Geophysical Landscape & Battlefield Analysis

This chapter looks at battle elements - (historic/battle) events and (physical) features – in/near eastern battlefield Landscapes to assess prior assumptions[1] about these areas itemized in the 2013 Plan/2010 Study. In doing this, it uses geophysical field study or ground-truthing of features (land area, landform, natural, built, below-ground) and reference materials. This analysis reviews the role in the battlefield of: 1) Gen'l Howe's strategy at Osborne Hill and ensuing combat at Battle Hill, Birmingham Hill, Sandy Hollow, and Sandy Hill; 2) Crown Force and American strategies and ensuing combat at Chadds Ford; 3) Gen'l Washington's strategy and approach into PA leading to defensive positions along Brandywine Creek and American encampment; 4) Civilian impact/involvement in the battle; and 5) still existing physical terrain features that contribute to an interpretable battlefield setting.

For local planning purposes, this analysis seeks to clarify the Landscapes' roles as to what (events) battle occurred and where (physical terrain features) it occurred in order to identify relevant features, develop planning strategies (Chapter 5) and speak to heritage interpretation themes (Chapter 6). This chapter mainly takes a historic military view of the battle in these Landscapes, providing related recommendations for future action, planning, or study; while Chapter 4 focuses on historic context, built features, and battle impacts on the local community. These chapters work in sync to provide a more holistic view of the battle in these Landscapes.

Reference materials used include the 2010 Study KOCOA analysis, 2013 Plan defining features and historic resources inventories, reference maps (historic atlases, aerial photographs, topographic maps), primary sources (firsthand accounts, road petitions, deeds), secondary sources (battle histories), field study, and historic archeological assessment, as well as review of battle-era cultural topography and settlement patterns in Chapter 4. The historic and military archeological project consulting team conducted this analysis with assistance from researchers in Chester County Archives.

KOCOA Military Terrain Analysis

KOCOA[2] analysis evaluates physical geography and cultural topography and identities defining features that help explain a battle and inform about its events and outcomes. ABPP describes defining features as those natural and built features named in battle accounts, historic maps, or other sources that help locate and ground-truth battle events in the modern landscape. Physical geography (natural) feature examples include terrain, watercourses, ridges, or ravines. Cultural topography (built) feature examples include places/settlement patterns (villages, farms); structures (mills, houses, meetinghouses); or other manmade features (roads, paths, woodlots, farm fields).

---

1 Appendix A purple italics wording shows 2013 Plan assumptions being studied in this project from a battle timeline perspective.
2 Appendix A further describes KOCOA analysis. Cultural topography encompasses the built environment and is addressed in Chapter 4.

The 2010 Study KOCOA analysis is used in the 2013 Plan, which takes a further look at defining features for local planning and interpretation purposes. Both are the starting points for this chapter.

This study uses KOCOA to analyze, update, and/or interpret previously understood battle events related to these Landscapes - where Crown Force's dividing into two columns strategy led to the northern tactical setting of Osborne Hill and ensuing combat in the Birmingham Meeting area and earlier starting combat at Chadds Ford. It is also where the American approach into PA, encampment, and choice of defensive positions along Brandywine Creek took place as well as civilian involvement/ impacts by both armies.

For example, this study uses KOCOA to better understand fords locations and the American's sudden need to shift troops from fords above Chadds Ford to the Birmingham Meeting area combat. This was

Figure 3-1a: Chadds Ford Combat Area & Fords Landscapes and Approach in PA and American Encampment Landscapes and related KOCOA Military Terrain Defining Features [1]
(updated from the 2010 Study and 2013 Plan)

DEFINING FEATURE	LANDSCAPE	KOCOA CATEGORY
1743 Great Nottingham Road (modern Baltimore Pike/US Rte 1)	Fords Approach	Knyphausen's column Avenue of Approach; Maxwell's Corps route of withdrawal
Brinton's Ford Road (portions of modern Brinton's Bridge Road)	Fords Approach	Sullivan's Division Avenue of Approach
Maxwell's Redoubt (southeast side of Ring's Run, on a hill that is now near the intersection of Cannoneer Court and Constitution Drive)	Fords Approach	Maxwell's Corps Cover and Concealment, Obstacle, Fields of Fire
Route to/from Hockessin To Hockessin - 1710 Road/the Limestone Road (modern Limestone Rd) to modern Valley Rd & headwaters of Mill Creek. From Hockessin - modern Valley Rd to 1740 Road (modern Old Wilmington Rd) to 1740 Road (modern Ewart Rd) to modern Chandler Mill Rd) (Crown Force route in area of modern Valley Rd was/is swampy. Likely used farm lanes and by-roads)	Fords Approach (in DE & into Kennett Twp. & PA)	Cornwallis' column Avenue of Approach, Obstacle
Brandywine Creek and Its Fords	Fords Approach, Fords Combat	Key Terrain, Avenues of Approach, Mobility Corridor, Obstacle
Route of the American Forces to the Brandywine (Center Road, Kennett Pike, Starved Gut Road, Cossart Road, Pyle's Ford Road, Smith's Bridge Road, Ridge Road, Ring Road)	Fords Approach	Washington's Army Avenue of Approach, Mobility Corridor
Possible picket Posts along the Brandywine (at Corner Ford and Gibson's Ford) Two locations within the "Big Bend" of the Brandywine that might be picket posts established to defend the river crossings.	Fords Combat	Left wing of Washington's Army Observation, Cover and Concealment
American Forces Positions east side of Brandywine Creek	Fords Combat	Washington's Army Cover and Concealment, Key Terrain, Observation, Fields of Fire
Crown Forces Positions west side of Brandywine Creek	Fords Combat	Knyphausen's column Cover and Concealment, Key Terrain, Observation, Fields of Fire

accomplished via mapping and comparing locations of: reported civilian property losses, battle-era properties and owners, and battle-era roads. Since battle events are not isolated activities, to understand how the Landscapes fit into the overall battle from a military and physical terrain

---

[1] Eastern Battlefield Phase 3 Study begins at Osborne Hill in the north and modern Rt. 1/Brinton's Bridge Rd intersection to the west.

perspective, analysis at times stretches beyond Landscapes' outlines. Figures 3-1a and 3-1b provide updated KOCOA defining features related to military activity in/related to eastern battlefield Landscapes.

Roadways - as communication routes, avenues of approach, and observation points for military logistics - are critical KOCOA defining

Figure 3-1b: Osborne Hill &
Birmingham Meetinghouse Combat Area Landscapes and
related KOCOA Military Terrain Defining Features [1]
(updated from the 2010 Study and 2013 Plan)

DEFINING FEATURE[2]	LANDSCSAPE	KOCOA CATEGORY
Osborne Hill	Osborne Hill Combat Area	Cornwallis' column Observation
Birmingham Hill and Sandy Hollow	Birmingham Hill Combat Area	Key Terrain, Fields of Fire, Cover and Concealment
Birmingham Meetinghouse	Birmingham Hill Combat Area	Fields of Fire, Cover and Concealment
Roads at Birmingham Hill (Seal's Road, 1746 Road)	Osborne Hill Combat Area	Sullivan's Division, Stirling's Division, & Stephen's Division Avenues of Approach, Key Terrain
Route of General Greene's Division to Birmingham Hill	Osborne Hill Combat Area	Greene's Division Avenue of Approach

features for battlefield military strategy analysis as well as cultural topography and battle-era settlement pattern analysis. Understanding what roads existed at the time of the battle is necessary for understanding primary reports from the field of battle and locations where battle events would have likely occurred. One of the extraordinary outcomes of strategic landscapes projects for the battlefield is research undertaken by Chester County Archives. Their work created a portrayal of the battle-era road network and property tracts and owners (Chapter 4 & Appendix B) using the best-known primary source reference materials available at the time. For example, this allows possible troop locations to become more apparent when compared with historical battle accounts.

KOCOA is further explained in terms of military terrain analysis from an on-the-ground view: a soldier looks at fields, woodlots, ridges, buildings, waterways, etc., for their military value, how they could be integrated into offensive or defensive positions, and how they fit into potential for offensive or defensive military action. This is not only important for understanding why a commander would (or would not) position infantry, artillery, or cavalry at a certain place on the terrain or at a certain point during the engagement (why faulty positioning could have disastrous consequences), but also helps to interpret the authenticity of battlefield maps. Further, evaluation of terrain from a military point of view can help provide reasonable explanations to 'fill in' gaps in current knowledge of battle events caused by a scarcity of primary sources. For example, military usage of terrain would demand troops be deployed under the cover of landforms and natural features, such as ridges, woodlots, or low-lying ravines, shielding troops from the enemy's view. Similarly, depending on the task assigned during any stage of an engagement, troops might be deployed via a road if speed is of the essence or via a woodlot or circuitously if the element of surprise is paramount. Taking these and similar military aspects into consideration, terrain becomes an integral part of the reconstruction of battle events and 'the stage' in which the events unfold.

A KOCOA analysis is a valuable tool for planning and interpretation purposes, as it identifies extant features that still define the battle/battlefield and that are paramount to protect for all efforts in preserving the battlefield and history of the battle in the American Revolution and as part of Chester County's legacy. Future actions should be made with a focus on protection of such features, including lands and structures.

---

1 Eastern Battlefield Phase 3 Study begins at Osborne Hill in the north and modern Rt. 1/Brinton's Bridge Rd intersection to the west.
2 In this plan use of these words means the following: 'Road' indicates the approximate battle-era road alignment and roadbed still exists. 'Spur is the approximate road extension of a battle-era road that still exists. 'Trace' indicates a former battle-era road that today is largely an archeological site.

Eastern Battlefield Military Analysis

The analysis[i] discusses the Landscapes from a military battle perspective, exploring battle events that took place within and/or are related to these Landscapes. It also takes into account Landscapes' significance (Chapter 2) and the broader battle (Appendix A), as well as historic context (Chapter 4) and themes (Chapters 2 and 6). Refer to Figures 3-1a and 3-1b for battle-era features approximate correlation to modern features.

The analysis focuses on a short period of time, morning of September 8 through the afternoon of September 11. Previous studies of the battle have not specifically focused as much on the Americans and movements or formations, their encampment, or their defensive positions along the Creek. This project focuses on these as well as Crown Force activities, and identified routes and formations, locations, sources, and refined and/or discovered battle activities. This KOCOA analysis has provided some new and/or revised interpretations of the battle. Important among these is a better understanding of American locations on September 8, American approach into PA in the early morning (starting around 4AM and ending around 2PM) on September 9, ford names and locations (north and south of Chadds Ford), American defensive positions along the Creek, American encampment extent, Americans quickly getting into position for Birmingham Meeting area combat, location of Sandy Hollow and battle-era roads, and extent of combat area at Chadds Ford.

New historical materials were reviewed – that is, new materials not previously used in the earlier phases of the ABPP studies, and also several sources that were not previously used by scholars in their study of the battle. Among these are a letter from an anonymous North Carolina officer (Anonymous 1777), a letter from General Lord Stirling, not previously attributed to him, describing the role of his division in the fighting at Birmingham Hill (Stirling 1778), Col. Thomas Musgrave's manuscript of the 1777 campaign, a letter about the role of Col. Thomas Robinson in the actions in New Castle County three days before the battle of Brandywine, the writing of General de Borre, brigade commander in Sullivan's Division, explaining the battle actions on Birmingham Hill, and an account of the limited role of North Carolina brigade at Brandywine by Lt. John O'Neal of the 2nd North Carolina.

This analysis also utilizes a much more robust archeological record for lands within the Combat Area of the battlefield. The previous cultural resources management study, completed in 1989 by historian Nancy V. Webster, architectural historian Martha L. Wolf, and archeologists Betty Cosans-Zebooker and Ken Joire contains a wealth of important archeological assessments of properties throughout the battlefield (Webster et al. 1989). The detailed property studies included statements of archeological potential as well as reports of artifacts already recovered from the battlefield.

The Battle of Brandywine on September 11, 1777, holds a pivotal place within the twelve months timeframe that provides the historical context of the Philadelphia Campaign of 1777/78. The campaign began on June 13, 1777, when Sir William Howe moved his forces out of winter quarters at New Brunswick, New Jersey, the same day Sir John Burgoyne set out from Quebec in Canada for Albany, the capital of New York State. Victory at Brandywine opened the road into Philadelphia for British forces where they hoped to take up winter quarters in anticipation of American offers to negotiate an end to their rebellion. On September 26, Howe's forces marched into the American capital, but Howe's failure to exploit that battlefield victory allowed American resistance to continue. American obstinacy and lack of cooperation and coordination by the British political and military leadership blunted the impact of the victory won at Brandywine.

At Brandywine Howe could claim victory in the longest single-day battle of the American War of Independence. For 11 hours almost 30,000 men faced each other, and while Washington had to concede a British victory, his army was still functioning. On September 13, Samuel Shaw, a captain lieutenant in Colonel John Crane's Third Continental Artillery Regiment, informed his father from "Camp near Schuylkill" that "Our troops, far from being discouraged, wish for nothing more ardently than another chance with the enemy" (Shaw 1777). As he had done before, Howe, much to the surprise of the Americans and his fellow officers as well, neglected to take full

advantage of his victory. Shaw's letter continues "It is now four o'clock in the afternoon, two days after the action, and no account of Howe's pursuing, or attempting to pursue, his advantage," while Brigadier General Preudhomme de Borre wondered about "The mistake that the English made [which] was to not follow us, they could have taken half of the army" (de Borre 1778).

Rain prevented another fight in the so-called Battle of the Clouds on September 16, while the Paoli Massacre of September 20 sent shock waves across the Continental Army. Yet rather than break the Americans' determination to continue the fight, it only strengthened their resolve. Congress moved to Lancaster to continue its work. "Remember Paoli!" was first heard in the morning of October 4, 1777, as it became the Continental Army's rallying cry that sent the dreaded British Light Infantry into near panic during the surprise attack at Germantown. Germantown did not bring the hoped-for victory, but the war was waged on more than one front. On October 17, General John Burgoyne surrendered his army at Saratoga, providing a major boost to American morale. Five days later, on October 22, the myth of Hessian invincibility died at Red Bank in the trenches around Fort Mercer just across the river from Philadelphia.

Sir William Howe realized that the Philadelphia campaign had not achieved its goals and submitted his resignation that same day. The occupation of Philadelphia had been dearly bought during three months of marching and five major battles between the landing at Elkton on August 25, and the fall of Fort Mifflin on November 16, 1777. Concurrently, however, in upstate New York, Burgoyne had been defeated as much by nature as by military force. The stubborn resistance of Continental forces in settled areas unaided by favorable natural conditions, combined with lackluster support by Loyalists, must have come as an unpleasant surprise to Howe and the government in London, and Howe's request to resign should be interpreted as an admission of failure. Analyzing military developments in toto, French foreign Minister the comte de Vergennes concluded that sending Burgoyne and his army, no matter how large or how well equipped it had been, into the interior of the continent, had been a mistake that Britain would repeat. The war would be decided along the Atlantic Coast. That made continued American resistance after the defeat at Brandywine and the loss of Philadelphia, encouraged by the attack at Germantown, and the Hessian disaster at Redbank even more important in Vergennes decision to openly enter the war. On February 8, 1778, France signed treaties of Amity and Friendship and Military Alliance with the United States. By the time Howe received notice on April 14, 1777, that his resignation has been accepted, the political and military situation had changed fundamentally. Once the Continental Congress had declined British overtures for reconciliation on May 4, 1778, and voted unanimously to approve the French treaties, Sir Henry Clinton, fearing a blockade of the Delaware Bay by French ships, decided to evacuate Philadelphia. The Continental Army had started to build its huts in near-by Valley Forge on December 19. Despite its hardships, winter quarters at Valley Forge turned into a training camp, where under the guidance of Friedrich Wilhelm, Baron von Steuben, the raw recruits, and semi-professional soldiers of 1777, became the well-trained, if not yet quite professional troops of 1778. On June 18, 1778, the British arm evacuated Philadelphia. As it retreated across New Jersey, the Battle of Monmouth on June 28, 1778, became the last major battle in the mid-Atlantic states. For the Crown Forces, the Philadelphia campaign had ended in failure; for the Patriot Forces, the actions in 1777, despite defeats and setbacks at Brandywine and Germantown, and the capture of Philadelphia, had brought international recognition and a dramatic shift in the way the war would be pursued.

Associated Approach & Encampment Landscapes

Encampment and Approach Landscapes as associated areas are described in a KOCOA analysis to understand the military history and to set the underpinning for the events of both columns Landscapes. In other plan chapters, Encampment and Approach Landscapes are discussed after other Landscapes as they are considered associated for planning purposes; however in this chapter they are discussed before due to battle event time sequencing as the American approach in PA from DE (September 9) and then their overnight camp east of Brandywine Creek (located approximately from the woods near Brinton's Ford on the north to Gibson's Ford to the south) took place prior to Osborne Hill and both areas of combat (September 11).

Military Operations From The Morning Of Sept. 8 To Midnight, Sept. 9/10, 1777

British Army Movements September 8, 1777

In the evening of September 7, 1777, Sir William Howe organized his forces into four 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, incl. 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, Catts et al. 2019).

In the morning of September 8, Howe was ready to move. His preparatory orders for the march, issued just inside Delaware at Pencader where he had established his headquarters at Aiken's Tavern in the center of modern-day Glasgow, instructed the army to "be in readiness to move at an hour's notice, and to march by the left in three Divisions." (Howe 1777:488/89). The first units left their encampments at around 3:00 a.m., but it took a while before all troops were on the roads. British officers such as Archibald Robertson recorded their departure "at Daybreak" when they "march'd with the whole Army", approximately 6:30 a.m. (André 1904:82; Anonymous 1777a:77; Robertson 1930:145).

Accounts by soldiers marching the town of Newark, Delaware, bear witness to the impact of the war along the Delaware-Pennsylvania State line. Musgrave wrote that "The 8 Army advance in three Divisions passed through Newark a pretty large Village, but totally abandoned by the Inhabitants" (Musgrave 1777; Downman 1898:156; Anonymous 1777b). An unidentified Hessian soldier observed that near Newark "All the houses stood alone and unoccupied, in part because of fear but most because they had fled with the rebels" (J.R. 1777). Upon reaching Newark the First Division under Lieutenant General Earl Cornwallis turned north, crossed the White Clay Creek and continued north to its campsite (erroneously) called the "Position at New Garden" by Major John André. It was now around 1:00 p.m. Taking the same road, General Wilhelm Reichsfreiherr von Innhausen und Knyphausen's units, slowed down by "276 waggons loaded with rum, flour, and salt meat" (Baurmeister 1935:402), and "almost suffocated with dust, owing to the vast train of baggage wagons and cattle that were in our front", continued to arrive throughout the afternoon and into the evening (Downman 1898:156). Lieutenant Gilbert Purdy of the Guides and Pioneers confirms this slow march which lasted 14 hours, from 8:00 a.m. to 10:00 p.m. "we Began our march About 8 oclock in the morning … to A place Called new garden whare we got About 10 oclock at Night & Incamped" (Purdy 1777). At nightfall of September 8 British forces lay encamped along Limestone Road stretching for a good three miles from north of Brackenville and Valley Road almost to Mill Creek. Howe made his headquarters at "Nicolson's, the only house on the main road from Newport and Wilmington to Lancaster" in the triangle formed by Limestone Road and Sheringham Drive (Muenchhausen 1974:30; Chiquoine 2016).

Howe's intention had been to deceive General Washington into thinking that he would attack him in Newport while turning the American's right flank. That deception included leaving campfires burning at Aiken's Tavern long after his forces had broken camp. During the day, reconnaissance forces harassed American outposts. Cornwallis sent his Light Infantry, almost 1,300 troops, as scouts and screen along the British southern flank. The easternmost advanced detachment traveling on Old Baltimore Pike to Christiana Bridge may even have entered

Christiana, less than five miles from the western-most American positions on the east bank of the Red Clay Creek along Calf Run.

Howe's flanking plan was initially successful. But by the evening of September 8, his plan of turning Washington's right flank and inserting his forces between the Continental Army and Philadelphia had failed. "At ¼ past 9 three alarm guns were fired from the rebel camp… at Newport" (Montrésor 1881:414). The Americans were aware of British movements.

Continental Army Movements September 8, 1777

Beginning about September 4, Continental Army forces straddled modern-day Route 4 in an east-west direction with advanced units deployed at the Red Clay Creek just north of where it flows into the Christiana River and along the Red Clay Creek and Newport Gap Pike from the Red Clay Creek to the Christiana River in a general north-south direction. Each side of this triangle was about two miles long. Joseph Clark recorded that on Sunday, September 7, "nothing was done this day but fortifying; parapet walls were thrown up to a great extent, trees felled to secure the flanks and important passes. By Monday morning everything was in readiness for an engagement" (Clark 1855:97). Washington had established his headquarters in the home of William Marshall within walking distance of the Hale Byrnes House on the Stanton-Christiana Road, where he held a War Council on September 6. One of the outcomes of the meeting was based on Howe's decision to send tents and all equipment deemed unnecessary back to the ships. "The General has received a confirmation of the intelligence mentioned in the after orders of last night that the enemy have disincumbered themselves of all their baggage, even to their tents, reserving only their blankets, and such part of their cloathing as is absolutely necessary—This indicates a speedy & rapid movement, and points out the necessity of following the example, and ridding ourselves for a few days of every thing we can possibly dispense with." Washington interpreted that to mean that Howe prepared his forces to moved swiftly. The Continental Army had to be able to respond just as rapidly. General Orders of September 7 read: "officers should only retain their blankets, great coats and three or four shifts of under cloaths, and that the men should, besides what they have on, keep only a Blanket and a shirt a piece, and such as have it, a great coat. All trunks, chests, boxes, other bedding and cloaths, than these mentioned, to be sent away, till the elapsing of a few days shall determine whether the enemy mean an immediate attack, or not" (https://founders.archives.gov/documents/Washington/03-11-02-0169). British troop movements on September 8 showed that Washington had correctly analyzed Howe thinking.

Around 9:00 a.m. or shortly thereafter, Washington knew that Howe was on the move and sent out scouts to look for British forces. The selection of General Maxwell's Light Infantry as a reconnaissance in force, about 1,000 men strong, suggests that Washington may already have suspected a British flanking maneuver. The new force of light infantry commanded by Brig. Gen. William Maxwell was carved equally out of nine brigades. A total force of 800 rank and file is estimated for this unit, 900 if officers are included. Maxwell's Light Infantry "Corps" (actually about the size of an infantry brigade), posted farthest to the west of the American line just east of Limestone Road at the intersection with Main Street in Stanton, had orders to conduct reconnaissance northward along Limestone Road. Concurrently he sent off General Weedon's 2nd Virginia Brigade, well over 1,000 men strong and posted on northern tip of the American defensive triangle south of Philips Mill on either side of Newport Gap Pike, to look for Howe. Neither Washington nor Howe were looking for a major engagement that day, but the day was punctuated with small-scale exchanges of fire – skirmishing - as the opposing armies made their way further inland almost straight north and away from the Delaware River.
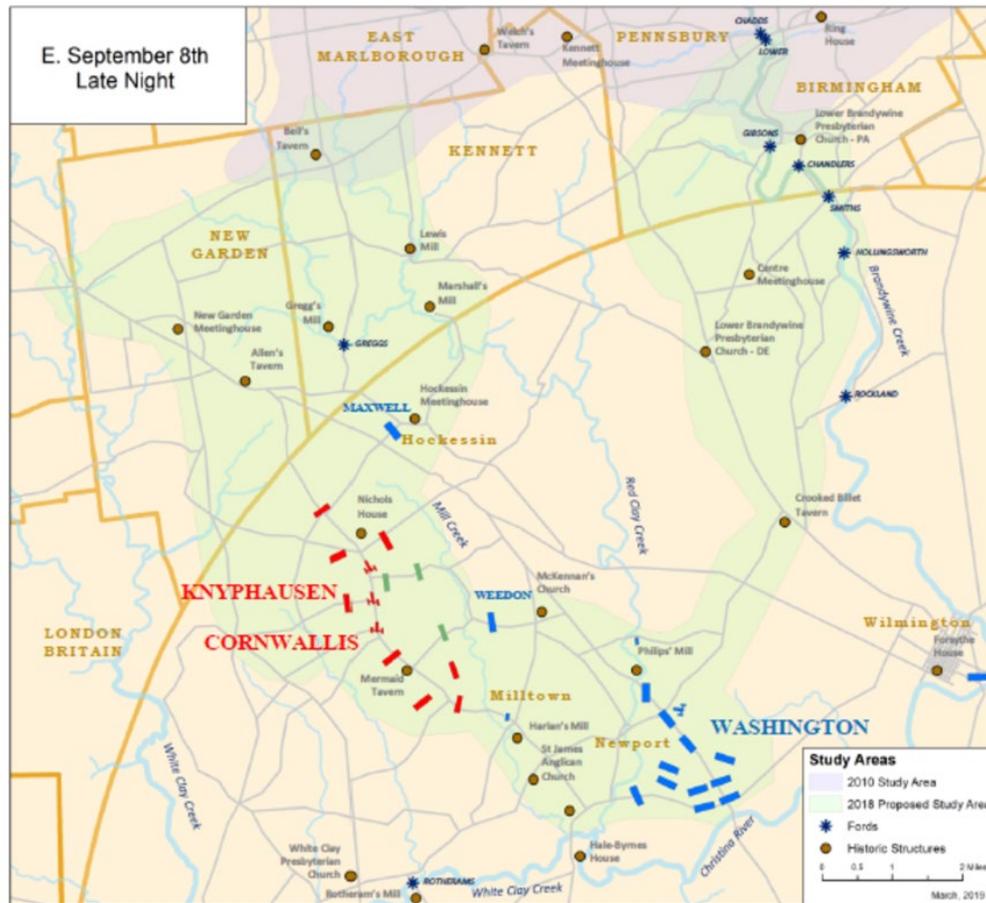
Locations of army formations on the night of September 8, 1777. Washington's brigades are shown in blue, clustered along the Red Clay Creek Defensive line, while the advance elements of Howe's Crown Forces are shown along the modern Route 7 in New Castle County.

Weedon's and Maxwell's marches did not go undetected by the British. "We saw two regiments coming from Newport on two different roads, with their flags flying, and in very good order, as if they were heading for the road to Lancaster" (Muenchhausen 1974:30). One of these units was "probably Weedon's Brigade" on McKennans Church Road marching to McKennans Church where Weedon's brigade encamped "within half a mile of" the enemy on the east side of Mill Creek. The other unit mentioned by von Muenchhausen was most likely Maxwell's Light Infantry advancing north, possibly on a no-longer existing road section of Mill Creek Road along the west side of the creek, to Hockessin Meeting House. Besides these two large-scale detachments, however, at least one other detachment was also probing British movements. That detachment was commanded by Lieutenant Colonel Thomas Robinson of the 5th Pennsylvania Regiment. Organized in Chester in January 1776 and now part of the 2nd Pennsylvania Brigade, these men knew the neighborhood as well as any in Washington's army and may have been selected for that reason. In a letter of January 24, 1819, Robinson's brother-in-law Richard Peters told John Trumbull that "a day or two previous to the Battle of Brandywine" Robinson had been

> "selected by Genl Washington, to command a picked corps of 250 men, well officered, with orders to reconnoitre, & procure intelligence of the march & position of the enemy; which could not be obtained by other means, in a disaffected part of our country. He advanced with all the precaution possible, but approached too near its main body, or a strong advance; sending off light horsemen frequently with information to the General, thro both night & day. At length he was pressed on; & was obliged to sustain a powerful attack. He drew up his command behind the walls of a burial ground; & cooly waiting the onset, reserved his fire, 'till the enemy were within 30 yards. He then gave a well-directed discharge; & mowed down great numbers of the foe. But he met with a severe retaliation; for a strong corps was detached to intercept him; &, thro' Superior numbers, he had to cut his way. His colour was taken or nearly so; but recovered, by unexampled proweß in himself & some of his detachment. In this struggle he

received a wound, of which though not slight, he was unconscious, till he began to bear off the Trophy. Per various casus; per tot discrimina rerum [through various misfortunes, and so many perils (Virgil, Aeneid)]; he brought off the remnants of his brave, but unfortunate corps. He returned to our army, with only 30 of his companions!" (Peters 1819).

The location of this violent encounter likely took place along Mill Creek near today's Stoney Batter Road in New Castle County. The reference to "the walls of a burial ground" points to McKennan's Meetinghouse [the modern Red Clay Creek Presbyterian Church] situated at the intersection of Mill Creek Road and McKennan's Church Road.

When Washington learned in the morning of September 8 that Howe's army was on the move, he readied his army for the fight. Preudhomme de Borre wrote in his Journal Des campagnes that "on the 7th [i.e. 8th] we learned that the enemies had moved and prepared to receive them, we made abatis and entrenchments to oppose their passage" (de Borre 1778). Concurrently, however, Washington sent out reconnaissance parties possibly amounting to twenty percent of his total strength, in case Howe should once again try to outflank him rather than risk large losses in pitched battle. Throughout the day, the armies skirmished as they made their way along the Brandywine. De Borre noted dejectedly that the Clay Creek defensive works near Newport were "useless." "The enemies turned our right", he wrote, and "… at 1 in the morning we abandoned our entrenchments to betake ourselves to the Brandywine River to prevent the enemies from crossing it" (de Borre 1778).

British Army Movements September 9, 1777

The last British units had reached their campsites only late at night on September 8 and needed rest. The deployment of scouts, though an absolute military necessity, had reversed the order of march: Howe's Light Infantry, the spearhead of his column, now lay encamped at the southern end of the campsite, more than three miles to the south. Howe wanted to re-establish the order in which he had set out from Aiken's Tavern before he set out on the day's march. Confident of having stolen a day's march on Washington, Howe ignored potential warning signs that seemed obvious to officers such as Charles Stuart, who wrote in a draft account of the Philadelphia Campaign addressed to his father that on September 8 "We could plainly discover their fires the Eveng. & from a continued noise I conjectured that they were moving on the following evening. Deserters confirm'd our suspicions & informed us that they had crossed the Brandy Wine Creek. We marched on the Eveng. of the 9th" (Stuart 1927:46).

At 1 p.m. orders for the march were issued, with an estimated time of arrival at Welch's Tavern, or Anvil Tavern Inn around midnight September 9/10. Welch's Tavern sat on Route 1 about four miles from the center of Kennett Square and only about another four miles from Chadds Ford. From there the march on the enemy at the Brandywine would begin. Almost from the beginning the plan ran into problems. Cornwallis' column was to arrive at Welch's first, but depart last, marching behind the column of Knyphausen with the wagons and package of the army. That, however, meant that Knyphausen had to march through more than half of Cornwallis' brigade while the British Light Infantry had to catch up with the grenadiers before they could set out on the march. It was already sunset before the last British units set out; the Regiment von Donop in Knyphausen's First Division 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).

Movement of Crown Forces on the afternoon and evening of September 9, 1777 (Western Heritage Mapping).

Almost concurrently Howe received notice that his plan had failed. "After marching two miles to a Place call'd Okerson Meeting" [Hockessin Meetinghouse], Howe learned from an American prisoner that the main American army "had moved from Wilmington" (Robertson 1930:146). Washington would be waiting for Howe at the Brandywine. Montrésor summed the situation up neatly when he wrote that "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" (Montrésor 1881:414). The news spread quickly, at least among the field-grade officers. Lieutenant Colonel Thomas Musgrave of the 40th Regiment of Foot recorded in his diary on September 8 that upon discovery of the British movements, "the Enemy […] fired their Alarm Guns." The next day, September 9, he recorded "The Army mov'd at four in the Afternoon & making a Night March arrived in the morning the 10th at Kennetts Square. The Enemy in the meantime retreated on the other side of the Brande Wine - & took Post opposite Chads Ford" (Musgrave 1777).

The tactical situation had fundamentally changed and the darkness and pouring rain made the situation only worse. For the next few hours British forces trudged through the mud while Howe tried to again re-constitute his columns. As he waited out the night near Hockessin Meeting, he knew that he needed to change his timetable, destination, routes, and order of march, but the new orders for the march, issued in the early evening at "Head Quarters, Cascot [Hockessin], Newcastle Co., 9th. Sept. 1777" were unrealistic. But it was too late. In the rain and darkness of the night, his orders either reached their destination late or not at all. Rather than Cornwallis' column it was Knyphausen who reached Kennett Square first. The von Donop Regiment, "marched until six o'clock the following day, i.e. 10 September (Donop:71). Downman set out on "September 9th – About 5 o'clock this afternoon" and "made a forced march all night through bad roads. Halted in the morning [of September 10]

about 6 at Kennett Square" after a march of 11 eleven hours (Downman 1898:156). Cornwallis was far behind. Lieutenant Stirke recorded for September 9, that "The Army march'd at 4 O'Clock in ye evening towards Lancaster and ye Light Infantry after a very disagreeable march, thro 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 [of September 10], about three miles from ye ground we had left" (Stirke 1961:169) (Figure 3.4).

American Army Movements September 9, 1777

Early in the morning of September 9, Washington informed John Hancock, president of the Second Continental Congress, in a letter written "8 Miles from Wilmington", that "The Enemy advanced Yesterday with a seeming intention of attacking us upon our post near Newport. We waited for them the whole day, but they halted in the Evening at a place called Mill Town about two Miles from us. Upon reconnoitering their Situation, it appeared probable that they only meant to amuse us in front, while their real intent was to march by our Right and by suddenly passing the Brandywine and gaining the heights upon the North side of that River, get between us and Philada and cut us off from that City. To prevent this [action from happening] it was judged expedient to change our position immediately, the Army accordingly marched at two O'Clock this Morning and will take post this Evening upon the High Grounds near Chad's Ford" (https://founders.archives.gov/documents/Washington/03-11-02-0176).

Captain William Beatty of the 7th Maryland Regiment in Smallwood's Brigade recorded that "The 9th [Sept.] we began this March about 2 o'Clock in the morning" (Beatty 1908:109). As is to be expected it took a few hours before the whole army was in motion. Lieutenant James McMichael of the 13th Pennsylvania Regiment in General Nathanael Greene's division entered into his diary: "At 4 A.M. we received marching orders and proceeded E.N.E. to the Crooked Billet, on the great road from Wilmington to Lancaster; thence thro' Kennett township, Chester county, crossed the Brandywine and turning S.E. encamped in the township of Birmingham, being extremely fatigued for want of rest and severe marching" (McMichael 1892:149). An anonymous officer in a North Carolina Regiment also confirmed the march in the early morning hours of September 9. "Genl Washington who was now reconnoitering his [i.e. Sir William Howe's] Camp plainly discovered his intention, & therefore between the Hours of 1 & 2 a.m. of the 8th Septr [i.e. the 9th] he marched to counteract his design, which was executed so judiciously that we got all our Baggage & other Implements of War over the Brandywine (the place of our Destination) 16 hours before the Enemy made their Appearance on the opposite Hills" (Anonymous 1777c).

Just around daylight of September 9, the army crossed the Brandywine and deployed along the banks of the river as Washington and his military family, about 30 men altogether, established his headquarters about a mile east of Chadds Ford in the home of Benjamin Ring. Throughout the day outlying detachments such as Major Joseph Bloomfield's New Jersey troops received orders to join the main army at the Brandywine. By the early evening the Continental Army had successfully disengaged from British forces and re-assembled along the Brandywine. As night fell on the Brandywine, Sir William Howe's forces were either still struggling "by County road" (Peebles 1998:132) or up to their waists in mud, "during a very dark night" (Ewald 1979:80) to find their way to Kennett Square or they lay "Encamp'd on a hill in the Dark" and at risk of harassment by local militia (Peebles 1998:132).

Movement of the American Army from the Red Clay Creek line to the Brandywine, September 9/10, 1777 (Western Heritage Mapping).

Sept. 10, The Day Before the Battle

American Army Movements September 10 until Midnight September 10/11, 1777

As day broke on September 10 along the Brandywine, Washington knew from information gathered by his scouts that the British attack would come on September 11. Washington needed to defend Philadelphia, and much as he might have wanted to avoid risking his army in a pitched battle with the British, he knew that he had no choice. The marches of the two previous days had placed his forces in Howe's way. Howe would have to fight his way into the American capital. On the other hand, he had sought battle with Washington all year long, and now that the American was offering it, Howe gladly accepted the offer. A decisive defeat would severely weaken the American Army and might convince Congress that the time had come to enter into negotiations to end the rebellion.

Throughout the day, the Continental Army went foraging, putting up defensive works and preparing for the attack it knew would come. Joseph Clark of the Light Infantry wrote: "On the 10th, preparation was making for a stand" (Clark 1855:98). Preparations were not always peaceful. Captain William Beatty of the 7th Maryland Regiment in Smallwood's Brigade recorded that on "Wednesday 10th Sept. the Alarm Guns were fir'd and the whole Army got Under Arms. However the Enemy did not Approach. The Army extended its Right Higher up the Brandewine [.] At the same time a Battery was begun by the Park of Artillery opposite Shad's Ford. Our Division being on the Right of the Army we extended to a large Stone Mill [Brinton's Mill] about one Mile above the Ford: in this Position we lay all Night" (Beatty 1908:109). James McMichael also recorded that on September 10 "At noon the alarm guns were fired, and the army drawn up in the usual manner, and marched to a height near the Brandywine, where we took post. The enemy not appearing we posted strong pickets and remained all night in the woods" (McMichael 150). The army would be ready once Howe's forces made their move.

All day long Washington's scouts watched the movements of Howe's forces. Robert Harrison informed Congress that "They have parties advanced on the Lancaster Road, and on those leading over this Ford & to Wilmington. Maneuvring appears to be their Plan; I hope notwithstanding, that we shall be able to find out their real intended route, and to defeat their purposes. By Light Horsemen this instant come in, the Enemy are in motion and appear to be advancing towards us. His Excellency is giving the necessary orders & getting the Troops under Arms, which prevents him signing this himself, as was intended at first" (GW Papers). Reconnoitering last well into the night. Moses Hazen wrote that "The officer and Party which I detached to reconitre the Enemy's Camp, returned last Evening at 11 O'Clock" (Hazen 1889:197).
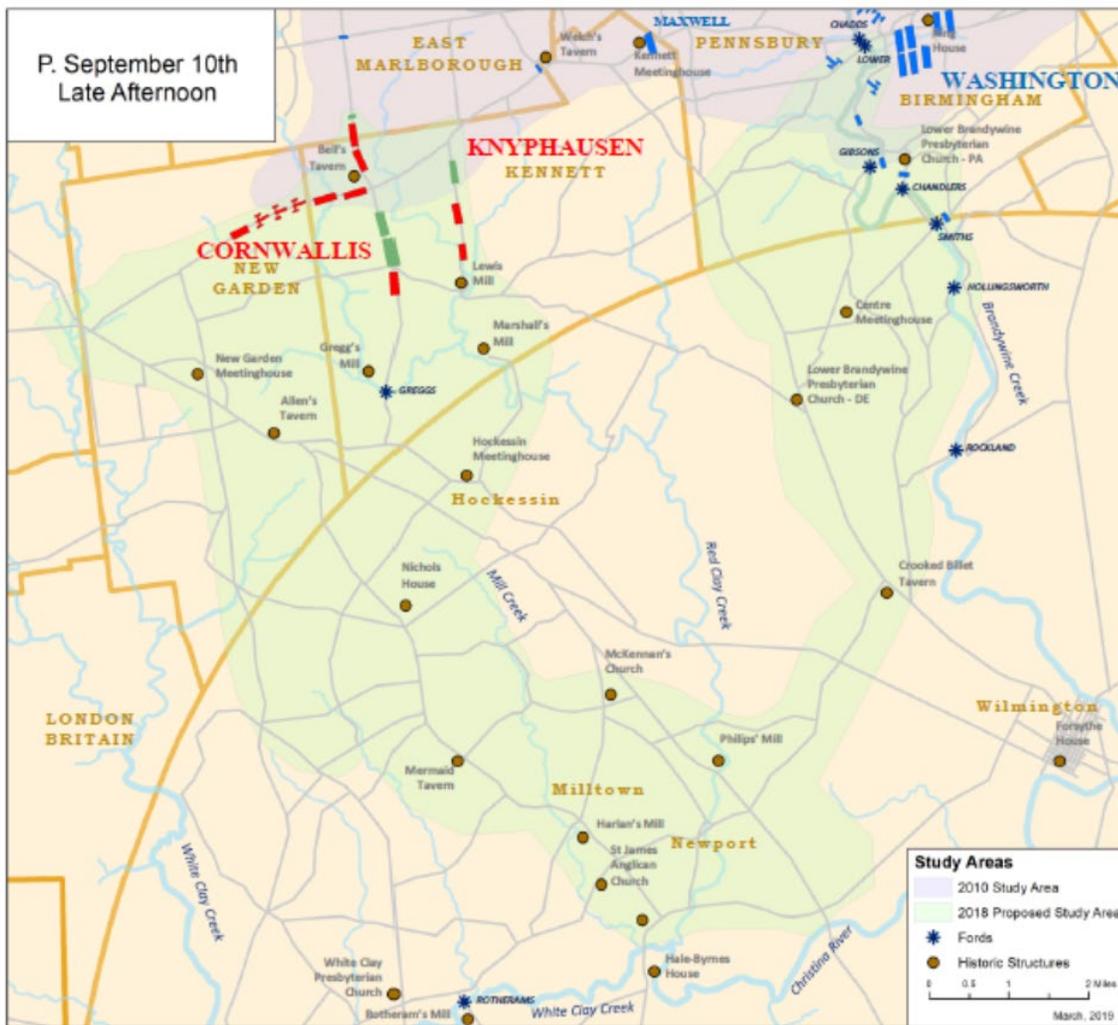
Position of the armies on the afternoon of September 10, 1777 (Western Heritage Mapping).

The pickets were the first to make contact in the morning of September 11. "Wednesday ye 10 march'd to gordons ford being about 4 miles there lay all night" (Kirkwood 1910:167). And Lancaster County Militia, Private Andrew Cummings deposed that "the evening before the battle of Brandywine, the company to which the applicant belonged were ordered to take position, about half way between Welsh's tavern and Chadd'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" (Cummings 1832).

Washington's Army had a total strength of approximately 18,700 officers and men at the beginning of September 1777 (Table 2). The number of American soldiers present to fight at the Battle of Brandywine on September 11 was reduced by 2,000 militia (only 3,000 Pennsylvania militia positioned themselves at fords to defend this day),

and 200 fewer Continental infantry compared to September 3 as these men were calculated to be too sick to participate. These adjustments still leave a considerable force of 12,400 infantry, 1,120 cavalry and artillery, and 3,000 militia for a total defending force of 16,520 officers and men present (Harris, 2014:368; Harris and Ecelbarger 2021).

3.2 Numerical Strength of Washington's 1777 Army, early August to late September.

PRESENT FOR DUTY	AUGUST 1 (DERIVED)	SEPTEMBER 3	SEPTEMBER 24
Infantry Rank and File	5,007	7,602	6,371
Field Officers	692	976	906
Non-commissioned officers	1,108	1,620	1,340
Regimental Staff (Nov 3)	140	[206]	[206]
General officers w/staff (est)	90	100	100
Present "on command"	1,005	1,474	1,148
Sick Present	428	628	383
Total Continental Infantry present	8.470	12,606	10.454.
Militia	0	5,000	3,000
Continental Dragoons & Artillery	1,120	1,120	1,120
Total Present Force	**9,615**	**18,726**	**14,574**

British Army Movements September 10 until Midnight September 10/11, 1777

Howe's forces had either marched through the night of September 9/10 or set up bivouac wherever the order to stop had reached them. Lieutenant Purdy had reached Kennett Square "About 7 oclock in the Morning which was About 10 Miles whare we halted Till About 12 oclock & marched on About 1 mile & incamped their that night" (Purdy 1777). Thomas Sullivan of the 49th Regiments of Foot recorded in his journal that on "September 10th. - The whole joined in the morning, and marched at 8 o'clock" for Kennett's Square and set up camp. Howe wanted to immediately initiate the attack on the Americans. His officers wisely discouraged him. The troops needed the day to rest, whatever repositioning took place was meant to reconnoiter American positions and to arrange and position the troops for the pending attack the following morning. Major Patrick Ferguson remembered "The morning before Brandywine [Sept. 10] we advanced within 6 miles of the Rebells, and while the army was taking its ground Sir Wm Erskine and other General Officers came to my Post which was on the road to their Camp. In my front was an open wood along the Skirts—of which the Rebell Horse were showing themselves in different bodys. As I imagined the Generals wished to know what was in the wood I took men and advanced to it and as the Rebells immediately made way for us, we Searched it unmolested. I was desired to take a larger party but I had enough and wanted to Show how much my Lads dispised their horse. In a field beyond the wood we saw a Large body of horse and a number of Officers— I believe Mr. Washington reconoitring" (Rankin 1978:299). Meanwhile British forces were moving into their jump-off positions for the pending attack on the Continental Army. "September 10th – About 5 o'clock this afternoon moved forward and encamped" (Downman 1898:157). That re-organization was complete once Kyphausen had moved his forces into their assigned position. Instead of fighting the battle on September 10, the Continental Army would have to be attacked one day later, but the delay gave Howe time to move Cornwallis to his far-left flank, from where it would embark on the flanking march that would decide the Battle of Brandywine. Howe was ready to issue his orders.

Head Quarters, Kennett Square, 10th. Sept., 1777.

> *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 percBattalion or Corps, and ten Spare Waggons with Earl Cornwallis's Division) are to march with Lieut.-Gen. Knyphausen's Corps.*

The army will March in two Columns at 4 o'Clock to-morrow morning, and receive their Orders of March from their respective Lieutenant Generals—His Excellency Lieut.-Gen. Knyphausen and Lieut.-Gen. Earl Cornwallis (Howe 1777:491).

Howe's forces were almost equal to those of Washington. The difference lay in the fact that Howe's men were professional soldiers, many with long years of service. The leadership skills of the officer and non-commissioned officers corps more than equaled those of their opponents while the combat skills of the rank and file were superior to those of most of the Continental Army and certainly of the militia. 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. (McGuire 2017).

American Army positions in the morning of September 11, 1777

In the morning of September 11, the Continental Army was stretched out for almost seven miles along the eastern bank of the Brandywine from Wistar's Ford, the northernmost ford before the forks of the Brandywine, to Pyle's Ford, the southernmost crossing point of the Brandywine (where Route 100 crosses the Brandywine). Trimble's Ford, the closest unguarded ford across the Brandywine, lay twelve miles up-river. Farthest to the south lay two brigades of Pennsylvania militia under Major General John Armstrong.
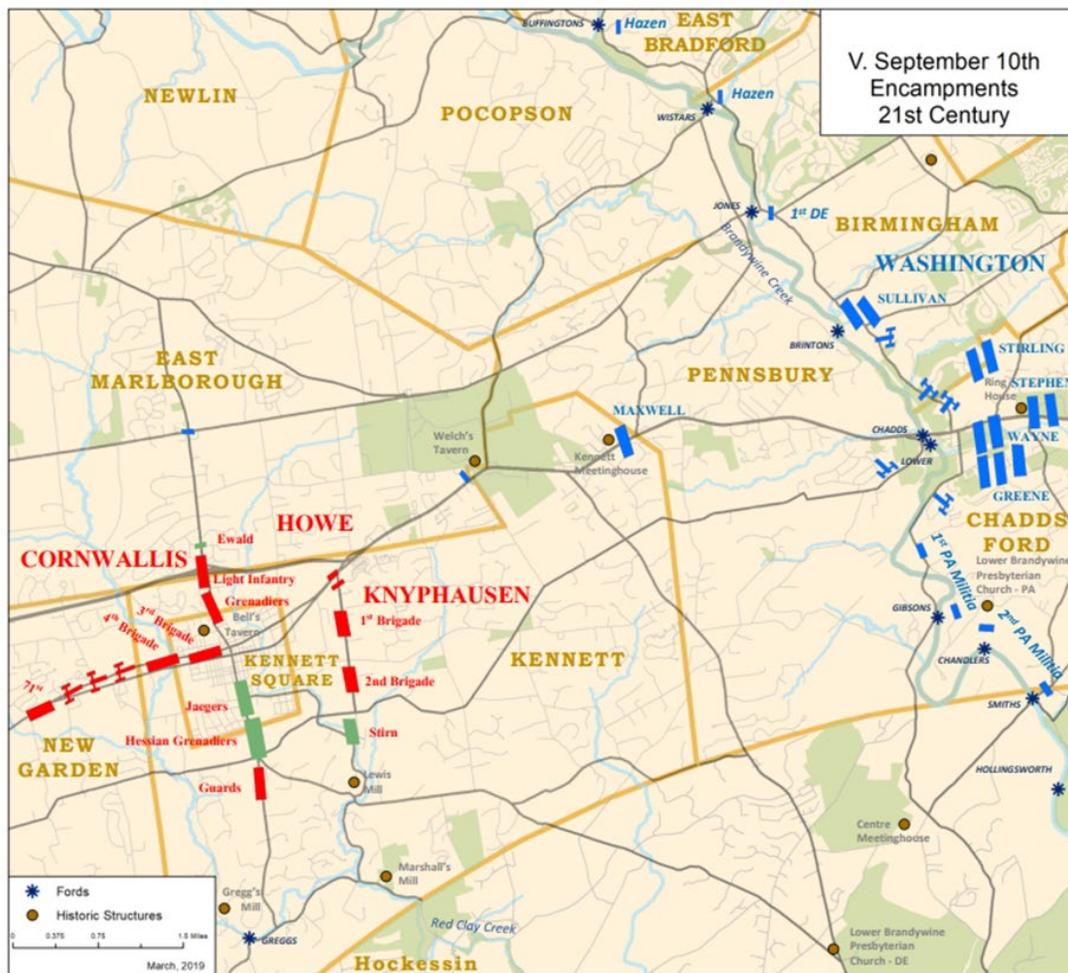
Distribution of the armies on the morning of September 11, 1777, prior to the battle (Western Heritage Mapping).

By around 10:00 a.m., Maxwell's Light Infantry had been pushed across the Brandywine and lay now on the heights on either side of Route 1. As it moved across the creek it joined the divisions of Generals Greene and

Wayne station along Harvey Run and west of Ring Road. Behind Wayne on either side of Route 1 lay the division of General Stephens and slightly to the north-west but south of Brinton Run lay the division of General Stirling, whose right flank rested on Brinton's Run.

Farther to the north came General Sullivan's division on the height between Brinton's Bridge Road and Wylie Ter Road. Still farther upstream the 1st Delaware Regiment lay where Street Road/W Street Road crosses the Brandywine guarding Jones's Ford. One detachment of Moses Hazen's Canadian Regiment lay on Creek Road just north of Plum Run where Route 52 crosses the Brandywine today guarding Wistar's Ford and another detachment a good mile upstream at Buffington's Ford just west of the forks of the East and West Branch on the northern bank of the Brandywine.

This distribution of forces concentrated around Route 1 and Chadds Ford clearly shows that Washington anticipated a frontal attack by Howe across the Brandywine and along Route 1 which led directly into Philadelphia. Using the Great Nottingham Road (modern Baltimore Pike, or US Route 1) it is a march of less than 25 miles from Chadds Ford to City Hall in Philadelphia. Woodford's, and Scott's brigades of Stephen's division were posted behind them, adjacent to Stirling's division of Conway's Pennsylvanians and the New Jersey brigade under the command of Col. Elias Dayton. The North Carolina Brigade was also concentrated at Chadds Ford and held in reserve.

Sept 11, The Day of The Battle

Chadds Ford and the Brandywine Creek Crossings: General von Knyphausen: early morning September 11 to around 4:00 p.m.

Following repositioning of forces during the day, General von Knyphausen's division in the evening of September 10, 1777, lay encamped along McFarlan Road southward between East Cypress Street with Major General Johann Daniel Stirn's Brigade south of East Hillendale Road on Creek Road toward the intersection of Creek Road with Old Kennett Pike at Lewis Mill on the East Branch of Red Clay Creek.

The final constitution of his division took place in Howe's orders of September 10 issued from his headquarters at Kennett Square.

> *"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.*
>
> *The army will March in two Columns at 4 o'Clock to-morrow morning, and receive their Orders of March from their respective Lieutenant Generals — His Excellency Lieut.-Gen. Knyphausen and Lieut.- Gen. Earl Cornwallis"* (Howe 1777:491).

In his letter to the Landgraf of October 17, 1777, von Knyphausen provided more detailed 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).

Eyre Coote of the 37th Regiment of Foot provides additional information on the preparations for the march on September 11.

Hd Quarters Kennets Square 10th Sepr 1777 Parole Albany C. Sign Burgoyne
Such Corps as have not already recd their two days fresh provisions to this day inclusive are to apply for it immediately – 27 Three days Rum for the Officers, non Commd Offrs & Soldiers doing duty, & Corps of Pioneers, to be issued this afternoon from three to five o'clock; no other part of the army can be served at present. – The 1st & 2d Brigades British under the Command under the command of Major General Grant are to be attached to the Corps Comanded by his Excellency Lieut: Genl Knyphausen One Squadron of Dragoons is to remain with that Corps and Two Squadrons with the Corps under the Command of Lieut: Genl Earl Cornwallis – The whole of the baggage provision train & Cattle except one wagon for Batn or Corps and Ten spare wagons with Lord Cornwallis are to march with Lt General Knyphausens Corps –

The addition of Grant's two brigades brought the total strength of Knyphausen's division to around 6,800 officers and men.

How many wagons accompanied von Knyphausen on his march to Chadds Ford? 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) Baurmeister had reported on September 8 that the provision train consisted of 276 wagons "… loaded with rum, flour, and salt meat" (Baurmeister 1935:402). Based on the number of units in Howe's army (including von Knyphausen's Hessians and Ansbachers) and the 276 wagons loaded with supplies and wagons loaded with equipment, the treasury etc., a minimum of 350 wagons drawn by around 1,400 horses seems a reasonable estimate. (Howe 1778; Catts et al. 2017: 21/22). Howe had ordered "one wagon for Batn or Corps and Ten spare wagons" to accompany Cornwallis, which still left well over 300 wagons in Knyphausen's column. At around 125 wagons per mile and 42 feet per wagon on average, Knyphausen's wagon train during the march to the Brandywine formed a hypothetical column of between 2.5 and 3 miles in length.

Knyphausen had not advanced far before he made first contact with a patrol of Maxwell's Light Infantry. Captain August Eberhard von Dincklage of the Hessian Leibregiment in Stirn's Brigade provided a detailed description of the fighting and the landscape in which it took place. "On the 11th at 4 o'clock in the morning the army set out again and marched in two columns. Ours was on the right hand under the orders of General von Knyphausen took the straight route to Brandywine Hill, where General Washington with his army stood on the other side of the Brandywine Creek." (Dinklage 1777) Put differently, the column commanded by Kynphausen marched north to the Great Nottingham Road, current US Route 1, where it turned east toward Chadd's Ford, a march of roughly six miles. The speed of the column was set by the oxcarts, at around 1.5 miles per hour the slowest

elements in the column. If it moved at the same speed as the rest of the column, Knyphausen's advance force could theoretically have reached Chadds Ford at around 8:00 a.m. but encounters with Continental Army forces along the way slowed the column down.

The Hessian brigade of Major General Johann Daniel Stirn, which included the Fusilier Regiments Mirbach and Donop, 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), camped at the southern end of McFarlan Road. It had to travel around 1.5 miles or one hour, before it even reached Route 1 (Howe 1777:488/9; Londahl-Smidt 2004/2005).

After less than two miles on the Great Nottingham Road, the Queens Ranger made first contact with Continental Army forces at Welch's Tavern/Anvil Tavern, which stood on the south side of Route 1 and west of both Route 52N and the entrance to Longwood Gardens. General William Maxwell, whose almost 1,000 men strong Light Infantry lay posted at Kennett Meeting House, had sent out a mounted scouting party. After heading up the road about a mile and a half, the scouts paused to refresh themselves at Welch's Tavern. Lieutenant James McMichael of the 13th Pennsylvania Regiment described this initial encounter in his diary. "Thursday 11th. At 7 oClock A.M. an attack commenced with Our Scouting party and the Enemy in which Captn. Marshal was wounded, we all paraded near Chads's ford and had a heavy Cannonade follow'd with small arms on both sides, but not much execution done the distance being too large" (McMichael 1892:149/50). Following this brief firefight, the scout retreated to warn Maxwell of the approaching column. It was now around 7:30 a.m. or a little thereafter.

The Brandywine battlefield road network 1777. Traces depicted in red illustrate roads (shown in red) that were present at the time of the battle, with their corresponding dates of creation.

With Maxwell's scout pushed aside, Knyphausen's column continued its advance on the Nottingham Road until it encountered Maxwell's Light Infantry at Kennett Meetinghouse just before the intersection of Route 1 and

Parkersville Road. That firefight was over quickly as well as Knyphausen's column continued to advance toward Brandywine Creek.
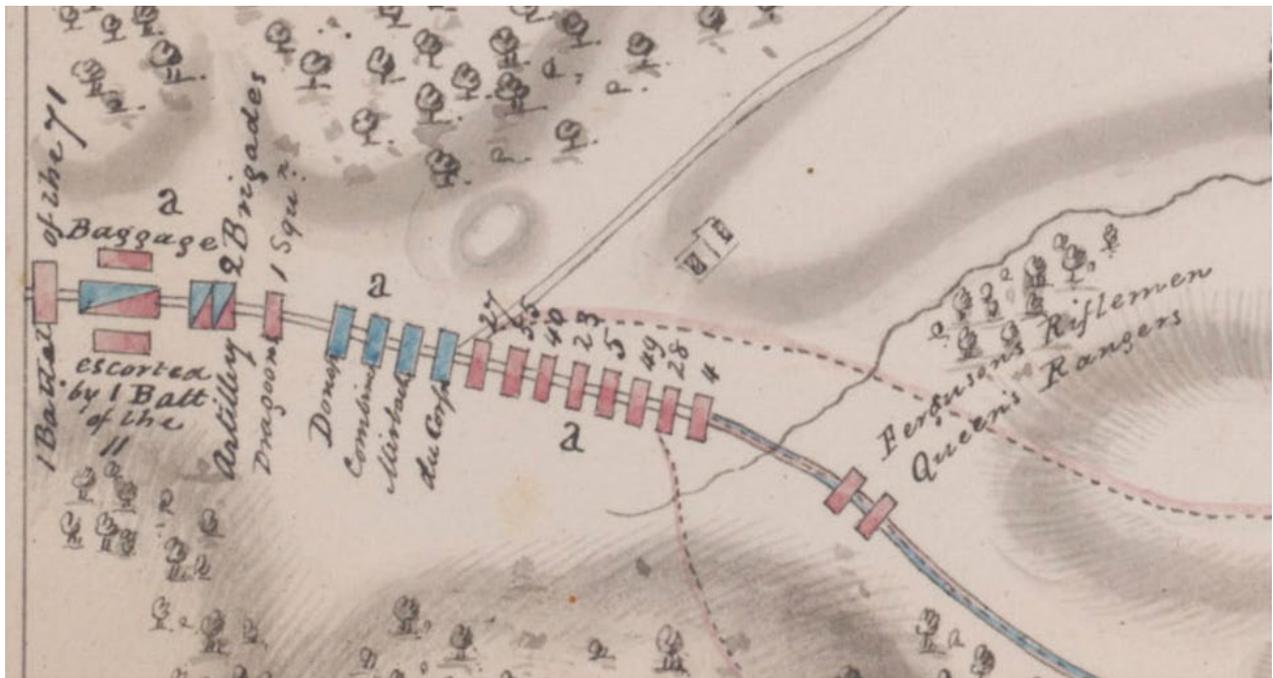
Detail of Anonymous, *Battle of Brandywine in which The Rebels were defeated*. It shows the line-up of Knyphausen's Division along the Great Nottingham Road as they approach the Brandywine in the morning of September 11, 1777.

American resistance stiffened as British forces came closer to Chads Ford and the Brandywine. Sergeant Stephen Jarvis of the Queen's Rangers recorded that "We came in sight of the enemy at sunrise," indicating a timespan between 6:30 a.m. and 6:45 a.m. "The first discharge of the enemy killed the horse of Major Grymes," continued Jarvis,

> *"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. None but the Rangers and Ferguson's Riflemen, were as yet engaged; the enemy retired, and there was a cessation for a short time, to reconnoiter the enemy, who had taken up their position in a wood which skirted the road that led down to the River. The Rangers were ordered to advance and drive the enemy from that position. We marched from the right of Companys, by files, entered the wood, and drove the enemy from it, into an open field where there was a large body of the enemy formed. Major Wymes, who commanded the Rangers, ordered the Regiment to halt and cover themselves behind the trees, but the right of the Regiment was hotly engaged with the enemy, and Captain Dunlap came to Major Wymnes, and requested him to let the Regiment charge or the two Companies would be cut off. The Major then ordered the Adjutant (Ormand) who was very glad of the opportunity, to desire the troops in our rear to support him, ordered the Regiment to charge. At this instant, my pantaloons received a wound, and I don't hesitate to say that I should been very well pleased to have seen a little blood also. The enemy stood until we came near to bayonet points. then gave us a volley and retired across the Brandywine. Captain Williams and Captain Murden were killed, and many of the officers were wounded in this conflict. The Brandywine on each side was skirted with wood, in which the Rangers took shelter, whilst our artillery were playing upon a half moon battery on the other side of the River which guarded the only fording place where our Army could cross. In this position we remained waiting for General Howe to commence his attack on the right flank of General Washington's main Army. Whilst in this situation Captain Agnew was wounded, of which wound he was ever after a cripple. Several other men were also wounded by the riflemen from the other side. Captain Agnew (he was only Lieutenant at this*

time) had behaved very gallantly when we drove the enemy. I saw him plunge his bayonet into the fellow who had killed Captain Murden the minute before" (Jarvis 1907: 200).

Charles Moile Talbot Jr. of the 6th Virginia Regiment in Brigadier General Weedon's Brigade, in Nathanael Greene's First Division spent most of September 11 near Chad's Ford. He described his experiences in a letter to his father of M. Charles Talbott in Bedford in Virginia written on October 10, 1777,

> *"In Woods Head Quarters 25 Miles north Philadelphia." "On 11th Sept. 8 OClock in the Morning our army having got a Head of the Enemy on their Cours to Philadelphia they attacted our Lines we not being unaware of them met them with a [three words illeg] a Never Saw men with [one word illeg.] higher Spirits when the fiering began on the outguard our troops farly Liped for Joy the firing Ensued on both Sides very hot & So Continuous During the whole day the Cannon as well as Small arms & So Continued till about Two hours by Sun when the Cannon in a Measure Ceased & the fire of the Small arms began in a most & Surprising manner So that it was as one Constant Roll of a Drum till after Sundown the dark Coming on our army being Some in Confusion we were [three words illg.] at Chester which was about 13 Miles the Enemy pursued us not at all"* (Talbot 1777).

An anonymous officer in one of the North Carolina regiments serving in Maxwell's Light Infantry Corps stationed at Chads Ford penned a lengthy account of his encounter with British forces September 11:

> *"Early in the Morning our Scouting Party of Light Horse under the Command of Col. Baylor, returned with Intelligence that the Enemy were in less than 3 Miles marching on us with the greatest precipitation, no time was therefore to be lost. The Alarm Guns were instantly fir'd for the out Centuries to return & for each man to repair to his respective Station of Defence, while a Detachment from each Brigade under the Command of Brigr Genl Maxwell was sent to attack them. At 7 o'clock the Enemy made their Appearance on the opposite hills marching in three large Columns, & as the course of one seemed to send towards the Valley, near which ran a very substantial Fence, behind which Mr Maxwell & his party were concealed in Hay, all were anxious of knowing the event of this day's Enterprise. About 20 Minutes after seven a very hot fire issued from all parts of the Fence, & in return for which the Enemy fired in grand Divisions, with now & then a piece of Artillery, which however did but very inconsiderable Damage. And as Brigr Genl Maxwell had orders to retreat & fire, reading the consequence of being overpower'd by Numbers, as well as falling into an Ambuscade which might probably be laid in the adjacent Woods through which he must pass, should he continue any longer, after an Engagement of 15 Minutes he retreated on the East Side of the Brandywine with the loss of a few Privates killed & wounded, the Enemy still continued the same Route till they came within long shot of us, at which time we opened three Batteries on them mounting 16 Carriage Guns from three to twelve Pounders. Which were served so well, that after exchanging 60 Rounds each, the Enemy made a halt, & retreated to the top of the Eminence. Precisely at 40 8 o'clock an advance guard of Hessians came to the River who were immediately attacked by Genl Maxwell, & from that time till 6 in the Evening, an incessant Fire was continued between them, during which they were three several times repulsed. The Enemy disappointed in their Attempt to cross the River as hitherto, betook themselves to a different Stratagem. There were in the space of three Miles four Fords one on our right & two on our left besides that which we occupied, over which a Man might pass on Foot at Pleasure, they therefore filed off to the right, & left, as tho' they were determined to make an Attempt on each place at once, but in a few Minutes those whom we saw on our right made a sudden halt, & proceeded to the left, till coming right opposite our centre Battery took possession of the plain, & began a Cannonade whilst an advance Party fortified an Eminence not far distant from our centre Battery, at 3 o'clock all their Batteries were opened against ours & from that time till Six in the Evening a most dreadful fire ensued indeed the brave Col. Proctor who was at the taking of the Havannah declared to me that it far exceeded that in hotness."* (Anonymous 1777c).

Both artillery and small-arms fire across the Brandywine commenced around 10:00 a.m. and was kept up in a desultory way for the next six hours, until about 4 o'clock in the afternoon. Regimental Quartermaster Heuser kept the journal of the Fusilier Regiment Alt Lossberg and described the battle thus: "At 10:00 (a.m.) our advance guard was already in contact with the rebels. They had posted themselves on a height behind split logs ("Spaltern"), but the Rangers stormed it and drove them back to their main army. The Knyphausen division posted itself on that height. In front of us was a meadow through which the Brandywine Creek flowed. General Washington had occupied the opposite height with his army and thrown up earthworks and batteries at various places from which they fired cannon at us. On our six 12-pounders were posted on two different heights which fired at their works. The enemy fire did little damage since their cannon were all aimed too high" (Alt Lossberg 1777). Captain August Eberhard von Dincklage of the Hessian Leibregiment wrote that "We met their advance corps this side of the creek, chased it off a number of heights and drove them back across the river. Thereafter we took up positions and began to fire at the enemies from the heights, which however did not happen without losses on our side, the regiment had two dead and a number of wounded" (Dinklage 1777).

General Grant described the events of the morning of September 11 in similar terms:

> "Kniphausen & I with two Brig[a]des of British [,] four Battns. of Hessians—the Heavy Artillery, spare Ammunition and Baggage of the army guarded by the 71st Regt. marched & took possession of the Heights of Brandy Wine opposite to the Rebell Army—Our orders were to force a Passage when the attack began upon the Right or if the Rebells should attempt to go off upon receiving information of the approach of the General's Column. I found a Corps of Rebells in possession of the Heights which We were order'd to occupy—with a Redoubt upon their Left, but after a pretty smart skirmish-- & a Cannonade having by different Movements gained the advantage of Ground & taken them in Flank, they were obliged to give Way, pass the River & fall back upon their Army 41 which was under Arms & within Reach of our Artillery." As soon as he had secured his position Grant created detachments "of the 4th, 5th, & 27th Regts. with Artillery to keep possession of the Heights upon our Left & to prevent the Rebells from passing the River upon that Flank" (Grant 1777).

Detail of Anonymous, *Battle of Brandywine in which The Rebels were defeated.* It shows the distribution of Knyphausen's forces upon arrival at the Brandywine.

All Knyphausen had to do now was wait for cannon fire on his left, indicating that Howe had turned the American right flank. That would be his signal to cross the Brandywine. By 2:00 p.m. British forces on the right bank of the Brandywine knew that the signal could come any moment. "Towards 2 o'clock a great change was noticed in the enemy's position; 4 regiments with artillery had to defile from their right to the spot where the left attack of our army must take place, and the road to Chester was filled with waggons driving to and fro. At 4 o'clock the firing of musketry proclaimed the approach of Generals Howe and Cornwallis; hereupon General Knyphausen at once formed into line for his attack" (Von Knyphausen 1777).

Flanking March: General Howe - Early morning September 11 to around 4:00 p.m.

From his Headquarters at Kennett Square, Sir William Howe had given somewhat precursory order on September 10. "The army will March in two Columns at 4 o'Clock to-morrow morning, and receive their Orders of March from their respective Lieutenant Generals — His Excellency Lieut.-Gen. Knyphausen and Lieut.-Gen. Earl Cornwallis (Howe 1777:491) (Figure 5.11).

In his letter to the Landgraf of October 17, 1777, von Knyphausen provided more detailed information on the order of march for Howe's and Cornwallis' column.:

> *"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."*

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).

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 ambuscade, 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 1777b; Burgoyne 1987:48; Montreśor 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 44 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.

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. 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 (Road 842) At this location the former road continued north to Trimble's Ford and is still visible.

Cornwallis' Division crossed the west branch of the Brandywine at Trimble's Ford. The importance of Trimble's Ford as a key component of the colonial road infrastructure should not be underestimated and can be seen in the number of roads and Townships it served. From the south, the four primary roads to the Great Valley from Kennett, East Marlborough, Newlin, Pocopson and Pennsbury converged at the floodplains that formed the ford. The 1742 Road that intersected the 1728 Road to the Great Valley, which was utilized by Crown Forces, brought goods and people 46 from East Bradford and Birmingham Townships north via Trimble's Ford. Locally, the ford was the main crossing of the Creek from Marshallton and points north towards Baltimore.

After crossing at Trimble's ford, Cornwallis's Division moved east onto Lucky Hill Road and then Allerton Road. This road leads to Jefferis Ford. Historical documentation and period maps indicate that the current location of the Allerton Bridge is at the approximate location of the 1777 Jefferis Ford. Von Muenchhausen comments that the waters at Jefferis, like those at Trimble's, were up to three feet deep (von Muenchhausen 1974:31). Perhaps the most detailed description of the ford area is provided by local resident Joseph Townsend. A member of the Society of Friends, he was attending a week-day meeting at the wheelwright shop (later owned by Philip Price) when he heard a disturbance caused by several local people who were visibly upset because the Crown Forces were coming. As Townsend and some others strived to calm the locals down, "...our eyes were caught on a sudden by the appearance of the army coming out of the woods into the fields belonging to Emmor Jefferis, on the west side of the creek, above the fording-place. In a few minutes the fields were literally covered over with them, and they were hastening towards us. Their arms and bayonets, being raised, shone as bright as silver, the sky being clear and the day exceedingly warm...."(Townsend 1846, quoted in Futhey and Cope 1881:75).

Cornwallis's Division halted their southern advance and began to organize near Strode's Mill at present-day Birmingham Road and modern PA 52. The British Light Infantry and the Hessian Field Jaeger Corps formed their lines along the south side of modern PA 52 just south of Strode's Mill. Ewald's Hessian Jaegers moved south along Birmingham Road to near County Club Road. Most of Cornwallis's Troops stop to rest on Osborne Hill north of Lenape Road and west of Birmingham Road and prepare for battle. (Catts et al. 2016: 4-5)

The journal of the Grenadier Regiment Minnigerode records that "We had to make a tedious detour of 17 miles and crossed the Brandywine Branch twice in the neighborhood of West Bradford. We occupied a height in the Brandywine Mountains [sic], and made a short halt towards three o'clock" (Minnigerode 1777).

Howe used the short halt for a picnic with some of his officers. Thomas Musgrave, Lieutenant Colonel of the 40th Regiment of Foot who was apparently marching with the Light Infantry of his regiment rather than the battalion companies which were in Knyphausen's division, recorded that he "arrived upon the Heights above Dilworth", i.e. after ascending the defile to Sconnelltown, "about three in the afternoon – The advanced Corps halted for the Rear of the Column – During this The Enemy were perceived in Motion but from the Woods & unevenness of the Ground it appeared at first uncertain whether they intended to give us battle – Sir Wm Howe with a most cheerful Countenance converse with the Officers & invited several to a slight Repast provided on the Grass all Eyes were on him & ev'ryone who remembers the anxious moment before an Engagement will conceive how animating the sight to see the Commander in Chief in high Spirits 47 & placing the utmost Confidence in his Troops – in short the Army reassumed their March in full assurance of Success & Victory." (Musgrave 1777).

Engineer Captain John Montrésor noted that during the approximately one-hour halt he could watch the movements of the American forces in his front (Montrésor 1881:416). These forces were General Sullivan's Division moving into position on the heights just to the west of Birmingham Meeting House, almost exactly two miles from where Montresor was standing.

The journal of the Grenadier Regiment Minnigerode records that the regiment "made a short halt towards three o'clock; then we moved on and after going about a mile we had to march forward with all possible dispatch, advance abreast in 2 divisions, and after we had passed through a wood 48 and come out upon a height the English Guards which formed the right wing and were supported by the Minnigerode Battalion in the 2nd line, engaged with the enemy" (Minnigerode 1777). One mile from Strode's Mill places the formation into line of battle almost exactly at Radley Run. From there it is another mile to Birmingham Friends Meeting House. The highest point along that road is between Radley Drive and Daniel Davis Lane, about 0.7 miles from Birmingham Meeting.

Colonel Musgrave recorded that "About 4 oClock the Enemy appeared in force & took up a strong Position on the commanding ground above Birmingham Church, their left near to the Brandewine both flanks covered by very thick Woods & their Artillery advantageously disposed" (Musgrave 1777). The journal of the Minnigerode regiment also mentions an American artillery position on the left side of Birmingham Road: "Our left wing which consisted of the light troops, the English Grenadiers and the Linsing Battalion came across a battery at the very commencement, which inflicted great injury upon them, it is true, but was soon abandoned, thanks to their courageous charge" (Minnigerode 1777).

Musgrave's journal describes the battle formation taken by Howe's Army. "The Kings Troops advanced in three Columns", he wrote, and

> "upon approaching the Enemy Lord Cornwallis was ordered to form the Line – the whole was presently formed without hurry or Confusion – the Right consisted of the Guards 1st & 2nd Grenadiers, supported by the Hessian Grenadiers in a second Line – The left consisted of the Hessian & Anspach Chasseurs with the two Battalions of Light Infantry & supported by the 4th Brigade – the high Road running through the Centre & dividing the 1st Light Infy from the 2nd Grenadiers. The 3rd Brigade form's the Reserve – 2 Squadrons of Dragoons The Line moving on exhibited a most Grand & Noble Sight. The Grenadiers beating their March" (Musgrave 1777).

The Battle of Brandywine had begun.
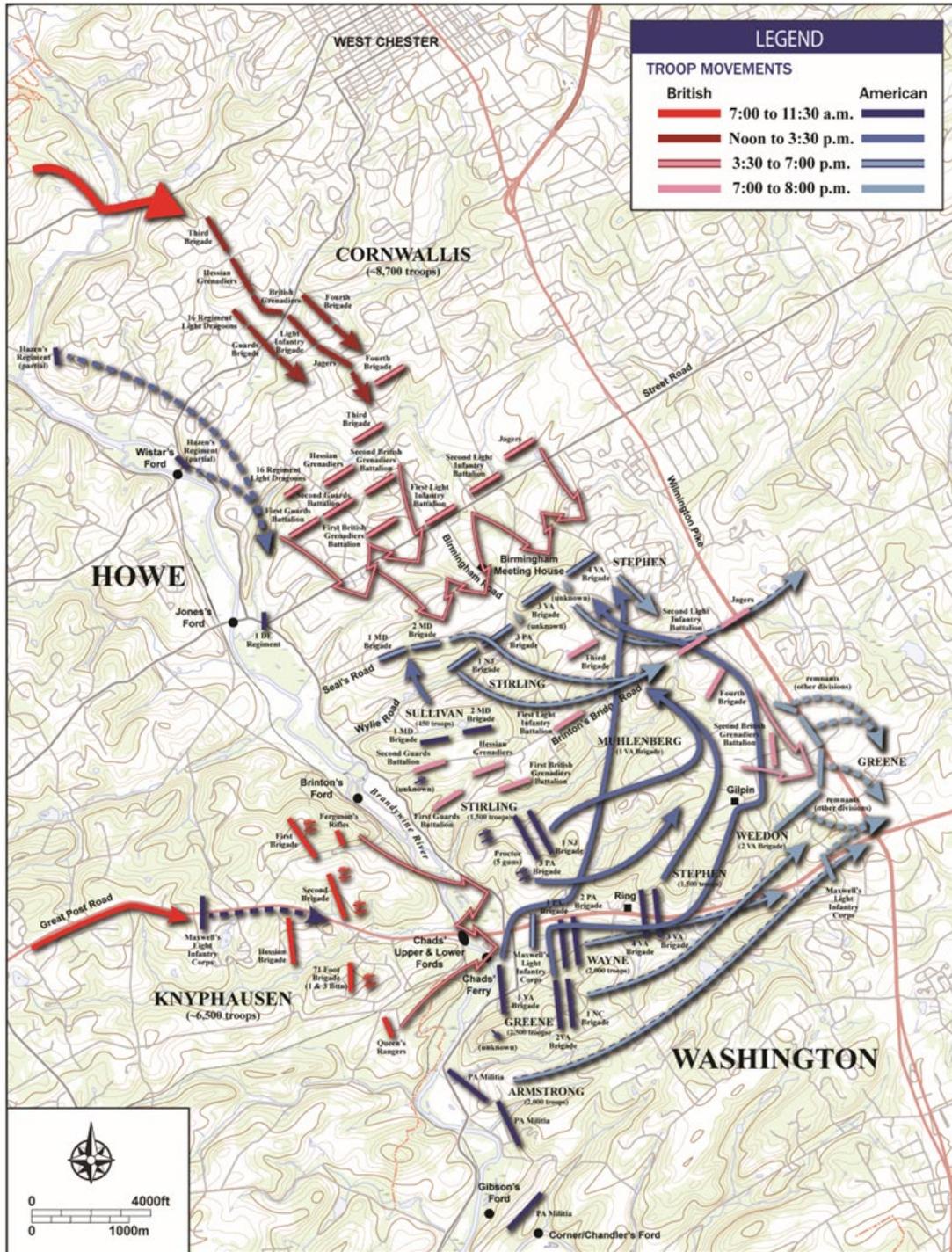
Map of the Battle of Brandywine, showing current battle interpretations based on most recent (2022) scholarship. Base map from an original by the American Battlefield Trust. This map revises troop movements and locations from the earlier 2010 and 2013 studies.

The Battle Ensues – Chadds Ford Combat & Fords Defense and Osborne Hill & Birmingham Road Combat

Chadds Ford Combat & Ford Defense

By 10:30 A.M., the British and Hessians had cleared the west bank of the Brandywine and taken up positions overlooking the Ford. About noon, having received the reports that a large British column was moving north, Washington assumed that Howe had split his army and launched an assault at Knyphausen's forces across the Brandywine at Chadd's Ford. Part of Greene's troops and Maxwell's light infantry crossed the Brandywine and attacked a work party of the 49th Regiment of Foot throwing up a Battery. They drove the British off, killed a captain and inflicted 30 casualties and before retreating back across the creek.

Thereafter Knyphausen spent the day watching American forces across the Brandywine and occasionally exchanging fire with them as he listened for artillery and small arms fire on his left indicating that Howe had made contact with Washington's forces. By the early afternoon Knyphausen knew that Howe was on the way: "toward half past one, the patrols of their right wing must have informed them of the approach of the second column. We saw several battalions, some artillery, and some troops of dragoons file to the right to reinforce their right wing and other changes in the line being made to give the necessary defensive strength to their left wing, which had been weakened by the removal of some of these troops" (Baurmeister 1937:15). Washington was re-deploying General Greene's division to Birmingham Meeting House to battle General Howe's forces threatening the American right flank.

The sound of battle reached Knyphausen sometime after 4:00 pm. "The artillery fire lasted until around 5 in the afternoon when we heard a different cannon and small arms fire in the rear of the rebel army which assured us of the arrival of general Howe." (Someone 1777) Around 5:30 p.m. Knyphausen advanced with his division and crossed the Brandywine River. In the explanatory comments to his map, Werner provides the line-up in which British forces crossed over Chads Ford: "The 2nd Battn of the 71st Regt the 4th Regt of Riflemen Queen's Rangers and the other regiments in the order of their brigade except the Regiment Donop which was detached to reenforce the other two battalions of the 71st Regiment placed by the equipage" (Werner 1777).

With General Greene's division already re-deployed along today's Wilmington Pike in a half moon outline open to the north-west, crossing Oakland Road Oakland Road just south of the intersection with Harvey Road and where Oakland Road meets Baltimore Pike to delay Howe's advance and allow the remnants of Stephen's and Stirling's divisions to make good their retreat, the defending Americans – Maxwell's Light Infantry, General Wayne's Brigade and Armstrong's Pennsylvania Militia – were quickly pushed by the around 6,500 British forces storming across the Brandywine.

Lord Stirling told Colonel Carey that "the Part of the Enemy which were left at Chad's ford under the Command of Kniphausen attempted to Cross the River they were oppos'd by Genl Wayne with 2 Brigades & 9 Regts of NO Carolina Troops under Genl Nash & Two 53 Brigades of Malitia who made a very good Stand, but were at last oblig'd to give way & that Night Join'd the Rest of the Army. Genl Howe assembled the whole of his Army at Dillingworths the Place where Genl Weedon met them And Remain'd there all night & for Several Days, burying his Dead & Collected his Wounded" (Stirling 1778).

"Immediately after our Regiment had crossed, two Companies (the Grenadiers and Capt. McKay's) was ordered to move to the left and take possession of a hill which the enemy was retiring from, and wait there until further orders. From the eminence we had a most extensive view of the American Army, and we saw our brave comrades cutting them up in great style"(Jarvis 1907).

 In a letter to the Landgraf, Knyphausen provided a detailed description of the attack across the Brandywine.

"The enemy had a battery with a six-pounder, 2 four-pounders and a howitzer on the road to Chadsfort, with the help of which they could cannonade the road and the passage across the Brandewyn, a second battery with 4 six-pounders more to the right of them [on the hill south of the road] on a height in the corner of the wood, and a third also with 4 six-pounders on the other side of Edwardsmill, to which the right wing of the Cornwallis column extended and which was taken by same [the Guards]. At 5 o'clock the 2nd battalion of the 71st Regiment, the Queen's Rangers, the English Jägers and the 4th and 5th Regiments waded through the Brandewyn near Chatsford, where the river is bout 100 ft. broad, whilst the enemy was firing on them the whole time with grapeshot and guns; the first battalions formed into line, continued their march along the road, moved a little to the left as they came near the battery, endured the fire from the grape-shot and guns, and forced the enemy to retire in great haste, leaving a six-pounder (a Hessian three pounder that had been taken at Trentown and drilled) 2 French four-pounders and a howitzer behind them, and drove them from one height to the other, behind every one of which they placed themselves and fired their guns off, until they came to a height lying to the left of the Chester road. The 23rd Regiment with the remainder of the 1st and 2nd English Brigades followed the above troops across the river, marched more to the left after they had waded through it, and reached the heights just a few moments after the above had left them, and drove the enemy, who had been routed by the English Guards and the Grenadiers, before them, so that they were now in full flight" (Knyphausen 1777).

British General Grant described the crossing of the Brandywine thus: "The defensive work closest to the river which was equipped with eight cannon was stormed and the rebels retreated in the greatest disorder in all directions. The English cavalry was ordered to pursue them and took from them a part of the baggage and various cannon. The quickly arriving night prevented continuing the pursuit of the enemy, who had already suffered a great loss of killed, wounded and prisoners. Our army remained standing on the captured battlefield during the night."

"The moment the firing began," General Grant wrote," Kniphausen [sic] & I passed Chads Ford [,] forced their Center & Left Wing, took a Redoubt with five piece of Cannon & got possession of the Heights which they had occupy'd on the morning, but it was too late to profit of our Victory so completely as could have been wished, Night saved them from a totall Detroite [?] & absolute Distruction" (Grant 1777).

The attack was not without loss. An anonymous officer in the 4th Regiment of Foot described how "At the affair of Brandywine, Lieutenant-colonel Ogilvie received orders from General Grant, that 55 when the 4th, or King's own, arrived at the creek, the regiment was to cross it, and attack the redoubt on the other side. Lieutenant-Colonel Ogilvy instantly led the regiment through the creek to the attack, and soon gained possession of the redoubt, in which were two howitzers, and three 6-pounders, which played with round and canister-shot, during their passage through the creek, in this action the Honourable Capt. Rawdon lost his leg" (Anonymous 1801).

American Major General Alexander, Lord Stirling, wrote that "the Part of the Enemy which were left at Chad's ford under the Command of Kniphausen attempted to Cross the River they were oppos'd by Genl Wayne with 2 Brigades & 9 Regts of NO Carolina Troops under Genl Nash & Two Brigades of Malitia who made a very good Stand, but were at last oblig'd to give way & that Night Join'd the Rest of the Army. Genl Howe assembled the whole of his Army at Dillingworths the Place where Genl Weedon met them And Remain'd there all night & for Several Days, burying his Dead & Collected his Wounded" (Stirling 1778).

Lastly an anonymous North Carolina Officer wrote appreciatively that "General Sullivan having taken possession of an Eminence not far distant from a Meeting House so retarded their progress as enabled us to retreat with all our Artillery & Baggage (except 8 Field Pieces, & a few Blankets) to the back of Chester. What Loss our Enemy sustained in this day's Engagement cannot be ascertained with accuracy, but from a very intelligent Farmer who assisted in burying their Slain, & from one of their Field Books, in which was contained the number of their Slain,

wounded & Prisoners their loss was computed to 1960 Men, our loss in the whole did not amount to 700 Men" (Anonymous 1777c).

In the hasty retreat on Birmingham Road through Dilworthtown and Concordville toward Chester, the Continental Army had lost all unit cohesion. In 1832, Colonel Aaron Ogden of the New Jersey Line told Jared Sparks that "On the retreat from Brandywine at Chester Bridge, several fires were built in different places. Persons were stationed at the Bridge to tell the soldiers as they came up which fire belonged to a particular line. By this means the men all found themselves in the morning associated with their comrades so they were easily arranged. This was an ingenious devise, for the route at Brandywine had thrown the army into utter confusion" (Ogden 1832).

Osborne Hill & Birmingham Meeting Combat

By around 2:15 p.m. to 2:30 p.m. most of Cornwallis's Troops had finished their rest on Osborne Hill north of Lenape Road and west of Birmingham Road and continued their march south on Birmingham Road (Catts et al. 2016: 4-5). They were exactly two miles from the Birmingham Friends Meeting House.

After a short march, British forces "arrived upon the Heights above Dilworth about three in the afternoon – The advanced Corps halted for the Rear of the Column – During this The Enemy were perceived in Motion but from the Woods & unevenness of the Ground it appeared at first uncertain whether they intended to give us battle – Sir Wm Howe with a most cheerful Countenance converse with the Officers & invited several to a slight Repast provided on the Grass all Eyes were on him & ev'ryone who remembers the anxious moment before an Engagement will conceive how animating the sight to see the Commander in Chief in high Spirits & placing the utmost Confidence in his Troops – in short the Army reassumed their March in full assurance of Success & Victory" (Musgrave 1777).

Musgrave is describing the hurried arrival of Continental Army forces on Birmingham Hill. Shortly before noon Washington, possibly reacting to the note by Lieutenant Colonel Ross informing him that Howe might have turned the American right flank, ordered a partial repositioning of his forces. Lieutenant John Mercer in Colonel Thomas Marshall's 3rd Virginia Regiment, part of Brigadier General William Woodford's 3rd Virginia Brigade in Major General Adam Stephen's 2nd Division, was "put into line of March for Jones's ford & had proceded about 4 Miles when they were halted before 1 OClock in their line of march on the main road, under an impression that false information had been receivd of the movements of the Enemy at Jones'es Ford" (Mercer 1809). Valuable time was lost before this order was rescinded two hours later and "our line of march was resum'd at about 3 OClock, we had not mov'd more than a mile when the Enemy were perceiv'd in force in the heights near the Meeting House having fully affected the passage of the Brandywine" (Mercer 1809).

The "heights near the Meeting House" most likely refer to the high ground between Radley Drive and Daniel Davis Lane about 0.7 miles north of Birmingham Meeting House. Stephen's division had been posted in the rear of the American position behind Washington's Headquarters at the Ring House. It is unknown whether Stephen's men moved across fields or followed established roads, but in order to watch British forces deploy they would have to have been on the height before Birmingham Road intersects with Wylie Road and Thornbury Road. One mile back from that location places his regiment near the intersection of Birmingham Road and modern South New Street.

Detail of Anonymous, *Battle of Brandywine in which The Rebels were defeated*. It shows the positions of General Sullivans forces south of the Birmingham Meetinghouse as they await the initial British attack and its positions once it retreated south-east across Birmingham Road.

Colonel Elias Dayton, commanding officer of the 3rd New Jersey Regiment and of the New Jersey Brigade in Major General William Alexander, Lord Stirling's, Fifth Division, also reported that "About 1 o'clock we received intelligence of the main body of the enemy having crossed the creek about six miles above us." But Stirling's Division, however, too was halted: "after I had Proceeded about two miles I was order'd to halt & Immediately after to Return to my former Station, advice having been Receiv'd thro' Genl Sullivan that not any Part of the Enemy were mov'd that way" (Stirling 1778).

According to some Continental officers, it was around 3:00 p.m. or later when Continental Army forces received the order to advance. They had to rush to prepared for battle. "About 1 Oclock we received Intelligence of the main body of the Enemy haveing croossed the creek about six miles Above us which was westward in the Country, why this pass was not Attended to is truly astonishing but so it was, & after the Enemy was properly formed on our side, Sullivans, Ld. Stirlings & G[eneral]. Stephens Devisions was ordered to march & attack them. Accordingly they all marched immediately" (Ryan 1979:100). A New Jersey officer related that "between 3 and 4 o'clock in the afternoon, formed the largest part of the three divisions upon a hill near Birmingham meeting house. The enemy very soon advanced to attack. I believe before Gen. Sullivan's division was formed, as they changed their ground on which they drew up. A number of them were marching past my regiment," i.e., the 3rd New Jersey Regiment in Lord Stirling Fifth Division, "when the first fire began, consequently I believe never fired a gun. In half an hour at farthest, the whole of our men gave way; the enemy pursued briskly, by which means a number of our wounded, as also some well men fell into their hands, in the whole about four hundred, and six or eight pieces of brass cannon six-pounders. The pursuit continued until after sun-set, when the night approaching, and also a check they got from General Greene's division, caused the enemy to give over the pursuit" (Dayton, 1848-1849: 185 186).

In a letter written from Valley Forge on January 6, 1778, Lord Stirling informed "Col. Carey", possibly Simeon Carey, a colonel in the Massachusetts Militia, that once "I received undoubted Intelligence that Lord Cornwallis with about Six Thousand Men had actually past the River about three Miles above, wherefore I mov'd gently

towards them while I send one of my Aids with the Intelligence to the Commander in Chief & for his further orders. I was ordered to Proceed & Stephens's Division to join me when we arrived at Birmingham Church, we were in Sight of the Enemy & Immediately form'd for Action on Advantageous ground – Soon after this Genl Sullivan Arriving with his Division the Command belong'd to him. to avoid loss of Time in Changing Ground the Brigades took the Ground as they arriv'd which placed my Division in the Centre Stevens on my Right – Sullivans on my left, we were in this position when the Enemy advanced & they was Receiv'd with a very good Countenance on the Whole, But in a very few Minutes, Sullivan's Division gave way & went of Shamefully. this Expos'd my left flank soon after the Left hand Brigade of Stevens's Division in the same Manner left my Right flank Expos'd the other Brigade of that Division Remain'd in their Station a little Longer, Then I was left with my Division alone to Encounter 6000 of the best of the Enemy's Troops, which we did in as firm a Manner as the best troops in the World Cou'd for upwards of half an Hour after the Rest were [sic; there 59 60 seems to be a line missing in the transcript] And for the last Twenty Minutes we were between 20 & 40 Yards of the Enemy the Carnage was so great that it made them Stagger but the great Superiority in Numbers enabled them to turn both my flanks & wou'd in five Minutes have surrounded us had we not immediately Retreated through a Wood in our Rear" (Stirling 1778).

An anonymous soldier (likely Captain Jonathan Forman) of the 4th New Jersey Regiment in Colonel Elias Dayton's New Jersey Brigade in Lord Stirling's Fifth Division wrote in his diary: "Abo.t 1 O.C[lock]. P.M. they filed of[f] to the left, which Occasioned Our Moving to the Rig[h]t w.th Genr.ls Sullivan, L.d Sterling & Stephens Divisions but they having Crossed the Brandywine ford before Our Arrival, Advanced and Soon began a Warm Action, which lasted Some time but thro some Means Our Right wing giving ground, let them in on our flanks [-- -- --] till they were Almost at Bayonet P[oin].ts but we were forc.d to Retreat in Disorder, the En[em].y Closely Pursuing (but not without Opposition from Some troops) till Dark." (Forman 1777) The "right wing" would have been Stephen's Division; Sullivan was on the left.

These accounts are partly contradictory, e.g., did the regiments, brigades and divisions line up as they arrived and as Lord Stirling claimed or did they change ground, but they all agree that there was a good amount of confusion. Colonel Dayton wrote that Sullivan's division was still in the process of getting into position and attacked "as they changed their ground." That was doubly unfortunate since Sullivan was the senior officer on the field, "the Command belong'd to him," in the words of Lord Stirling. Dayton even thought that many of Sullivan's men "never fired a gun." Not surprisingly Sullivan's division was the one that broke first.

Brigadier General Preudhomme de Borre, commanding the 2nd Maryland Brigade, gave this description of the fighting on the American Left Wing. "The enemies crossed above us and advanced on the 11th to give us battle. We were out to meet them around 3 in the afternoon and the battle began which lasted about ¾ of an hour, we were obliged to retire with a considerable loss on both sides. We retired during the night to Chester. The confusion was very great in our army, everything was all mixed up, the Americans did not hold up to musket fire and a great part of them ran away at the first discharge, that is what happened to my brigade, of which I commanded about half, the other half was detached" (de Borre 1777).

De Borre's 2nd Maryland Brigade in General John Sullivan's Third Division consisted of the 2nd, 4th and 7th Maryland Regiments, and two battalions of Congress' Own Regiment under Colonel Moses Hazen. De Borre's claim that half of his brigade had been detached was not a self-serving statement. Hazen's Regiment, some 400 men strong, had been stationed at Wistar's and Buffington's Fords and did not arrive in time to join de Borre's brigade. The German Battalion, which is often (Harris 2014:406) assigned to de Borre, had been added to the First Virginia Brigade under Brigadier General Peter Muhlenberg and was guarding the crossing of Brandywine Creek at Chad's Ford. The 1st Maryland Brigade under Colonel John Stone consisted of the 1st, 3rd, 6th Regiments and two companies of the 5th Maryland, the Delaware Regiment having been detached to guard Jones's Ford. That made Sullivan's Division, facing the 939 men strong Brigade of British Guards, by far the smallest American division on the field (McGuire 2006: 379). Both Stephens and Stirling with 1,500 men or more, faced the First and Second Battalion Grenadiers, around 1,500 men strong (McGuire 2006: 205). De Borre was left with the

three Maryland regiments, a little over 300 men. Eyewitness accounts confirm de Borre's claim that his brigade, or the three Maryland Regiments that were left, put up little resistance, before joining Stephens' and Stirling's Divisions as they retreated toward Brinton's Bridge Road and Dilworthtown.

As the Right Wing of the army, i.e., Stephens' Division, gave way, the 3rd Virginia Brigade under Brigadier General William Woodford, consisting of the 3rd, 7th, 11th and 15th Virginia Regiments and around 1,000 men strong, which had advanced past the Birmingham Meeting House, was left by itself to face the British Light Infantry, around 1,300 men strong, and the Hessian and Ansbach Jaeger, another 500 soldiers under Lieutenant Colonel Ludwig von Wurmb and the Mounted Jaeger company und Captain Richard Lorey, which added another 100 men, bearing down on them (Harris 2014: 171; McGuire 2006:197). In a letter to Henry Lee of November 16, 1809, Lieutenant John F. Mercer of the 3rd Virginia Regiment, informed Lee that

> "A detachment from it under the command of Lieut Mercer was employ'd on fatigue the whole night previous to the action in assisting to erect a Redoubt in front of Chads ford to command the crossing place, which was afterwards havily defended as I have always understood by a Corps of Colo Proctor's Artillery commanded by their Colonel in person during the Action. – About sunrise the detachment fell back with the Regiment into the front line of the American Army, which was formed about 150 Yards in rear of the Redoubt & parallel with the course of the Brandywine & continued in this position until the British Army, after driving in our Advanced Corps appeared in fore on the opposite heights & commenced a brisk cannonade from a few field pieces in front of our Redoubt" (Mercer 1809).

Around 1:00 p.m. his regiment received orders to redeploy to the vicinity of the Birmingham Meeting House. His account confirms the confusion in the Continental Army as it lined up to face the enemy. "With some confusion & much precipitation the line was formed by pulling away the fence at our right & displaying in an open field just above a bottom that separated the two armies, during this manoeuvre the Enemy discharg'd some round shot on the line as it formed & a scattering fire was commenced between the light infantry in advance from both sides, in the bottom through which ran a small Brook or rivulet" (Mercer 1809). Mercer's 3rd Virginia Regiment had lined up on the west side of Birmingham Road but pushed past the Birmingham Meeting House close to W. Street Road.

The regiment had marched up Birmingham Road and reached the high ground from where it could see British forces about one mile to the north forming into battle formation. Here it received orders to deploy to the right. Lieutenant John Mercer of the 3rd Virginia Regiment provides a vivid description of what happened next as his regiment had become separated from the rest of its Brigade and was facing the 2nd Light Infantry.

Lieutenant Mercer's letter continues:
> "The third Virginia Regiment was on the right of Woodford's Brigade, & Stevens division which was formed to the right of Sullivan's Division, & consequently constituted the right of the whole American line, with the exception of some light Horse of Blands, placed at a distance in a wood on their right, it is believed as a reconnoitering party, which extended beyond the left flank of the Enemy. – as the line form'd in the open field this Regt covered a small copse of open wood in their front, which extended in the bottom to the rivulet – they were order'd to advance to take possession of this which they did supported by Capt Bryan of the Artillery with one or two field pieces, (I do not recollect which) – By this movement these pieces & the third Virginia Regiment became divided from the Brigade, & almost at the same moment, the main Body finding a wood in their Thornbury Rd "rivulet" ? "fence on our right" "open field just above the bottom" ? "bottom" = Sandy Hollow rear fell back to take advantage of it - & by these means became so far separated from the 3d Regiment as never afterwards to have any communication with it during the Action that I know of – The 3d Regiment thus insulated, had scarcely form'd in this Copse of wood, which was so open as to afford neither cover nor obstruction, when the head of a Column of the Enemy appeared in their front & began to display at about 150 or 200 yards distance under cover of their Artillery & Sharp Shooters. […] The Regiment reserve'd their fire untill the Enemy was display'd, & then commenc'd firing by platoons with as much regularity as on a field day,

each Officer giving the word of command & leveling the pieces of his platoon – this was succeeded by a running fire which continued for 45. Minutes by Genl Woodfords watch during which the Regiment discharged more than 50 rounds a Man." By the time it was over, "this Regiment was now reduc'd to the Colonel & two or three Subalterns & not more than 30, or 40 privates, of 4 Captains one lay dead in the field & another had been mortally wounded & carried off. – 1. Lieut was kill'd, three wounded, & an Ensign kill'd.- Capt. Bryan of the Artillery who supported the Regiment with his pieces until not 5 Men remain'd, was kill'd" (Mercer 1809)*.*

As it disengaged, Mercer's 3rd Virginia Regiment joined Sullivan's and Stirling's Divisions in their retreat on Birmingham Road toward Dilworthtown. It was just after 5:00 p.m.

On the opposing side Lieutenant Colonel Ludwig Johann Adam von Wurmb of the Hessian Jäger provides a vivid description of the battle beginning with the first encounter. "At daybreak on the 11th the Army marched to cross the Brandywine. The column of General Howe, with the Jägers as advance guard, moved out to cross the creek at Jeffrey's Ford, which didn't occur until 1 PM because of the many hills and poor roads. About 3 PM Captain Ewald of the advance guard reported the enemy was approaching and he was forming up on a hilltop and that another column was approaching on the right [Sullivan]. Then the order was received to form the line. The Jägers received the left wing, then the two battalions of light infantry, the English grenadiers, and the two English regiments [sic: brigades]. The Hessian Grenadiers were to support the English. I made the movement almost exactly so that I neither outflanked them or they outflanked me, without any assistance. I saw that the enemy wanted to form for us on a bare hill, so I had them greeted by our two amusettes and this was the beginning of General Howe's column's [participation]. We drove the enemy from this hill and they positioned themselves in a woods from which we dislodged them and then a second woods where we found ourselves 150 paces from their line which was on a height in a woods and we were at the bottom also in a woods, between us was an open field [Sandy Hollow]. Here they fired on us with two cannon with canister [sic: grape shot] and, because of the terrible terrain and the woods, our cannon could not get close enough, and had to remain to the right. Sergeant Bickell of Captain Wreden's Company, who had the flanking battalion, moved left to a hill, where he inaccommodated the enemy for a half hour. Then we heard the firing to our right become lively and detected movements among the enemy whereupon we attacked them in God's Name and drove them from their post. As we were going up the hill, the English light infantry moved in 10 paces ahead of us and used the cannon, since we were very fatigued from the 65 long march. As the cavalry could not follow them into the woods, we made no prisoners except for the severely wounded. Many dead lay to our front" (Wurmb 1998: 10).

Lieutenant Colonel Musgrave placed the beginning of the battle a bit later when he wrote that "About 4 oClock the Enemy appeared in force & took up a strong Position on the commanding ground above Birmingham Church, their left near to the Brandewine both flanks covered by very thick Woods & their Artillery advantageously disposed" (Musgrave 1777). The Light Infantry pushed forward but "As soon as the Left approached the Birmingham Church the Engagement began – the Line continuing constantly to move on, notwithstanding an incessant & tremendous fire of Artillery & Musquetry & were impeded by swampy broken ground & Rail Fences." The "swampy broken ground is clearly visible on the Robertson map and Mercer mentioned moving fences out of the way. Musgrave continued: "But the Ardour & Intrepidity of the Troops overcoming ev'ry opposition & pressing on with Resolution not to be resisted The Enemy Line gave way in ev'ry part & fled with the utmost precipitation. Musgrave praised his men and their actions. "The Troops pursued closely near two Miles," he wrote, "but the fatigue of the day having been great & the Soldiers encumbered with their packs & Blankets the Enemy fresh & light & favoured by the Woods easily ran from them" (Musgrave 1778).

As Howe's forces were pushing Washington right flank toward Dilworthtown and into his rear, he re-deployed Greene's two reserve brigades to the east and north to protect the Right Wing of his army that was on the verge of collapsing under the British onslaught. George Weedon's, the 2nd, 6th, 10th and 14th Virginia Regiments and the Pennsylvania State Regiment marched east, then north. Muhlenberg's brigade was marching, or better:

running, parallel to them, covering four miles in about 45 minutes. Upon arrival Greene placed Peter Muhlenberg's and George Weedon's brigades on the front and flank of the British advance.

Weedon was first to arrive near Dilworthtown about 6:00 PM, followed shortly thereafter by Muhlenberg. As the retreating units joined them, the American resistance stiffened. Major Robert Beal in Colonel Josiah Parker's 5th Virginia Regiment, Brigadier General Peter Muhlenberg's 1st Virginia Brigade, provides this account of the direct participation of Muhlenberg's Brigade in the Battle of Brandywine 11 Sep 1777. Following Washington's orders, Greene had "reinforced the right by the left until it came to our turn. This was about four-and-one-half-hours by sun. When we got up we saw Woodford's Brigade [3rd Virginia Brigade in Stephen's Division] drawn up in order of battle and the British advancing upon them. We saw the charge made and the repulse. They rallied again for the second time and were again repulsed. The third charge our men were beaten and ran in imaginable confusion. We were the only men now in order. The retreat now was general. General Scott came riding by and asked Parker what he intended to do. He said 'Fight them.' Scott told him the whole army was in confusion, that he had better cover the retreat. We did so - not without several hot fires from the British" (Beale 1956:506).

Eventually Henry Monckton, commanding officer of the 2nd Grenadier Battalion had to call in assistance. Brigadier General James Agnew's 4th British Brigade came up but "ran into several American regiments" of Weedon's brigade. The Hessians "received intense grapeshot and musketry fire [apparently from Muhlenberg's men], which threw [the Hessians] into disorder, but they recovered themselves quickly, deployed, and attacked the village." At this point, "Ewald wrote, "there was terrible firing, and half of the Englishmen and nearly all of the officers of these two regiments [the 44th and 64th regiments] were slain" (Ewald 1979). Eventually two six-pounders on Weedon's flank, breaking up the American attack and British numerical superiority and skills turned the tide, but the 64th Regiment of Foot was roughly handled.

Lord Stirling wrote that "We then endeavour'd to Rally our Troops and found them on A Hill about two Miles in the Rear but the Enemy Press'd on us so Close it was in Vain to attempt it however – Genl Weedon coming up with his Brigade & part of Muhlenburg's in a most Critical Minute engag'd the Enemy with the utmost Steadyness & Bravery, gave the rest of the Army time to form & Make good their Retreat to Chester which they Effected by Two the next Morning." (Stirling 1778) Lieutenant Colonel Musgrave wrote about that last phase of the battle that "A considerable Body of the Enemy which form'd part of their second Line to the Right having taken a position to cover their Retreat were attacked by the 4th Brigade assisted by the Light Infy & 2nd Grenadiers – the Heat of the action fell chiefly on the 64th Regt & soon after the Enemy gave way the Dusk of the Evening came on. The Enemy retreated to Chester - & the Kings Army lay on the field of Battle – During the pursuit 5 pieces of Cannon were taken by the 1st Light Infy two by the 2nd & two by the Grenads" (Musgrave 1778). "The night approaching, and also a check they got from General Greene's division, caused the enemy to give over the pursuit" (Dayton 1848-1849:186). Greene's division finally retreated into the night, following the rest of the army to Chester while the exhausted British settled down for the night on the battlefield.

Chadds Ford Combat & Fords Defense

Great Nottingham Road

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.

The trace of modern U.S. Route 1 follows much of the course of the former Great Nottingham Road. For much of the distance between Kennett Square and Chad's Ford, the old roadbed has been subsumed under the current dualized highway but there are still fragments extant.
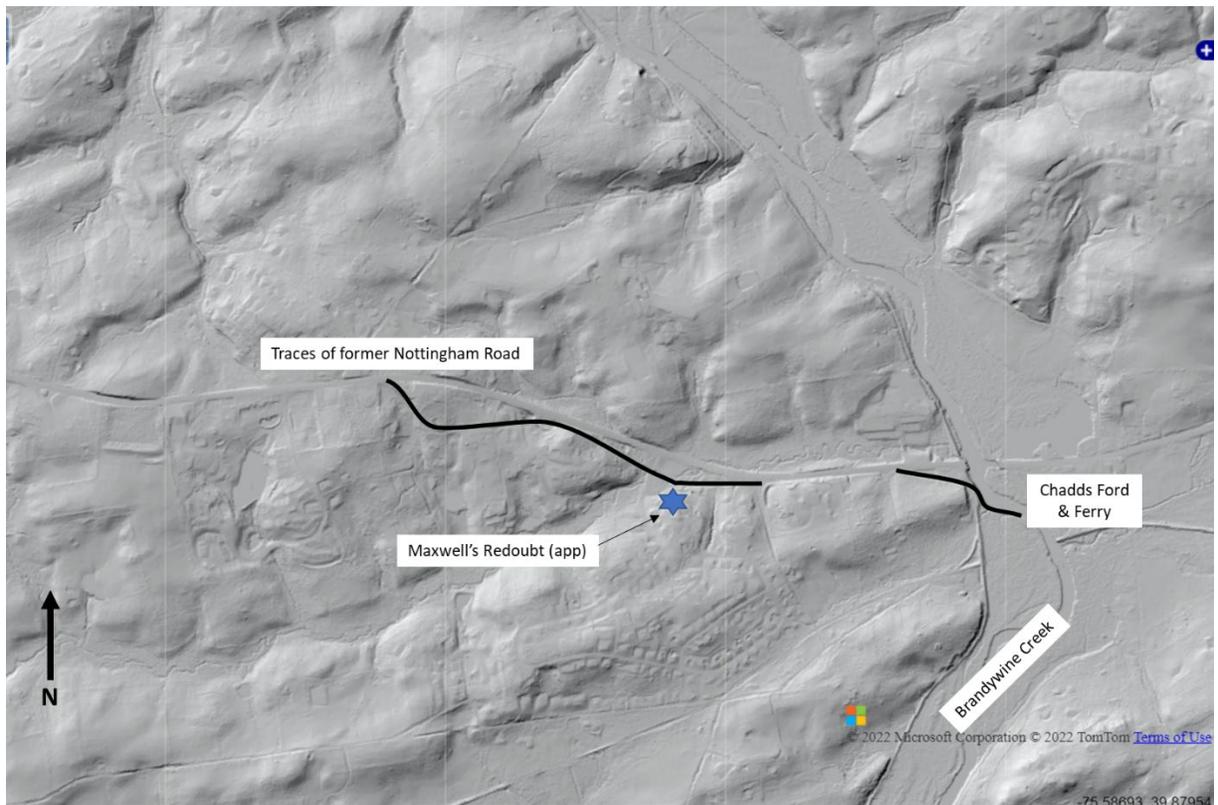
Lidar imagery showing the locations of the former traces of the Great Nottingham Road. The approximate location of Maxwell's Redoubt is also shown.

A piece (approximately 2,100 feet) of the former Nottingham Road is still in use and is accessed just east of the intersection of US Route 1 and Brinton's Bridge Road. The fragment reenters US Route 1 approximately 720 feet east of the Chadds Ford Township boundary. A second alignment of the former road can be traced by the property and fence lines and shown on Lidar. The former line of the Nottingham Road is visible along the south side of US Route1. According to researchers who examined the area in the late 1980s "the south side of the old road bed is situated about 75' to 100' south of the present road and is delineated by embanking and a distinctive line of old trees…" (Webster et al. (1989: G-6). They further detailed the former roadbed as follows: "the original line of Route 1 … joins the present line of Old Baltimore Pike opposite North Ridge [road]. At the point where Old Baltimore Pike curves northward to rejoin the present highway, the original road ran 10' to 15' north of Old Baltimore Pike. Near the western terminus of Old Baltimore Pike, the original road ran about half way up the slope passing in front of Reyburn's Tavern" (Webster et al. 1989: G-17).

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 moved towards the American position along the Brandywine on the morning of September 11. 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 49th 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).

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 Crown Forces' 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).

Knyhausen'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. 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).

Brinton's Ford Road

From the intersection of US Route 1 (Great Nottingham Road) Brinton's Ford Road (today's Brintons Bridge Road) follows a course that was laid out by the mid-eighteenth century. The road formerly led to Brinton's Ford and then Brinton's Bridge; the bridge was built in 1854 (Futhey and Cope 1881:356) and apparently below the ford (Brinton 1895). The bridge was damaged in the 20th C and the ruins are still extant. The Creek crossing at Brinton's Bridge is no longer functioning and the portion of the road immediately east of the Brandywine is now on private lands.
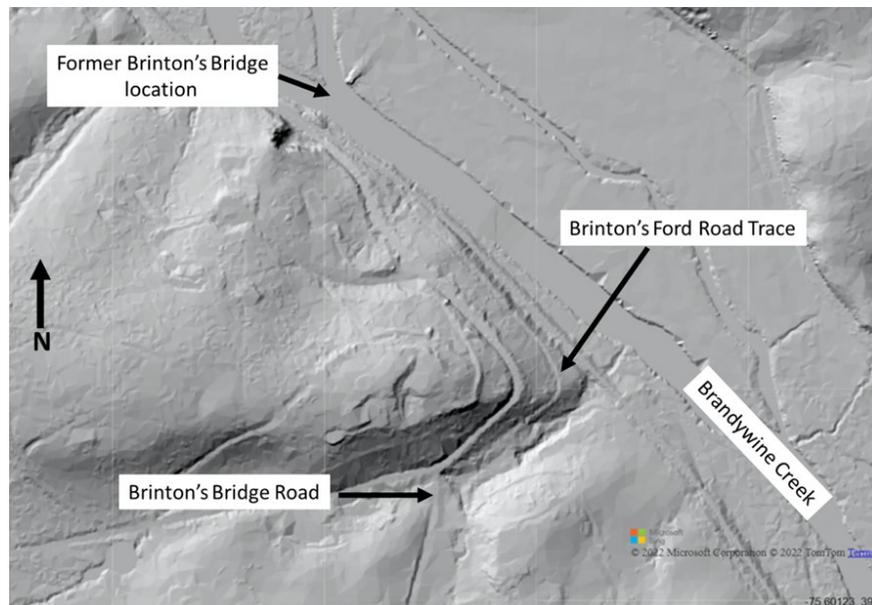
Lidar imagery showing former location of Brinton's Ford Road trace along the west side of the Brandywine Creek. Stirling's Division used this road as their avenue of approach to the Brandywine on September 10.

Brinton's Ford Road was the avenue of approach on September 9 by elements of Washington's Army as they moved into positions along the Brandywine. As recalled by Lt. John Shreve of the Second New Jersey Regiment,

> *"…we crossed the River Brandywine at daylight the next morning [September 10], the most of our army fording at Chads'-ford; but Gen. Stirling's division, composed of Gen. Maxwell's brigade of New Jersey troops, and Gen. Conway's brigade of Pennsylvania troops, crossed at Brinton's ford, about two miles*

above, when we, in sight of the ford, lay on the leaves in the woods in a line on our arms to rest and wait for orders" (Shreve 1879:566).

Shreve's account indicates that not all of the American forces crossed the Brandywine at Chadds Ford, but Stirling's Division of two brigades used Brinton's Ford.

Approximately 5,140 feet north from that US Route 1 intersection, the former road trace breaks off from the current Brinton's Bridge Road. The trace is discernable leading downhill towards the Brandywine Creek then turns north and parallels the creek. The trace is now part of a trail system that extends along the Creek. The trace is unpaved and easily observed on modern Lidar imagery of the area. From the east side of the Brandywine, the former road trace of Brinton's Bridge Road is readily apparent. The Brinton Bridge was established in 1852, replacing the ford location. The ford was slightly north of the bridge (approximately within 400 feet) near the large loop in the Brandywine Creek (MacElree 1909:143).

Brinton's Bridge Road (this portion established 1852), looking west at its intersection with Creek Road. The former public road trace is visible as a private drive extending towards the Brandywine Creek.

Route of the American Forces from the Red Clay Creek defensive line to Brandywine Creek, Sept 9

Between 1am and 4am on September 9, Washington's army moved quickly from the defensive line along the Red Clay Creek by a series of roads to reach the Brandywine Creek position. President John McKinley wrote to General Caesar Rodney on September 9 that Washington was aware that the Crown Forces were attempting to cross the Brandywine "… at a Place called Chad's Ford, about 9 or 10 miles above this place…" (Ryden 1933:221). Washington's plan was to thwart this maneuver and, as McKinley stated proudly, the Crown Forces "…were pursued, or rather attempted to be outmarched, head[ed] & interrupted, in their rout by the whole Continental Troops under Genl Washington who set off for that purpose from their lines at four o'clock this morng accompanied by his excellency, the commander in chief, & other general officers, & hope they will accomplish their intention…." (Ryden 1933:221). Crown Forces were likely aware of the move. British officer Charles Stuart commented that "…We could plainly discover their fires this Eveng. & from a continued noise I conjectured that they were moving…" (Stuart 1927:46).

The time of departure from the Red Clay line varied over a period of several hours and provides a suggestion as to the order of march. Joseph Clarke of New Jersey reported that he was notified of the nighttime march between 1 and 2am (Clarke 1855:98). Captain John Chilton of the Third Virginia Continental Regiment also recalled marching for the Brandywine at 2am, writing that Tuesday [September 9]:

> at 2 in the morning we had orders to march[.] took the road from Newport to Wilmington 2 Miles then turned to almost North about 2 M[ile]s more[.] we then marched West course 10 Miles S.W. & crossed Brandywine Creek and encamped on the heights of the Creek.

Delaware Continental Robert Kirkwood recalled that his regiment was on the road an hour later, marching for Chadds Ford at 3am (Kirkwood 1910:167). Maryland Continental Lt. James McMichael noted in his diary that:

> At 4 a.m. we received marching orders and proceeded E.N.E. to the Crooked Billet, on the great road from Wilmington to Lancaster; thence thro' Kennett township, Chester county, crossed the Brandywine and turning S.E. encamped in the township of Birmingham, being extremely fatigued for want of rest and severe marching…. (McMichael 1892:149).

McMichael's reference to the Crooked Billet is to the Crooked Billet Tavern. In September 1777, the property was part of the estate of Thomas Ogle. Ogle had died the preceding February, and the estate was not settled until 1791. The Center Road (at this location called Brindley Road) in 1777 passed east of the tavern, instead of the present configuration to the west (modern Route 141).

Some American formations were still on the picket or advanced lines on 9 September, particularly those formations that had crossed to the west side of the Red Clay Creek to keep contact with the Crown Forces. New Jerseyman Joseph Bloomfield was among this number. On 8 September, Bloomfield was part of a force of approximately 150 men (infantry and cavalry) commanded by Captains Conway, Hollinghead, Gifford, and Forman that moved two miles west of the Red Clay position. This detachment was ordered to skirmish with the Crown Forces and fall back on the main body of the American army. It was anticipated on 8 September that a general engagement would occur, so Bloomfield's unit was a picket force. As Bloomfield remembered:

> I was alarmed all Night with the approach of the enemy & kept my party paraded…At day-break [approximately 6am] on Tuesday I received Orders to follow our Army who had marched at two at Night for the heighths [sic] of Brandewine [Brandywine] opposite Chad's Ford, where I also arrived this evening with my party much fatigued (Bloomfield 1982:127).

The initial route used by American Forces was Center Road from Newport to the Wilmington to Kennett Road. This route is essentially modern Route 141 to modern Route 52. Center Road was an important route that linked the Red Clay Creek at Robinsons Ford to the Brandywine at Chandler's Ford (NCCRP 1764). Local historians and researchers in the early twentieth century concluded that American forces moved out of Newport along Center Road to the Lancaster Pike, then continued northeast along Center Road/Brindley Road until reaching the Wilmington to Kennett Road (today's Kennett Pike or Route 52).

In the second half of the nineteenth century New Castle County bailiff and law librarian Amos C. Brinton (1819-1912) extensively researched the Brandywine Campaign and regional history. Brinton was born in Birmingham Township and spent his life in southeastern Pennsylvania and New Castle County (Anonymous 1912). Brinton's historical knowledge spanned the generations of residents who had lived during the period of the Brandywine Campaign in 1777 and his position with the law library allowed him access to official records and documents. He is frequently cited as providing records to the antiquarian historians of the period in publication of the Historical Society of Delaware, and often quoted in the Wilmington newspapers for his historical knowledge. Prior to the publication of Wilmer W. MacEllree's 1909 volume on the Brandywine River, Brinton assisted in properly

identifying the location of Chad's Ferry (Anonymous 1909). Brinton's handwritten manuscript notes contain important information regarding the route the American forces took. With so many formations moving at the same time, sources indicate that the army used several roads to reach the Brandywine position. Brinton interpreted that Washington

> *put his army In motion for Chadds ford and the Main part of his army took the Road that crosses the Present Lancaster turnpike near Oak hill and the Kennett Pike near the old Buck Tavern three miles from Wilmington [.] Washington took his Breakfast at Brindley's then [crossed out "Sven Sudhams"] that then lived on what I call the Brindley Farm (in pencil, added "one section only") now owned by Mr. DuPont [.] the army crossed the Brandywine at Hollingsworth's Ford now known as Ealy ford and kept up the east side of the stream past William Simasons and the Presbyterian meting house now Gone to Decay but the farm belongs to Mrs. Susan Seal then Robert Muccleho and the Road passed near the Brandywine some distance above Gibsons Ford once called Pyles Ford [in pencil, "at that time Gordons Ford"] and then passed to the north of Neal Woodwards house & tanyard, now Mrs. Barneys and on to Chadds ford [.] the old Road has gone out of use but faint marks may be seen some places.*
>
> *Washington had his men placed so as to Guard the Fords and all Ready to Receive the British army the Day Before the Battle* (Brinton 1895/96).

Brinton's research is important because it places the events of 1777 on the 1890s landscape of northern New Castle County and the Brandywine Valley, at a time before extensive suburbanization and commercial development had altered the region's earlier road network and farm patterns. Brinton had grown up in the Brandywine Valley and knew the roads, fords, farms, and mills intimately. His work at the law library coupled with the landscape knowledge he gathered from his family and neighbors allowed him to identify the routes used by the American forces on their way to Brandywine.

Brinton drafted a manuscript map in 1895 that detailed much of what he had learned about the troop movements and positions. His map identified Gordon's Ford, Corner Ford, Chads Ford, Lower Ford and Hollingsworth's Ford as Brandywine Creek crossing points. He noted that on the east side of the Brandywine the army took a road leading north from Smith's Bridge in 1777 "but most of this road is now out of use" by 1895. He identified two dwellings on the east side of the creek – one called "R.M Elko 1777/ Wm Seals present" near Gordon's Ford, and one labeled "Neal Woodward house 1777/Barney's at present." West of the Brandywine, near the lower Chads Ford, he identified the road to "Hogtown" – likely Starved Gut Road – as leading to the ford. And just south Chads Ford he placed "General Greene's Reserves."

Pyle's Ford Road was one of several routes used by American forces to access the Brandywine and cross at one of several fords. Pyle's Ford road (or the road to Thomas Gibson's) was a new road in 1777, having been established only a year earlier in 1776 (NCCRP 1776). The road was petitioned for by residents in Pennsbury and Birmingham townships in Chester County as well as by residents in Christiana Hundred in New Castle County. The road extended from the Kennett Road, crossed the Center Road (today's Center Meeting Road) on Adam Kirk's land, then continued to the county line on Jesse Eldridge's property. An unpaved portion of the former Pyle's Ford Road is still extant on the Flint Woods Preserve lands. The trace runs from Center Meeting Road nearly straight downhill until it intersects with Route 100 (Montchanin Road). The Flint Wood Preserve property is jointly managed by the Delaware Nature Society and the Delaware Division of Natural Resources and Environmental Control. A portion of the former road is privately owned by the Flint family.

Starve Gut Road was a principal route used by American forces. Chester County archival records confirm that the road was laid out by 1725 (MacEllree says 1754) and extended across much of the lower portion of Chester County from near Hamilton's mill on the Red Clay Creek in the west to the Lower Chads Ford on the Brandywine. Starve Gut Road was the first and most direct road leading to the Brandywine defensive position which the American forces would encounter moving up the Kennett Road to the north and east. Brinton calls this

road the road to Hogtown (Brinton 1895) and it was also known as the Lower Ford Road (MacElree 1909:132-134). Presently the road retains a high degree of integrity and follows for much of its length the eighteenth-century trace.
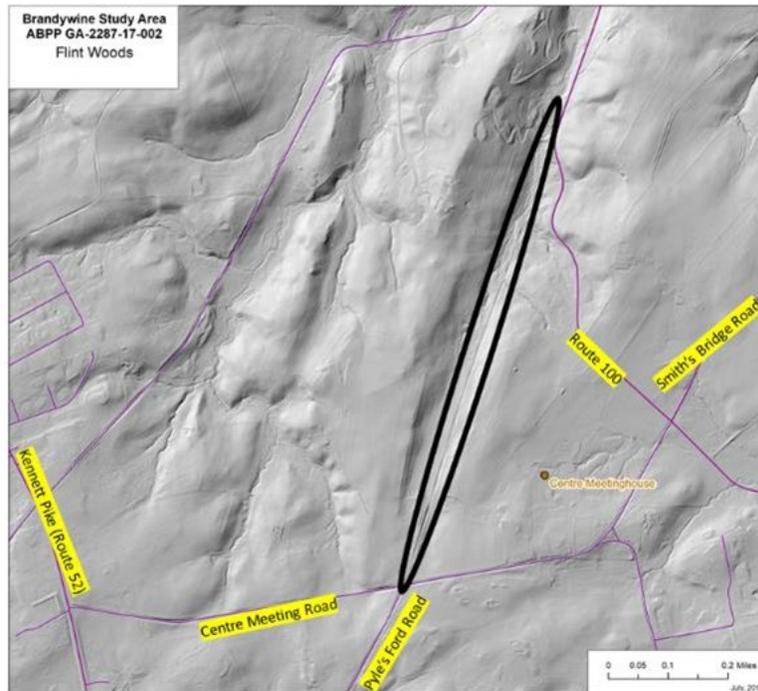
LiDAR image of the location of remnant of the eighteenth-century Pyle's Ford Road on the Flint Woods Preserve Property.

Today's Cossart Road was initially established by 1730. This road too, led to Harlan's/Gibson's Ford on the Brandywine and likely served as a route used by American forces. The road extended east and generally descended to the modern Route 100, which in turn led to the Harlan/Gibson's ford. This ford location is still apparent but is no longer used. A modern gas line crosses the Brandywine at this location.

Upon crossing the Brandywine at this point, Smith's Bridge Road intersects with Ridge Road. American forces likely entered Ridge Road and march north on this road until intersecting with Ring Road. Turning again on Ring Road, American forces used Ring Road to reach the Benjamin Ring House, used by Washington for his headquarters (Harris 2014:166-168), and the center of the American army's position on the Brandywine.

A second road on the east side of the Brandywine traced north from Corner/Chandler's Ford. This road is now a private farm lane. The trace followed an unnamed stream valley and then intersected an east-west trace which linked Harlan/Gibson's Ford to the west with Ridge Road to the east. The general road system is clearly illustrated on the 1848 map of Delaware County (Smith 1848) (Figure 19). The modern Smith's Bridge Road and its crossing point over the Brandywine at Smith's Bridge was another route used by American forces. This road was accessible from Pyle's Ford Road.

Detail of the "Big Bend" of the Brandywine, from *Map of Delaware County* (Smith 1848).

The east-west road passed the original location of the Lower Brandywine Presbyterian Church, established at that location in 1720. The original log church was on a small parcel of land at the foot of "Bald Hill" on land sold by Ralph Pyle to the congregation (Jones 1876:13-14). The church was replaced by a Lower Brandywine Presbyterian Church on the west side of the Brandywine in 1773, at the intersection of modern Route 52 and the Old Wilmington Road. At that site (in Delaware), the original log church was constructed on a plot enclosed in the present old graveyard near the southwest entrance of today's building, just inside the stone wall and measured 30 by 35 feet (Kelly 2018). By 1777 the building on the eastern side of the Brandywine was deteriorating. While still standing with its associated burial ground in 1777 when American forces marched along the route, was likely not being used. The archaeological signature of this historical resource has not been verified.

The minister of the Lower Brandywine Presbyterian Church at the time of the Revolution was a Mr. Thomas Reed (or Read). Several sources indicate that it was Reed who guided Washington's forces from the Red Clay Creek line across the Brandywine to Chadds Ford, though precisely which church he was the minister of is not clear (Ashmead 1884:315-316; Cannon 2001:13; Conrad 1902; Hyatt 1933). Some sources suggest that Reed was the minister at Old Drawyer's Church in Cantwell's Bridge (modern Odessa); others suggest the Lower Presbyterian on the Brandywine. Reed is reputed to have provided Washington with detailed knowledge of the ground between Newport and the Brandywine, including knowledge of roads, crossroads, and by-roads. Given the area that the American army needed to traverse in the early morning hours of September 9, Reed's association with the Lower Brandywine Church in the Big Bend of the Brandywine seems the most likely.

Road records for what is now Delaware County do not report a road in the location of modern Route 100 extending north along the Brandywine and eventually intersecting US Route 1 at Chadds Ford. However, farm lanes or traces were likely present that allowed movement across this space. In 1785 a formal road was established from the main road crossing at Chads Ford (modern US Route 1) and referred to on the road return as The Bottom Road) and extending south into the Big Bend of the Brandywine to the forge of William Twaddell. The road return shows this road as intersecting the east-west road trace noted above as leading from Harlan/Gibson's Ford.

Picket Posts on the Brandywine

On 31 August, Washington ordered Pennsylvania militia General Potter to take two militia battalions of 250 men to "Richlings" (or Rockland's) ford and Gibson's Ford on the Brandywine, "… to take post on the East Side of the Brandy Wine & fix on the best ground for Defending those Passes" (4th North Carolina Orderly Book). Richlings Ford is identified as Richland Ford on the 1777 Jacob Broom map, or today as Rockland Ford. These militia battalions were stationed at ford crossings on the Brandywine until 4 September when Pennsylvania militia General Armstrong was ordered to recall "…the Troops Posted at the differ [sic] parts of Brandy Wine & order them to form their respective Brigades…." (4th North Carolina Orderly Book).
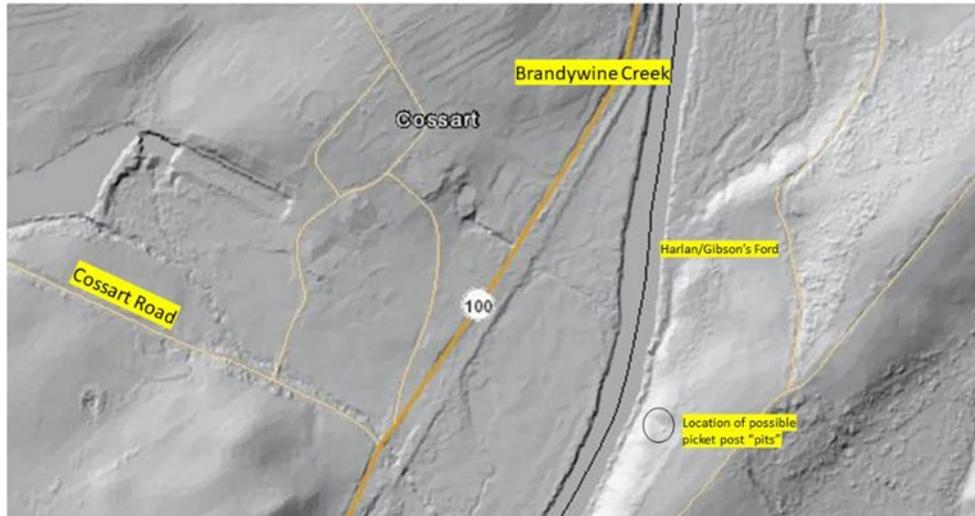
LiDAR imagery showing location of the possible picket post pits south of Harlan/Gibson's Ford.

A walking reconnaissance of the ford crossings along the big bend portion of the Brandywine Creek discovered what appear to be purposefully excavated pits or trenches in the general vicinity of Corner Ford and Harlan/Gibson's Ford. The initial observation of these pits was that they were natural and likely associated with tree falls. Considerable research and study of the natural and archaeological signatures of tree falls has previously been completed with careful comparisons of the distinctions between natural and human made features. While no archaeological survey was completed of these pit features, several observations can be made. The pits are on steep slopes, roughly 15-25 feet in length, kidney-shaped with a dirt mound on the downhill side. The pits come in groupings of three, with a possible fourth pit situated at both observed locations. Despite the fact that the pits are situated on steep, wooded hillsides, no evidence of tree stumps are present, nor are other naturally-occurring treefalls apparent along the hill side. Finally, the placement of the pits does not appear to be random.

At Harlan/Gibson's Ford, the pits are situated approximately 600 feet south of the actual ford, but roughly opposite the intersection of present-day Route 100 (Creek Road) and Cossart Road – both of these are eighteenth century roads on the west side of the Brandywine that were present at the time of the battle. The Harlan/Gibson's Ford pits are also centered on a gut or ravine. Such a ravine might offer relatively easy accent from the creekbank below or descent from the hilltop above. At Corner Ford, the pits are immediately above the crossing and in a direct line of sight of the ford. The floodplain at Corner Ford is approximately 80 to 100 feet wide before a steep slope is encountered. The possible pits are placed near the military crest of the steep slope, and have a commanding view of Corner Ford.

The tentative interpretation of these pit features is that they are remnants of the preparation by the Pennsylvania militia to "defend those passes." Careful archaeological survey of each of these features is recommended to determine, if possible, whether this interpretation is accurate, or whether some other natural or human-produced activity created these features.

Maxwell's Redoubt

Field examination, previous studies and topography suggest that Maxwell's Redoubt was situated on the southeast side of Ring's Run, on a hill that is now near the intersection of Cannoneer Court and Constitution Drive. The placement of this redoubt was intended to overlook the Great Nottingham Road. The location of the redoubt offered the KOCOA features of cover and concealment, obstacle, and Fields of fire.

Knyphausen's attack of the redoubt included the placement of artillery pieces on high ground northwest of Ring's Run. The hill chosen, located south of the Great Nottingham Road, is approximately 350 feet asl. Fighting at Maxwell's Redoubt and vicinity was some of the heaviest of the morning action west of the Brandywine. Following this fighting in this area, Maxwell's light troops withdrew across the Brandywine and continued to engage with the advancing Crown Forces.

Chadds Ford Combat Area & Fords Defense Areas
Brandywine Creek and Its Fords

Brandywine Creek is a tributary of the Delaware River draining a significant portion of Chester County, Pennsylvania; the western extremity of Delaware County, Pennsylvania; and part of New Castle County, Delaware. It flows among rolling hills of the northern Piedmont and through the scenic meadows of its floodplain and discharges into the Delaware at Wilmington (Scheffey 1960:11). The Brandywine in this portion of southeastern Pennsylvania is a considerable stream. Below the forks of the Brandywine, the creek runs nearly north-south, presenting a formidable obstacle to the movements of the Crown Forces and providing a key defensive barrier for Washington's Army.

Beginning in the early hours of September 9, 1777, Washington shifted his entire army from its defensive line along the Red Clay Creek to a new position on the Brandywine. By the next day, the American position stretched for several miles along the east side of creek, with Maxwell's Light Corps and smaller mounted detachments and infantry patrols moving on the west side of the creek about as far as Welch's Tavern. In 1777 the Brandywine was crossable at fords (shallow places in the river where movement was possible on foot, wagon, or horse). The Brandywine in the eighteenth century was about six feet deep for much of its length. The ford crossings were also deep, typically the water being chest high for an average person. Due to recent rains, the river crossings in September 1777 were abnormally high (Harris 2014:203).

Chadds Ford was the principal crossing point in the area for the main road, the Great Nottingham Road, leading from Philadelphia to Baltimore. A traveler here had several options for getting across the Brandywine. There were two fords here, called the Upper and Lower fords, or Chadds Upper and Chadds Lower. The Upper Ford and the Lower Ford were within 600 feet of each other (MacElree 1909:133). Travelers on the Great Nottingham Road forded the creek "300 feet or more north of the present bridge" (MacElree 1909:132). Starved Gut Road (Fairville Road) laid out in 1754, crossed the Brandywine about 150 feet south of the present bridge (MacElree 1909:133). Sometimes Starved Gut Road (Fairville Road in this area) was called Lower Ford Road.

Lidar image showing the approximate locations of the Upper Ford, Lower Ford and Chadds Ferry, based on historical accounts.

Besides the ford crossings, there was also a ferry crossing at Chadds. In 1737 John Chads, who owned land and kept a tavern there, entered into an agreement with the county commissioners, by which, with monies loaned him by the county, he procured the necessary boats and took charge of the ferry. "The crossing of the Brandywine Creek at Chads' Ford was frequently interrupted by high water and ice, and the settlements had become so numerous west of that stream that the establishment of a ferry became necessary" (Futhey and Cope 1881:357). Chads died in 1760 but the ferry continued operations into the early nineteenth century, when a bridge was constructed (MacElree 1909:124). Amos Brinton recalled the locations of the ferry posts in the early twentieth century, saying they were within 20 to 40 feet of Harvey Run (erroneously called Brinton's Run in the publication).

North of Chadds Ford, the next crossing point was called Brinton's Ford. It was situated about a mile above Chadds Ford. Moving north along the creek, the next crossing point was Jones or Painter's Ford, a little more than a mile above Brinton's Ford. In 1777 it was called Jones ford for the landowner whose property extended along the eastern side of the creek in this area, William Jones. Today this ford crossing is the bridge for Route 926 on Street Road.
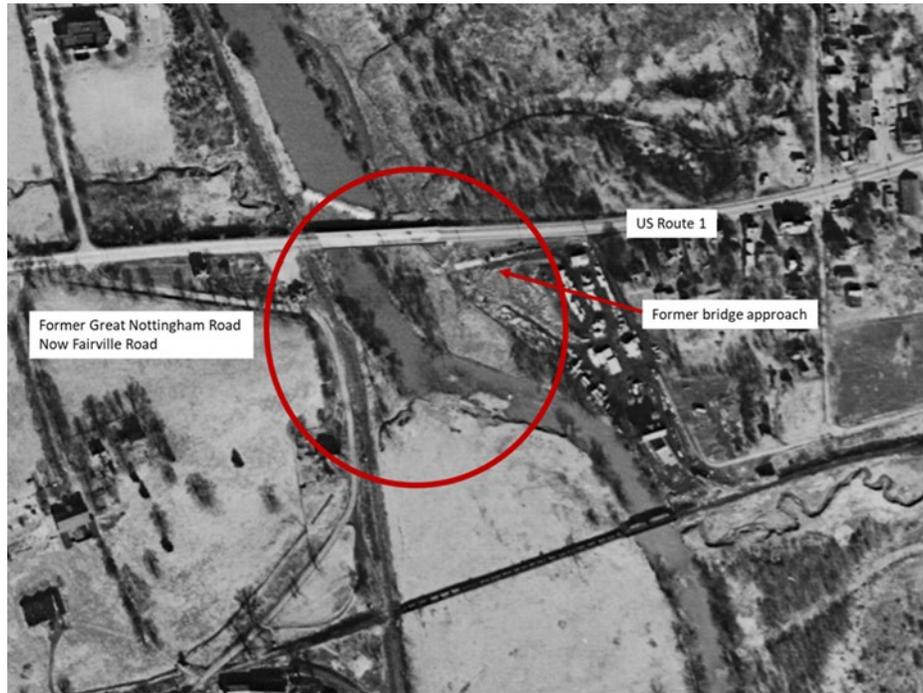
1959 aerial showing the Chadds Ford area. This image shows the former bridge approach which was replaced by the US Route 1 bridge. The former trace of the Great Nottingham Road on the west side of the Brandywine is now part of Fairville Road.

Another mile above Jones ford was Wistar's Ford, today's Lenape where Route 52 bridges the Brandywine. Lenape was the location of Wistar's Ford, called Sagar's bridge by the last quarter of the nineteenth century (Futhey and Cope 1881:336). The Forks of the Brandywine, the confluence of the East Branch and the West Branch, are a little over a mile west-northwest of Lenape. This location was called Buffington's Ford in 1777 (later Shaw's Bridge).

American Positions along the Brandywine

Washington deployed his divisions along the east side of the Brandywine on September 10. The positions selected used topography and the landscape to provide adequate fields of fire for artillery and infantry, and to oversee the principal crossing points of the Brandywine. The positions provided the KOCOA defining features of cover and concealment, key terrain, observation, and fields of fire. The American line extended from the bend of the Brandywine near Corner and Harlans fords, through the principal position at Chadds Ford, up to Brinton's Ford. At Brinton's Ford, General John Sullivan's Division was positioned, with further detachments at the three fords further north.

At Chadds Ford, General Greene's Division was bivouacked on lands belonging to Joseph Davis in 1777. The recollection of Amos Brinton in 1895 was that Greene's Division was encamped along the "down creek road" on the land of Amor Garrett – Garrett's lands are clearly depicted on the 1892 maps of Chadds Ford. Wayne's Pennsylvania Division was also in Chadds Ford, supported by artillery on the hills rising east of the creek. Some of the artillery positions were fortified with cut timber redoubts and fleches.

Crown Forces Positions on the Brandywine

Knyphausen's Division took up commanding positions along the west side of the Brandywine by mid-morning, after Maxwell's Light Infantry Corps had been pushed back across the creek. A series of hills on the west side offered observation, cover and concealment, and fields of fire for Crown Forces artillery units, and infantry units moved into the Brandywine Creek valley to threaten crossing the creek at ford locations.

Detail of Werner, *Plan du Passage* (1777). It shows the distribution of Knyphausen's forces upon arrival at the Brandywine.

Hills ranging in height from 200 to 240 ft elevation (with higher elevations further west) overlooking the Brandywine north and south of today's Route 1 were ideal artillery platforms. The high ground north of Chadds Ford Elementary School, the steep bluff immediately south and west of Fairville Road and its intersection with Route 1, and the ridge west of the railroad line running along the Brandywine were all used by the cannons. Infantry units probed along the creek, keeping up a skirmishing fire to cause the American formations to prepare for a possible attack. It is likely that the near attempt on General Washington's life, reported by Captain Ferguson, occurred in the area south of the Lower Ford, with Ferguson skirmishing along the creek. The Crown Forces baggage train, when it arrive at the end of the battle, took up a position in the valley around Fairville Road.

Osborne Hill & Birmingham Roads area Combat Landscapes
Osborne Hill Landscape

Osborne Hill is a dominant landform to the southeast of the Plum Run valley where Route 52 (not present at the time of the battle) passes Strodes Mill at about 1.25 miles from Sconneltown. With an elevation of well over 370 feet Osborne Hill offered an excellent observation platform to Sir William Howe. From this vantage point Howe could observe the activities of the Americans under Sullivan and the movements of Stephens and Stirling. The hill on which the Birmingham Meeting House stands is nearly 400 feet at its highest point, and there is no high ground between the two vantage points. Sullivan's movement was a hasty one because of the rapidly diminishing proximity of the contending forces.

View looking south from Osborne Hill at the intersection of Birmingham Road and the road to Radley Run GC. The high ground in the middle of the image is the position on Birmingham Hill held by Stirling's American Division in the center of the line.

British engineer Captain John Montrésor noted that during the approximately one-hour halt after ascending the defile to Sconnelltown, the Crown Forces observed the movements of the American forces in their front (Montresor 1881:416). Notations on Archibald Robertson's map indicate that the Crown Forces deployed while on the heights at Sconneltown, and then moved forward towards Osborne Hill " in three Columns— The centre Column composed of the Jaegers, two Battalions of Light Infantry, two Battalions British [grenadiers], and three Battalions of Hessian Grenadiers in the Road—The Brigade of Guards and 16th Regiment of light Dragoons formed the right Column, and the 4th Brigade British the left Column, about 400 Yards distant on each side of the Road— The third Brigade British formed the Reserve and moved along the Road in the Rear.— "(Robertson 1777).

The American divisions of Stirling and Stephens had arrived before that of Sullivan; by the time contact with the enemy was impending there was still a serious gap of several hundred yards in the line between Sullivan and the other two divisions. Sullivan complained later that orders had been issued and movement executed so hurriedly that there was uncertainty about where Stephens and Stirling were and what route they had taken. Also, the strength of the British column had been grossly underestimated. The British and Hessians quickly assumed battle formation and advanced through the small valley between the two hills (Scheffey 1960:17).

The importance of the view from Osborne Hill was obvious to the Crown Forces as well as to residents in the area. Townsend commented that civilians gathered on the hill to watch the battle - and interesting commentary regarding spectator actions. "When I arrived on the top of the hill," Townsend wrote, "I discovered on the eminence in Samuel Osborne's field a number of my acquaintances, who were standing near to a considerable number of persons on horseback, and viewing them, with the different movements of the army. I joined in with them. It was now a time of some seriousness and alarm among them. The battle had commenced in earnest; little was to be heard but the firing of the musketry and the roaring of cannon from both parties" (Townsend quoted in Futhey and Cope 1881:75).

Birmingham Meetinghouse, Birmingham Hill, Sandy Hill, Battle Hill, Sandy Hollow

The Birmingham Hill battle space is well-known and has been the subject of numerous battlefield studies and texts (cf., Hooten 1901, Stone 1908, Smith 1976, McGuire 2006; Harris 2014). The KOCOA assessment in this area was focused on providing insights or details to the already defined battlefield. In particular, we were investigating the question of the movement of Sullivan's Division as it came into position on the left flank of the American battleline.

Detail of the 1777 Robertson Map showing the deployment of Howe's forces at the outset of battle on the high ground just south of Radley Run.

Hooten's early twentieth century study suggested that Sullivan's Division formed on a hill about ¼-mile southwest of "Harvey Darlington's springhouse". Hooten and his coauthors wrote that "Thomas Sharpless, whose father lived on the ground of the battle, says his father told him that his father, the grandfather, that the American line was first formed on an eminence about a quarter of a mile southwest of where Harvey Darlington's springhouse stands, a proper position on which to plant artillery and place infantry. It is almost in line with Stirling and Stevens' [sic, should be Stephens] position and distant almost half a mile" (Hooten et al. 1901:5).

Hooten was identifying locations on the battlefield by using current – 1901 – landowners. A review of the Breou map published in 1883, the closest in date to Hooten's writing that depicts landowners and structures, shows Harvey Darlington's land as the area currently encompassed by much of the Birmingham Hill area. The springhouse mentioned by Hooten was situated along Meetinghouse Road at the head of a Brandywine Creek tributary called Renwick Run. Renwick Run forms a small valley north of Meetinghouse Road, and the valley follows the topography, with high ground ranging from 300 feet asl along Meetinghouse Road to a high point of about 374 feet asl on the lands of the Brandywine Conservancy.

Based on the Robertson map, topographic maps, aerial images, road configurations, damage claims, and landscape study, Sullivan's initial position seems to have been along a piece of high ground roughly paralleling today's

Meetinghouse Road. British writers noted that Sullivan's line was "a strong position on the commanding grounds above Birmingham church, with his left extending towards the Brandywine, his artillery advantageously posted, and both flanks covered with very thick woods" (quoted in McGuire 2006:219). Sullivan himself described the position his division occupied, saying that "I ordered Colo. Hazens Regiment to pass a Hollow way [likely Renwick Run valley], File off to the Right & face to Cover the Artillery while it was passing the Same Hollow way, the Rest of the Troops following in the Rear to assist in Covering the Artillery." Sullivan further noted that the Crown Forces allowed him the time to take up this his battle line on "an advantageous Height in the Line with the other Divisions but almost half a mile to the Left" (quoted in McGuire 2006:220).

Reviewing the Robertson map, the location of Sullivan's position south of Renwick Creek and on rising ground, with flanks covered by woods, is clearly shown. This line of battle was likely on Parcel 65-4-22.
The cultural resources management study completed by Webster et al. (1989) evaluated the lands bordering Renwick Run and extending into the woods along Meetinghouse Road as high archaeological potential, noting that the open fields here should provide significant battle-related resources, including the potential for burials. The authors of that report stated that this section of the battlefield "is one of the most critical areas of the battlefield site and consideration should be given to the preservation of the open space which presently exists" (Webster et al. 1989:B-6).

In their study of the battle the Hooten committee (including L.G. McCauley, Charles H. Pennypacker, Joseph Thompson, William Wayne, Jr. and Gilbert Cope) noted that the center of the American line was on a topographic high termed "Mrs. Biddle's Hill" (Hooten et al. 1901:5). The Breou map of 1883 depicts a Mrs. M.D. Biddle as the owner of the high ground near the intersection of today's Wylie Road and Birmingham Road. The center of the American line was situated on this hill, now known as Birmingham Hill, and was held by Stirling's Division. New Jersey Lt. Ebenezer Elmer noted that when they formed their battleline on Birmingham Hill their right flank was covered by woods (Brooks 1911:105). Referring to the Robertson map, the American position on Birmingham Hill is depicted with woods on the right flank.

Called "Dilworth's Path" at the time of the battle (Ashmead 1884:62), the Sandy Hollow and Birmingham Hill comprise one of the main combat areas of the battlefield. A short distance south of the Birmingham Meetinghouse Property a ridge rises to almost 420 feet above sea level; it is most prominent near the intersection of Wylie Road and Birmingham Meeting Road. The ridge extends roughly northeast/southwest with an average elevation of 370-380 feet. This ridge was key terrain in the American battleline, providing observation, cover and concealment, and fields of fire.

From right to left, the American divisions of Stephens, Stirling, and Sullivan formed a rough line of battle facing north, using the high ground formed by Birmingham Hill as their position. Sandy Hollow is located south of the ridge line. All of these sections of the battle saw heavy action on the afternoon of September 11, 1777. According to one battlefield historian, the vicinity of Sandy witnessed the "…most severe and sanguinary fighting in the Battle of Brandywine. More cannon balls, bullets, and other relics of the conflict have been found in this vicinity than anywhere else on the field…" (Bruce 1922). Stirling's Division held high ground in the center of the line, approximately in the area where Wylie Road intersects with Birmingham Meeting Road. It was on this hill that Stirling's artillery were placed, where they could command the areas from Street Road to the Birmingham Meetinghouse and the fields immediately in front of the position.
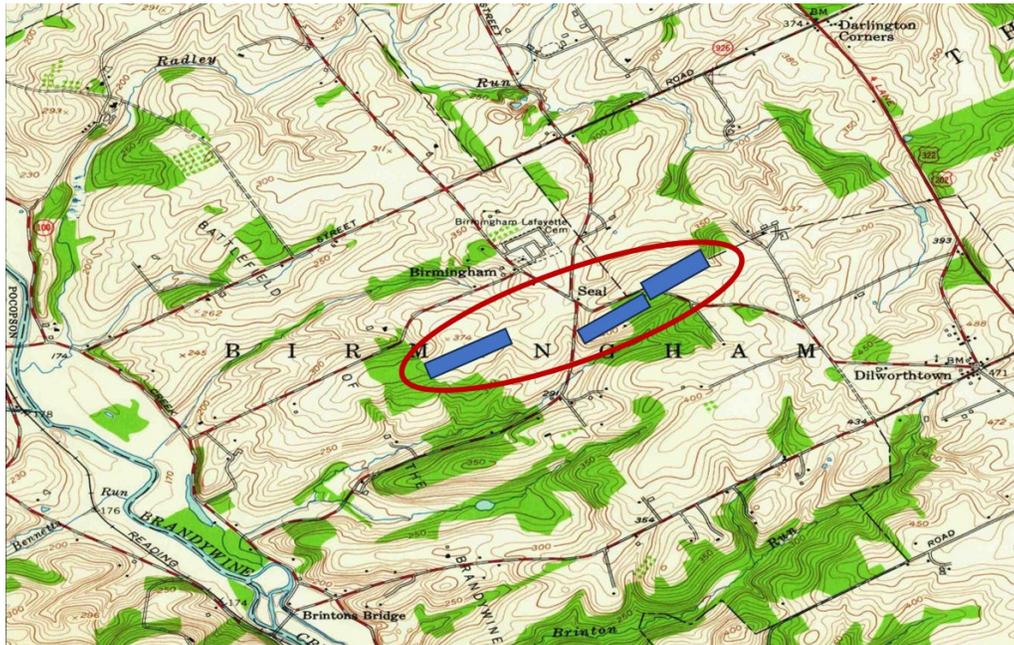
A detail of the 1954 USGS quadrangle map, showing the general location of Birmingham Hill and the areas of Sandy Hollow and the Brimingham Meetinghouse. The blue rectangles denote approximate locations of the American division deployed on the high ground. Note that the intersection of Wylie Road and Birmingham Meeting Road is identified as "Seal."

Sandy Hollow Park is actually south of the main defensive ridge position occupied by Stephens Division. While combat activity occurred in the park area, significant combat also occurred on the north side of the ridge, on the lands currently part of the Spackman Farm.

Birmingham Meetinghouse Property

The Meetinghouse grounds witnessed fighting by the units in the American General Woodford's 3rd Brigade in Stephens' Division. The meetinghouse grounds were surrounded by a stone wall which served as a makeshift field fortification. The action at this location assisted in slowing down the Crown Forces advance towards Brimingham Hill and the valley north of today's Sandy Hollow Park.

The Roads at Birmingham Hill

In 1777 there was a road that led to William Seal's property from the Birmingham Meeting Road. Seal's Road served as a road for Sullivan's two brigades to align upon during the fighting at Birmingham Hill. This road also intersected a north-south road that led to Brinton's Bridge Road. The intersection and the roads are important locations for interpreting the Robertson, Faden, Montresor and other battle maps.

In its depiction of the action at Birmingham Hill, the Robertson map shows a number of roads that intersect southwest of the Birmingham Meetinghouse. In interpreting this road network, it is important to know the dates that current roads were established. The modern Wylie Road is not an eighteenth-century road and was established sometime between 1847 and 1863. Meetinghouse Road is also not an eighteenth-century road; it was created in 1870. Both of these roads connect to Creek Road and provide east-west access from Brandywine Creek to the uplands and the road network around Birmingham Hill.
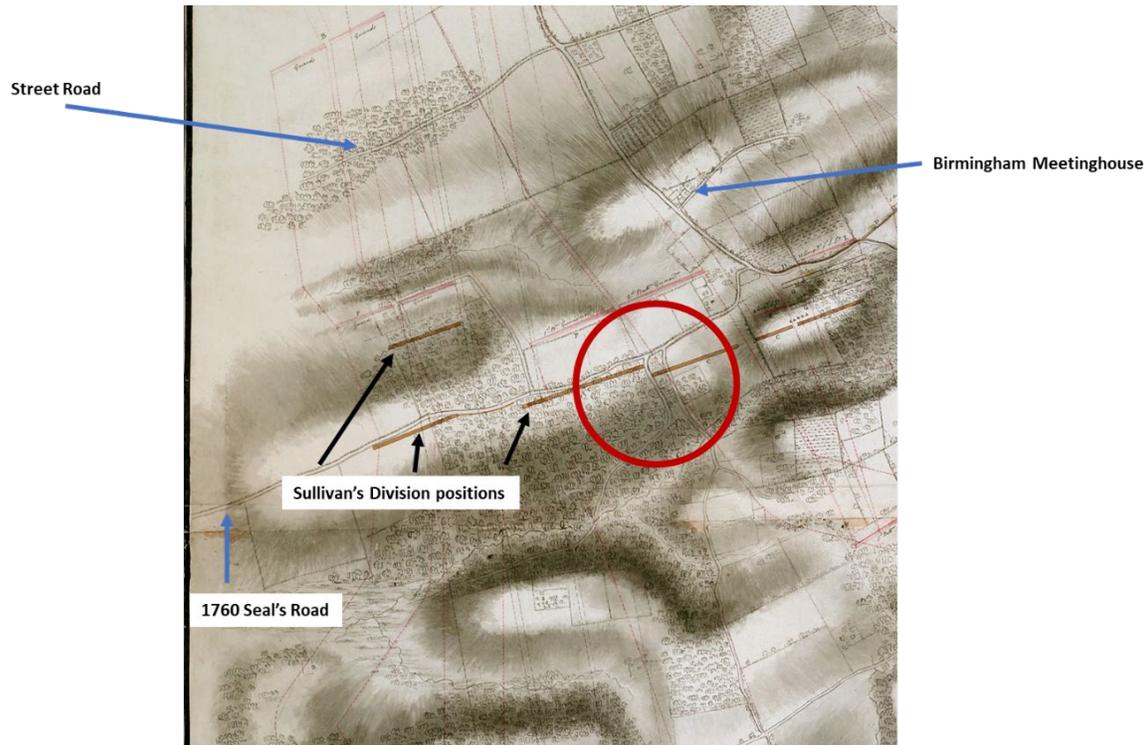
Robertson map detail, showing the location of Seal's Road and the positions occupied by Sullivan's Division. The red circle identifies the intersection of Seal's Road and a road leading to Brinton's Bridge Road.

The landowners in 1777 in this section of Birmingham Township included John Pennock and the heirs of William Seal. Seventeen years earlier, in 1760, William Seal petitioned the Chester County Justices of the Peace in the Court of Quarter Sessions for a road so that his property would be more accessible. He noted that his "plantation" was "…remote from any laid out road which lays him under a very great disadvantage to pass and repass…." The Court responded by establishing a road that led from "the Brandywine Beginning on Wm. Seal's land to a Laid out Road…from William Jones's Leading to John Chad's."

Seal's Road connected with the "Laid out" road established in 1746 leading from William Jones's property to Chad's Ford. Jones' land is today the Linden Farm near the intersection of Route 926 and the Birmingham Meeting Road. Jones had acquired this land in 1739 in two tracts. The holding extended all the way to the Brandywine Creek and provides the name of Jones Ford to the place where Route 926 crosses the Brandywine. The intersection of Seal's Road and the 1746 road was land purchased by Jesse Graves in 1776. The 1746 road trace was still discernable in 1989 when the Cultural Resources Management Study identified its bed. The researchers described the road as beginning near the intersection of Birmingham Road and Wylie Road heading west a short distance before turning south, crossing Wylie Road and following Hatton Road and eventually reaching Brinton's Bridge Road. They noted that "this road appears to have been a one-perch [16.5 feet] road and is banked for at least part of its length" (Webster et al. 1989:D-34).
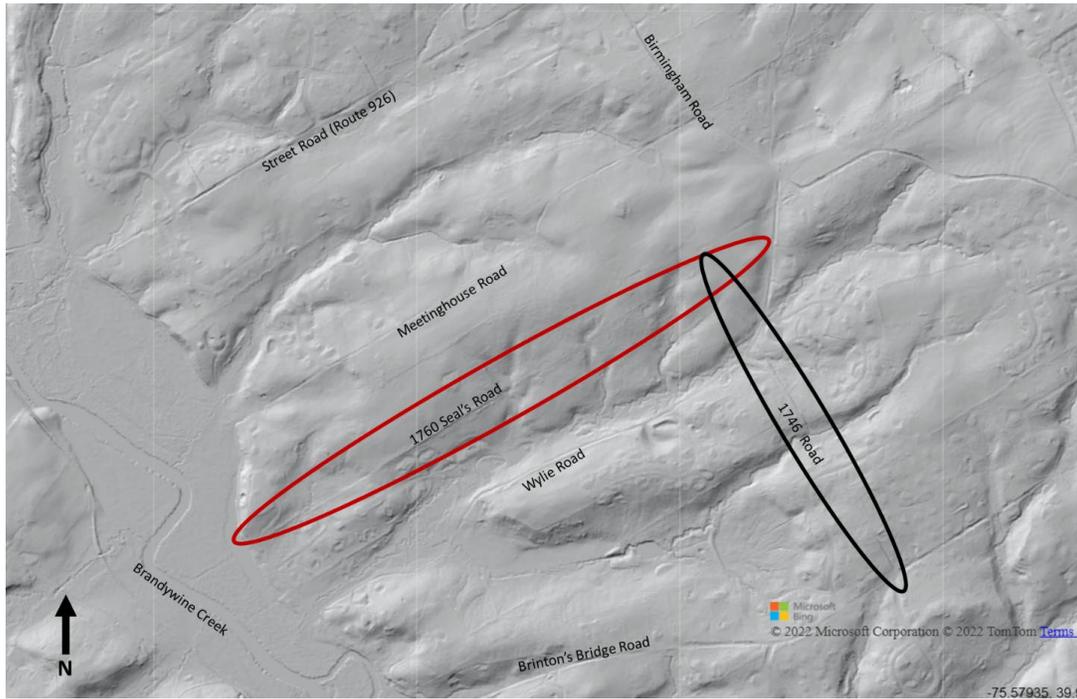
Lidar image of the area where the 1760 Seal's Road (outlined in red) intersects with the 1746 road (outlined in black) that led from William Jones' land to John Chad's land.

The trace of the former Seal's Road is shown on the Robertson map as a roughly east-west road extending along uplands to an intersection point with the Birmingham Road (or the road from Jones' land to Chad's land). The freeholders who laid out the road chose a route that followed the property line separating Pennock's lands to the south from Seal's larger land holding. The road used their boundary line as its road trace.

While Seal's Road is no longer extant, the property line marking the road is still readily apparent on the landscape and on aerial and Lidar images. The former road's termination point on Creek Road and the Brandywine is also still obvious, as it is the only location along the former Seal land where the topography would allow a road to reach the floodplain and that does not contain a steep embankment along Creek Road. In this area there is a steep bluff above the creek (elevation of 229 feet asl).

The trace of the 1746 road is still faintly visible on the Lidar imagery. The road is still shown as a public road on Breou's 1883 map of the township. This road served as an avenue of approach for Continental forces on the afternoon of September 11, as Stirling's Division shifted position from the Brinton's Ford area to the Birmingham Hill area. As Stirling wrote in 1778: "about noon I was order'd to March with my Division to the Right on the apprehension that part of the Enemy's was mov'd that way in order to Cross the River about five Miles Higher up after I had Proceeded about two miles…." (Stirling 1778). From a general position at Brinton's Ford and following the line of Brinton's Bridge Road to the 1746 Road, two miles would place Stirling at approximately the modern intersection of Wylie Road and Birmingham Road. The road also served as a major line of march for the Crown Forces moving southward from the Osborne Hill/Birmingham Hill battlefield space towards Chadds Ford.
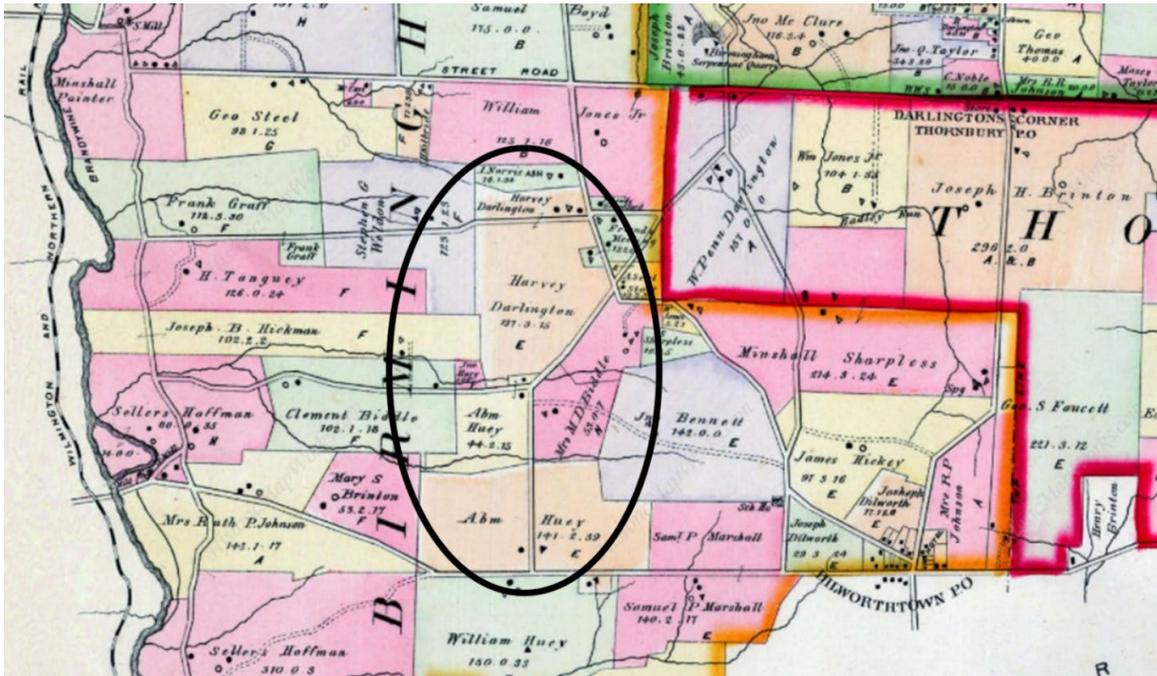
Detail of Breou's 1883 map of Birmingham Township, showing the Birmingham Hill battle space. Note the names of landowners, particularly Harvey Darlington, the Norris property, and Mrs. M.D. Biddle. Frank Hooten's 1901 study of the battlefield mentions these landowners. Note too that the 1746 road is still a functioning public road in 1883.

Route of General Greene's Division to Birmingham Hill and Rear Guard Area

Washington's reserve during the battle consisted of Gen'l Nathanael Greene's Division and the unattached North Carolina Continental brigade commanded by Francis Nash. Greene's Division was composed of two brigades of mostly Virginians, commanded by Brigadier General Weedon and Brigadier General Muhlenburg. As noted above, during the morning hours of the battle, Greene's Division was positioned south and east of Chadds Ford.

In the afternoon of September 11, Washington ordered Greene's brigades to march to the Birmingham Hill combat area. Greene apparently put both Virginia brigades in motion. Based the research of later historians. His troop movements are documented by Ashmead (1884:314) and later by Amos Brinton (Brinton 1895). Both historians use historical names for landowners as well as current (late nineteenth century) names. Ashmead described the movement as:

> "The road taken by American Reserves to Birmingham meeting-house was up the ravine by William Harvey's house, past the barn, over the hill to and across Dix's Run, up the next hill to and across the road from Dilworthtown to the Brandywine, at a point between the James Brinton and Darlington residences, thence nearly northeast across the Bennett land to the Sandy Hollow road which led to Birmingham meeting-house, the scene of that part of the battle of Brandywine. One wing of Greene's command was shown the way by George Hannum, who piloted them across the Gilpin lands from the Philadelphia and Chad's Ford road to the south of Dilworthtown" (Ashmead 1884:314).

Amos Brinton elaborated on the move (authors have corrected spelling):

> "…the Reserve under Greene was ordered to the field of action he went up the Road that Passed Wm Harvey by and across the Hill up to the Left of Edward Brintons Land the track of the Road may still be seen Just above Abraham Huey's house on the Dilworth & Brandywine Road [today's Brinton's Bridge Road] then the Reserves crossed through the woods in Direction of Bennett's house near Sandy hollow where they done Good Service other Parts of the Reserve went up the Bottom Road above Gideon Gilpin's house and took a Road that went in a northerly Direction up towards Dilworthtown at the Day of the Battle…."

Based on these written descriptions it appears that one element of Greene's Division moved from its bivouacs south of Harvey Run, then proceeded up what is today the Webb Road valley or ravine. Having passed William Harvey's barn, the column struck cross country, wading through a drainage called "Dix's Run" up the slope bordering this stream, crossing the Brinton's Bridge Road and then moving cross country again in a northeasterly direction to the Bennett property at Sandy Hollow.
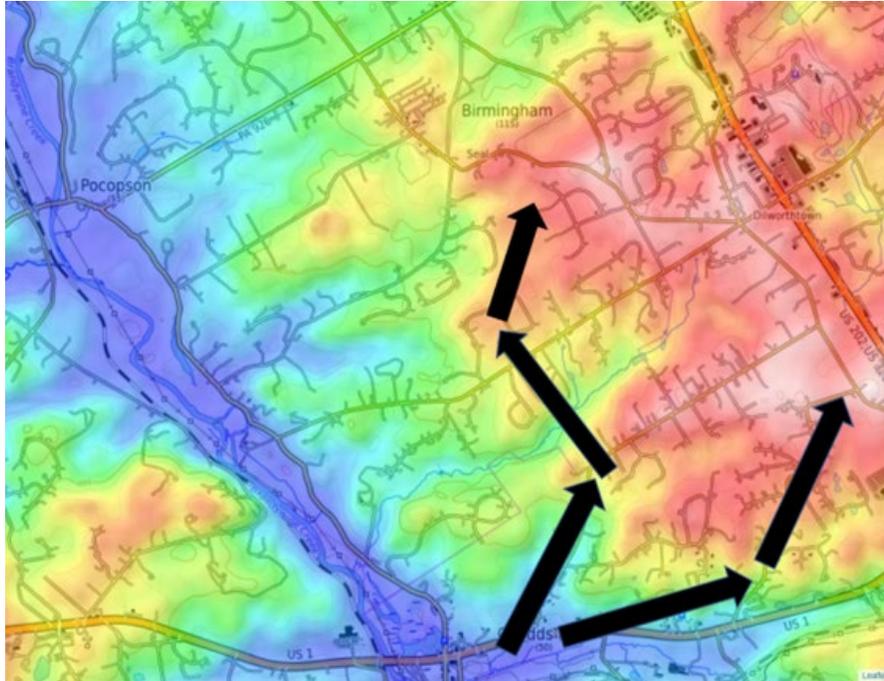
Topographic map showing the hypothesized route of the elements of Greene's Division as it marched to Birmingham Hill and Dilworthtown.

The other element of Greene's Division moved across the Gilpin property along what Brinton calls the "Bottom Road" – perhaps Harvey Road. This route brought the troops to the area of Dilworthtown.

Historic Military Archeological Potential

Based on the battle and landscape analysis, historic archeological potential related to battle military events in eastern battlefield Landscapes was assessed. Archeological potential varies according to what types of archeological remains are being considered. For example, archeological character for a marching movement is different than a skirmish or a formal battle combat situation.

The study of battlefields requires a combination of military history, archeology, and terrain or landscape analysis. Not only is it important to know the who, what, where, when, and how of the specifics of the battle, but knowledge of the historical development of the place the battle occurred is critical in order to understand the event and the subsequent changes that may have taken place.

Fields of conflict are temporary, albeit seminal, events, superimposed on preexisting cultural landscapes. These Landscapes witnessed a variety of cultural actions - transportation systems, agricultural development, settlement patterns, population change – that exerted influence on the land prior to the engagement on September 11, 1777 and that continue to exert influences on the field after the battle through today. Land uses, such as pasture and field patterns, farmsteads, and husbandry buildings, change as they give way to ultimate progression; roads are altered, vacated, rerouted, or widened, woodlands are reduced or removed from the landscape, and structures

are expanded, modified, or razed. Despite these transformations, the archeological evidence of conflict is often quite resilient and can be discovered through archeological investigation.

Prior to the development of KOCOA analysis and the growth of the field of Conflict Archeology, the 1989 Brandywine Battlefield Preservation Plan devoted a well-developed chapter addressing the archeological potential of the battlefield (Webster et al. 1989:43-58). The authors reviewed the archaeological potential for all parcels on the battlefield, ranking these as high, medium or low, and presented detailed written descriptions of each parcel or area in a series of appendices. Compiled more than three decades ago, this documentation is still extremely useful for assessing archaeological potential for not only battle-related resources but native American and historical archaeological resources as well. There was no field component for the 1989 archaeological survey, and its conclusions were based principally on predictive modelling, the above ground resources, landuse histories, and written histories of the battle. The goal of the 1989 archaeological assessment was to serve as a guide to "resource management and preservation planning (Webster et al. 1989:45-46).

Webster et al. 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). Systematic survey of the battlefield and the potential for battlefield interpretation using historical archaeological data was not explicitly stated. Instead, 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.

A number of previous formal archeological investigations have been undertaken on portions of the Brandywine Battlefield and focused specifically on discovering particular elements of the battle. Other professional archeological studies have been completed as part of cultural resource management studies required as part of Section 106 of the National Historic Preservation Act. In addition, some amateur metal detection and collecting has undoubtedly occurred.
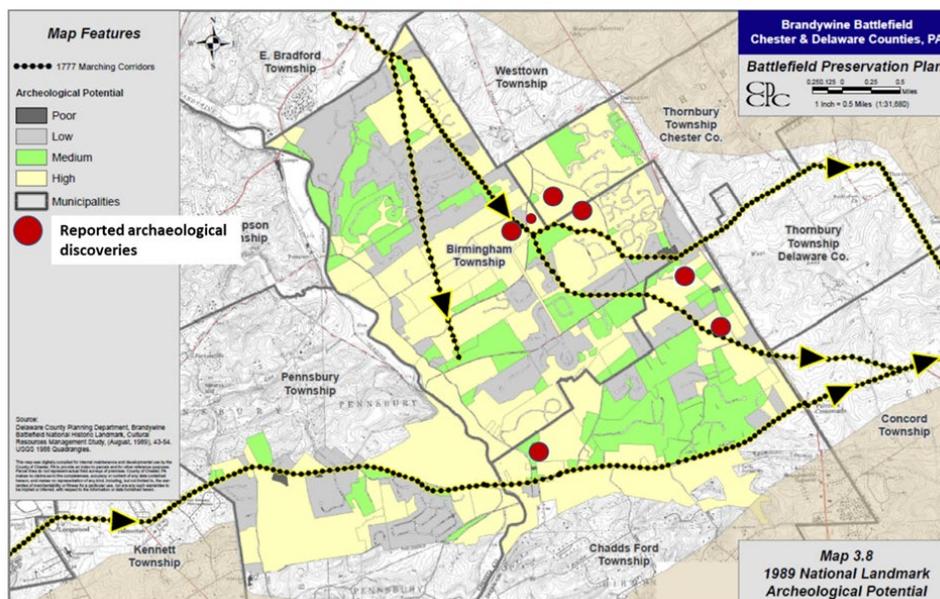
General Archaeological Potential as defined in 1989 and reported archaeological discoveries up to 2022.
In this image, the yellow parcels are considered to retain high archeological potential, green retains medium potential, gray low potential, and dark gray poor potential. The red dots indicate general locations of recorded archeological surveys.

On the battlefield, the formal surveys are limited in the scope of the geographic areas they covered. Included among these are geophysical and archeological testing in search of a mass burial site at the *Spackman* property (Historic resource 66.01: Parcel 66-3-2 at 1255/1256 Thornbury Road and Parcel 66-3-1 at 1252 Thornbury Road, Davis/Darlington Farm (Shaffer and Bevan 2006); formal metal detection under the supervision of an archaeologist at the Odell farm (Sivilich 2002); limited archeological survey and metal detection for the trail at Sandy Hollow (Lawrence and Weinberg 2008; Sivilich 2008); a focused metal detector study at the Wylie Farm (Parcel 65-4-13, Birmingham Township, Chester County) (Bradley and Catts 2016); and two archaeological studies at the Brinton Run Preserve in Chads Ford Township, Delaware County (King and Heller-Leib 2022a, 2022b). It should be noted that these last two studies did not employ archaeological survey methods considered to be standard for examining battlefield landscapes, but instead were more traditional archaeological studies.

Additionally, unreported metal detector surveys of several parcels in the Chadds Ford area have successfully recovered archaeological evidence of the artillery engagement in that area and the subsequent afternoon fighting between Knyphausen's Division and the American units (Wayne and Maxwell) who remained at the Chadds Ford area to defend the crossing.

Local collectors, notable among the Christian Sanderson, have recovered artifacts associated with the battle for a long time. Other collectors have also retrieved artifacts from the battlefield, and these have gone unreported and remain in private hands. Reputedly assemblages of battle-related artifacts have been found throughout the Core Area of the battlefield, specifically when the greenhouses associated with Gilpin House on Harvey Road were removed (Historic Resource 04.04: Parcel 04-09-039:000 at 198 Harvey Road, Howe's Headquarters; Gilpin Homestead, circa 1754).

Over the centuries since the battle there have been many published reports and/or first-person statements of the discovery and recovery of artifacts of the battle. A summary of the currently known statements is presented in

3.3 Artifacts and Archeology reported on the Brandywine Battlefield, 1819-2022

Date	Artifact/Object reported	Location	Source
1819	4-lbs cannon ball in a tree cut on the west side of the Brandywine	sawmill one mile east of Chadds ford, on Harvey Run; "…In March, 1819…Benjamin Hampton, the sawyer at this mill, while running through a large poplar log, heard the saw strike against an unusually hard substance, which he found to be a forty-four-pound [sic, should be 4-lbs] cannon-ball, It was a relic of the battle, the tree having been cut just back of the grove, **on the west side of the creek,** where the British artillery was stationed. The old solid shot, however, absolutely destroyed the teeth of the saw…."	*Niles Register* 1819; Ashmead 1884:319
1832	Human remains, uniform parts, buttons, buckles, coins	Parcel 65-4-12, Birmingham Meetinghouse, Birmingham Township	Watson 1832:38-39.
1838	British regimental buttons ("73rd" regiment)	Parcel 65-4-12, Birmingham Meetinghouse, Birmingham Township	Leslie 1838
1845	"a field strewn with musket-balls for years after the war" (recollection of Joseph McClellan)	"Bennett's Field, immediately south of Wistar's Woods" (Darlington's letter quoting McClellan). Near left end of American line, at "Mrs. Pepper's cottage [now Mrs. Biddle]" (likely Parcel 65-4-25.1)	Futhey and Cope 1881:80-81.
c1850	Human remains, buttons of 64th	Parcel 04000013500, Dr. Craig Farm, Chadds	Webster 1997;

	Regiment of Foot (see Webster et al. 1989 below)	Ford Township, Delaware County (Painter-Craig farm)	Schaffer and Bevan 2006:5.
1856	Unexploded artillery shell	Caleb Brinton, jrs., property ¼ mile north of Chadds Ford (likely in the village of Chadds Ford, near the Chad House).	Anonymous 1856
1859	Human remains, buckle, buttons, musket ball. Presumed British soldier.	Bridge embankment for the Baltimore Central Railroad (later PWBRR, and then Penn Central) bridge below Chadds Ford. Likely to be Parcel 04000018100, Chadds Ford Township, Delaware County	Ashmead 1884:319
1868	barrel and lock of a horse pistol; 6-lbs cannon ball	excavating earth for a new road, on the farm of John Burnett, near Chadds Ford (likely parcels 04000008900	Anonymous 1868
1881	Human remains; button suggests American soldier	Eli Harvey's cornfield. Possibly Parcel 04000005100, Chadds Ford Township, Delaware County	Anonymous 1893
1900	Human remains, musket. Presumed British.	Excavation for Mrs. Freeman's driveway, near the Sconnelltown Schoolhouse, East Bradford Township (possibly a series of parcels at this intersection)	Anonymous 1900
1922	Cannon balls, bullets, and other relics. "More have been found in this vicinity than anywhere else on the [battle] field."	Parcel 65-4-49.1, Sandy Hollow Heritage Park, Birmingham Township	Bruce 1922
1924	Burial trench 500-feet long	Oats/alfalfa field near Sandy Hollow. Likely parcel 66-3-2.1, Thornbury Township, Spackman Farm	Anonymous 1924; Long 1924; see also Shaffer and Bevan 2006: Appendix A
1978	Human remains, 17th Regiment of Foot (see 1989 below)	Parcel 04000013500, Dr. Craig Farm, Chadds Ford Township, Delaware County (Painter-Craig farm)	Webster 1997b; Shaffer and Bevan 2006:5
1989	Seven battle-related burials at two grave locations.	Parcel 04000013500, Dr. Craig Farm, Chadds Ford Township, Delaware County (Painter-Craig farm)	Webster et al. 1989, vol II. Description of parcel E-46
2002	Musket balls, iron grape/case shot (limited archaeological survey)	Parcel 65-4-49.1, Sandy Hollow Heritage Park, Birmingham Township, Chester County	Sivilich 2002
2006-2020	Musket balls, potential burial spaces (limited archaeological survey)	Parcels 66-3-2, 66-3-2.1 (Thornbury Township) and 65-4-15 (Birmingham Township) Spackman Farm	Spackman, personal communication; Shaffer and Bevan 2006
2008	Musket ball, coin, button (limited archaeological survey)	Parcel 65-4-25.1, the Odell Property (now Brandywine Conservancy), Birmingham Township, Chester County	Sivilich 2008
2014	3-lbs and 12-lbs grape shot	Parcel 04000009000, hill east of 1733 Creek Road, Chadds Ford, Chadds Ford Township, Delaware County	Donaghy, personal communication 2014
2015	Large numbers of musket balls (limited archaeological survey)	Parcel 04000013500, Dr. Craig Farm, corner of Oakland Road and Harvey Road (38 Harvey Road), Chadds Ford Township, Delaware County (Painter-Craig farm)	Craig, personal communication 2015
2016	Musket balls, button, gun part, bayonet fragment (archaeological survey)	Parcel 65-4-16 (northeast corner of Birmingham Road, Thornbury Road and Wylie Road intersection)	Bradley and Catts 2016
2017	Reported Hessian burials, including buttons, musket parts	Parcels 64-4-7 (Sanford property) and 64-4-8 (Chadds Ford Elementary School),	Marshall, personal communication 2017

		Pennsbury Township	
2019	Reported artifacts from "Big Bend" area of Brandywine Creek	Private lands in Delaware County	Delinger, personal communication 2019

Visible damage to contemporary buildings has also been reported. The former eighteenth-century Jones farm (today's Linden Farm) reputedly has a cannon ball lodged in the eastern wall of the house. Like the Jones farm (Linden) at least one farmhouse in the Rearguard Action area reputedly displays some damage from musket balls in the west wall paneling of Biddlebrook Farm (04.02: Parcel 04-05-028:000 at 478 Webb Road, Biddlebrook Farm, circa 1750-74, a fieldstone and stucco over stone house built in two sections (Webster et al. 1989 Appendix C, Part II, 045-BI-48).

There are three broad military activities that took place at Brandywine that may leave an archaeological signature: Combat, Encampment (including Hospital sites), and Burials. These (Combat, Camps, and Burials) are applicable in the two strategic landscapes comprising the Core area of the battlefield: Chadds Ford Combat & Defense; Osborne Hill & Birmingham Meeting Combat. The action of encampment is also applicable to the movement of American forces and Crown forces in the days prior to the battle. Summaries of each are presented below. Burials and their potential are presented separately.

Combat – (Chadds Ford Combat & Fords Defense, Osborne Hill & Birmingham Roads area Landscapes)

Archaeological Evidence of Combat

The archaeological study of military battlefields (collective termed 'conflict archeology') is proving that the physical evidence of such fields of conflict is often remarkably resilient, still present beneath the ground, and often recovered from near surface contexts (Scott and McFeaters 2011; Steele et al. 2006). Archaeologists attempt to identify patterns of human behavior through the material remains that survive. Of all the types of organizations or groups of people that can be studied, perhaps no group is more organized or more patterned than military organizations. Military formations of any size, from armies to companies, can be studied as social units operating in a closed cultural system created with strict rules (Smith 1994:15). The ways that various formations were organized for battle or for camp were highly structured and patterned and may be observable in the archeological record (Orr 1994).

The two armies that clashed on the 11th of September 1777 were distinctive from each other in terms of organization, logistics, and composition. The Crown Forces were composed of British, Hessian, and Loyalist formations, while the Main American army consisted of Continental combat units from several states (Delaware, Maryland, New Jersey, North Carolina, Pennsylvania, Virginia, and Canada), militia formations from Pennsylvania and Delaware, and various civilian organizations (ex. teamsters and wagoners). Each of these armies was composed of smaller military units (smallest to largest, companies, regiments/battalions, brigades, divisions), and each was armed and organized somewhat differently. The differences in arms, accoutrements, and uniforms between the two armies may leave a distinctive archaeological signature that may reveal battlefield activities or patterns.

Battlefield archeology is an integral component of the study of fields of conflict. Archeological studies of the battlefield seek to identify artifact density and distribution patterns, so that locations of American and British battle lines and potential burial locations could be more fully investigated and interpreted to the public. Archeological survey, including metal detection and other forms of geophysics, could investigate specific areas of the battlefield. Combining the physical remains of the battle with the documentary record and battlefield topography, archaeology strives to reconstruct the events of a military engagement. Careful archeological survey of the battlefield may reveal former battlelines, areas of intense combat (identifiable by density and distribution of

military artifacts, in particular impacted and dropped musket balls, artillery projectiles, etc.) offer the potential to gain new insights into the actions of September 11, 1777. 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.

While some selected tracts have been archaeologically studied, to date <u>no systematic archeological survey</u> has been conducted to date within the Chadds Ford and Osborne Hill/Birmingham Meeting Strategic landscapes. The areas around Sandy Hollow, Birmingham Meeting house and the Battle Hills area, including the Spackman Farm, areas along both sides of the Brandywine Creek in the vicinity of Chadds Ford all retain a fair degree of archaeological potential. These areas are likely to still have archeological resources related to the battle.

In the Birmingham Hill Combat Area, the 1989 cultural resources management study evaluated the lands bordering Renwick Run and extending into the woods along Meetinghouse Road as high archaeological potential, noting that the open fields here should provide significant battle-related resources, including the potential for burials. The authors of that report stated that this section of the battlefield "is one of the most critical areas of the battlefield site and consideration should be given to the preservation of the open space which presently exists" (Webster et al. 1989:B-6).

The documentary, and potential archeological, records of the Battle of Brandywine still have details to divulge, despite the passage of more than 240 years and the development pressures in the area. Archeological survey can address identified threats by documenting the existence of archeological battlefield resources and establishing a basis for protection of the resources. In addition, by raising public awareness of the significance of archeological resources in the National Landmark long-term stewardship can be fostered.

Encampments – (Chadds Ford Combat & Fords Defense, Osborne Hill & Birmingham Road Area Landscapes, American Encampment, American Approach)

Archaeological Evidence of Encampments

For both armies, encampments at Brandywine were temporary, short-term camps occupied for several days. 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). Archeological distinctions may be possible to make regarding the camp layouts (known as 'castramentation') and the level of military standardization (Whitehorne 2006:29). The American forces occupied the seven miles along the Brandywine for no more than two days prior to the battle. During that time temporary field fortifications were constructed as part of the river defenses. Crown Forces remained on site after the battle for several days in short-term camps.

In the days before the battle, the best evidence for where the Crown Forces encampments were situated comes from damage claims and first-person reports from the various townships. The camp did have a significant impact on the immediate physical surrounds in the form of damaged real estate and personal property. Locations of plundered properties clearly delineate the size of the encampment. Of the 33 landowners in the Township residing west of Red Clay Creek, 21 landowners (nearly 64%) reported plunderings by Crown Forces. Reported damages were especially heavy among the farms located along the McFarlan Rd. Corridor, extending south from the Great Nottingham Road. This corridor likely marks the overnight position of Gen'l Knyphausen's column and extends as far south as the Gavin Hamilton Mill. Other property damage is centered along the Rt. 82 corridor, and likely relates to the overnight camp of Gen'l Cornwallis' column.

Camp sites may be marked by dropped or discarded items, the remnants of fire hearths, artifacts associated with cooking, and other camp-related actions. Fire hearths can be discovered through archeological survey and through the use of geophysical surveys, such as magnetometer surveys, which are particularly adapted to detecting burnt areas. Though temporary and transient, overnight bivouacs – like those of the Crown Forces on their approaches to Brandywine, or the American forces at places like Hockessin Meeting House - and short-term camps – the American camps prior to the battle (Sept 9-11), and the Crown Forces camps after the battle - are often distinguished by the presence of hearts, lost ammunition and discarded items, such as reported from a post-battle Crown Forces camp near Monmouth, New Jersey, pre-battle hearths at Coochs' Bridge, and hearths at Red Bank. Campfires are mentioned by one British officer when he reached Hockessin Friends Meetinghouse on the 9th of September: "Here the rebels had a body of their forces, consisting (as the Quakers told us) of fifty or sixty light horse and about a thousand foot. They were but just got away, for many of their fires were still burning when we arrived" (Anonymous 1777a:77). Similarly, after the Crown Forces departed their camps at Cooch's Bridge in New Castle County (a camp occupied for five days), American scouts reported to General Washington that "he was in Aitkin['s] Tavern-House, passed Some Miles through the late Encampment of the Enemy Round about that place, Saw, and was among the fires they had left burning" (Rodney 1933:221).

Short-term temporary camps occupied for several days can be readily distinguished 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).

Hospital locations are likely resource locations that are associated with the post-battle encampment. Hospitals are known to have been established directly on the Brandywine Battlefield in/at the Birmingham Meeting House, Dilworthtown and at several other locations such as the Samuel Painter Farm, the Brandywine Glen Complex, Concord Friends Meetinghouse, and the Nicholas Newlin House. Like encampments, hospital sites may retain an archeological signature consisting of uniform parts and hearths. Unlike camps, hospital sites contain discarded medical/surgical equipment and human remains associated with amputations. Such remains are often found buried in the immediate vicinity of the hospital.

Principal houses in the area were utilized as headquarters for high-ranking officers, such as Washington, Lafayette, Howe, Cornwallis, and Knyphausen. Investigations at these sites may identify discrete archaeological deposits associated with the military occupation, although later land use at these places may have compromised the integrity of such resources.

Archaeological Evidence of Burials (Chadds Ford Combat & Fords Defense, Osborne Hill & Birmingham Road Area Landscapes)

The 1989 cultural resources management study estimates approximately 2,000 men as casualties, with no more than 350 of those potential burials reputedly accounted for (Webster et al. 1989:50). Burial parties were employed following the battle for several days. In the days following the battle, Crown Forces burial details gathered dead bodies, excavated pits or trenches, and buried these in groups (McGuire 2006:268). The grim task

of grave digging was daunting and time consuming, and when the Crown Forces moved on, the task of burial fell to the civilians who remained on a devastated landscape. Joseph Townsend reported that after the battle

> *"…Some few of the inhabitants…found it necessary to call in the assistance of their neighbors to rebury many of the dead, who lay exposed to the open air and ravages of beasts and wild fowls, having, in consequence of the late heavy rains, been washed bare, and some few of them had never been interred…"* (Townsend 1846).

This was a task that had both short-term and long-term consequences. As local historian Amos Brinton recalled in the late nineteenth century

> *"…on the 14th Sunday three Days after the Battle the People turned out to hunt up and Bury the Dead there was not many shovels & spades to be found as they had been Destroyed by the Enemy [.] the task must have been very Disagreable [sic] after the Dead Laying on the ground from the 11th to the 14 in a hot and sultry time and Manys [sic]the Bones of the Poor fellow that Lies Buried not very Deep in Birmingham Townships some was thrown Down old wells some Buried in Gullies along the Road side to be washed or Ploughed up when the Road menders come and it was common for fifty years after the Battle to get Bones along the Road side one Scull [sic] Found Had a Part of a spoon & and a Musket ball in It…"* (Brinton 1895).

Given the extensive amount of land encompassed by the Brandywine battlefield, burial sites are likely found in a number of locations on the battlefield. Battlefield burials are known to be present at Birmingham Meeting House, Kennett Meeting House, and "at a few smaller grave sites scattered in or near the battlefield" (Webster et al. 1989:50). The discovery of human remains has been reported at seemingly random locations around the battlefield and is a consideration for these Landscapes, particularly around skirmish sites, but also in other possible locations as heat stroke, related to the warm, humid September weather and woolen clothes and heavy packs, and other calamities may have struck troops within the area.

What are apparently isolated burials, as compared with mass burials, have been reported over the last centuries. A purported British soldier burial was encountered in 1859 during the construction of the railroad embankment south of Chadds Ford (Ashmead 1884:319). A burial was found on the lands of Eli Harvey, also Chadds Ford, circa 188; this burial was identified as American based on the recovered artifacts (Anonymous 1893). Human remains, presumed to be British, and a musket were found near the intersection of Sconnelltown Road and Birmingham Meeting Road in 1900 (Anonymous 1900); this location is unusual due to its distance from the main combat areas at Birmingham Hill.

By contrast, several locations on the battlefield have been reported and/or documented through archaeology as burial spaces, described below. In most cases, detailed archaeological investigations are required before such spaces can be verified.

Sandy Hollow (Osborne Hill & Birmingham Road Area Landscapes)

The area of Sandy Hollow has been reported to contain more than one mass burial. This area within the main combat zone of the Birmingham Hill fighting makes it an ideal location for burial trenches. The 1989 cultural resources management plan identified the Spackman farm in Thornbury and Birmingham Townships as an area that may contain burials according to local tradition (Webster et al. 1989:C8). More than six decades earlier, a quarter-mile long burial trench was described in several newspaper articles printed in the summer of 1924 (Anonymous 1924a, 1924b, 1924c, Long 1924). "Motorists who chance to drive along the shady curves of Patriot's Highway," the author wrote that summer, "observed a line of small American flags along the edge of an oats field." Another writer was more specific regarding the burial trench location, saying that the unmarked trench was "by the roadside…in the field on Brandywine battlefield at Sandy Hollow where…there have rested the remains of hundreds of Revolutionary soldiers who fell in the fight" (Long 1924). The flags mark the trench where

"the British…gathered the American dead in a long windrow. Then they dug a trench, almost a quarter of a mile long, and tossed the slain Colonials into it. It is this trench covered with growing oats that the flags marked" (Anonymous 1924c). The trench was nearly 500 feet long and it was reported that "the outline of this grave can be traced" (Long 1924). In 1924 the president of the Brandywine Battlefield Association, W.H. Sheffield, reported that "we are trying to get possession of this trench and dedicate it as a burying ground with fitting marks" (Anonymous 1924b).

In 2006 archaeological survey, consisting of geophysical testing was conducted in the area identified as the location for this trench on the Spackman farm (Parcel 66-3-2.1) (Shaffer and Bevan 2006). The survey area was focused on the location where pine trees are marking a "grove" that locals recall was planted by school children in the early twentieth century to mark the purported location of the mass grave. The results of the geophysical testing were inconclusive, but the researchers recommended further detailed archaeological testing.

Thornbury Farm (Osborne Hill & Birmingham Road Area Landscapes)

 In 2006 geophysical and archaeological investigations were undertaken on the farm in areas where, by local tradition, two possible burial mounds were situated (Shaffer et al. 2006). These are on parcels 65-4-15 (Birmingham Township) and 66-3-2 (Thornbury Township). Archaeological testing of the mound areas was inconclusive for the presence of human remains.

Painter-Craig Farm (Rear Guard Defense Landscape, Delaware County)

The recovery of human remains was reported as early as the mid-nineteenth century at the farm situated at the intersection of Harvey Road and Oakland Road. This farm location is within the apex of the rearguard action fought by General Greene's Division around dusk of September 11, 1777. Human remains were again located in this area in the late 1970s. To date seven sets of human remains in two separate grave locations have been reported (Webster et al. 1989: E-46). Regimental buttons recovered with the remains include British 17th Regiment of Foot and 64th Regiment of Foot (Webster 1997). The 64th Foot was part of the 4th British Brigade of infantry, commanded by General Agnew. The 17th Foot was brigaded with the 3rd British Brigade, while the regiment's light infantry company was part of the 1st Light Infantry battalion. At the rearguard action late in the day the 64th Foot was engaged with General Greene's two brigades and the remnants of other American commands. The level of the fighting in this location of the battlefield was some of the most intense of the entire day. Pennsylvania Lt. James McMichael recalled that the rearguard action "severe and successive engagement exceeded all I ever saw," lasted more than an hour, and was fought at the distance of "about 50 yards" (McMichael 1892). During this fighting, the 64th suffered heavy casualties, losing its commanding officer, several other officers, and nearly 10 percent of its strength (McGuire 2006:259).

Spring Run Burial Space (Ford Defense Area Landscape)

In Pennsbury Township (either parcels 64-4-7 and/or 64-4-8) local informants report that "Hessian" artifacts, such as musket parts and buttons, have been recovered from a possible burial space north or Spring Run, immediately southwest of the Chadds Ford Elementary School. Bone is also reported as being recovered from this area, but whether human or nonhuman has not been verified. Historically the area reported as containing artifacts was in the valley of Spring Run, a western tributary of Brandywine Creek. Maps from 1777 show this area as a low, swampy zone along the creek and the area appears on aerials to have remained swampy. During the battle this property belonged to James Brinton, who owned the lands on both sides of the Great Nottingham Road.

Old Kennett Meetinghouse Burial (Associated Approach)

A memorial stone in the burial ground of the Old Kennett Meeting reportedly marks the location of soldiers killed during the fighting in this section of the battlefield. It is not known if the stone marks an actual grave site or is only commemorative.

Birmingham Meetinghouse (Osborne Hill & Birmingham Road Area Landscape)

The presence of battlefield burials and hospital burials at the Birmingham Meeting is well documented. The use of the meetinghouse as a hospital in the days preceding the fight (Washington had established a hospital before the battle) and after the battle is reported by numerous military and civilian participants (cf. Watson 1832; Leslie 1838; Townsend 1846; Brinton 1895). A memorial stone and commemorative space are maintained at the cemetery.

Human remains were frequently uncovered during nineteenth century burials. John Watson recorded that when visiting the meetinghouse "…if you see the gravedigger turning up the grave ground, you may possibly see the bones of some British soldier at only two feet underground, with fragments of his red coat, his stock buckle, buttons, etc.! You may be even shown some old gold coin found concealed once in the great cue of a buried Hessian!" (Watson 1832:38-39). Another traveler to meetinghouse noted a similar experience, saying

> *"Our guide [Ennion Cooke] informed us that many years afterwards in digging the grave of old Mr. Jones, he found the remains of three British officers designated as such by the remnants of their uniforms, the buttons being those of the 73rd regiment, [note – this regimental designation is likely in error, as the 73rd regiment was not present at Brandywine] beside bearing the number, the stamp of G.R. surmounted with a crown. These buttons the old sexton informed us, he had long since given away one by one to various visitors who were desirous of having them to show as mementos of the Battle of Brandywine. The ghastly relics of three British officers were all re-interred by our informant in the place in which he had discovered them, and he showed us the spot"* (Miss Leslie 1838).

Burial spaces are neither key terrain, generally are not part of avenues of approach and retreat, nor are they associated with cover and concealment or present obstacles of are part of fields of fire. Thus, mass burials are not really covered in any KOCOA assessment but their presence on a battlespace of the magnitude of Brandywine has been reported for generations. Their location on the Chester County landscape should be documented and reported so that adequate means of identification and responsible planning and commemoration or recognition can be made. In the Core Area of the Battlefield – especially the Osborne Hill & Birmingham Meetinghouse and Chadds Ford strategic landscapes – there remains a strong potential for human remains to be encountered whenever ground-disturbing actions are undertaken.

Recommendations

Using the analysis undertaken in this chapter, the following recommendations were developed. Parties that may carry out a recommendation are noted in parentheses after the related recommendation.

Overarching Recommendation: A KOCOA analysis is a valuable tool for planning and interpretation purposes, as it identifies extant features that still define the battle/battlefield. Protecting those resources is paramount in efforts to preserve and/or interpret the battlefield and the battle's role in the American Revolution and a foundational element of Chester County's legacy. All future actions should be made with consideration and focus on protection of KOCOA identified features and battle-era historic resources, their associated context, and historic landscapes, particularly those within the half-mile troop movement buffer as a first priority (CCPC, DCPD, Battlefield Municipalities, BBTF, PHMC)

3-1.   Further investigate mass burial sites and consider archeological evaluation. Report any archeological findings to PHMC for their recording in the inventory of important archeological sites. (Military historian and archeologist working with Battlefield Historical Commissions, landowners, PHMC)

3-2.   Consider archeological evaluation for the Crown Force encampment in the days after the battle. Report any archeological findings to PHMC for their recording in the inventory of important archeological sites. (Military historian and archeologist working with Battlefield Historical Commissions, landowners, PHMC)

3-3.   Work with property owners to continue to investigate along Creek banks for defensive earth works. With many private properties in the study area, some field investigation could be completed; however there may be evidence of additional earth works in other areas along the Creek. (Military historian and archeologist working with Battlefield Historical Commissions, landowners, PHMC)

3-4.   Further investigate the former homestead on Birmingham Hill for historic interpretation. A Phase 1 archeological study was completed. (Brandywine Conservancy, Military historian and archeologist working with Battlefield Historical Commissions, PHMC)

3-5.   Further investigate locations of 1777 farm lanes on Birmingham Hill. (Brandywine Conservancy, Military historian and archeologist working with Battlefield Historical Commissions, PHMC)

3-6.   Consider archeological investigation of the American encampment which is relatively unknown, (Military historian and archeologist working with Battlefield Historical Commissions, landowners, PHMC)

3-7.   Continue to transcribe American pensioner applications and other primary sources. Create an online clearinghouse of primary sources. Create a database of primary sources including the text transcriptions. (Military historian, local historians, Battlefield Historical Commissions)

3-8.   Viscount Cantelupe, a grenadier in the British Brigade of Guards painted the battle as he saw it looking from Street Road towards Birmingham Hill. Investigate the location of the two houses and the American cannons seen in the painting. (Military historian/archeologist working with Battlefield Historical Commissions)

3-9.   Update 2013 Plan mapping, as applicable, to reflect the findings herein. (CCPC)

3-10. Update 2010 KOCOA analysis and other battle mapping to reflect the findings herein. (CCPC)

3-11. Provide updated information to 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). (CCPC)

3-12. Provide updated information to BBTF members, in particular its Steering Committee members who guide and lead BBTF efforts. (CCPC)

3-13. Provide updated information to local heritage centers, the Battlefield Gateway, and Interpretive Sites, as well as environmental stewardship organizations (e.g. Brandywine Red Clay Alliance), so they can incorporate the information into their historic interpretation, education, and stewardship outreach and efforts. (CCPC, DCPD, Battlefield Historical Commissions, BBTF)

3-14. Provide updated information to land conservation groups (e.g. Brandywine Conservancy, Natural Lands, NALT) and Chester County Open Space Department 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. (CCPC, DCPD, Battlefield Municipalities, BBTF)

---

[i] Sources:

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.

Anonymous (1777a) Battle of Brandywine in which The Rebels were defeated. September the 11th 1777. by the Army under the command of Sr. Willm. Howe. Rare Map G3701. S323 B7. 1777. Cornell University Library, Ithaca, New York.

Anonymous (1777b) British Journal, Officer B. Manuscript 409, Sol Feinstone Collection, David Library of the American Revolution.

Anonymous (1777c) *A Detail of the Operations of the American & English Armies during their Campaign in the autumn 1777.* [anonymous North Carolina officer] William Petty, 1st Marquis of Lansdowne, 2nd Earl of Shelburne Papers, vol. 88: Miscellaneous American Papers (1770-1793). Papers relating to governmental and mercantile business, primarily in America." Item #24. William L. Clements Library, The University of Michigan, Ann Arbor, Michigan.

Anonymous (1856) A Revolutionary Relic. *Delaware County American*.

Anonymous (1893) Brandywine Day – Celebration of the 116th Anniversary of the Battle of Brandywine. *The News Journal* (Wilmington, Delaware), Tuesday, September 12.

Anonymous (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.

Anonymous (1924a) Recall Fight on Brandywine: "Battlefield Day" is Observed by West Chester Associations. *The Evening Journal* (Wilmington), Tuesday, May 27.

Anonymous (1924b) May Buy Brandywine Trench of '76 Heroes. *The News Journal* (Wilmington), Saturday, July 24.

Anonymous (1924c) Death Trench is Neglected. *The Evening Journal* (Wilmington), Friday, June 13.

Ashmead, Henry (1884) *History of Delaware County, Pennsylvania*. L.H. Everts & Co., Philadelphia.

Baurmeister, Carl (1935) Letters of Major Baurmeister During the Philadelphia Campaign, 1777-1778. Bernard A. Uhlendorf and Edna Vosper, editors. *Pennsylvania Magazine of History and Biography* 59(4):392-419.

Beatty, William (1908) Journal of Captain William Beatty, 1776-1781. *Maryland Historical Magazine* 3 (2): 104-119.

Bertolet, Benjamin (1903) *Camp Pottsgrove, September 18th to 26th, 1777: General Washington with his Continental Army at Fagleyville, New Hanover Township, Montgomery County, Pennsylvania*. Philadelphia.

Bradley, Kevin, and Wade P. Catts (2016) Summary of Archaeological Survey, Parcel 65-4-16, Birmingham Township, Chester County, Pennsylvania. Limited Metal Detector Survey at the Wylie Farm. Report prepared for Adey Family Dentistry. Prepared by Commonwealth Heritage Group, West Chester, Pennsylvania.

Brinton, Amos C. (1895) Amos C. Brinton Papers, Box 2, Folder 4 Delaware Historical Society, Wilmington, Delaware.

Brooks, John N., ed. (1911) Extracts from the Journal of Surgeon Ebenezer Elmer of the New Jersey Continental Line, September 11-19, 1777. *The Pennsylvania Magazine of History and Biography* 35(1):103-107.

Bruce, Robert (1922) Identification of Markers on and About the Brandywine Battlefield. Mss on file with authors.

Bueltzingsloewen, Carl Wilhelm von (2013) My Journal of the Mirbach Regiment from the day of my Departure in 1776 to the end of 1777, by 2nd Lt. Carl Wilhelm von Bueltzingsloewen, Henry J. Retzer, translator and editor. *Journal of the Johannes Schwalm Association* 16: 69-73.

Catts, Wade P. (2021) Conflict Archaeology and the 1777 Philadelphia Campaign in Chester County. *Chester County Ledger: The Newsletter of the Chester County Preservation Network* 24(2):8-10.

Catts, Wade P. (2019) "Foot Jäger Forward!" Johann Ewald, Petit Guerre, and the Archaeology of the Battle of Cooch's Bridge. In *Partisans, Guerrillas, and Irregulars: Historical Archaeology of Asymmetric Warfare*, Steven D. Smith and Clarence R. Geier, editors. The University of Alabama Press, Tuscaloosa.

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., Robert A. Selig, and Kevin Bradley (2017) *"The Army March'd at Day Break in Two Columns:" Military Terrain Analysis for Two Brandywine Battlefield Strategic Landscapes Chester County, Pennsylvania*. American Battlefield Protection Program Grant GA-2287-15-005. Prepared for the Chester County Planning Commission. Commonwealth Heritage Group, West Chester, Pennsylvania.

Catts, Wade P., Robert A. Selig, and Sean Moir (2019) *"Left Newport…before Daylight and March'd to Chad's Ford": Military Terrain Analysis for Two Brandywine Battlefield Strategic Landscapes Chester County, Pennsylvania*. American Battlefield Protection Program Grant # Ga2287-17-002. Prepared for the Chester County Planning Commission. South River Heritage Consulting, Newark, Delaware.

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.

Clark, Joseph (1855) Diary of Joseph Clark, Attached to the Continental Army from May, 1778 to November, 1779. *Proceedings of the New Jersey Historical Society* 7 (1853-1855):93-116.

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.

Dincklage, August Eberhard von (1856) *Concerning the Battle on the Brandywine.* Tagebuch des Obristlieutenants August Eberhard von Dincklage aus dem Amerikanischen Unabhängigkeitskrieg 1776 – 1784. Copy of original made in 1856. 4° Ms. Hass. 186, fol. 154 Universitätsbibliothek Kassel/Murhardsche Bibliothek, 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.

Du Buy, Johann Christian (1777) Letter of October 16, 1777 (Germantown). In Letters to Lieutenant General Wilhelm Maximillian 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.

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

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 (1977) *Tagebuch des Hessischen Feldjägerkorps*. Shelf mark: 4° Ms. Hass. 166, Murhard Library, Kassel, Germany.

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.

Forman, Jonathan (1777) John U. Rees and Bob McDonald, "`The Action was renew.d with a very warm Canonade': A New Jersey Officer's Diary, June 1777 to August 1778" Unpublished manuscript available at https://www.scribd.com/doc/216378254/The-Action-was-renew-d-with-a-very-warm-Canonade-New-Jersey-Officer-s-Diary-21-June-1777-to-31-August-1778

Futhey, J. Smith and Gilbert Cope, eds. (1881) *History of Chester County, Pennsylvania with Genealogical and Biographical Sketches*. Louis H. Everts, Philadelphia.

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

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

Harris, Michael C. and Gary Ecelbarger (2021) The Numerical Strength of George Washington's Army during the 1777 Philadelphia Campaign. https://allthingsliberty.com/2021/10/the-numerical-strength-of-george-washingtons-army-during-the-1777-philadelphia-campaign/

Harrison, Robert H. (1777a) Robert H. Harrison to Israel Putnam, September 10, 1777   https://www.loc.gov/resource/mgw3b.004/?sp=110 Webpage accessed 3-31-2019

Harrison, Robert H. (1777b) Robert H. Harrison to John Hancock, September 10, 1777 https://www.loc.gov/resource/mgw3a.003/?sp=11 Webpage accessed 3-31-2019

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.

 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.

Hooton, F.C., L.G. McCauley, Charles H. Pennypacker, Joseph Thompson, William Wayne, Jr., Gilbert Cope (1901) The Battle of Brandywine with its Lines of Battle. *The Spirit of '76* 8(1):218-220.

Howe, Sir William (1777) General Orders by Major General William Howe, November 1775- June 1776, October1776- 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.

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

King, Daniel and Abigail Heller-Leib (2022a) Phase I Archaeological Investigation of Brinton Run Preserve Conservation Easement Chadds Ford Township, Delaware County, Pennsylvania. Report prepared for North American Land Trust. Prepared by Johnson, Mirmiran & Thompson, Philadelphia.

King, Daniel and Abigail Heller-Leib (2022b)Addendum Phase I Archaeological Investigation of Brinton Run Preserve Conservation Easement Brandywine Township, Delaware County, Pennsylvania. Report prepared for North American Land Trust. Prepared by Johnson, Mirmiran & Thompson, Philadelphia.

Kirkwood, Robert (1910) *Journal and Order Book of Captain Robert Kirkwood of the Delaware Regiment of the Continental Line*. Joseph Brown Turner, editor. Historical Society of Delaware.

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 v*ol. 2, Bestand 4h 3099. Hessisches Staatsarchiv Marburg, Germany.

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

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

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

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

Lidar Imagery (2022) PAMAP Program - 3.2 ft Digital Elevation Model, 2006 - 2008 - DCNR PAMAP Program. Preview PAMAP Program - 3.2 ft Digital Elevation Model (psu.edu).

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.

MacEllree, Wilmer W. (1909) *Along the Western Brandywine*. Privately Published.

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

McGuire, Thomas J. (2002) British Images of War at Brandywine and the Tredyffrin Encampment. *Pennsylvania Heritage* (Fall): 24-31.

McGuire, Thomas J. (2006) *The Philadelphia Campaign, Volume I: Brandywine and the Fall of Philadelphia*. Stackpole Books, Mechanicsburg, Pennsylvania.

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

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

Miss Leslie (1838) The Field of Brandywine. *North Star* (Danville, Vermont), 9 June 1838.

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

Montreśor, John (1882) Journal of Captain John Montreśor, July 1, 1777, to July 1, 1778, Chief Engineer of the British Army. John Montreśor 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.

Muhlenburg, John P.G. (1910) Orderly Book of Gen. John Peter Gabriel Muhlenberg, March 26 to December 20, 1777. *The Pennsylvania Magazine of History and Biography* 34(4):438-477.

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

Peterson, Charles J. (1844) The Battlefields of America. No.1 – Brandywine. *Graham's Lady's and Gentlemen's Magazine* 24:226-228.

Purdy, Gilbert (1777) Memorandum of Lt. Gilbt. Purdy for ye year 1777 National Archives of Canada, MG 23, Series B14, Gilbert Purdy File.

Rankin, Hugh F. (1978) An Officer Out of His Time: Correspondence of Major Patrick Ferguson, 1779-1780, Howard Peckham, *Sources of American Independence: Selected Manuscripts from the Collections of the William L. Clements Library*, Vol. II. The University of Chicago Press, Chicago.

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

Rodney, Caesar (1933) *Letters to and From Caesar Rodney, 1756-1784*. Edited by George H. Ryden. The University of Pennsylvania Press, Philadelphia.

Scheffey, William M. (1960) The Battle of the Brandywine. In *Historic Brandywine Guidebook*, William C. Baldwin, editor, pgs. 5-19. The Bradford Village Press, West Chester, Pennsylvania.

Seybolt, Robert F., ed. (1931) A Contemporary British Account of General Sir William Howe's Military Operations in 1777. *Proceedings of the American Antiquarian Society,* New Series 40 (Part I): 69-92.

Shaffer, Mark D. and Bruce W. Bevan (2006) *Geophysical and Archaeological Investigations on the Spackman Property. Brandywine Battlefield National Historic Landmark, Birmingham and Thornbury Townships, Chester County, Pennsylvania*. Report prepared for Brandywine Battlefield Task Force. Prepared by Bureau for Historic Preservation, Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.

Shreve, John (1879) Personal Narrative of the Services of Lieut. John Shreve of the New Jersey Line of the Continental Army. *Magazine of American History* 3:564-576.

Sivilich, Daniel M. (2002) *Limited Phase I Archaeological Survey Conducted at Sandy Hollow Heritage Park, Birmingham Township, Chester County, PA.* Report prepared for A.D. Marble & Company. Prepared by Battlefield Restoration and Archaeological Recovery Organization.

Sivilich, Daniel M. (2008) Phase I Archaeological Survey Conducted at the Odell Farm Site, Tax Parcel No. 65-4-25.1, Deed Book 7168, Page 401, 1301 Birmingham Road, Birmingham Township, Chester County, Pennsylvania. Report prepared for The Brandywine Conservancy, Inc. Prepared by Battlefield Restoration and Archaeological Recovery Organization.

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, George (1862) *History of Delaware County, Pennsylvania, from the discovery of the Territory included in its Limits to the Present Day.* Henry Ashmead, Philadelphia.

Smith, Robert P. (1848) *Map of Delaware County, Pennsylvania*. Philadelphia.

Smith, Samuel S. (1976) *The Battle of the Brandywine*. Philip Freneau Press, Monmouth Beach, New Jersey.

Stirke, Henry (1961) A British Officer's Revolutionary War Journal, 1776-1778., S. Sydney Bradford, editor. *Maryland Historical Magazine* 56(2):150-175.

Stirling, Alexander (1778) Letter to Colonel Carey, Valley Forge, January 6, 1778. Clarence H. Vance Papers Box 4, Folder: Battle of Brandywine Rare Books and Manuscript Library, Columbia University, New York, New York

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.

Stone, Frederick D. (1908)The Battle of Brandywine. *The Magazine of History with Notes and Queries* 7 (5):284-293.

Stuart, Sir Charles (1927) *New Records of the American Revolution. The Letters, Manuscripts and Documents sent by Lieut.-General Sir Charles Stuart to his Father, the Earl of Bute, 1775-79*; also the Letters of General Howe, General Clinton, and other Officers to Sir Charles Stuart, during the Revolution, *1779-81*. L. Kashnor, London.

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

Townsend, Joseph (1846) *Some Account of the British Army, Under the Command of General Howe, and the Battle of Brandywine, on The Memorable September 11th, 1777, and the Adventures of that Day, Which came to the Knowledge and Observation of Joseph Townsend*. Press of the Historical Society of Pennsylvania, Philadelphia.

W.D. (1860) Chads' Ford. *The Historical Magazine, and Notes and Queries Concerning the Antiquities, History, and Biography of America* 4(1)15-16.

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

Washington, George (1777a) General Orders September 7, 1777 https://www.loc.gov/resource/mgw3g.002/?sp=236 Webpage visited 3-31-2019

Washington, George (1777b) General Orders September 9, 1777 https://www.loc.gov/resource/mgw3g.002/?sp=237 Webpage visited 3-31-2019

Washington, George (1777c) George Washington to Governor Jonathan Trumbull, September 8, 1777 https://www.loc.gov/resource/mgw4.044_0098_0099/?sp=1 Webpage visited 3-31-2019

Washington, George (1777d) George Washington to John Hancock, September 9, 1777 https://founders.archives.gov/?q=September%208%2C%201777&s=1111311111&sa=&r=200&sr=. Webpage visited 3-31-2019

Webster, Nancy V. (1997a) 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. (1997b) Revolutionary Preservation. *CRM* 20(5):42-46. crm-v20n5.pdf (npshistory.com).

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.W. (1777) *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*. WHK 29/54b, -55, -56. Hauptstaatsarchiv Marburg.

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

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.