nd</sup> Lt. Carl Wilhelm von Bueltzingsloewen." *Journal of the Johannes Schwalm Association*, 16: 69-73.

- Burne, Alfred H.  
2005 *The Battlefields of England*. (reprint of 1950 edition) Pen and Sword Books Limited, Barnsely, UK.
- Catts, Wade P.  
Forthcoming "Foot Jäger Forward!" Johann Ewald, Petit Guerre, and the Archaeology of the Battle of Cooch's Bridge. In *The Archaeology of Asymmetric Warfare*, Steven D. Smith and Clarence R. Geier, editors. The University of Alabama Press, Tuscaloosa.
- Catts, Wade P. and Joseph F. Balicki  
2007 "Make Sure You Aim, For One Shot Well-Pointed is Worth a Dozen Thrown Away: Archeological Evidence of a Musketry Range at Valley Forge National Historical Park, Pennsylvania, USA. Paper Presented at the Council for Northeast Historical Archeology Annual Meeting, Buffalo, New York.
- Catts, Wade P., William J. Chadwick, and Elisabeth A. LaVigne  
2016a *Historical, Archeological, Geophysical, and Geomorphic Assessment of Four Strategic Battlefield Landscapes, Brandywine Battlefield, Chester County, Pennsylvania*. American Battlefield Protection Program Grant GA-2287-13-004. Prepared for the Chester County Planning Commisison. Commonwealth Heritage Group, West Chester, Pennsylvania.
- Catts, Wade P., Juliette Gerhardt, Elisabeth LaVigne, Peter Leach, and Tim Mancl  
2014 *"An Opportunity of Annoying Them Greatly": Archeological Investigations of a Portion of the Cooch's Bridge Battlefield, New Castle County, Delaware*. Prepared for the Delaware Division of Historical and Cultural Affairs. John Milner Associates, Inc., West Chester, Pennsylvania.
- Catts, Wade P. Elisabeth LaVigne, and Kevin Donaghy  
2016b *Archeological Design Analysis for Two Strategic Battlefield Landscapes, Brandywine Battlefield, Delaware County, Pennsylvania*. American Battlefield Protection Program Grant GA-2287-13-007. Prepared for Delaware County Planning Department. Commonwealth Heritage Group, West Chester, Pennsylvania.
- Chester County Planning Commission and John Milner Associates, Inc. (CCPC)  
2013 *The Brandywine Battlefield Preservation Plan: Revolution in the Peaceful Valley*. American Battlefield Preservation Program Grant Number GA-2255-11-003. Chester County Planning Commission, West Chester, Pennsylvania.
- Chiquoine, Walt  
2016 "Finding the Daniel Nichols House – A New Interpretation of the British March Through Mill Creek Hundred, September 8-10, 1777." Unpublished manuscript, available at [http://www.academia.edu/26580954/FINDING\\_THE\\_DANIEL\\_NICHOLS\\_HOUSE\\_-\\_A\\_NEW\\_INTERPRETATION\\_OF\\_THE\\_BRITISH\\_MARCH\\_THROUGH\\_MILL\\_CREEK\\_HUNDRED](http://www.academia.edu/26580954/FINDING_THE_DANIEL_NICHOLS_HOUSE_-_A_NEW_INTERPRETATION_OF_THE_BRITISH_MARCH_THROUGH_MILL_CREEK_HUNDRED).
- Cliffe, Loftus  
1777 Loftus Cliffe Papers, 1769-1784. William L. Clements Library, The University of Michigan, Ann Arbor.

---

Clinton, Sir Henry

- 1778 Lieutenant General Sir Henry Clinton, K.B., to Lord George Germaine, 5 July 1778. State of the Forces under . . . Sir Henry Clinton, 3 July 1778. Library of Congress, Mss. Division: PRO CO 5:96,77.

Connor, M. and D.D. Scott

- 1998 Metal Detector Use in Archaeology: An Introduction. *Journal of the Society for Historical Archaeology* 32(4):76-85.

Cummings, Andrew

- 1832 Pension Application W911. M804 Revolutionary War Pension and Bounty Land Warrant Application Files, Record Group 15. National Archives and Records Administration, Washington, D.C.

Curtis, Edward E.

- 1926 *The Organization of the British Army in the American Revolution*. Yale University Press, New Haven and London. Quoted from <http://www.americanrevolution.org/britisharmy4.php>

DeHaven, Isaac

- 1832 Pension Application S8318. M804 Revolutionary War Pension and Bounty Land Warrant Application Files, Record Group 15. National Archives and Records Administration, Washington, D.C.

Dincklage, August Eberhard von

- 1776 *Tagebuch des Obristlieutenants August Eberhard von Dincklage aus dem Amerikanischen Unabhängigkeitskrieg ... 1776*. Shelf mark: 4° Ms. Hass. 186, Murhard Library, Kassel, Germany.

Downman, Francis

- 1898 The Services of Lieut.-Colonel Francis Downman, R.A., in France, North America, and the West Indies between the Years 1758 and 1784. edited by F.A. Whinyates. *Minutes of the Proceedings of the Royal Artillery Institution* 25.

Dowset

- 1808 Dowsett Collection of Sands Family Papers, MSA SC 2095-2-33, Maryland State Archives, Annapolis, Maryland.

Du Buy, Johann Christian

- 1777 Letter of October 16, 1777 (Germantown). In Letters to Lieutenant General Wilhelm Maximilian von Dittfurth. *Militär-Berichte und Relatione, die Operationen des hessischen Corp im amerikanischen Kreige betreffend, 1776-1782*. Bestand 4h, Verzeichnis 31SS. Hessische Staatsarchiv, Marburg, Germany.

Egnal, Marc

- 1975 The Economic Development of the Thirteen Continental Colonies, 1720-1775, *William and Mary Quarterly* 32 (2): 191-222.

## Erbprinz Regiment

1777 *Tagebuch des Regiments Erbprinz*. Shelf mark: 4° Ms. Hass. 204, Murhard Library, Kassel, Germany.

## Espenshade, C.T., R.L. Jolley, and J.B. Legg

2002 The Value and Treatment of Civil War Military Sites. *North American Archaeologist* 23 (1):39-67.

## Ewald, Johann

1979 *Diary of the American War: A Hessian Journal, Captain Johann Ewald, Field Jäger Corps*. Joseph P. Tustin, translator and editor. Yale University Press, New Haven and London.

## Feilitzsch, Heinrich Carl Philipp

1997 Lieutenant Feilitzsch Diary (1777-1780). In *Diary of Two Ansbach Jägers*. Translated and edited by Bruce E. Burgoyne. Heritage Books, Inc., Bowie, Maryland.

## Feldjäger

1777 *Tagebuch des Hessischen Feldjägerkorps*. Shelf mark: 4° Ms. Hass. 166, Murhard Library, Kassel, Germany.

## Fisher, John

1781 John Fisher Papers 1778-1781. Manuscript Group 4, Revolutionary War Collection, New Jersey Historical Society, Newark, New Jersey.

## Foard, Glen

2003 Sedgemoor 1685: Historic Terrain, the 'Archaeology of Battles' and the Revision of Military History. *Landscapes* 4(2):5-15.

2009 English Battlefields 991-1685: A Review of Problems and Potentials. In *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*, Douglas Scott, Lawrence Babits and Charles Haecker, editors, pgs. 13-159. Potomac Books, Inc., Washington, D.C.

## Foard, Glen and Richard Morris

2012 *The Archaeology of English Battlefields: Conflicts in the Pre-Industrial Landscape*. CBA Research Report 168. Council for British Archaeology, St Mary's House, York, UK.

## Freyenhagen, Wilhelm Johann Ernst

2011 Journal of Ensign/Lt. Wilhelm Johann Ernst Freyenhagen Jr – 1776-1778. Part 2 – 1777-1778. Henry J. Retzer and Donald M. Londahl-Smidt, editors and translators. *Journal of the Johannes Schwalm Association* 14: 63-77.

## Fox, R.A., Jr.

1993 *Archaeology, History, and Custer's Last Battle*. University of Oklahoma Press, Norman, Oklahoma.

## Geier, Clarence R., and Stephen R. Potter

2000 "To Peel This Land." In *Archaeological Perspectives on the American Civil War*, edited by Clarence R. Geier and Stephen R. Potter, pg. xxv-xxxiii. University Press of Florida, Gainesville.

---

Geier, Clarence R. and Susan E. Winter

1994 *Look to the Earth: Historical Archaeology and the American Civil War*. The University of Tennessee Press, Knoxville, Tennessee.

Glyn, Thomas

1777 "The Journal of Ensign Thomas Glyn, 1st Regiment of Foot Guards on Service with the Brigade of Guards 1776-1777." Collection of Princeton University Library.

Gossett, Tanya M., and H. Bryan Mitchell

2007 *Report to Congress on the Historic Preservation of Revolutionary War and War of 1812 Site in the United States*. Prepared for The Committee on Energy and Natural Resources (United States Senate) and The Committee on Resources (United States House of Representatives). Prepared by the American Battlefield Protection Program, National Park Service, Department of the Interior, Washington, D.C.

Grant, James

1777 Grant to General Harvey, October 20, 1777, Grant Papers, Reel 28. Library of Congress.

Graves, Donald E.

1986 "Dry Books of Tactics": US Infantry Manuals of the War of 1812 and After, Part I. *Military Collector and Historian, Journal of the Company of Military Historians* 38(2):50-61.

Greene, Nathanael

1778 Estimate of Teams to be employed in transporting Provisions and Forage from Trenton to Kings Ferry, 19 October 1778. George Washington Papers, series 4, reel 53.

Gruber, Ira D.

1988 "On the Road to Poonamalle: An Irish Officer's View of the War for American Independence." *The American Magazine* 4 (1):1-12.

Hagist, Don

2001 *General Orders, Rhode Island: December 1776-January 1778*. Heritage Books, Bowie, Maryland.

Harper, Mary G., Bruce Clouette, and Ross Harper

1999 The Rochambeau Project: Historical and Archaeological Documentation of The French Army's Marches Through Connecticut in 1781 and 1782. Prepared for the Connecticut Historical Commission. Public Archaeology Survey Team, Inc., Storrs, Connecticut.

Harris, Michael C.

2014 *Brandywine: A Military History of the Battle that Lost Philadelphia but Saved America, September 11, 1777*. Savas Beatie LLC, El Dorado Hills, California

Hazen, Moses

1889 Letter of September 11, 1777. In *The State of New Hampshire, Rolls and Documents Relating to Soldiers in the Revolutionary War (Part I)*, compiled and edited by Isaac W. Hammond, page 161. John B. Clarke, Manchester, New Hampshire.

---

Heath, William

1777 General William Heath's orders, 12 July 1777, Numbered Record Books. National Archives, reel 3, vol. 18, target 4.

Heth, William

1931 The Diary of Lieutenant William Heth while a Prisoner in Quebec, 1776, edited by Floyd B. Flickinger. *Annual Papers of Winchester Virginia Historical Society* 1:26-118.

Howe, Sir William

1777 General Orders by Major General William Howe, November 1775- June 1776, October 1776-January 1777; June-November 1777; February-May 1778. New York Historical Society *Collections* 16 (1883) 251-585.

Howe, Sir William

1778 *A List of the General and Staff Officers, and of the Officers in the several Regiments serving in North America Under the Command of His Excellency General Sir William Howe, K. B., MacDonald and Cameron in Chestnut Street, Philadelphia.*

Jarvis, Stephen

1907 An American's Experience in the British Army. *The Journal of American History* 1(3):441-453.

Jung-Loßberg

1777 *Tagebuch des Regiments Lossberg 1776 – 1784*. Shelf mark: 4° Ms. Hass. 228, Murhard Library, Kassel, Germany.

Keagan, John

1976 *The Face of Battle: A Study of Agincourt, Waterloo, and the Somme*. Vintage Press, New York.

Kemble, Stephen

1884 *The Kemble Papers, Volume 1, 1773-1789*. Collections of the New-York Historical Society for the Year 1883. New York.

Kennedy, Michael V.

2000 "Cash for Turnips": Agricultural Production for Local Markets in Colonial Pennsylvania, 1725-1783. *Agricultural History* 74(3):587-608.

Knyphausen, Friedrich Wilhelm von

1777 Letter by von Knyphausen to Landgraf Friedrich II of 17 October 1777 in: *Relationen vom nordamerikanischen Krieg unter dem Kommandeur v. Knyphausen* vol. 2, Bestand 4h 3099. Hessisches Staatsarchiv Marburg, Germany.

Kulikoff, Allan

2000 *From British Peasants to Colonial American Farmers*. The University of North Carolina Press, Chapel Hill, North Carolina.

Lee, Henry

1998 *The Revolutionary War Memoir of General Henry Lee*. Da Capo Press, New York.

Legg, James B., Steven D. Smith, and Tamara S. Wilson

2005 *Understanding Camden: The Revolutionary War Battle of Camden as Revealed through Historical, Archaeological and Private Collections Analysis*. Report presented to the Palmetto Conservation Foundation and the American Battlefield Protection Program. South Carolina Institute of Archaeology and Anthropology, Columbia, South Carolina.

Leibinfanterieregiment

1777 *Tagebuch des Leibinfanterieregiments modo Erbprinz*. Shelf mark: 4° Ms. Hass. 161, Murhard Library, Kassel, Germany.

Lengerke I

1777 Short Description of the Journey of the Hon. Hessian Troops. Microfiche #45 Letter FZ, pp. 82-85. Lidgerwood Collection, Morristown National Historical Park, Morristown, New Jersey

Lengerke II

1777 *Tagebuch des Grenadierbatt. Block/Lengerke* Shelf mark: 8° Ms. Hass. 24, Murhard Library, Kassel, Germany.

Lemon, James T.

1972 *The Best Poor Man's Country: A Geographical Study of Early Southeastern Pennsylvania*. Johns Hopkins University Press, Baltimore, Maryland.

1967 Urbanization and Development of 18th Century Southeastern Pennsylvania and Adjacent Delaware *William and Mary Quarterly* 24 (4), 501-542.

Lemon, James T. and Gary B. Nash

1968 The Distribution of Wealth in Eighteenth Century America: A Century of Change in Chester County, Pa. 1693-1802," *Journal of Social History* 2: 1-24.

Letter Z

1777 [Hessian Corps Report] Microfiche -----, pgs 83-87. Lidgerwood Collection, Morristown National Military Park, Morristown, New Jersey.

Londahl-Smidt, Donald

2004/5 Das Combinierte Bataillon – The Combined Battalion of Hessen-Cassel,1777-1778." *Journal of the Johannes Schwalm Association* (7)4: 21-28 and *The Hessians* 8: 67-71.

Long, Samuel W.

1924 Brandywine Battlefield – Unmarked Trench Where Hundreds of Americans Who fell in the Conflict are Buried. *The Morning News* (Wilmington, Delaware), Monday, June 2.

Lowe, David W.

2000 *Battlefield Survey Manual*. American Battlefield Protection Program. National Park Service, Washington, D.C.

Mancl, Tim, Peter Leach, Elisabeth LaVigne, and Wade P. Catts

2013 *Archeological Investigations of the Continental Powder Works at French Creek*. Prepared for East Pikeland Township Historical Commission. John Milner Associates, Inc., West Chester, Pennsylvania.

---

Mann, Isaiah

1834 Pension Application R6872. M804 Revolutionary War Pension and Bounty Land Warrant Application Files, Record Group 15. National Archives and Records Administration, Washington, D.C.

Martin, J.W. and R. Veit

2004 British and Continental Spring Training Circa 1777. Paper presented at the Society for Historical Archaeology Annual Meeting, York, UK.

McMasters, Kristen

2016 *Battlefield Survey Manual, American Battlefield Protection Program, revised 2016*. National Park Service, Washington, D.C.

2009 *KOCSA (Military Terrain Analysis) – Cheat Sheet*. National Park Service, American Battlefield Protection Program, Washington, D.C.

McGuire, Thomas J.

2006 *The Philadelphia Campaign, Volume I: Brandywine and the Fall of Philadelphia*. Stackpole Books, Mechanicsburg, Pennsylvania.

2017 E-mail correspondence with Robert Selig of 12 May 2017.

McMichael, James

1892 Diary of Lieutenant James McMichael, 1776-1778. *Pennsylvania Magazine of History and Biography* 16(2): 128-159.

Michel, Jack

1981 In a Manner and Fashion Suitable to Their Degree: A Preliminary Investigation of the Material Culture of Early Rural Pennsylvania. *Working Papers from the Regional Economic History Research Center* 5 (1): 1-83.

Minigerode

1777 *Tagebuch des Grenadierbataillons von Loewenstein (= von Minnigerode)*. Shelf mark: 4° Ms. Hass. 164, Murhard Library, Kassel, Germany.

Montrešor, John

1881 Journal of Captain John Montrešor, July 1, 1777, to July 1, 1778, Chief Engineer of the British Army. John Montrešor and G.D. Scull, editors. *Pennsylvania Magazine of History and Biography* 5(4):393-417.

1882 Journal of Captain John Montrešor, July 1, 1777, to July 1, 1778, Chief Engineer of the British Army. John Montrešor and G.D. Scull, editors. *Pennsylvania Magazine of History and Biography* 6 (3): 284-299.

Muenchhausen, Friedrich von

1974 *At General Howe's Side, 1776-1778: The Diary of General William Howe's aide de camp, Captain Friedrich von Muenchhausen*. Translated by Ernst Kipping and annotated by Samuel S. Smith. Philip Freneau Press, Monmouth Beach, New Jersey.

Muir, Rory

1998 *Tactics and the Experience of Battle in the Age of Napoleon*. Yale University Press, New Haven,

---

Connecticut.

National Park Service (NPS)

2001 *National Historic Landmarks at the Millennium: A Report to Congress and the American People, 2000-2001*. U.S. Department of the Interior, National Park Service Cultural Services, Washington, D.C.

Nicholson, Jesse

1832 Pension Application S5832. M804 Revolutionary War Pension and Bounty Land Warrant Application Files, Record Group 15. National Archives and Records Administration, Washington, D.C.

Orr, David G.

1994 The Archaeology of Trauma: An Introduction to the Historical Archaeology of the American Civil War. In *Look to the Earth: Historical Archaeology and the American Civil War*, edited by Clarence R. Geier, Jr., and Susan E. Winter, pgs. 21-36. The University of Tennessee Press, Knoxville, Tennessee.

Peebles, John

1998 *John Peebles' American War: The Diary of a Scottish Grenadier, 1776-1782*. Ira D. Gruber, editor. Stackpole Books, Mechanicsburg, Pennsylvania.

Preservation Pennsylvania

1994 Pennsylvania at Risk, 1994. *Preserving Pennsylvania* 8(1):5.

Rhoads, Ann F., Douglas Ryan, and Ella W. Aderman

1989 *Land Use Study of Valley Forge National Historical Park*. Unpublished report on file, Valley Forge National Historical Park.

Robertson, Archibald

1930 *Archibald Robertson Lieutenant General Royal Engineers: His Diaries and Sketches in America, 1762-1780*. Harry Miller Lyndberg, editor. New York.

Rochefoucault, Duke de la

1799 Rochefoucault-Liancourt, Duke de la *Travels through the United States of North America, the Country of the Iroquois, and Upper Canada, in the Years 1795, 1796, and 1797; with an authentic Account of Lower Canada* 2 vols. vol. 2, R. Phillips, London.

Sachs, William J.

1953 "Agricultural Conditions in the Northeast Colonies Before the American Revolution," *The Journal of Economic History* 13: 274-290.

Scott, Douglas D., Richard A. Fox, Jr., Melissa A. Connor, and D. Harmon

1987 *Archaeological Perspectives on the Battle of the Little Big Horn*. University of Oklahoma Press, Norman, Oklahoma.

Scott, Douglas D. and Andrew P. McFeaters

2011 The Archaeology of Historic Battlefields: A History and Theoretical Development in Conflict Archaeology. *Journal of Archaeological Research* 19:103-132.

- 
- Selig, Robert A., Matthew Harris, and Wade P. Catts  
 2010 Battle of Princeton Mapping Project: Report of Military Terrain Analysis and Battle Narrative, Princeton, New Jersey. Prepared for the American Battlefield Protection Program (Grant #08-015) and the Princeton Battlefield Society. John Milner Associates, Inc., West Chester, Pennsylvania.
- 2013 Archaeology, Computer technology, and the Battle of Princeton as a Cross-Cultural, Trans-Atlantic Encounter. In *The Archaeology of Interdependence: European Involvement in the Development of a Sovereign United States*, Douglas Comer, editor, pgs. 15-39. Springer briefs in Archaeology 1. Springer Publishing, New York.
- Seybolt, Francis  
 1930 A Contemporary British Account of General Sir William Howe's Military Operations in 1777. *American Antiquarian Society Proceedings New Series* 40 (April): 69-92.
- Sivilich, Daniel M.  
 2009 What the Musket Ball Can Tell: Monmouth Battlefield State Park, New Jersey. In *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*, edited by Douglas Scott, Lawrence Babits, and Charles Haecker, pgs. 84-101. Potomac Books, Washington, D.C.
- Sivilich, Daniel M., and R. Phillips  
 1998 *Phase I Cultural Resource Investigation: Neuberger Farm, Middletown-Lincroft Road, Monmouth County, Middletown, New Jersey*. Report prepared for the Monmouth County Park System, Lincroft, NJ.
- Smith, Samuel S.  
 1976 *The Battle of the Brandywine*. Philip Freneau Press, Monmouth Beach, New Jersey.
- Smith, Steven D.  
 1994 Archaeological Perspectives on the Civil War: The Challenge to Achieve Relevance. In *Look to the Earth: Historical Archaeology and the American Civil War*, edited by Clarence R. Geier, Jr. and Susan E. Winter, pg. 3-20. The University of Tennessee Press, Knoxville, Tennessee.
- Smith, Steven D., James B. Legg, and Tamara S. Wilson  
 2009 *The Archaeology of the Camden Battlefield: History, Private Collections, and Field Investigations*. Presented to the Palmetto Conservation Foundation and Save America's Treasures. South Carolina Institute of Archaeology and Anthropology, Columbia, South Carolina.
- Stirke, Henry  
 1961 A British Officer's Revolutionary War Journal, 1776-1778., S. Sydney Bradford, editor. *Maryland Historical Magazine* 56(2):150-175.
- Strickland, William  
 1801 *Observations on the Agriculture of the United States of America*. Bulmer and Company, London.
- Stirn, Johann Daniel  
 1998 Diary Installment from Major General Johann Daniel Stirn. In: The Philadelphia Campaign, 1777-1778, Letters and Reports from the von Jungkenn Papers, *Journal of the Johannes Schwalm Association* 6(2):1-25, translated by Henry Retzer and annotated by Donald Londhal-Smidt, pgs. 6-7.

---

Sullivan, Thomas

1997 *From Redcoat to Rebel: The Thomas Sullivan Journal*. Joseph Lee Boyle, editor. Heritage Books, Inc., Bowie, Maryland.

Trussell, John B. B, Jr.

1977 *The Pennsylvania Line: Regimental Organization and Operations, 1776-1783*. Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.

USDA Bulletin

[https://www.nass.usda.gov/Statistics\\_by\\_State/Pennsylvania/Publications/Annual\\_Statistical\\_Bulletin/2015\\_2016/2015-2016%20PA%20Annual%20Bulletin.pdf](https://www.nass.usda.gov/Statistics_by_State/Pennsylvania/Publications/Annual_Statistical_Bulletin/2015_2016/2015-2016%20PA%20Annual%20Bulletin.pdf)

Wadsworth, Jeremiah

1780 Jeremiah Wadsworth to Henry Champion, 15 July 1780. Jeremiah Wadsworth Papers, Letterbooks, Box 151. Connecticut Historical Society, Hartford, Connecticut.

Walker, Philip L. and Phil Thomason

2004 Reading the Land: Cultural Resource Analysis and Battlefield Preservation. Paper presented at the American Battlefield Protection Program 7<sup>th</sup> National Conference on Battlefield Preservation, Nashville, Tennessee.

Warden, Rosemary S.

1998 Chester County. In: *Beyond Philadelphia: The American Revolution in the Pennsylvania Hinterland*, edited by John B. Frantz and William Pancak, pgs. 1-22. The Pennsylvania State University Press, University Park, Pennsylvania.

Webster, Nancy V.

1997 A Commonwealth Treasure: Brandywine Battlefield Park. *Pennsylvania Heritage* 23(4). <http://www.phmc.state.pa.us/portal/communities/pa-heritage/commonwealth-treasure-brandywine-battlefield-park.html>. Webpage visited 12-1-2017.

Webster, Nancy V., Martha L. Wolf, Betty Cosans-Zebooker, and Ken Joire

1989 *Brandywine Battlefield National Historic Landmark Cultural Resources Management Study*. Delaware County Department of Planning.

Werner, F.

1777 *Plan der Passage von Brandweinscreek...11 September 1777*. Marburg Archives, <http://www.digam.net/?dok=2002>).

Whitehorne, Joseph W.A.

2006 Blueprints for Nineteenth-Century Camps: Castramentation, 1778-1865. In *Huts in History: The Historical Archaeology of Military Encampment during the American Civil War*, edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pgs 28-50. University Press of Florida Gainesville, Florida.

Wurmb, Ludwig Johan Adam

1998 Letter of 14 October 1777 to Major General Friedrich Christian Arnold Baron von Junkenn-Muntzer von Mohrenstamm. In: *The Philadelphia Campaign, 1777-1778, Letters and Reports from the von Jungkenn Papers, Journal of the Johannes Schwalm Association*, volume 6, number 2:1-25, translated by Henry Retzer and annotated by Donald Londhal-Smidt, pgs. 7-11.

