



**æon archaeology**

---

## **B33-2.4 Glascoed WTW to Bodelwyddan Castle, 450mm GRP Main Renewal, Abergele.**

**November 2020 V 1.0**



Archaeological Evaluation

Project Code: A0126.3

Report no. 0273

Event PRN: 164308





**æon archaeology**

---

# **B33-2.4 Glascoed WTW to Bodelwyddan Castle, 450mm GRP Main Renewal, Abergele.**

## **November 2020 v1.0**

Report no. 0273

Archaeological Evaluation

**Aeon Archaeology  
Obsidian Offices  
Chantry Court  
Chester  
CH1 4QN**

Written by: Richard Cooke BA MA MCIfA

Checked by: Josh Dean BA ACIfA



Project Code: A0126.3

Date: 25/11/2020

Client: DCWW

[info@aeonarchaeology.co.uk](mailto:info@aeonarchaeology.co.uk)

---



**æon archaeology**

---

# **B33-2.4 Glascoed WTW to Bodelwyddan Castle, 450mm GRP Main Renewal, Abergele.**

## **November 2020 v1.0**

### Copyright Declaration:

Aeon Archaeology grants permission for the material presented within this report to be used by the archives/repository with which it is deposited, in perpetuity, although Aeon Archaeology retains the right to be identified as the author of all project documentation and reports, as specified in the Copyright, Designs and Patents Act 1988 (chapter IV, section 79). The permission will allow the repository to reproduce material, including for use by third parties, with the copyright owner suitably acknowledged.

### Disclaimer:

This Report has been prepared solely for the person/party which commissioned it and for the specifically titled project or named part thereof referred to in the Report. The Report should not be relied upon or used for any other project by the commissioning person/party without first obtaining independent verification as to its suitability for such other project, and obtaining the prior written approval of Aeon Archaeology. Aeon Archaeology accepts no responsibility or liability for the consequences of this Report being relied upon or used for any purpose other than the purpose for which it was specifically commissioned. The entitlement to rely upon this Report rests solely with the person/party which commissioned it and does not extend to any other person/party. Aeon Archaeology accepts no responsibility or liability for any use of or reliance upon this Report by any person/party other than the commissioning person/party.



Project Code: A0126.3

Date: 25/11/2020

Client: DCWW

[info@aeonarchaeology.co.uk](mailto:info@aeonarchaeology.co.uk)

---

# Figures

**Figure 01:** Location of new water main route at Glascoed, Abergele, Conwy. Scale 1:20,000 at A4.

**Figure 02:** Location of evaluation trenches (1-4) at Glascoed, Abergele. Scale 1:3,000 at A4.

**Figure 03:** Plan of trench 1. Scale 1:50 at A4.

**Figure 04:** West facing section of trench arm (A) within trench 1. Scale 1:20 at A4.

**Figure 05:** West facing profile across trench arm (B) within trench 1. Scale 1:20 at A4.

**Figure 06:** North facing profile across trench arm (C) within trench 1. Scale at 1:20 at A4.

**Figure 07:** East facing section of trench arm (D) within trench 1. Scale at 1:20 at A4.

**Figure 08:** North facing section of trench arm (E) within trench 1. Scale 1:20 at A4.

**Figure 09:** North facing profile of trench arm (A) within trench 1. Scale 1:20 at A4.

**Figure 10:** North facing profile across trench arms A, B and C. Scale 1:50 at A4.

**Figure 11:** Location of archaeological finds plotted on Plan of Trench 1. Scale 1:50 at A4.

**Figure 12:** Location and orientation of photographic plates within trench 1. Scale 1:50 at A4.

**Figure 13:** Plan of trench 3. Scale 1:30 at A4.

**Figure 14:** South eastern corner section of trench [304] in trench 3. Scale 1:20 at A4.

**Figure 15:** Southeast facing section across trench [304] in trench 3. Scale 1:20 at A4.

**Figure 16:** Northwest facing section across trench [304] in trench 3. Scale 1:20 at A4.

**Figure 17:** North western corner section of trench [304] in trench 3. Scale 1:20 at A4.

**Figure 18:** Location of archaeological finds plotted on Plan of Trench 3 . Scale 1:30 at A4.

**Figure 19:** Location and orientation of photographic plates within trench 3. Scale 1:30 at A4.

**Figure 20:** Section of trench 4 showing terrace [404]. Scale at 1:20.

**Figure 21:** The .303-inch (7.7 mm) calibre rimmed rifle cartridges (small find no. 2, 3, 7, 21, 22, 24).

**Figure 22:** Fe fragments, most likely from a Mills bomb grenade (small find no. 13, 17, 18).

**Figure 23:** Fe nails from duckboards (small find no. 6, 12, 14, 15).

**Figure 24:** Brass button with black and white image (small find no. 20) and 'simulator' (small find no.19).

**Figure 25:** *Trace of Trenches* plan as laid out in the War Office *Manual of Field Works 1921*.

**Figure 26:** *Fire trenches* profiles as laid out in the War Office *Manual of Field Engineering 1911*.

**Figure 27:** *Sections through a fire trench* as laid out in the War Office *Manual of Field Works 1921*.

**Figure 28:** *Communication Trench* profile as laid out in the War Office *Manual of Field Engineering 1911*.

**Figure 29:** *Trace & Section of Communication Trench* as laid out in the War Office *Manual of Field Works 1921*.

**Figure 30:** 1946 RAF aerial photograph of Bodelwyddan Park (3G.TUD.UK.33.5421).

**Figure 31:** 1946 RAF aerial photograph of Bodelwyddan Park showing WW1 trenches and earthworks as undertaken by CPAT and Cadw in 2015.

**Figure 32:** Detailed location of evaluation trenches (1-3) at Glascoed, Abergele. Scale 1:1,000 at A4.

**Figure 33:** Trenches (1-3) overlaid on the CPAT / Cadw earthworks survey of 2015. Scale 1:1,000 at A4 (3G.TUD.UK.33.5421).

# Plates

**Plate 01:** Trench 1 pre-excavation photograph, from the west. Scale 1.0m.

**Plate 02:** Trench 1 pre-excavation photograph, from the east. Scale 1.0m.

**Plate 03:** Trench 1 post-excavation photograph, from the north. Scale 2 x 1.0m.

**Plate 04:** Trench 1 post-excavation photograph, from the north-northeast. Scale 2 x 1.0m.

**Plate 05:** Trench 1 post-excavation photograph, from the northeast. Scale 1.0m.

**Plate 06:** Trench 1 post-excavation photograph, from the east. Scale 1.0m.

**Plate 07:** Trench 1 post-excavation photograph, from the southeast. Scale 2 x 1.0m.

**Plate 08:** Trench 1 post-excavation photograph, from the south (eastern end). Scale 2 x 1.0m.

**Plate 09:** Trench 1 post-excavation photograph, from the south (western end). Scale 2 x 1.0m.

**Plate 10:** Trench 1 post-excavation photograph, from the southwest. Scale 2 x 1.0m.

**Plate 11:** Trench 1 post-excavation photograph, from the west. Scale 1.0m.

**Plate 12:** Trench 1 post-excavation photograph, from the northwest. Scale 2 x 1.0m.

**Plate 13:** Trench 1 trench arm A, from the north. Scale 1.0m.

**Plate 14:** Trench 1 trench arm A, from the south. Scale 1.0m.

**Plate 15:** Trench 1 trench arm B, from the east. Scale 1.0m.

**Plate 16:** Trench 1 trench arm B, from the west. Scale 1.0m.

**Plate 17:** Trench 1 trench arm C, from the north. Scale 1.0m.

**Plate 18:** Trench 1 trench arm C, from the south. Scale 1.0m.

**Plate 19:** Trench 1 trench arm D, from the east. Scale 1.0m.

**Plate 20:** Trench 1 trench arm D, from the west. Scale 0.5m.

**Plate 21:** Trench 1 trench arm E, from the south. Scale 1.0m.

**Plate 22:** Trench 1 trench arm E, from the north. Scale 1.0m.

**Plate 23:** Trench 1 section across trench arm A, from the west. Scale 0.5m.

**Plate 24:** Trench 1 section across trench arm D, from the east. Scale 0.5m.

**Plate 25:** Trench 1 section across trench arm D, from the west. Scale 0.5m.

**Plate 26:** Trench 1 section across trench arm E, from the south. Scale 0.5m.

**Plate 27:** Trench 1 section across trench arm E, from the north. Scale 0.5m.

**Plate 28:** Trench 1 trench arm E showing stones (104), from the south. Scale 0.5m.

**Plate 29:** Trench 1 trench arm D showing area of slumping (105), from the southwest. Scale 0.5m.

**Plate 30:** Trench 1 post-excavation context shot, from the north-northwest.

# Plates

**Plate 31:** Trench 1 post-excavation context shot showing existing earthworks, from the northwest.

**Plate 32:** Trench 1 aerial post-excavation context shot showing existing earthworks, from the southeast.

**Plate 33:** Trench 2 pre-excavation photograph, from the east. Scale 1.0m.

**Plate 34:** Trench 2 pre-excavation photograph, from the south. Scale 1.0m.

**Plate 35:** Trench 2 post-excavation photograph, from the north. Scale 2x 1.0m.

**Plate 36:** Trench 2 post-excavation photograph, from the northeast. Scale 2x 1.0m.

**Plate 37:** Trench 2 post-excavation photograph (north), from the east. Scale 2x 1.0m.

**Plate 38:** Trench 2 post-excavation photograph (south), from the east. Scale 2x 1.0m.

**Plate 39:** Trench 2 post-excavation photograph, from the southeast. Scale 2x 1.0m.

**Plate 40:** Trench 2 post-excavation photograph, from the south. Scale 2x 1.0m.

**Plate 41:** Trench 2 post-excavation photograph, from the southwest. Scale 2x 1.0m.

**Plate 42:** Trench 2 post-excavation photograph (south), from the west. Scale 2x 1.0m.

**Plate 43:** Trench 2 post-excavation photograph (north), from the west. Scale 2x 1.0m.

**Plate 44:** Trench 2 post-excavation photograph, from the northwest. Scale 2x 1.0m.

**Plate 45:** Trench 2 east facing trench section, from the east. Scale 1.0m.

**Plate 46:** Trench 2 aerial post-excavation context shot showing, from the east.

**Plate 47:** Trench 3 post-excavation photograph, from the east. Scale 1.0m.

**Plate 48:** Trench 3 post-excavation photograph, from the southeast. Scale 1.0m.

**Plate 49:** Trench 3 post-excavation photograph, from the south. Scale 1.0m.

**Plate 50:** Trench 3 post-excavation photograph, from the west. Scale 1.0m.

**Plate 51:** Trench 3 post-excavation photograph, from the northwest. Scale 1.0m.

**Plate 52:** Trench 3 post-excavation photograph, from the north. Scale 1.0m.

**Plate 53:** Trench 3 post-excavation photograph, from the northeast. Scale 1.0m.

**Plate 54:** Trench 3 post-excavation photograph showing trench [304], from the southeast. Scale 0.5m.

**Plate 55:** Trench 3 post-excavation photograph showing trench [304], from the northwest. Scale 0.5m.

**Plate 56:** Trench 3 northwest facing section of [304] showing fills (303) and (302), from the northwest. Scale 0.5m.

**Plate 57:** Trench 3 southeast facing section of [304] showing base fill (303), from the southeast. Scale 0.5m.

**Plate 58:** Trench 3 southeast facing section of [304] showing fills (303) and (302), from the southeast. Scale 0.5m.

**Plate 59:** Trench 3 showing possible entrance into trench [304], from the northeast. Scale 0.5m.

**Plate 60:** Trench 3 aerial photograph, from the southeast.

# Plates

**Plate 61:** Trench 4 pre-excavation photograph, from the east. Scale 1.0m.

**Plate 62:** Trench 4 pre-excavation photograph, from the southwest. Scale 1.0m.

**Plate 63:** Trench 4 pre-excavation photograph, from the south. Scale 1.0m.

**Plate 64:** Trench 4 post-excavation photograph, from the west. Scale 1.0m.

**Plate 65:** Trench 4 post-excavation photograph, from the east. Scale 1.0m.

**Plate 66:** Trench 4 south facing trench section, from the south. Scale 1.0m.

**Plate 67:** Trench 4 south facing trench section showing terrace [404], from the south. Scale 1.0m.

## Contents

1.0	NON-TECHNICAL SUMMARY .....	3
2.0	INTRODUCTION .....	4
3.0	POLICY CONTEXT .....	5
4.0	HISTORICAL BACKGROUND.....	7
	WW1 Training Camps .....	7
	Context of The Great War.....	7
	Kimnel Bay Camp.....	8
	The New Weapons of War.....	8
	Bodelwyddan Practice Trenches.....	9
	Canadian Mutiny.....	10
	The Legacy of War .....	11
5.0	PROJECT AIMS.....	14
6.0	METHODOLOGY – ARCHAEOLOGICAL EVALUATION.....	15
	6.1 Evaluation .....	15
	6.2 Data Collection from Site Records .....	15
	6.3 Artefact Methodology .....	16
	6.4 Environmental Samples Methodology.....	16
	6.5 Report and dissemination.....	16
7.0	DIGITAL DATA MANAGEMENT PLAN .....	17
	7.1 Type of study .....	17
	7.2 Types of data.....	17
	7.3 Format and scale of the data .....	17
	7.4 Methodologies for data collection / generation.....	17
	7.5 Data quality and standards .....	17
	7.6 Managing, storing and curating data.....	18
	7.7 Metadata standards and data documentation.....	18
	7.8 Data preservation strategy and standards.....	18
	7.9 Suitability for sharing .....	18



7.10	Discovery by potential users of the research data .....	18
7.11	Governance of access.....	18
7.12	The study team’s exclusive use of the data.....	18
7.13	Restrictions or delays to sharing, with planned actions to limit such restrictions.....	19
7.14	Regulation of responsibilities of users .....	19
7.15	Responsibilities .....	19
7.16	Organisational policies on data sharing and data security .....	19
8.0	QUANTIFICATION OF RESULTS .....	20
8.1	The Documentary Archive.....	20
8.2	Environmental Samples .....	20
8.3	Artefacts.....	20
	Preface .....	20
	The Archaeological Finds .....	21
9.0	RESULTS OF THE ARCHAEOLOGICAL EVALUATION.....	24
9.1	Overview.....	24
10.0	CONCLUSION AND RECOMMENDATIONS.....	30
11.0	SOURCES.....	32

## 1.0 NON-TECHNICAL SUMMARY

*Comisiynwyd Aeon Archaeology gan Dwr Cymru / Dŵr Cymru (DCWW) i gynnal gwerthusiad archeolegol fel rhan o gynllun adnewyddu prif bibell ddŵr arfaethedig yn Glascoed, Abergele, Conwy.*

*Roedd y gwerthusiad archeolegol yn cynnwys cloddio pedair ffos a oedd yn targedu tri gwrthgloddiau llinol y credir eu bod yn Ffosi Ymarfer gan amser Rhyfel Byd Cyntaf, a hefyd bedwaredd gwrthglawdd llinellol heb ddyddiad anhysbys.*

*Cadarnhaodd y ffosi bresenoldeb "ffos danio ochr yn ochr" a "ffos gyfathrebu igam-ogam" o'r Rhyfel Byd Cyntaf, ond methwyd â dod o hyd i'r trydydd gwrthglawdd wedi'i dargedu, yr amheuir ei fod wedi'i aredig yn llwyr neu ei gam-adnabod.*

*Darganfuwyd bod y pedwerydd gwrthglawdd llinol yn dirlunio wedi'i dorri i mewn i lethr bryn ac roedd hyn yn fwyaf tebygol o ddyddiad Fictoraidd ac yn gysylltiedig â'r gerddi ffurfiol yng Nghastell Bodelwyddan.*

*Adenillwyd cyfanswm o 24 o arteffactau gan gynnwys .303 cetrus reiffl, darnau grenâd, botwm pres, weiren bigog, a grenâd efelychydd mwg.*

Aeon Archaeology was commissioned by the Dwr Cymru / Welsh Water (DCWW) to carry out an archaeological evaluation as part of a proposed water main renewal scheme at Glascoed, Abergele, Conwy.

The evaluation involved the excavation of four trenches targeting three linear earthworks believed to be First World War practice trenches, and a fourth linear earthwork of unknown date.

The trenches confirmed the presence of a First World War traverse fire trench and a zigzag communications trench, but failed to find the third targeted earthwork, which is suspected to have been entirely ploughed out or misidentified.

The fourth linear earthwork was proven to be a landscaping terrace cut of at least Victorian date and associated with the formal gardens at Bodelwyddan Castle.

A total of 24 artefacts were recovered including .303 cartridges, grenade fragments, a brass button, barbed wire, and a simulator.

## 2.0 INTRODUCTION

Aeon Archaeology was commissioned by the Dwr Cymru / Welsh Water (DCWW), hereafter the Client, to carry out an archaeological evaluation as part of a proposed water main renewal (WMR) scheme at Glascoed, Abergele, Conwy (NGR SH 99860 74245) (figure 01 and 02).

The replacement scheme would be located within enclosed grazing fields to the immediate north and south of Cross Foxes, Glascoed Road as detailed in DCWW Drawing No. **MUS-0000-B33-D-001-001** (reproduced in figure 02). The WMR scheme would include the replacement of the existing water main with a new 450mm diameter high performance polyethylene (HPPE), using open cutting.

Several site meetings and email correspondence took place between Aeon Archaeology, the Client, the Clwyd-Powys Archaeological Trust (CPAT) Development Management Archaeologist (DMA), and Cadw regarding the proposed route, which was chosen to best avoid known archaeological earthwork remains in the form of World War I practice trenches associated with the existing Scheduled Ancient Monument polygon of *First World War Practice Trenches at Bodelwyddan Park* (FL186).

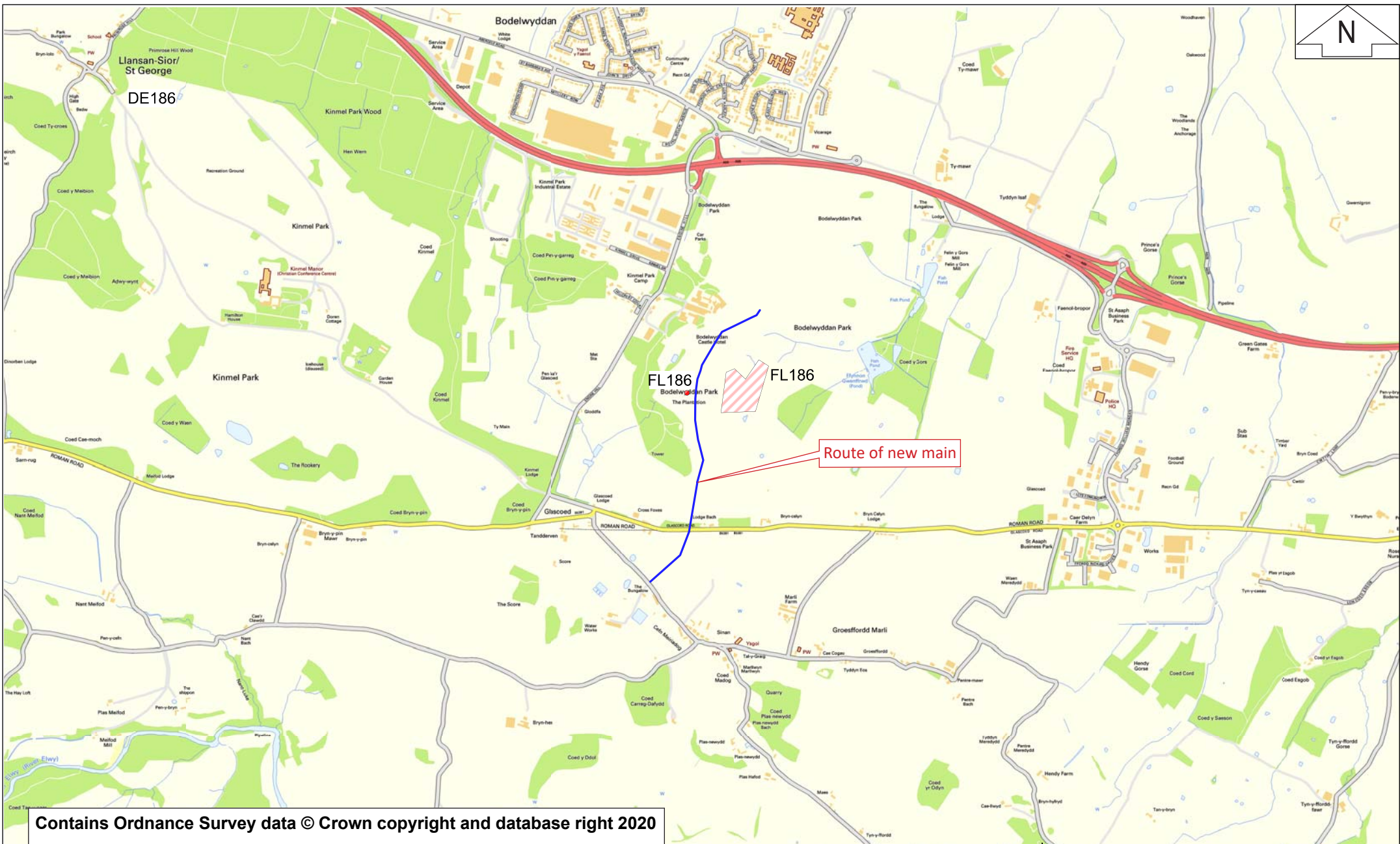
The open-cut pipe trench would run north from the WTW north of Cae Onnen at NGR SH 99667 73695 and will cross Glascoed Road at NGR SH 99820 73910. From then on the open-cut trench would skirt the eastern limit of the Bodelwyddan Park plantation, and then head north c112m west of the main SAM polygon and c30m east of the Observation Post included within the same SAM designation. The pipe trench would then curve north-eastward past the eastern limit of Bodelwyddan Castle, terminating at NGR SJ 00112 74798.

The recommended assessment and mitigatory response proposed by the CPAT DMA and Cadw was that 4 x evaluation test pits would be excavated in advance of the main works and target four linear earthworks, which are believed to have formed part of the World War I practice trenches. These test pits would characterise the suspected archaeological resource and would help inform the methodology for the main works, in particular the future transit of plant across the site. It is currently expected that the remaining mitigatory response will take the form of an archaeological watching brief to monitor the pipe trench excavation from Glascoed Road in the south to the scheme termination northeast of Bodelwyddan Castle.

Relevant UK legislation on heritage includes the Welsh Government's Planning Policy Wales Technical Advice Note 24 (TAN24), and the Historic Environment Act (Wales) 2016.

The work adhered to the guidelines specified in Standard and Guidance for Archaeological Evaluation (Chartered Institute for Archaeologists, 2020).

The event Primary Reference Number (PRN) assigned by the Clwyd-Powys Historic Environment Record (HER) for this archaeological evaluation is **164308**.

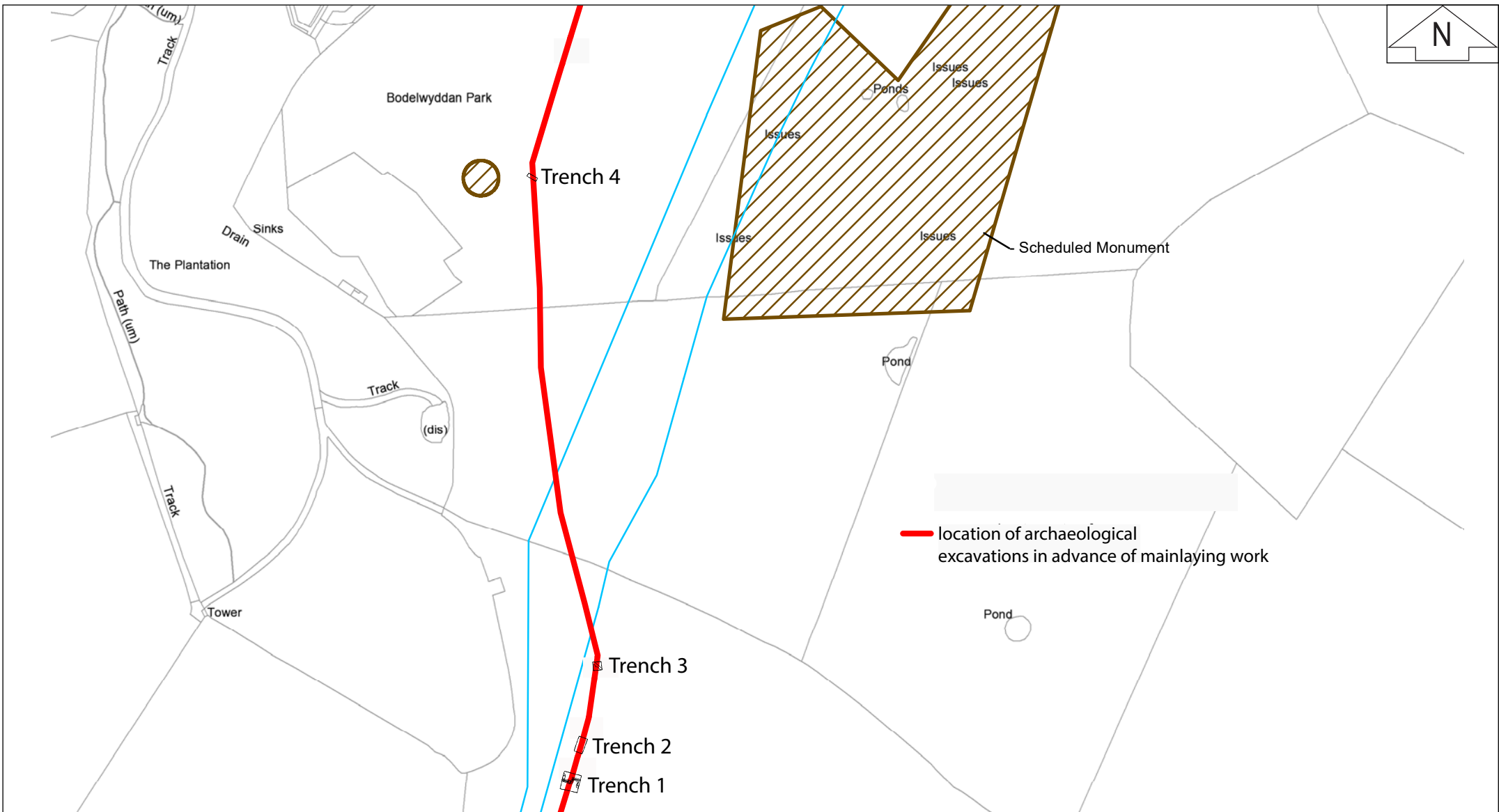


Contains Ordnance Survey data © Crown copyright and database right 2020



**Figure 01:** Location of new water main route at Glascoed, Abergele, Conwy.  
Scale 1:20,000 at A4.

**Aeon Archaeology**  
Richard Cooke BA MA MCIFA  
Obsidian Offices, Chantry Court,  
Chester, CH1 4QN  
Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)



Contains Ordnance Survey data © Crown copyright and database right 2020. Licence no. 100019534



**Figure 02:** Location of evaluation trenches (1-4) at Glascoed, Abergele.  
Scale 1:3,000 at A4.

**Aeon Archaeology**  
Richard Cooke BA MA MCIFA  
Obsidian Offices, Chantry Court,  
Chester, CH1 4QN  
Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)

### 3.0 POLICY CONTEXT

At an international level there are two principal agreements concerning the protection of the cultural heritage and archaeological resource – the UNESCO Convention Concerning the Protection of World Cultural and Natural Heritage and the European Convention on the Protection of the Archaeological Heritage, commonly known as the Valetta Convention. The latter was agreed by the Member States of the Council of Europe in 1992, and also became law in 1992. It has been ratified by the UK, and responsibility for its implementation rests with Department for Culture Media and Sport.

The management and protection of the historic environment in Wales is set out within the following legislation:

- The Planning (Listed Buildings and Conservation Areas) Act 1990 (As amended)
- The Historic Environment (Wales) Act 2016
- The Town and Country Planning Act 1990
- The Ancient Monuments and Archaeological Areas Act 1979
- The Town and Country Planning (General Permitted Development Order) 1995 (As amended)

The Historic Environment (Wales) Act is the most recent legislation for the management of the Historic Environment and amends two pieces of UK legislation — the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990. The new Act has three main aims:

- to give more effective protection to listed buildings and scheduled monuments;
- to improve the sustainable management of the historic environment; and
- to introduce greater transparency and accountability into decisions taken on the historic environment.

With respect to the cultural heritage of the built environment the Planning (Conservation Areas and Listed Buildings) Act 1990 applies. The Act sets out the legislative framework within which works and development affecting listed buildings and conservation areas must be considered. This states that:-

“In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses” (s66(1))

Other known sites of cultural heritage/archaeological significance can be entered onto county-based Historic Environment Records under the Town and Country Planning 1995.

Planning Policy Wales sets out the land use planning policies of the Welsh Government. Chapter 6 covers the historic environment and emphasises that the positive management of change in the historic environment is based on a full understanding of the nature and significance of historic assets and the recognition of the benefits that they can deliver in a vibrant culture and economy.

Various principles and policies related to cultural heritage and archaeology are set out in the Planning Policy Wales which guide local planning authorities with respect to the wider historic environment.

The following paragraphs from Planning Policy Wales are particularly relevant and are quoted in full:

Paragraph 6.1.5 concerns planning applications:

*The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource for the general well-being of present and future generations. The historic environment is a finite, non-renewable and shared resource and a vital and integral part of the historical and cultural identity of Wales. It contributes to economic vitality and culture, civic pride, local distinctiveness and the quality of Welsh life. The historic environment can only be maintained as a resource for future generations if the individual historic assets are protected and conserved. Cadw's published Conservation Principles highlights the need to base decisions on an understanding of the impact a proposal may have on the significance of an historic asset.*

Planning Policy Wales is supplemented by a series of Technical Advice Notes (TAN). Technical Advice Note 24: The Historic Environment contains detailed guidance on how the planning system considers the historic environment during development plan, preparation and decision making on planning and listed building consent applications. TAN 24 replaces the following Welsh Office Circulars:

- 60/96 Planning and the Historic Environment: Archaeology
- 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas
- 1/98 Planning and the Historic Environment: Directions by the Secretary of State for Wales

## 4.0 HISTORICAL BACKGROUND

### WW1 Training Camps

The construction of Kinmel Bay Camp was only a small part of the countrywide response that Britain undertook at the outbreak of World War 1 in the autumn of 1914. Lord Horatio Herbert Kitchener was made Secretary of State for War at the beginning of the conflict and he was responsible for initiating a policy he referred to as the 'New Army'. His solution to the demand of all-out war with Germany was to realise Britain's true power; a massive increase in the size of its standing Army. This was to be achieved via the mass mobilisation of the population through the use of conscription; between August and September 1914 enlistment offices had recruited approximately 480,000 troops, and by the end of the War in 1918 a further 2.5 million had also been recruited (Brown 2017).

However, these newly conscripted troops lacked the basic training of a British soldier and the contemporary military infrastructure present in Britain at the time was deemed insufficient to handle such large numbers of new recruits. To meet the problems created by mass mobilisation decisive action was needed; existing barracks were made larger to accommodate the new troops (Shornecliff and Aldershot), temporary camps which were often seasonal were expanded into semi-permanent installations (Westdown, Larkhill, Salisbury Plain & Cannock Chase) and wealthy landowners leased large areas (Halton House, Belton House & Bodelwyddan Castle) to the War office (Brown 2017, Staffordshire County Council 2009, University of Bristol, 2014). A second challenge that became evident after the beginning of the war was the use of trench warfare, which further dictated that these new camps and installations be able to provide the new specialist training required to fight effectively (Brown 2017). Networks of trenches needed to be constructed to simulate the environment that the soldiers were to encounter in France and Belgium, how to build and maintain trenches was considered of paramount importance as well how to fight effectively within them.

### Context of The Great War

The First World War was the first conflict in which propaganda was specifically fashioned by the British Government for the purpose of targeting the hearts and minds of the general public. The edifice of mass media was mobilised in such a way as to instil a 'war fervour' upon the nation, this was achieved by inciting feelings of patriotism and stoking the fires of nationalism. As participants in the war the people were compelled by their government to recognise that they had a responsibility to justify the righteousness of the war (Welch 2000). Probably one of Britain's most enduring images symbolising the need for a 'war effort' is the idiosyncratic recruitment poster that portrays Lord Kitchener - which is adorned with the message '*Your Country Needs YOU*', this iconic image almost implores the observer to honour their duty as a citizen, whilst simultaneously issuing a command to take up arms in defence of the nation.

Subsequent forms of propaganda began to be produced and these were to draw heavily from stereotypical imagery and invoke aggressive, nationalistic thought processes that became reminiscent of the British Jingoism that prevailed during the latter half of the 19<sup>th</sup> century. British propaganda posters often employed the religious symbolism of St George slaying the (German) dragon (Welch 2000). British recruitment posters changed in tone, from appealing to an individual's honour to 'mobilisation by shame' (Murphy 2017).



However, once the initial euphoria had subsided, it was imperative to remind people, both at home and in the trenches, of what they were fighting for. The major themes included a call to arms and a request for war loans; as well as efforts to encourage industrial activity, to explain national policies, to channel emotions such as courage or hatred, to urge the population to conserve resources, and to inform the public of food and fuel substitutes (Saunders & Taylor 1982).

One tactic at a state's disposal was the use of iconic figures to strengthen a particular point about national identity in order to promote patriotism. These might be real people presented in a mythologised form as national heroes, or they might come from old myths or popular folklore: Britannia, John Bull and the British bulldog; the German eagle or the French cockerel for instance (Welch 2000).

### **Kinmel Bay Camp**

Kinmel Military Camp was a large facility by the standards of the time; and was the largest army camp in Wales (Vannan & Taylor 2007), and was constructed to the southwest of the village of Bodelwyddan. It was also provided with a railway connection, The Kinmel Camp Railway (NPRN 34761) from Foryd Junction on the North Wales main coast line in 1915. The camp originally occupied an area approximately 1.50km long and 0.75km wide (Malaws 2008); it consisted of twenty sub-camps, each with their own canteens and messes as well as accommodation and rooms for instruction, all in timber huts. There was also a headquarters, stores, a Post Office, bakery, theatre/cinema, Wesleyan, Free Church, Salvation Army and three YMCA buildings (Putkowski 1989). There were stables and training areas for bayonet practice and trench fighting within the camp and it is widely assumed that extensive use was made of detached training areas in parkland in the locality (Spencer 2014).

The camp also had a significant effect on local population distribution and density; as civilian shops and semi-permanent shelters were erected near the camp – this settlement came to be nicknamed 'Tintown'. Some anecdotal evidence also exists of soldiers spending nights out in Rhyl, particularly following a large advance of pay given to the Canadian Young Soldiers battalion, perhaps to celebrate the defeat of the German Army (Putkowski 1989). The camp was not enveloped by a defensive perimeter and it is possible that soldiers and civilians came into contact, although there is no evidence for this (ibid.). The camp's principal function was to train soldiers for active service during the conflict (Vannan & Taylor 2007). Towards the end of the First World War it had been occupied by the Canadian Young Soldiers battallion, battalions of Welsh and English recruits and two Officer Cadet battalions (Grant et al. 2015). Following the First World War, the camp was transferred to the Canadian expeditionary forces who were awaiting demobilisation.

The camp's location is now more accurately described as lying south of the A55, between Engine Hill and Primrose Hill. The site until recently included a camp, small-arms ranges and a dry training ground. As well as accommodating up to 250 troops, it was used as a base for training in nearby Snowdonia National Park (Vannan & Taylor 2007).

### **The New Weapons of War**

The huge networks of trenches and semi-static fronts established in the fields of France and Belgium have come over time to serve as the primary context for World War I. However, as important as the advent of trench warfare was, it was in large part a response to the technological advancements in

warfare. Technological improvements included the development of grenades, mortars, howitzers and the widescale adoption of machine guns. The use of the grenade as a weapon of war was to become a very important element in the capture and defence of trenches, with specific tactics and training courses for specialist troops including specialised bombing schools (Vannan & Taylor 2007); of which Bodelwyddan may be an example.

Mortars were also beginning to be developed as a weapon although not immediately available to the British by 1914. However, the later introduction of a series of trench-mortars were eventually designed to reduce or destroy enemy trenches through relatively short-range high angle artillery fire. These smaller more mobile weapons would have been supplemented by traditional artillery – field guns and howitzers. These retained their importance and became the masters of the battlefield, allowing for long distance bombardment by high explosive, shrapnel and, as the war progressed, gas, onto enemy trenches or further into the rear where supply depots, ammunition dumps, camps, railheads and airfields were often located.

Machine guns were already in use in the British Army by 1914, predominantly the Vickers-Maxim Gun, but the role of machine guns and machine gun tactics changed. As well as acting as a direct fire weapon, machine guns provided a form of light artillery firing indirectly to specific grid references, rather than at a visible target, in interdiction roles designed to prevent an enemy bringing up reinforcements or supplies to a section of the line, and in infantry support bombarding enemy trenches with suppressing fire during an attack.

Military aviation was in its infancy in 1914, the Army had only started to take a serious interest in aeroplanes in 1910 and the Royal Flying Corps was only founded in 1912 and British preparations lagged behind France and Germany. Nevertheless the role of aircraft cannot be understated; the application of airplanes for observation, reconnaissance, aerial photography and eventually coordinating ground attack changed the accuracy in which intelligence was accrued and developed and only served to exacerbate the challenges the War presented.

Furthermore the advent of armoured warfare is another technological advance which is synonymous with the Great War. Testing, training and the evaluation of the first British tanks initially took place at Lincoln, close to their original factory. In 1916 tank training was moved to a former infantry training camp on Bovington Heath in Dorset, as the technology and tactics around tank warfare began to evolve. Soon after a series of demonstrations which King George V personally attended; tanks began to be demanded by military commanders for operations at the Battle of the Somme (Section reproduced from Brown M., (2017). *First World War Fieldworks in England*, Research report series 61-2017, Historic England. – please read for greater detail).

### **Bodelwyddan Practice Trenches**

The training that was provided at places such as Bodelwyddan was organised as a direct response to the challenges posed by this new weaponry and the realities of the emergent trench warfare. Extending over several hectares to the south and east of the parkland at Bodelwyddan Castle, to the east of the Kinmel Camp there is a complex of training trenches. These were presumably created initially for instruction in how to excavate effective trenches, but were also subsequently used for infantry combat training. Firing (frontline) trenches are identifiable from their crenelated shape (or traverses), with zigzag communication trenches linking back to support and reserve lines parallel to the firing line. There appear also to be dugouts (perhaps for command posts or first aid stations),

passing bays and saps (trenches dug out into 'no-man's land' from the front line). From the study of aerial photographs it seems there were several distinct groups in the parkland, some perhaps dug as opposing systems. Over much of the area circular craters suggest efforts were made to create a realistic landscape for troops to negotiate. Some of the craters have been joined by digging between them, and the fact that none of the craters appear to have damaged the trenches suggests they were created by detonating charges in the ground, rather than by shelling. In addition there is what is thought to be a remote command post on slightly higher ground (at SH 9981 7445) overlooking part of the training area. Interestingly, a similar circular earthwork (129913) appears on an air photograph (CPE/UK/2525 Frame 4029) of 1948 just to the south-east of the entrance to Kinmel Park Camp. Whatever it was, this latter site now lies beneath a housing estate.

### **Canadian Mutiny**

Following the conclusion of the First World War, the Kinmel Camp was transferred to the Canadian expeditionary forces who were awaiting demobilisation (Morton 1980). This was an extremely frustrating time for the camps inhabitants, as they had received their final payment in advance of repatriation, but were now stranded in North Wales awaiting transportation back to Canada without compensatory provision for the extended wait.

As well as the discomfort of this hiatus between overseas military service and repatriation, during the Autumn and Winter of 1918/19 an influenza pandemic had killed 80 soldiers at Kinmel (Mullins 2000). The understandably low morale at the camp was also afflicting an army comprised of mixed types of soldiers, including conscripts, non-combatants, and under-aged soldiers who would not be continuing with a military career, and a general lack of discipline existed within the camp (Morton 1980, Putkowski 1989). The failure of commanding officers to keep the camp inhabitants informed of the progress of their transportation appears to have been largely responsible for allowing a tense situation to escalate into mutiny and riots.

On Tuesday the 4th March 1919, riots broke out in protest at camp conditions, disturbances that focused mainly on raiding camp stores, canteens and messes and the civilian shops of 'Tintown' (Putkowski 1989). The riots continued until the afternoon of the 5th March, with up to 800 men being involved, and clashes between rioters and camp defenders resulted in the injuries of 28 men, five of whom died (Morton 1980). Fifty-one soldiers were court-martialled for mutiny following the riots.

The riots at Kinmel Park were happening at a time of general unrest both at home and abroad, which probably contributed, at least in part, to their instigation. In January and February 1919, there was a wave of strikes by shipbuilding engineering and transport workers, fuelled partly by increases in the cost of living, poor housing and low rates of pay (Putkowski 1989). At the same time, the IRA renewed its campaign to end British occupation in Ireland and other similar struggles around the British Empire began to spring up. A third crisis came with police strikes and more pertinent, strikes in the British Army. Disturbances involving both British and Canadian troops were reported due to the poor British demobilisation procedures.

Between the end of the First World War and 1953 the camp arrangement was modified substantially, including the demolition of the original camp buildings and the reduction of the overall area of the camp to less than half of its original size. (Section reproduced from Vannan A. & Taylor K. (2007). *Former Barracks, Kinmel Park Army Camp, Bodelwyddan, Denbighshire*, Oxford Archaeology North, Issue No: 685/2007-8, OA North Job No. L9834. – please read for greater detail).

## The Legacy of War

The eventual conclusion to World War 1 on November the 11<sup>th</sup> 1918 signalled to most people an end to the destruction and savagery of the War. The legacy of the war is almost inestimable although the cost may be expressed in general terms. Succinct estimates on the number of war dead vary but it is widely accepted that 20 million people lost their lives during the conflict and 20 million more were left maimed or wounded (Stevenson 2004). Countless hectares of farmland were left destroyed by the fighting; a vast area which is still deemed unsuitable to human life called *Zone Rouge* exists in the northern part of France, due to the sheer volume of unexploded ordinance that exists below the surface (Hupy 2006, Brown 2017). Shell shock and PTSD (Post Traumatic Stress Disorder) was a poorly understood phenomenon at the time – but it affected thousands of men returning from the front, the prevalent concept at the time was that the repeated physical impact of exploding shells above men’s heads was to blame. However, as time passed another theory became popular - that the cause of the condition was borne from the sustained trauma of war, living for extended periods of time in the trenches concentrated tremendous emotional stress in the minds of soldiers. Individuals lived in such close proximity to death and destruction on a daily basis that the fear of losing their own lives became incapacitating, furthermore, being forced to experience friends and enemies suffering gruesome ends at the hands of terrible modern weaponry would often cause men to have debilitating psychological breakdowns, which often only manifested after the fighting had ended (Downing 2016, Stevenson 2004).

Another product of the war was the rise of European socialism and labour movements; as well as the trade union movement which emerged in response to the plight of the working class. The experiences of the First World War were shocking and it was the working classes which suffered in the largest numbers (Downing 2016, Stevenson 2004). During the war, workers in important industries, in particular skilled workers, crucial for the production of machinery and armaments - were exempt from recruitment into the army and often favourable food and wage conditions in return for renouncing strike action (Sherry 2014). But as the war wore on and continued to destroy lives and resources, living and working conditions for workers declined. The Russian year of revolution in 1917 is seen as a political turning point as socialism became organised, belligerent, and determined with the trade union movement demanding better standards for the working class (Stevenson 204). This was augmented by the decline of the traditional aristocracy in Britain which had suffered greater proportional losses in the fighting than other classes (Clark 2012).

Whether the war can legitimately say to have liberated women is a matter of lengthy debate. However, that it was a huge catalyst for debate cannot be denied. Women became essential to the war effort as they were asked to adopt traditionally masculine roles in arms production and in the fields producing food for the front (Adie 2013). Without a doubt, women achieved important political gains in certain countries (Britain). Certain fashions, such as the flapper look of the 1920’s, induced a liberation of women from certain traditional feminine codes. However, in reality once the war was over, many women were expected to return to traditional gender-based roles as dictated by the traditional Patriarchal system. The fight for Women’s Suffrage was both long and arduous and required the determination of women over an extended period of time (in France, women only won the right to vote in 1944. In Germany they could vote as of 1919, in Great Britain from the age of 30 in 1918, and from the age of 21, like men, in 1928). Recent work suggest that this post war period was a transitional phase for feminism, rather than a true revolution of Women’s rights – however the experiences of the War had set the conversation for Universal Suffrage in motion (Dombrowski 2004, Adie 2013).

As the guns were falling silent across Europe the seeds of future conflict were already beginning to be sown. In Russia, war fatigue among other factors led to the collapse of the ruling Romanov dynasty, the 1917 Russian Revolution, and the establishment of Communist rule. The empire of Austria-Hungary broke into a collection of independent states based on ethnicity, including the former Yugoslavia which experienced terrible Wars largely based on ethnicity between 1991-2001. The harsh terms imposed by the Allies in the Treaty of Versailles ultimately facilitated the rise of National Socialism in Germany, and eventually helped to deliver Adolf Hitler and his Nazi Party to power. Some historians see World War I as the beginning of a continuous struggle for Europe that didn't really end until the reunification of Germany in 1989 (Dombrowski 2004, Stevenson 2004, Clark 2012).

After World War I, the allies stripped Germany of its colonies in Asia and Africa. But instead of being given independence, these long-oppressed lands were absorbed into the victors' colonial empires. Colonized peoples resented being denied the right to national self-determination which had been extended to newly created or liberated European countries like Poland, fuelling independence movements in India and several African nations (Sherry 2014). World War I also redrew the map of the Middle East. The British and the French carved up the remnants of the Ottoman Empire, which had entered the war on Germany's side. Britain took control of what became Iraq and Jordan, as well as the Gulf States. The new borders were arbitrarily drawn, with no regard for long-standing religious and tribal identities (Sherry 2014).

Ultimately the legacy of World War 1 is now rehearsed each year, all over the world under a collection of different monikers namely: Remembrance Day in the United Kingdom. For the victors of the Great War, Armistice Day (11/11/1918) was initially seen as a day of celebration – elation that the war had finally ended and Germany beaten (Stevenson 2004, Clark 2012). However, the festive nature of this event quickly changed; by the 1<sup>st</sup> and 2<sup>nd</sup> anniversaries of the armistice (1919 and 1920) a more solemn atmosphere characterised the event and now became a memorial with a focus on mourning the dead rather than celebrating a victory against a vanquished enemy. A Cenotaph was erected at Whitehall, at first a temporary wooden structure but this was replaced in 1920 with a monument made of Portland stone; this new place which became the focus for remembrance events as crowds gathered to lay wreaths. The 11th November 1919 saw the first observance of a minute's silence at 11 o' clock, in which the vast majority of people participated, wherever they were and whatever they were doing. A year later, on the same day that the permanent Cenotaph was unveiled, the Unknown Warrior was buried in Westminster Abbey to honour the countless ordinary service personnel who had died. This immediate post war period was when most of the memorials that commemorate the First World War were erected, as thousands of communities came together to pay tribute to their fallen (Mcnab 2018).

By the 1990s the memorial had come to be known as Remembrance Day in the United Kingdom. It is generally agreed that by this time the service had become less popular; as its observance gradually declined during the latter half of the 20<sup>th</sup> century (Mcnab 2018). Partly to remedy this, the two-minute silence began to be held on 11<sup>th</sup> November itself, regardless of whether it was a Sunday or not. Remembrance therefore became a more integral part of daily life on that day once more and its relevance returned. Remembrance Day is now widely observed, with two-minute silences often being held at 11 o'clock on the 11<sup>th</sup> as well as the following Sunday (Remembrance Sunday) if the 11<sup>th</sup> falls on a different day. Many people continue to attend Remembrance services at local war memorials in the United Kingdom. The observance of Remembrance Day often starts before 11<sup>th</sup> November, when many people buy and wear poppies. The tradition of wearing a poppy to symbolise Remembrance

began in 1920 and was inspired by the poem, *'In Flanders Fields,'* written by John McCrae in 1915. The opening lines of the poem refer to poppies growing in Flanders, an area of the Western Front, around the graves of soldiers. The poppy came to symbolise remembering those who had died during the Great War of 1914-1918.

## 5.0 PROJECT AIMS

Before evaluation commences an agreed programme of excavation timing, siting, duration, surface reinstatement and health and safety protection measures were agreed with the Client, the DMA at CPAT, and Cadw. The above named also attended a site meeting within two weeks of the commencement of archaeological works to review the programme, submitted method statement and arrangements that had been established for archaeological evaluation.

The size, location and orientation of the evaluation areas were agreed in advance so as to best target areas that may contain archaeological features within the proposed pipeline route:

- Evaluation trench 1: measuring 10m by 10m and targeting an east-west aligned, crenelated linear earthwork believed to be a World War I traverse ‘fire’ trench;
- Evaluation trench 2: measuring 5m by 5m and targeting an east-west aligned, linear earthwork believed to be a World War I practice trench;
- Evaluation trench 3: measuring 5m by 5m and targeting an east-west aligned, zig-zag linear earthwork believed to be a World War I ‘communications’ trench;
- Evaluation trench 4: measuring 6m by 2m and targeting a northeast-southwest aligned, linear earthwork of unknown origin.

The broad aims of the archaeological evaluation were:

- To determine, as far as is reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains within the proposed pipe route, the integrity of which may be threatened by development at the site.
- To establish the nature and extent of existing disturbance and intrusion to sub-surface deposits and, where the data allows, assess the degree of archaeological survival of buried deposits of archaeological significance.
- To enable the client to establish a schedule for archaeological risks.
- To allow the DMA at CAPAS and Cadw to make an informed decision on the need for and scope of further evaluative and/or mitigatory archaeological works at the site.

The detailed objectives of the archaeological excavation were:

- Insofar as possible within methodological constraints, to explain any temporal, spatial or functional relationships between the structures/remains identified, and any relationships between these and the archaeological and historic elements of the wider landscape.
- Where the data allows, identify the research implications of the site with reference to the regional research agenda and recent work in North Wales.

## **6.0 METHODOLOGY – ARCHAEOLOGICAL EVALUATION**

### **6.1 Evaluation**

If archaeological deposits are identified they were to be manually cleaned, excavated and recorded to determine extent, function, date and relationship to adjacent features.

Contingency provision was to be made for the following:

- Additional excavation of up to 100% of any given feature should the excavated sample prove to be insufficient to provide information on the character and date of the feature.
- Expansion of excavation trench limits, to clarify the extent of features equivalent to an additional 20% of the core trench area.

The archaeological works were surveyed with respect to the nearest Ordnance Survey datum point and with reference to the Ordnance Survey National Grid. The excavation area, deposits, features and structures within them were to be accurately located on a site plan prepared at the most appropriate and largest scale.

A written record of the trench content and all identified features was completed via Aeon Archaeology pro-formas.

Any subsurface remains were to be recorded photographically, with detailed notations, measured drawings, and a measured survey. The photographic record was maintained using a digital SLR camera (Canon 600D) set to maximum resolution (72dpi) with photographs taken in RAW format and later converted to TIFF format for long-term storage and JPEG format for presentation and inclusion in the archive. Photographic identification boards were also used.

The excavation areas were opened with a mechanical excavator fitted with a toothless ditching bucket.

The excavation area and spoil heaps were routinely investigated through the use of a metal detector and any finds/artefacts collected and processed as below.

All excavations were backfilled with the material excavated and upon departure Aeon Archaeology left the site in a safe and tidy condition. Aeon Archaeology were not requested to re-lay turf/lawn surface.

### **6.2 Data Collection from Site Records**

A database of the site photographs was produced to enable active long-term curation of the photographs and easy searching. The site records were checked and cross-referenced and photographs were cross-referenced to contexts. These records were used to write the site narrative and the field drawings and survey data were used to produce an outline plan of the site.

All paper field records were scanned to provide a backup digital copy. The photographs were organised and precisely cross-referenced to the digital photographic record so that the Clwyd-Powys Archaeological Trust (CPAT) Historic Environment Record (HER) can curate them in their active digital storage facility.



### **6.3 Artefact Methodology**

All artefacts were to be collected and processed including those found within spoil tips. They would be bagged and labelled as well any preliminary identification taking place on site. After processing, all artefacts would be cleaned and examined in-house at Aeon Archaeology. If required, artefacts would be sent to a relevant specialist for conservation and analysis.

The recovery policy for archaeological finds was kept under review throughout the archaeological watching brief. Any changes in recovery priorities would be made under guidance from an appropriate specialist and agreed with the Client and the Clwyd-Powys Archaeological Trust (CPAT) Development Control Archaeologist. There was a presumption against the disposal of archaeological finds regardless of their apparent age or condition.

### **6.4 Environmental Samples Methodology**

The sampling strategy and requirement for bulk soil samples was related to the perceived character, interpretational importance and chronological significance of the strata under investigation. This ensured that only significant features would be sampled. The aim of the sampling strategy was to recover carbonised macroscopic plant remains, small artefacts particularly knapping debris and evidence for metalworking.

Advice and guidance regarding environmental samples and their suitability for radiocarbon dating, as well as the analysis of macrofossils (charcoal and wood), pollen, animal bones and molluscs would be obtained from Oxford Archaeology if required.

### **6.5 Report and dissemination**

A full archive including plans, photographs, written material and any other material resulting from the project was prepared. All plans, photographs and descriptions were labelled, and cross-referenced, and will be lodged within a suitable repository to be agreed with the archaeological curator within six months of the completion of the project.

A draft copy of the report has been sent to the client and upon written approval from them paper and digital copies of the report will be sent to the regional HER, the CPAT Development Control Archaeologist, and will be logged with the RCAHMW. Copies of all notes, plans, and photographs arising from the evaluation will be stored at Aeon Archaeology under the project code **A0126.3** with the originals being lodged with the RCAHMW.

## **7.0 DIGITAL DATA MANAGEMENT PLAN**

### **7.1 Type of study**

Archaeological evaluation as part of a proposed water main renewal (WMR) scheme at Glascoed, Abergele, Conwy (NGR SH 99860 74245).

### **7.2 Types of data**

- Photographs (RAW)
- Context sheets (paper)
- Photographic register (paper)
- Drawings (drafting film)
- Misc registers (paper)
- Compiled report

### **7.3 Format and scale of the data**

Photographs taken in *RAW* format and later converted to *TIF* format for long term archiving and *JPEG* format for use in the digital report, converted using *Adobe Photoshop*. All photographs renamed using *AF5* freeware with the prefix (*project code\_frame number*) and a photographic metadata created using Microsoft Excel (*.xlsx*) or Access (*.accdb*).

Compiled report (including figures and plates) as *.PDF* files.

### **7.4 Methodologies for data collection / generation**

Digital data will be collected / generated in line with recommendations made in the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (2014. Rev 2020). Sections 3.3.1 and 3.3.3 are relevant:

*3.3.1 Project specifications, research designs or similar documents should include a project specific Selection Strategy and a Data Management Plan.*

*3.3.3 Project designs or schedules of works etc should outline the methodology used in recording all information, in order to demonstrate that all aspects of archive creation will ensure consistency; for instance in terminologies and the application of codes in digital data sets, highlighting relevant data standards where appropriate*

### **7.5 Data quality and standards**

Consistency and quality of data collection / generation shall be controlled and documented through the use of standardised procedure as outlined in the WSI. This will include the use of standardised data capture file formats, digital proformas, data entry validation, peer review, and use of controlled vocabularies.

## **7.6 Managing, storing and curating data.**

All digital data will be organised into Aeon Archaeology proforma project file systems and backed up to the cloud using *Digital River's Crashplan* with additional copies made to external physical hard drive.

## **7.7 Metadata standards and data documentation**

Digital metadata created using Microsoft Excel (.xlsx) or Access (.accdb) of all photographic plates.

Paper metadata created from Aeon Archaeology proformas for contexts, artefacts, environmental samples, watching brief day sheets, trench sheets, and basic record sheets and then scanned to create digital .PDF copies.

## **7.8 Data preservation strategy and standards**

Long term data storage will be through the submission of digital (.PDF) reports to the regional Historic Environment Record (HER); submission of digital (.PDF) reports and a project completion form to the RCAHMW; submission of the scanned (.PDF) archive, photographic plates (.TIF), and metadata (.xlsx) (.accdb) to the Archaeology Data Service (ADS); and retention of copies of all digital files at Aeon Archaeology on physical external hard drive and uploaded to the cloud.

## **7.9 Suitability for sharing**

All digital data will be placed within the public realm (through the channels in 6.8) except for where project confidentiality restricts the sharing of data. All data sets will be selected / discriminated by the Senior Archaeologist at Aeon Archaeology and written permission will be sought from all project specific Clients prior to the sharing of data.

## **7.10 Discovery by potential users of the research data**

Potential users of the generated digital data (outside of the organisation) will be able to source the data and identify whether it could be suitable for their research purposes through access granted via the ADS and RCAHMW websites. Requests can also be made for data through the regional HER's and directly to Aeon Archaeology ([info@aeonarchaeology.co.uk](mailto:info@aeonarchaeology.co.uk)).

## **7.11 Governance of access**

The decision to supply research data to potential new users will be via the associated website request (ADS, RCAHMW, HER) or via the Senior Archaeologist when made directly to Aeon Archaeology.

## **7.12 The study team's exclusive use of the data**

Aeon Archaeology's requirement is for timely data sharing, with the understanding that a limited, defined period of exclusive use of data for primary research is reasonable according to the nature and value of the data, and that this restriction on sharing should be based on simple, clear principles. This time period is expected to be six months from completion of the project however Aeon Archaeology reserves the right to extend this period without notice if primary data research dictates.

### **7.13 Restrictions or delays to sharing, with planned actions to limit such restrictions**

Restriction to data sharing may be due to participant confidentiality or consent agreements. Strategies to limit restrictions will include data being anonymised or aggregated; gaining participant consent for data sharing; and gaining copyright permissions. For prospective studies, consent procedures will include provision for data sharing to maximise the value of the data for wider research use, while providing adequate safeguards for participants.

### **7.14 Regulation of responsibilities of users**

External users of the data will be bound by data sharing agreements provided by the relevant organisation or directly through Aeon Archaeology.

### **7.15 Responsibilities**

Responsibility for study-wide data management, metadata creation, data security and quality assurance of data will be through the Senior Archaeologist (Richard Cooke BA MA MCIfA) at Aeon Archaeology when concerning data generation and early/mid-term storage. Upon deposition with digital depositories the study-wide data management, metadata creation, data security and quality assurance of data will be the responsibility of the specific organisations' themselves.

### **7.16 Organisational policies on data sharing and data security**

The following Aeon Archaeology policies are relevant:

- Aeon Archaeology Archive Deposition Policy 2019
- Aeon Archaeology Quality Assurance Policy 2019
- Aeon Archaeology Conflict of Interest Policy 2019
- Aeon Archaeology Outreach Policy 2019
- Aeon Archaeology Digital Management Plan 2020

## 8.0 QUANTIFICATION OF RESULTS

### 8.1 The Documentary Archive

The following documentary records were created during the archaeological evaluation:

Trench Sheets	4
Context Sheets	19
Digital photographs	144
Scale Drawings	16 on 7 sheets

### 8.2 Environmental Samples

No environmental samples were taken as part of the archaeological evaluation.

### 8.3 Artefacts

#### Preface

This finds report concerns the archaeological finds that were recovered during the archaeological evaluation as part of the WMR between Glascoed and Bodelwyddan Castle. The artefacts were discovered using a *Garrett ACE 250* Metal detector which was employed during the course of a metal detecting survey during the excavation of the four evaluation trenches. Therefore, the finds recovered largely comprise of metalwork, namely ferrous and nonferrous metals including copper alloys which principally date to the operational period of the Kinmel Camp during World War 1 (1915 – 1919). A total of 24 finds were recovered.

It is practical to mention at this point of the finds report that the recovery of the archaeological artefacts from the fields at Bodelwyddan was subordinate in importance to the watching brief that was concurrently being conducted by the UXO (unexploded ordinance specialist) who employed a fluxgate magnetometer (*Schonstedt GA-72 CD/ML*) in order to trace the signals of potential targets (unexploded ordinance). In order for the finds to be recovered in a manner that was safe and risk averse the UXO was primarily engaged with scanning an area and investigating any signal prior to archaeological survey or excavation by the archaeologist. Following an initial scan of consecutive 30/40m sections of the topsoil along the trench locations by the UXO and subsequently the archaeologist, a 13-tonne tracked excavator was utilised to reduce the ground level by 0.20m spits before the process of scanning and survey was repeated. This process continued, with the reduction in ground level by a further 0.20m followed by a survey, until the natural glacial clay soil horizon or archaeological features were exposed. All of the archaeological finds were recovered using this methodology.

## The Archaeological Finds

The following artefacts were recovered during the archaeological evaluation.

Finds No.	Description	Context	Material	Weight (g)
1	Twisted wire (barbed wire?)	Turf	Iron	69
2	.303 cartridge	102	Brass	9
3	.303 cartridge	103	Brass	8
4	VOID	VOID	VOID	VOID
5	Barbed wire	Turf	Iron	79
6	Nail	103	Iron	4
7	.303 cartridge	103	Brass	9
8	Manganese glazed ware	103	Ceramic	3
9	Barbed wire	102	Iron	17
10	Misc item	102	Uncertain	22
11	Gate pin	102	Iron	34
12	Nail	103	Iron	3
13	Iron frag (Mills grenade frag?)	103	Iron	8
14	Nail	103	Iron	4
15	Nail	102	Iron	4
16	Black ware	102	Ceramic	11
17	Iron frag (Mills grenade frag?)	301	Iron	33
18	Iron frag (Mills grenade frag?)	301	Iron	38
19	Simulator	301	Cu alloy	6
20	Button	302	Brass	3
21	.303 cartridge	Unstrat	Brass	10
22	.303 cartridge	302	Brass	6
23	Barbed wire	302	Iron	61
24	.303 cartridge	303	Brass	11

### *The .303 British Service Cartridge (fig 21)*

Six separate .303 service spent rounds (finds no. 2, 3, 7, 21, 22 & 24) were recovered during the evaluation. Small finds no's 2, 3 and 7 were found within trench 1 in both the upper and lower fills (102 and 103) while small finds no's 21, 22 and 24 were found within trench 3, again within the upper and lower fills (302 and 303) as well as unstratified. This is interesting; as past interpretation of the zig-zag shaped trenches seen in evaluation trench 3 (see CPAT report 1303) has focused on the premise that these were 'communication' trenches as opposed to 'fire' trenches. However, the discovery of spent cartridges within trench 3 shows that these communication trenches were also being used for combat exercises.

Of further interest is cartridge find no 24, recovered from the lower fill (303) of the communications trench in evaluation trench 3. This cartridge is more well preserved than any of the others found and retains more of its length towards the point, where although fired, shows crimping around the

cartridge edge. This shows that it was in fact a blank cartridge rather than a live bullet, and for the first time alludes to the use of blanks rather than live ammunition being used at the Bodelwyddan site.

The .303 British Service cartridge, commonly known as the .303 or .303 British was adopted by Britain along with the Lee - Enfield Rifle in 1889 and contained 71.9 grains of black powder. Cordite was used as a propellant from 1891; Cordite consisted of 58% Nitro-glycerine, 37% Nitro-cellulose and 5% Mineral Jelly and was normally pressed into cord. Nitro-cellulose was first used as a propellant in the .303 cartridge during 1894 although it was not officially approved for service until 1916 (Temple 1986). This propellant, however, was not considered to be as stable as cordite in the tropics and cordite was, therefore, still retained as a propellant in military cartridges for the remainder of the cartridges service life. Nitro-cellulose propellant however was extensively used during the first and second world wars (Hogg 1982).

In 1910 the 174 grain, pointed, Mark VII bullet was adopted and the muzzle velocity was increased to 2440 feet per second. This mark of bullet remained the standard ball round for the remainder of the .303 cartridges service life. Tracer, armour piercing and incendiary cartridges were adopted by the British Government during 1915, explosive bullets having been approved for service in 1916. These rounds were extensively developed over the years and saw several Mark numbers (Labbett & Mead 1988).

Since the introduction of the .303 cartridge in 1889 it has been manufactured in at least 20 countries and in nearly 200 military variants as well as in numerous experimental and sporting cartridge configurations. During the First World War more than 7,000 million Mk 7 ball cartridges were produced by British factories alone (Tebbutt 2020).

### ***Mills Grenades (fig 22)***

Three iron fragments (small finds 13, 17 and 18) were recovered during the archaeological evaluation that are likely to be fragments / components of Mills Grenades. Small find 13 was recovered from context (103), the secondary fill of the fire trench located within evaluation trench 1. While small finds 17 and 18 were both recovered from context (301), the topsoil in the location of evaluation trench 3. All three fragments were too damaged / corroded to identify as particular components of the grenade, and thus their identity is not certain.

William Mills, was an industrial designer from Sunderland and he patented, developed and manufactured the “Mills bomb” at the Mills Munition Factory in Birmingham, England, in 1915. The Mills bomb was inspired by an earlier design by Belgian captain Leon Roland. Roland and Mills were later engaged in a patent lawsuit over who originated the design. The Mills bomb was adopted by the British Army as its standard hand grenade in 1915, and designated the with the model number “No. 5”.

The Mills bomb underwent numerous modifications. The No. 23 was a variant of the No. 5 with a rodded base plug which allowed it to be fired from a rifle. This concept evolved further with the No. 36, a variant with a detachable base plate to allow use with a rifle discharger cup. The final variation of the Mills Bomb, the No. 36M, was specially designed and waterproofed with shellac for use initially in the hot climate of Mesopotamia in 1917, but remained in production for many years. By 1918 the No. 5 and No. 23 were declared obsolete and the No. 36 (but not the 36M) followed in 1932 (Saunders 1999).

The No. 5 Mk. 1 was the first version of Mill's Bomb. The explosive filler was loaded through a small circular plug on the upper half, the detonator assembly was loaded through the bottom through the baseplug, and the pull-ring striker was screwed in to the fuse well at the top. The lever was protected by metal "ears" flanking the top that could be used to locate it in darkness. It was first issued in May, 1915 but wasn't in general issue until mass production caught up a year later in 1916. The Mk. 2 had a redesigned stronger safety lever (Saunders 1999).

### ***Iron nails (fig 23)***

Four iron nails (small finds 6, 12, 14 and 15) were recovered from the upper and lower fills (102 and 103) of the fire trench located within evaluation trench 1. These nails were likely used to secure duckboards in place along the base of the trench.

Duckboards' (or 'trench gratings') were first used at Ploegsteert Wood, Ypres in December 1914. They were used throughout the First World War being usually placed at the bottom of the trenches to cover the sump-pits, the drainage holes which were made at intervals along one side of the trench. This made it easier to pump out the pits when necessary. The raised edges of the boards in theory helped protect men's feet from accumulated water; walking along them, especially at night and in the wet, was something of an art as it was easy to lose one's footing and slip or trip on the frequently misaligned sections.

### ***Brass button (fig 24)***

A single brass button (small find no 20) was recovered from the upper fill (302) of communications trench [304] located within evaluation trench 3. This button measured 18mm in diameter by 2mm thickness, with a single clasp loop on the reverse. The button was particularly degraded and it was extremely difficult to discern any pattern to its obverse side, however once a black and white filter is applied to the button image it is possible to trace a faint outline, as shown in fig 24. Although still very unclear, a tentative image of a beaver is suggested - which would correlate with the emblem of the Royal Canadian Engineers, who were posted at the Kinmel Bay camp during, and immediately after the First World War.

### ***Simulator (fig 24)***

This artefact, resembling a bicycle tyre valve was recovered from the topsoil at the location evaluation trench 3. The splayed ends of this artefact indicates that it was probably part of an explosive device used to simulate battlefield conditions. It is likely that they were small hand-held devices employing a percussion cap that could be thrown to the ground to make a bang.

Three similar artefacts were recovered during an archaeological evaluation by CPAT in 2015 (report 1303) but no further parallels could be found beyond the Bodelwyddan site.



## 9.0 RESULTS OF THE ARCHAEOLOGICAL EVALUATION

### 9.1 Overview

The archaeological evaluation was undertaken by Richard Cooke BA MA MCIFA, Josh Dean BA, and Catherine Jones BSc MSc, archaeological contractors and consultants at Aeon Archaeology between the 4<sup>th</sup> and 20<sup>th</sup> February 2020. The weather conditions varied between heavy downpours, strong winds, and bright sunny conditions; as a consequence the evaluation trenches repeatedly flooded requiring a mechanical pump to empty the trenches.

#### **Trench 1 (plates 1-32) (figs 3-12, 30-33)**

SH 99870.61/74123.12 - SH 99868.19/74113.49 – SH 99858.48/74115.77 – SH 99860.99/74125.74

#### *Description*

Trench 1 measured 10m in length by 10.0m in width, and was excavated to a maximum depth of 1.12m below ground level (BGL) (86.87m OD). It was excavated through a 0.2m deep deposit of very soft, dark grey-brown clay-silt turf and topsoil (107), which produced three pieces of corroded iron wire, most probably barbed wire (SF 1). This deposit lay above a 0.33m deep deposit of firm, mid orange-brown silt-clay subsoil with occasional small, sub-rounded pebble inclusions (106).

Cut into subsoil deposit (106) the targeted traverse fire trench [101] was encountered between 87.59m and 87.81m OD. This feature was crenelated in plan with steep to very steep, and mildly concaved sides, with a sharp break of slope at both the top and the bottom, and a flat to mildly undulating base. The fire trench measured >10m in length orientated east-west and forming a series of right angled bends (trench arms A-E) and continuing beyond the limits of excavation (LOE). It measured an average width of 1.8m by 0.76m depth.

The fire trench [101] had two distinct fills (102 - primary) and (103-secondary) throughout its revealed length. Fill (102) was a soft, dark brown-grey clay-silt measuring 0.44m in depth and filling the base of [101]. It produced 1 x .303 cartridge (SF 2), 1 x barbed wire (SF 9), 1 x simulator (SF 10), 1 x iron gate pin (SF 11), 1 x iron nail (SF 15), and 1 x sherd black-ware ceramic (SF 16). Fill (103) was a firm, mid orange-brown silt-clay measuring 0.15m in depth, with frequent large to small sub-rounded and sub-angular pebble inclusions. It produced 2 x .303 cartridge (SF 3 and 7), 3 x iron nail (SF 6, 12 and 14), 1 x sherd manganese glazed ware ceramic (SF 8), and 1 x possible iron fragment of a mills grenade (SF 13).

Within trench arm D a third deposit was identified as a slumping material (105) on the northern edge of the fire trench. This consisted of a very firm, mid yellow-brown clay measuring 1.48m in length by 1.31m in width by 0.3m in depth and lay as a primary fill within [101] beneath fill (102).

At the very northern end of trench arm E (at the western end of the evaluation area) a concentration of stones (104) were uncovered lying in the base of the trench. These consisted of medium to large sized sub-angular cobbles within a soft mid grey-brown silt matrix, and measuring 0.5 in length by 0.42m in width by 0.32m in depth, orientated north-south.

## *Discussion*

Evaluation trench 1 succeeded in revealing the remains of the targeted traverse fire trench identified from low earthworks and historic aerial photography. The trench occupied a ridge of east-west aligned high ground with the concentration of associated practice trenches being located to the north, thus suggesting that this fire trench was intended to face northward and down-slope. In support of this theory, the three recovered .303 cartridges (SF 2, 3 and 7) were all found within the forward facing east-west aligned trench arm B, suggesting that this was the area of action.

The trench, although crenelated in plan, was not of equal dimensions, with trench arms measuring between 6.1m and 4.0m in length. Although the greatest length was recorded on a forward facing east-west aligned arm (trench arm B) and historic aerial photography would suggest that the forward facing arms of the traverse were of slightly greater length than the north-south connection arms.

The trench appeared to have remained open for some time, suggested by an area of slumping (105) within trench arm D, after which the trench appears to have partially silted up with fill (102) before being deliberately infilled with (103). Due to the similar characteristics of fill (103) and subsoil deposit (106), it appears likely that (103) was the excavated subsoil to create the fire trench, which would have been mounded to the north and south creating a parapet and parados respectively. This was then ploughed or bladed back into the semi infilled trench once it had gone out of use.

A concentration of medium to large cobbles (104) within the base of trench arm E appears to be in-situ rather than a slumping or demolition deposit. The identity of this feature is unknown although it is likely that it was associated with drainage in the trench base.

The fire trench appears to have been deliberately excavated slightly deeper in the corners, presumably to create drainage sumps for water, and also with a slope bias towards the southern rear-facing side of the trench to drain water away from the forward facing trench arms.

The trench, although vertically truncated by ploughing and erosion / slumping, is unlikely to have been of sufficient depth for combat practice. Even with the mounding of excavated material to form a parapet and parados it is challenging to envisage the trench being much more than 1m in depth. This would suggest that sandbags were used to increase the trench 'depth' of which now no trace survives.



**Plate 01:** Trench 1 pre-excavation photograph, from the west. Scale 1.0m.



**Plate 02:** Trench 1 pre-excitation photograph, from the east. Scale 1.0m.



**Plate 03:** Trench 1 post-excavation photograph, from the north. Scale 2 x 1.0m.



**Plate 04:** Trench 1 post-excavation photograph, from the north-northeast. Scale 2 x 1.0m.



**Plate 05:** Trench 1 post-excavation photograph, from the northeast. Scale 1.0m.



**Plate 06:** Trench 1 post-excavation photograph, from the east. Scale 1.0m.





**Plate 07:** Trench 1 post-excavation photograph, from the southeast. Scale 2 x 1.0m.



**Plate 08:** Trench 1 post-excavation photograph, from the south (eastern end). Scale 2 x 1.0m.



**Plate 09:** Trench 1 post-excitation photograph, from the south (western end). Scale 2 x 1.0m.



**Plate 10:** Trench 1 post-excavation photograph, from the southwest. Scale 2 x 1.0m.



**Plate 11:** Trench 1 post-excitation photograph, from the west. Scale 1.0m.



**Plate 12:** Trench 1 post-excavation photograph, from the northwest. Scale 2 x 1.0m.



**Plate 13:** Trench 1 trench arm A, from the north. Scale 1.0m.



**Plate 14:** Trench 1 trench arm A, from the south. Scale 1.0m.





**Plate 15:** Trench 1 trench arm B, from the east. Scale 1.0m.



**Plate 16:** Trench 1 trench arm B, from the west. Scale 1.0m.



**Plate 17:** Trench 1 trench arm C, from the north. Scale 1.0m.



**Plate 18:** Trench 1 trench arm C, from the south. Scale 1.0m.



Plate 19: Trench 1 trench arm D, from the east. Scale 1.0m.



Plate 20: Trench 1 trench arm D, from the west. Scale 0.5m.



**Plate 21:** Trench 1 trench arm E, from the south. Scale 1.0m.

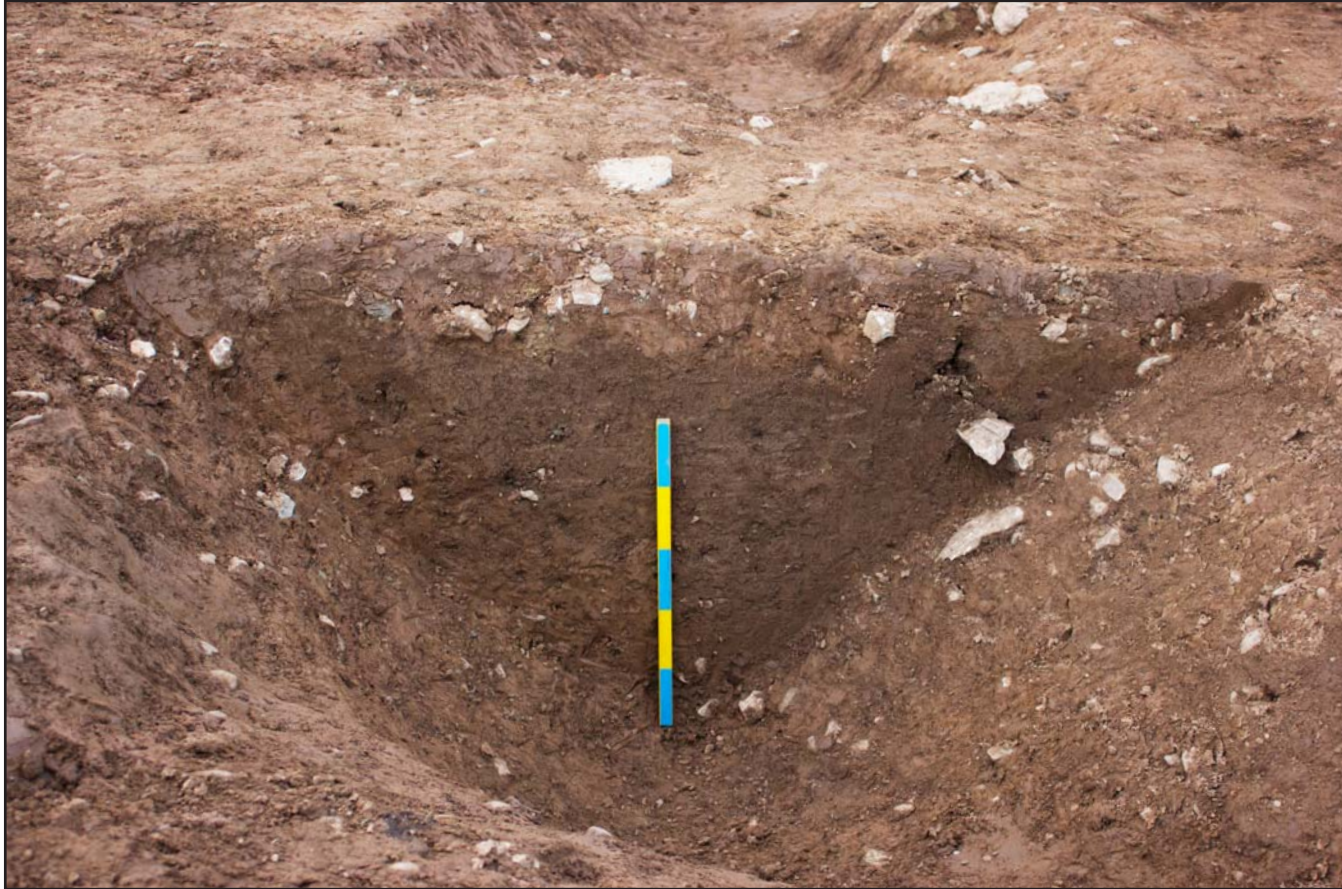


**Plate 22:** Trench 1 trench arm E, from the north. Scale 1.0m.

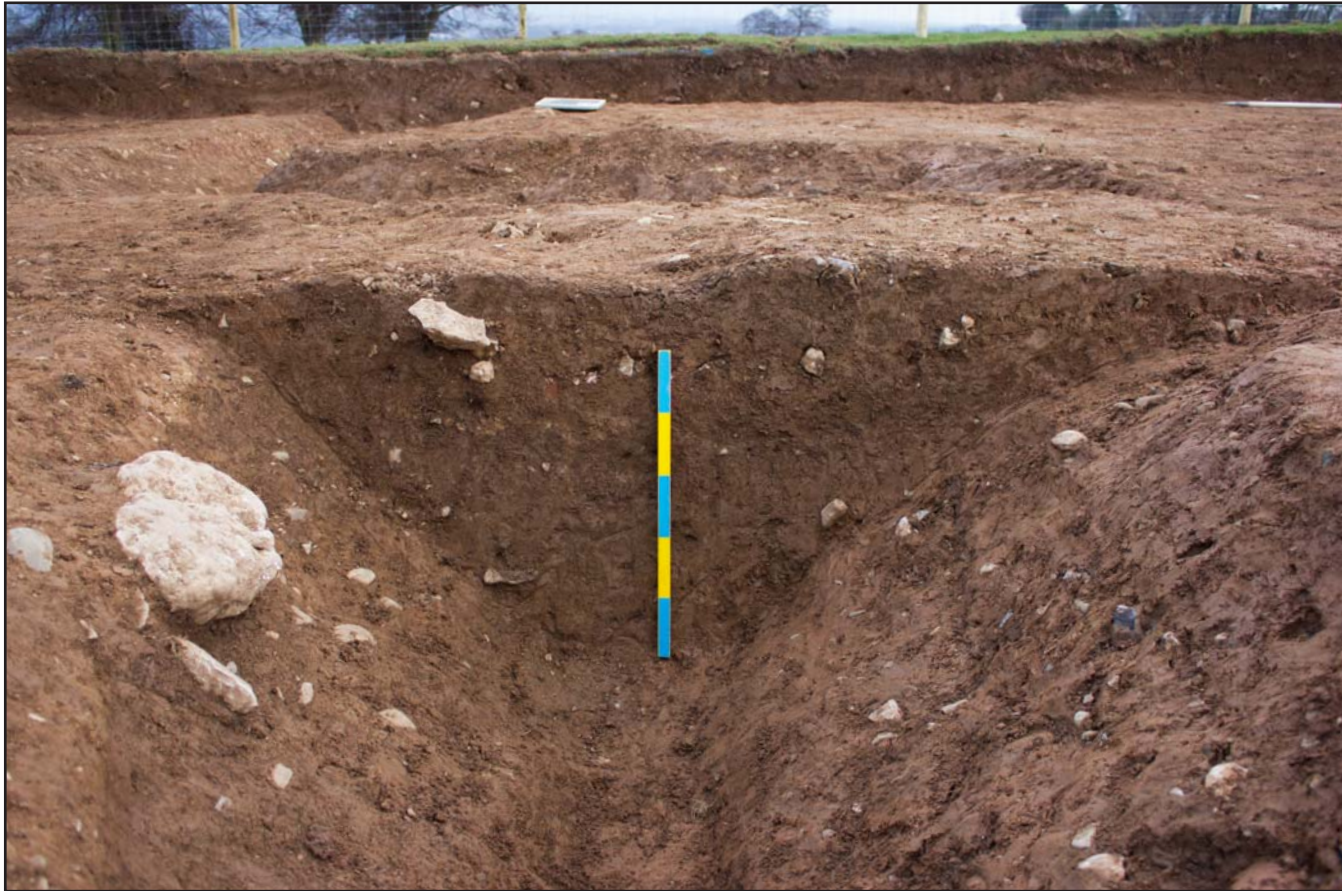




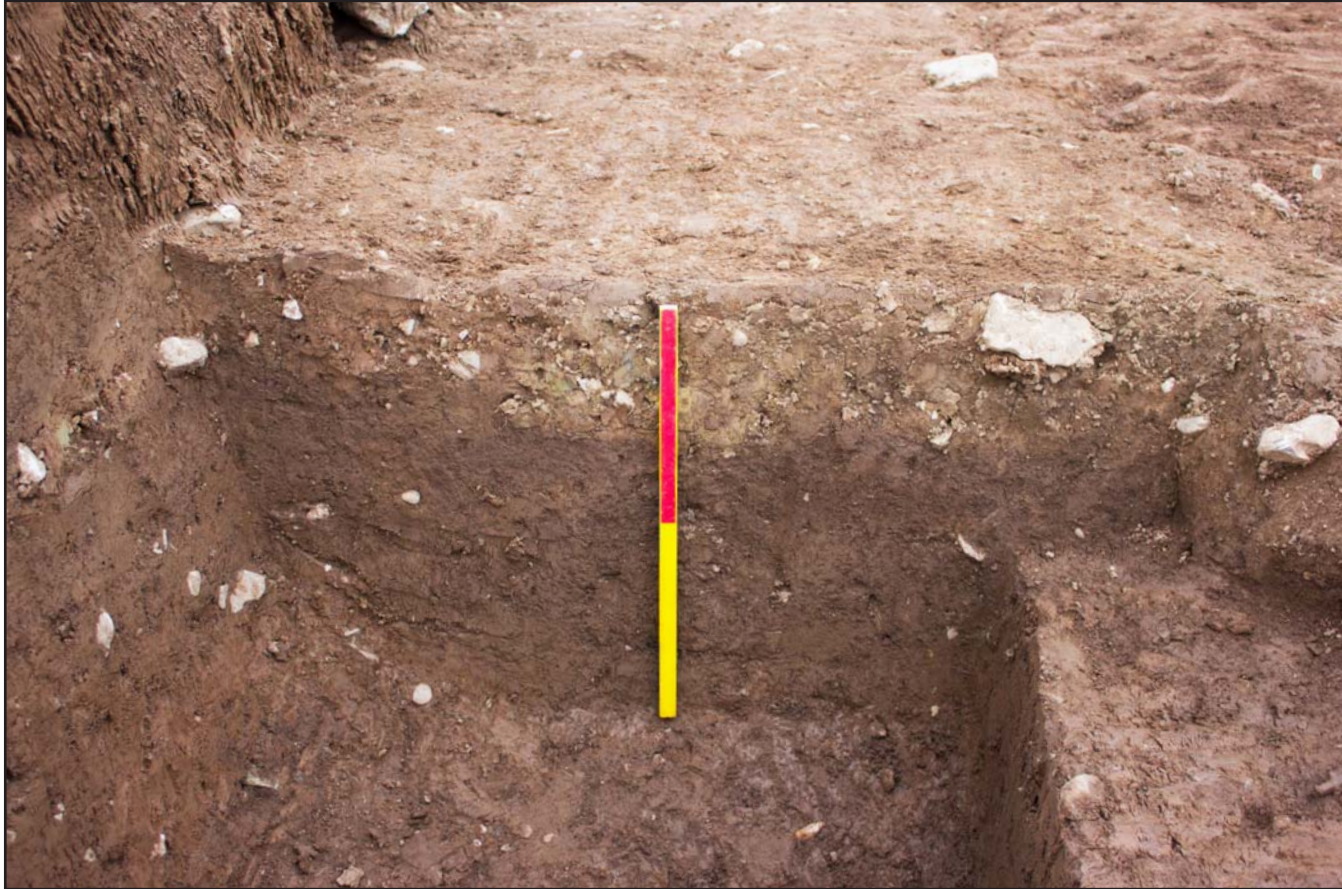
**Plate 23:** Trench 1 section across trench arm A, from the west. Scale 0.5m.



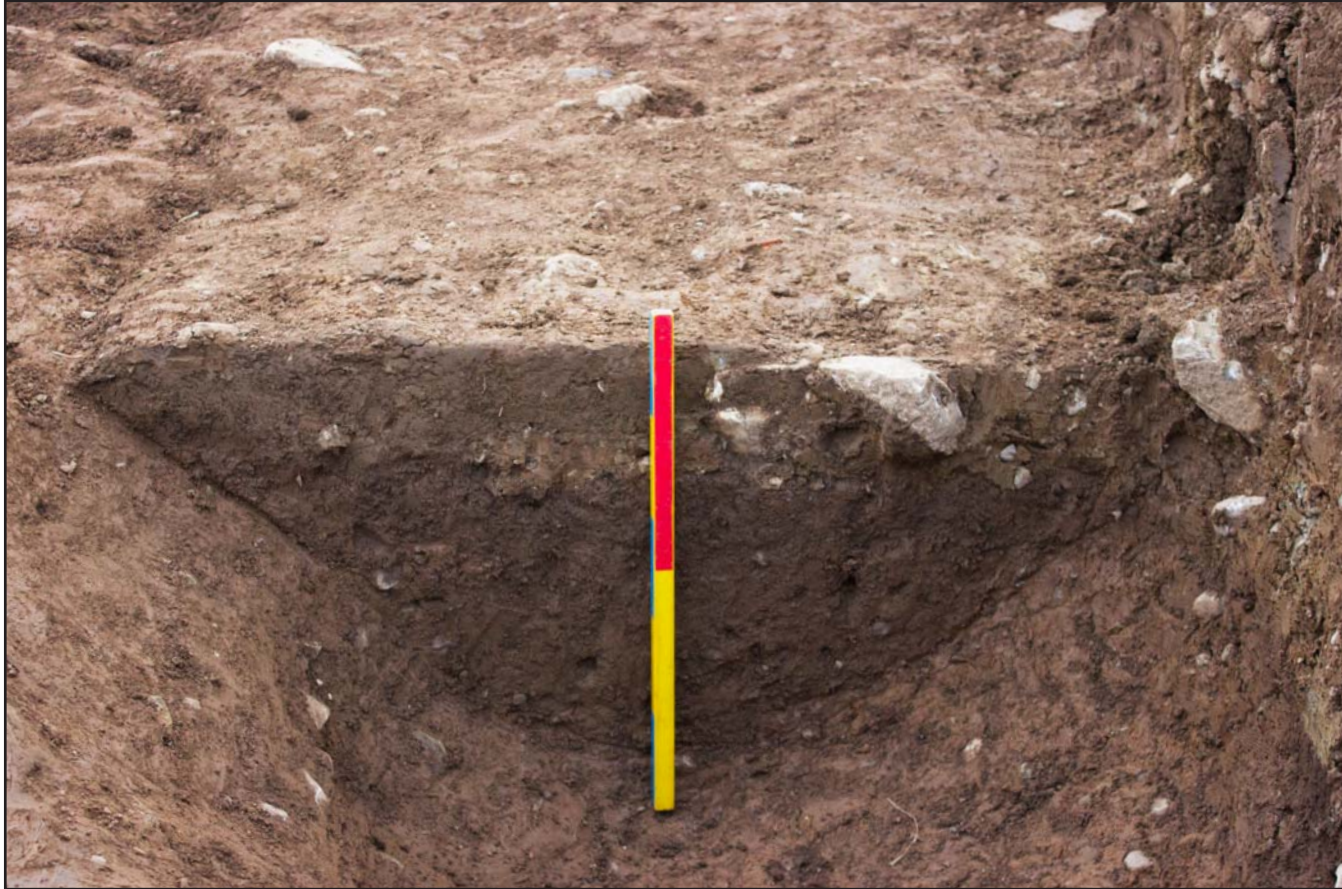
**Plate 24:** Trench 1 section across trench arm D, from the east. Scale 0.5m.



**Plate 25:** Trench 1 section across trench arm D, from the west. Scale 0.5m.



**Plate 26:** Trench 1 section across trench arm E, from the south. Scale 0.5m.



**Plate 27:** Trench 1 section across trench arm E, from the north. Scale 0.5m.



**Plate 28:** Trench 1 trench arm E showing stones (104), from the south. Scale 0.5m.



**Plate 29:** Trench 1 trench arm D showing area of slumping (105), from the southwest. Scale 0.5m.



**Plate 30:** Trench 1 post-excavation context shot, from the north-northwest.





**Plate 31:** Trench 1 post-excavation context shot showing existing earthworks, from the northwest.



**Plate 32:** Trench 1 aerial post-excavation context shot showing existing earthworks, from the southeast.



Parados

Parapet

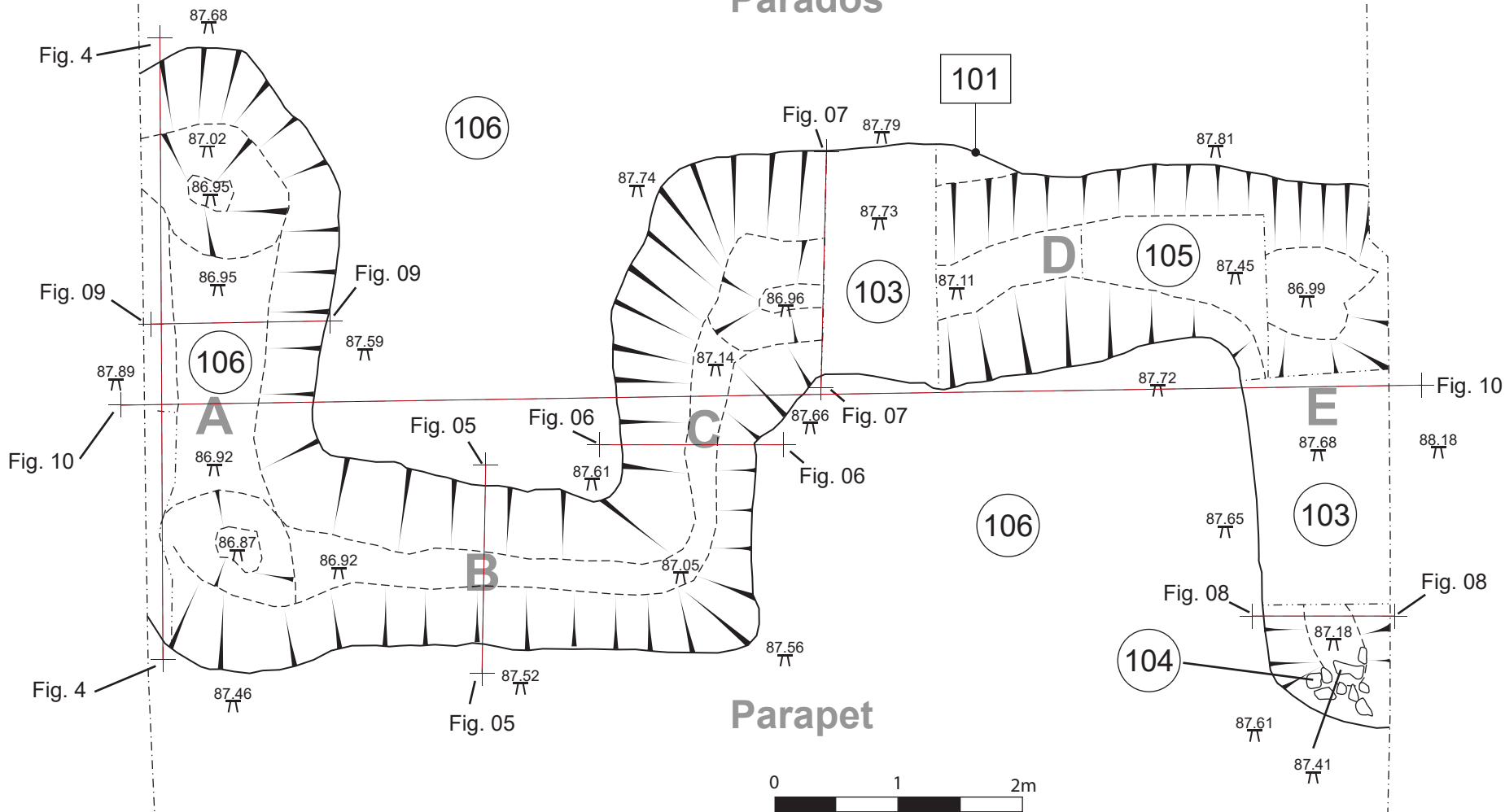
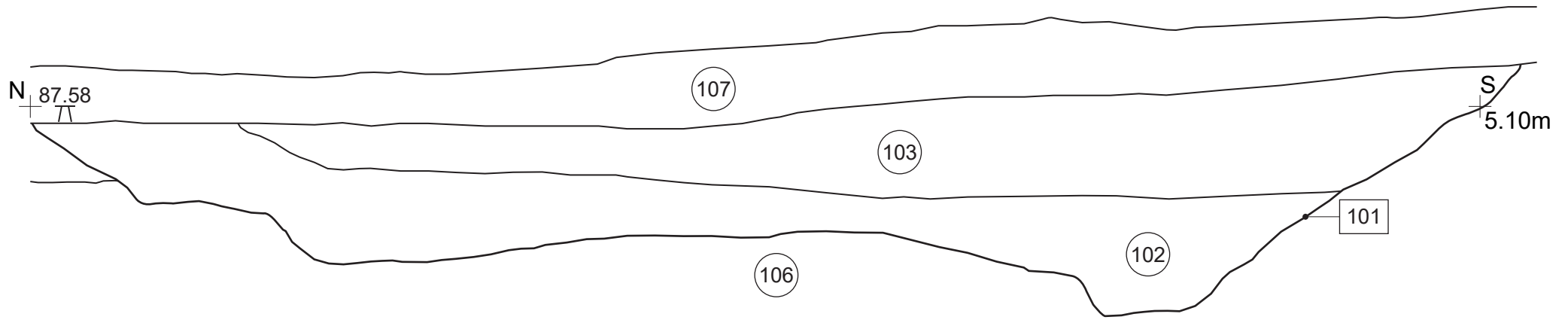


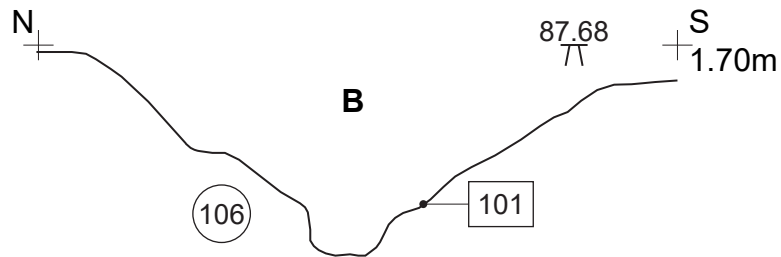
Figure 03. Plan of trench 1. Scale 1:50 at A4.

**Aeon Archaeology**  
 Richard Cooke BA MA MCIFA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
 www.aeonarchaeology.co.uk

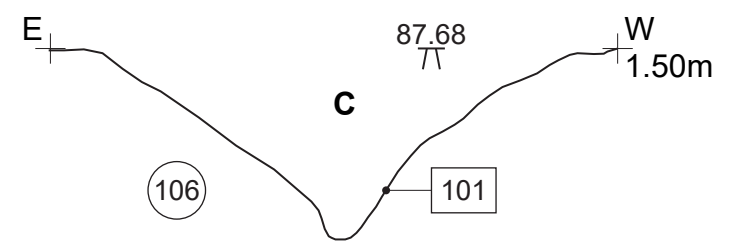
**Fig 04.**



**Fig 05.**



**Fig 06.**



1:20



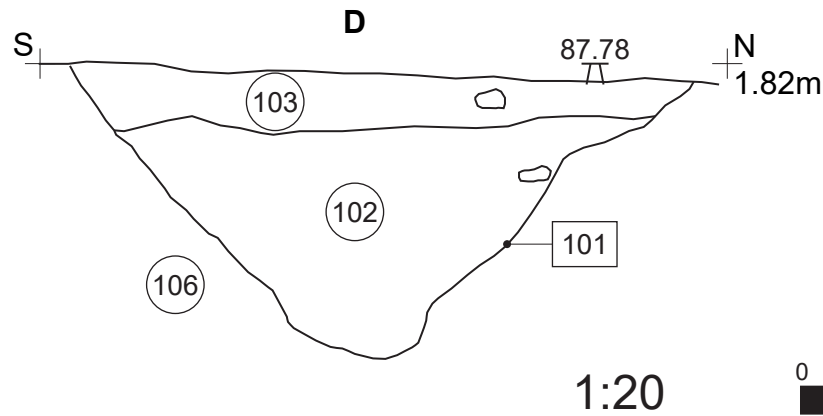
Located on fig 03.



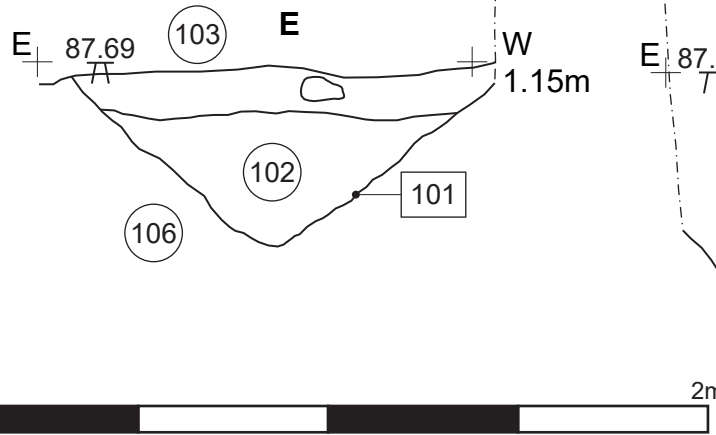
**Figure 04.** West facing section of trench arm (A) within trench 1. Scale 1:20 at A4.  
**Figure 05.** West facing profile across trench arm (B) within trench 1. Scale 1:20 at A4.  
**Figure 06.** North facing profile across trench arm (C) within trench 1. Scale at 1:20 at A4.

**Aeon Archaeology**  
Richard Cooke BA MA MCifA  
Obsidian Offices, Chantry Court,  
Chester, CH1 4QN  
Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)

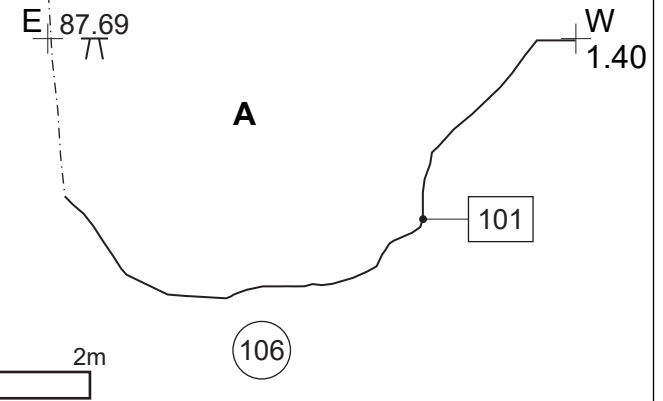
**Fig 7.**



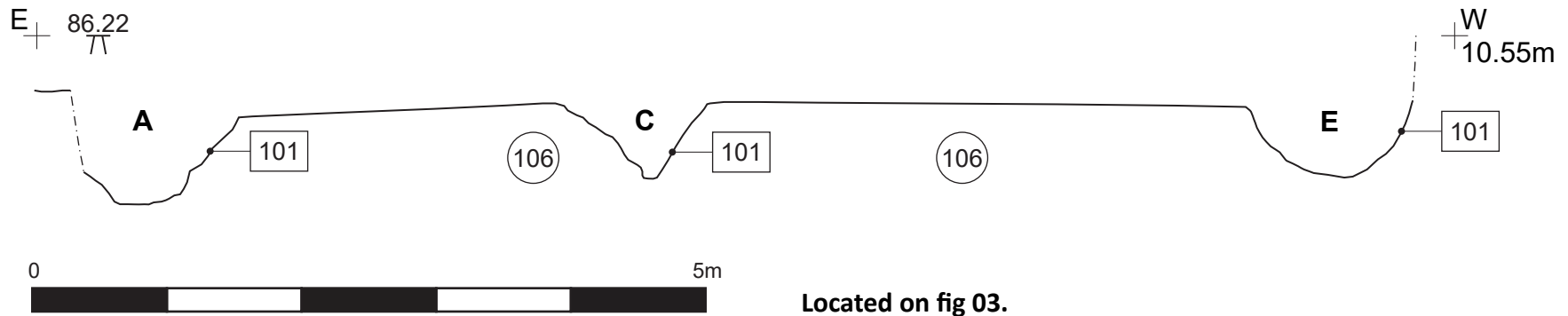
**Fig 8.**



**Fig 9.**



**Fig 10.**



Located on fig 03.

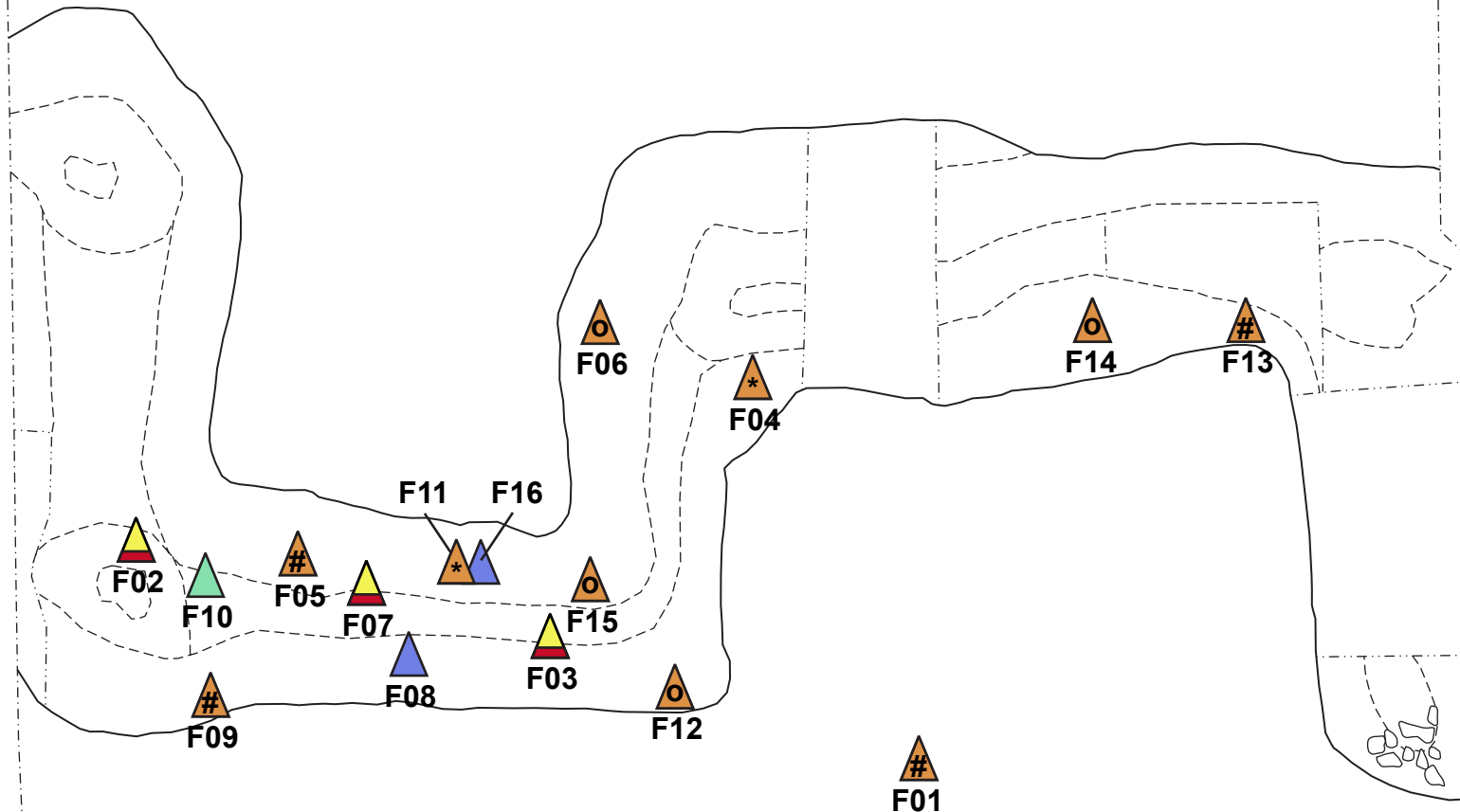


**Figure 07.** East facing section of trench arm (D) within trench 1. Scale at 1:20 at A4.  
**Figure 08.** North facing section of trench arm (E) within trench 1. Scale 1:20 at A4.  
**Figure 09.** North facing profile of trench arm (A) within trench 1. Scale 1:20 at A4.  
**Figure 10.** North facing profile across trench arms A, B and C. Scale 1:50 at A4.

**Aeon Archaeology**  
 Richard Cooke BA MA MCIFA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)



1:50









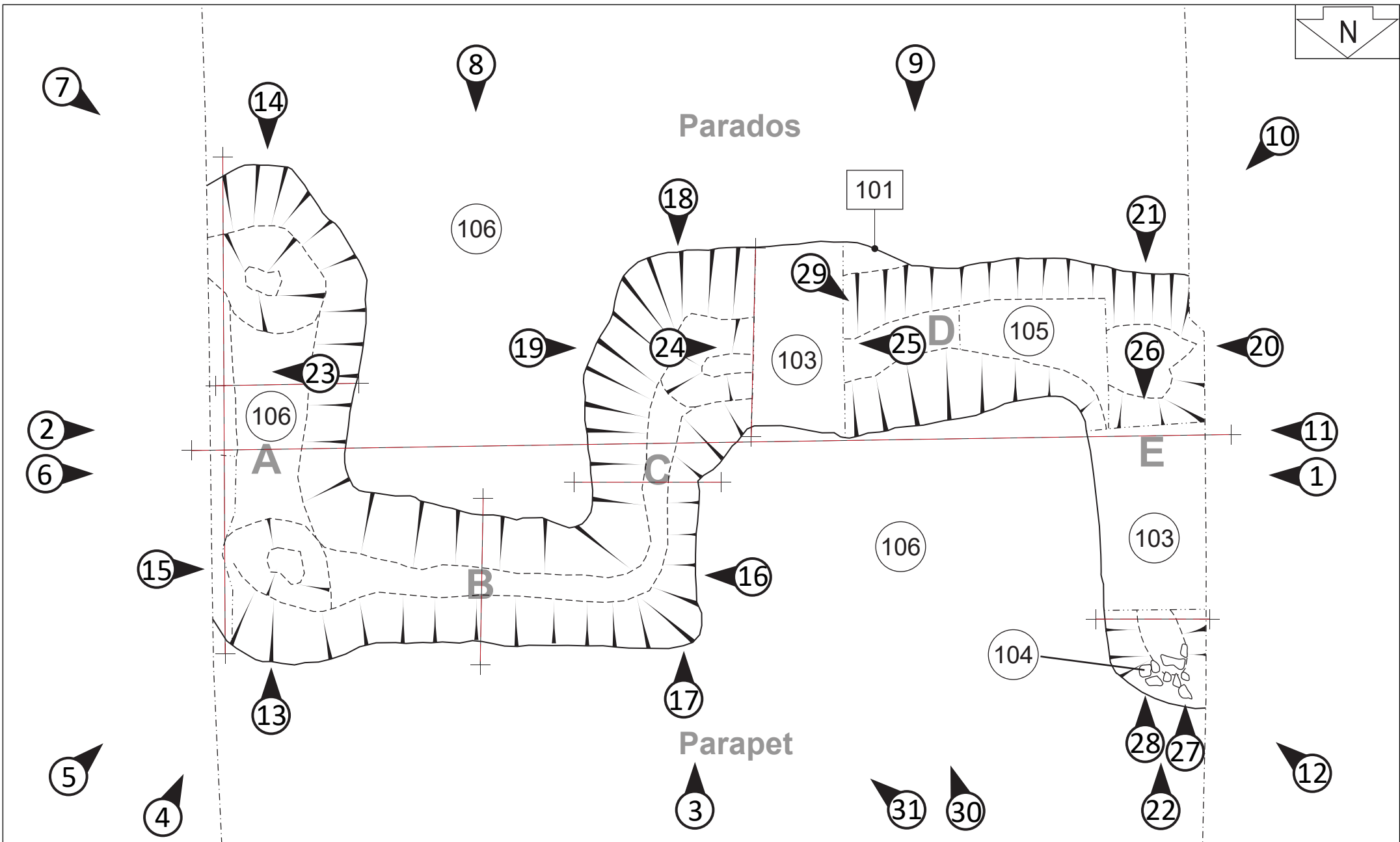
-  Cartridge '303 round'
-  Fe Nail
-  Fe Wire
-  Fe Object
-  Cu Alloy
-  Ceramic



Figure 11. Location of archaeological finds plotted on Plan of Trench 1. Scale 1:50 at A4.

**Aeon Archaeology**  
Richard Cooke BA MA MCifA  
Obsidian Offices, Chantry Court,  
Chester, CH1 4QN  
Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)



**Figure 12.** Location and orientation of photographic plates within trench 1.  
Scale 1:50 at A4.

## **Trench 2 (plates 33-46) (figs 1-2, 30-33)**

SH 99874.12/74143.96 – SH 99870.99/74135.66 – SH 99866.47/74137.32 – SH 99869.40/74145.70

### *Description*

Trench 2 measured 9.0m in length by 5.0m in width orientated north-south, and was excavated to a maximum depth of 0.9m BGL (86.0m OD). It was excavated through a 0.28m deep deposit of very soft, dark/mid red-brown silt-clay turf and topsoil, and a 0.5m deep, very mixed mid orange-brown clay-silt subsoil with occasional small sub-rounded and sub-angular cobble and pebble inclusions. This lay above a fir, pink-red boulder clay natural glacial substrata with light grey bedrock outcroppings.

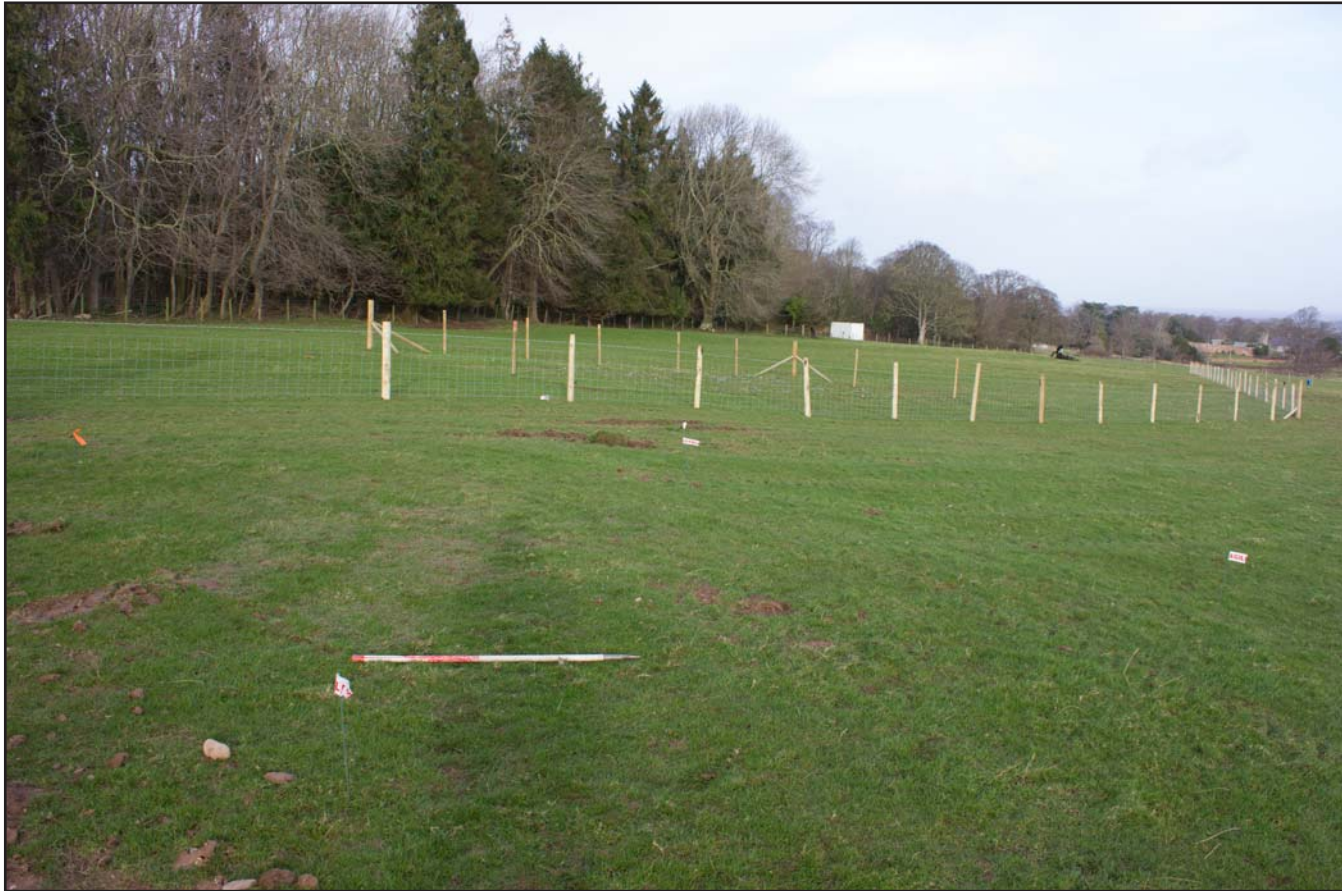
There were no archaeological features revealed within the evaluation trench and no artefacts recovered.

### *Discussion*

Evaluation trench 2 failed to uncover any remains associated with the linear earthwork identified from historic aerial photography and recorded by CPAT as part of the Cadw Scheduling Enhancement Program of 2015 (report 1384). It is possible that due to farming across the site this particular trench has not survived and therefore could not be identified upon evaluation. Indeed, heavy mixing of the topsoil and subsoil deposits was recorded on site, and if the trench was only of shallow depth to begin with then it is possible that ploughing has removed all trace.

Alternatively, it may be the case that this feature was never a First World War trench to begin with and was merely a scarp running along the top of the slope which presented as a possible trench feature on the interpretation of the RAF photograph of 1946.





**Plate 33:** Trench 2 pre-excavation photograph, from the east. Scale 1.0m.



**Plate 34:** Trench 2 pre-excitation photograph, from the south. Scale 1.0m.



**Plate 35:** Trench 2 post-excavation photograph, from the north. Scale 2x 1.0m.



**Plate 36:** Trench 2 post-excitation photograph, from the northeast. Scale 2x 1.0m.



**Plate 37:** Trench 2 post-excitation photograph (north), from the east. Scale 2x 1.0m.



**Plate 38:** Trench 2 post-excavation photograph (south), from the east. Scale 2x 1.0m.



**Plate 39:** Trench 2 post-excavation photograph, from the southeast. Scale 2x 1.0m.



**Plate 40:** Trench 2 post-excitation photograph, from the south. Scale 2x 1.0m.





**Plate 41:** Trench 2 post-excitation photograph, from the southwest. Scale 2x 1.0m.



**Plate 42:** Trench 2 post-excavation photograph (south), from the west. Scale 2x 1.0m.



**Plate 43:** Trench 2 post-excitation photograph (north), from the west. Scale 2x 1.0m.



**Plate 44:** Trench 2 post-excavation photograph, from the northwest. Scale 2x 1.0m.



**Plate 45:** Trench 2 east facing trench section, from the east. Scale 1.0m.



**Plate 46:** Trench 2 aerial post-excavation context shot showing, from the east.

### **Trench 3 (plates 47-60) (figs 13-19, 30-33)**

SH 299881.81/74188.19 – SH 99882.40/74183.49 – SH 99877.46/74183.01 – SH 99877.00/74187.81

#### *Description*

Trench 3 measured 5.0m in length by 5.0m in width, and was excavated to a maximum depth of 0.9m BGL (83.36m OD). It was excavated through a 0.29m deep deposit of soft, dark grey-brown clay-silt turf and topsoil (301), which produced 2 x iron fragments possibly from a Mills grenade (SF 17 and 18), and 1 x simulator (SF 19). This deposit lay above a 0.42m deep deposit of firm, mid orange-brown silt-clay subsoil with occasional small, sub-rounded pebble inclusions (305).

Cut into subsoil deposit (305) the targeted zigzag communications trench [304] was encountered between 84.03m and 83.95m OD. This feature was linear in plan within the trench LOE and had steep and mildly concaved sides, with a sharp break of slope at both the top and the bottom, and a flat base. The communications trench measured >7.08m in length orientated southeast-northwest, by 1.58m in width by 0.9m in depth.

The communications trench [304] had two distinct fills (303 - primary) and (302-secondary) throughout its revealed length. Fill (303) was a soft, mid grey-brown clay-silt measuring 0.33m in depth and filling the base of [304]. It produced 1 x .303 cartridge (SF 24) which was sufficiently preserved to show crimping around its point proving that it had been a blank rather than live cartridge.

Fill (302) was a firm, mid red-brown silt-clay measuring 0.21m in depth, with occasional medium to small sub-rounded and sub-angular pebble inclusions. It produced 1 x brass button (SF 20), 1 x .303 cartridge (SF 22), and 1 x barbed wire (SF 23).

#### *Discussion*

Evaluation trench 3 succeeded in revealing the remains of the targeted zigzag communications trench identified from low earthworks and historic aerial photography. The trench occupied the slope of an east-west aligned area of high ground with the concentration of associated practice trenches being located to the north, although fire trench 1 was in this case located to the south on higher ground.

The trench had been previously assumed to be a communications trench due to its zigzag shape in plan, with trenches being described as such in the War Office *Manual of Field Engineering 1911*. However, the recovery of .303 cartridges from the upper and lower fills, as well as unstratified but within vicinity of the trench, shows that this trench was also being used for firing. Moreover, cartridge find no 24, recovered from the lower fill (303), retains more of its length towards the point, where although fired, shows crimping around the cartridge edge. This shows that it was in fact a blank cartridge rather than a live bullet, and for the first time alludes to the use of blanks rather than live ammunition being used at the Bodelwyddan site.

The trench appeared to have remained open for some time, with the trench appearing to have partially silted up with fill (303) before being deliberately infilled with (302).

The communications trench appears to have been deliberately excavated on a gentle slope running down to the northwest, almost certainly to aid drainage.

The trench, although vertically truncated by ploughing and erosion, is unlikely to have been of sufficient depth for combat practice. Even with the mounding of excavated material to form a parapet

and paradox it is challenging to envisage the trench being much more than 1m in depth. This would suggest that sandbags were used to increase the trench 'depth' of which now no trace survives.





**Plate 47:** Trench 3 post-excavation photograph, from the east. Scale 1.0m.



**Plate 48:** Trench 3 post-excavation photograph, from the southeast. Scale 1.0m.



**Plate 49:** Trench 3 post-excavation photograph, from the south. Scale 1.0m.



**Plate 50:** Trench 3 post-excavation photograph, from the west. Scale 1.0m.



**Plate 51:** Trench 3 post-excavation photograph, from the northwest. Scale 1.0m.



**Plate 52:** Trench 3 post-excavation photograph, from the north. Scale 1.0m.



**Plate 53:** Trench 3 post-excavation photograph, from the northeast. Scale 1.0m.



**Plate 54:** Trench 3 post-excavation photograph showing trench [304] , from the southeast.  
Scale 0.5m.





**Plate 55:** Trench 3 post-excitation photograph showing trench [304] , from the northwest.  
Scale 0.5m.



**Plate 56:** Trench 3 northwest facing section of [304] showing fills (303) and (302), from the northwest. Scale 0.5m.



**Plate 57:** Trench 3 southeast facing section of [304] showing base fill (303), from the southeast. Scale 0.5m.



**Plate 58:** Trench 3 southeast facing section of [304] showing fills (303) and (302), from the southeast. Scale 0.5m.



**Plate 59:** Trench 3 showing possible entrance into trench [304], from the northeast. Scale 0.5m.



**Plate 60:** Trench 3 aerial photograph, from the southeast.

299869.40 /  
374145.70

299874.12 /  
374143.96

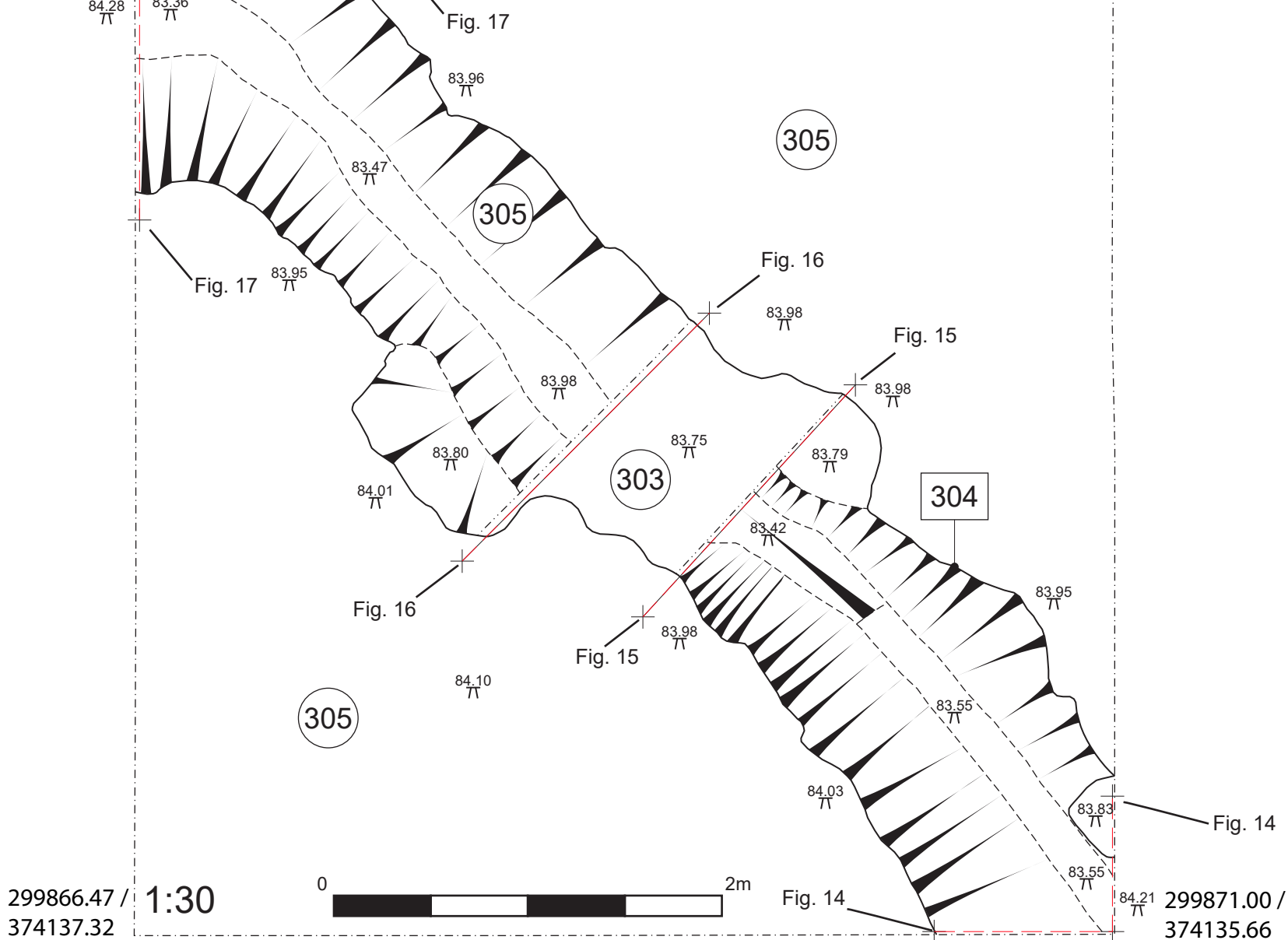
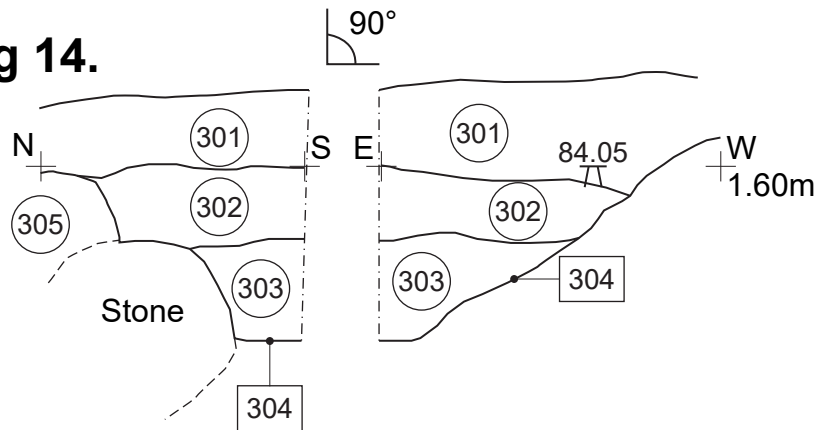


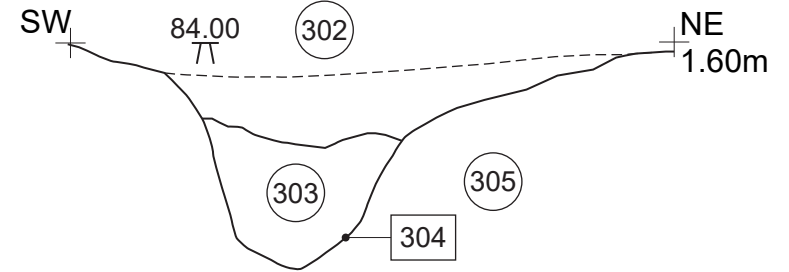
Figure 13. Plan of trench 3. Scale 1:30 at A4.

**Aeon Archaeology**  
 Richard Cooke BA MA MCifA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
 www.aeonarchaeology.co.uk

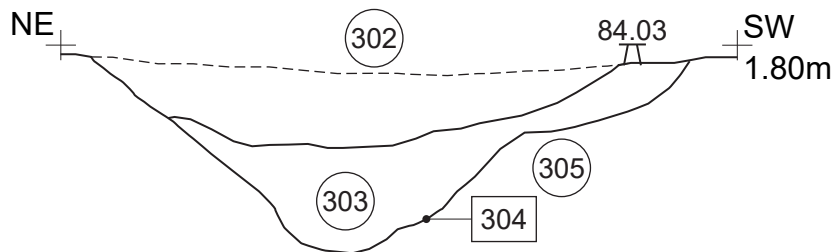
**Fig 14.**



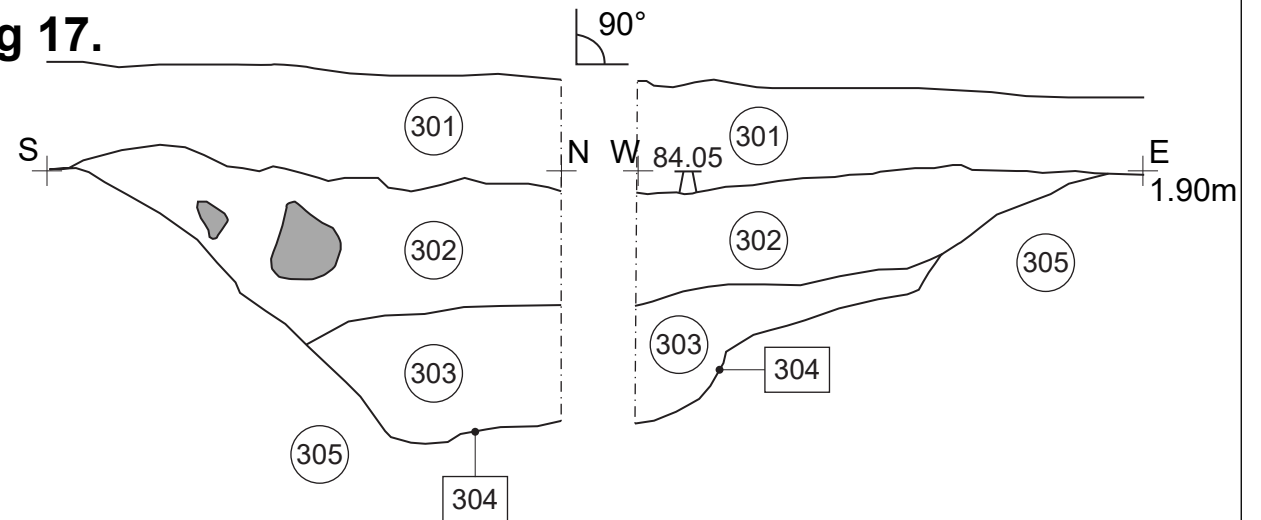
**Fig 15.**



**Fig 16.**



**Fig 17.**



1:20



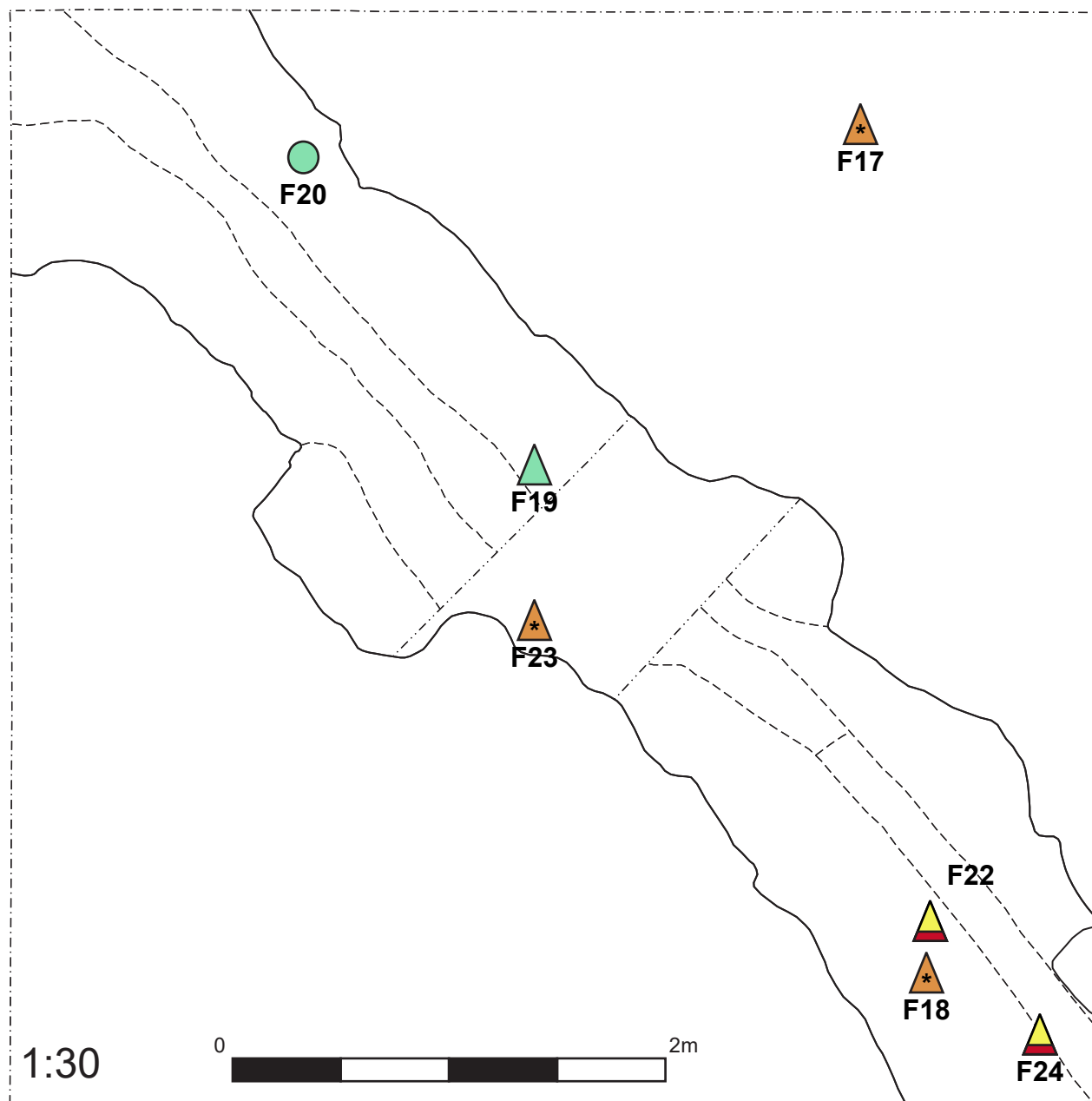
Located on fig 13







**Figure 14.** South eastern corner section of trench [304] in trench 3. Scale 1:20 at A4.  
**Figure 15.** Southeast facing section across trench [304] in trench 3. Scale 1:20 at A4.  
**Figure 16.** Northwest facing section across trench [304] in trench 3. Scale 1:20 at A4.  
**Figure 17.** North western corner section of trench [304] in trench 3. Scale 1:20 at A4.

**Aeon Archaeology**  
 Richard Cooke BA MA MCifA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
 www.aeonarchaeology.co.uk





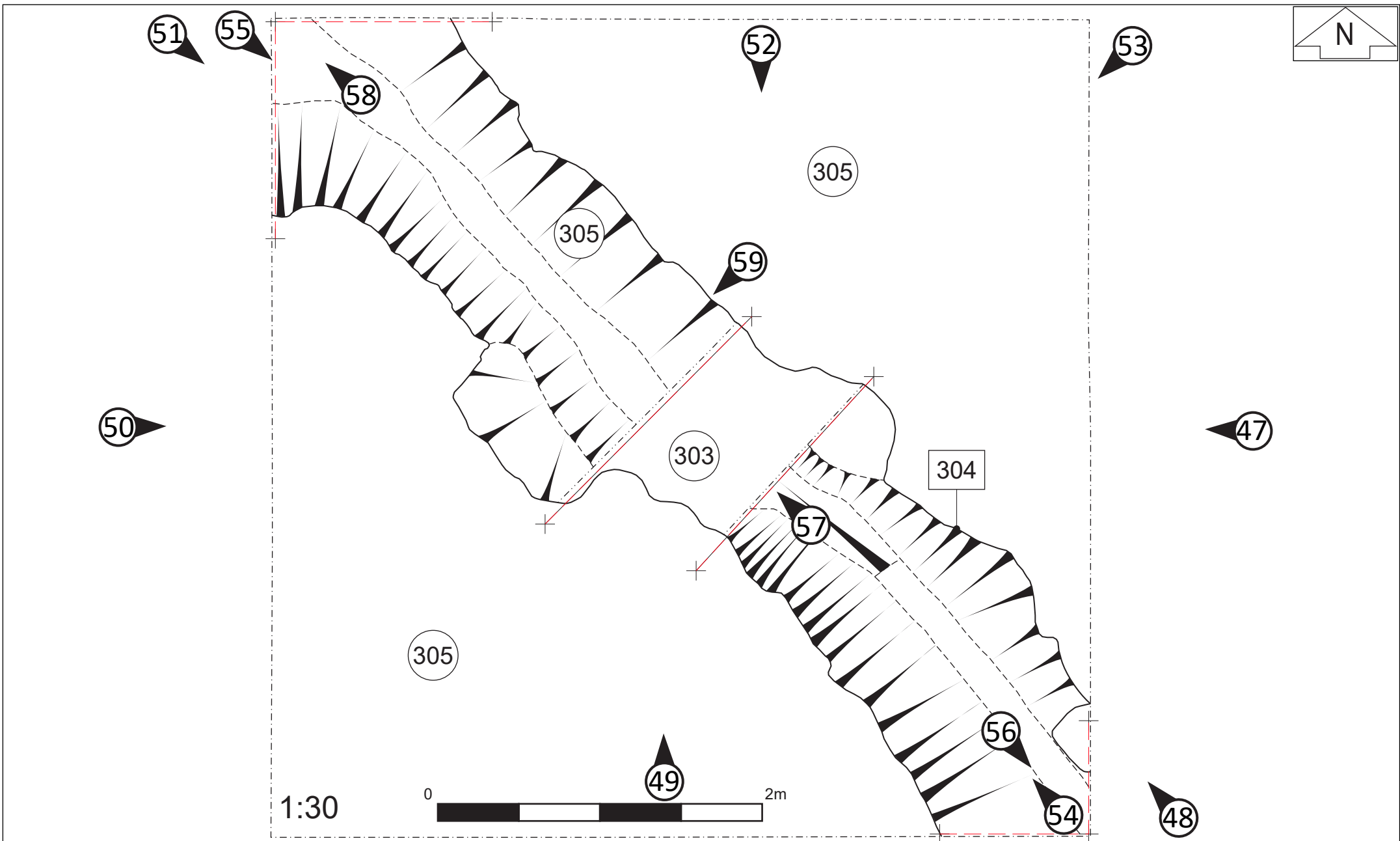
-  Cartridge '303 round'
-  Fe Object
-  Cu Alloy
-  Cu Button

1:30



**Figure 18.** Location of archaeological finds plotted on Plan of Trench 3 . Scale 1:30 at A4.

**Aeon Archaeology**  
 Richard Cooke BA MA MCifA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
 www.aeonarchaeology.co.uk



**Figure 19.** Location and orientation of photographic plates within trench 3.  
Scale 1:30 at A4.

#### **Trench 4 (plates 61-67) (figs 20, 30-33)**

SH 299840.66/74466.25 – SH 99845.77/74463.33 – SH 99844.70/74461.64 – SH 99839.53/74464.63

##### *Description*

Trench 4 measured 6.0m in length by 2.0m in width orientated east-west, and was excavated to a maximum depth of 0.8m BGL (68.44m OD). It was excavated through a 0.28m deep deposit of soft, dark grey-brown clay-silt turf and topsoil (403), and a 0.52m deep deposit of soft, mid red-brown clay-silt subsoil with infrequent large, sub-rounded cobble inclusions (402). This lay above a very firm, red-brown natural clay substrata (401).

There were no archaeological features observed in plan, however upon cleaning and inspection of the north and south facing trench sections, a gently curving cut [404] was visible in section c.1.75m from the west end of the trench. This cut measured >2.0m in length by >2.0m in width, continuing into the northern, southern and western limits of excavation, by 0.3m in depth. This cut through subsoil deposit (402), almost but not quite to the level of the natural clay substrata (401). The cut had a steep top break of slope, a gently concaved side, and a flat base. The cut was initially filled by a 0.3m deep, firm mid red-brown clay (405) at its eastern end, before being entirely infilled by a 0.35m deep, soft dark orange-brown silt-clay (406) and then overlaid with topsoil (403).

No artefacts were recovered from evaluation trench 4.

##### *Discussion*

Evaluation trench 4 was targeting a northeast-southwest aligned, linear earthwork of unknown origin. Upon excavation it became apparent that rather than being an upcast earthwork, the feature was in fact a terraced landscaping cut, made into the natural slope. This had the effect of terracing the land to the west as part of the formal gardens of Bodelwyddan Castle, which are shown on the first edition Ordnance Survey map of 1878.

It therefore seems probable that the targeted linear feature was not of First World War origin like the features targeted in trenches 1-3, but rather an area of landscaping of probable Victorian date. There were however no artefacts recovered from the terrace fills and as such the date origin remains conjectural.



**Plate 61:** Trench 4 pre-excitation photograph, from the east. Scale 1.0m.



**Plate 62:** Trench 4 pre-excavation photograph, from the southwest. Scale 1.0m.



**Plate 63:** Trench 4 pre-excitation photograph, from the south. Scale 1.0m.



**Plate 64:** Trench 4 post-excavation photograph, from the west. Scale 1.0m.



**Plate 65:** Trench 4 post-excavation photograph, from the east. Scale 1.0m.

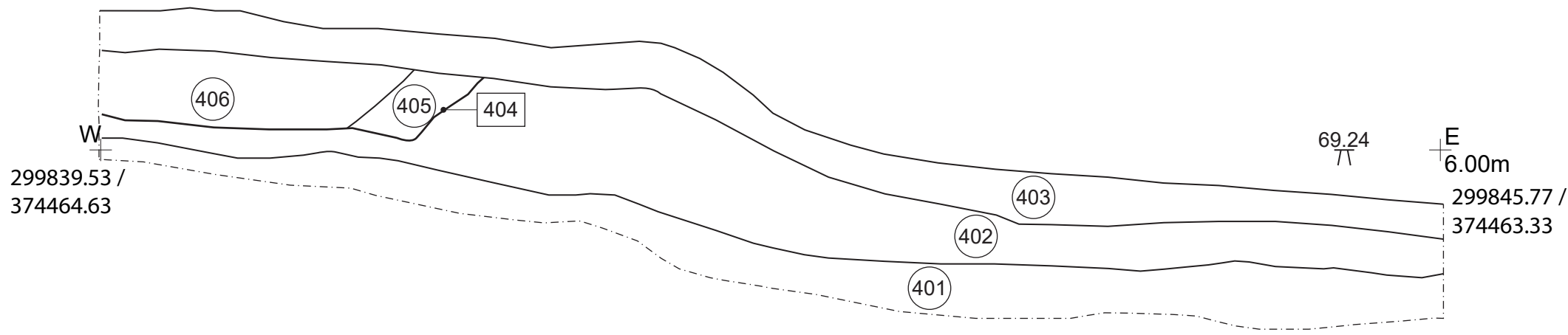




**Plate 66:** Trench 4 south facing trench section, from the south. Scale 1.0m.



**Plate 67:** Trench 4 south facing trench section showing terrace [404], from the south. Scale 1.0m.



1:20



**Figure 20.** Section of trench 4 showing terrace [404]. Scale at 1:20.



**Aeon Archaeology**  
 Richard Cooke BA MA MCifA  
 Obsidian Offices, Chantry Court,  
 Chester, CH1 4QN  
 Tel: 07866925393 / 01244 531585  
 www.aeonarchaeology.co.uk

## 10.0 CONCLUSION AND RECOMMENDATIONS

The archaeological evaluation has been successful in investigating and characterising the First World War practice trenches located within the route of the proposed water main renewal scheme at Bodelwyddan Castle.

Evaluation trench 1 uncovered the remains of a traverse fire trench, while trench 3 uncovered the remains of a zigzag communications trench, with a total of 24 associated artefacts being recovered including .303 cartridges, potential Mills grenade fragments, iron nails, a simulator, and a brass button possibly belonging to the Royal Canadian Engineers.

Evaluation trench 2 showed that a suspected First World War trench was potentially not a trench at all but rather the scarp of a hill, misidentified from the 1946 aerial photograph – or potentially was a First World War trench that had been so severely ploughed out so as to be imperceptible during evaluation.

Evaluation trench 4 showed that a linear feature of suspected First World War origin was in fact a landscaping terrace for the formal gardens to the west, of at least Victorian date.

The evaluation has also contributed to the historical narrative of the practice trenches at Bodelwyddan in the following ways.

There were no bullets recovered during this evaluation or during the evaluation undertaken by CPAT in 2015. It has long been assumed that the practice trenches at Bodelwyddan were a live firing training ground and indeed spent .303 cartridges have been recovered from both phases of work. However, spent .303 cartridge SF 24 recovered from the communications trench in evaluation trench 3 was preserved enough to show crimping near the tip, proving it was a blank rather than a live cartridge. Although this is only one individual find, the absence of any recovered bullets tentatively suggests that the troops were using blanks rather than live ammunition.

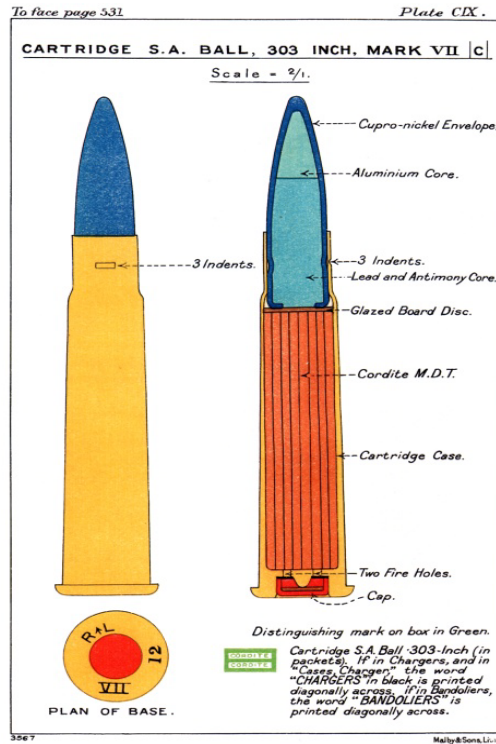
Furthermore, the recovery of two spent .303 cartridges from the zigzag communications trench, and a third .303 cartridge unstratified but within close proximity, alludes to the use of the communications trench also as a firing trench.

Both the traverse fire trench and the communications trench are well below the trench depths of 6ft 6” (a trench 5ft deep plus parapet 1ft 6” high) and 4ft 6” (1.4m) respectively, as dictated in the War Office *Manual of Field Engineering 1911*. The fire trench averaged 0.76m in depth while the communications trench averaged 0.9m in depth. Even allowing for vertical truncation by ploughing and erosion, it is unlikely that the trenches were much over 1.0m in depth, suggesting that sandbags were used to increase the trench ‘depth’ of which now no trace survives. This is in keeping with the results of the CPAT evaluation in 2015 which also recorded a much reduced trench depth than expected. By contrast, the First World War practice trenches evaluated by the Gwynedd Archaeological Trust west of Tan y Coed, Llanfaes, Anglesey in 2014 averaged between 1.35m and 1.5m in depth, much closer to the recommended trench depths.

It has been previously assumed that the First World War practice trenches at Bodelwyddan were created in order to train volunteers and conscripts in the methodology of trench excavation as well as combat. However, the decreased trench depth within soils that were not restricted by a high bedrock table would suggest that trench excavation was not the foremost aim of the site, otherwise the trenches would have been excavated closer to the standardised depth in the 1911 Manual.



Example of a WW1 Lee Enfield rifle



Longitudinal section of Mk VII ammunition circa 1915, showing the "tail heavy" design

(War Office, UK - Plate CIX in "Treatise on Ammunition" 10th Edition 1915. Facsimile reprint by Imperial War Museum and Naval & Military Press 2003)

**Figure 21:** The .303-inch (7.7 mm) calibre rimmed rifle cartridges (small find no. 2, 3, 7, 21, 22, 24).



13



17



18

0 3cm



Example of a Mills bomb



A bombing officer "lobbing" a Mills grenade

*(Greece, Salonika National Archives, Public Domain 2.24.09 158-2200)*

**Figure 22:** Fe fragments, most likely from a Mills bomb grenade (small find no. 13, 17, 18).



6



12



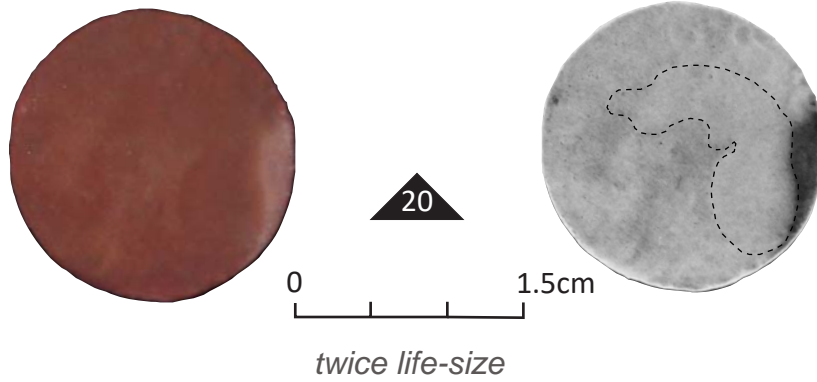
14



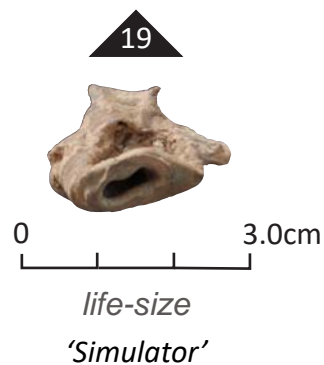
15



Reconstruction trench at Bodelwyddan Castle showing duckboards



Badge of the Royal Canadian Engineers showing Beaver motif



**Figure 24:** Brass button with black and white image (small find no. 20) and 'simulator' (small find no.19).



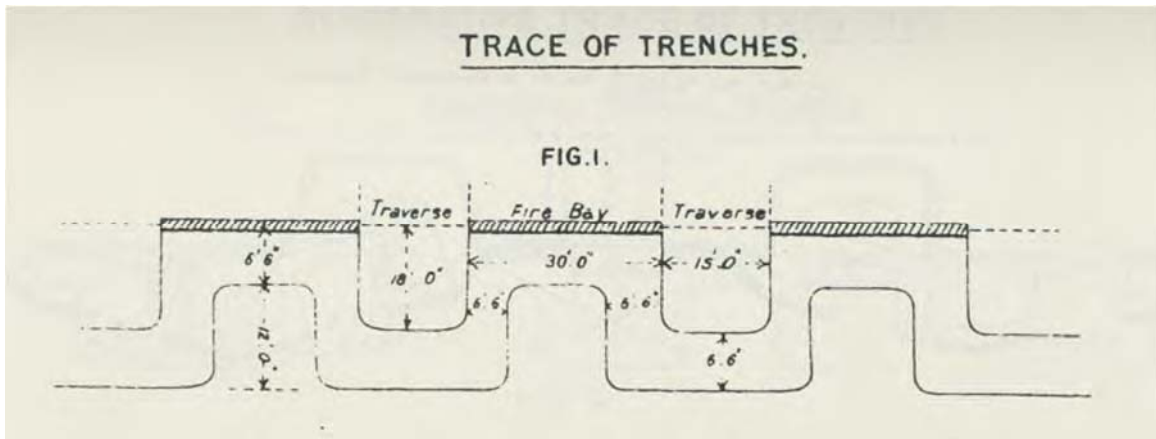


Fig.25

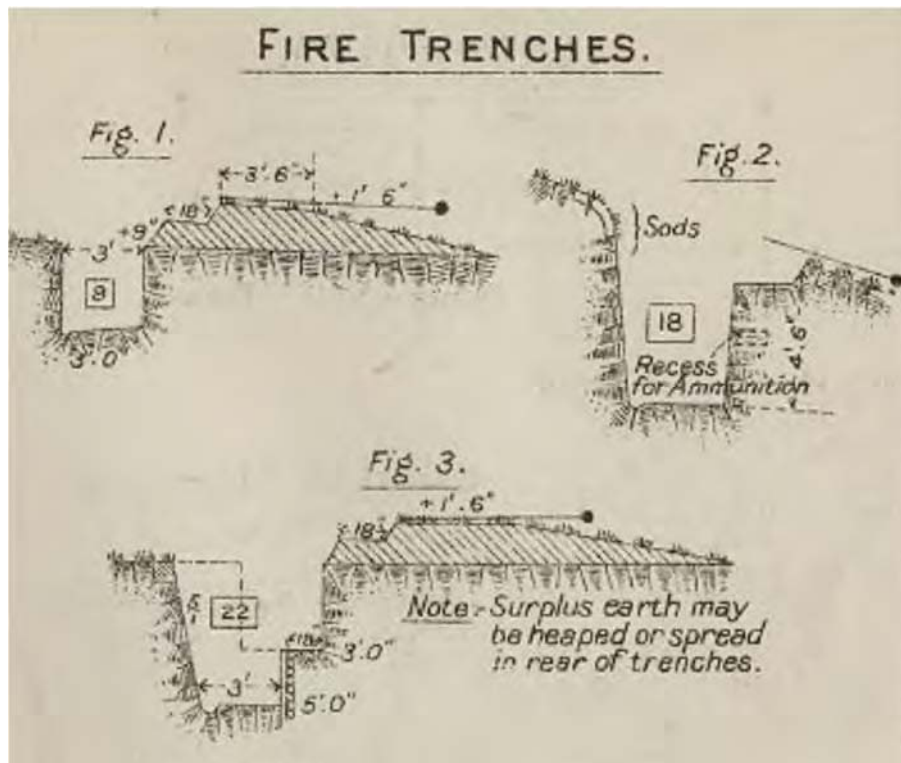


Fig.26

**Figure 25:** Trace of Trenches plan as laid out in the War Office Manual of Field Works 1921.

**Figure 26:** Fire trenches profiles as laid out in the War Office Manual of Field Engineering 1911.

FIG. I. NORMAL SECTION OF FIRE TRENCH.

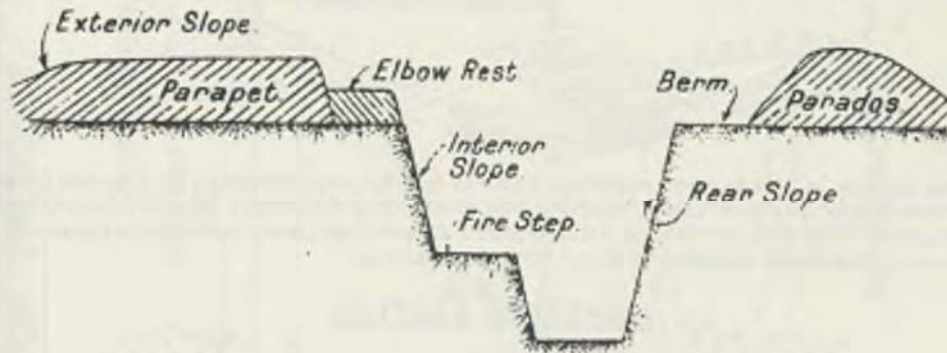


FIG. 2. ORDER OF WORK.

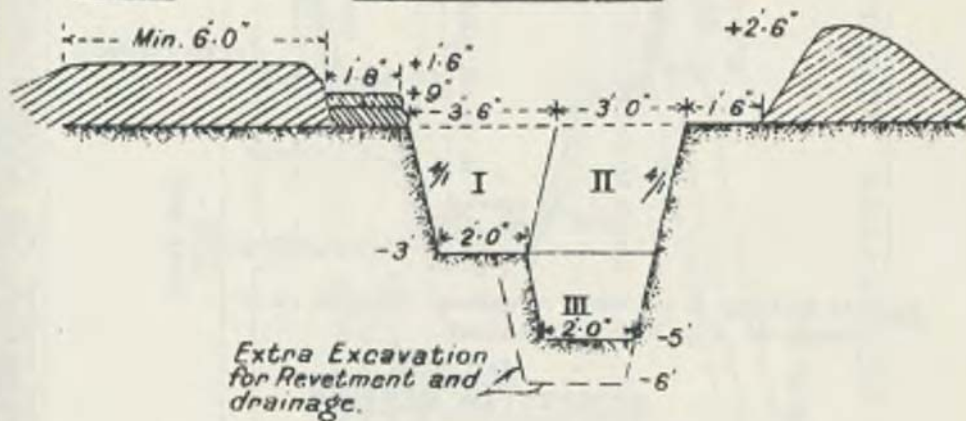
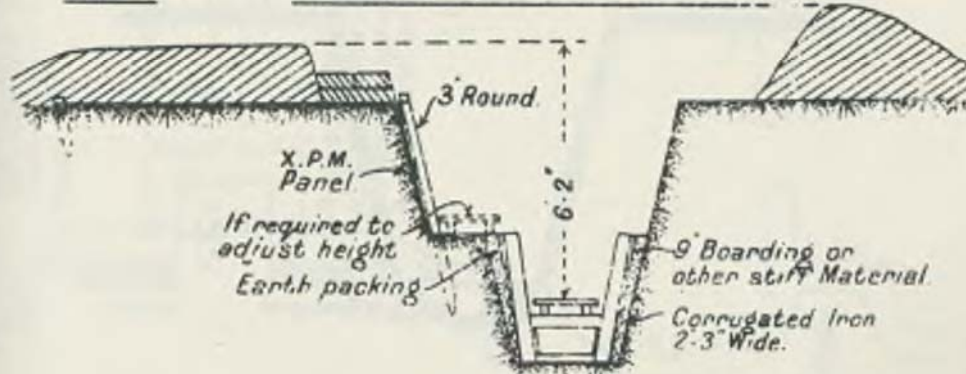


FIG. 3. FINAL SECTION OF TRENCH.



© 1921.

Malby & Sons, Lith.

Figure 27: Sections through a fire trench as laid out in the War Office Manual of Field Works 1921.

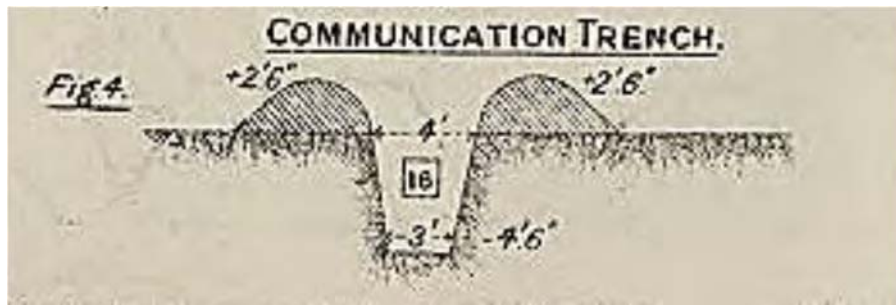


Fig.28

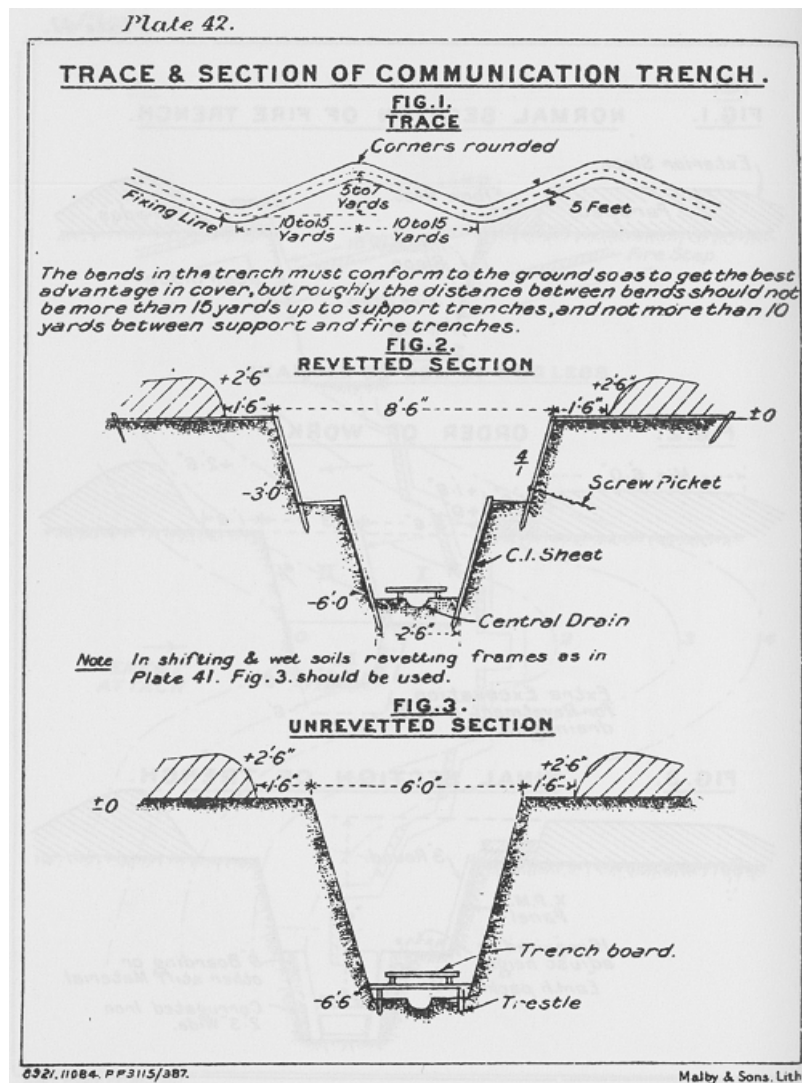
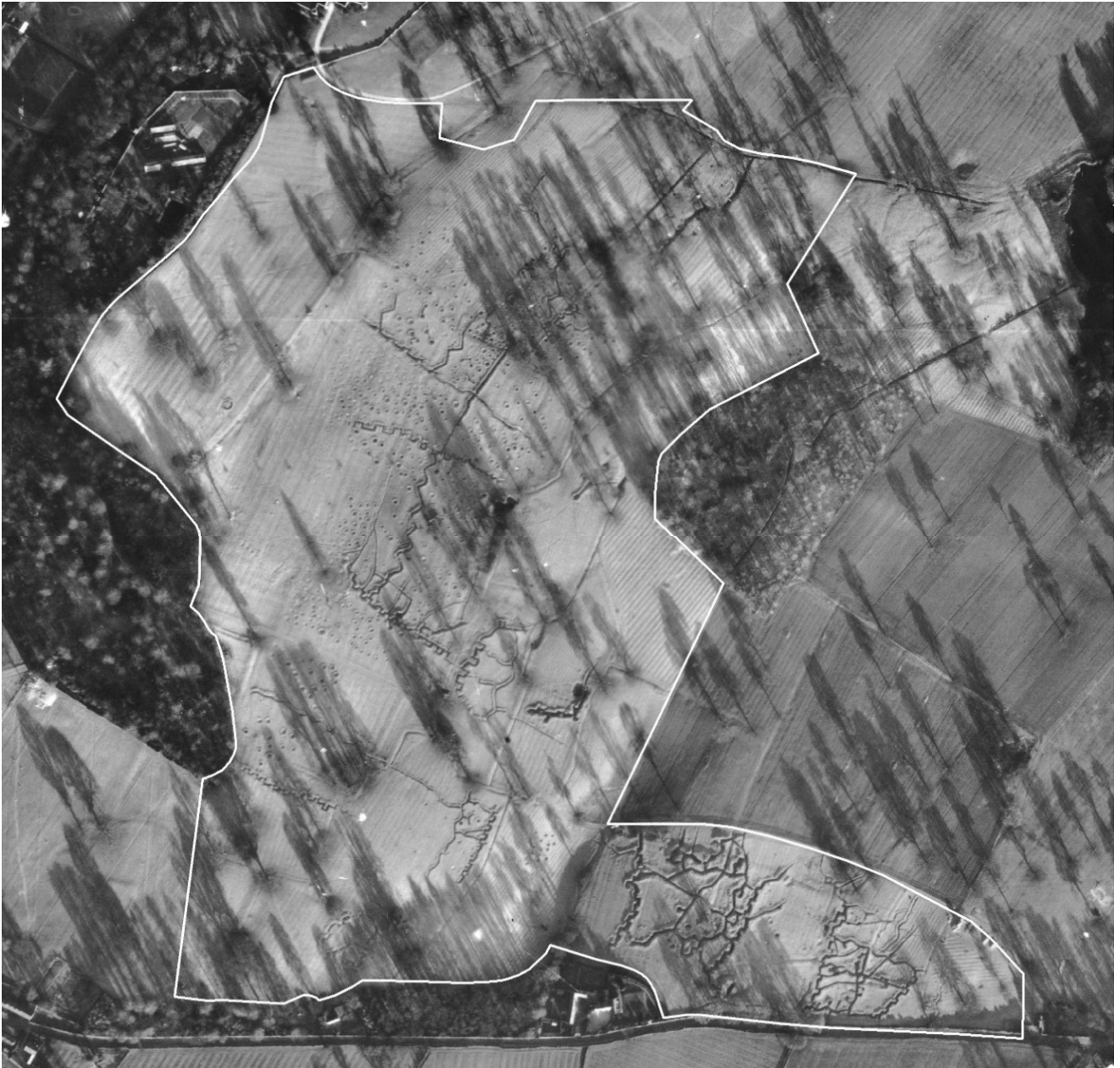


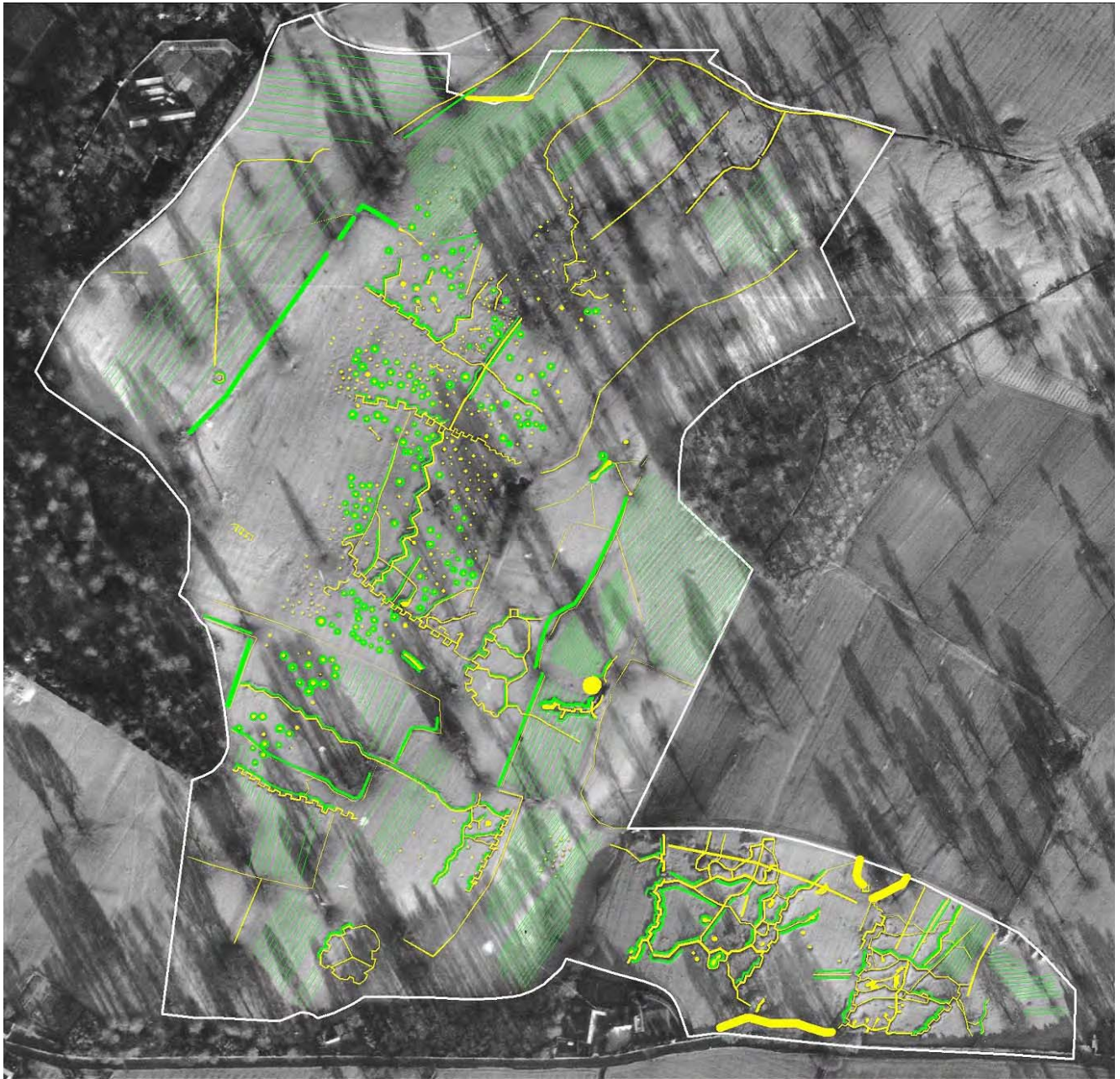
Fig.29

**Figure 28:** Communication Trench profile as laid out in the War Office *Manual of Field Engineering* 1911.

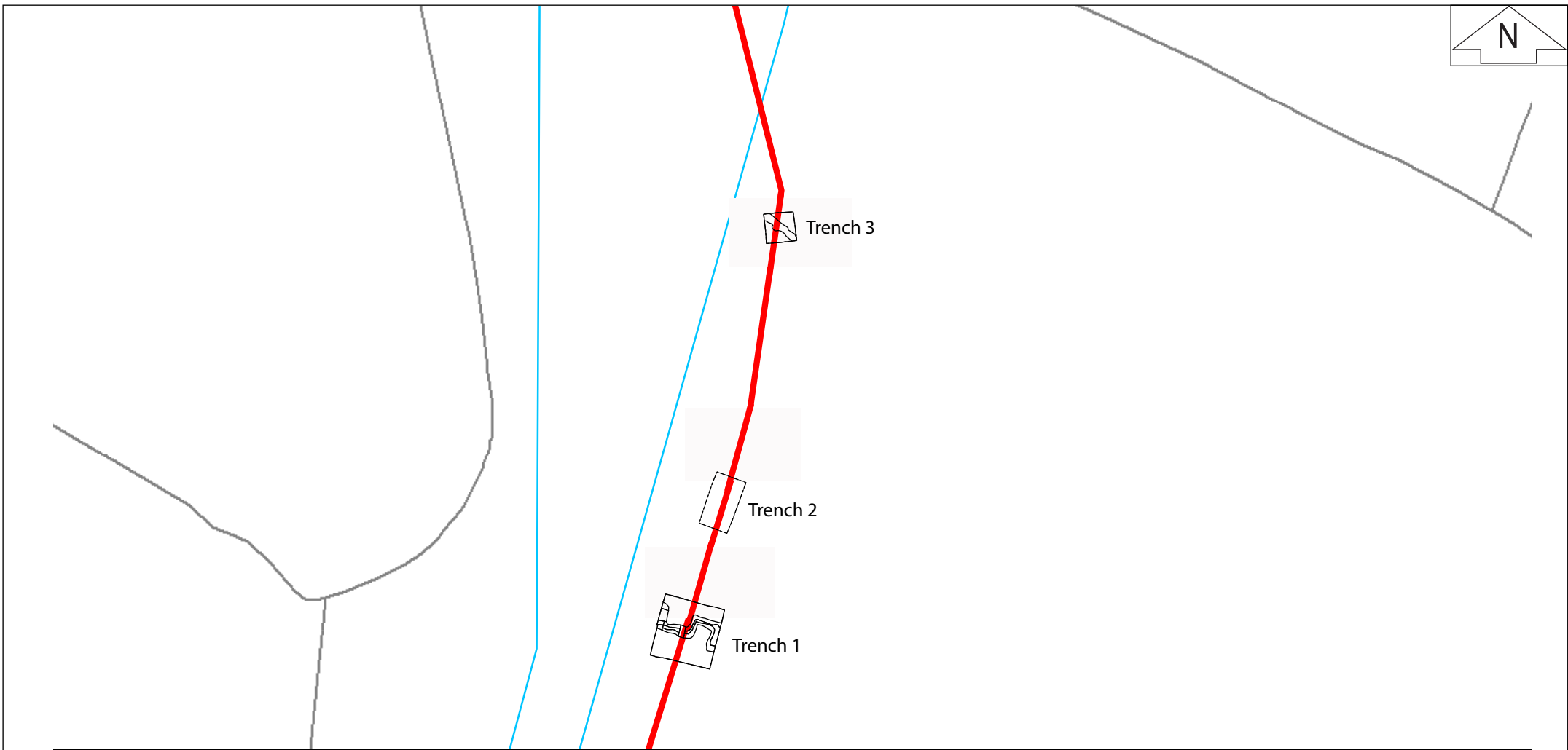
**Figure 29:** Trace & Section of Communication Trench as laid out in the War Office *Manual of Field Works* 1921.



**Figure 30:** 1946 RAF aerial photograph of Bodelwyddan Park  
(3G.TUD.UK.33.5421)



**Figure 31:** 1946 RAF aerial photograph of Bodelywyddan Park showing WW1 trenches and earthworks as undertaken by CPAT and Cadw in 2015. (Yellow signifies an excavated feature, green upstanding) (3G.TUD.UK.33.5421)

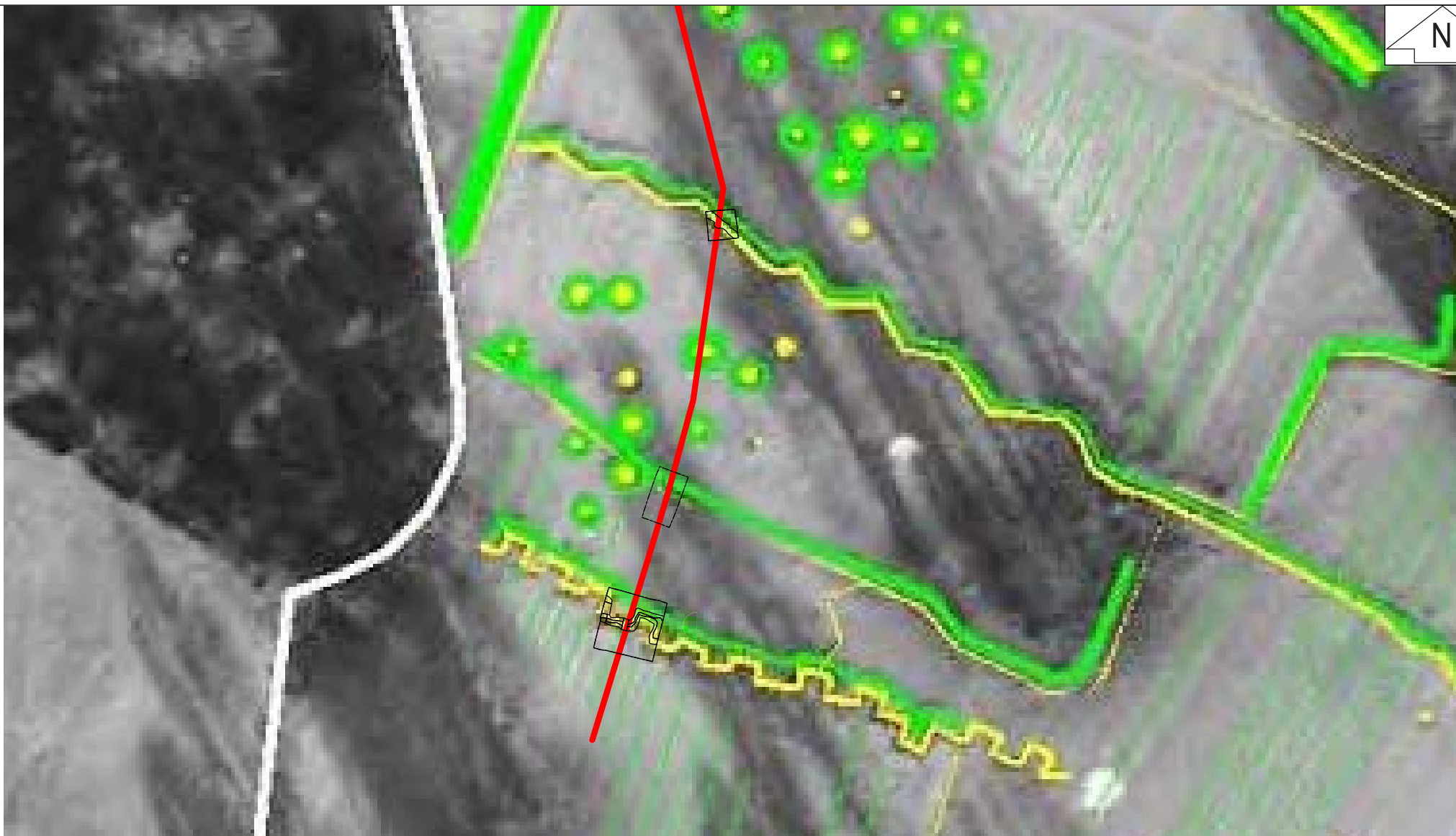


Contains Ordnance Survey data © Crown copyright and database right 2020. Licence no. 100019534



**Figure 32:** Detailed location of evaluation trenches (1-3) at Glascoed, Abergele.  
Scale 1:1,000 at A4.

**Aeon Archaeology**  
Richard Cooke BA MA MCIFA  
Obsidian Offices, Chantry Court,  
Chester, CH1 4QN  
Tel: 07866925393 / 01244 531585  
[www.aeonarchaeology.co.uk](http://www.aeonarchaeology.co.uk)



**Figure 33:** Trenches (1-3) overlaid on the CPAT / Cadw earthworks survey of 2015.  
Scale 1:1,000 at A4 (3G.TUD.UK.33.5421).

The numerous craters across the Bodelwyddan site are too extensive in dimensions to have been caused by grenades. Moreover, the fact that none of the craters intercept any of the practice trenches suggests that they were not produced by artillery field guns either, which would have been unprecise and certainly would have damaged some of the trenches. It is therefore assumed that they were created by explosives most likely remote or timer detonated, at a distance.

Furthermore, three suspected simulators (hand-thrown devices employing a percussion cap that could be thrown to the ground to make a bang) were recovered during the CPAT evaluation in 2015, and one suspected simulator during this evaluation.

In conclusion, it would appear that the existing interpretation of the site as a location for First World War troops to practice trench construction and live firing is now in doubt. Indeed, the evaluation results suggest that live firing may not have been taking place on site using rifles or artillery, but rather using blank .303 cartridges and remote / timed explosives to create craters – although it appears that live grenades were used. Moreover, the reduced trench depths suggest that the excavation of trenches was not the foremost use of the site, and the discovery of hand-thrown simulators allude to a combat simulator rather than a live firing or trench construction site.



## 11.0 SOURCES

- Adie, K., (2013). *Fighting on the Home Front: the legacy of women in World War One*. Hachette UK.
- Archaeology in Marlow (2013). *A visit to RAF Halton and WWI training trenches*, Available at: <http://www.archaeologyinmarlow.org.uk/2013/10/a-visit-to-raf-haltons-museum-and-wwi-training-trenches/> (Accessed 02/10/20).
- Brown M., (2017). *First World War Fieldworks in England*, Research report series 61-2017, Historic England.
- Bull S. (2002). *World War I Trench Warfare*, Elite, Osprey Publishing.
- Cannadine D. (2018). *George V the Unexpected King - Penguin Monarchs. The House of Saxe-Coburg & Gotha and Windsor*, Penguin Books.
- Carradice P., (2012). *The Kimmel Camp Riots of 1919*, BBC, Wales, Available at: <https://www.bbc.co.uk/blogs/wales/entries/cfb526c8-186d-3afe-b3e0-095c8898f868> (Accessed 02/01/20).
- Clark, C., (2012). *The Sleepwalkers: How Europe went to war in 1914*. Penguin UK.
- Dombrowski, N.A. ed., (2004). *Women and War in the Twentieth Century: Enlisted with or without Consent*. Routledge.
- Downing, T., (2016). *Breakdown: the crisis of shell shock on the Somme*. Hachette UK.
- Grant I., Hankinson R. & Spencer J., (2015). *Bodelwyddan Castle Park Practice Trenches, Denbighshire, Archaeological investigations 2014*, CPAT Report no. 1303
- Glencross M. (2015). *The State Visits of Edward VII: Reinventing Royal Diplomacy for the Twentieth Century*, Palgrave Studies in Modern Monarchy, Palgrave Macmillan.
- Hupy J.P., (2006) *The long-term effects of explosive munitions on the WWI battlefield surface of Verdun, France*, Scottish Geographical Journal, 122:3, 167-184.
- Harding C.W. (2006). *Eley Cartridges: A History of the Silversmiths and Ammunition Manufacturers*. Quiller. Shrewsbury, Shropshire.
- Hogg, I.V. (1982). *The Cartridge Guide: The Small Arms Ammunition Identification Manual*, Arms and Armour Press. Melbourne.
- Labbett, P. & Mead P.J.F., (1988). *.303 inch A History Of The .303 Cartridge In The British Service*, Forensic Ammunition Service, Spring Arbour, Michigan, USA.
- Malaws B.A., (2008), *Site Description – Kimmel Military Camp, Bodelwyddan*, Coflein RCAHMW.
- McNab, C., (2018). *The Book of the Poppy*. The History Press.
- Morton, D., (1980). *'Kicking and complaining': demobilisation riots in the Canadian expeditionary force, 1918–19*

- Mullins, A., (2000). *Canada's shame lies hidden by a tribute to the fallen*, The Independent, Home News, Saturday 24th June 2000
- Murphy, M., (2017). *Colonial Captivity during the First World War: Internment and the Fall of the German Empire, 1914–1919 (Vol. 52)*. Cambridge University Press.
- Putkowski, J., (1989). *The Kimmel Park Camp Riots, 1919*, Hawarden Library.
- Saunders, A. (1999). *Weapons of the Trench War: 1914-1918*, Sutton Publishing Ltd.
- Sanders, M.L. & Taylor, P.M., (1982). *British Propaganda during the First World War, 1914–18*. Macmillan International Higher Education.
- Sherry, D., (2014). *Empire and revolution: A socialist history of the First World War*. Bookmarks Publications.
- Sjörgren, G. (2020). The West Midlands Nail Trade, Available online: <https://historywm.com/file/historywm/the-west-mids-nail-trade-article-guy-sjogren-final-80502.pdf> (Accessed 01.01.20)
- Spencer, J. (2014). *Bodelwyddan Castle Park Trenches & Kimmel Park Camp Scoping Study*, CPAT report no 1255.
- Stevenson, D., (2004). *1914-1918: the history of the First World War*. Penguin UK.
- Staffordshire County Council (2009). *The First World War Camps of Cannock Chase, The Archaeology of the Camps*. Available at: <http://www.staffspasttrack.org.uk/exhibit/chasecamps/archaeology.html> (Accessed 02/10/20).
- Tebbutt, R. (2020). The .303 British Service Cartridge, Available online at: <https://harringtonmuseum.org.uk/the-303-british-service-cartridge/> (Accessed 01.10.20)
- Temple, B.A. (1986). *Identification Manuals on the .303 British Service Cartridge: No 1 Ball Ammunition*, Self-published, Burbank, Australia.
- Vannan A. & Taylor K., (2007). *Former Barracks, Kimmel Park Army Camp, Bodelwyddan, Denbighshire*, Oxford Archaeology North, Issue No: 685/2007-8, OA North Job No. L9834.
- Welch, D., (2000). *Germany, Propaganda and Total War, 1914-1918: the sins of omission*. Rutgers University Press.
- Verdegem, S. (2007). *Caesar's Nose, 1914–1918*. Archeologisch Onderzoek van Oorlogspatrimonium langs de Ieperboog. Unpublished MA dissertation, Ghent University. Available on: Google Scholar.
- University of Bristol (2014). *Excavating World War I training trenches in Cumbria*. Available at: <http://www.bristol.ac.uk/news/2014/november/world-war-one-practice-trenches.html> (Accessed 02/10/20)

