Oak Lane, Newton-with-Scales, Lancashire

Archaeological Evaluation Report

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Oak Lane, Newton-with-Scales, Lancashire

Archaeological Evaluation Report

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Summary

Oxford Archaeology (OA) North was commissioned by Lanpro Services on behalf of Westchurch Homes Ltd to undertake a trial trench evaluation and record ridge and furrow present on the site of a proposed residential development north of Oak Lane, Newton-with-Scales, Lancashire (NGR: SD 44584 30798).

The work was undertaken as condition 18 of Planning Permission (planning ref. 20/0315). During consultation for the application, the archaeological advisors to Fylde Council, Lancashire Archaeological Advisory Service (LAAS; now Lancashire County Archaeological Service (LCAS)), recommended an initial exploratory phase of archaeological works. Further consultation with the Planning Officer (Archaeology) for Lancashire County Council (LCC) agreed with the early advice; as such, a Written Scheme of Investigation (WSI) was produced by Lanpro Services detailing the Local Authority's requirements for work necessary to discharge the planning condition. OA North were subsequently commissioned to undertake the archaeological fieldwork, which was undertaken between 2nd and 4th December 2020.

All seven of the proposed trenches were excavated, however, only two of those trenches contained archaeological remains, Trenches 1 and 4. The ditch encountered in Trench 4 was the only archaeological feature which appeared to correspond to the geophysical survey interpretation; this feature appeared to cut the subsoil in Trench 4, suggesting that it likely related to a field boundary. The remains encountered in Trench 1 did not correspond with the geophysical interpretation, neither did they contain dating evidence to aid in their interpretation. The large magnetic response depicted in the south-eastern part of the development was identified in Trench 3 as modern leveling and backfilling of a pit or pond. There was no evidence of the other geophysical anomalies or the 'croft' identified on historic mapping.

The recording of the ridge and furrow depicted on LiDAR was successfully completed. The ridges, approximately 6m wide and surviving to a height of 0.2m, were recorded via dGPS profile.

Acknowledgements

Oxford Archaeology (OA) North would like to thank Emily Mercer of Lanpro Services and Sophie Turbefield of Weshchurch Homes Ltd for commissioning this project. Thanks are also extended to Doug Moir, Planning Officer (Archaeology) for Lancashire County Council who monitored the work on behalf of Fylde Council.

The project was managed for OA North by Paul Dunn. The fieldwork was directed by Andy Phelps, who was supported by Graeme Botham and Kelly Griffiths. Survey was undertaken by Andy Phelps, whilst the illustrations were produced by Mark Tidmarsh.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) North was commissioned by Lanpro Services on behalf of Westchurch Homes Ltd to undertake a trial trench evaluation and record ridge and furrow present on the site of a proposed residential development north of Oak Lane, Newton-with-Scales, Lancashire (Fig 1; NGR: SD 44584 30798).

1.1.2 The work was undertaken as condition 18 of Planning Permission (planning ref. 20/0315). During consultation for the application, the archaeological advisors to Fylde Council, Lancashire Archaeological Advisory Service (LAAS; now Lancashire County Archaeological Service (LCAS)), recommended an initial exploratory phase of archaeological works. Further consultation with the Planning Officer (Archaeology) for Lancashire County Council (LCC) agreed with the early advice; as such, a Written Scheme of Investigation (WSI) was produced by Lanpro Services detailing the Local Authority's requirements for work necessary to discharge the planning condition. A geophysical survey was undertaken by KIT Archaeology and Heritage (2020), which identified several geophysical anomalies throughout the proposed development, as such, a trench plan, targeting anomalies and 'blank' areas, was devised by Lanpro Services and approved by LCAS. OA North were subsequently commissioned to undertake the archaeological fieldwork, which was undertaken between 2nd and 4th December 2020. This document outlines how OA implemented the specified requirements.

1.2 Location, topography and geology

1.2.1 The proposed development site comprises a T-shaped parcel of land on the south-west side of the village of Newton-with-Scales, Lancashire. The site is located to the north of Oak Lane, to the west of Parrox Lane, to the east of buildings fronting Bryning Lane and to the south of agricultural land (Fig 1; NGR SD 44584 30798).

1.2.2 The area of proposed development consists of a single agricultural field which gently slopes from *c*. 15m above Ordnance Datum (aOD) in the east to *c*. 11.7m aOD in the west.

1.2.3 The solid geology of the majority of the area is mapped as Sandstone of the Sherwood Sandstone Group, whilst in the north-west corner of the site it is mapped as Mudstone of the Bracknells Mudstone Member (BGS 2021). The overlying superficial geology is mapped as Diamicton Devensian Till (*ibid*). The soils of the area are mapped as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (Cranfield 2020)

1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the site is described in the WSI (*Appendix A*), which was drawn from consultation with the LCC Historic Environment Team; however, a brief summary is provided here. Newton is one of the original townships of the parish and in recent years has expanded considerably to now take in

the adjacent settlement of Scales to the north-east. It originally occupied a long strip of land running north from the River Ribble.

1.3.2 Newton is a common settlement name, with many settlements with that name being considered to be post-Conquest planted or planned settlements. In the case of this particular Newton, the name is recorded in the Domesday Book of 1086, suggesting that it was established as a formal settlement between 1066 and 1086 (Ekwall 1922). The village is shown on the 1839 Tithe map and OS 6 inch map of 1848 as a small rectangular cluster of dwellings around Grange Lane and Oak Lane. The field systems appear to indicate the former presence of medieval-type strip fields running north/south to the north and east of the settlement. In the southern part of the site, nineteenth century mapping depicts short strips running north from the properties on Oak Lane, suggesting 'croft and toft' occupation.

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The main aim of the project is to obtain sufficient information to establish the presence or absence, character, extent, state of preservation and date of any archaeological deposits within the proposed development. This will allow a reasoned and informed recommendation to be made regarding any potential further mitigation. The project objectives were as follows:

i. to determine the location, extent, date, character, condition and significance of any archaeological remains within the development site;
ii. to excavate and record identified archaeological features and deposits to a level appropriate to their extent and significance;
iii. to assess vulnerability/sensitivity of any exposed remains;
iv. to assess the impact of previous land use on the site;
v. to assess the potential for survival of environmental evidence;
vi. to inform a strategy to avoid or mitigate impacts of the proposed development on surviving archaeological remains;
vii. to undertake sufficient post-excavation assessment to confidently interpret identified archaeological features;
viii. to report the results of the evaluation and place them in their local, regional or national context and to make this record available.

2.2 Methodology

2.2.1 The full methodology is outlined in the WSI (*Appendix A*) and was adhered to in full, and, as such, was fully compliant with prevailing guidelines and established industry best practice (CIfA 2019; 2020a; 2020b; Historic England 2015). A programme of field observation accurately recorded the character of the deposits within the excavations.

2.2.2 The topsoil and subsoil were removed by an 8-ton 360° tracked excavator, fitted with a toothless ditching bucket, to the surface of the first significant archaeological deposit, natural geology or a safe working depth, under direct archaeological supervision at all times. Subsequent cleaning and investigation of all archaeological deposits was undertaken manually, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions. All features of archaeological interest were investigated and recorded.

2.2.3 The trenches were located by use of a differential Global Positioning System (dGPS), accurate to within 0.02-0.03m, and altitude information was established with respect to Ordnance Survey Datum. Prior to excavation, the trenches were scanned using a Cable Avoidance Tool (CAT) and Signal Generator (Genny), to identify any potential services. All trenches were excavated in a stratigraphic manner.

2.2.4 All information identified during the site works was recorded stratigraphically, using a system adapted from that used by the former Centre of Archaeology of English Heritage, with an accompanying pictorial record (plans, sections, and digital photographs). Primary records were available for inspection at all times.

2.2.5 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes both photographic images and accurate large-scale plans and sections at appropriate scales (1:50; 1:20; 1:10).

2.2.6 A full professional archive has been compiled in accordance with the WSI, and in accordance with current CIfA (2020b) and Historic England (2015) guidelines. The archive will be deposited with the Lancashire County Record Office in due course.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the evaluation are presented below, and include a stratigraphic description of the trenches that contained archaeological remains. The full details of all trenches with dimensions and depths of all deposits can be found in *Appendix B*. The results of the evaluation trenching will be discussed first (*Section 3.2*), followed by the results of the ridge and furrow survey (*Section 3.3*).

3.2 Evaluation Trenching

3.2.1 The soil sequence in the trenches was fairly uniform. The natural geology of mid-orange grey sandy clay was overlain by a mid- to light- orange grey silty clay subsoil, varying in thickness from 0.15 to 0.68m, which in turn, was overlain by topsoil, approximately 0.3m thick.

3.2.2 Ground conditions throughout the evaluation were generally poor, with ground water being present within all the trenches. Although ground water was present in all of the trenches, this did not impede the identification of archaeological features, which where they were identified, were obvious against the underlying natural geology.

3.2.3 Archaeological features were only identified in two of the seven trenches, Trench 1 and 4. The remaining five trenches were blank or contained modern features, and will not be discussed further.

3.2.4 ***Trench 1***: located in the southern part of the proposed development, was aligned approximately north-west/south-east and targeted several linear and discrete anomalies throughout the trench (Fig 2); however, there was no evidence of these, suggesting that they may relate to modern features within the topsoil. Natural geology ***102*** was identified throughout the trench and was cut by two linear features, ***103*** and ***105*** (Fig 3 and Plate 1).

*Plate 1: Linear features **103** and **105** pre-excavation, looking west, scale 1m*

3.2.5 The southernmost linear, ***103*** (Plate 2), aligned approximately east/west, measured 1.15m wide in section, survived to a maximum depth of 0.32m and contained two deposits; initial fill ***104***, a very dark grey black clay 0.24m thick, which in turn, was overlain by fill ***107***, a mid-reddish brown clay silt 0.08m thick. Linear ***105*** was observed 0.77m to the north and parallel with linear ***103*** (Plate 3), measured 0.93m wide in section, survived to a maximum depth of 0.19m and was filled by a single deposit, ***106***, a dark black grey clay. They were both overlain by subsoil ***101***, which was, in turn, overlain by topsoil ***100***.

*Plate 2: East-facing section of linear feature **103**, scale 0.5m*

*Plate 3: East-facing section of linear feature **105**, scale 0.5m*

3.2.6 ***Trench 4***: located in the eastern part of the proposed development, was aligned north-east/south-west and targeted a north-east/south-west-aligned linear anomaly at the trench's northern end (Fig 2), which was successfully identified as ditch ***403***. Natural geology ***402*** was identified throughout the trench and was overlain by subsoil ***401***, which was, in turn, cut by ditch ***403***, which measured 4m wide and survived to a depth of 0.8m (Fig 3 and Plate 4). Ditch ***403*** was filled by two deposits; initial fill ***404***, a mid-grey brown silt 0.4m thick, which in turn, was overlain by fill ***405***, a mid- orange brown clay silt 0.55m thick. The feature was, subsequently, overlain by topsoil ***400***.

*Plate 4: East-facing section of ditch **403**, scale 1m*

3.3 Ridge and Furrow Survey

3.3.1 Ridge and furrow had been identified from LiDAR data in the northern part of the proposed development (Fig 4). The data depicted regular ridges aligned north-east/south-west and running parallel with the extant field boundaries along the northern and south-western limits of the proposed development. A profile of the features was successfully recorded by dGPS, which recorded the ridges being approximately 6m wide and surviving to a height of 0.2m (Plate 5 to 7).

Plate 5: General view of ridge and furrow looking east

Plate 6: General view of ridge and furrow looking north

Plate 7: Detail of ridge and furrow looking west, scales 1m and 2m

3.4 Finds and Environmental summary

3.4.1 There were no finds recovered during the fieldwork. There were also no environmental samples taken during the fieldwork as there were no suitable deposits.

4 DISCUSSION

4.1 Reliability of field investigation

4.1.1 Both the evaluation and the ridge and furrow survey are reliable, all the trenches were excavated in their intended locations. Although the weather and ground conditions were not ideal for the evaluation, due to heavy rain and waterlogged soils, archaeological features were easily identifiable against the underlying natural geology.

4.2 Evaluation objectives and results

4.2.1 The principal aim as identified above in *Section 2.1.1* was to obtain sufficient information to establish the presence or absence, character, extent, state of preservation and date of any archaeological deposits within the proposed development, and to provide sufficient information as to the need for and scope of any subsequent mitigation strategy. To meet these aims, the programme of trenching was designed to provide adequate coverage across the site, to target anomalies and to test 'blank' areas identified on the geophysical survey (KIT Archaeology & Heritage 2020). All the trenches were successfully excavated, succeeded in characterising the anomalies and 'blank' areas identified during the geophysical survey.

4.3 Interpretation

4.3.1 Archaeological remains were identified in only two of the seven trenches, Trenches 1 and 4. The remains identified in Trench 1 were two parallel linear features, ***103*** and ***105***, 0.77m apart, neither feature produced dating evidence and there was no indication of their possible function. Ditch ***403*** identified at the northern end of Trench 4 was identified as cutting through the subsoil and potentially a field boundary. There were no finds recovered from any of the features to provide dating evidence.

4.4 Significance

4.4.1 The results of the evaluation have shown that only one of the geophysical anomalies appeared to correspond well with archaeological remains, ditch ***403***. The large area of magnetic disturbance identified in the south-eastern part of the development appeared to relate to modern levelling and backfilling of a large pit or pond in Trench 3. The remaining anomalies were not identified during the evaluation. There were also no remains relating to the potential 'croft' identified on the tithe map in the area of Trench 1, suggesting that it had been completely truncated when it had been demolished. The two parallel linear features identified at the southern end of Trench 1 were undated and there was indication of their possible function.

4.4.2 The ridge and furrow survey showed that there was good survival of the feature in the northern part of the site. The feature can be clearly seen in LiDAR data and a profile was successfully recorded on site.

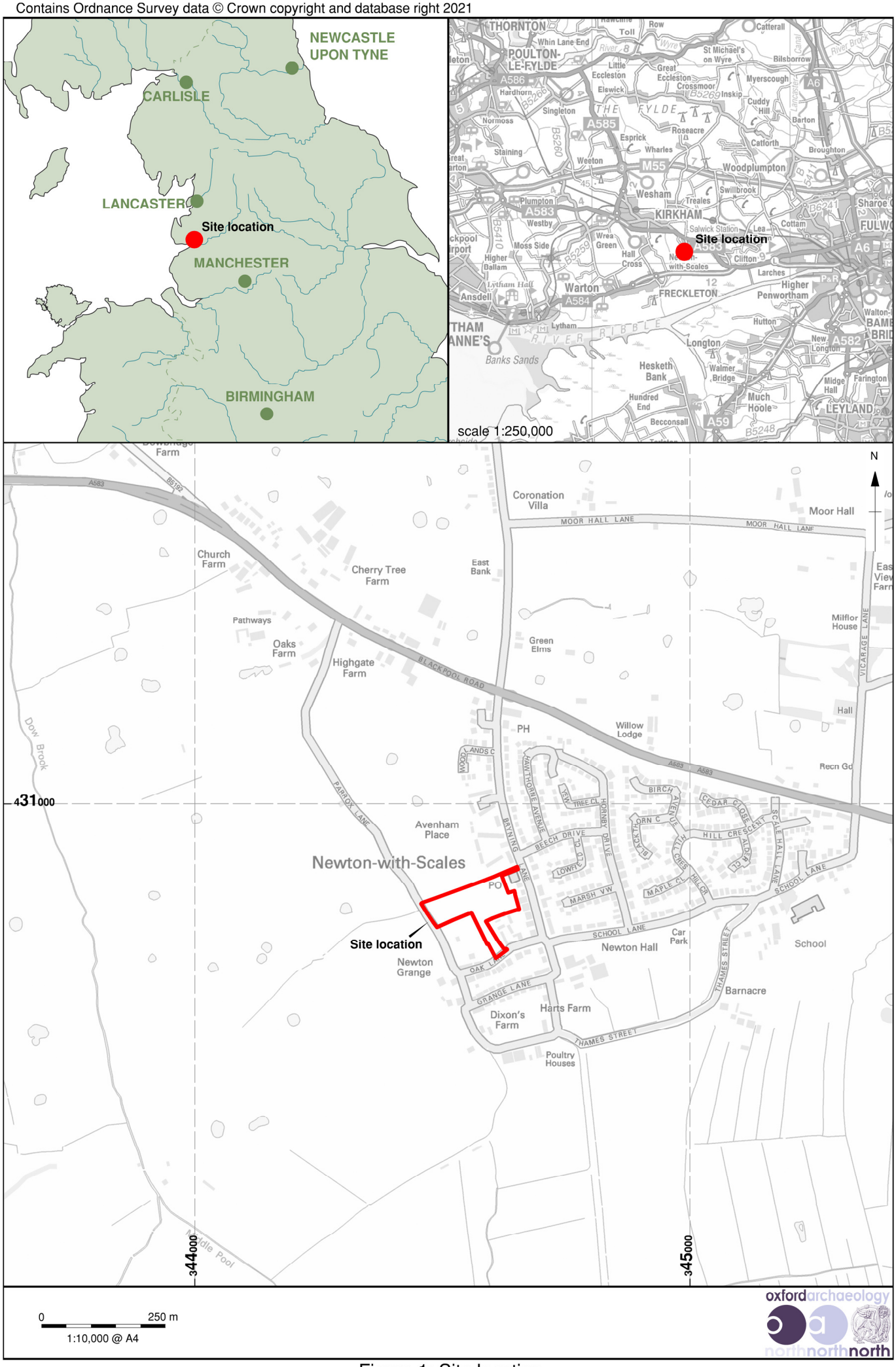

Figure 1: Site location

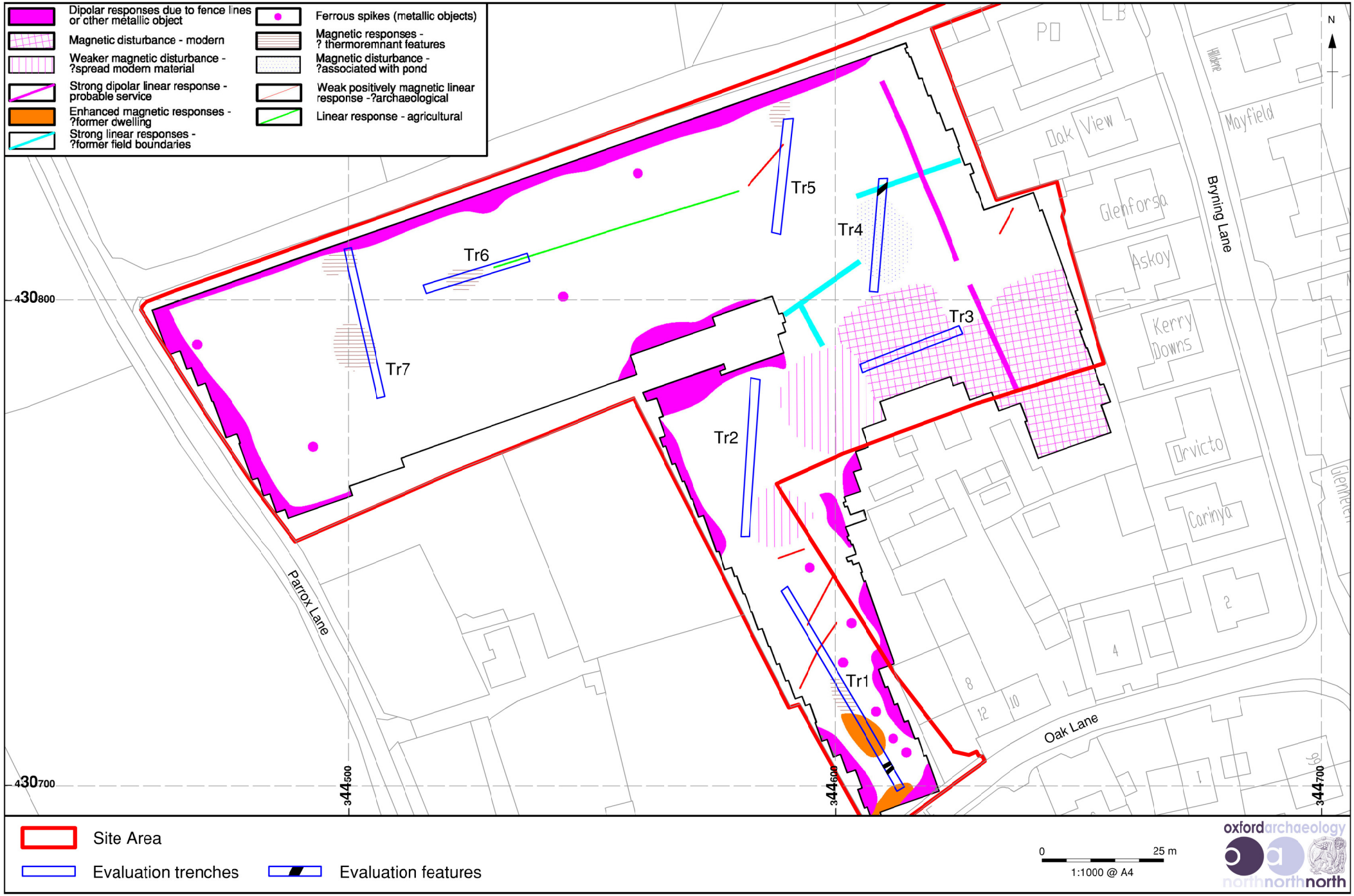

Figure 2: Trench locations superimposed on the geophysical survey results

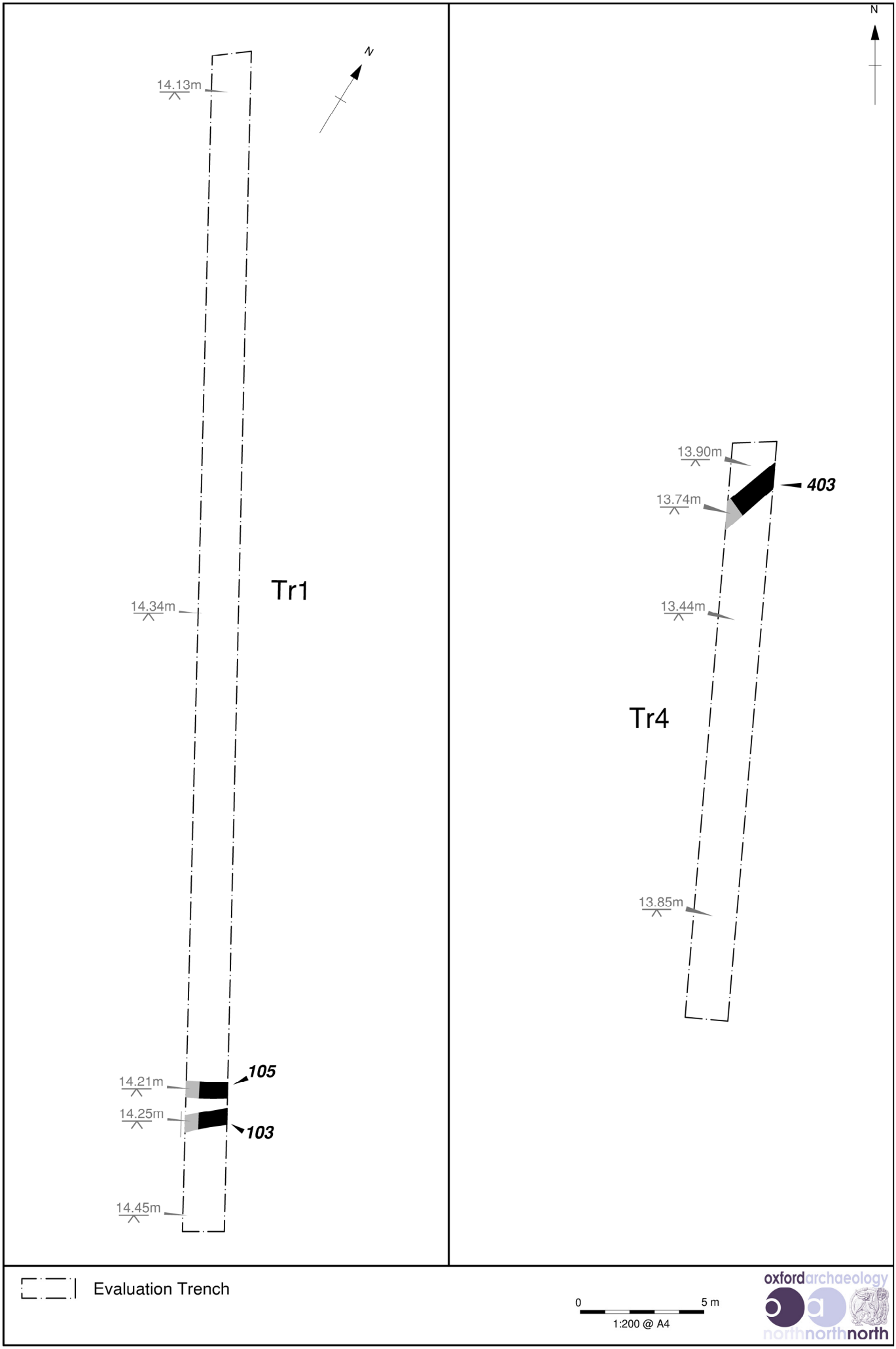

Figure 3: Trenches containing archaeological remains

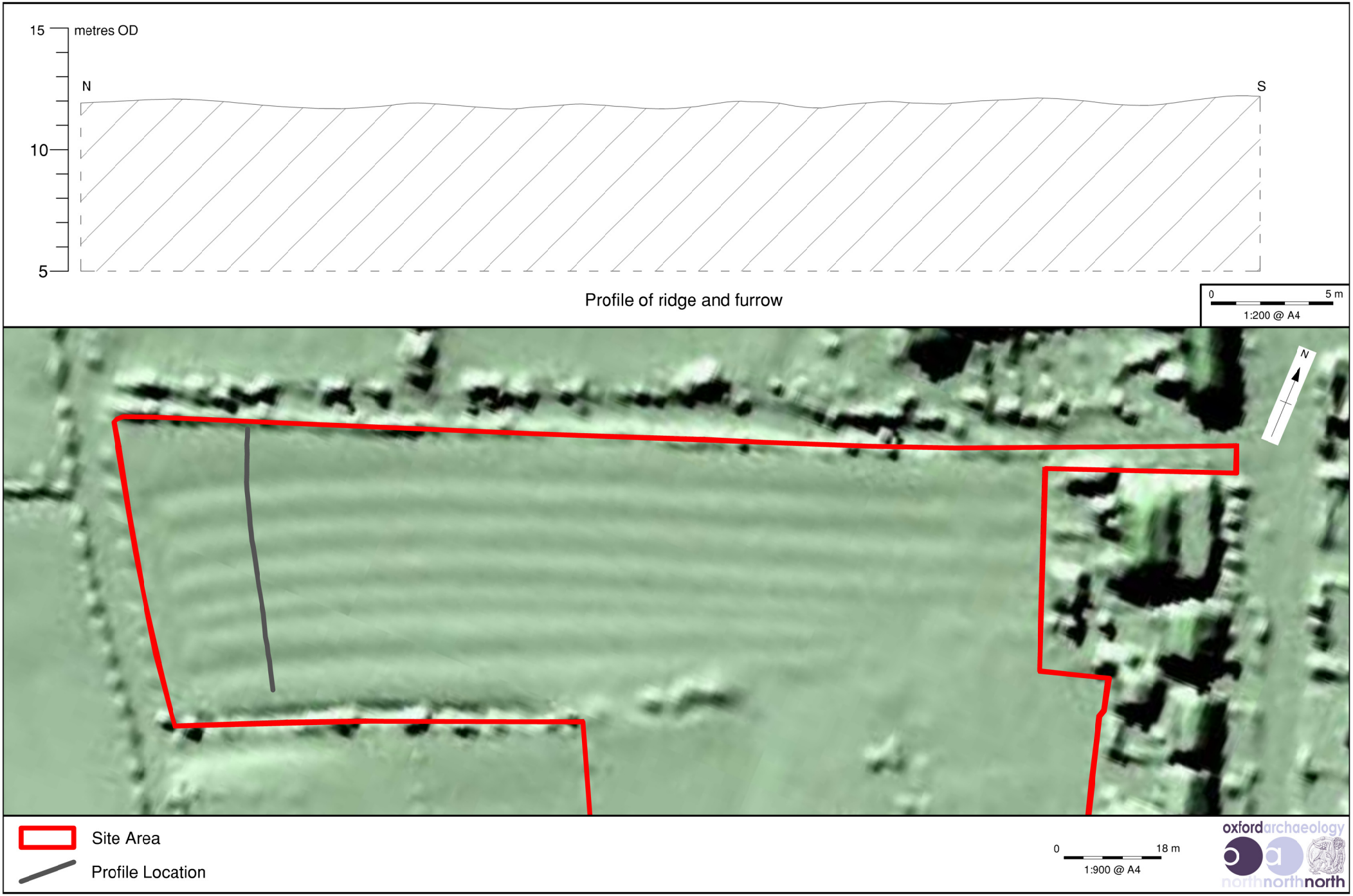

Figure 4: Profile of ridge and furrow superimposed on LiDAR data

APPENDIX A WRITTEN SCHEME OF INVESTIGATION

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL EVALUATION TRENCHING

LAND NORTH OF OAK LANE
NEWTON-WITH-SCALES
LANCASHIRE

PREPARED BY LANPRO SERVICES
ON BEHALF OF
WESTCHURCH HOMES

May 2020

Lanpro

Planning + Development | Design Studio | Archaeology + Heritage

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Figure 5. Aerial photograph (Google Earth 2019)

1 INTRODUCTION

1.1 This Written Scheme of Investigation (WSI) has been prepared by Lanpro on behalf of Westchurch Homes (the client) and details the methodology for undertaking a scheme of archaeological evaluation of land measuring c. 1.23ha in extent to the north of Oak Lane, Newton-with-Scales, Lancashire.

1.2 The archaeological evaluation will comprise a site-wide geophysical survey and trial trenching to establish the presence or absence of buried archaeological remains and their nature, date, extent and significance. The results of the evaluation will be used to inform decisions on the need for any further archaeological mitigation investigation and, should this be required, the scope of any additional excavation will be detailed in a further WSI.

2 SITE DESCRIPTION

2.1 The proposed development site comprises a T-shaped parcel of land on the south-west side of the village of Newton-with-Scales in Lancashire, approximately 8km to the west of Preston, (centred at NGR SD 44584 30798; see Figure 1). It is located within the administrative boundary of Fylde Council.

2.2 The site consists of a single agricultural field which gently slopes down from c. 15m above Ordnance Datum (aOD) in the east to c. 11.7m aOD in the west. It is bound on the west side by Parrox Lane and to the south-west and south by the rear of properties fronting on to Oak Lane. The east side of the study site is bound by the rear of properties fronting Bryning Lane and to the north by agricultural land.

2.3 The recorded bedrock geology across the majority of the site comprises sandstone of the Sherwood Sandstone Formation, with the north-west corner of the site being mudstone of the Breckells Mudstone Member. This is overlain by Diamicton Devensian Till (BGS 2020).

3 PLANNING BACKGROUND

3.1 An application has been recently submitted for a residential development of the study site (currently yet to be validated). This is in addition to a separate outline application for residential development which was submitted in 2017 and that was never determined (planning ref. 5/2017/0595). During consultation for the previous application the former archaeological advisors to the Fylde Council, Lancashire Archaeological Advisory Service, recommended the following:

Buried remains from such medieval occupation are unlikely to be of national importance. They would, however, be of sufficient importance to merit formal recording prior to their loss to development. As such we would recommend that a planning condition is applied to any consent granted to this (or any other application for this site) that required a phased scheme of investigation and recording in advance of development. We would strongly recommend that he initial exploratory phase be undertaken at an early enough stage that it can be used

to inform the design and layout of the new development, reducing the impact and thus the cost of subsequent mitigation works.

3.2 The phased scheme of archaeology was to comprise 'an initial phase of geophysical survey and trial trenching' which would inform a strategy for mitigation either by design and thereby preserving any remains in situ or by record by archaeological excavation.

3.3 Therefore, at this early stage of the present application, consultation with the Planning Officer (Archaeology) for Lancashire County Council (LCC) Historic Environment Team has been undertaken. It was agreed that the advice provided for the outline application in 2017 is still extant.

3.4 This WSI provides a detailed methodology for undertaking a programme of archaeological evaluation work across the proposed development site. This is aimed at identifying, recording and sampling any archaeological features that may be present, and assessing the need for further mitigation excavation if required.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 The archaeological background below is drawn from consultation with the LCC Historic Environment Team.

4.2 Newton is one of the original townships of this parish but has in recent years been considerably expanded to now take in the adjacent settlement of Scales to the north-east (with which it was originally a separate parish). It occupied a long strip of land running north from the River Ribble and contours and field patterns suggest that the settlement once lay on the northern edge of a bend of the River Ribble, with the land to the south of the southernmost part of what is now Thames Street having been reclaimed from former salt marsh and river foreshore as the channel migrated south.

4.3 Newton is a common settlement name, and the second element is almost exclusively interpreted as the Old English '*tun*' meaning manor, farm, village or hamlet. Many 'Newton' settlements are considered to be post-Conquest planted or planned settlements, to which the simple name 'New Town' was applied. In the case of this Newton (with Scales) the name is recorded in the Domesday Book of 1086 (as *Neutune*), suggesting that it was established as a formal settlement between 1066 and 1086 (Ekwall 1922, 150).

4.4 The village is shown on the 1839 Tithe map and the OS 6 inch map of 1848 (Figures 2 and 3) as a small rectangular cluster of dwellings arranged around Grange Lane and Oak Lane. The field systems appear to indicate the former presence of medieval-type strip fields running north/south to the north and east of the settlement. Within the southern part of the site the 19th century mapping shows short strips running north from the properties on Oak Lane which suggests 'croft and toft' occupation; houses fronted the street with garden/yard plots to the rear. Such plots were often used for ancillary buildings such as barns, stables and workshops, as well as for kitchen gardens and for domestic rubbish disposal.

4.5 To the west and north-west the field pattern is less regular and suggests that the strips were laid out on both north/south and east/west in this area in response to the altering terrain. This correlates with LiDAR data (Figure 4) which shows east/west ridge and furrow earthworks also across the northern part of the site.

4.6 There is no early church here and Newton Hall, a 17th century farmhouse with a possible medieval predecessor, is located at the eastern end of Grange Lane. As such it is more like Clifton than its nearer neighbour Scales, which is of an irregular plan form and whose name is said to be derived from the Old Norse '*Skali'* meaning hut (Ekwall 1922); it is possible that Newton was intended to replace the earlier Scales. The name Grange Lane does not seem to indicate a formal monastic grange or farmstead here, although land was held by the knights Hospitallers 'from an early date' and Cockersand Abbey also held lands in the parish (Farrer and Brownbill 1911, 165-7).

5 RESEARCH DESIGN

Aims and Objectives

5.1 The overall aim of the archaeological evaluation will be to obtain sufficient information to establish the presence/absence, character, extent, state of preservation and date of any archaeological deposits within the area of the proposed development. This will allow reasoned and informed recommendations to be made regarding any requirements for mitigation, the scope of which would be detailed in a subsequent WSI in agreement with the Planning Officer (Archaeology) for the LCC Historic Environment Team.

5.2 This will be achieved through the following objectives:

- To determine the location, extent, date, character, condition and significance of any archaeological remains within the development site;
- To excavate and record identified archaeological features and deposits to a level appropriate to their extent and significance;
- To assess vulnerability/sensitivity of any exposed remains;
- To assess the impact of previous land use on the site;
- To assess the potential for survival of environmental evidence;
- To inform a strategy to avoid or mitigate impacts of the proposed development on surviving archaeological remains;
- To undertake sufficient post-excavation assessment to confidently interpret identified archaeological features;
- To report the results of the evaluation and place them in their local, regional or national context and to make this record available.

Research Framework

5.3 The programme of archaeological investigation has the potential to contribute to research priorities originally identified in the regional research framework *The Archaeology of North West England - An Archaeological Research Framework for the North West* (Brennand 2006), and recently revised and updated in draft form (archaeologynorthwest.wordpress.com/ period-updates/). In particular the investigation will aim to contribute to the understanding of rural medieval settlement patterns in a region where the settlement pattern is not fully understood. The potential for medieval tofts and crofts fronting Oak Lane provides the possibility for medieval building remains. This may contribute to the understanding of any localised building types or any sequencing therein. In addition, the pond identified on the tithe map (Figure 2) may provide palaeoenvironmental evidence of the local landscape and land usage during the medieval period.

5.4 Specifically, the following updated research questions will look to be addressed, although this should be revised following the results of the trial trenching:

LM3 - How did small settlements evolve and exploit environmental resources?

LM11 - How can we improve our understanding of the origins and developments of building types from early med to late medieval?

LM21 - How can below-ground archaeological investigations shed light on the role and nature of small towns?

5.5 The investigation will also take account of the national research programmes outlined in English Heritage's *Strategic Framework for Historic Environment Activities and Programmes in English Heritage* (SHAPE) first published in 2008.

6 STANDARDS AND GUIDANCE

6.1 All work will be undertaken to fully meet the requirements of all nationally recognised guidance for such work, including standards laid down by the former English Heritage (now Historic England) and the Chartered Institute for Archaeologists (CIfA).

6.2 The programme of archaeological evaluation will be managed in line with the standards laid down in the Historic England guideline publication *Management of Research Projects in the Historic Environment (MoRPHE): Project Managers Guide* (2015a), as well as to meet the requirements of the National Planning Policy Framework (NPPF; Chapter 16: 'Conserving and enhancing the historic environment'; revised 2019). All excavation will be undertaken using recording standards detailed in the *Archaeological Field Manual* (MOLAS 1994).

6.3 Guidance of particular relevance to the programme of works are:

- *Guidelines for the Use of Geophysics in Archaeology* (EAC 2016);
- *Standard and guidance for archaeological field evaluation* (CIfA 2014a);

- *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (CIfA 2014c);
- *Standard and guidance for archaeological geophysical survey* (CIfA 2016 (rev));
- *Management of Research Projects in the Historic Environment: PPN3: Archaeological Excavation* (English Heritage 2008).

7 METHODOLOGY

7.1 The programme of archaeological evaluation will comprise:

- geophysical survey;
- trial trenching;
- report production.

Project initialisation

7.2 Lanpro will inform the Planning Officer (Archaeology) for the LCC Historic Environment Team at least one week in advance of the commencement of fieldwork.

7.3 The appropriate museum will be contacted by the archaeological fieldwork contractor to arrange for the project archive to be created and deposited in accordance with their deposition and archiving standards.

7.4 Before fieldwork commences an OASIS online record will be initiated and key fields completed on Details, Location and Creator forms.

Geophysical survey

7.5 Detailed gradiometer survey will be conducted using Bartington Magnetic Gradiometer systems with a sensitivity of 0.03nT/m. Data will be acquired over 30 m x 30 m grids with a sample interval of 0.25m along transects spaced 1 m apart in accordance with EAC's guidelines for geophysical survey (2016). Positioning for the survey grid corners will be provided using appropriate means to locate each grid corner to less than 0.1m.

7.6 Preliminary results will be issued within 2-3 days which will inform the positioning of the SI works and the quantity and configuration of the trial trenches.

Trial Trenching

7.7 The configuration of the trial trenches will be determined following the results of the geophysical survey and in consultation with the Planning Officer (Archaeology) for the LCC Historic Environment Team.

7.8 Topsoil across the trenches will be stripped using a mechanical excavator fitted with a 2m wide toothless grading bucket, down to the first archaeological horizon or natural sub-soil.

7.9 Spoil from mechanical excavation will be scanned by eye and by metal detector to aid the recovery of artefacts, and topsoil and subsoil will be stored separately.

7.10 All excavation by mechanical excavator will be undertaken under direct archaeological supervision, by a suitably experienced and qualified archaeologist, with one archaeologist responsible for monitoring each excavator. Mechanical excavation will cease at either undisturbed natural deposits or when archaeological deposits are identified.

7.11 All archaeological features and deposits revealed will be cleaned and excavated in an archaeologically controlled and stratigraphic manner, in order to establish their extent, form, date, function and relationship to other features.

7.12 All structures, deposits and finds will be recorded according to accepted professional standards. Individual descriptions of all archaeological strata and features exposed or excavated will be entered onto prepared pro-forma recording sheets. Sample recording sheets, sample registers, finds recording sheets, access catalogues, and photo record cards will also be used.

7.13 Any excavation, by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits which appear to be demonstrably worthy of preservation in situ.

7.14 There will be a presumption of the need to cause the minimum disturbance to the site consistent with adequate evaluation. Significant archaeological features (e.g. solid or bonded structural remains, building slots or postholes), will be preserved intact even if fills are sampled. For linear features, minimum 1m wide slots should be excavated across their width. For discrete features, such as pits, 50% of their fills will be sampled.

7.15 Metal detector searches will take place at all stages of the evaluation. Metal detecting of trench locations will be carried out before trenches are excavated, with trench bases and spoil scanned once trenches have been opened. Any metal finds will be located using survey-grade GPS and metal detectors will not be set to discriminate against iron. Metal detecting will also be conducted over the surface of all exposed features before the end of each working day as a countermeasure to 'nighthawking'.

7.16 Should the excavation of the trenches reach 1.2m in depth (or limit of safe working depth) without natural geology being encountered, a machine dug sondage will be excavated in order to establish the depth of natural geology. Where depth of excavation is required to be greater than 1m, suitable stepping will be employed.

7.17 All identified finds and artefacts will be collected and retained, and bagged and labelled according to their context. Finds of significant interest will be given a 'small finds' number, and information on their location in three dimensions will be entered on a separate pro-forma sheet. No finds will be discarded without assessment by an appropriate finds specialist.

7.18 A full written, drawn and photographic record will be made of all features revealed during the course of the archaeological evaluation. The location and extent of archaeological features will be recorded by GPS. Plans will be completed at a scale of 1:20 (as appropriate), with section drawings at a scale of 1:10. All plans will be tied in with the Ordnance Survey National Grid with levels given to above OD.

7.19 A photographic record of the project will be maintained. This will include black and white and colour prints, and digital images, illustrating the detail and context of the principal features and finds discovered. The photographic record will also include working shots to illustrate more generally the progress of the programme of archaeological works.

7.20 All photography will follow the Historic England guidance for digital image capture (HE 2015b). All images will have accompanying metadata specifying; photo ID, capture device, converting software, colour space, bit depth, resolution, date of capture, photographer, caption, and any alterations made to the image.

7.21 Following excavation and recording of any archaeological remains and with the agreement of the Planning Officer (Archaeology) for the LCC Historic Environment Team, the evaluation trenches will be back-filled with the previously excavated spoil.

Palaeoenvironmental sampling strategy

7.22 Soil samples will be taken from all suitable features or deposits for palaeoenvironmental sampling. This will comprise the removal of a bulk sample from every securely sealed and hand-excavated context, excepting those with excessive levels of residuality or those with minimal 'soil' content (such as building rubble).

7.23 Bulk samples will comprise representative 40 litre samples. Where a context does not yield 40 litres of material, smaller samples will be taken (generally the maximum amount of material practicable to collect). Bulk samples will be used to recover a sub-sample of charred macroplant material, faunal remains and artefacts where necessary, as well as any industrial residues.

7.24 If buried soils or other deposits are encountered, column samples may be taken for micromorphological and pollen analysis. Environmental material will be stored in a controlled environment and specialists consulted during the course of the work if necessary.

7.25 The post-excavation processing of all palaeoenvironmental samples will be undertaken in line with the requirements of the former English Heritage's (now Historic England) *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation* (2011).

Human remains

7.26 The discovery of human remains is not anticipated during the evaluation fieldwork. However, should these be encountered then the archaeological contractor must contact the Ministry of Justice for an appropriate licence and the Planning Officer (Archaeology) for the LCC Historic Environment Team will be informed. The contractor will comply with all statutory consents

and licences under the Disused Burial Grounds (Amendment) Act, 1981 or other Burial Acts regarding the exhumation and interment of human remains.

7.27 If human remains are encountered, they will be cleaned with minimal disturbance, prior to recording and removal, following receipt of the required Ministry of Justice licence. Investigation and excavation of human remains will be undertaken by, or under supervision of, suitably experienced specialist staff and in accordance with former Institute of Field Archaeologists (IFA) guidelines *Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains* (McKinley and Roberts 1993) and the *Updated Guidelines to the standards for recording human remains* (Mitchell and Brickley 2017). Assessment of excavated human remains will be undertaken in line with English Heritage guidelines *Human Bones from archaeological sites: Guidelines for the production of assessment documents and analytical reports* (English Heritage 2004). The archaeological contractor will comply with all reasonable requests of interested parties as to the method of removal, re-interment or disposal of the remains or associated items. Every effort will be made, at all times, not to cause offence to any interested parties.

7.28 If required a qualified and experienced osteoarchaeologist will undertake site visits to discuss the recording and assist in the removal of any human skeletal remains.

Scientific dating

7.29 Provision will be made to recover material suitable for radiocarbon, archaeomagnetic, dendrochronological and other scientific dating. Where material suitable for dating is recovered, sufficient dating will be undertaken to meet the aims of the evaluation.

Other finds

7.30 Finds will be exposed, lifted, cleaned, conserved, marked, bagged and stored in accordance with the guidelines set out in United Kingdom Institute for Conservation's Conservation Guidelines No. 2 (1990) and the ClfA guidelines *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2014c).

7.31 If required, conservation will be undertaken by approved conservators in line with the *First Aid for Finds* guidelines (Watkinson and Neal 1998). Significant iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy should be X-radiographed before assessment.

7.32 Any finds of gold and silver will be moved to a safe place. Where removal cannot be undertaken immediately, suitable security measures will be taken to protect the artefacts from theft or damage. All finds of gold and silver, and associated objects, will be reported to the coroner according to the procedures relating to the Treasure Act 1996 (and the act's amendment of 2003).

Unexpectedly significant or complex discoveries

7.33 Should unexpectedly extensive, complex or significant remains be uncovered that warrant, in the professional judgment of the archaeologist on site, more detailed recording than is appropriate within the terms of the WSI, the scope of the WSI will be reviewed.

7.34 In the event of a review of the WSI being required, Lanpro will contact the client and the Planning Officer (Archaeology) for the LCC Historic Environment Team with the relevant information to enable them to resolve the matter. This is likely to require an on-site meeting between the relevant stakeholders to review the archaeological remains on-site and identify a way forward. Any variations to this WSI will be put in writing and agreed by the relevant stakeholders including the Planning Officer (Archaeology) for the LCC Historic Environment Team and the client.

Plant and equipment

7.35 The archaeological contractor on site will be responsible for the provision of all required welfare, plant, and health and safety equipment during the trial trenching.

8 POST-FIELDWORK

8.1 Upon completion of the evaluation fieldwork, the artefacts, soil samples and stratigraphic information will be assessed for their potential and significance for further analysis if required and the relevant parties notified accordingly. A report on the combined stages of fieldwork will be produced within 4-6 weeks following completion which will be used to inform any further mitigation work.

Finds

8.2 Finds will be cleaned, conserved, marked, bagged and stored in accordance with the guidelines set out in United Kingdom Institute for *Conservation's Conservation Guidelines No. 2* (1990) and the CIfA guidelines *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2014c).

8.3 In accordance with appropriate procedures, significant iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before issue of the final report.

8.4 All material will be packed and stored in optimum conditions, as described in *First Aid for Finds* (Watkinson and Neal 1998). Any waterlogged organic materials will be dealt with in line with the English Heritage guidance documents, W*aterlogged Organic Artefacts. Guidelines on their Recovery, Analysis and Conservation* (2018) and *Waterlogged Wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood* (2010).

8.5 The preservation state, density and significance of material retrieved will be assessed, following the English Heritage guidelines *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation* (2011).

8.6 Any finds for dating will be submitted to specialists promptly, so as to ensure that results are available to aid development of a project design for the analysis stage, if required.

Environmental Sample Processing

8.7 The processing of any palaeoenvironmental samples will be undertaken in line with the requirements of the English Heritage publications A*rchaeological Science at PPG16 Interventions: Best Practice Guidance for Curators and Commissioning Archaeologists* (2006b) and *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation* (2011).

8.8 The samples will be processed, and ecofacts collected and assessed with regard to the potential for detailed analysis of pollen, charred plant macrofossils, land molluscs, faunal remains (including small mammals and fish) and soil micromorphology. Samples suitable for radiocarbon, or other dating methods, will also be identified. The environmental assessment will be reported within the overall post-excavation assessment report for all phases of investigation and include proposals for full analysis if required. Unprocessed sub-samples will be stored in conditions specified by the appropriate specialists. Samples for dating will be submitted to specialists promptly, so as to ensure that results are available to aid development of the project design for any further analysis stage if required.

Conservation

8.9 If required, conservation will be undertaken by approved conservators in line with the *First Aid for Finds* guidelines (Watkinson and Neal 1998). Material considered vulnerable will be selected for stabilisation after specialist recording. Where intervention is necessary, consideration must be given to possible investigative procedures (e.g. glass composition studies, residues in or on pottery, and mineral-preserved organic material).

Report

8.10 The results of the geophysical survey will be issued as a standalone report but the results will be integrated with the evaluation report. As a minimum the report shall contain the following information:

- A title page, with the name of the project, the name of the author(s) of the report, the title of the report and date of the report;
- A non-technical summary of the scope, methodology and results of the work;
- Introduction which includes site code/project number, dates when the fieldwork took place and grid reference;
- Description of the topography and geology of the site;
- Description of the archaeological background to the site;
- Description of the aims, methodology and extent of fieldwork completed;

- Factual assessments of stratigraphic, artefactual and environmental evidence;
- An assessment of the archaeological potential of the stratigraphic, artefactual and environmental records;
- Proposed programme for further analysis and reporting if required, including the identification of specialists;
- Conclusions;
- Details of archive location and destination (with the museum accession number), together with a catalogue of what is contained in that archive;
- Copy of the OASIS entry form and any entry updates;
- Appendices, illustrations and figures, as appropriate; and
- References and bibliography of all sources used.

8.11 A draft copy of the evaluation report will be provided to the Planning Officer (Archaeology) for the LCC Historic Environment Team in PDF format for comment.

8.12 Following approval, copies of the final reports will be produced and submitted to the Lancashire HER in a PDF/A or hard copy format as required.

9 ARCHIVING

9.1 The appointed archaeological contractor will contact the Lancashire Museums Service in advance of commencing any fieldwork to determine the preparation, and deposition of the archive and finds, and obtain an accession number for all archaeological works. Currently, the policy and/or guidelines for the Lancashire Museums Service are being revised. The landowner will be encouraged to transfer ownership of the finds to the museum.

9.2 Adequate resources will be provided during fieldwork to ensure that all records are checked and internally consistent.

9.3 The archive will contain all the data collected during the archaeological works, including all digital and paper records, finds and environmental samples. The archive will be prepared in accordance with the CIfA guidelines detailed in *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (*CIfA, 2014c). The preparation of the archive will also be informed by the *Guidelines for the preparation of Excavation Archives for long–term storage* (United Kingdom Institute for Conservation, 1990), *Standards in the museum care of archaeological collections* (Museums and Galleries Commission 1994), and in accordance with museum's archive deposition guidelines. Provision will be made for the stable storage of paper records and their long–term storage.

9.4 Digital copies of the assessment report and associated data will be submitted to the Lancashire HER, together with OASIS and ADS to allow the results of the work to be accessible on-line to the wider archaeological community and general public.

10 TIMETABLE

10.1 The geophysical survey is expected to take one day in the field to complete. Interim results will be provided within 2-3 days of the completion of the fieldwork and the final report within 2-3 weeks

10.2 The configuration of trial trenches is not presently known as this will be informed by the geophysical survey. However, this will be agreed in consultation with the Planning Officer (Archaeology) for the LCC Historic Environment Team who will be provided with one week's notice of the fieldwork commencement date.

10.3 The Planning Officer (Archaeology) for the LCC Historic Environment Team will monitor implementation of the programme of archaeological works on behalf of Fylde Council and evaluate the work being undertaken on site against the methodology detailed in this WSI. The Planning Officer (Archaeology) will be afforded the opportunity to inspect the site and all records of the appointed archaeological contractor at any stage of the work.

11 STAFFING

11.1 Emily Mercer (Principal Heritage Consultant, Lanpro) will be in overall charge of the management of the project on behalf of Westchurch Homes.

11.2 KIT Heritage and Archaeology will be carrying out the geophysical survey.

11.3 Oxford Archaeology North will be responsible for undertaking the trial trenching and post-excavation assessment reporting. They are a CIfA Registered Archaeological Organisation (RAO) who for over 40 years have been successfully supplying a commercial archaeology service. They are regularly employed by clients and their consultants in the preparation and execution of archaeological mitigation strategies and provide a range of services to the heritage industry.

12 INSURANCE

12.1 The archaeological contractor will produce evidence of Public Liability Insurance to the minimum value of £5m and Professional Indemnity Insurance to the minimum of £5m.

13 HEALTH AND SAFETY

13.1 The management of all health and safety on site during the survey and trial trenching phase will be the responsibility of the appointed geophysical survey and archaeological contractors. All works will be undertaken by the contractor in compliance with the Health and Safety at Work Act (1974) and all applicable regulations and Codes of Practice.

13.2 All archaeological staff will undertake their operations in accordance with safe working practices and will be CSCS certified. At least one First Aider will be present on site at all times.

A site-specific risk assessment will be produced by the appointed archaeological contractor, prior to the commencement of work on site, which will be subject to regular review.

13.3 Suitable Personal Protective Equipment (PPE) and welfare facilities will be provided by the archaeological contractor, including hi-visibility coats/vests, hard hats, safety boots and gloves, as well as safety glasses if required.

13.4 All staff will receive a health and safety induction prior to starting work on site to be provided by the archaeological contractor.

13.5 Regular audits of health and safety practices will be carried out during the course of the project by Lanpro and the archaeological contractor in consultation with the site workforce. Toolbox talks on health and safety issues will be conducted at minimum weekly intervals and/or after changes in working practices or identification of new threats/risks. The risk assessment will be reviewed and updated as necessary. Control measures will be implemented as required in response to specific hazards.

13.6 Safe working will take priority over the desire to record archaeological features or remains, and where it is considered that recording is dangerous, any such features will be recorded by photography at a safe distance.

13.7 All areas of excavation will be scanned with a Cable Avoidance Tool (CAT) prior to ground works commencing. Necessary measures will be taken to avoid disturbing any services.

13.8 Plant operators will be required to produce evidence of qualification within an industry accepted registration scheme. Sub-Contractors health and safety performance will be kept under review and action taken if necessary. All spoil will be stored and managed safely in line with the standards of the *Construction Code of Practice for Sustainable Use of Soils on Construction Sites* (DEFRA 2009).

13.9 Site welfare accommodation and car parking should be located within the site and the location of these facilities will be agreed between the archaeological contractor, Lanpro and the client in advance of the commencement of work.

14 COPYRIGHT AND PUBLICITY

14.1 Copyright of the documentation prepared by the archaeological contractor and specialist sub-contractors should be the subject of additional licences in favour of the client and the Lancashire HER to use such documentation for their statutory and educational functions, and to provide copies to third parties as required.

14.2 Under the Environmental Information Regulations (EIR 2004), information submitted to the HER becomes publicly accessible, except where disclosure might lead to environmental damage, and reports cannot be embargoed as ‘confidential’ or ‘commercially sensitive’.

14.3 It is recognised that the project may identify remains which are of interest to the public and these may be publicised through appropriate media. Any publicity for the project proposed by the archaeological contractor should be approved by the client in advance.

14.4 The appointed archaeological contractor will not issue any information on the work through media, internet or social media without prior agreement of the client. Care will be taken to ensure that any publicity does not compromise the security of archaeological remains that may have been identified or recovered. Any approaches by the press to the archaeological contractor should be referred to the client in the first instance.

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Figures

Lanpro

Planning + Development | Design Studio | Archaeology + Heritage

Parrox Croft

Parrox Lane

Bryning La

School La

Newton-with-Scales

Dow Brook

Proposed development site

N

0 50 100 150 200 250 m

Figure 1. Location of the proposed development site

Figure 2. Extract from the 1839 Newton-with-Scales tithe map

N

Study Site

0 100m

Lanpro

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Figure 3. Extract from the 1848 Ordnance Survey 6 inch map

N

Study Site

0 100m

Lanpro

Planning • Development | Design Studio | Archaeology • Heritage

Figure 4. LiDAR data

N

Study Site

0 50m

Lanpro

Planning + Development | Design Studio | Archaeology + Heritage

Figure 5. Aerial photograph (Google Earth 2019)

N

Study Site

0 50m

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APPENDIX B TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 1						
General description					**Orientation**	NW-SE
Trench containing two parallel east/west-aligned linear features cutting natural geology. The features were overlain by subsoil, which was, in turn, overlain by topsoil.					**Length (m)**	47
					Width (m)	1.79
					Avg. depth (m)	0.72
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
100	Layer	-	0.28	Topsoil. Mid- grey brown clay silt	-	-
101	Layer	-	0.2	Subsoil. Mid- orange brown sandy silt	-	-
102	Layer	-	-	Natural. Mid- orange grey clay	-	-
103	Cut	1.15	0.32	East/west-aligned Ditch	-	-
104	Fill	1.05	0.24	Fill of Ditch ***103***. Very dark grey black clay	-	-
105	Cut	0.93	0.19	East/west-aligned Ditch	-	-
106	Fill	0.93	0.19	Fill of Ditch ***105***. Dark black grey clay	-	-
107	Fill	1.15	0.08	Fill of Ditch ***103***. Mid-reddish brown clay silt	-	-

Trench 2						
General description					**Orientation**	NE-SW
Trench devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of sandy clay.					**Length (m)**	31
					Width (m)	1.7
					Avg. depth (m)	0.48
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
200	Layer	-	0.28	Topsoil. Mid- grey brown silt	-	-
201	Layer	-	0.15	Subsoil. Light grey brown sandy clay with orange mottling	-	-
202	Layer	-	-	Natural. Pinkish brown orange sandy clay	-	-

Trench 3						
General description					**Orientation**	E-W
Trench containing a modern pit, deliberately backfilled, identified cutting subsoil, which overlay natural geology. The fill of the pit was, subsequently, overlain by topsoil.					**Length (m)**	21.3
					Width (m)	1.7
					Avg. depth (m)	0.58
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
300	Layer	-	0.28	Topsoil. Mid- grey brown clay silt	-	-

301	Layer	-	0.15	Subsoil. Mid- grey brown sandy clay	-	-
302	Layer	-	-	Natural. Mid- orange clay with flecks of black and red	-	-
303	Cut	3.1	>1.2	Modern pit	-	Modern
304	Fill	3.1	>1.2	Deliberate backfill of modern pit ***303***. Blackish-brown silt	-	Modern

Trench 4						
General description					**Orientation**	NE-SW
Trench contained a single north-east/south-west-aligned ditch cutting natural geology and filled by two deposits. The feature was overlain by subsoil, which was, in turn, overlain by topsoil					**Length (m)**	20.7
					Width (m)	1.68
					Avg. depth (m)	1.2
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
400	Layer	-	0.33	Topsoil. Mid- grey brown clay silt	-	-
401	Layer	-	0.68	Subsoil. Mid- black brown sandy clay	-	-
402	Layer	-	-	Natural. Mid- orange grey clay	-	-
403	Cut	4	0.8	North-east/south-west-aligned boundary ditch	-	-
404	Fill	2.5	0.4	Fill of Ditch ***403***. Mid- grey brown silt	-	-
405	Fill	4	0.55	Fill of Ditch ***403***. Mid-orange brown clay silt	-	-

Trench 5						
General description					**Orientation**	NE-SW
Trench devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of sandy clay.					**Length (m)**	22.3
					Width (m)	1.84
					Avg. depth (m)	0.82
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
500	Layer	-	0.22	Topsoil. Mid- grey brown clay silt	-	-
501	Layer	-	0.38	Subsoil. Mid- orange brown sandy clay	-	-
502	Layer	-	-	Natural. Mixed grey orange clay	-	-

Trench 6						
General description					**Orientation**	E-W
Trench devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of sandy clay.					**Length (m)**	21
					Width (m)	1.8
					Avg. depth (m)	0.84
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
600	Layer	-	0.27	Topsoil. Mid- grey brown clay silt	-	-
601	Layer	-	0.47	Subsoil. Mid- orange brown sandy clay	-	-
602	Layer	-	-	Natural. Mid- orange grey clay	-	-

Trench 7						
General description					**Orientation**	N-S
Trench devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of sandy clay.					**Length (m)**	29.5
					Width (m)	1.52
					Avg. depth (m)	1.05
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
700	Layer	-	0.28	Topsoil. Mid- grey brown clay silt	-	-
701	Layer	-	0.15	Subsoil. Mid- orange brown clay silt	-	-
702	Layer	-	-	Natural. Orange to grey sandy clay	-	-

APPENDIX C BIBLIOGRAPHY

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APPENDIX D SITE SUMMARY DETAILS

Site name:	Oak Lane, Newton-with-Scales, Lancashire
Site code:	NWS20
Grid Reference	SD 44584 30798
Type:	Evaluation
Date and duration:	2nd – 4th December 2020; 3 days
Area of Site	1.23ha
Location of archive:	The archive is currently held at OA North, Mill 3, Moor Lane Mills, Moor Lane, Lancaster, LA1 1QD, and will be deposited with Lancashire County Record Office in due course.
Summary of Results:	OA North were commissioned by Lanpro Services, on behalf of Westchurch Homes Ltd, to undertake an archaeological evaluation and ridge and furrow survey of a proposed residential development on land north of Oak Lane, Newton-with-Scales, Lancashire (NGR: SD 44584 30798). Both elements of fieldwork were undertaken over three days between 2nd and 4th December. Archaeological remains were only identified in two of the seven trenches, Trenches 1 and 4. Only the ditch identified in Trench 4 corresponded well with the geophysical survey results. The parallel linears identified at the southern end of Trench 1 undated and with no indication of their possible function. The ridge and furrow in the northern part of the proposed development was successfully recorded. The feature is present on LiDAR data and a profile was also recorded utilising a dGPS.

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