

CPAT Report No 1303

First World War Commemoration

**Bodelwyddan Castle Park Practice Trenches,
Denbighshire**

ARCHAEOLOGICAL INVESTIGATIONS 2014



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Client name: Cadw
CPAT Project No: 1860
Project Name: First World War Commemoration
Grid Reference: SH 9994 7451
County/LPA: Denbighshire

Report Title: **Bodelwyddan Castle Park Practice Trenches, Denbighshire:
Archaeological Investigations 2014**

CPAT Report No: 1303
Issue No: 2
Report status: Final
Confidential: No

Report Prepared by: **Position:**
I Grant Project archaeologist
Completion date: 26 March 2015

R Hankinson Project archaeologist
Completion date: 26 March 2015

J Spencer HER Officer
Completion date: 06 August 2015

Checked by: **Position:**
R J Silvester Head of Field Services
Checked on: 06 August 2015

Signed:

R. J. Silvester

Bibliographic reference:

Spencer, J., Grant, I. & Hankinson, R., 2015. *Bodelwyddan Castle Park Practice Trenches, Denbighshire: Archaeological Investigations 2014*. Unpublished report. CPAT Report No. 1303.



The Clwyd-Powys Archaeological Trust
41 Broad Street, Welshpool, Powys, SY21 7RR
tel: 01938 553670, fax: 552179
email: trust@cpat.org.uk
www.cpat.org.uk

© CPAT 2015

Cover photo: View of the 2014 excavations (CPAT 3916-0111).

CONTENTS

1	SUMMARY	3
2	INTRODUCTION	3
3	THE STUDY AREA	4
4	THE INVESTIGATIONS	5
5	GEOPHYSICS	7
6	EXCAVATION	13
7	FINDS	27
8	OUTREACH	33
9	DISCUSSION	36
10	FUTURE WORK	39
11	ACKNOWLEDGEMENTS	40
12	SOURCES	41
	APPENDIX 1: SITE ARCHIVE	44
	APPENDIX 2: BRITISH GRENADES	47

Copyright Notice

The copyright of this report is held jointly by Cadw and the Clwyd-Powys Archaeological Trust. The maps are reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Welsh Government. Licence No: 100017916 (2015).

Atgynhychir y mapiau o ddeunydd yr Arolwg Ordnans gyda chaniatâd Arolwg Ordnans ar ran Rheolwr Llyfrfa Ei Mawrhydi © Hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri Hawlfraint y Goron a gall hyn arwain at erlyniad neu achos sifil. Llywodraeth Cymru. Rhif Trwydded: 100017916 (2015).

1 SUMMARY

- 1.1 In late September and early October 2014 staff from the Clwyd-Powys Archaeological Trust (CPAT) carried out investigations of the First World War practice trenches in parkland at Bodelwyddan Castle in Denbighshire. The work was intended to determine the extent, nature and possible dating of the trenches by means of geophysical survey and excavation. This formed part of the on-going pan-Wales programme of work on 20th-century military remains, funded through grant-aid from Cadw that is enhancing the management and protection of the remains of this era. No evidence of north-eastern continuations of either trench line investigated could be discerned in the geophysical survey results, but they did show significant quantities of ferrous material, with a tendency towards clustering. Although the reasons for this are unclear, it is assumed the anomalies have a military origin. The excavation established the profiles and depths of the reserve (3rd line) and communications trenches and provided dating evidence in the form of rifle grenade components of 1916/17.

2 INTRODUCTION

- 2.1 In 2013/14 with the approach of the centenary of the beginning of the First World War the WATs turned their attention to studies of the physical remains associated with the First World War. At the Clwyd-Powys Archaeological Trust the first stage was a scoping study to attempt to understand the size and nature of the likely surviving resource of buildings, sites and structures in east and north-east Wales, built or taken over for use during the First World War; the results were presented in CPAT Report 1226. The second stage, undertaken the same year, comprised another scoping study, this time focussing on the training camp at Kinmel Park and training landscapes in Kinmel Park and Bodelwyddan Castle Park. The aims of this work were to summarise what was known about the sites, identify repositories where further research might prove fruitful and opportunities for community engagement. From this study CPAT Report 1255 was produced.
- 2.2 The aims of the 2014 investigations were to identify whether there were backfilled trenches in the park that were no longer visible on the surface or on aerial photographs and to begin to characterise the resource: to ascertain the original depth and profile of the trenches and to recover artefacts with which to identify the nature and dates of construction and use and possibly even the units involved. It was also hoped to establish the amount of intentional backfilling, as opposed to natural erosion, that had taken place since their abandonment by the military. With this information to hand it was intended to compare the stipulations for trench excavation laid down in contemporary instructional manuals with what was actually constructed at Bodelwyddan and to attempt better to understand relationships between the practice trenches at Bodelwyddan and practice trenches dug elsewhere in the United Kingdom, thus enabling the remains at Bodelwyddan to be placed within a broad context of training for trench warfare.
- 2.3 This project was carried out by CPAT with the permission of the landowner, the Bodelwyddan Castle Trust (BCT), and funded through grant-aid from Cadw as part of a pan-Wales project on 20th-century military remains. Throughout this report any numbers in brackets, except where they relate to written references, refer to the Primary Record Numbers (PRN) assigned to the site, and which feature in the Historic Environment Record.

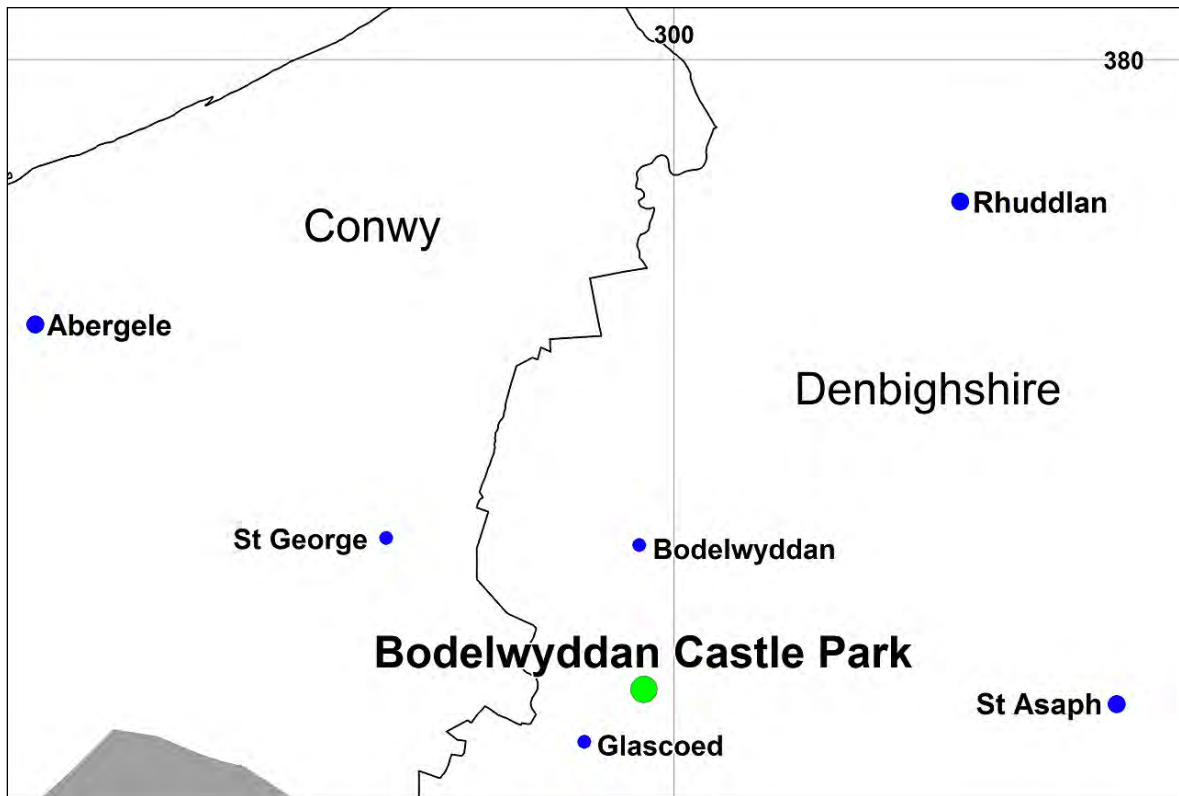


Figure 1: Location plan (land over 300m shaded grey)

(This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Welsh Government. Licence Number: 100017916 (2015)).

3 THE STUDY AREA

- 3.1 Extending over several hectares of parkland at Bodelwyddan Castle is a complex of First World War trenches (23082; Scheduled Ancient Monument FL186). Jon Berry of Cadw explains, "the trenches were built so that soldiers could practice constructing, living in and fighting in the conditions that they would encounter on the Western Front. The construction of these trenches also developed physical fitness, ingrained drill routines and established esprit de corps" (Berry 2014 online). Zigzag communication trenches link reserve (3rd line) and support (2nd line) trenches to the crenelated traces of the fire trenches (the plan view of a length of trench is known as the trace of trench). The crenelations are earth banks called traverses designed to protect soldiers from enfilading fire from an enemy entering the trench. Evidence on aerial photographs suggests there are several distinct groups in the parkland, facing in different directions (including some opposing each other) and constructed at different times by different units for different training scenarios (Berry 2014 online). There are also what appear to be dugouts (perhaps command posts or first aid stations), passing bays, island traverses (constructions which allow troops to pass along the trench without hindering those manning it) and saps (trenches dug out into 'no-man's land' from the front line). Over much of the area circular craters indicate that efforts were made to create a realistic battle landscape for troops to negotiate. Rather than bombarding the trenches, the craters were created artificially by detonating charges set in the ground. None of the craters have damaged the trenches and none overlap any other. The craters are all a regular circular shape on plan, by contrast incoming

- projectiles create an elliptical crater with a pronounced throw of spoil forwards of the impact point (Berry pers. comm. 2015). There is also what may be the site of a remote observation post or machine gun emplacement on slightly higher ground (132340) overlooking part of the training area. In 2001 a section of tunnel (129936) was discovered to the north-north-west of this feature, which was traced for 18 paces running from north-north-east to south-south-west (Cadw 2008).
- 3.2 The earliest confirmed photographic evidence currently available for the Bodelwyddan Castle Park trenches is an *Aerofilms* image of 1927 showing disused trenches towards the northernmost limit of the complex. However, photographs in journals written by Vernon Williams, a vicar's son from Tal-y-cafn, Caernarfonshire, (lent to CPAT by Mr Jerry Bone), show an officer throwing a hand grenade and may have been taken at Bodelwyddan in 1916 (Williams 1916). The trenches were re-discovered by CPAT staff in 1992 during an assessment for development in the castle grounds and in 1995 an area of well-preserved trenches and the observation/machine gun post were given statutory protection as a Scheduled Ancient Monument (SAM FL186). Aerial photographic coverage suggests the scheduled area forms only part of a more extensive trench system, or is one of a series of systems in the park no longer easily discernible at ground level. Other areas of trenches have been backfilled and are now visible only as soil marks and marks in pasture on immediately post-Second World War and later aerial photographs. The full limit of the trenches appears to have survived until sometime between 1948 and 1954 when an *Aerofilms* image shows the trenches in the field at the south-east extent of the area to have been backfilled. There is also the potential that the trenches extend into an area of woodland to the west of the open parkland. Interpretation boards have been erected across the site by the Bodelwyddan Castle Trust.

4 THE INVESTIGATIONS

- 4.1 Geophysical survey and excavation were considered the most appropriate techniques to employ to investigate the site.
- 4.2 Four separate survey areas were covered by geophysics, the results being combined in GIS to produce an overall view of the sub-surface anomalies at the different localities (see Figure 3). Each survey was based on a series of 20m by 20m grids and employed a *Bartington 601* fluxgate gradiometer. The readings in each grid were taken along traverses 0.5m apart and the speed of each traverse was carefully controlled such that readings were taken every 0.25m, giving a total of 3200 readings per 20m grid. The grids were laid out by taped measurement and then located in relation to local field boundaries by total station survey. The survey areas could then be related to modern Ordnance Survey mapping, thereby enabling the co-ordinates of any significant anomalies to be determined and the results compared to evidence obtained from other sources. The readings from each area were combined and processed using *Archeosurveyor* software to provide greyscale and trace images of the results. The main processing functions used were *Destripe* to remove variations in the readings between opposing traverses and *Clip*, to remove the effects of very high and very low readings on the results, thereby allowing anomalies of potential archaeological interest to be observed. Any other functions used will be referred to in the appropriate section. The methods and practices employed were in accordance with the *CIfA Standard and guidance for archaeological geophysical survey* (2013).

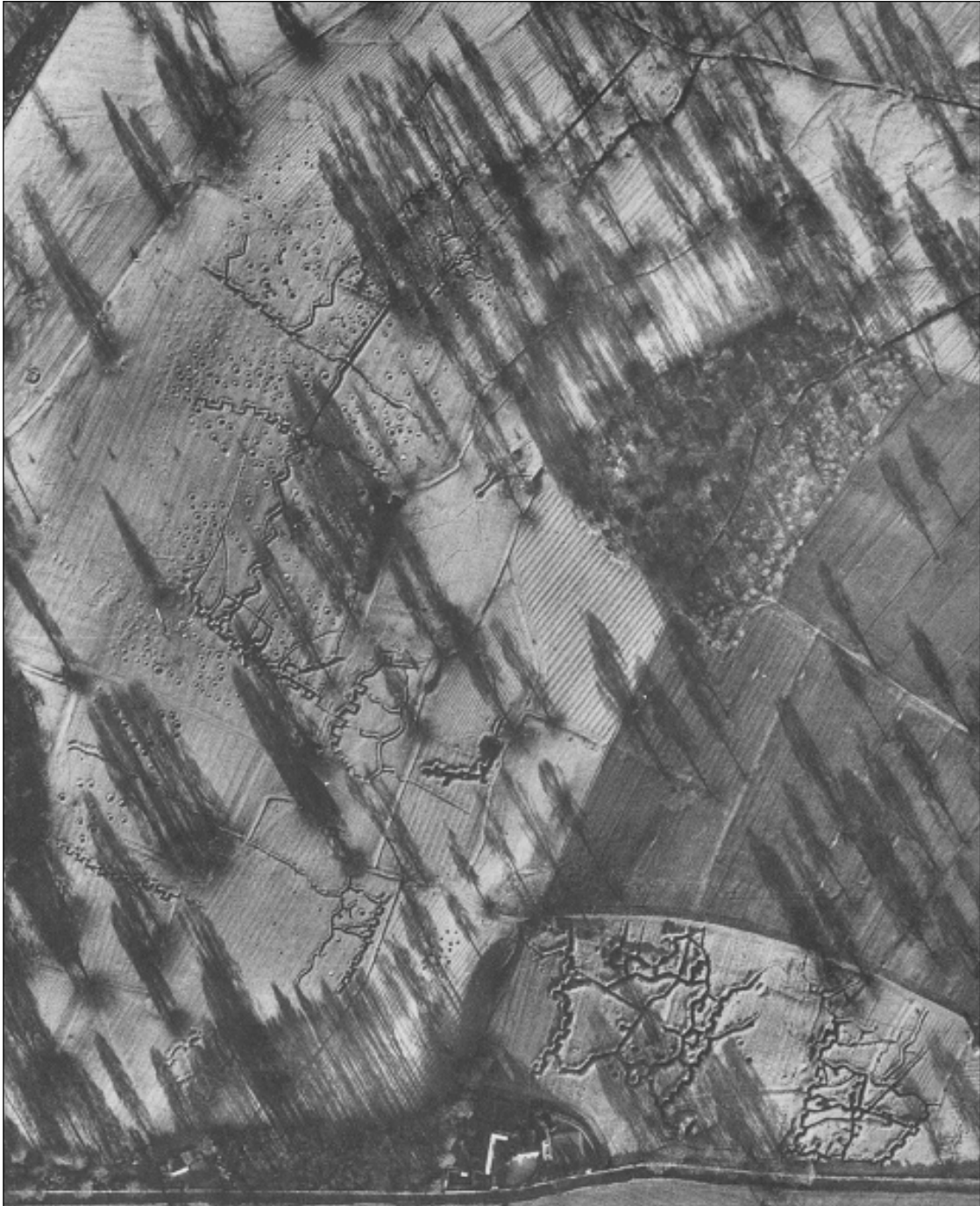


Figure 2: Extract from RAF photo 3G/TUD/UK/33 Frame 5419 taken in 1946 reproduced in Driver and Davis 2012.

- 4.3 At the suggestion of Jonathan Berry, Senior Inspector of Ancient Monuments and Archaeology at Cadw, and with the agreement of Dr Kevin Mason, Director of the Bodelwyddan Castle Trust, the area for excavation was located at the north-western limit of the surviving trench earthworks outside the area of the Scheduled Ancient Monument in order to allow project staff to gain experience of excavating First World War trenches whilst avoiding unnecessary disturbance to the protected remains. The excavation trench was sited to allow the investigation of a reserve or 3rd line trench and a communications trench at the point where they met. The practice trenches at this point are clearly visible as negative features and the grass around them is regularly mown by BCT staff/volunteers to improve their visibility to visitors.

5 GEOPHYSICS

- 5.1 The methodology for the geophysics is given in 4.2 above. A total of four areas were examined in the grounds of the castle, with the aim of determining the presence or absence of continuations of the visible trench system. Although the areas were relatively close to each other, it was not possible to combine them into a single survey owing to various obstacles and the nature of the vegetation.



Figure 3: The geophysics results in relation to the surviving practice trench system and the scheduled areas

(This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Welsh Government. Licence Number: 100017916 (2015)).

- 5.2 In addition to this composite plan and any subsequent discussion of the results, each survey area is dealt with separately by a more detailed discussion and the provision of two plans. The plans comprise a trace plot of the raw data (clipped to + and - 30nT for clarity) and a greyscale plot of the manipulated data. A second greyscale plot with added interpretation of any significant anomalies would normally follow, but on this occasion no anomalies were detected and these have been omitted.

Area A (120m by 40m overall)

- 5.3 This area of survey was placed to the west and north-west of two visible trench lines (see Figure 3 above), to determine whether either continued beyond their current terminals. No evidence of continuations to either line could be discerned in the results, but they clearly indicated a significant amount of ferrous material was present throughout the area, which showed a tendency towards clustering. It is assumed that this has a military origin but the reasons for the clustering are not apparent. The only visible anomalies show as faint stripes aligned north-east/south-west in the quieter areas between the clusters; these are probably the result of post-medieval ploughing.

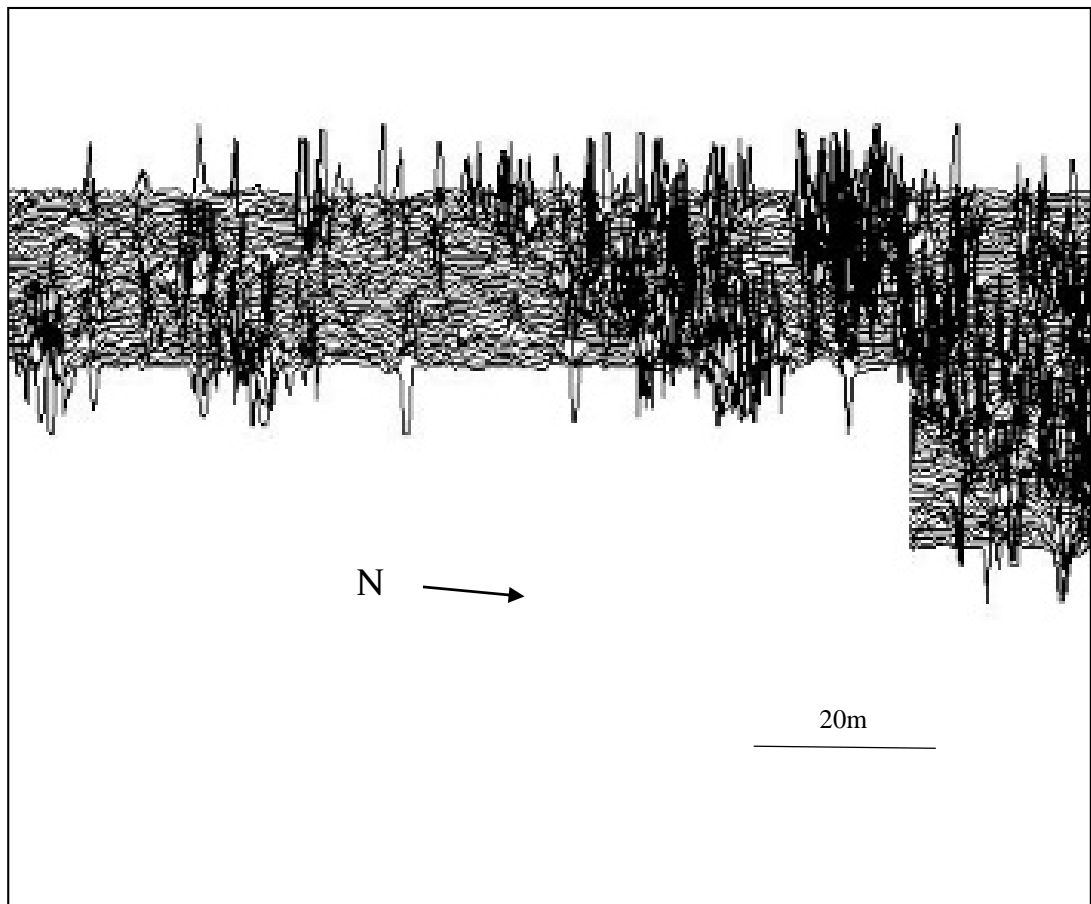


Figure 4: Trace plot of the results for Area A, clipped to + and - 30nT (Original scale 30nT/cm).

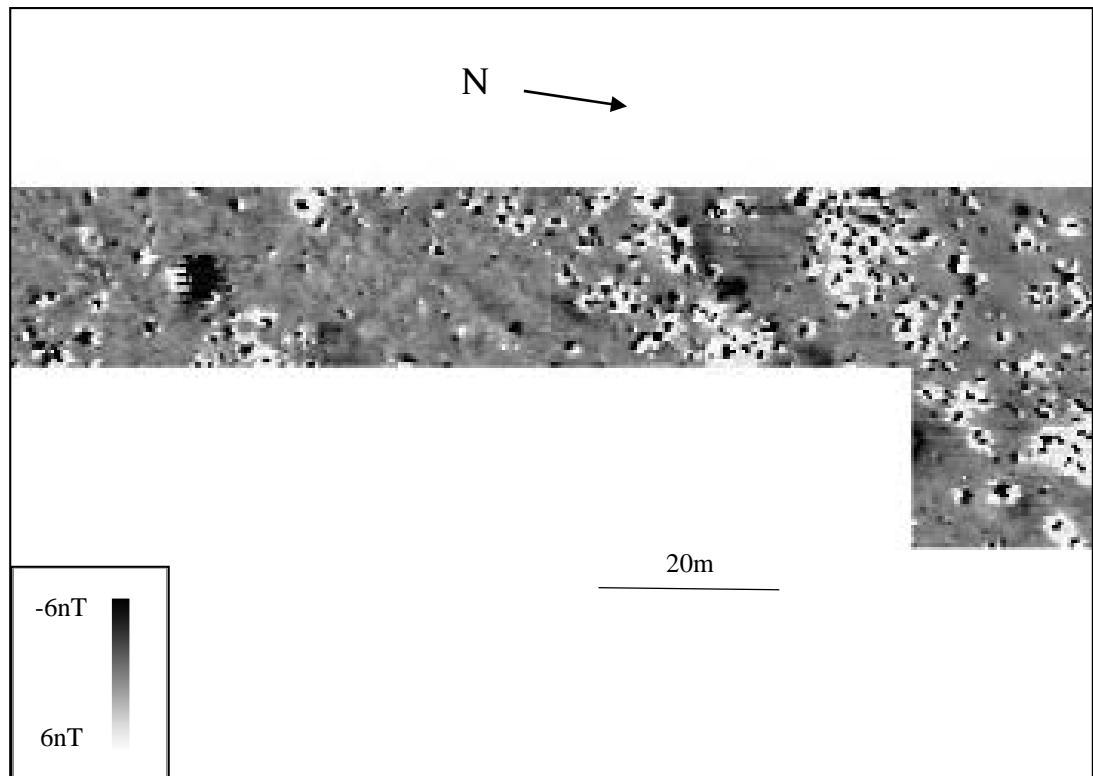


Figure 5: Greyscale plot of the results for Area A.

Area B (40m by 20m)

- 5.4 This area was randomly placed where it could be fitted in between areas of dense vegetation. As with Area A, significant quantities of ferrous material were present in the soil and these demonstrated a tendency towards clustering in particular localities although the reasons for this were unclear. It seems almost certain that the activity was of military origin. A narrow but strong linear anomaly towards the southern end of the area might define a section of wire used to give the practice area an authentic appearance.

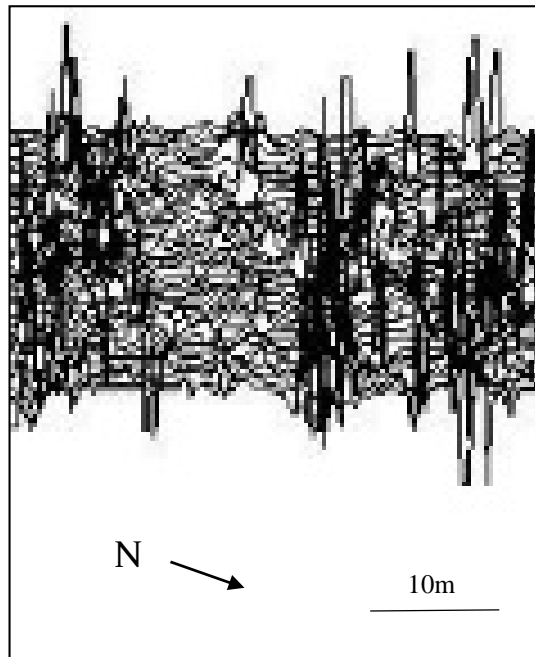


Figure 6: Trace plot of the results for Area B clipped to + and - 30nT (Original scale 30nT/cm).

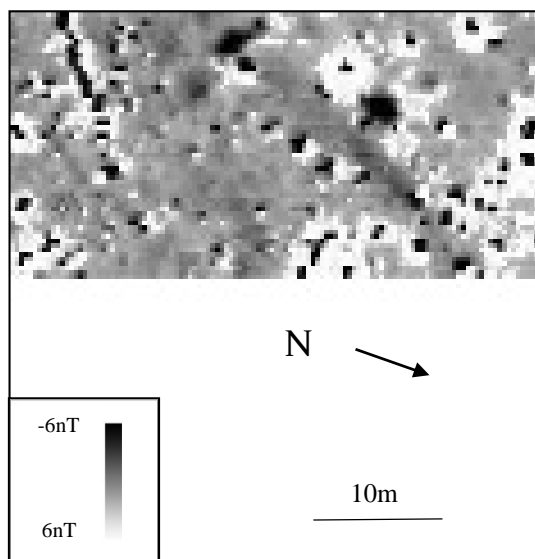


Figure 7: Greyscale plot of the results for Area B.

Area C (40m by 20m)

- 5.5 This area was placed to the north of a ring-shaped earthwork (part of SAM Fl186), which is believed to have been used as an observation post when the trench system was in operation. It was immediately adjacent to a fenced hollow, where there had been a collapse into a sub-surface tunnel, to see if any traces of the tunnel were evident; none were found. As with Areas A and B, clustered scatters of ferrous objects were apparent in the results and these were almost certainly of military origin. The dark anomaly at the top of the greyscale image is not significant; it denotes the outer limit of the magnetic effect associated with the fence surrounding the collapsed tunnel.

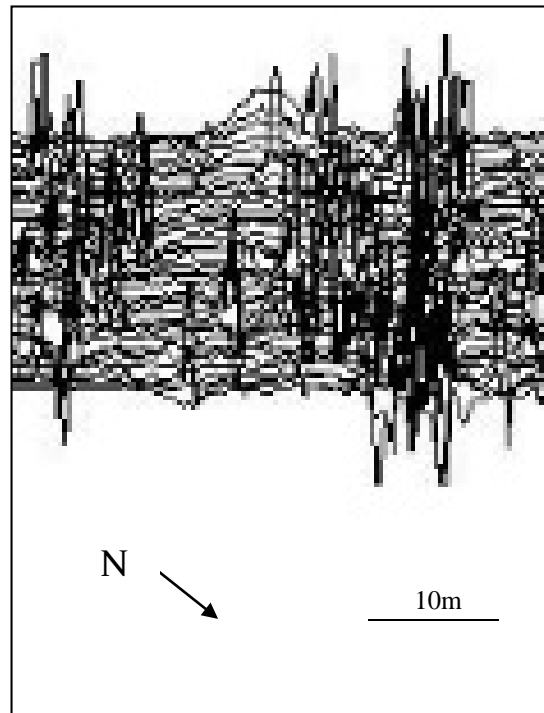


Figure 8: Trace plot of the results for Area C clipped to + and - 30nT (Original scale 30nT/cm).

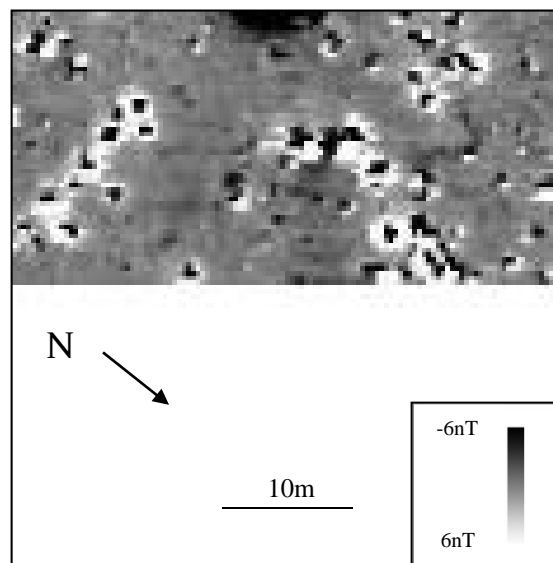


Figure 9: Greyscale plot of the results for Area C.

Area D (80m by 20m)

- 5.6 No evidence of any trench system was identified in the results from Area D, although significant clusters of ferrous objects were clearly visible, as in the other three areas. The parallel stripes running north-east/south-west define the linear furrows of a former ridge-and-furrow field system; the width between furrows of approximately 3m suggests a post-medieval origin for this activity.

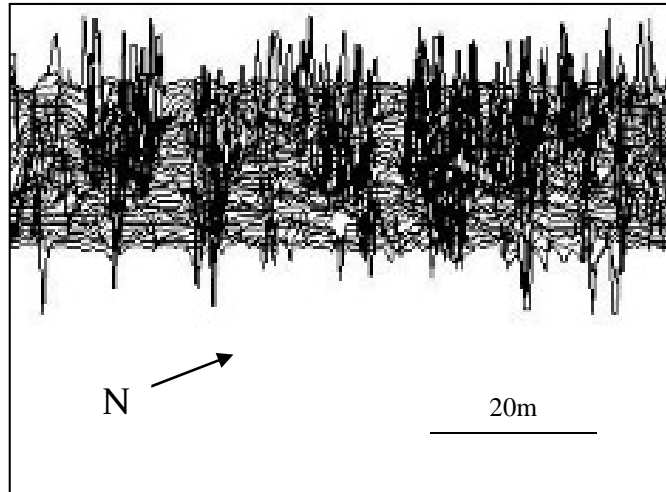


Figure 10: Trace plot of the results for Area D clipped to + and - 30nT (Original scale 30nT/cm).

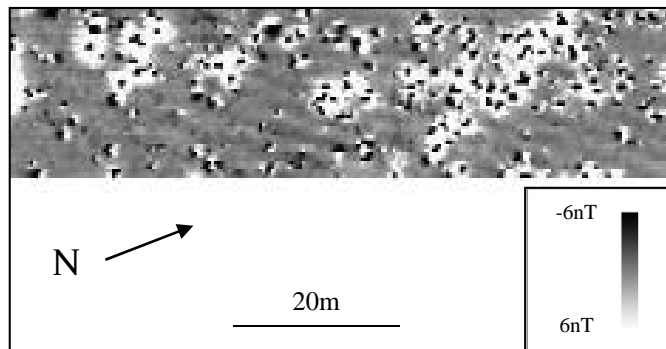


Figure 11: Greyscale plot of the results for Area D.

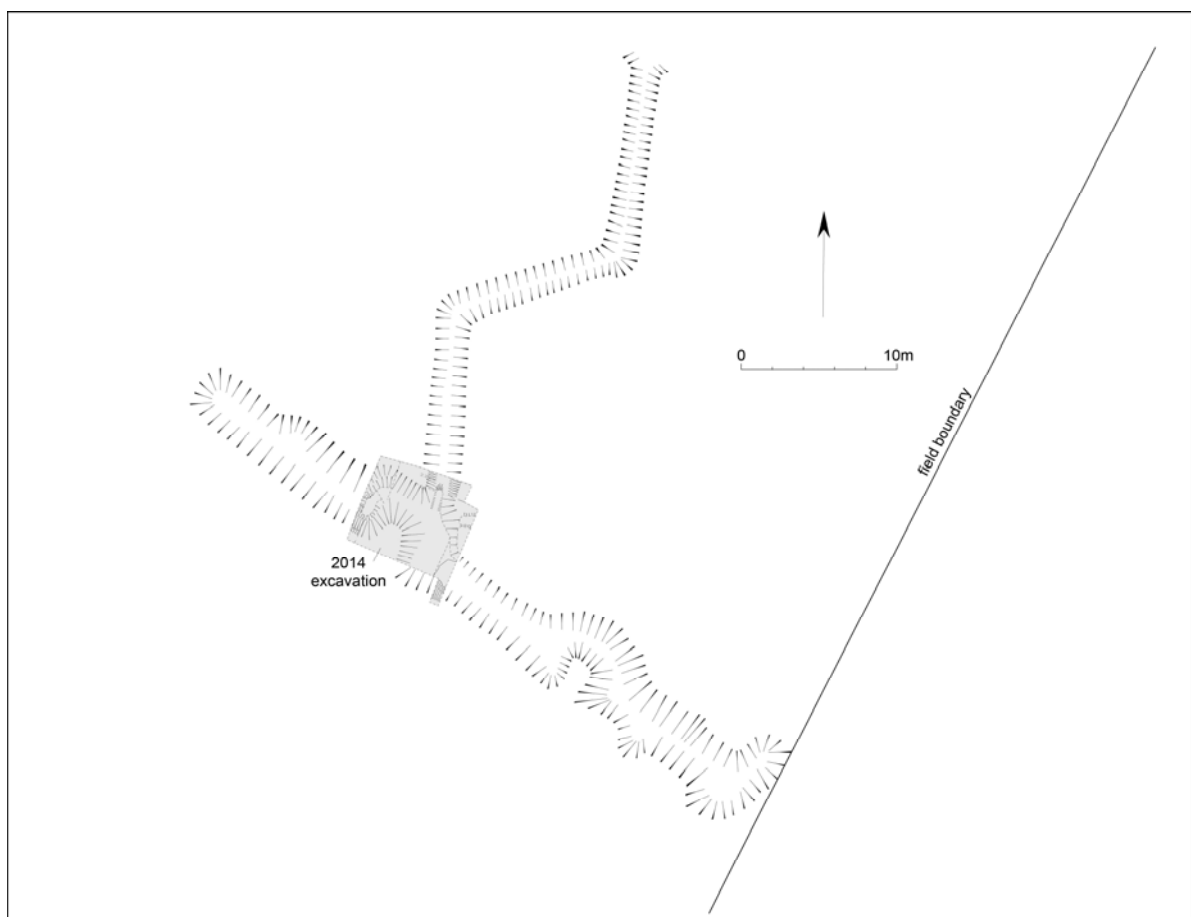


Figure 12: Topographical plan of the traversed reserve and zig-zag communications trenches indicating the location of the 2014 excavations.

6 EXCAVATION

- 6.1 As previously stated, the area for excavation was located at the north-western limit of the surviving trench earthworks outside the area of the Scheduled Ancient Monument (SAM Fl186) and east of/adjacent to geophysics grid Area A (see Figure 3). The excavation trench, measuring approximately 6m x 8m and orientated north-west to south-east, was sited to allow the investigation of a reserve or 3rd line trench and a communications trench at the point at which they met. Upon completion of the excavation the results were digitally mapped and incorporated into a topographical plan of the surrounding trench system (see Figure 12 above).
- 6.2 The excavation, which took place between 29th September and the 9th October, was undertaken by a team of four CPAT staff with the aid of Maj. (Retd.) Andy Hawkins (chairman of The Durand Group) who was also responsible for a specialist site risk assessment. At all times a written, drawn and photographic record was maintained, in accordance with the *Cifa Standard and guidance for archaeological excavation (2013)*.
- 6.3 Before the commencement of the excavation Mr Reg Simmons and his son Adrian, both amateur metal detectorists, carried out a search of the general area (including the ground immediately outside the trench system). The initial scan identified several metallic objects and once turf removal and excavation got underway further metallic objects within the excavation trench were identified. All finds spots were digitally

plotted using the EDM and subsequently marked to assist with recovery upon removal of the designated deposits. As the excavations progressed, further scans were undertaken and thus the process continued. The resulting finds data are reported in Section 7 of this report.



Figure 13: Locating and recording the positions of artefacts with metal detector and EDM total station (CPAT 3916-0021).

- 6.4 Our investigations focussed on two distinct types of trenches, a *traversed* reserve trench and a *communications* trench. As the *War Office Manual of Field Engineering 1911* (reprinted 1914) illustrates, there are numerous permutations of construction type for both (see Figures 14-16 below). Traversed trenches consisted of forward facing parapets, elbow rests, fire steps and recesses (for shelter of personnel or ammunition storage). To the rear of the trench there could be a *parados* (another parapet designed to avoid soldiers' heads being silhouetted against the skyline) and at the base possibly supports for trench boards and drainage ducting.

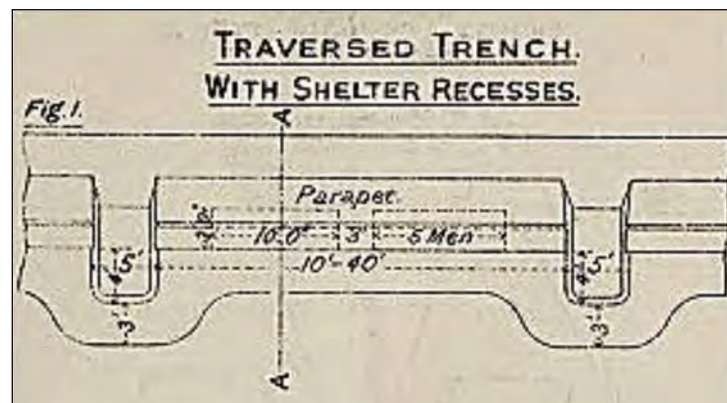


Figure 14: *Traversed Trench With Shelter Recesses* plan as laid out in the *War Office Manual of Field Engineering 1911* (reprinted 1914) (Plate 12, Fig.1).

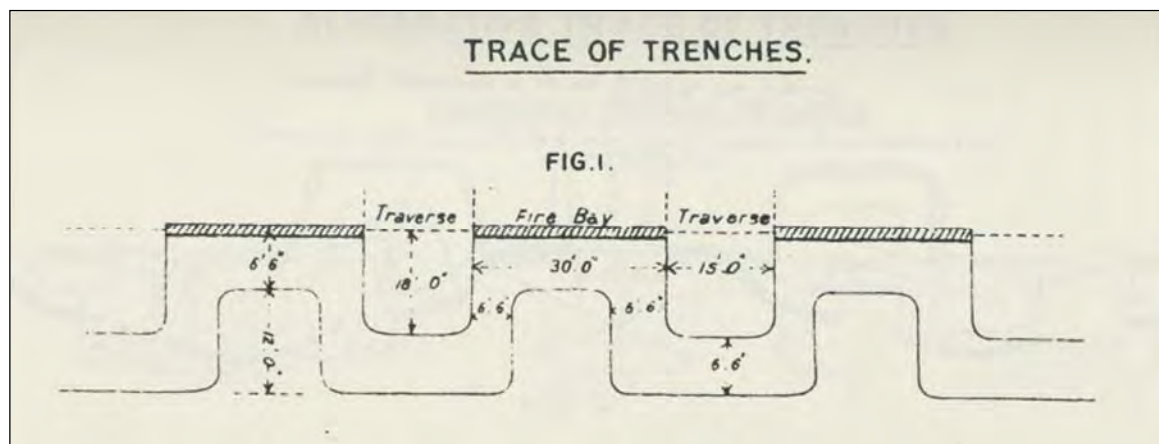


Figure 15: *Trace of Trenches* plan as laid out in the War Office *Manual of Field Works (All Arms) 1921 (Provisional)* (Plate 37, Figs.1 & 2).

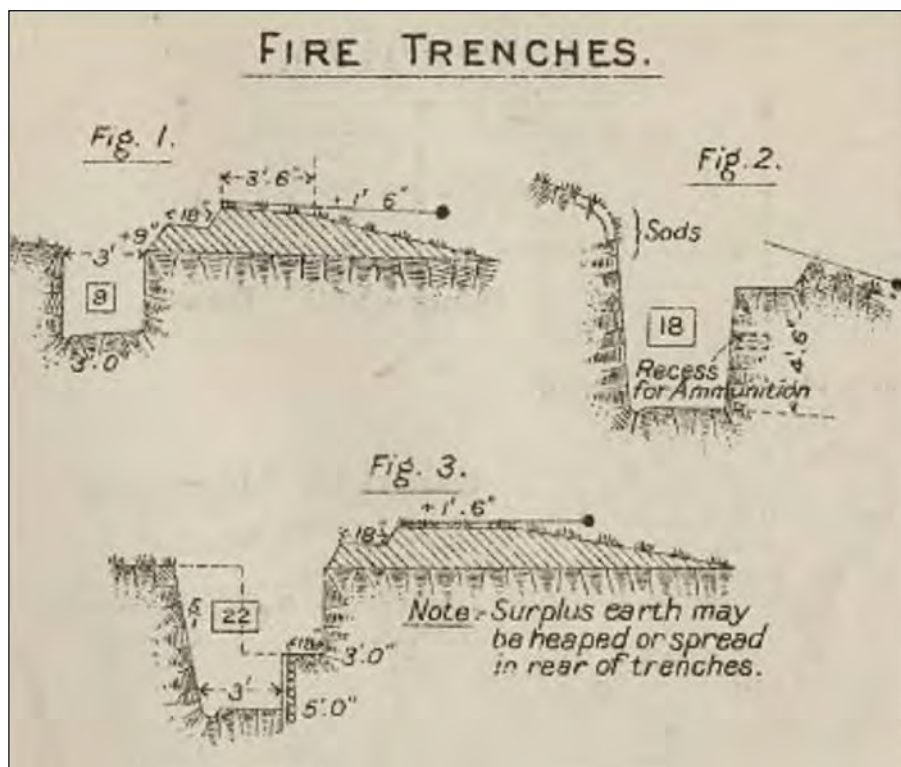


Figure 16: *Fire trenches* profiles as laid out in the War Office *Manual of Field Engineering 1911* (reprinted 1914) (Plate 9, Figs.1, 2 & 3).

- 6.5 Once the turf and general overburden had been removed it became apparent there was still a substantial amount of slumped material to be excavated from within our area of investigation. The slumped material in question invariably consisted of a firm dark grey gravelly silt with traces of re-deposited natural clay (a pinkish coal-measures clay). A number of similar deposits were recorded during the excavations, all of which have been interpreted as re-deposited construction material, probably from the associated parapets and parados. In order to maximise our resources, two cross-section sondages (1 and 2) were excavated across the traversed trench with a third across the communications trench (see Figure 17).

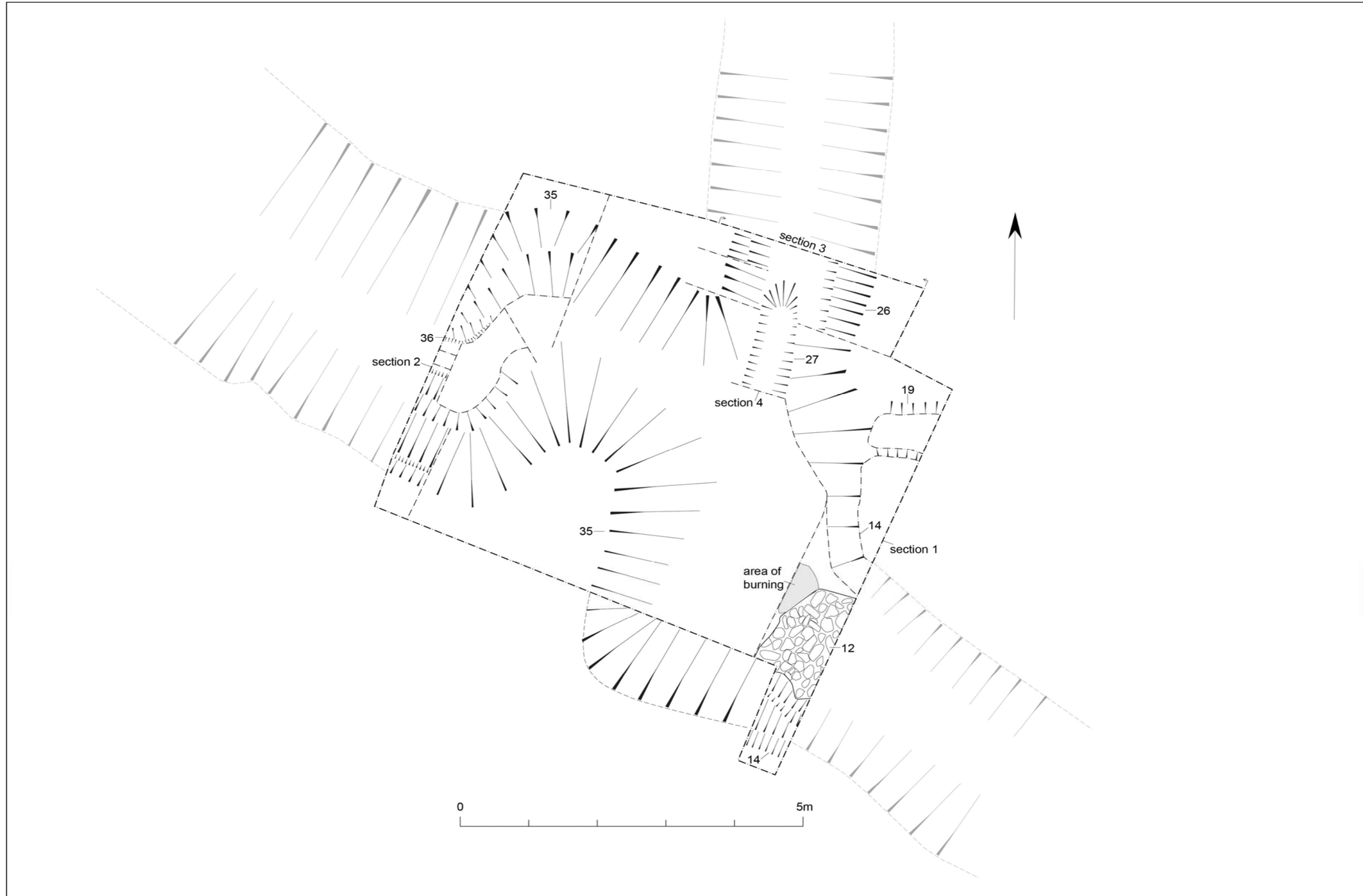


Figure 17: Overall plan of the 2014 excavations.

- 6.6 The excavation across section 1 (in the south-eastern quadrant) proved somewhat problematic in that a large deposit of limestone rubble (12) was recorded underlying the general overburden. The origins of the rubble, which sealed a deposit of charred wood (15), is unknown, although fragments of earthenware pottery (see paragraph 7.6) recovered from within the rubble suggest the deposit post-dates the Second World War. A narrow sondage, excavated through the south-west facing edge of the trench, did reveal a cut (14), perhaps for an elbow rest, below slumped parapet material (05) (see Figures 18, 19 and 22). At the north end of this section a recess (19) was partially excavated. The feature, initially identified on aerial photographs, is unusual in that recesses or shelters are usually located on the *interior* (forward) slope of a firing trench to protect them from incoming shell fire. The base plate of a hand grenade (F3), unearthed from just within the top of the feature, may hint at its use for storage and it is possible that it was a passing bay or sentry post, but at the present time a definite interpretation cannot be advanced with any confidence.



Figure 18: Section through traversed trench, viewed from the west. Limestone rubble (12) in situ (CPAT 3916-0137).

- 6.7 Sondage 2 was excavated along the north-western edge of the excavations and provided our clearest cross-section through the trench. When examined beside the illustrations in the manuals (Figures 16 and 19), the excavated section (Figure 20) compares quite favourably (see 9.3 below), bearing in mind that since abandonment there is likely to have been considerable slumping of the once steeply sloping trench sides. Although this trench was a reserve (3rd line) trench it (and the support or 2nd line trench) is likely to have been dug to the same specification as the front line trench. The theory is that (at the battle front) if an enemy attack captured the forward defences those further back could be used to continue to offer resistance. Along the north-facing *interior* slope (cut 35) there is evidence for an elbow rest (34) and two breaks of slope, one of which may have been a firing step. Below these was the base of the trench, at the very bottom of which was a narrow (0.3m wide) drainage duct (36). There are likely to have been duck boards, possibly supported on inverted 'A'-frames, fitted into the base of the trench, with the drain running beneath them (see Figure 19). However, such is the eroded nature of the trench at this location that our interpretation is speculative. No

conclusive evidence for 'A'-frames or trench revetting material such as corrugated iron sheeting or rough hurdle (or impressions of the same in the soil) was encountered, but fragments of nails suggest the former presence of worked timber within the trench. The overall width of the excavated trench (from parapet to the rear) was 4.6m (15ft 1") and maximum depth approximately 1.8m (5ft 11").

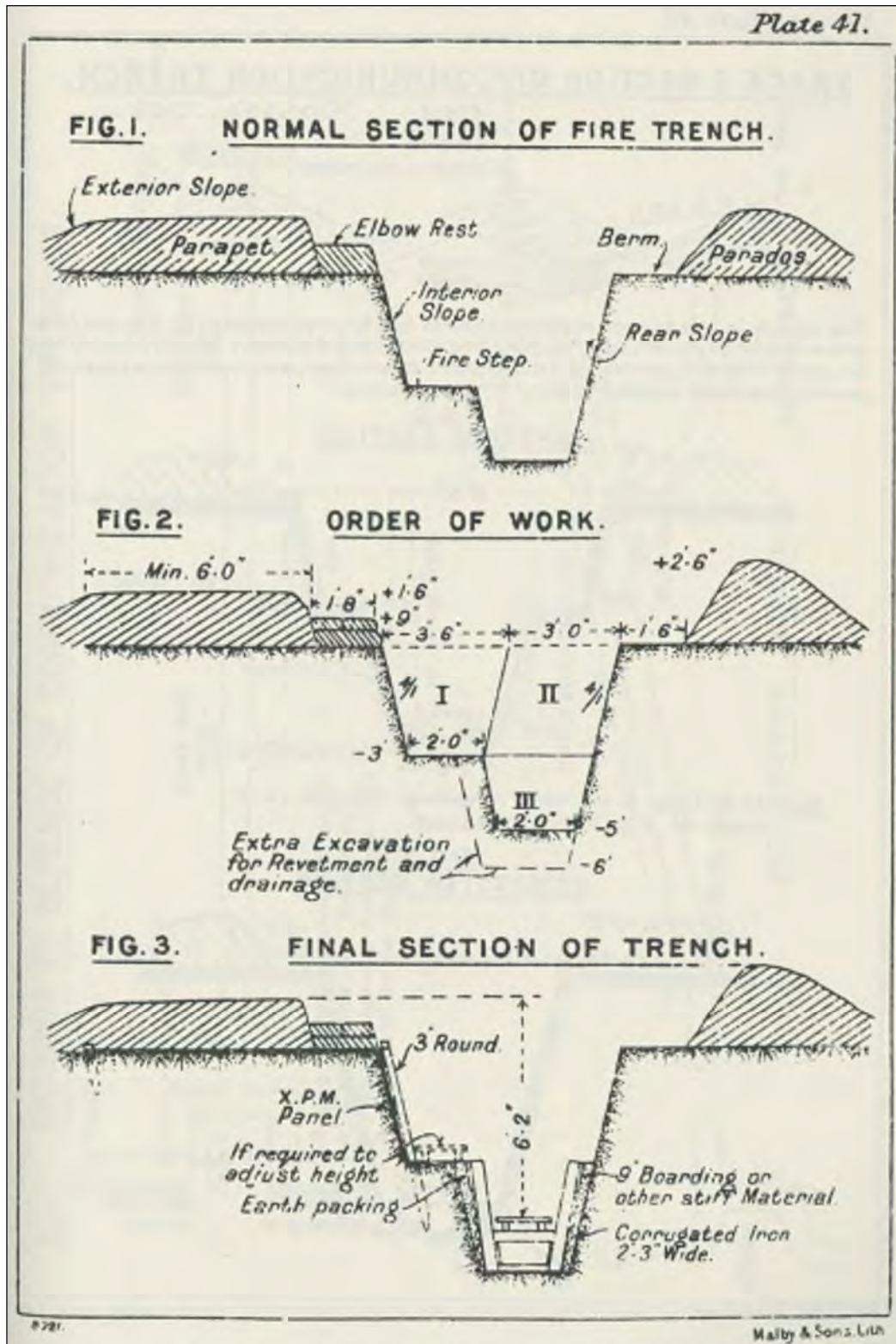


Figure 19: Sections through a fire trench as laid out in the War Office *Manual of Field Works (All Arms) 1921 (Provisional)* (Plate 41, Figs.1, 2 & 3).



Figure 20: South-east facing section (2) through the traversed trench, partially excavated (CPAT 3916-0120).



Figure 21: Section 2, illustrating the trench base and drainage duct (36).
Viewed from the south-east (CPAT 3916-0254).

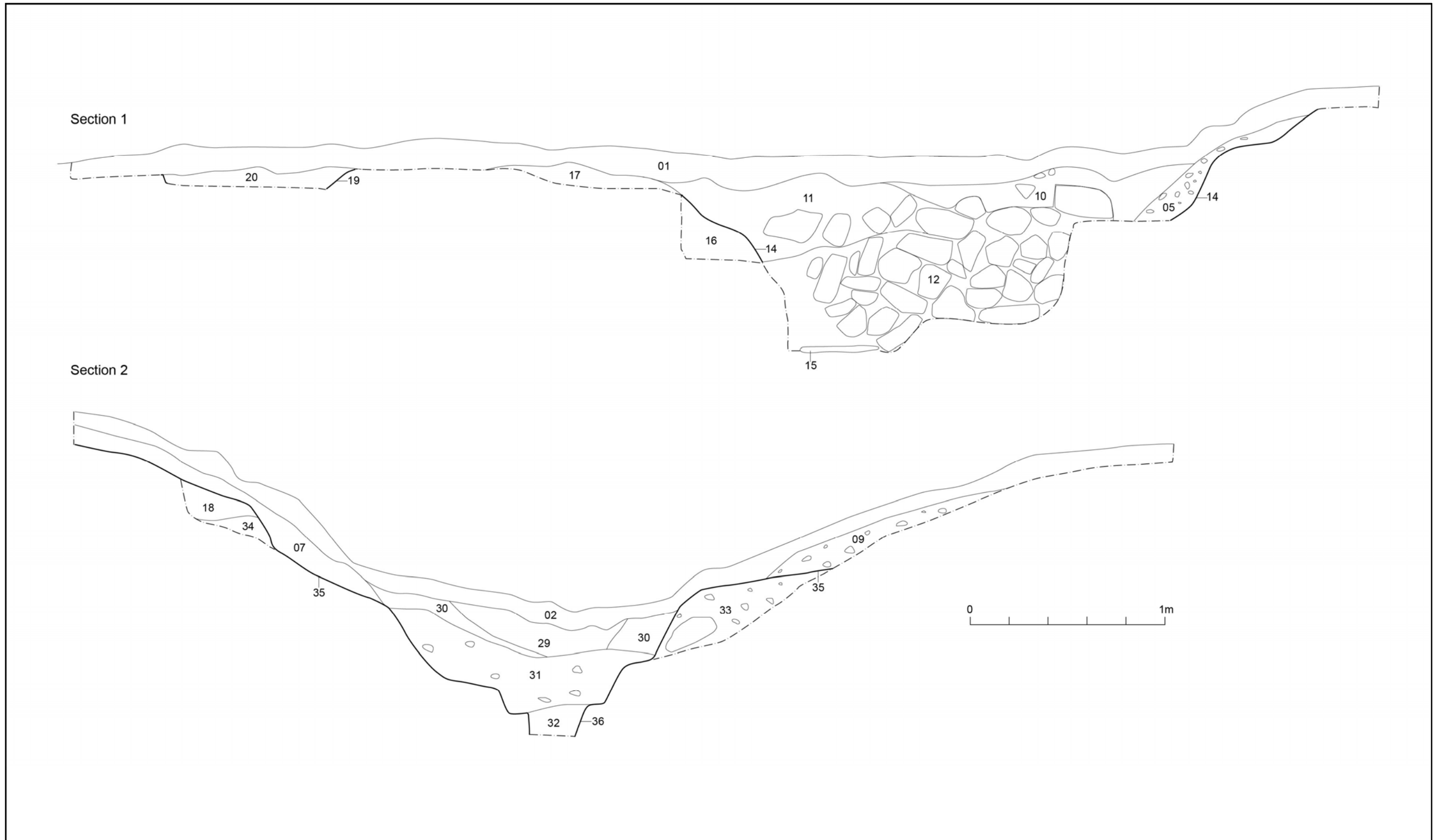


Figure 22: Sections 1 (west facing) and 2 (south-east facing) through the traversed trench.

- 6.8 Section 3, located across the communications trench, revealed a simple profile as set out in the War Office manual (Figures 23 and 25). As with other areas of the excavations, the cut for the trench (26) contained a great deal of slumped material from the flanking parapets. The recorded profile through the upper section of the trench consisted of a steep-sided 1.8m wide trench no more than 0.6m deep (Figures 23, 24 and 27). Towards the intersection with the traversed trench a narrow (0.75m wide and 0.5m deep) trough (27) had been cut into the base of the communications trench. It is assumed that this gully represents a *central drain* as illustrated in *Plate 42, Fig. 2* of the *Manual of Field Works* (1921) (Figure 25).

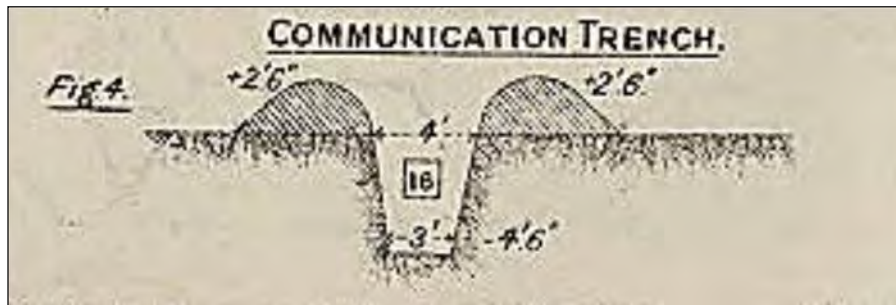


Figure 23: *Communication Trench* profile as laid out in the War Office *Manual of Field Engineering 1911* (reprinted 1914) (Plate 12, Fig.4).



Figure 24: South-west facing section (3) through the communications trench (26). Lower section drainage duct (27) in the foreground (Photo CPAT 3916-0141).

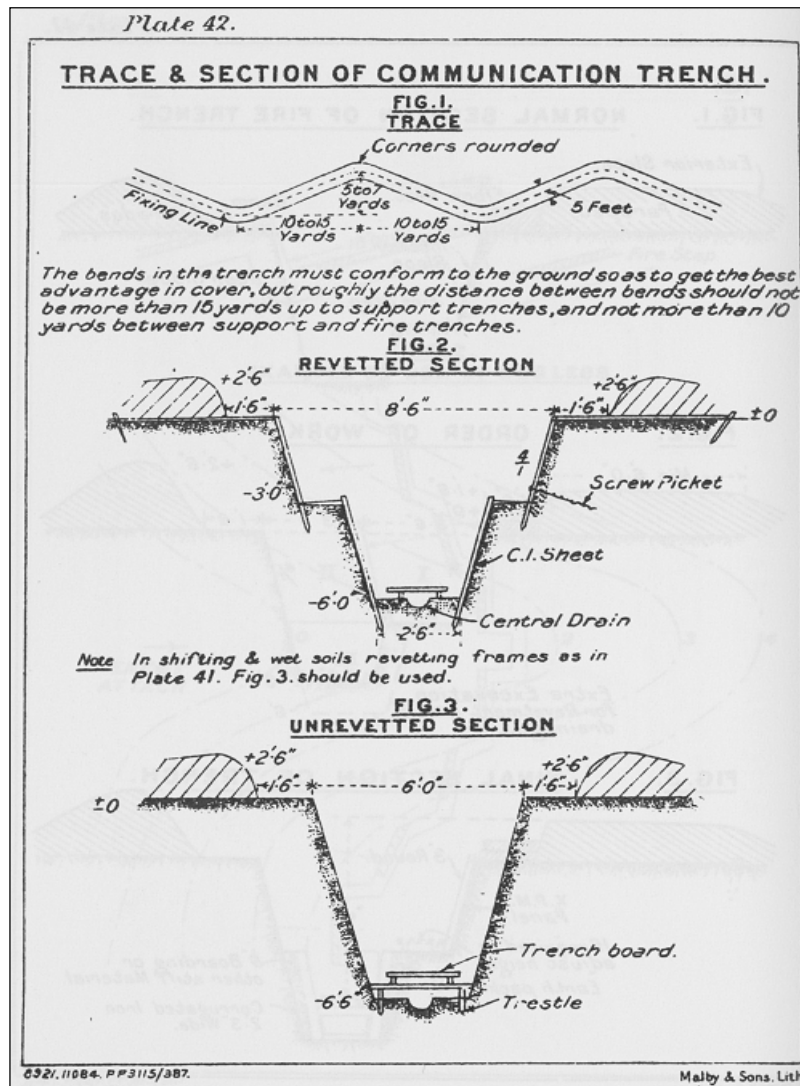


Figure 25: Trace & Section of Communication Trench as laid out in the War Office Manual of Field Works (All Arms) 1921 (Provisional) (Plate 42, Figs.1, 2 & 3).



Figure 26: North-east facing section through the drainage duct (27) of the communications trench (26) (Photo CPAT 3916-0125).

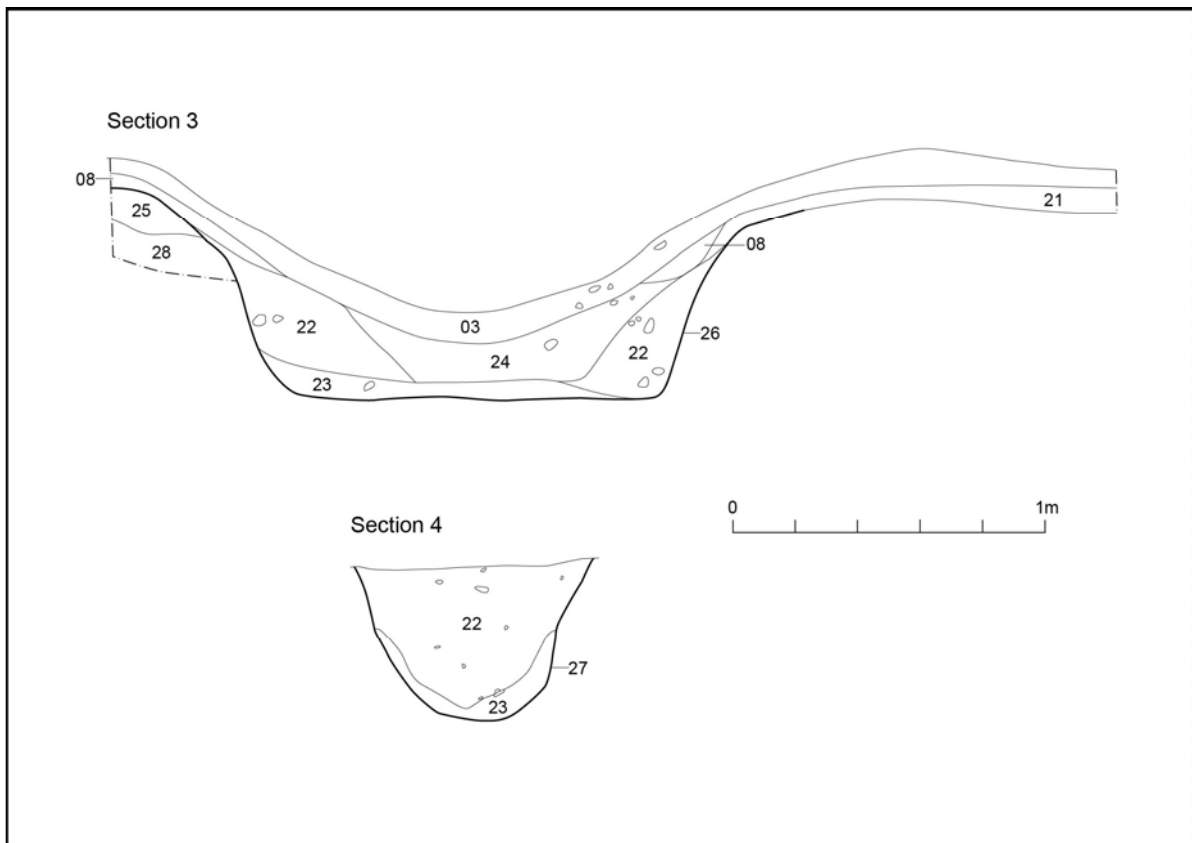


Figure 27: Upper section 3 (south-west facing) and lower drainage section 4 (north-east facing) through the communications trench cuts (26 and 27).

- 6.9 The figures on the following pages (Figures 28 - 33) present a montage of *before and after* images illustrating the extent of the 2014 excavations, viewed from key angles across the surviving trench system.



Figure 28: Traversed trench and communications trench as viewed from the south-east (CPAT 3916-0008).



Figure 29: Similar view to Figure 28, post-excavation (CPAT 3916-0164).



Figure 30: Traversed trench and communications trench as viewed from the north-east (CPAT 3916-0010).



Figure 31: Similar view to Figure 30, post-excavation (CPAT 3916-0180).



Figure 32: Traversed trench and communications trench as viewed from the north-west (CPAT 3916-0011).



Figure 33: Similar view to Figure 32, post-excavation (CPAT 3916-0187).

7 FINDS

7.1 Many, if not all, of the finds recovered from the excavation were within slumped deposits that would have originally formed part of the parapets or parados of the trench system. It was impossible to ascertain whether or not items such as cartridge cases, grenade fragments and simulators were in-situ or residual within their respective context. The position of each find is mapped in Figure 34 and a key is provided in Table 1 below. Finds 7, 33, 34 and 35 were located north of the main trench and therefore do not appear in Figure 34. Individual finds worthy of further note are discussed within this section.

Finds No	Comment
F1	Grenade filling plug
F2	Unidentified Cu-alloy item – probable grenade component
F3	Base plate – Number 23 grenade, made September 1916
F4	Broken screw ring – grenade component
F5	Simulator
F6	Blank 303-cartridge case
F7	Blank 303-cartridge case – possible Mk5 made 1915
F8	Blank 303-cartridge case – Mk10 made 1960, fired by a Bren gun
F9	Simulator
F10	Gas-check disk from Number 36 grenade
F11	Iron object, possibly fragment of barbed wire or nail
F12	Iron object, possibly fragment of barbed wire or nail
F13	Iron/steel button
F14	Unidentified Cu-alloy item
F15	Grenade filling plug
F16	Broken screw ring – grenade component
F17	Double threaded copper-alloy ring – probable grenade component
F18	Iron object, possibly fragment of barbed wire or nail
F19	Iron object, possibly fragment of barbed wire or nail
F20	Iron object, possibly fragment of barbed wire or nail
F21	Iron object, possibly fragments of shoe iron
F22	Iron object, possibly fragment of barbed wire or nail
F23	Iron object, possibly fragment of barbed wire or nail
F24	Iron object, possibly fragment of barbed wire or nail
F25	Shotgun cartridge
F26	Blank 303-cartridge case
F27	Blank 303-cartridge case
F28	Shotgun cartridge
F29	Iron object, possibly fragment of barbed wire or nail
F30	Iron object, possibly fragment of barbed wire or nail
F31	Iron object, possibly fragment of barbed wire or nail
F32	Number 23 grenade base plate (made September 1916) and rifle launch rod
F33	Gas-check disk from Number 36 grenade
F34	Simulator
F35	Shotgun cartridge
F36	Numerous sherds of white-glazed earthenware, Grindley Hotel Ware
F37	Golf ball

Table 1. Finds recovered from the 2014 excavations.

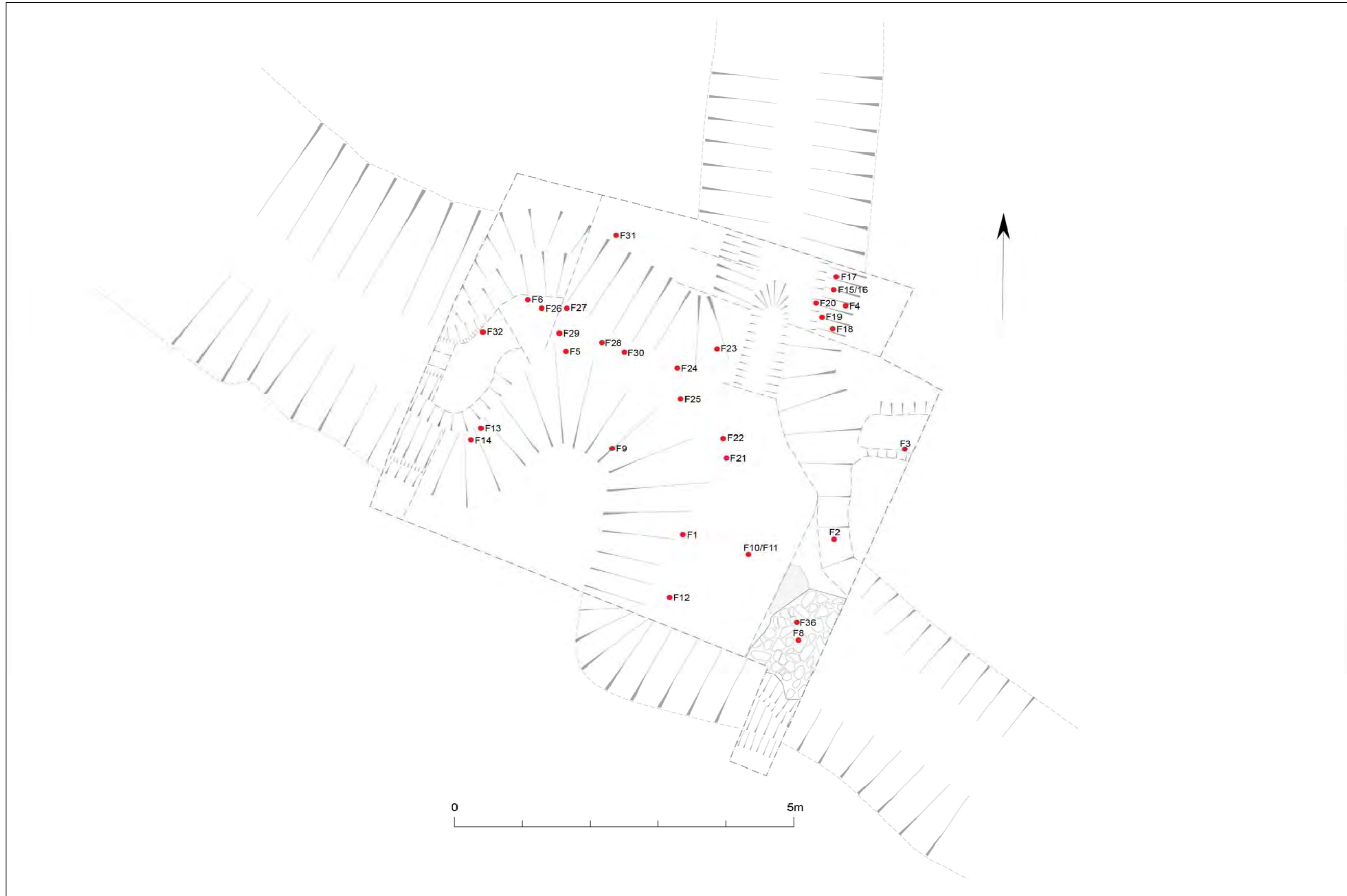


Figure 34: Overall plan of the 2014 excavations, illustrating locations of finds.

7.2 Cartridge cases

Five empty (fired) 0.303" cartridges were found by metal detecting and during excavation. One is intact and has a crimped end indicating that it is a blank cartridge but the others are fragmentary, the brass having deteriorated and shattered. Four have red paint on their bases, perhaps indicating that they are drill rounds or for use with rifle grenades. Photographs have been sent to experts in an attempt to clarify this issue. The bases of the cartridges were checked as they are known to bear their date of manufacture but unfortunately, corrosion has made them illegible.



Figure 35: Incomplete blank 0.303" cartridge marked with red paint at the base (CPAT 3916-0319).

7.3 *Simulators*

Three of these curious items resembling a bicycle tyre valve were unearthed at Bodelwyddan, this quantity suggesting that they were employed as part of the training undertaken on the site. The splayed ends of these artefacts indicate that they were probably parts of explosive devices used to simulate battlefield conditions. It has been suggested that they were set off remotely, possibly from the observation post (132340) above the trenches (Andy Hawkins, pers. comm., October 2014), alternatively that they were small hand-held devices employing a percussion cap that could be thrown to the ground to make a bang (Lt. Gen. Jonathon Riley pers. comm., January 2015). Help in confirming the identification of these artefacts has been sought from staff at the National Army Museum, Chelsea.



Figure 36: *Simulator* (CPAT 3916-0310).

7.4 Grenade components

Two Mills Bomb filling plugs and two base plates, one attached to a steel firing rod, were discovered during the excavation, along with other fragments of worked metal which could also have come from grenades. Interestingly, one of the plugs is somewhat smaller than the other, suggesting the use of different types of grenade during practice. The base plates are versions designed to enable a Mills Bomb to be fired from a rifle by means of the attachment of a steel rod which could be slid down the barrel of the rifle. The first example excavated is clearly stamped with the maker's name *ELMBANK GLASGOW* and details indicating that it is a Mark 1 base plate for a Number 23 type grenade, a further number suggests it was made in September 1916. The second example has a steel firing rod attached, but to the inside of the base plate, suggesting that it hadn't been prepared for attachment to a grenade. It is stamped *No. 23.1* indicating that it is the same type as the first example, but has a different maker, *M&B Ltd* and again appears to have a date of manufacture of September 1916. A very similar example can be seen online in a photograph of several grenade base plates at *inert-org.net* (see also Appendix 2).



Figure 37: Mills Bomb base plate, diameter 34.6mm
Find No.3 (CPAT 3916-0296).



Figure 38: Mills Bomb base plate and firing rod
Find No.32 (CPAT 3916-0113).



Figure 39: Mills bombs, No. 23 Mk. I grenades
(The Mills Grenade Collectors Site/British and Commonwealth Grenade Guide,
online).

7.5 Barbed wire

Several small fragments of barbed wire were recovered from various points within the excavation. Although corroded, several barbs are visible and there appear to be both single and double strand types.

7.6 Pottery

Several large sherds of white-glazed earthenware were recovered from above and amongst the dump of limestone (12) at the south-eastern limit of the excavation, including base and rim sherds and one which bore traces of having had a handle. A printed maker's mark provided sufficient evidence to establish that this had once been a vessel perhaps a jug, of *Grindley Hotel Ware*, manufactured in Staffordshire, probably after the Second World War. Two small sherds of post-medieval Mottled Ware were also found, presumably as a result of manuring of the grassland in the park at some point in the past, these have not been retained.



Figure 40: Grindley Hotel Ware maker's stamp
(Ernestartist and Photo Tanner, 2001-2014 online).

7.7 Other

Two very similar items, one found within the trench, are also worthy of mention and may have a military origin. These are circular iron discs, approximately 75mm in diameter, slightly concave, with a small, central raised point and what appear to be three attachments to small, square section bars. Current theories as to the purpose of these items are: components of artillery shells, tensioners for wire and components of cooking stoves.

8 **OUTREACH** – by Viviana Culshaw, Community Archaeologist

8.1 Education is one of the core values of the Trust, reflecting CPAT’s long-standing and continuing commitment to education and the engagement of the public in archaeology and heritage. A related key value is to enjoy the work that we do, and share that enjoyment with others as widely as possible in a creative, flexible and innovative way. During the time spent at Bodelwyddan Castle Park, around 80 people took part in a series of local activities and events including an archaeology open day, historical re-enactment, site visits, talks and displays. Two volunteers with expertise in military history and archaeology shared their experience with CPAT staff and helped with the excavation. A breakdown of the numbers of people involved can be found in Table 2 below.

CPAT staff	5
Volunteers	5
Visitors on site	80
Visitors at WWI Christmas Truce exhibition	120

Table 2: Participants in outreach events

8.2 Fieldwork and outreach events were undertaken both to understand the relationships between the practice trenches at Bodelwyddan and the wider European resource of First World War trenches generally, and to enhance peoples’ understanding of the domestic impact of the First World War, while developing new skills.

8.3 Information panels about the trenches and CPAT’s project were prepared in advance and displayed on site while staff were at work. Between 15 and 20 members of the public visited the site and CPAT staff explained methodologies and the purpose of the excavation. Volunteer ground and site security staff at the castle also visited the site on several occasions.

8.4 On the middle Saturday of the excavation (4th October) CPAT staff, with support from local military history enthusiast Jerry Bone, staged an open day to present the work undertaken up to that point to the public. Visitors were given guided tours of the excavation and shown the artefacts that had been discovered. There were themed games for children such as a *Help the soldier through the trenches* maze and members of CPAT staff donned appropriate uniforms to engage members of the public in discussion and to demonstrate First World War military equipment. The open day received positive feedback with over 60 people attending the event. Visitors had the opportunity to approach professionals from CPAT and Denbighshire County Council, as well as members of local societies, such as the St. Asaph Archaeology Society.



Figure 41: CPAT staff in First World War uniforms during the Bodelwyddan excavation open day (CPAT 3919-0221).

- 8.5 In addition to the above, members of the public were encouraged to share their knowledge of local military sites with CPAT staff. Information about the use of 'Moelfre Mountain' (presumably Moelfre Isaf south-east of Abergele) for training, the reuse of two military huts at Colomendy Industrial Estate, Denbigh and the presence of a Second World War Prisoner of War Camp at Pengwern Farm, Bodelwyddan was forthcoming and will be used to enhance the Historic Environment Record.

- 8.6 The archaeological and engagement activities that we were able to offer with Cadw's resourcing, provided a unique experience which gave both adults and children the thrill of discovery, while engaging in work with tangible results.
- 8.7 Furthermore, on January 10th CPAT archaeologists attended the launch of an impressive temporary exhibition: *1914 WW1 Christmas Truce* at Bodelwyddan Castle. Over 120 people attended the event. The exhibition, an international partnership between museums in Wales, France and Germany was declared open by Deputy Minister for Culture, Media and Sport Ken Skates. CPAT presented information on the fieldwork project and displayed some of the artefacts found during the excavation.



Figure 42: CPAT staff speak to visitors at the launch of *1914 WW1 Christmas Truce* at Bodelwyddan Castle on 10th January 2015 (CPAT 3956-0036).

- 8.8 The work carried out at Bodelwyddan Castle Park enabled CPAT to engage with and created a new dialogue with a wider public, represented by a diverse socio-economic and geographic profile incorporating family historians, military historians and non-professional researchers, as well as local residents and occasional visitors.
- 8.9 The diverse activities and experiences provided at Bodelwyddan Castle Park enhanced pride amongst local people in their heritage and increased appreciation of and engagement with this potentially difficult heritage. In 2000 John Hope Franklin, speaking about a "sense of mingled pride and sadness" perceptible at many historic places said that "explaining history from a variety of angles makes it not only more interesting, but also more true. When it is more true, more people come to feel that they have a part in it" (Little and Shackel, 2007).

- 8.10 Visitors' positive comments will encourage CPAT staff to set up future community and educational initiatives to enhance knowledge of the archaeological process. They also support future efforts in presenting and managing the remains at Bodelwyddan and Kinmel.
- 8.11 In order to record the number and demographic of visitors, a sign-in sheet asking for names and dates of birth was provided. The collection of dates of birth caused some comment and in hindsight boxes to tick according to age range would have been more appropriate. The feedback form used was one provided by Cadw and feedback about the event was positive. However, it was felt that there should have been more advertising in the run-up to the event and better directions to the excavation from the carpark. Following this event the CPAT event feedback form has been improved with tick boxes to allow people to indicate an age range.
- 8.12 For reasons that have not been made public, the proposal by the army to 're-enact' the construction of practice trenches in an area of the park adjacent to the known First World War trenches did not come to fruition during the course of this project.

9 DISCUSSION

- 9.1 The geophysics found no evidence that the visible trench system continued further to the west and north-west and no evidence for unknown systems in the area immediately overlooked by the observation post. Large quantities of ferrous material were apparent and these seemed to form clusters, but beyond the suggestion that these were of military origin and associated with the practice trenches it was difficult to ascertain whether the spreads of material were meaningful; it may be that they identify the locations of earthworks, subsequently levelled, where material accumulated by a range of processes.
- 9.2 Evidence of ridge-and-furrow cultivation with a north-east/south-west alignment was also visible in the results. Its character suggests strongly that this was farming activity dating from the post-medieval period and surviving earthworks of the same appearance can be seen elsewhere in the locality.
- 9.3 Looking at the excavation of the traversed (reserve) trench there appears to have been considerable erosion and slumping of the parapet, parados and trench sides, making the slopes much shallower than they were when dug. This has also resulted in the trench becoming much wider than it was, its width now being 4.6m (15ft 1") at this location. The *Manual of Field Engineering* 1911 specifies a width for trenches of 4ft at the surface and that of 1921 a width of 6ft 6". If we project the trench sides immediately above the cut for the drainage duct (36) upwards to the old ground surface, and assume a consistent angle of slope for the trench sides, we arrive at an estimated width at the old ground level of approximately 5ft 6" (1.7m). This falls comfortably within the specifications given in the two manuals (1911 = 4ft, 1921 = 6ft 6"). Assuming a consistent angle of slope for the trench sides is potentially problematic in that a firing step (usually placed about 2ft from the base of the trench) would result in an increase in the width of the trench by between one and two feet, although if we take this into account, the width still roughly meets requirements, being between 6ft 6" and 7ft. Turning to the depth, by projecting the trench sides upwards as described above the depth of the trench at this location can be estimated at approximately 5ft (1.5m). Comparing this with measurements in the manuals this is somewhat shallower than

- specified, an overall depth of 6ft 6” (a trench 5ft deep plus parapet 1ft 6” high) being required. The depth of the Bodelwyddan trench would have been reduced further if duck boards had been laid over the drainage duct in the base of the trench. However, we don’t know whether duck boards were used, or whether sand bags were employed to enhance the height of the parapets.
- 9.4 It is possible to make out features within the traversed (reserve) trench that may be the characteristic elements depicted in the manuals (an elbow rest, firing step and drain), but it is difficult to identify them all with confidence due to a lack of definition. It was also difficult during excavation to determine cuts which were filled with the same material as that into which they were dug. The definition of the archaeology in the traversed trench improved with depth and it is likely that there was an initial collapse of the steep trench sides, which preserved the shape of the drainage duct and trench base. Further infilling may then have taken place as erosion continued at a slower rate and over a longer period. The evidence for trench revetting is very slight, comprising only a few nail fragments. It is likely that steep-sided trenches would have required revetting for their support during use, but any that was once there was clearly removed at abandonment.
- 9.5 At the top of the excavated communications trench its width of 1.8m matches the 4ft required in the *Manual of Field Engineering* 1911, but at the base it is about 1.1m wide, closer to 4ft than the regulation 3ft. It may be that the communications trench widens as it meets the traversed trench in order to act as a passing bay, or that slumping of the sides has had an effect. A depth of 0.6m (2ft) is well below the 4ft 6” (1.4m) required in the *Manual of Field Engineering* 1911 (which had been increased to 6ft 6” (2m) by the time of the 1921 edition). Parapets flanking the trench (possibly with the addition of sand bags) are likely to have provided a little more depth, though they don’t appear to have reached the 2ft 6” in height required by the manuals. The parapets have subsequently eroded back into the trench but from the excavated evidence, the communications trench appears to have been dug to a shallower depth than that proscribed in the official manuals, though the possibility remains that this example remains incomplete.
- 9.6 From observation of the visible earthworks in the parkland at Bodelwyddan Castle, and from the study of Section 2, it is clear that there was no intentional backfilling of the trenches in this area of the park. The material within them is all redeposited material eroded from the parapet, parapets and trench sides. The exception is an area at the south-eastern limit of the excavated area, extending beyond it to the south-east, where limestone rubble has been dumped into the traversed trench, probably after the Second World War. The origin of the rubble has not been determined.
- 9.7 One aim of the excavation was to recover artefacts with which to begin to establish a site chronology; to identify the dates of construction and use of the trenches. The number of finds recovered from slumped and redeposited material demonstrated the value of inviting metal detector users to join us on site. The hand excavation of the areas returning metallic signals proved extremely productive to the rate of finds retrieval. The number of finds discovered during the excavation demonstrates the high potential for the survival of material culture across the site as a whole.
- 9.8 The Royal Engineers may have been responsible for the construction of at least some of the trenches in Bodelwyddan Castle Park, probably in late 1914, as Griffiths (2014, 19) notes their “*arrival at the Kinmel and Bodelwyddan sites to assist in the construction*

- of the camp*". Unfortunately, we were not lucky enough to recover items (such as buttons or badges) with which to confirm this. Such is the extent of the trench complex, it is likely that troops arriving at Kinmel Park Camp from early 1915 (Griffiths 2014, 28) were also involved in trench digging; the *Manual of Fieldworks* makes it clear that teaching a recruit to dig was an important part of his training (War Office 1921, 26). If this was the case one might expect some of the practice trenches to have been dug by men of the Welsh regiments based at Kinmel Park Camp (Royal Welsh Fusiliers, Welsh Regiment, South Wales Borderers) (Griffiths 2014, 32-41).
- 9.9 A surprisingly high quantity of finds were discovered during the excavation and two grenade base plates have provided date ranges of 1917-18 for activity in the area investigated. It had been hoped to recognise dates stamped on the bases of the 0.303" cartridge cases recovered, but their condition has prevented this. While it is likely they are also of First World War vintage it remains a possibility that they are later and relate to secondary use of the site by the Home Guard in the 1940s. That said, the trenches are likely to have gone out of use at the end of hostilities and the end of the need to train troops. They appear to have grassed over by the time of the 1927 *Aerofilms* image.
- 9.10 Several grenade components confirm that training and practice with this type of weapon took place in the Bodelwyddan Castle training area. The grenade range where live weapons were used would have been in a designated area elsewhere on the site (Andy Hawkins pers. comm. 2014; Roger J C Thomas pers. comm. 2014) so the presence of components in the excavated area is unlikely to be due to examples exploding nearby. However, the finds might indicate their storage, or the adaptation of hand grenades for use as rifle grenades in this area.
- 9.11 The presence of numerous craters over the training area coupled with the artefacts which we have named *simulators*, suggests that attempts were made to replicate a realistic battlefield landscape, or as realistic as was safely possible. The *simulators* are likely to have been used to create explosions and fragments of barbed wire suggest trenches were defended in a similar fashion to the way they were on the Western Front. Due to the open and elevated nature of the land it is unlikely that live small arms ammunition was used (Andy Hawkins pers. comm. 2014), an assertion which is supported by the excavation of only blank cartridge cases. The placement of the trench system investigated in 2014 on a reverse slope suggests planners may have been trying to replicate the experience of attacking uphill, a situation often encountered by British troops on the Western Front where the Germans had consolidated their positions on high ground. We may though have gained a slightly different perspective by investigating the reserve (3rd line) trench from that which might emerge from excavation in the associated front line trench.
- 9.12 To date, the only other excavation of First World War trenches in Wales has been by the Gwynedd Archaeological Trust (GAT) at Cichle Farm, Llangoed, near Beaumaris on Anglesey in September 2014. Comparison of the results of the two excavations is interesting: the steep sides and flat base of Trench 1 at Cichle Farm, partially backfilled at the end of hostilities (probably by German Prisoners of War), contrasts with the shallower sloping and less well-defined features at Bodelwyddan left open to the elements. The evidence for trench revetment at Cichle Farm was slightly more convincing than at Bodelwyddan, with the cast of a piece of wood found, possibly in situ, against the side of one of the trenches; a second small piece of wood with a nail in it was also recovered during excavation and in a second trench was tentative evidence for a revetment of rough hurdle. Very few artefacts were recovered from the

- Cichle Farm excavations in comparison to the plentiful supply at Bodelwyddan. A reason for this has been advanced by Jane Kenney of GAT: the Cichle Farm trenches were associated with a nearby Royal Engineers camp (Kingsbridge) where the emphasis was only on practicing the digging of trenches rather than their use. If the trenches were not used once excavated there was little chance of material culture becoming incorporated into their fills (Jane Kenny pers. comm. 2015). At Bodelwyddan, while training in trench digging is likely to have been one purpose of their creation, there is certainly the additional element of their use by troops in order to become accustomed to trench life and trench warfare.
- 9.13 Elsewhere, the University of Bristol have investigated practice trenches on Walney Island in Cumbria. From the little detail available online, definition of the features, in sandy soil, appears to have been quite good and like Bodelwyddan, an array of military artefacts, including cartridge cases, were recovered. Fortunately for them, soil conditions meant that sufficient detail survived to allow the team to identify that the ammunition had been manufactured in the United States in 1915 and 1916 (University of Bristol 2014, online).
- 9.14 Work on Salisbury Plain by Martin Brown and Richard Osgood involved the excavation of a number of archaeological trenches across military fieldworks of the First World War. Their first round of works (at the Bustard) showed the trenches dug by Australian troops did not conform to the patterns shown in the manuals (the reason for this being an encounter with solid geology) but photographs show that they were still utilised for training (Brown & Osgood 2009, 37). Interestingly, another photograph, of a section of communications trench excavated by the team shows a depth of a little more than a metre and a width of over 1.5m, dimensions which are quite similar to those of the communications trench excavated at Bodelwyddan (Brown & Osgood 2009, 44). Like CPAT's work, that undertaken on Salisbury Plain recovered spent 0.303" ammunition, but as well as blank rounds were found spent live cartridges. The level of preservation of artefacts in Wiltshire was higher than that in Denbighshire, enabling the mark number and date of production of their cartridges to be established. Another similarity between the assemblages from the two sites is the absence of personal items; the reason given for this state of affairs at the Bustard is the likelihood that troops were required to clean up after their use (Brown & Osgood 2009, 43), and perhaps this was also the case at Bodelwyddan.

10 FUTURE WORK

- 10.1 Of great value would be the plotting of the full extent of the trenches as depicted on the 1946 RAF aerial photographs and a topographical survey of all the surviving First World War era earthworks in Bodelwyddan Castle Park. By plotting the trenches and other earthworks visible on the 1940s air photos it will be possible to establish the full extent of the wartime excavations at Bodelwyddan and by surveying both the scheduled and unscheduled elements visible on the surface today using an EDM/total station, it will be possible to compare the 2 plots and identify the amount of backfilling that has occurred. It will be possible to establish for the first time the full extent of the surviving earthworks. By studying the air photographs and spending time on site it may be possible to begin to recognise separate elements of the training landscape and to enhance the site chronology. As a result of this work it may be appropriate to propose revisions to its management and protection.

- 10.2 The Bodelwyddan Castle Trust have erected several interpretation boards over the area of the visible military earthworks. It is possible that in due course the results of this work could be used to enhance the on-site interpretation and inspire new outreach and education activities, led by both the Bodelwyddan Castle Trust and the Clwyd-Powys Archaeological Trust. This might include display of some of the excavation artefacts, as it is hoped that once post-excavation work is completed the assemblage will be deposited with the Bodelwyddan Castle Trust.

11 ACKNOWLEDGEMENTS

- 11.1 The writers would particularly like to thank Dr Kevin Mason, Director of the Bodelwyddan Castle Trust for permission to carry out the work and his support throughout. Also Cadw for funding the project and specifically Jon Berry for his advice and guidance.
- 11.2 The writers would also like to thank the following people who gave freely of their time; Jerry Bone for his assistance with documentary resources, the open day and backfilling, Maj (Retd) Andy Hawkins (chairman of The Durand Group and also active member of the St. Asaph Archaeological Society) for his assistance with a specialist risk assessment, excavation and the identification of finds, Reg and Adrian Simmons for pinpointing metallic finds with their metal detectors, Adelaide Edwards for assistance with the geophysical survey and Mike McCaffrey who loaned copies of manuals on munitions, extracts of which are reproduced in this report. Jane Kenney generously agreed to discuss GAT's excavations at Cichle Farm.
- 11.3 We are grateful to the following colleagues at CPAT: Paul Belford, Menna Bell and Viviana Culshaw. Thanks are due to Bob Silvester and Paul Belford for their contributions to the report.

12 SOURCES**12.1 Published sources**

- Berry, J, 2014. The trenches reconsidered, *Heritage in Wales* 59, Winter 2014, pp22-3.
- Brown, G and Field, D, 2003. Principles of defence. Military trenches, *Conservation Bulletin* 44, June, pp26-7.
- Brown, M & Osgood, R, 2009. *Digging Up Plugstreet. The Archaeology of a Great War Battlefield*, Sparkford, Yeovil: J H Haynes & Co.
- Cocroft, W, 2013. Trenches of the Home Front, *Conservation Bulletin* 71, Winter, pp4-5.
- Driver, T and Davis, O, 2012. *Cymru Hanesyddol o'r Awyr / Historic Wales from the Air*, Aberystwyth: RCAHMW, pp120-121.
- Griffiths, R. H., 2014. *The Story of Kinmel Park Military Training Camp 1914 to 1918*, Llanrwst: Gwasg Carreg Gwalch.
- Jordan, H, 2003. Bastions, trenches and palisades: military links with parks and gardens, *Conservation Bulletin* 44, June, pp56-58.
- Samuels, M, 1995. *Command or Control? Command, Training and Tactics in the British and German Armies, 1888-1918*, London: Frank Cass.
- Vickridge, D. D. and Hannon, P., 1989. British field works 1914-18 (1): trenches and wire, *Military Illustrated* 22, pp 18-25.
- War Office, 1911. *Manual of Field Engineering 1911* (Reprinted 1914), London: His Majesty's Stationery Office.
- War Office, 1921. *Manual of Field Works (All Arms)*, London: His Majesty's Stationery Office.

12.2 Unpublished sources

- Cadw, 2008. Cadw Field Monument Warden's Report (AM107) - F1186(DEN).
- Evans, R, 2009. *Land at Tan y Coed: Beaumaris, Anglesey. Archaeological Assessment*. Unpublished report. GAT Report No. 838.
- Ullathorne, H, 2006. *Training Trenches at Redmires, Sheffield. The Great War Remembered*. Archaeological Surveys conducted by students from The Institute of Lifelong Learning, University of Sheffield.
- Williams, V, 1915-1916. *The Chronicle of Private Vernon Williams*.

12.3 Aerial photographs

- *Aerofilms* black and white oblique, accessed via *Britain from Above*.

WPW018780 (July 1927) – Bodelwyddan practice trenches and part of Kinmel Park Camp.

A217942-3 (18/9/71) – the trenches at Bodelwyddan before area N of diagonal fence improved and trenches all but destroyed. Also show fairways and 6 golf greens as square fenced areas.

-*Google Earth*

-*Google Maps*

-*Next Perspectives* 2006 colour vertical

- RAF black and white vertical

3G/TUD/UK/33 Frames 5411-21 (16/01/46)

CPE/UK/1996 Frames 4249-53 (13/04/47)

CPE/UK/2525 Frames 4027-9 (24/03/48)

541/206 Frames 4042-3 (20/11/48)

82/889 Frames 38-9 (06/04/1954)

- CPAT colour oblique

88-c-0069 and 70

88-mb-0377

89-c-0119 and 0120

89-mb-0509 to 0512

90-mb-1085 to 1087

12.4 Terrestrial photographs

- CPAT colour digital

Film 3916

Film 3956

- CPAT colour slides

cs93-022-0033 to 0037

cs93-036-0001 to 0037

cs93-056-0001 to 0019

12.5 Online sources

Berry, J, 2014, Welsh History Month. How Great War soldiers were made, *Western Mail* 16/10/2014 <http://www.walesonline.co.uk/lifestyle/nostalgia/welsh-history-month-how-great-7944929> accessed 21/07/2015.

Birks, Steve, nd, A-Z of Stoke-on-Trent Potters, W H Grindley & Co (Ltd) <http://www.thepotteries.org/allpotters/472.htm> accessed 16/01/2015 accessed 09/01/2015.

Blackpool Council, 2014, Hidden WWI trenches to be uncovered <https://www.blackpool.gov.uk/News/2014/June/Hidden-WWI-trenches-to-be-uncovered.aspx> accessed 01/03/2015.

Durand Group, nd, The Durand Group <http://www.durandgroup.org.uk/> accessed 27/03/2015.

Edwards, Tony, 2013, British Military Small Arms Ammo <https://sites.google.com/site/britmilammo/home> accessed 06/08/2015.

Ernestartist and Tanner Photo 2001-2014, Vancouver BC Canada http://ernestartist.org/June02_2014_01.htm accessed 09/01/2015.

Franklin, John Hope "Cultural Resource Stewardship" (Keynote address, Discovery 2000: The National Park Service General Conference, St. Louis, Missouri, 11 September 2000) in Little, B.J. and Shackel P.A., (2007). *Archaeology as a Tool of Civic Engagement*. Chapter I, pg. 4. Rowman Altamira <http://www.nps.gov/discovery2000/culture/keynote.htm> accessed 22/03/2010.

"EJ", 2013, Inert-Ord.net <http://www.inert-ord.net> accessed 07/08/2015.

Sampson, David, nd, The Mills Grenade Collectors Site <http://www.millsgrenades.co.uk/> accessed 22/02/2015.

Staffordshire County Council, 2009, The First World War Camps of Cannock Chase. The Archaeology of the Camps <http://www.staffspasttrack.org.uk/exhibit/chasecamps/archaeology.htm> accessed 01/03/2015.

UK Crown, 2015, RAF Halton. Restored WWI Trenches <http://www.raf.mod.uk/rafhalton/aboutus/restoredwwitrenches.cfm> accessed 22/03/2015.

University of Bristol, 2014, Excavating WWI practice trenches in Cumbria <http://www.bristol.ac.uk/news/2014/november/world-war-one-practice-trenches.html> accessed 01/03/2015.

Various, nd, British and Commonwealth Grenade Guide <http://members.shaw.ca/dwlynn/british/britid.htm> accessed 17/02/2015.

APPENDIX 1

SITE ARCHIVE

328 digital photographs, CPAT Film No 3916

Photographic catalogue

36 context description forms

2 A3 site drawings, 2 A4 site drawings

Context register

Finds register

Drawings register

Correspondence

Digital data

Location surveys for geophysics areas – bodel14.pts and bodel14c.pts (penmap),
bodel14.dxf and bodel14c.dxf

Location survey for excavation area – bodelexc.pts (penmap) and bodelexc.dxf

Geophysics

Area A - bodel14a: 7 grids, composites and graphics

Area B - bodel14b: 2 grids, composites and graphics

Area C - bodel14c: 2 grids, composites and graphics

Area D - bodel14d: 4 grids, composites and graphics

Contexts Register

Context	Type	Comment
1	Deposit/Fill	Area A – general topsoil
2	Deposit/Fill	Area B – general topsoil
3	Deposit/Fill	Area C – general topsoil
4	Deposit/Fill	Area D – general topsoil
5	Fill	Area A, stoney silt, slumped parapet material
6	Fill	Area A, same as 05
7	Fill	Area B, Dark brown loose gravely silt, same as 05
8	Fill	Area C, same as 05
9	Fill	Area D, same as 05
10	Fill	Area A, dark brown, grey silty clay below 01, upper fill of Traverse trench.
11	Fill	Area A, similar to 10, below 10.
12	Fill	Area A, fragmented limestone blocks, below 10 & 11, fill of Traverse trench.
13	Fill	Same as 12
14	Cut	Construction cut for the Traverse trench (Area A).
15	Fill/structure?	Area A, remains of charred wood in situ below limestone blocks (12).
16	Deposit	Area A, Trench construction material, pinkish compact clay.
17	Deposit	Area A, light yellowish-grey compact silt clay. Construction material above deposit (16)
18	Deposit	Area B, fine light brown silt clay, in situ construction material for the parapet. Above deposit (34).

19	Cut	Area C, oval depression, possible recess (noted on aerial photograph) where communication trench joins the main traverse trench.
20	Fill	Area C, soft loose pinkish grey silt clay. Fill of feature 19.
21	Deposit	Area C, parapet slump for the communication trench. Below (03) & (08), above (22).
22	Fill	Area C, fine brown stoney silt clay. Fill of communications trench. Below (08), above fill (23).
23	Fill	Area C, light brown pinkish clay, primary fill of lower section (27) of communication trench (26). Below fill (22)
24	Fill	Area C, dark brown silty clay. Fill of communications trench (26), below slump fill (08).
25	Deposit	Area C, mid brown silty clay. Construction material for communications trench (26). Below parapet slump (08).
26	Cut	Area C, construction cut for communications trench, orientated north-east to south-westerly.
27	Cut	Area C, construction cut for lower section of communications trench – possible recess for drainage duct.
28	Deposit	Area C, compacted light brown pinkish clay. Lower construction material for communications trench (26). Below deposit (25).
29	Fill	Area B, uppermost fill of traverse trench (35), below topsoil (02). A dark grey, humic silty clay.
30	Fill	Area B, brown gravelly silt below (29).
31	Fill	Area B/D, dark grey brown silt clay below (30).
32	Fill	Area B, pink silt clay – below fill (31), fill of drainage duct (36) only part excavated.
33	Deposit	Area B/D, construction material for traverse trench (35), a dark grey gravelly silt clay. Sealed by slumped parapet material (09).
34	Deposit	Area B, similar to (33), opposite side of trench (35). Sealed by construction material (18)
35	Cut	Area B/D – construction cut for the traverse trench similar to cut (14) but better defined with firing steps and drainage ducts.
36	Cut	Area B/D – construction cut for drainage duct – possibly linked to lower section of communication trench (27).

Finds Register

Finds No	Context	Comment
F1	10	Grenade filling plug
F2	10	Unidentified Cu-alloy item – probable grenade component
F3	20	Base plate – Number 23 grenade, made Sept 1916
F4	8	Broken screw ring – grenade component
F5	9	Simulator
F6	4	Blank 303-cartridge case

F7	Area N of excavation	Blank 303-cartridge case – possible Mk5 made 1915
F8	1	Blank 303-cartridge case – Mk10 made 1960, fired by a Bren gun
F9	1	Simulator
F10	11	Gas-check disk from a Number 36 grenade
F11	10	Iron object, possibly fragment of barbed wire or nail
F12	10	Iron object, possibly fragment of barbed wire or nail
F13	7	Iron/steel button
F14	7	Unidentified Cu-alloy item
F15	21	Grenade filling plug
F16	21	Broken screw ring – grenade component
F17	21	Double threaded copper-alloy ring – probable grenade component
F18	21	Iron object, possibly fragment of barbed wire or nail
F19	21	Iron object, possibly fragment of barbed wire or nail
F20	24	Iron object, possibly fragment of barbed wire or nail
F21	3	Iron object, possibly fragments of shoe iron
F22	3	Iron object, possibly fragment of barbed wire or nail
F23	8	Iron object, possibly fragment of barbed wire or nail
F24	8	Iron object, possibly fragment of barbed wire or nail
F25	3	Shotgun cartridge
F26	9	Blank 303-cartridge case
F27	9	Blank 303-cartridge case
F28	4	Shotgun cartridge
F29	9	Iron object, possibly fragment of barbed wire or nail
F30	33	Iron object, possibly fragment of barbed wire or nail
F31	2	Iron object, possibly fragment of barbed wire or nail
F32	31	Number 23 grenade base plate (made Sept. 1916) and rifle launch rod
F33	Area N of excavation	Gas-check disk from Number 36 grenade
F34	Area N of excavation	Simulator
F35	Area N of excavation	Shotgun cartridge
F36	12	Numerous sherds of white-glazed earthenware, Grindley Hotel Ware
F37	3	Golf ball

Drawings Register

No	Scale	Size A1/A3/A4	Contexts	Comment
1	1:20	A4	03, 08, 21-28	Area C – SW facing section through Communications trench, upper section.
2	1:10	A4	22, 23, 27	Area C – NE facing section through Communications trench, lower section.
3	1:20	A3	01, 05, 10-17, 19,20	Area A – west facing section through main Traverse trench.
4	1:20	A3	02, 07, 09, 18, 29-36	Area B – SE facing section through main Traverse trench.

APPENDIX 2**BRITISH GRENADES**

NOMENCLATURE: Grenade, Hand or .303 inch, Rifle No.23
(Mill's Pattern)

SERVICE: Land

DESIGN/PART NO:

TYPE: Hand or Rodded, Time

FILLED WEIGHT: 1 lb 9.25 ozs

EXPLOSIVE CONTENT AND WT OF EXPLOSIVE: 2 ozs 2 drs Ammonal
or Alumatol (Mk.1).
2 ozs 13 drs Abelite,
Cilferite, Amatol
(Mk.2 and 3)

PRINCIPAL DESIGN FEATURES: A modified No.5 grenade, for short range firing (80 yds). The base plug is threaded to take a 5.5 inch rod and strengthened to stand the shock of firing. The detonator is as for the No.5 grenade. It had a 5 sec delay up to June 1917, and a 6 second delay thereafter.

MARKING: Red filling band

MARK	DATE OF INTRODUCTION	CHANGE OF PATTERN	DATE OBSOLETE
1	June 1917	A parallel design to the No.5 Mk.1 grenade. It had a solid steel or brass base plug.	Mar 1918
2	July 1917	As for the No.5 Mk.2 grenade. It had a cast iron base plug with ribs. A corrugated striker lever. The striker was deeply slotted at the head to facilitate gas escape.	17 Feb 1921
3	Jan 1918	It had a slotted striker and a new pattern lever (plain). The base plug had hexagon shaped lugs and a different shaped filling plug.	17 Feb 1921