A Certain Cure for Lust of Blood: Archaeological Excavation Report Mametz Wood, Somme. 2015

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for

Bearhug Television

Contents:

Summary

In the summer of 2015 an archaeological team commissioned by Bearhug TV undertook excavation work in and around Mametz Wood to investigate positions pertinent to the 38th (Welsh) Division attacks as a part of the Battle of the Somme of 1916. In addition to a LiDAR and geophysical surveys, five excavation trenches were opened. Structures and artefacts relating to the 1914-1918 period were examined and this report itemises these and also makes recommendations for the potential of future studies.

Acknowledgements

The archaeological fieldwork and research was accomplished by the individuals below – to them my thanks: Luke Barber, Richard Bennett, Bethan Boulter, Ant Cook, Dave Hart, Ian Jones, Peter Masters, Lisa Miller, Dan Phillips, Steve Roberts, Andrew Robertshaw, Justin

Russell, Matt Smith, Alex Sotheran, Zoë Sutherland, and Bas, Vonnie and Gareth Thomas. Dr David Kenyon also contributed to the invaluable project design.

All film coverage was managed by Louise Bray and Jobim Sampson of Bearhug TV and with Osian Williams, Tudor Evans, Hywel Jones and Rob McDougall

Photography of artefacts by Harvey Mills
Further Conservation of artefacts by Wessex Archaeology

Project Design:

A project design was submitted in support of an application to DRAC, Somme-Picardie for permission to carry out archaeological investigations and LiDAR survey of a number of sites in and adjacent to Mametz Wood, Somme, France. 2016 will mark the centenary of the battle of the Somme, a key event in the Great War of 1914-18. During that battle an attack was made on German positions in Mametz Wood, near Albert. The attack was carried out by British forces including in particular the 38th Welsh Division, which was recruited among war-time volunteers from Wales. In order to commemorate the anniversary of this event, BBC Wales commissioned Bearhug TV to produce an archaeological and historical project to tell the story of the battle for television broadcast in 2016. This archaeological element of this project had a numnber of specific research objectives:

Research Objectives:

The primary objective of the project was to examine and excavate elements of the battlefield fought over by the 38th Welsh Division in July 1916. Excavations concentrated largely on German trenches which formed the objectives of the Welsh attack. Broad research questions were:

- What was the character of the German trenches in the area?
- Does material survive which specifically reflects the activity (fighting) of 10 July 1916?
- What is the state of preservation of the battlefield? How does the preservation of trenches within the wooded areas compare with those in arable fields?
- What is the character of surviving artefactual material in the plough soil (as uncovered by metal-detector)?
- How well do trenches and other battlefield features respond to geophysical prospection, in particular magnetometry? Is it possible to discern such features in spite of significant soil contamination by metallic debris?

Scope

The project consisted of fieldwork on site over a period of two weeks, with an on-site team of archaeologists and surveyors. During this period Mr Peter Masters of Cranfield University also undertook a programme of geophysical survey in selected arable fields around Mametz Wood, these being used to inform excavation

strategies. These results were augmented by aerial LiDAR survey (using hyper-spectral laser scanners) of the wood itself, to detect Welsh-used trenches. Excavation of small areas of visible trench earthworks within Mametz wood were carried out. The scale of this fieldwork, and the later than expected cropping regimes meant that our initial aims to carry out an archaeological metal-detector survey outside the wood were not possible.

Figure 1: Map of the Mametz Region with the study area located within the red box.

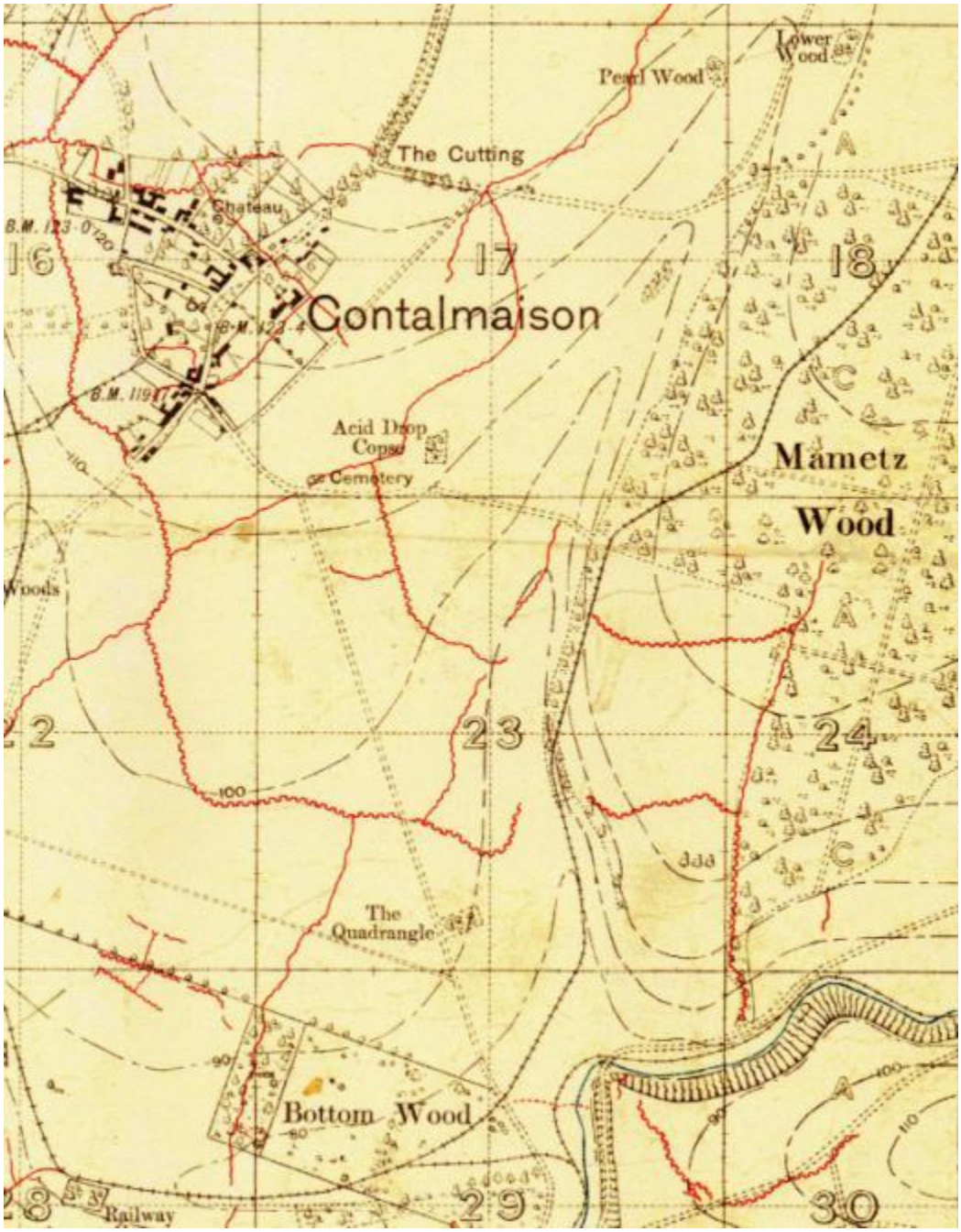


Figure 2: British trench map of 19 August 1916 showing the study area

ARCHAEOLGICAL AREAS AND TECHNIQUES

Initial Prospection:

LiDAR (Light Detection And Ranging)

Bearhug TV commissioned an aerial flight over the area of Mametz Wood and the surrounding Somme landscape to carry out a hyper-spectral LiDAR survey. LiDAR is a powerful technique that uses lasers to measure the distance between the survey aircraft and

the ground surface. It has the ability to record hundreds of thousands of measurements per second. Using this technique allowed the team to digitally strip away the vegetation to map the forest floor and create a 3D model of the landscape and terrain. The results identified not only vestiges of trenches (such as Wood Trench and Wood Support Trench) to the West of Mametz Wood, but also a series of features within the middle of the woodblock, in close proximity to objective lines of the 38th (Welsh) Division marked on contemporary trench maps. Although the Intellectual Property of the resulting data belongs to Bearhug TV, the data will be made available to DRAC for research and educational purposes.

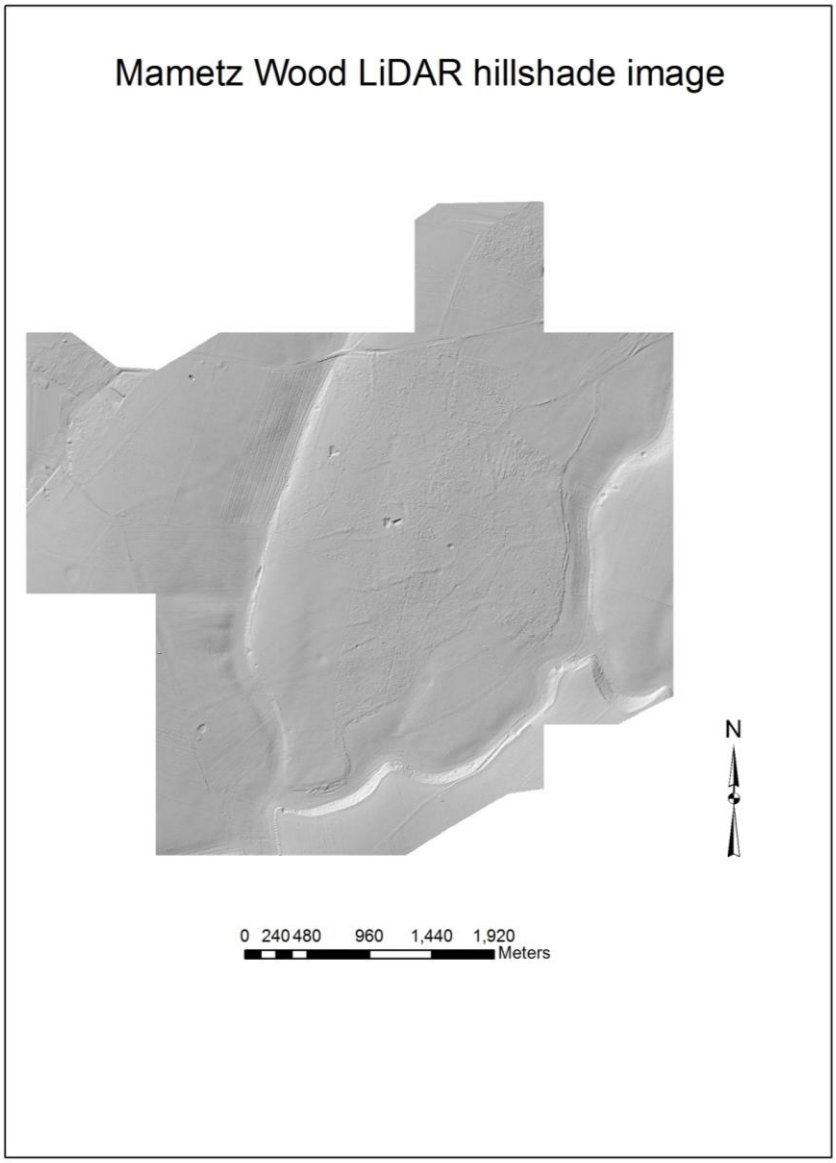


Figure 3: LiDAR Hillshade image (processing by Peter Masters)

Geophysical Survey

Geophysical surveys were carried out using standard UK equipment and methodologies (Bartington Fluxgate), with readings at 0.25m intervals on transects 1m apart. Resulting data was shown in the form of grey-scale plots (see below), and these will form part of the archive.

Excavation

A number of areas were identified as possible sites for excavation through cartographic searches, an examination of the locations by the field team, and by the use of the LiDAR results. These are described individually below. These areas fell into two types;

- Areas of visible trench earthworks within the wood. These were dug entirely by hand, and led to the emptying of the visible feature, thus the excavated area was only as wide as the original trench.
- Ploughed-out trenches and features. In these areas no surface features were visible, and the excavation area was based upon geophysical survey results. The selected area was then stripped by a machine bucket to topsoil depth and all subsequently identified features hand dug.

Deposits were removed and recorded as per the project design standard UK archaeological practice, with individual ‘context’ record forms being completed for each deposit, and plans and drawings completed as required. A photographic record of all excavations was also compiled and included within this report (Appendix 2). All finds were bagged according to context, and examined and recorded during the excavation process. They too form part of this report, composed by Luke Barber.

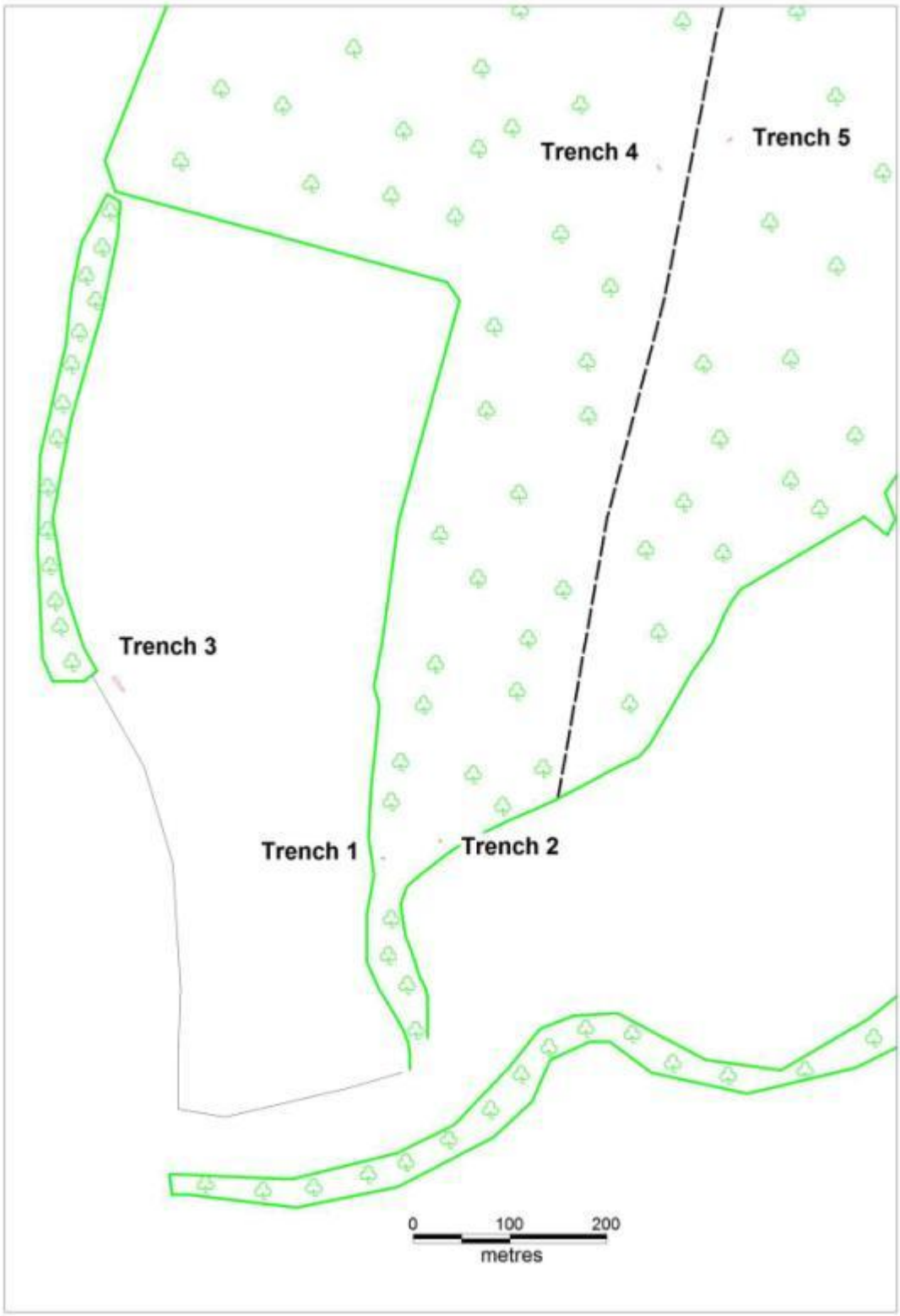


Figure 4: the location of the excavation trenches

Trench 1: A Sondage across Strip Trench

According to the initial project design, *Strip Trench* survived as a clear, traversed earthwork that can be followed running up the western side of the wood. The project team selected an area which was clearly seen to have a junction between two trenches. Even though the location had a mature tree in the vicinity (and hence the inevitability of a degree of root disturbance), it was felt to have high potential for structural remnants.

An area of c 4x2m was excavated by hand through very compact stony (flint) trench fills. The German position known by the British as *Strip Trench* ran North-South in this excavated area, to a depth of c.74m (and width of c1.30m). The trench was steep-sided.

Strip Trench features heavily in the literature surrounding the attacks on Mametz Wood. This was one of the positions attacked by the 16th (and then the 14th) Battalion Royal Welsh Fusiliers on the 10th July (Renshaw, 1999, 92-95). "Overlooking Strip Trench, the 16th Royal Welsh Fusiliers, led by Lieutenant-Colonel Carden, held what amounted to a short religious service. They sang hymns in Welsh and their commanding officer addressed them. He said 'Boys make your peace with God! We are going to take that position and some of us won't come back. But we are going to take it'" (Ibid, 93).

It is also one of the dark locations highlighted by the poet David Jones in his epic '*In Parenthesis'*, "But which is front, which way's the way on and where's the corporal and what's this crush and all this shoving you along and someone shouting rhetorically about remembering your nationality – and Jesus Christ – they're coming through the floor endthwart and overlong: Jerry's through on the flank...and: Beat it! – that's what one said as he ran past: Bosches back in Strip Trench – its a monumental bollocks every time and but we avoid wisely there is but death" (180-1)

Strip Trench could be seen to have been cut by a second East-West running trench, up to .90m deep and .35m wide. This second feature had a large number of communications wires within it and may perhaps represent either German communication systems or later Allied communications cables to support nearby Allied artillery positions – see Lt-Col Fitzgerald's comments below. At least ten strands of wire were present including one armoured wire and traces of sandbag backfill (protecting the cables) were possibly noted.

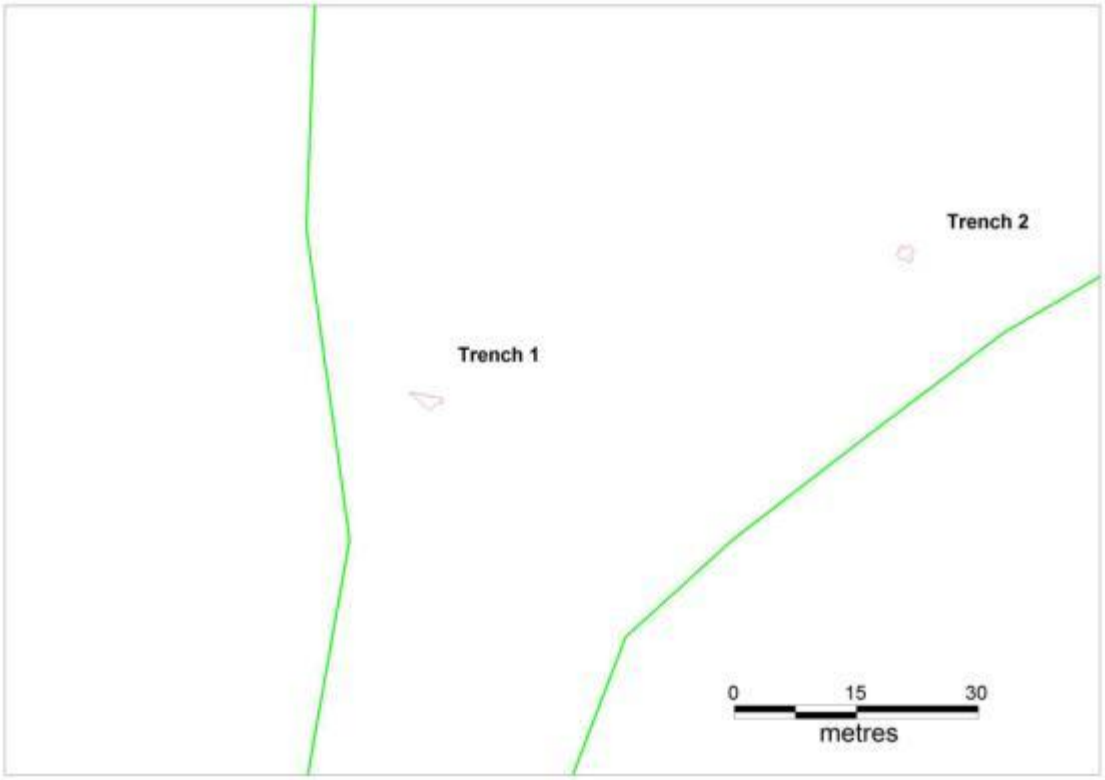


Figure 5: Locations of Trenches 1 and 2 (see Figure above)

TRENCH 1 PLAN

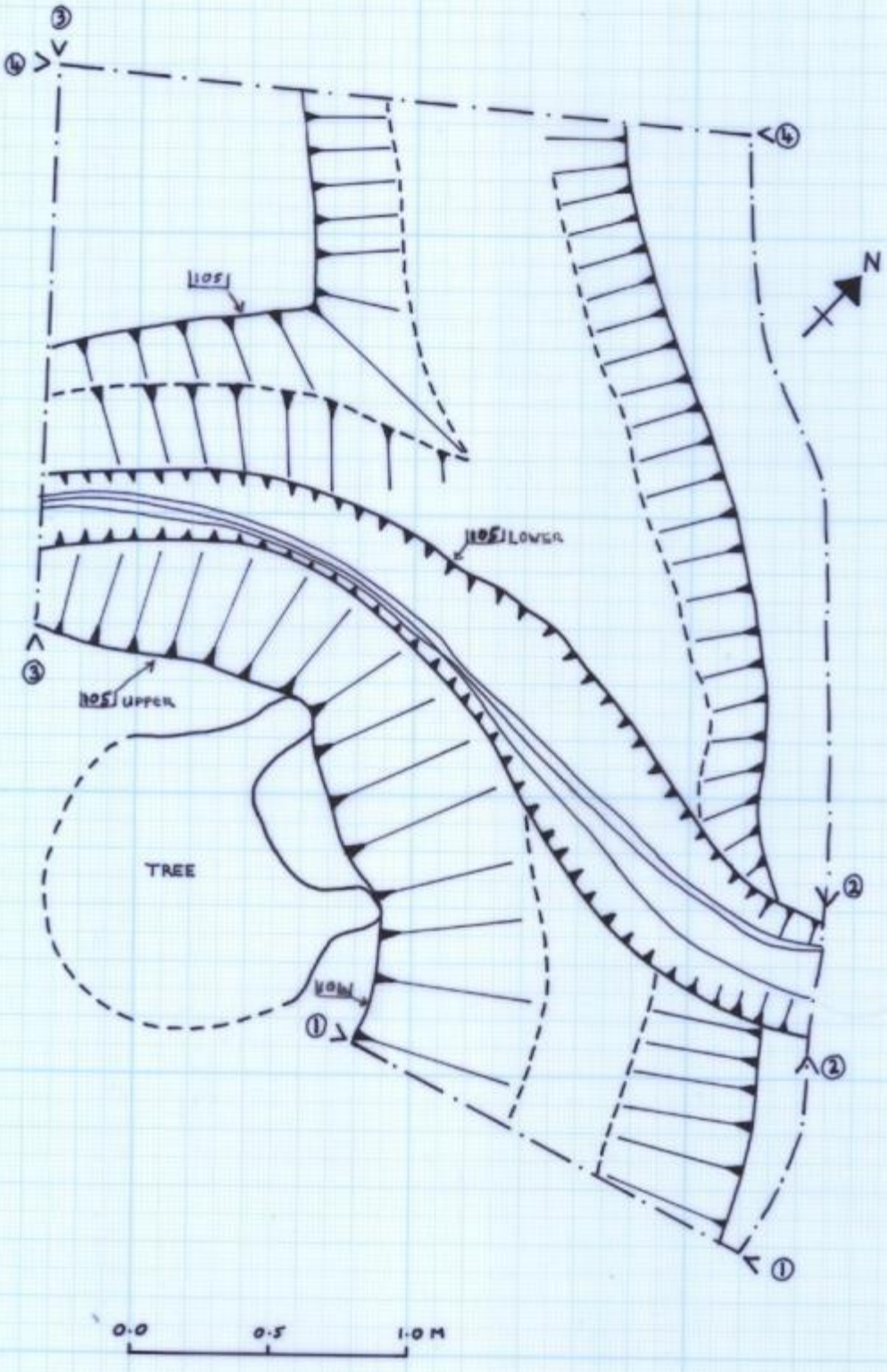


Figure 6: Detailed plan of Trench 1 illustrating section locations

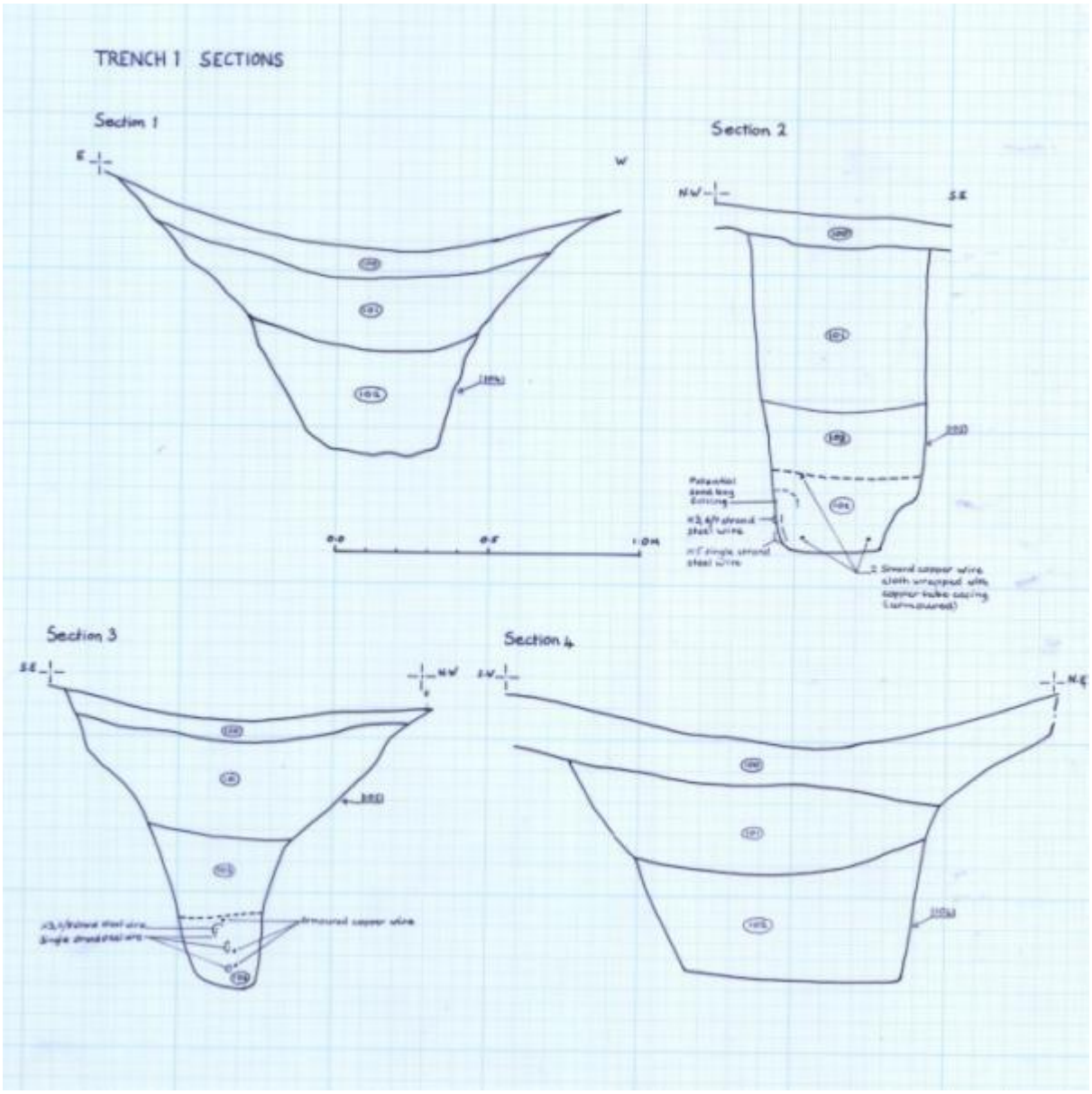


Figure 7: Section drawings of Trench 1

"Soon after the Capture of the wood, Lieutenant-Colonel R W Castle of 79 Brigade Royal Field Artillery was ordered to take his brigade into Death Valley. He reconnoitred the battery positions and went into Mametz Wood where he found trenches full of dead Germans. Passing through the wood into the valley he found men of the 38th Division lying thickly on the ground outside the wood, not yet buried. There was heavy shelling and he got to the place where he was supposed to put his guns and found it one mass of bursting shells. He could see nothing but smoke and dust. Realising that it was useless to attempt to put the guns in the valley he selected a quieter place south of Mametz Wood instead" (Renshaw, op Cit, p128) this being said, "The British artillery did manage to establish themselves in Mametz wood and in Death Valley and also in Caterpillar Valley. Lieutenant-Colonel Castle

finally got his gun positions established and Lieutenant-Colonel Fitzgerald later recorded that Caterpillar Valley was a remarkable sight soon covered with 18 pounder and 4.5" Howitzer batteries" (Ibid 129). The wiring could also be German communications wire enabling better command and control of the front line positions.

In addition to the cables within this trench, finds included many shell splinters and shrapnel balls and components of both British and German grenades – perhaps indicative of the close-quarter nature of fighting in this area. Only 17 German Mauser cases were found in this trench (all bar one fired) whilst, strangely all British .303 ammunition was unfired. Other evidence for the presence of British forces around here include sherds of rum jar, part of an entrenching tool handle and sauce bottles. Quite movingly, the jaw of a terrier-sized dog was excavated from the primary fill of Strip Trench and it is tempting to view this as the remains of one of the soldier's pets. It was certainly not unknown for dogs to be present in trenches of the Great War. For a full list of finds see Barber, below.

Trench 1 Looking West: Communications wire towards the base of cutting [105]

Trench 1 Looking West: Strip Trench [104] running bottom left to top right with communications wire trench [105] cutting through from top to bottom

Figure 8: Photographs of Trench 1 after completion of excavations

Figure 9: An example of the Communications wire towards the base of Trench 1 [105]

Trench 2: German Defensive Trench, SE Face of Mametz Wood

Although not shown on British trench maps, a defensive trench was constructed along the south-eastern face of the wood. This would have formed the first defensive feature encountered by 38th Div. during their attack. A visible earthwork was discerned a few metres inside the edge of the wood, it is in places up to 1m deep, measured from the top of the up-cast parapet to the top of the internal fill. An area of these earthworks was identified for excavation near to the southern end of the north-south ride through the wood. The project design felt that, as a German-built defence, this trench was likely to contain German artefacts and construction techniques, and so it proved. As an area not marked on trench maps, this location would certainly benefit from future topographic surveys to contribute to an overall study of the battle. This would include further scrutiny of LiDAR results.

Figure 10: German trench on SE face of Mametz Wood (white line shows line of trench and traverse) as shown in project proposal, prior to excavation.

An area some c 2m x 2m was excavated to examine the nature of these German positions. It was clear both to the archaeologists and also to the British military personnel on the project that this position commanded an astonishing field of fire and would have provided serious opposition to any attacks mounted by the 38th Division in 1916. The German trench had been cut through natural limon and, as such, was far easier to excavate than Trench 1. The German trench was orientated roughly South West – North East and had steep sides and a curved base. The parados and parapet of the trench formed part of its backfill and were observed in plan. The trench survived to a depth of c 1.65m and around 1.85 – 2.30m in width.

The trench bore witness to being subjected to heavy bombardment with a fair quantity of shell splinters, largely from High Explosive projectiles, being recovered. British and German grenades were also located alongside many unfired and fired German rounds, and a 25 round magazine for the G98 Rifle. Some Sept 1916 German rounds were found here, perhaps illustrating actions from the 1918 Spring Offensive of the Germans as this area had been passed over by the 1916 fighting before this date.

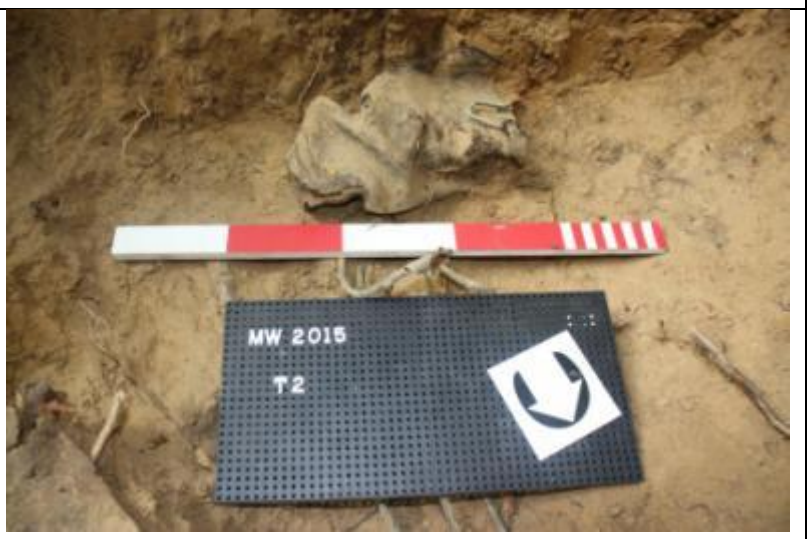
Trench 2: Locations of some of the artefacts within the German front line trench including ammunition pouches, glass bottle, and wire strands	
Trench 2: In Situ photograph of one of the boots in the German front line trench	
Trench 2: In situ photograph of German equipment with 'spork', ammunition pouches/belt, respirator (top of photo) and spare respirator canister all visible.	

Figure 11: Photographs of some of the artefactual components within Trench 2

As well as the munitions, Trench 2 provided a large quantity of materiel relating to the German infantier –from gasmask to bayonet, and from boots to buttons. Some personal

items such as a pipe and pencil really added poignancy to this assemblage as giving a very human story to the artefacts and linking the team (several of whom were soldiers of recent conflicts) directly to military forebears, with the same hopes, fears, and privations. Much of the material was damaged and disturbed perhaps indicative of the wearer having been hit by heavy munitions. A quantity of human remains was recovered (minimum number of individuals = 1) and there is the potential that this equipment related to one (or two) front line soldier(s) killed in the July 1916 attacks whose remains were then either covered by shell blast or simply pushed back into the now-captured trench which was subsequently backfilled – either by military or post-war labourers. A full description of this equipment and its significance is given by Barber, below. Although much was recovered – there were several notable absences within the German infantry equipment, one of which was the belt buckle in spite of all the other elements of belt and ammunition pouching and fittings being present. One account from a British soldier of July 1916 in Mametz Wood may suggest as possible reason:

Private Albert Conn, 8th Btn Devonshire Regt:

"I lost no time in getting myself dug in. The dead had fallen in many strange, grotesque postures, some on their hand and knees as if they were praying. I did have a bit of a scrounge round though. I thought I might get one of those belts with 'Gott mit uns' on it or perhaps one of those Prussian helmets. I did come across one bloke, but when I lifted his helmet half the top of his nut was in it - it was full of brains like mincemeat. I'm not very squeamish, but I didn't fancy scraping that out' (In Hart, 2006)

Trench 2: German trench on the edge of Mametz Wood. Note the presence of firestep to the left of the cutting	

Trench 2: German trench on the edge of Mametz Wood. Note the presence of firestep to the left of the cutting	

Figure 12: Photographs of the west facing section of Trench 2

Another Royal Welsh Fusilier, Robert Graves, also ventured into the Wood after its capture and was moved to write "The next two days we spent in bivouacs outside Mametz Wood. We were in fighting kit and felt cold at night, so I went into the wood to find German overcoats to use as blankets. It was full of dead Prussian Guards Reserve, big men, and dead Royal Welch and South Wales Borderers of the New Army battalions, little men. Not a single tree in the wood remained unbroken. I collected my overcoats, and came away as quickly as I could, climbing through the wreckage of green branches" (Greaves, 1960, 175).

Indeed it is possible that the types of remnant of German soldier that were recovered from Trench 2 by the archaeologists are very similar to the situation encountered almost a century before by Graves when he was to pen his work 'A Dead Boche':

A Dead Boche

To you who'd read my songs of War

And only hear of blood and fame,

I'll say (you've heard it said before)

'War's Hell!' and if you doubt the same,

To-day I found in Mametz Wood

A certain cure for lust of blood:

Where, propped against a shattered trunk,

In a great mess of things unclean,

Sat a dead Boche; he scowled and stunk

With clothes and face a sodden green,

Big-bellied, spectacled, crop-haired,

Dribbling black blood from nose and beard

(in Stallworthy, 2005, 89)

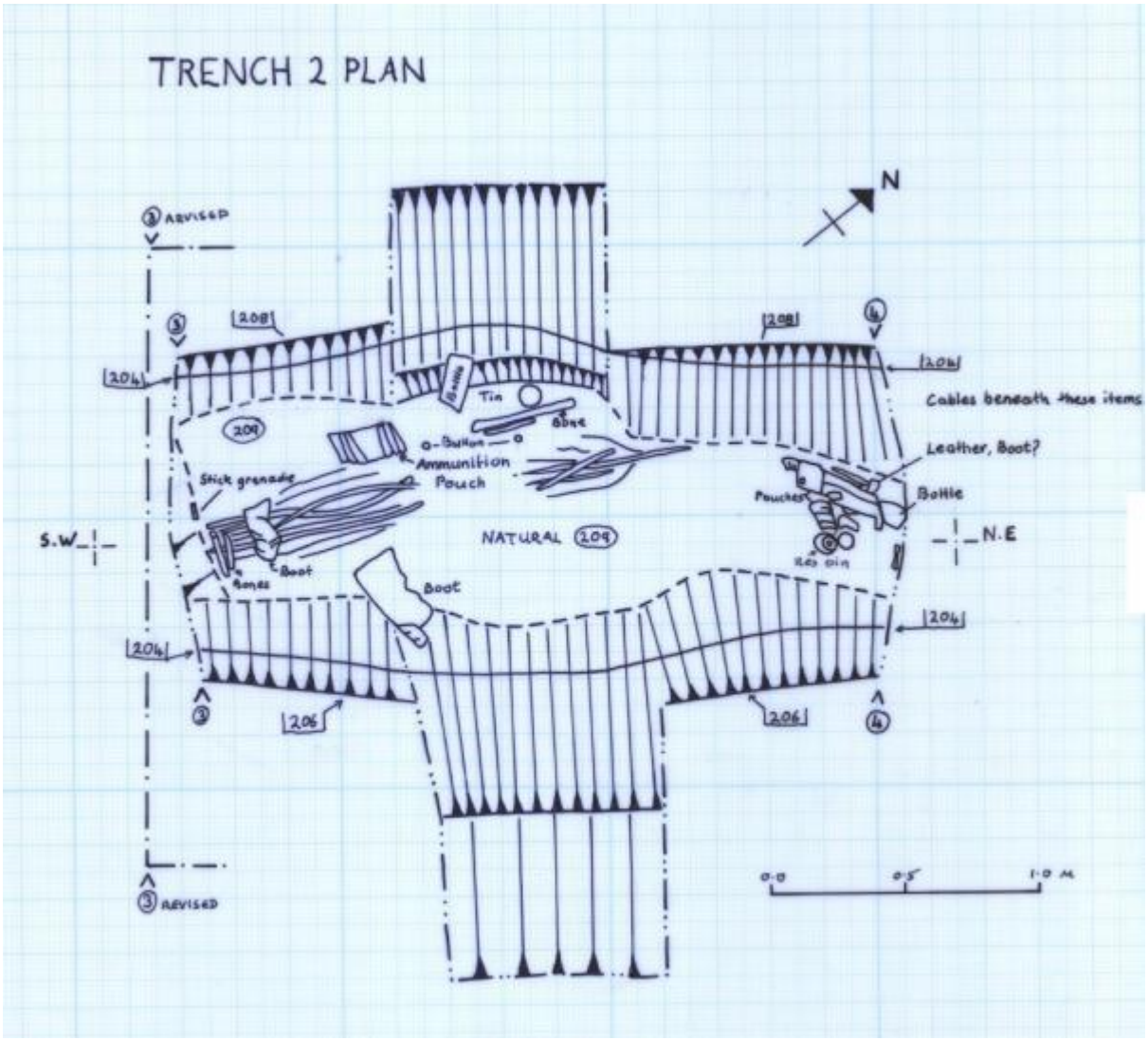


Figure 13: Detailed plan of Trench 2 illustrating section locations (Note the extended central portion of the sondage to establish the full extent of the German trench)

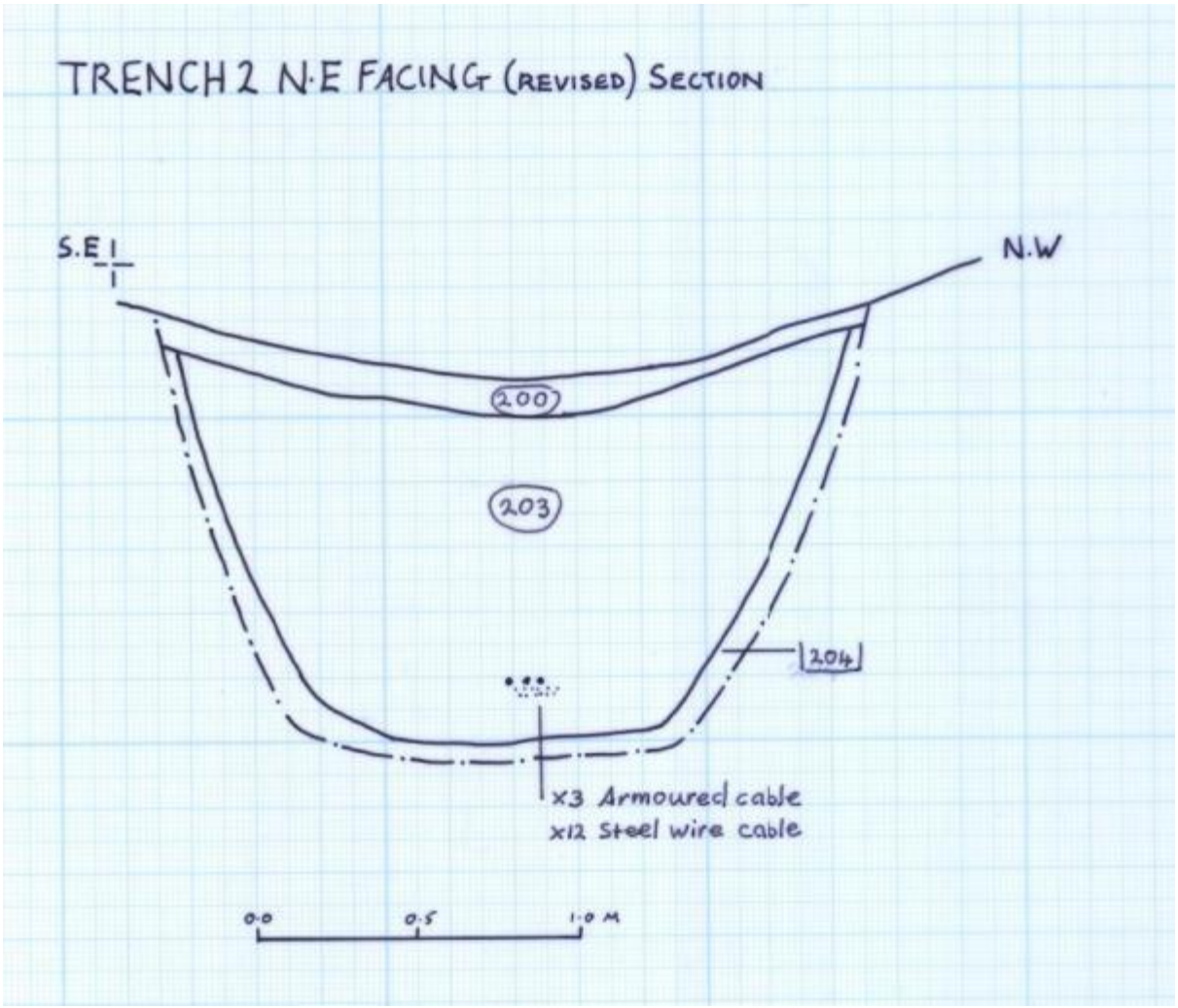


Figure 14: Trench 2 NE Facing Section

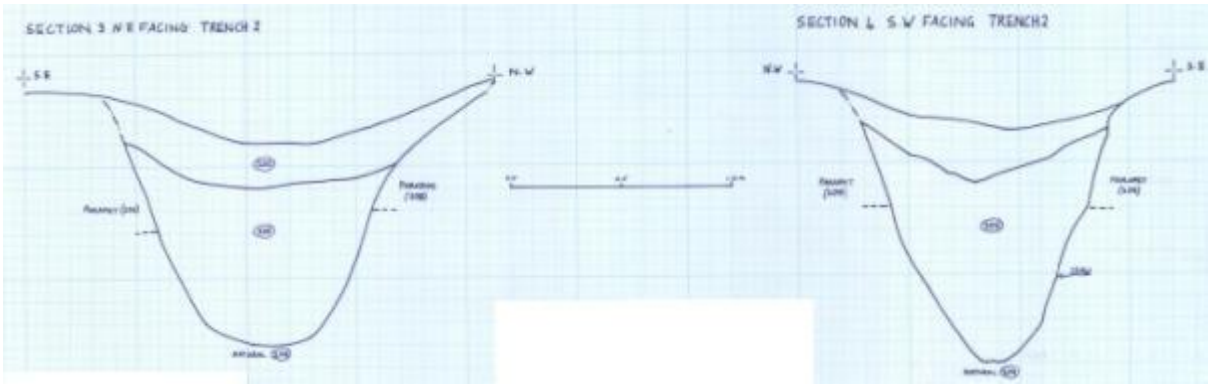


Figure 15: Trench 2 NE and SW Facing Sections

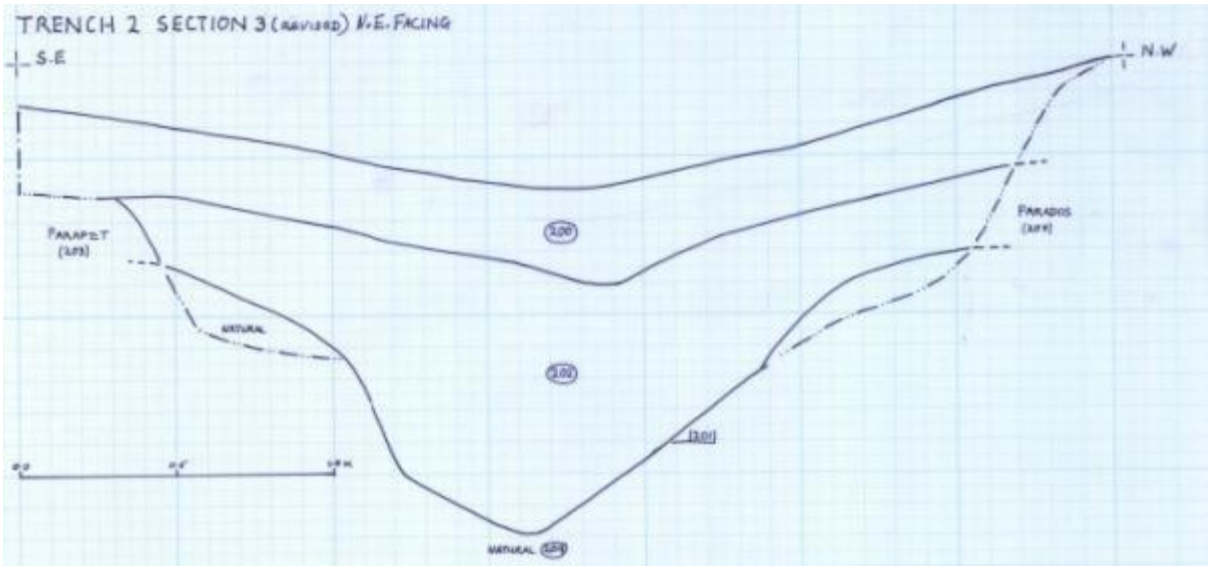


Figure 16: Trench 2 Revised NE Facing Section

Trench 3: A Sondage to look for 'Wood Trench'

"Just before I arrived at the top I slowed up and threw my two bombs. Then I rushed at the bank, vaguely expecting some sort of scuffle with my imagined enemy. I had lost my temper with the man who had shot Kendle; quite unexpectedly, I found myself looking down into a well-constructed trench with a great many Germans in it. Fortunately for me, they were already retreating. It had not occurred to them that they were being attacked by a single fool....Having thus failed to commit suicide, I proceeded to occupy the trench – that is to say, I sat down on the fire-step, very much out of breath, and hoped to God the Germans wouldn't come back again".

"The trench was deep and roomy, with a fine view of our men in the Quadrangle, but I had no idea what to do now I had got possession of it. The word 'consolidate' passed through my mind; but I couldn't consolidate by myself." (Sassoon, 2000, 63-4)

With the strong links of the war poet Siegfried Sassoon of the Royal Welsh Fusiliers to this area, an obvious task was to try to locate the trench which he famously captured 'single-handed' and to examine its construction. The location of this site, 'Wood Trench' which linked the old railway line, north east of the 'Quadrangle' to 'Strip Trench' on the edge of Mametz Wood. The siting of the excavation was based on digital mapping modules and measurements from Allied trench maps. It was difficult to locate as the area was fully under crop (maize) and thus accurate plotting of trench maps onto the ground was impossible. As any fieldwork would necessitate crop destruction and compensation, only a small excavation was proposed. A small area was cleared to facilitate geophysical survey. This magnetometry was further limited by close proximity of a metal fence (which in part incorporated British silent pickets). The survey showed a number of anomalies (see Fig 21) which were further investigated.

Trench 3: Shell crater under excavation. Note the corrugated iron sheet (British) towards the base	
Trench 3: Shell crater detail note the German mess tin above the corrugated iron sheet	
Trench 3: Shell crater on completion of excavation	

Trench 3: Shell crater on completion of excavation illustrating natural chalk surrounds in this area	

Figure 17: Trench 3 shell crater holding post battle clearance debris

Figure 18: the hazards of battlefield excavation – German stick grenade within the shell crater, Trench 3. Note the preservation condition of the wooden handle

Figure 19: Trench 3 on completion

An area some 20m x 3m was mechanically stripped down to the natural chalk (the only one of the excavation trenches to encounter such solid underlying geology) some c 25cm below the current surface. Only one cut feature was encountered, in the North-East baulk. This area of the excavation was slightly extended to reveal a small sub-circular cut feature which was half-sectioned and subsequently shown to be the remnants of a shell crater – [302] which had then been used as a dump for battlefield debris in the (probably post-war) clearing process. The crater held both German and British materiel. The crater was not planned but a half section was drawn – Fig 22..

The crater contained both German and Allied shell fragments including elements from Allied shrapnel shells. Live German grenades were also encountered alongside a German mess

tin and Mauser cases and the presence of some heavy calibre munitions components may suggest a German gun position in the near vicinity (Barber below).

Trench 3 produced evidence for trench furniture in the form of nails, corrugated iron sheeting and wiring – again from the shell crater. There were many British bottles and tins here too.

This trench was a fascinating exercise in showing the accuracy of digital mapping modules; the standard deviation in our trench location was designed to compensate for the acknowledged limitations in these packages and yet the geophysical survey did not pick up Wood Trench. This was corroborated when the area was stripped to reveal only a single shell crater. As the field was within maize (which stood at over 2 metres) accurate Global Positioning Systems (GPS) location and map triangulation was impossible, and this, combined with the expense of requesting that the farmer destroy further areas of cropping, resulted in not locating Wood Trench. This area would be suitable for further survey in the spring or winter when there is no ground cover and when the LiDAR results can also be utilised.

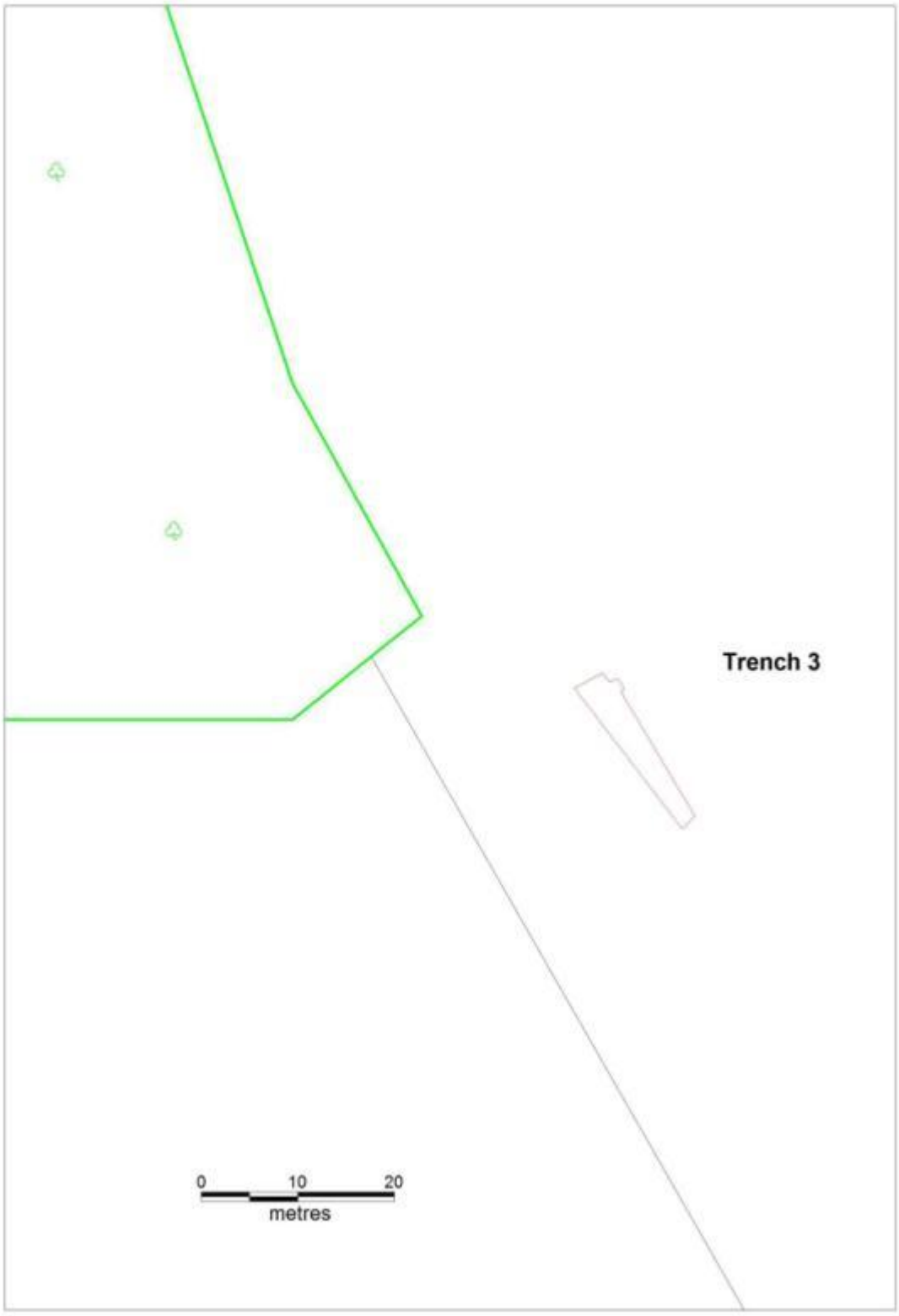


Figure 20: Location of Trench 3 (see Figure above) – note the small extension to the north east – this is the location of the shell crater and the section drawing was taken from this line

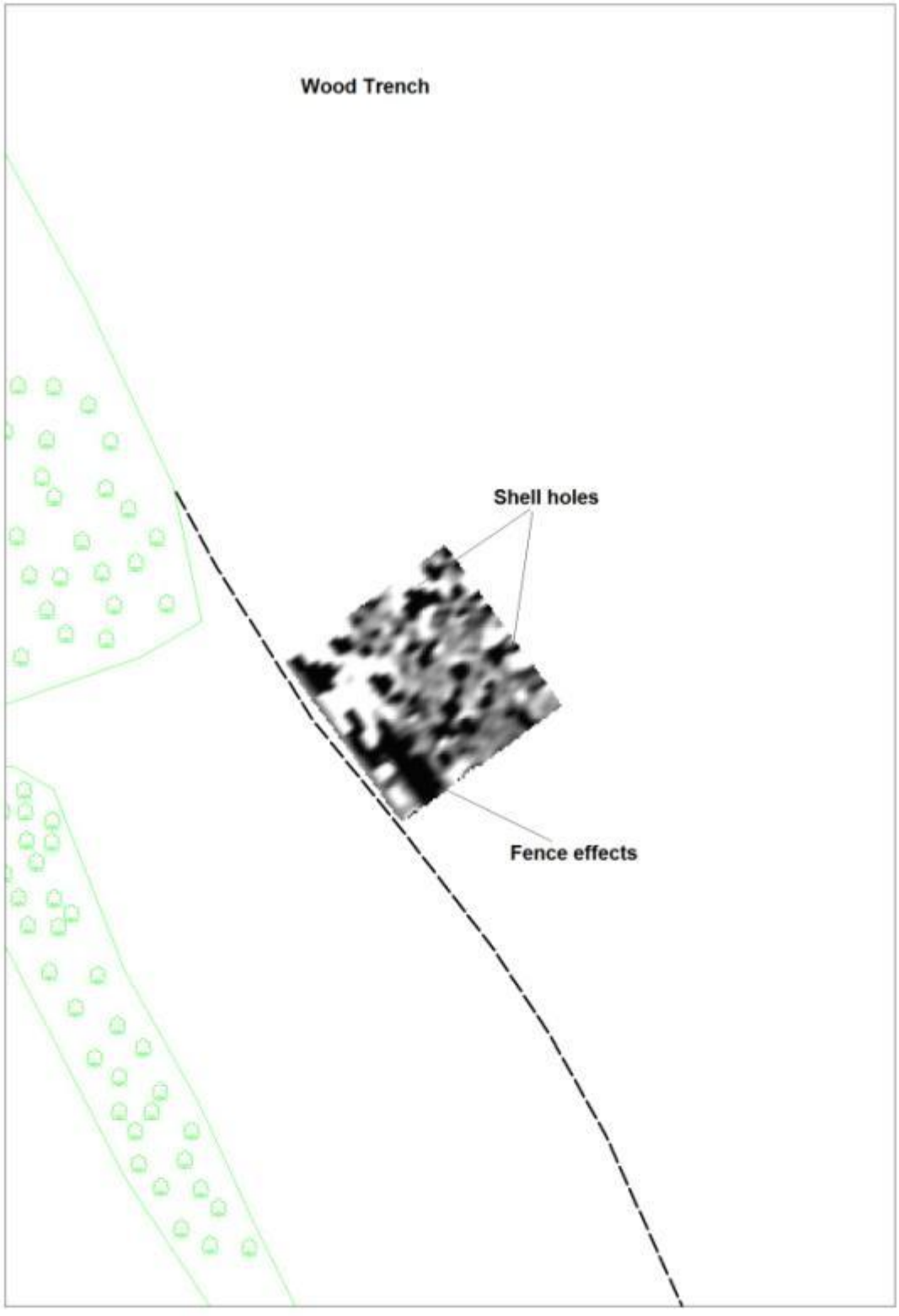


Figure 21: Geophysical survey of the Area stripped in readiness for excavation of Trench 3. The northernmost shell crater was the one excavated. (C) Mr Peter Masters, Cranfield University

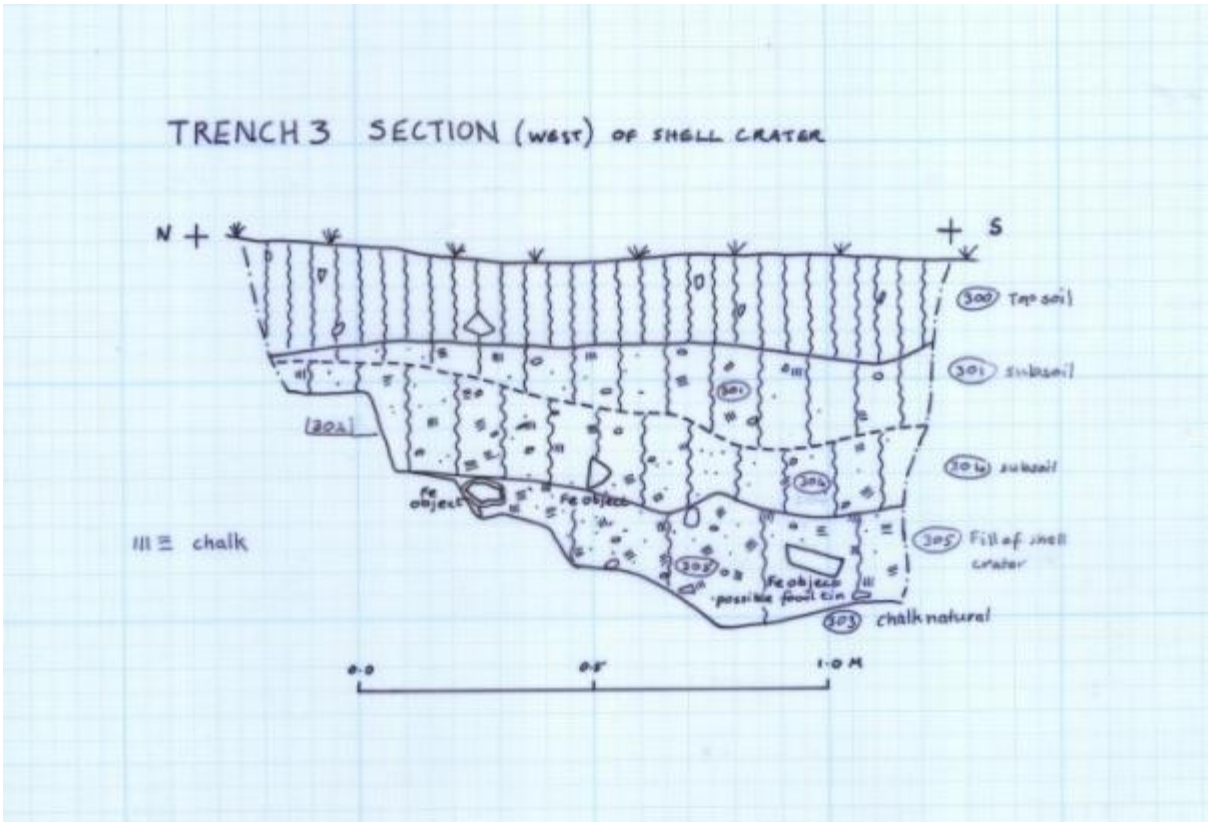


Figure 22: Section cut across the shell crater excavated in Trench 3

Trench 4: Stripped area to evaluate anomalies on LiDAR

One of the aspirations within the project design was to search for evidence of the second objective of the 38th Division. Looking at the LiDAR data in combination with some historic mapping references and metallic anomalies just to the west of a major ride through Mametz Wood, a small area was selected for closer inspection. This was mechanically stripped but it was soon clear that there were no cut features within the area. The metallic signals were created by munitions and the only other elements were a current drainage channel. No sections or Plans were drawn.

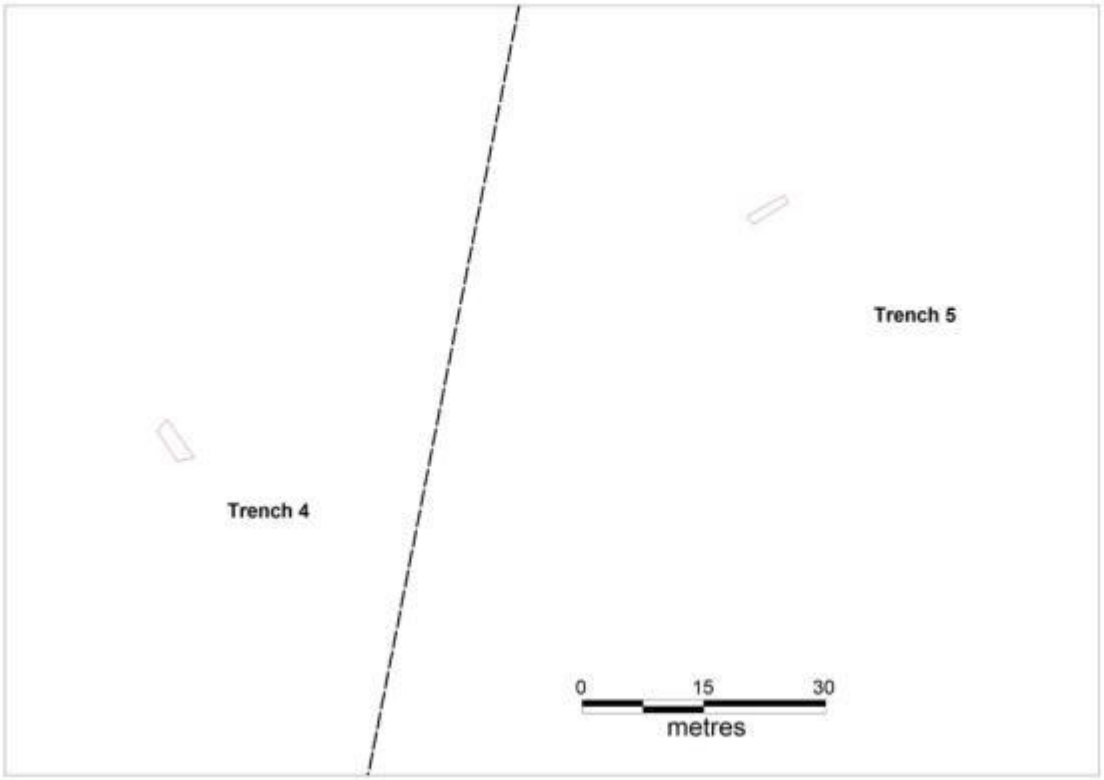


Figure 23: Locations of Trenches 4 and 5 (see Fig above) with ride represented by dashed North-south line

Trench 5: A trench to evaluate LiDAR results

Trench 5 was a second attempt to examine the locations attacked as part of the second objective of the 38th Division. Although, as with Trench 4, no defensive features were noted on contemporary trench maps, there were clear features picked up by the LiDAR survey. On examination by the team within the wood it was soon apparent that this area comprised a huge German system of trenches and bunkers, not on trench maps but nonetheless something that the Welsh troops would have encountered in 1916. This was the area of positions attacked by the 17th Royal Welsh Fusiliers on the afternoon of 10th July in attempts to take the Second objective (see Renshaw, op Cit, 106-7 inc Map 18). It is now thick with trees and the remains of these also made taking any objectives very difficult in July 1916: "Everybody for themselves. The brambles; trees falling. Almost like barbed wire in a sense except it was trees interwoven with one another, one across another. You had to battle to get over trees and get out of their way in case they fell on you. You've got to experience it yourself to actually know. Our main concern was keeping alive". Pte George Richards, 13th Btn Welch Regiment (Hart, 2006, 256).

An area with clear surface earthworks was selected and hand-excavated to reveal a German trench (possibly communication) some c1.15m deep and c2.29m wide. Evidence for slumped parados and parapet were seen within the fills excavated and the German trench profile was viewed as shallow at the top and much steeper towards the base. This area also

incorporated a ‘spur’ trench which was either the entrance to one of the many dugouts within this complex or simply re-erected slumping from within the main trench

Figure 24: Trench 5 on completion of excavation

Although this was a substantial defensive feature, it was relatively ‘clean’ – with only two shell splinters and no small arms rounds found within the fill. This perhaps indicates the relative lack of bombardment of the area and hence highlights the even greater task faced by attacking forces in July 1916. It is tempting to think that the lack of knowledge of German fortifications, as displayed in the paucity of their depiction on contemporary Allied trench maps, was in part a reason for lack of evidence of artillery barrage.

Some bitumen sheeting and galvanised metal revetment was recovered to indicate both attempts to stabilise and waterproof trenching in this area but, other than this material, the sole item recovered was the head of a long-handled German shovel.

This small sondage highlighted the potential for future excavation work in the vicinity, not least because the area is so evidently replete with deep trenches and potential bunker complexes which survive to some depth and which are visible as major surface features throughout this area of Mametz Wood – some of the better surviving trenches on the Somme

front. It was not clear whether the lack of trench furniture was asa result of natural decaying over 100 years, or post war removal.

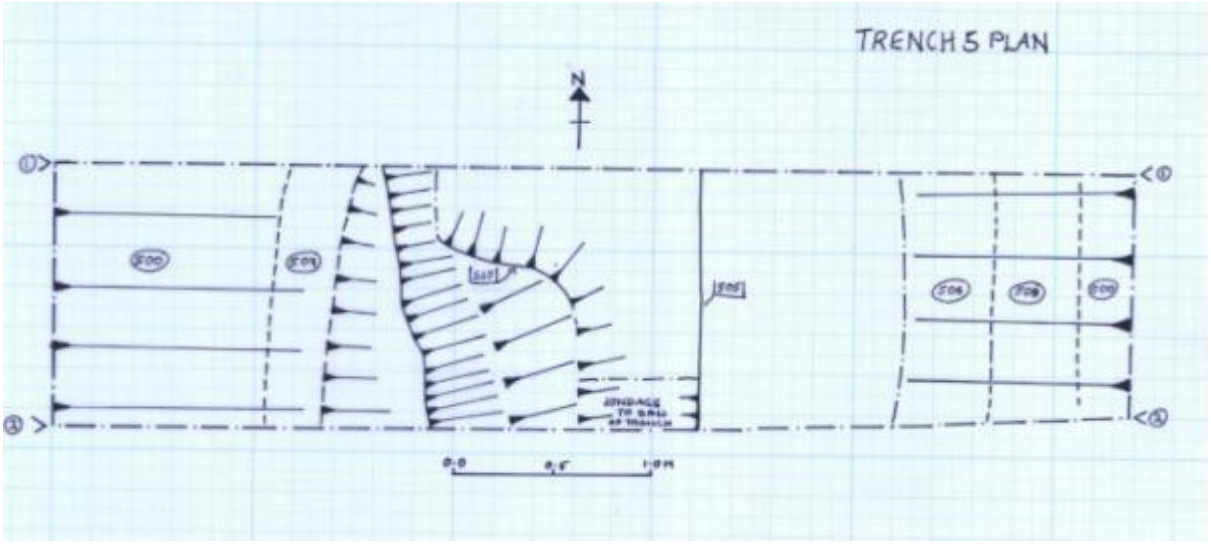


Figure 25: Detailed Plan of Trench 5 illustrating section locations

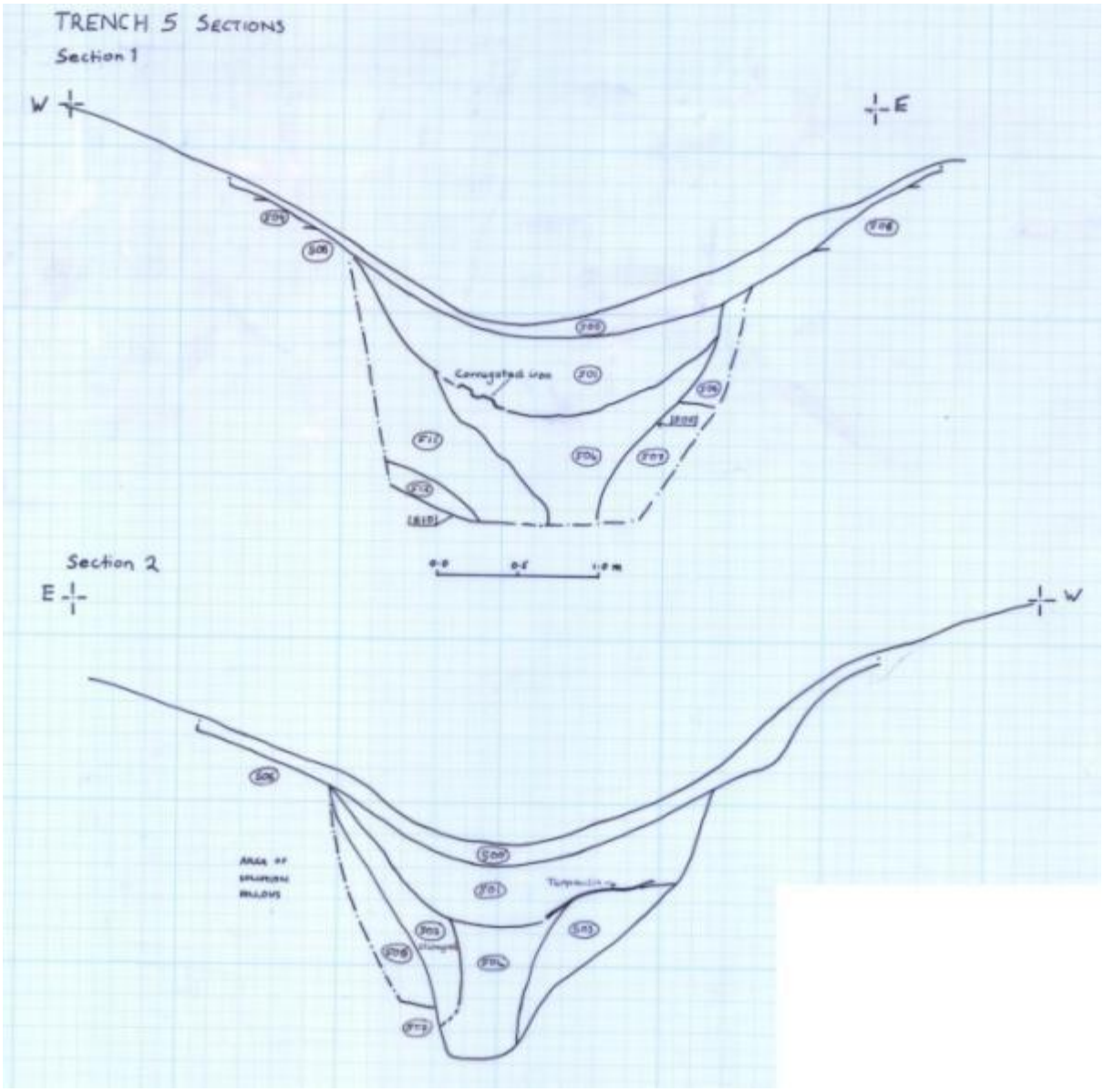


Figure 26: Trench 5 Sections

Non-Excavation components of the Mametz Wood fieldwork:

Geophysical Survey Area: 'Death Valley'

The Project Design highlighted the fact that the 10th July attack by the 38th Division was launched from the area of White Trench, south of Mametz Wood. The axis of advance across the ground towards the wood lay between the southernmost tip of Mametz Wood on the left, and the 'Hammerhead' (the section of wood immediately north of the current Welsh Memorial) on the right. The first line of German defences facing this attack consisted of a trench system running along the south-east face of the wood. Thus the fields in the bottom of the 'Vallee Wagnon' or 'Death Valley' formed the no-man's-land across which the Welsh advanced. The German trenches along the south-east edge of the wood do not appear on

contemporary trench maps, possibly because they were obscured from aerial view by being under the trees, however one section of trench which extended south from the wood was marked on the maps. This length of trench has been ploughed flat and is no longer visible as a surface feature. It is an area where many visceral actions were noted -

“It was just tree stumps and all the broken branches were down. They were wiping us down with enfilade fire. I don’t know how we got to the wood but we did get to it and we engaged them in hand-to-hand fighting. It was hectic. We were so reduced in numbers that we couldn’t hold them and they drove us back out into the field...I saw the Germans that had come out of the wood bayoneting our wounded – I saw the downward motion of their rifle which indicated to me that that was what they were doing – bayoneting our wounded boys. I think some of the men in our reserve battalion, the 10th and 15th must have seen that, because the passed me in a screaming temper”. Sgt Tom Price 13th Btn Welch Regt (Hart, 2006, 256)

A magnetometer survey undertaken by Peter Masters of Cranfield Univeristy located this trench (the presence of an East-West pipeline which disturbed the readings notwithstanding). This trench might be worth excavating in any subsequent fieldwork.See Fig 28.

Figure 27: South edge of wood looking East and covering the geophysical survey area. (Photo taken Mar 2013, area now ploughed)

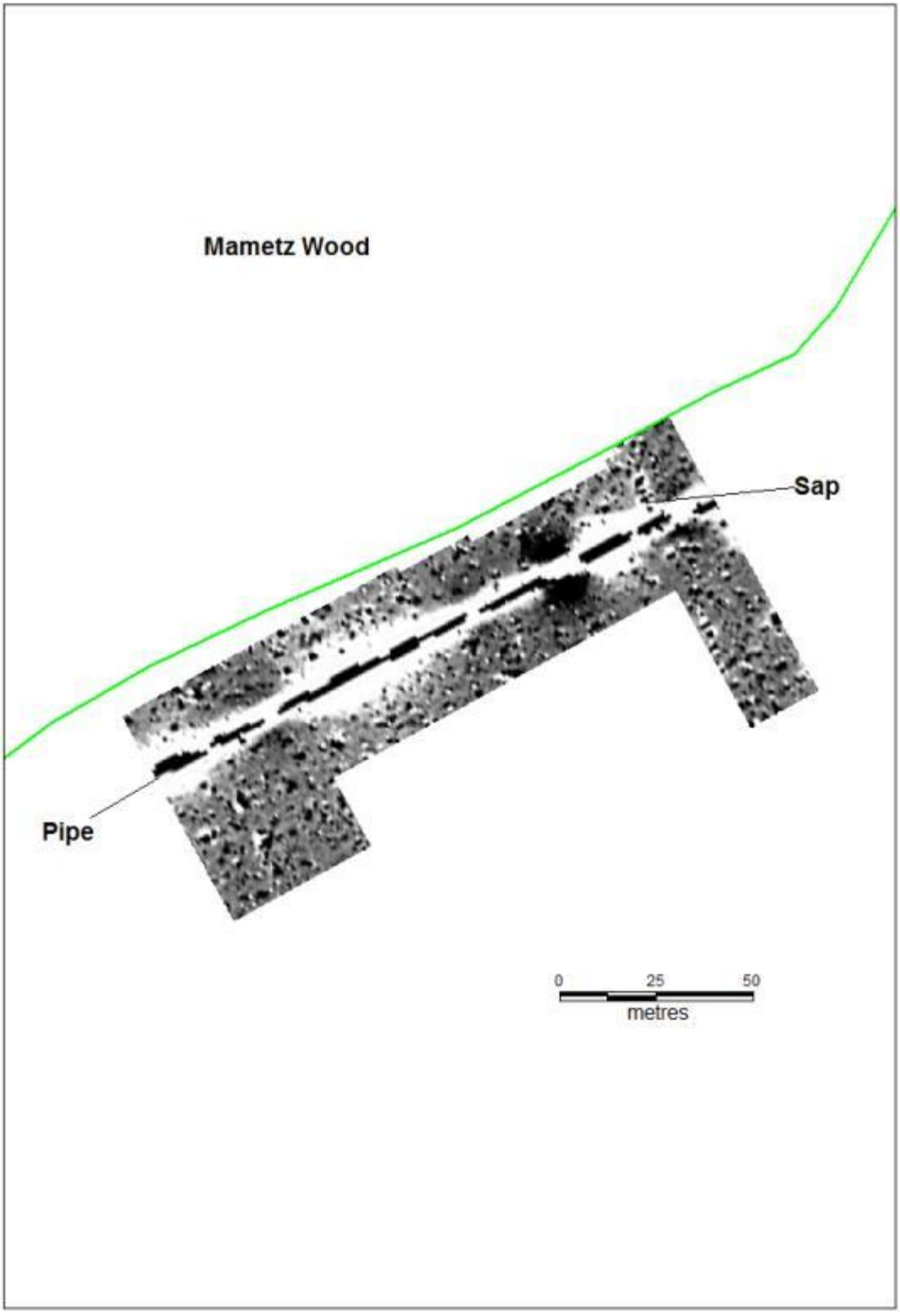


Figure 28: Geophysical survey to the south of Mametz Wood illustrating the presence of the sap shown on Figure (C) Cranfield University

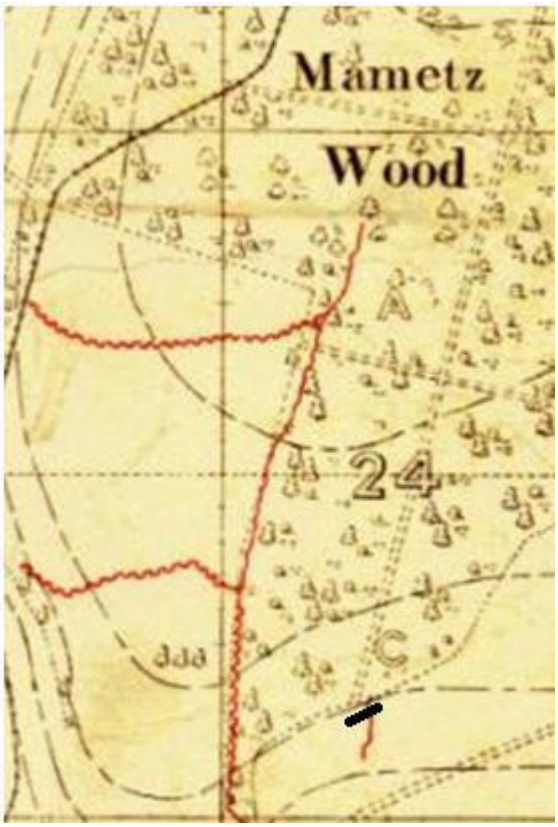


Figure 29: Location of the geophysical survey of the Sap – 19 August 1916 trench map

Elements included within the initial Project Design proposals but not undertaken:

1) Acid Drop Copse: German machine-gun positions were known to have been present in this location and presented a huge challenge to the 38th Division. The project did not have the time or resources to excavate this location.
2) No-Man's-Land Survey: A possible metal-detection survey within no-man's-land had initially been suggested. The area was still under crop for the majority of our time on site and, when it was eventually harvested, the decision was made to retain excavation staff on areas already being examined and to concentrate survey efforts in this area on locating the Sap which extended from the south of the wood (see above).

Conclusion: The archaeological fieldwork illustrated the nature of surviving deposits in this part of the Somme battlefield and also highlighted the huge potential for future work. The fact that the team was able to examine such a significant site redolent with Welsh ethos and, as Gareth Thomas put it, with 'sacred soil' was a huge privilege.

Did the project fulfil the research aims?

- What was the character of the German trenches in the area?

  German trench systems were located in three of the excavation trenches; Trenches 1, 2 and 5. In all three, although the cuts of the trenches survived, there was little by way of surviving in-situ trench architecture. Perhaps this was indicative of their having made use of wicker and now-decayed organic material for revetment. Wiring was present in these trenches to indicate communications role. Trenches 1 and 2 bore testament to bombardment, with Trench 2 particularly noteworthy, and there was collapse of both parados and parapet in all. Those German positions in Trenches 1, 2 and 5 were all clearly visible on the surface still. It seems likely that Trench 2 had the remains of at least one German infantryman who was either pushed back into the captured trench as it was filled back in, or perhaps fell in with the upcast soild from a shell exploding at the time . All the German trenches examined were in strategically-located positions commanding fields of fire which would have enabled the defenders to bring devastating fire upon attacking soldiers of the 38th Division.

- Does material survive which specifically reflects the activity (fighting) of 10 July 1916?

  No artefacts could be said without doubt to relate to the actions of 10 July 1916, indeed some German rounds dating from September 1916 empirically date to later actions – probably Spring 1918. This being said, the likelihood is that much of the material expended and/or discarded in the positions do indeed relate to the attacks of this time; both the bombardment and associated infantry thrust. The remains of the German soldier(s) in Trench 2 are included within this probability. No items could be said to be specifically of the Welsh Battalions of the 38th Division but rather simply Allied units.

- What is the state of preservation of the battlefield? How does the preservation of trenches within the wooded areas compare with those in arable fields?

  No trenches were excavated within arable areas so this comparison was not possible; a shell crater was seen within arable fields, and geophysical survey

also indicated the presence of a German sap south of the woodblock but the condition of this feature was not tested. Within the wood itself, the German trenches had been heavily damaged and their sides (not utilising corrugated iron or its presence not surviving) were not especially well preserved although the outline of the trenches was still clear. On excavation it was possible to reveal how deep these features were. The geology of the area changed quite dramatically over a fairly small area – with very stony/flinty clay with flint in Trench 1, limon in Trench 2, and solid chalk in Trench 3. Trench 5 was more mixed with Chalk and clay limon solution hollows.

- What is the character of surviving artefactual material in the plough soil (as uncovered by metal-detector)?

  For reasons explained above a metal-detector survey was not undertaken. The preservation of materials within the excavated layers was variable. There was little by way of organics (some stick grenade handles, and leather equipment/boots being noteworthy exceptions – the latter being reasonably well preserved). Much of the ironwork was in a poor condition and was thus retrieved from Mametz for further cleaning/conservation works at Wessex Archaeology in the UK.

- How well do trenches and other battlefield features respond to geophysical prospection, in particular magnetometry? Is it possible to discern such features in spite of significant soil contamination by metallic debris?

  As this excavation team has found on other sites such as at Ploegsteert in Belgium, in spite of the significant amount of contamination within ploughsoils and indeed the presence of elements such as metal fencing and pipelines, the efficiency of magnetometry is still huge and it is an essential tool as part of the remote sensing response to predicting the location of features within a landscape of the First World War. To this, LiDAR can also be added as a methodology which is very useful especially within wooded areas – to this end Delville Wood, High Wood and Thiepval would also be responsive within the Somme region amongst others. This technique will become increasingly available to archaeologists as prices drop and delivery platforms such as drones become smaller and hence more firms offer the service.

Mametz Wood 2015 Finds

THE FINDS by Luke Barber

Introduction

All finds from the excavations were listed by context on pro forma in the field, after initial cleaning where necessary. This paper record, which includes sketches, detailed measurements and notes on marks and damage/condition, forms part of the site archive. The information from these paper records was used to create an Excel database of the assemblage as part of the digital archive. The finds themselves were all retained, stored in one of three cardboard boxes (by bagged category) and temporarily deposited in the barn at Avril Williams' tea-room at Auchonvilliers, before transfer to the Mayor and people of Mametz. Following this transfer, the artefacts were then taken back to the UK for further cleaning work at Wessex Archaeology and subsequent photography. The finds will then be returned to Mametz [RO].

In all 690 items were recovered during the archaeological works. The assemblage was recovered from all trenches, though quantities varied considerably between them: Trench 1 produced 215 items, Trench 2, 332 items, Trench 3, 135 items while Trenches 4 and 5 produced a mere two and six items respectively. It is clear that artefactually the richest areas were in and around the front line trenches. The material is very variable but can be classified into one of several functional categories. The assemblage is considered under these categories in this summary report. Stratigraphically virtually all of the assemblage was recovered from post-usage trench backfill (whether natural and/or deliberate) and topsoil deposits. Although lacking a refined context the material can still be used as a useful indicator to what occurred in that area even if there has been some vertical or lateral displacement from its original primary point of deposition. Considering this situation the assemblages have been overviewed at a more general level usually combining contexts for quantitative discussion.

Pre Great War Finds
The only pre-Great War find consists of a heavily abraded 8g sherd of pottery tempered with sparse coarse flint in a fine sandy oxidised matrix. A prehistoric date is certain but the piece cannot be closely dated in isolation and with no diagnostic features. However, a later Bronze Age to mid Iron Age date is suspected (Trench 2, context [205])..

Large Calibre Ammunition
The excavations recovered 192 pieces of large calibre ammunition, weighing in excess of 13.3kg. The full weight was not established as live munitions were not handled unnecessarily on site and as a consequence, were not weighed. The assemblage is summarised in Table 1 by component and trench.

Trench	1	2	3	4	5
Shell (complete/live)	-	-	-	x1	-
Shell fragments (large)	-	-	2/2342g	-	-
Shell splinters	41/4902g	78/3853g	15/1370g	-	2/98g
Driving band fragments	3/76g	1/1g	4/34g	-	-
Fuze fragments	3/70g	-	1/650g	-	-
Flash tubes (shrapnel)	-	-	1/84g	1/50g	-
Shrapnel balls	5/50g	21/228g	13/142g	-	-
Total	***52/5098g***	***100/4082g***	***36/3972g***	***2/50g+***	***2/98g***

Table 1: Summary of large calibre ammunition by trench. NB. The total weight for Trench 4 could not be established, as live munitions were not handled for weighing.

The Trench 1 assemblage produced the second largest number of iron shell splinters (though the largest combined weight). All appear to derive from High Explosive shells, with wall thicknesses of 10 to 20mm thick. Although none are diagnostic of nationality it is suspected that most result from the British bombardment (NB. The term British in this report includes Commonwealth armies). The driving bands include one definite British, but also a fragment from a German 77mm shell (context [101]). Although two of the fuze fragments are undiagnostic, one is from part of a British adapter ring painted orange (very typical of those used on shrapnel shells). Certainly some British bombardment with shrapnel is evidences by the five lead balls from the trench.

The area around Trench 2 appears to have seen a significantly greater intensity of bombardment with 78 shell splinters coming from a relatively small area. It should be noted that this is by no means a 100% sample of what was there – finds were only hand-collected and it is likely there were considerably more small shell splinters that were not noted during excavation. Once again the splinters appear to be only from HE shells. The single driving band fragment is not diagnostic of type. British shrapnel bombardment my not be represented by shell cases or timer fuzes, but there were a significant quantity of lead shrapnel balls showing at least some shrapnel went in amongst the rain of HE shells.

Trench 3 produced a slightly larger proportion of shrapnel to HE. As well as the 15 HE shell splinters (Table 1) there were two empty casings (or large fragments thereof) from British 18pdr shrapnel shells (contexts [300] and [305]) as well as 13 lead shrapnel balls and part of a Canadian-marked No 85 timer fuze dated 1916 (context [303]) and a brass 18pdr flash tube (context [300]). The area around this trench was clearly the focus of a shrapnel barrage at some point. The driving bands are mainly undiagnostic or of uncertain type, however, the

presence of at least one German 77mm driving band shows some retaliation by the German artillery (context [304]).

Trench 4 produced a single flash tube, presumably from an 18pdr (the item was not retained by the excavators). If this were the case it demonstrates the shrapnel shelling of the German rear area, though no such evidence was recovered from Trench 5. The other piece of large calibre munitions here was a live German 5.9 HE shell (Ian Jones *pers comm.*).

Trench 5 produced just two HE shell splinters showing that at least this part of the German rear did not receive a concentrated or sustained bombardment.

Grenades

Twelve grenades or fragments thereof were recovered during the excavations: eight from German grenades, the remainder being of British type. Trench 1 produced evidence of close-quarter grenade exchanges. The iron base screw cap and a handle ferrule from German stick grenades were recovered from contexts [101] and [102] respectively. However, two Mills grenade fly-off levers, together with a live Mills brass detonator clearly show bombing up the line of the trench by British troops.

Trench 2 contained much more in the way of live grenades, including complete cans from two German stick grenades and a complete Mills grenade with pin still in, all presumably dropped or abandoned in the heat of battle. A single white porcelain bead pull from a stick grenade shows at least some German grenades were thrown from the position. All grenade pieces in this trench were from context [205].

Trench 3 produced a further white porcelain bead pull from a stick grenade as well as a further live can from another stick grenade (contexts [304] and [305] respectively.

Small Arms Ammunition

A total of 170 pieces of small arms ammunition was recovered during the excavations. The vast majority of this consists of German ammunition, which accounts for 150 pieces, the remainder being composed of British pieces, including a single flare cartridge case. The assemblage has been summarized by trench in Table 2.

Trench	1	2	3	4	5
German unfired	4	77	3	-	-
German fired cases	13	46	7	-	-
Commonwealth unfired	16	1	-	-	-
Commonwealth fired cases	1 (flare)	-	-	-	-
Commonwealth fired bullets	-	1	1	-	-

Table 2: Breakdown of used and unused small arms ammunition by trench

Unsurprisingly the majority of rounds were recovered from the forward positions investigated in Trenches 1 and 2. German firing appears to have been particularly intense in Trench 2 and the high number of unfired German rounds here also suggests much wastage during the heat of battle. However, many of these unfired rounds appear to have been in iron chargers and it is quite possible that a good proportion originated from the ammunition pouches found in this trench, the pouches themselves being testament to the carnage of the British shelling (see below). British .303 rounds are rare in Trench 2, but much more notable in Trench 1. Interestingly none of these are fired, with the exception of the Eley flare from context [103]. British soldiers were clearly present in this trench but the fighting appears to have been

completed by the use of grenades (and perhaps bayonets) rather than close quarters use of their rifles. Only two fired bullets were found (Table 2), presumably representing incoming fire before the trench was taken.

The chronological breakdown of the legible cartridge cases is given in Table 3. This shows that soldiers on both sides had a few pre-war rounds still in their possession. The earliest German round was dated 1909 (manufacturer illegible) from Trench 1, context [106], though an August 1915 round was found in the same deposit. However, the vast majority were composed of 1915 manufactured rounds (73.3% and 89.6% of the British and German rounds respectively). This is what one may expect in the 1916 battle, allowing for a time-lag for supply between factory and front. Once the offensive started these 1915 rounds would have been used at an increased rate and it is therefore not surprising that 1916 rounds are also in evidence. These could represent rounds made prior to the July offensive but may also be the result of the need to fast-track new supplies up to the front as quickly as possible in July and August. The German rounds, being dated by month as well as year are more revealing. The latest German rounds are dated September 1916 (from H and S manufacturers) both in Trench 2, context [202]. As Mametz Wood was in British hands by this date these rounds may relate to the 1918 offensive.

Year	German rounds	British rounds
1909	1	-
1910	1	-
1913	-	1
1914	2	-
1915	95	11
1916	7	3

Table 3: Manufacturing year profiles for German and British small arms (where legible)

Tables 4 and 5 give a breakdown of the German and Commonwealth manufacturers noted in the current assemblage, together with the date of the rounds they were noted on. One can see that on both sides there were a wide range of manufacturers involved.

Headstamp	Manufacturer	Dates
C	Munitionsfabrik Cassel	1915 Jul, Aug
D.	Konigliches Arsenal, Dresden	1914 Dec; 1915 Apr, May, Aug, Oct, Nov, Dec
DM	Deutsche Munitionsfabriken. Karlsruhe/Berlin	1915 May, Aug, Sep, Oct
G	Wurttembergische Metallwarenfabrik, Geislingen/Steige	1915 Aug
H	Rheinische Metallwarenfabrik, Dusseldorf	1915 Oct; 1916 Sep
J	Hauptlaboratorium, Ingolstadt	1915 Mar, Aug, Sep; 1916 Feb
N	Rheinisch Westfalische Sprengstoff, Nuremberg und Stadeln	1915 Aug
P	Polte Werke, Zentrale Magdeburg	1914 Feb; 1915 Jun, Jul, Aug, Sep, Oct, Nov; 1916 Feb
R	Unknown (or mis-read)	1915 Nov
S	Koenigliche Munitionsfabrik,	1915 Mar, Jun, Sep, Oct; 1916

	Spandau	Sep

Table 4: Summary of German 7.92mm rounds with legible makers' stamped codes. (NB Markings S and S67, which denote the brass alloy of the case, are not included)

Headstamp	Manufacturer	Years
B	Birmingham Metal & Munitions Co Ltd	1915 x1
E	Eley Brothers, Edmonton, London	1915 x4; 1916 x3
K	Kynoch & Co, Witton, Birmingham	1915 x1
K-	Kynoch & Co?	1915 x1
KN	Kings Norton Metal Co., Birmingham	1915 x4
R↑L	Royal Laboratories, Woolwich	1913 x1

Table 5: .303 small arms manufacturers

Artillery

The only finds relating to large calibre gun positions consists of three crushed zinc cylinders from German fuze protectors, perhaps for 5.9cm guns (Trench 3, context [305]). These suggest a gun position in the vicinity.

Trench Furniture

Trench-construction materials were recovered from all trenches with the exception of Trench 4. Surprisingly little material is in evidence suggesting either most of the revetting used perishable materials such as sand-bags and wickerwork or the trenches had been thoroughly robbed once they were no longer needed. Just two fragments of 1-strand German barbed wire were recovered and a single angle iron stake, all from Trench 1, context [100]. Considering the context it is possible these relate to post-war activity. If there had been a significant wire entanglement in front of this German line, it probably sat at some distance from it. The scatter of iron nails was mainly recovered from Trench 3 (12 examples from [304] and [305] combined), with the only other example coming from Trench 1 (context [100]). There was also a scatter of iron sheet fragments, including six small fragments of corrugated iron (Trench 3, context [305]: 5/894g and one 230g galvanized piece from Trench 5, context [501]). The example from [501] appears to have been punctured by the back blade of a British entrenching tool as well as receiving a bullet hole from the opposite direction. The same context produced a large area of thin bitumen sheeting, used for waterproofing, but dumped back into the trench during infilling.

The most common finds were of non-defensive wire. Contexts [101], [304] and [504] produced fragments of smooth iron wire used in riveting and for many other tasks (8, 6 and 1 fragment respectively). Trenches 1 and 2 produced *in situ* and loose pieces of what must be electrical wire. This type consists of two 0.9mm diameter copper wires, insulated in fibres and then bound in obliquely wound 10mm wide white canvas strips. This in turn was covered by the oblique winding of a 12mm wide copper sheet strip over which is a final winding of 10mm wide canvas strip. Overall the insulated wires measure c. 5.5mm diameter. The presence of these shows the developed nature of this part of the German defences. Alongside the electrical wire were the more typical communications wires. Trench 1 contained the most types, both *in situ* and loose in its fill. The *in situ* types consisted of 1-

strand wire (0.9mm diameter in a 3mm diameter iron sheathing), 5-strand wire (each 0.2mm diameter in a 2.4mm diameter iron sheathing) and 11-strand wire (each 0.3mm diameter in a 2.4mm diameter iron sheathing). Contexts [102] and [103] also produced loose examples of 7-strand wire (each 0.2mm diameter in a 3.4mm diameter iron sheathing). The only communications wire recovered from Trench 2 consisted of 1-strand types of 0.9mm diameter (in 3mm diameter iron sheath) and 0.7mm diameter (in 1.7mm diameter iron sheath). Certainly the quantity of *in situ* communication wires in Trench 1 show it to have been a major route for communications.

Military Equipment and weapons

Thirty three items under these categories were recovered – Trench 1 (x6), Trench 2 (x18), Trench 3 (x8) and Trench 5 (x1).

Trench 1 produced three white metal 3-hole drop-back 17mm diameter buttons from either German groundsheets, bread-bags or braces/trousers as well as an 18mm diameter white metal groundsheet eyelet and a copper alloy rivet from some leather German webbing. Of note is the presence of the iron top from the handle of a British entrenching tool handle demonstrating the presence of allied troops in this section of trench.

Trench 2's assemblage was notably larger than those from the other trenches. All but one of the recovered items of military equipment here were recovered from context [205]. A complete undamaged bayonet, still in its steel scabbard and attached to a leather suspension frog, is of an unusual type: an M1914 2nd type (Ersatz Gottscho). Only 27,000 of this type were made between the end of 1914 and start of 1915, being supplied to Bavarian and Wurtemberg troops. Whether it was still with its original owner when lost is impossible to say. The other weapon-related item was also a relatively rare find: an undamaged (though empty) 25 round magazine for a German G98 rifle. Two 7.92mm iron chargers were also recovered (one coming from [202]) and there were others, or traces thereof, on a number of the unfired German small arms rounds (see above).

The majority of items of military equipment in Trench 2 appeared to perhaps derive from one or two sets of issued equipment that may have been deposited after the owner/s had been killed. The ferocity of the damage to some of the pieces, notably the waist belt, suggests a large calibre shell may have been responsible. This would very much be in keeping with the fragmented nature of the human remains in the same deposit. Whether the items were related to these human remains (see below) is impossible to tell due to the random nature of the spread, however, an association does appear likely. The bayonet noted above can happily be seen as part of this same spread of apparently serviceable equipment and indeed the bits of German tunic and boots noted under clothing (below) can probably also be associated.

The spread of equipment included part of a leather suspension cradle from an entrenching tool, a few fittings from a German haversack and the remains of three M1909 leather ammunition pouches. One was loose, the other two still had parts of the waist belt attached indicating a significant force had broken the belt in more than one place. This is confirmed by the twisted broken nature of the copper alloy belt fastener. One of the pouches had a copper alloy charger with four unfired rounds remaining (dating to between March 1915 and July 1915) and another with two unfired rounds in an iron charger (both dated September 1915). All three pouches were maker-marked on their reverse faces (A. WUND // BERLIN, undated; ?SHWAIBE // BERLIN 1915 and A. SCHWNE // BERLIN 1915). Other items included the copper alloy belt hook from a bread-bag (which probably originally held some of the more domestic items listed below), a complete (with top) M1893 water bottle, a complete entrenching tool head, a folded down iron spork and a complete M1915 gas mask in its tin, with a separate loose spare filter (which was probably originally in the carrying bag that contained the tin). No items of British military equipment were found in this trench

Trench 3's assemblage was similar to that noted in Trench 1 in that it contained a sparse scatter of smaller items likely to represent casual losses or disposal of broken items rather than mass loss of serviceable items due to enemy action. Items included parts of a German haversack, a loose copper alloy charger and a damaged steel mess tin (with lid). The single lynch pin is likely to be from a wheeled item and could be further evidence of artillery, but could also derive from a small cart. A safety pin fragment is probably from a British dressing.

The only item of military equipment from Trench 5 consists of the iron head from an undamaged German long-handled shovel.

Clothing

Some 19 items classified as clothing were recovered during the excavations. All were recovered from either Trench 1 (6 items) or Trench 2 (13 items) and where discernable, all is of German nationality. Trench 1 produced an iron heel plate, a leather sole with traces of iron hobnails (in two pieces) (context [100]) and part of the upper from a leather ankle boot (context [102]). These items are of uncertain nationality. However, [102] produced a complete copper alloy side belt hook from a German tunic. Trench 2 produced further tunic elements, including an exact same copper alloy side belt hook as that noted in [102], together with another of different form (both context [205]). The same deposit produced the back-plate of a belt hook from the rear of a German tunic as well as two complete examples, both with Prussian crown motifs. Tunic buttons from [205] were all German and consisted of three in iron, with copper allow shanks. All had adhering pieces of tunic showing they were not buttons that had come loose from the tunics in question, but had been lost when the tunic was ripped apart. One example, whose adhering cloth had surviving red piping of the infantry, was legible, clearly being an epaulette button from company No 4. The other buttons from [205] consist of two white metal 4-hole dome-backed buttons (with adhering coarse cloth) that are likely to be from trousers or braces.

Trench 2 (context [205]) also contained the complete or partial remains from three M1866 German leather 'Jack' boots. One still contained traces of black woolen cloth on its interior suggesting the owner was still wearing the boot when it was blown off complete with socks. The most complete boot (for left foot, and measuring 310mm along the sole) has no obvious reason for discard, though there is a clear bullet entry on the outside upper section that may have caused it to be removed to treat the wound.

Food and drink

Items associated with drinking were recovered from Trenches 1 to 3. Trench 1 produced six sherds from an English stoneware SRD rum jar (manufactured by SKEY), the remains of two green wine/beer bottles and further shards from a cylindrical bottle in aqua glass with cork closure – probably a spirit bottle. Further bottle fragments from the trench in aqua glass were from square and cylindrical sauce bottles demonstrating the spicing up of otherwise a bland meal. It would certainly appear that British troops were stationed here long enough to eat and drink.

Trench 2 produced the remains of four different green wine/beer bottles of uncertain nationality and 23 fragments from cylindrical iron food tins, also of uncertain nationality.

Trench 3 again produced evidence of British troops eating and drinking. Items included parts from a green beer bottle with crown cap closure, an aqua coloured oval spirit bottle and the complete copper alloy screw cap from a petrol tin (at this location almost certainly used for carrying water). The trench also produced 44 fragments from an estimated three and six rectangular corned beef and cylindrical cans respectively. In addition to the key from one of the corned beef cans there was a key for a sardine can too. Overall this assemblage,

together with the drink remains, suggests a relatively short stop by a small group of British soldiers.

No food or drink-related items were recovered from Trenches 4 and 5.

Domestic Items
A scatter of pieces classified as of 'domestic' nature were recovered. These included the bowl of a German white pipe-clay tobacco pipe with the remains of an iron cover (probably once within the bread-bag of the individual in [205]). The pipe has crudely moulded maker's mark that appears to read 'B.PES // CIONN' (the latter word does not appear to be Bonn unless the moulding is very poor). Context [205] also produced part of a graphite pencil as well as items associated with lighting – the remains of a graphite cylindrical battery core (54mm long by 15mm diameter) and five fragments of German black wax candle (11mm diameter). A 6g fragment of identical candle was recovered from context [100] (Trench 1). The two fragments of bone from Trench 1 (context [102]) include the complete jaw of a terrier-sized dog that may well have been a pet, though of which nationality is uncertain.

Human Remains
Ten human bone fragments were recovered during the work – all being recovered from context [205] in Trench 2. Although impossible to prove without scientific analysis, it is probable all derived from the same individual, presumably German considering the equipment in the vicinity, who was killed by a large calibre shell at close quarters. The remains consisted of two complete lower arms (radius and ulna in the correct anatomical positions to each other), two heel bones, a neck vertebra, two possible cranial fragments and a finger bone. All were spread randomly but the fact the arm bones had stayed together shows they were with flesh when deposited. Following the end of the excavation these remains were buried in the raised bed at Fricourt German cemetery.

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Appendices:

Appendix 1 – Excavation Contexts:

Context Number	Trench Number	Description
100	1	Topsoil
101	1	Secondary fill of [104]

102	1	Primary fill of [104]
103	1	Secondary fill of [105]
104	1	Cut of 'Strip Trench'
105	1	Cut of comms wire trench E-W
106	1	Primary fill of [105]
107	1	Natural
200	2	Topsoil
201	2	Cut of linear ditch, part of German trench
202	2	Main fill of [201]
203	2	Parapet remnants
204	2	Cut of German front-line Trench
205	2	Main fill of [204]
206	2	Parapet
207	2	Trench parados = 208
208	2	Trench parados = 207
209	2	Natural
300	3	Topsoil
301	3	Stoney layer
302	3	Shell crater cut
303	3	Chalky fill of [302]
304	3	Dumped material within [302]
305	3	Dumped material within [302] below corrugated sheet
400	4	Topsoil –straight onto Natural
500	5	Topsoil
501	5	Chalk slumping –Secondary fill
502	5	Possible Sandbagging on E Face of Trench
503	5	Sandbagging on W Face of Trench
504	5	Primary fill of Trench
505	5	Trench Cut
506	5	Limon Natural
507	5	Chalk Natural
508	5	Parapet Bank
509	5	Parapet Bank
510	5	Cut of 'Spur Trench'
511	5	Fill of [510]
512	5	Limon Slumping

Appendix 2: Photo record with Digital SLR:

Shot Number	Details	View	Date
1	Intersection [201] German Trench	Looking SW	8/8/15
2	" " " " "	" " " "	" " "

3	" " " " "	Looking S	" " "
4	" " " " "	Looking S	" " "
5	Area 2: German Trench	Looking E	" " "
6	General Shot	Looking S	" " "
7	Area 2 showing Line of Trench	Looking SW	" " "
8	Area 2 showing Line of Trench	Looking NE	" " "
12-13	Trench 3 (303)	Looking NE	9/8/15
14-15	Trench 3 Medium close up	Looking NE	" " "
16-17	Trench 3 close up	" " " "	" " "
18-19	Trench 3 general shot	Looking SE	10/8/15
20-21	Trench 3 general shot	Looking NW	" " "
22-23	Trench 3 shell crater wide view	Looking N	" " "
24-25	Trench 3 shell crater wide view	Looking E	" " "
26-27	Trench 3 south west facing north	Looking E	" " "
28-29	Wide view of shell crater section	Looking NE	" " "
30-31	Section of shell crater medium close	Looking NE	" " "
32-33	Section of shell crater close up	Looking N	" " "
34-25	Section of shell crater close up	Looking SE	" " "
36	Section of shell crater close up from above	Looking NW	" " "