ARCHAEOLOGICAL INVESTIGATIONS AT LAND WEST OF SCORTON, NORTH YORKSHIRE

EVALUATION REPORT

FEBRUARY 2018

PRE-CONSTRUCT ARCHAEOLOGY

Archaeological Investigations at Land West of Scorton, North Yorkshire

Site Code: SYN 18

Commissioning Client:

Savills
26 Coniscliffe Road,
Darlington,
DL3 7JX

On behalf of:

Tancred Gravel Limited

Cook Cl,
Brompton on Swale,
Richmond DL10 7EQ
Tel: 01748 811638

Contractor:

Pre-Construct Archaeology Limited

Durham Office
Unit N19a Tursdale Business Park
Durham
DH6 5PG

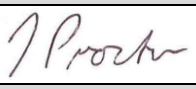
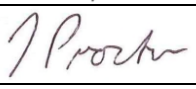
Tel: 0191 377 1111

DOCUMENT VERIFICATION

ARCHAEOLOGICAL INVESTIGATIONS AT LAND WEST OF SCORTON, NORTH YORKSHIRE

EVALUATION REPORT

Pre-Construct Archaeology Limited Quality Control	
Project Number	K5357
Site Code	SNY 18
Report Number	RN 11093

Task	*Name*	*Signature*	*Date*
Text prepared by:	Aaron Goode and Jennifer Proctor		February 2018
Text checked by:	Jennifer Proctor		14 February 2018
Graphics prepared by:	Mick Steel		February 2018
Graphics checked by:	Mark Roughley		February 2018
Manager sign-off:	Jennifer Proctor		15 February 2018

Revision No.	*Date*	*Checked by*	*Approved by*

Pre-Construct Archaeology Limited

Durham Regional Office

Unit N19a Tursdale Business Park

Durham

DH6 5PG

CONTENTS

1. NON-TECHNICAL SUMMARY

1.1 Pre-Construct Archaeology was commissioned by Savills on behalf of Tancred Gravel Limited to undertake archaeological investigations on land to the west of Scorton, Richmond, North Yorkshire. The proposed development covers *c.* 6.5 hectares of land located on the western edge of the village of Scorton, centred at National Grid Reference SE 2482 9997.

1.2 The work was undertaken in association with an outline planning application to Richmondshire District Council for a proposed housing development at the site. The site is located within an area of high archaeological potential for prehistoric remains as it lies within a landscape of considerable ritual and funerary significance centred around the River Swale. The southern extremity of the Scorton Cursus, a 2km long Neolithic monument formed by two ditches with a central bank, runs NW-SE through the south-western corner of the site. The cursus was a focus for later prehistoric funerary activity with a late Neolithic or Early Bronze Age ritual monument excavated to the north of the site and ring ditches identified around the southern terminal and flanking the central section. Iron Age field systems and granary structures have also been excavated in the close vicinity prior to quarrying, as well as several groups of human burials thought to be of 4th-6th century AD date.

1.3 A geophysical survey of the proposed development undertaken in November 2017 identified a number of features of archaeological interest. The north-eastern outer ditch of the Scorton Cursus monument was identified along with six features thought to represent the remains of ploughed out barrows, including a square barrow. Traces of a presumed to be prehistoric field system, evidently laid out to respect the alignment of the cursus, was also identified.

1.4 Other anomalies were thought to represent the agricultural use of the site, including ridge and furrow which is still extant as a low earthwork throughout most of proposed development area. Several anomalies that corresponded with boundaries depicted on the first edition Ordnance Survey map were also identified.

1.5 The subsequent trial trenching evaluation undertaken in January comprised 17 trenches of varying sizes positioned to investigate geophysical anomalies and also in areas where no anomalies were detected in order to identify the archaeological potential of the entire site.

1.6 Significant multi-period prehistoric archaeological remains were recorded, with a particular concentration in the southern area. The geophysical survey detected linear magnetic anomalies across the site and this ploughing had resulted in truncation of archaeological features leaving only the truncated remains of deep cut features; no upstanding earthwork features such as the bank associated with the cursus or barrow mounds survived.

1.7 Part of the north-eastern side of the main Scorton Cursus ditch was identified by geophysical survey for a distance of 75m and sample excavation revealed it to be *c*. 4.20m wide and c. 1.10m deep. A parallel feature in the north-west, identified by geophysical

survey for a distance of 10m, may represent a palisade trench which excavations elsewhere have shown to contain posts which revetted the external bank of the cursus ditch.

1.8 The ploughed out remains of the encircling ditches of four round barrows were recorded in the vicinity of the cursus ditch, ranging in diameter from 9.60–13m. Two of the barrows had internal features which may represent burial pits. These barrows, of Late Neolithic or Early Bronze Age date, demonstrate that the Scorton Cursus retained significance in the landscape long after its original use. The ditches of two square barrows were also identified including one with a probable central burial pit. This form of barrow dates from the Iron Age period.

1.9 An extensive field system comprising at least two substantial parcels of land defined by ditches extended across the site. This field system was evidently laid out to respect the alignment of the much earlier cursus monument and may also have incorporated part of one of the barrow ditches.

1.10 The investigations demonstrated that the site had been subject to ploughing since the medieval period; low ridge and furrow earthworks survived across the site from a former open field system of agriculture which probably originated in the medieval period. The north-eastern end of Trench 9 was sited to test a group of NW-SE and NE-SW aligned geophysical anomalies 24 that were presumed to be post-medieval based on cartographic evidence. A north-south aligned ditch produced a single sherd of medieval pottery. The function of this ditch is uncertain, it is on a different orientation to the NE–SW ridge and furrow agriculture across the site, the alignment of which later became incorporated into post-medieval field boundaries.

1.11 No artefactual material was recovered from the prehistoric features and ten palaeoenvironmental samples processed from these features produced very little ecofactual material. Any charred plant material occurred in single counts and was poorly preserved and/or fragmented, so identification was prohibited. Where present, charcoal tended to occur in very small amounts and identification, where possible, tended to be oak. The pH levels taken from the samples should inhibit the preservation of bone particularly as the site is on a bedrock of Sherwood Sandstone with superficial deposits of freely-draining River Terrace Deposits. The unreliable nature of the assemblage is illustrated by the presence of earthworm capsules and modern roots within the flots as the presence of each may suggest a large quantity of bioturbation has occurred. Furthermore, the gravel nature of the fills of the features would allow for the movement of ecofactual material through the deposit resulting in the potential loss of palaeoenvironmental evidence.

2. INTRODUCTION

2.1 Project Background

2.1.1 This report details the results of archaeological investigations undertaken in November 2017 and January 2018 on land to the west of Scorton, Richmond, North Yorkshire. The proposed development covers *c*. 6.5 hectares of land centred at National Grid Reference SE 2482 9997 located on the western edge the village of Scorton (Figures 1 and 2). The archaeological investigation was commissioned by Savills on behalf of Tancred Gravel Limited (the Client) and undertaken by Pre-Construct Archaeology Limited (PCA).

2.1.2 The work was undertaken in association with an outline planning application to Richmondshire District Council (17/00710/OUT) for a proposed housing development at the site. The Heritage Officer of North Yorkshire County Council has advised the District Council that a scheme of archaeological investigation, comprising geophysical survey and trial trenching evaluation, should be undertaken prior to determination of the planning application (ref 1039 MD CNY15944). The aim of this work was to identify and describe the nature and significance of any surviving archaeological remains within the proposed development area and enable an understanding of the potential impact of the proposal upon their significance.

2.1.3 The proposed development site lies within an area of high archaeological potential for the survival of prehistoric remains as it lies within a landscape of considerable ritual and funerary significance centered around the River Swale. The southern extremity of the Scorton Cursus, a 2km long Neolithic monument formed by two ditches with central bank, runs NW-SE through the south-western corner of the site. The cursus was a focus for later prehistoric funerary activity with a large late Neolithic or Early Bronze Age ritual monument excavated to the north of the proposed development site and ring ditches identified on aerial photographs clustered around the southern terminal and flanking the central section. Iron Age field systems and granary structures have been excavated in the close vicinity of the site ahead of quarrying, as well as with several groups of human burials thought to be of 4th-6th century AD date.

2.1.4 The geophysical survey of the proposed development identified a number of features of archaeological interest, concentrated mainly in the south-west portion of the site through which ran the Scorton Cursus Neolithic monument (AD Archaeology 2017; Appendix 6). The eastern outer ditch of the cursus monument was identified along with six features thought to represent the remains of ploughed out barrows. Traces of a presumed to be prehistoric field system, evidently laid out to respect the alignment of the cursus, was also identified. Other anomalies were thought likely to relate to the agricultural use of the site, including ridge and furrow which is still extant as a low earthwork throughout most of the proposed development. Several anomalies that corresponded with boundaries depicted on the first edition Ordnance Survey map were identified.

2.1.5 The trial trenching evaluation comprised 17 trenches of varying sizes positioned to investigate both geophysical anomalies and areas where no anomalies were detected in order to identify the archaeological potential of the entire site (Figures 2 and 3).

2.1.6 The Online Access to the Index of Archaeological Investigation (OASIS) reference number of the project is preconst1-309269.

2.2 Site Location and Description

2.2.1 The proposed development area comprises an irregular-shaped plot of land covering *c*. 6.5 hectares on the western edge of the village of Scorton (NGR SE 2482 9997). The site is bounded to the south and south-east by the B6271 and to the north by a minor access road (Figures 1 & 2). The north-western boundary lies within the large field and the north-eastern side of the site is bounded by residential properties and associated gardens.

2.2.2 The site, which at the time of the investigations was used for pasture, measures a maximum of *c*. 400m NW-SW by 300m NE-SW. Two public rights of way, a bridleway (20.58/11) and a footpath (20.58.12), cross the central part of the site. A hedge line is located in the northern part of the site aligned approximately NE-SW and running parallel to the northern boundary. Overhead power cables cross the southern part of the site on a NE-SW alignment

2.2.3 An extensive gravel quarry operated by Tancred Gravel Limited lies to the west and north of the site. The town of Richmond lies *c*. 8km to the west of the site and Catterick is *c.* 1.5km to the south-west.

2.3 Geology and Topography

2.3.1 The bedrock geology of the site comprises Sandstone from the Tyne Sherwood Sandstone Group formed approximately 237 to 272 million years ago in the Triassic and Permian Periods. The bedrock is overlain by River Terrace Deposits of sand and gravel formed up to 3 million years ago in the Quaternary Period (BGS 2017). These deposits have been extensively quarried to the west and north of the site, creating large lakes after the deposits have been removed.

2.3.2 The site consists of a relatively flat extensive field of pasture. Ground level in the northern end of the site lies at *c*. 56.85m AOD and at the southern end at *c*. 57.60m AOD.

2.3.3 The River Swale is located *c*. 0.7km to the south-west of the site and the Bolton Beck 0.4km to the east.

2.4 Planning Background

2.4.1 An outline planning application has been submitted to Richmondshire District Council (17/00710/OUT) for a proposed housing development with associated vehicular access highway works, public open space, landscaping, football pitch and car park at the site. The archaeological investigation was required, as part of the planning process, to inform the

Local Planning Authority (LPA), Richmondshire District Council, and their archaeological advisors at North Yorkshire Council of the character, date, extent and degree of survival of archaeological remains at the site.

2.4.2 The LPA has responsibility for development control in relation to the historic environment. The Heritage Officer of North Yorkshire County Council has advised the District Council that a scheme of archaeological investigation, comprising geophysical survey and trial trenching evaluation, should be undertaken prior to determination of the planning application (ref 1039 MD CNY15944). The aim of this work was to identify and describe the nature and significance of any surviving archaeological remains within the proposed development area and enable an understanding of the potential impact of the proposal upon their significance.

2.4.3 Chapter 12 of the NPPF *Conserving the historic environment* describes in paragraph 126, how LPAs should *... set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment* and details, in paragraph 128, that *in determining application, LPAs should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the relevant [Historic Environment Record] HER should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, LPAs should require developers to submit an appropriate desk-based assessment and where necessary [the results of] a field evaluation*.

2.4.4 In accordance with historic environment policies within Section 12 of the National Planning Policy Framework, 2012 (paragraph 128), this evaluation was undertaken prior to determination of the planning application. This was to enable an informed and reasonable planning decision to be taken as to whether the development should be permitted in its proposed form (paragraph 135). If so, the information will assist in identifying mitigation options for minimising, avoiding damage to, and/or recording any archaeological remains (paragraph 141).

2.5 Archaeological and Historical Background

2.5.1 The site lies within a landscape that is rich in prehistoric sites, perhaps most notable being the Scorton Cursus, a major middle Neolithic monument visible as a cropmark on aerial photographs. The Scorton Cursus formed an elongated rectangular enclosure *c.* 2km in length defined by ditches with traces of a central mound, placing it in the rare category of the bank barrow class of cursus monument (NAA 2009). The cursus is orientated NW-SE and a cropmark of its eastern outer ditch can be seen across the south-western edge of the site,

alongside Back Lane (B6271). Quarrying has removed much of the monument, including the southern terminal sometime prior to 1975 and a 1km stretch of the northern part between the mid-1970s and 1996 (NAA 2009). Short lengths of the monument have been excavated or recorded in the quarry faces including 70m of the main ditches in 1976 (DoE 1977); hand dug trenches across both ditches in 1978 and part of the interior which recorded the remains of part of the central mound (Topping 1982). Traces of the central mound and both ditches were also excavated in 1998 (Harding 1998).

2.5.2 In 2008 a 70m length section of the monument was investigated *c*. 400m to the west of the current site and *c.* 500m north-west along the length of the cursus (NAA 2009; Appendix 6, Plate 1). This work allowed the examination of smaller external flanking linear features to the main cursus ditches which had been identified on aerial photographs but not previously excavated. The outer features proved to be a sequence of palisade trenches which may have held lines of posts revetting banks originally running external to the main cursus ditches. No traces of the internal bank survived which had presumably been truncated by deep ploughing. In total the monument measured c. 47m wide. The north-eastern cursus ditch was up to 3.85m wide and 0.96m deep and had a shallow U-shaped profile. The south-western cursus ditch was 34m (centre to centre) from the north-eastern and was up to 4m wide with a similar depth and profile to the opposing ditch.

2.5.3 Cursus monuments retained significance in the landscape long after their original use as demonstrated by the frequency with which later monuments, including henges and round barrows, cluster around them (Barber 2011).

2.5.4 During the later Neolithic and Early Bronze Age periods, a widespread ritual and funerary landscape seems to have developed to the west of the Scorton Cursus, centred on the River Swale, including possible henge monuments at Catterick Racecourse and Catterick Aerodrome (NAA 2009). Several ring-ditches have been identified on aerial photographs clustered around the southern terminal of the Scorton Cursus and flanking its central section; however, these have been destroyed by quarrying without investigation (NAA 2009). One of the ring ditches lay between a pair of parallel ditches set 30–40m apart which crossed the central part of the cursus and were visible on aerial photographs for a distance of over 500m; it is possible that this feature (subsequently quarried) represented a second cursus (NAA 2009).

2.5.5 Evidence for another possible Neolithic monument has been recorded in the north-eastern part of Scorton Quarry; several large post-pits arranged in an irregular oval may have formed part of an associated monument (NAA 2008). At Hollow Banks Farm, *c.* 1.7km to the west, an alignment of conjoining pits crossed the site parallel to the Scorton Cursus and a small hengiform enclosure, measuring up to 16m in diameter, was delineated by two curving ditches (NAA 2002). No internal features had survived, although a pit immediately outside one entrance contained a human cremation within a Collared Urn of early Bronze Age date. One isolated pit near to the hengiform enclosure produced an assemblage of Grooved Ware

pottery and worked flint and another pit produced a burnt but unused saddle quern. To the north-west, a double alignment of pits ran westwards from the projected henge-axis.

2.5.6 Excavation of a penannular ditch within Scorton Quarry in 1977 revealed a central pit, presumably a grave, which contained an Early Bronze Age beaker (Greenhalf 1980). Finds of Bronze Age material in the area such as a gold bracelet in Scorton Beck and two swords found at Brompton-on-Swale suggest deposition of prestige objects indicating the continuing ritual significance of this area (NAA 2009).

2.5.7 Evidence for Iron Age occupation has been recovered from several sites in the vicinity. At Hollow Banks Farm, *c.* 1.7km to the west of the site, Iron Age activity was recorded within three parts of site, each differing in character and suggesting successive phases of occupation (NAA 2002). These included: a small oval ditched enclosure probably containing a single structure represented by a small circular gully; a square enclosure delineated by two phases of palisade slot and associated four-post structure; and another area of possible unenclosed settlement indicated by residual pottery recovered from later features and probably including post-built structures.

2.5.8 A system of large rectangular fields delineated by ditches probably originated in the Iron Age and continued into the Roman period. At Grange Farm, c. 1km to the north-west of the site, remains of an extensive Iron Age field system and settlement of 6th to 3rd century BC date were recorded with the field system remaining in use into the 2nd to 4th centuries AD (Copp and Roe 1996; 1997). Elements of a field system and a group of Iron Age or Roman period inhumation burials were recorded to the east of the Grange Farm site (NAA 2008). Iron Age activity was also recorded ahead of quarrying c. 400m to the west of the site (NAA 2009). Five four-post structures, a form of building generally interpreted as granaries and likely to be of Iron Age date, as well as a small pit containing debris from iron smithing, indicated the presence of settlement in the vicinity. Traces of a field system delineated by small ditches or gullies presumably formed part of an extensive field system of Iron Age or Roman period date.

2.5.9 The site lies *c.* 2km to the east of the Roman town and fort of Cataractonium. There was ribbon-development during this period along Dere Street to the north and south of the town, and a separate focus of settlement at Bainesse adjacent to Marne Barracks (the former Catterick Aerodrome). Civilian occupation of the town probably continued into the 5th century.

2.5.10 From the later 1st century AD, the site at Hollow Banks Farm formed part of the immediate hinterland of the Roman town of Cataractonium and lay close to Dere Street. Parts of the southern and south-eastern corner of a probable Roman marching camp ditch lay within the site and produced early 2nd century pottery, perhaps suggesting a late 1st century date for the camp (NAA 2002). The main evidence for Romano-British activity consisted of a small rectangular enclosure or structure enclosed within a larger rectangular ditched enclosure. Both enclosure ditches produced Iron Age or 1st to 2nd century Roman pottery but with

occasional sherds of later material. A second phase of the enclosure was arranged on a different alignment and in the mid to late 4th century part of the site was used for a small cemetery. Part of the earlier field layout was altered during the Roman period; the new arrangement apparently forming the basis of the medieval and modern field layout. One of the new ditches subsequently formed the focus for an extensive 5th-6th century Anglian cemetery.

2.5.11 Scorton Village was first recorded in the 1173 version of the Domesday survey; it was a two-row village with green surrounded by a field system comprising blocks of ridge and furrow cultivation (NAA 2009). Low ridge and furrow earth works survive across the site from a former open field system of agriculture which probably originated in the medieval period.

2.5.12 Elements of the former ridge and furrow system were incorporated into the boundaries of the post-medieval enclosure field layout and can be seen subdividing the site with four narrow principal fields on the first edition OS Survey map of 1857 (Appendix 6, Fig. 10). Several footpaths and a Bridle road are depicted, the later still visible as an earthwork across the field, and perhaps lying on the road of an earlier medieval routeway from the village. The first edition OS Survey map shows the south-east portion of the site occupied by several buildings and associated small enclosures and gardens; it was not until the 1970s OS edition that the last of these structures were removed from the site

3. Aims and Objectives

3.1 Project Aims

3.1.1 The project aims were to fulfil the requirements of the local planning authority by undertaking an appropriately specified scheme of archaeological work. The primary aim of this work was to identify and describe the nature and significance of any surviving archaeological remains within the proposed development area to enable an understanding of the potential impact of the proposal upon their significance. The results are to be used to inform decisions regarding further mitigation measures that may be required at the site.

3.2 Research Objectives

3.2.1 The project was undertaken with reference to the research framework set out in the *Yorkshire Archaeological Research Framework: Research Agenda* (Roskams and Whyman 2007). By setting out key research priorities for all periods of the past, this research agenda allows archaeological projects to be related to wider regional and national priorities for the study of archaeology and the historic environment.

4. ARCHAEOLOGICAL METHODOLOGY

4.1 Fieldwork

4.1.1 The fieldwork was undertaken in compliance with the codes and practice of the Chartered Institute for Archaeologists and the relevant CIfA standard and guidance document (CIfA 2014 a, b & c). PCA is a CIFA Registered Organisation. All fieldwork and post-excavation was carried out in accordance with the Yorkshire, the Humber & The North East: Regional Statement of Good Practice (SYAS 2011).

4.1.2 The geophysical survey was undertaken in the week of 20th November 2017 (AD Archaeology 2017; Appendix 6). The trial trenching evaluation was carried out 8th to 26th January 2018.

4.1.3 The archaeological evaluation comprised 17 No. Trenches of varying lengths that were set-out using a Leica Viva Smart Rover Global Navigation Satellite System (GNSS), with pre-programmed co-ordinate data determined by an office-based CAD operative. The trenches were located across the site on variable alignments and sited to target either potential archaeological features identified by geophysical survey or as judgment trenches to test areas where no geophysical anomalies were identified. A summary of the rationale for the evaluation trenching is summarised below with interpretation of geophysical features (Appendix 6):

Trench No.	Purpose
1	Judgement trench
2	N-S orientated linear positive anomaly 12 (field system), discrete positive anomaly 26
3	N-S orientated linear positive anomaly 12 (field system), ENE-WSW positive linear anomaly 7 (post-medieval field boundary)
4	N-S orientated linear positive anomaly 12 (field system)
5	WNW-ESE linear positive anomaly 13 (field system)
6	Judgement trench
7	N-S orientated linear positive anomaly 12 (field system)
8	N-S orientated linear positive anomaly 12 (field system), NW-SE orientated weak linear positive anomaly 21
9	WNW-ESE orientated linear positive anomaly 13 (field system), E-W linear positive anomaly 23 and ENE-WSW & NNW-SSE orientated linear positive and negative anomalies 24 (post-medieval features), E-W orientated linear weak anomaly 22
10	Positive anomalies 17 (round barrow) & 18 (square barrow)
11	ENE-WSW orientated linear positive anomaly, discrete positive anomaly

12	Judgement trench
13	NNE-SSW orientated linear positive anomaly, discrete positive anomaly
14	Positive anomalies 15 & 16 (round barrows)
15	Positive anomaly 14 (round barrow), N-S orientated linear positive anomaly 12(field system)
16	Positive anomaly 19 (square barrow), NW-SE orientated linear positive anomaly 12 (field system)
17	NW-SE orientated linear positive anomaly 9 (cursus ditch), NW-SE orientated linear positive anomaly 10 (cursus flanking ditch), fragmentary linear anomaly 11

Trench location summary

4.1.4 Trenches 6, 8 & 9 had to be either shortened or split to avoid overhead power cables and Trench 2 had to be shortened to avoid a mature hedgerow (shown in light blue in Figures 2 and 3). The table below summarises the dimensions of each trench:

Trench	Length (m)	Width (m)	Maximum depth (m)
1	100	1.80	0.52
2	55	1.80	0.46
3	100	1.80	0.43
4	50	1.80	0.58
5	100	1.80	0.52
6	50	1.80	0.35
7	50	1.80	0.34
8	100	1.80	0.43
9	25 and 40	1.80	0.38
10	35	1.80	0.37
11	30	1.80	0.37
12	35	1.80	0.32
13	50	1.80	0.38
14	50	1.80	0.38
15	50	1.80	0.37
16	50	1.80	0.37
17	20	1.80	0.60

Trench summary

4.1.5 All trenches were mechanically-excavated by a 20-tonne 360˚ tracked machine with toothless ditching bucket under archaeological supervision. The trenches were excavated to the top of the first significant archaeological horizon, or the clearly defined top of the geological substratum, whichever was reached first. All potential archaeological features were identified and marked at the time of machine clearance of overburden.

4.1.6 The investigation of archaeological levels was by hand, with cleaning, examination and recording both in plan and in section, where appropriate. Investigations within the trenches followed the normal principles of stratigraphic excavation and were conducted in accordance with the methodology set out in the field manual of PCA (PCA 2009) and the Museum of London Site Manual (Museum of London 1994).

4.1.7 Deposits and cut features were individually recorded on the *pro-forma* Trench Recording Sheet and Context Recording Sheet. All site records were marked with the unique Site Code SNY18. All archaeological features were excavated by hand tools and were recorded in plan at 1:20 and by GPS or in section at 1:10 using standard single context recording methods. The height of all principle strata and features was calculated in metres above Ordnance Datum (m AOD) and indicated on appropriate plans and sections.

4.1.8 A detailed photographic record of the evaluation using SLR cameras (35mm film black and white prints for archive purposes) and by digital photography. All detailed photographs included a legible graduated metric scale. The photographic record illustrated both in detail and general context archaeological exposures and specific features in all trenches.

4.2 Post-excavation

4.2.1 The stratigraphic data for the project comprises written and photographic records. A total of 136 archaeological contexts were defined in the seventeen trenches (Appendix 2). Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data (Appendix 3). A written summary of the archaeological sequence was then compiled, as described in Section 5.

4.2.2 During the evaluation a single sherd of medieval pottery and two fragments of ceramic building material were recovered. No other artefactual or ecofactual material was recovered from the evaluation trenches.

4.2.3 The palaeoenvironmental sampling strategy of the project was to recover bulk samples where appropriate, from well dated stratified deposits covering the main periods or phases of occupation and the range of feature types represented, with specific reference to the objectives of the evaluation. To this end, ten bulk palaeoenvironmental samples were selected for post-excavation processing and assessment for palaeoenvironmental remains (Samples 4, 5, 8, 9, 11, 13-17). An assessment report has been produced including a basic quantification of the recovered material and a statement of potential for further analysis and recommendations for such work (Appendix 5).

4.2.4 The complete Site Archive, in this case comprising only the written, drawn and photographic records (including all material generated electronically during post-excavation) will be packaged for long term curation. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document (Brown 2007) will be adhered to, in particular a well-established United

Kingdom Institute for Conservation (UKIC) document (Walker, UKIC 1990) and the most recent CIfA publication relating to arching (CIfA 2014c).

4.2.5 When complete, the site archive will be deposited with the relevant museum, under the site code SNY 18. The depositional requirements of the relevant museum which the Site Archive will be ultimately transferred will be met in full. A completed transfer of title deed will accompany the Site Archive on deposition.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the archaeological investigation, separate stratigraphic entities were assigned unique and individual context numbers, which are indicated in the following text as, for example [123]. The archaeological sequence is described by placing stratigraphic sequences within broad phases, assigned on a site-wide basis in this case. An attempt has been made to add interpretation to the data and correlate these phases with recognised historical and geological periods. The figures can be found in Appendix 1 with the context index and stratigraphic matrix located in Appendix 2 and 3 respectively. A selection of plates can be found within Appendix 4 and the Environmental Sample Assessment on the samples within Appendix 5.

5.1 Phase 1: Geological substratum

5.1.1 Phase 1 represents the geological material exposed within all 17 trenches which comprised mid to dark brown compact to loose sandy gravel with occasional large patches of light yellowish brown sand.

5.1.2 The maximum and minimum height of the upper interfaces of geological substratum was 57.52m AOD in Trench 17 in the south-western part of the site and 56.00m AOD in Trench 9 in the eastern part of the site, respectively.

5.1.3 The depth at which natural geological material was encountered varied across the site from maximum and minimum depths below ground level of 0.52m in Trench 1 in the north-western corner of the site and 0.28m in Trench 9.

5.2 Phase 2: Prehistoric and Undated

5.2.1 Phase 2 represents prehistoric activity across the site including features associated with the Neolithic Scorton Cursus monument, six barrows and elements of a field system (Figures 3 and 4). For the purposes of this evaluation, and in the absence of any artefactual material or AMS dates, the prehistoric activity has been placed within one broad phase, but most of the features can be assigned to specific periods based on comparisons with archaeological excavations in the vicinity.

5.2.2 Low ridge and furrow earthworks survive across the site from a former open field system of agriculture which probably originated in the medieval period. The geophysical survey detected linear magnetic anomalies across the site from a ridge and furrow system orientated ENE-WSW that was spaced at intervals of mainly between 4m-6m apart, indicating a medieval origin. This ploughing had resulted in truncation of archaeological features leaving only the truncated remains of deep cut features; no upstanding earthwork features such as the bank associated with the cursus or barrow mounds survived.

Neolithic Cursus

5.2.3 Part of the north-eastern side of the main Scorton Cursus ditch was initially identified by geophysical survey as a NW-SE aligned linear positive anomaly 9 within the south-western part of the site, for a distance of 75m (Figure 3). Trenches 16 and 17 were sited to target elements of the cursus ditch and a section was excavated through the ditch in Trench 16.

5.2.4 The cursus ditch [1612] was exposed for a distance of 2.00m at the south-western extent of Trench 16 (Figure 6). The ditch had a shallow U-shaped profile up to 4.18m wide and was up to 1.12m deep (Section 24, Figure 8; Plate 1). Its primary fill comprised compact sandy gravel [1620] up to 0.34m thick probably representing either deliberate backfilling or slumping. This in turn was overlain by two loose silty sand fills, [1619] & [1611], that had a combined maximum thickness of 0.77m. Both fills were relatively sterile and probably represent the natural silting-up of the feature.

5.2.5 Palaeoenvironmental samples taken from the cursus ditch were analysed from the primary backfill [1620] (Sample 16) and the deposit [1619] (Sample 15) (Appendix 5). The primary fill did not produce any ecofactual material. The sample from fill [1619] produced a probable charred wheat (cf. Triticum sp.) grain and the largest volume of charcoal from the samples presented for this site, however this was still a very small quantity. Those fragments that were identifiable comprised, mostly oak with a single fragment of hazel (Corylus avellana), would be suitable for radiocarbon AMS dating. However, the context from which this fragment was recovered may negate them being fit for dating purposes because of soil porosity, bioturbation and size of their relative assemblage.

5.2.6 In the south-western extent of Trench 17 the cursus ditch [1706] was partially exposed for a distance of up to 2.00m. It was at least 4.00m wide, continuing beyond the south-western limit of excavation. Its uppermost exposed fill comprised compact gravelly sand [1707] that probably represents natural silting-up of the ditch.

5.2.7 Located *c*. 4.00m to the north-east of the main cursus ditch was a parallel feature [1703] corresponding with linear geophysical anomaly 10 which was traced for 10m. This was exposed for a maximum distance of 2.00m within the trench, had a U-shaped profile and was up to 1.07m wide by 0.40m deep (Section 8, Figure 8). Its two fills comprised compact gravelly sand [1705] & [1704]. This may represent a segment of the external flanking feature which was excavated to the north-west and proved to be a sequence of palisade trenches which may have held lines of posts revetting the banks originally running external to the main cursus ditches (NAA 2009).

Prehistoric Barrows

5.2.8 Elements of six features initially identified by geophysical survey as possible barrow monuments were located in the southern part of the site including four round barrows (Geophysical anomalies 14, 15, 16 & 17) and two square barrows (Geophysical anomalies 18 & 19). The anomalies were interpreted as the surviving elements of ditches surrounding

burial mounds, with all traces of the mounds having been removed by the extensive ploughing which had taken place across the site. Anomalies were also identified in the central part of square barrow 19 and anomalies 16 and 17. Trenches 10, 14, 15 and 16 sited to test these geophysical anomalies (Figures 5 and 6).

5.2.9 Trench 14 was sited to test two round barrows (Geophysical anomalies 15 & 16). The southernmost round barrow was identified as a penannular feature, open to the east, which had an external diameter of 12m (Figure 5). Two ditches [1404] and [1409] set 8m apart (the internal dimeter of the barrow), recorded in the southern part of the trench, correspond with geophysical anomaly 15. A slot excavated through the southernmost part of the ring ditch [1404] revealed a 0.96m wide by 0.40m deep ditch with a U-shaped profile (Section 11, Figure 8; Plate 7). Its single backfill comprised compact reddish brown sandy gravel [1406]. The northernmost part of the ring ditch [1409] was not excavated, however the feature was up to 1.01m wide and filled with a compact reddish brown sandy gravel [1410]. The maximum height at which the ditch survived in Trench 14 was encountered was 56.83m AOD.

5.2.10 Geophysical anomaly 16 located at the northern end of Trench 14 comprised around half of the eastern side of a semi-circular feature with external dimensions of 9.60m and a central oval pit which measured 4.20m x 3.80m. Slots were excavated through the northern and southern parts of the ring ditch, [1403] & [1407], which were 6.20m apart representing the internal dimeter of the barrow. Both sides had a U-shaped profile up to 1.34m wide by up to 0.45m deep (Sections 10 & 20, Figure 8; Plate 8). The maximum and minimum heights at which the top of the round barrow ditch survived were 56.78m AOD and 56.90m AOD, respectively. The southernmost part of the ring ditch, [1407], contained two depositional events including the initial natural silting-up of the ring ditch and possible infilling with material from the central mound. The initial natural silting-up deposit was only present within ring ditch slot [1407] and comprised a relatively sterile compact dark brown silty sand [1413)] up to 80mm thick. This in turn was overlain by two deposits [1412] & [1408], comprising compact reddish brown sandy gravel and gravelly sand, respectively, that had a combined maximum thickness of 0.38m. The northernmost part of the ring ditch, [1403], contained a single compact reddish brown sandy gravel fill [1405].

5.2.11 A palaeoenvironmental sample (Sample 9) was taken from ring ditch [1403] fill [1405]. No ecofactual material was present.

5.2.12 A compact dark brown sandy gravel [1411] was partially exposed within the central part of the round barrow for a distance of 3.80m north-south by at least 1.80m east-west. Although unexcavated, this deposit probably presumably represents the upper fill of a pit associated with the round barrow, possibly a central grave.

5.2.13 Trench 10 was sited to investigate two possible barrows (Geophysical anomalies 17 & 18). The northernmost geophysical anomaly 17 comprised a penannular feature, open to the south, with an external diameter of *c.* 12m with a semi-circular feature located in the

southern part of the internal area (Figure 5). Investigation of Trench 10 revealed part of the southern side of the barrow ditch which had not been detected by geophysical survey. Slots excavated through the northern and southern parts of the ring ditch, [1003] & [1008], respectively, revealed a U-shaped profile with dimensions of up to 1.83m wide by up to 0.50m deep (Sections 5 & 18, Figure 8; Plate 9). The maximum and minimum heights at which the top of the round barrow ditch survived were 56.70m AOD and 56.59m AOD, respectively.

5.2.14 Both excavated portions of the ring ditch contained two fills, generally comprising mid reddish brown sandy gravel and gravelly sand. The northernmost ring ditch [1003] contained fills [1005] & [1006], that had a maximum combined thickness of 0.45m and the southernmost ditch contained fills [1014] & [1009], with a combined maximum thickness of 0.50m.

5.2.15 A loose mid brown sandy gravel deposit [1012] was partially exposed within the internal area of the round barrow across an area that measured 1.60m north-south by at least 1.80m east-west. Although this deposit was unexcavated it may represent a pit associated with the round barrow.

5.2.16 Geophysical anomaly 18 located at the southern end of Trench 10 may represent the surviving part of a square barrow with external dimensions of 8m. Slots excavated through the northern and southern parts of the ditch, [1004] & [1010], set 6m apart, revealed a flat based U-shaped profile up to 1.20m wide by up to 0.39m deep (Sections 6, 7 & 19, Figure 8). The maximum and minimum heights at which the barrow ditch survived were 56.77m AOD and 56.72m AOD, respectively.

5.2.17 Both excavated sections contained two deposits which generally comprised compact to weakly cemented mid reddish brown sandy gravel. Fills [1013] & [1007] in the northernmost slot had a combined maximum thickness of 0.38m and fills [1015] & [1011] in the southernmost slot had a maximum combined thickness of 0.28m.

5.2.18 A palaeoenvironmental sample (Sample 8) taken from lower fill [1013], of slot [1004] through the northern part of the barrow ditch produced no ecofactual material.

5.2.19 Geophysical anomaly 14 within Trench 15 comprised a possible circular round barrow with external dimensions of 13m with the eastern side possibly incorporated into a later field system aligned NNE-SSW in this area (Figure 6). Two ditches [1503] & [1506] recorded within the central part of the trench correspond with the geophysical anomaly. Slots excavated through these ditches revealed a flat based U-shaped profile up to 2.34m wide by up to 0.87m deep (Sections 12 & 22; Figure 8, Plate 10). The maximum and minimum heights at which the top of the ditch survived were 57.30m AOD and 57.23m AOD.

5.2.20 Both excavated slots contained two fills which generally comprised loose mid reddish brown sandy gravel. The easternmost ring ditch [1506] contained fills [1508] & [1507] which had a

maximum combined thickness of 0.70m and the westernmost [1503] contained fills [1505] & [1504] which had a maximum combined thickness of 0.87m.

5.2.21 A palaeoenvironmental sample (Sample 13) taken from lower fill [1505], of ring ditch slot [1503] produced a single indeterminate cereal grain.

5.2.22 Trench 16 was sited to test square barrow geophysical anomaly 19 which had external dimensions of 12m and a large central anomaly (Figure 6). Two NW-SE aligned ditches and a central pit were recorded within the central part of the trench that correspond with the geophysical anomalies. Slots were excavated through both sides of the barrow ditch [1605] and [1617], revealing a shallow V-shaped profile up to 0.98m wide by up to 0.43m deep (Sections 13 & 26, Figure 8). The maximum and minimum heights that the square barrow was encountered was 57.01m AOD and 56.97m AOD, respectively.

5.2.23 The north-easternmost ditch [1605], containing a single fill [1618] and the south-westernmost ditch [1605] containing two fills [1604] & [1603]. All fills generally comprised loose reddish brown gravelly sand or sandy gravel.

5.2.24 A palaeoenvironmental sample (Sample 11) taken from the lower fill [1604] of barrow [1605] produced two very small fragments of oak (*Quercus* sp.).

5.2.25 Located centrally within the square barrow was part of a presumed to be square pit [1610] partially exposed for a maximum distance of at least 3.40m NE-SW by at least 2.00m NW-SE (Plate 11). A sample excavation undertaken within the central part of the pit recorded a depth of at least 0.67m and a moderately steep sloping south-eastern edge (Section 25, Figure 8).

5.2.26 Four fills [1616], [1609], [1621] & [1622], were recorded within the sample excavation. The 0.27m thick primary fill [1616] comprised a dark grey sandy silt, overlain by loose sandy gravel [1609], up to 0.30m thick in turn overlain by a *c*. 0.17m thick loose silty sand [1621]. The uppermost fill comprised loose sandy gravel [1622]; this redeposited natural material represented the remains of the central barrow mound.

5.2.27 A palaeoenvironmental sample (Sample 17) taken from primary backfill [1616] of the central square barrow pit [1610] produced three very small fragments of oak charcoal.

5.2.28 Located immediately to the south-west of square barrow ditch [1617] was an oval-shaped pit [1615]. It had a shallow U-shaped profile and measured 0.88m north-south by at least 1.56m east-west and was 0.20m deep (Section 15, Figure 8). Its single fill comprised loose reddish brown gravelly sand [1614].

Field System

5.2.29 A field system comprising at least two substantial parcels of land defined by ditches was initially identified by geophysical survey (anomalies 12 & 13) (Figure 3). Geophysical anomaly 12 extended NNE-SSW across the western side of the site for a distance of *c*. 380m. At its southern extent it turned to run south-eastwards, parallel to the main cursus

ditch, where it was traced for a distance of *c.* 48m. The slightly curved WNW-ESE orientated geophysical anomaly 13 extended eastwards from geophysical anomaly 12 *c.*140m north of the south-west corner of the field system and was traced for a distance of *c.* 180m. The southern parcel of land thus measured 140m NNE-SSW by at least 180m and the northern parcel at least 240m NNE-SSW by at least 180m. Several gaps in the geophysical anomalies were visible along the lengths of all elements of the field boundaries. It is possible that some of these may be where the ditch was not detected by the geophysical survey as well as actual gaps providing access into these parcels of land.

5.2.30 Trenches 2, 3, 4, 7, 8, 15 & 16 were sited to test the NNE-SSW aligned linear geophysical anomaly 12 and segments of the field enclosure ditches were recorded within all trenches. The exception was Trench 15, where a small stretch of the field system appeared to be delineated by barrow ditch [1506]. The profile of the enclosure ditch was generally U-shaped with the exception of enclosure ditch [1608] which had a V-shaped profile (Sections 2-4, 17, 14 & 23, Figures 7 and 8; Plates 2–5). The dimensions of each ditch section are summarized below:

Trench No.	*Cut No.*	*Width (m)*	*Depth (m)*	*Fill No.*	*mAOD*	
					Top	*Base*
2	[203]	1.32	0.55	[204], [205]	56.35	55.80
3	[303]	1.46	0.57	[304], [305]	56.58	56.00
4	[403]	1.10	0.53	[404], [405]	56.47	55.90
7	[703]	1.05	0.80	[704], [705]	56.94	56.14
8	[803]	1.80	0.76	[804], [805]	56.92	56.13
16	[1608]	1.47	0.95	[1606], [1607], [1613]	57.23	56.26

Table 1: Phase 2 Field Enclosure Ditch dimensions (Geophysical Anomaly 12).

5.2.31 The field enclosure ditch was filled with up to two depositional events which may represent the initial silting of the ditch and subsequent infilling with redeposited natural material (Groups 1 & 2). The dimensions of the field enclosure ditches fill deposits are summarised below:

Trench No.	*Fill No.*	*Cut No.*	*Thickness (m)*	*mAOD*	
				Highest	*Lowest*
Group 1					
3	[304]	[303]	0.13	56.28	56.13
4	[404]	[403]	0.42	56.47	-
4	[405]	[403]	0.26	56.44	56.08
7	[705]	[703]	0.66	56.89	56.80
8	[805]	[803]	0.55	56.68	56.57
16	[1607]	[1608]	0.21	57.01	56.88
16	[1613]	[1608]	0.41	56.74	56.68
Group 2					
3	[305]	[303]	0.45	56.58	56.51
7	[704]	[703]	0.14	56.94	56.89
8	[804]	[803]	0.30	56.92	56.81
16	[1606]	[1608]	0.27	57.23	57.21

Table 2: Dimensions of backfill deposits (Groups 1 & 2)

5.2.32 The initial silting (Group 1) depositional event comprised a single fill in ditch slots [303], [803] & [703] and two fills in [403] & [1608]. The Group 1 deposits generally comprised mid reddish-brown compact to loose sandy gravel.

5.2.33 A palaeoenvironmental sample (Sample 5) taken from primary fill [705] of ditch [703] in Trench 7 produced a very small quantity of charcoal fragments; a single fragment identifiable as likely willow/poplar. A single, poorly preserved, fragment of indeterminate cereal grain was also observed.

5.2.34 The later backfilling depositional event (Group 2) contained a single backfill deposit in ditch slots [303], [703], [803] & [1608] and generally comprised soft to loose mid reddish brown gravelly sand.

5.2.35 A palaeoenvironmental sample (Sample 4) taken from fill [704] of ditch [703] also produced a very small quantity of charcoal fragments with two pieces identified as alder/hazel (Alnus-type) and willow/poplar (Salix/Populus).

5.2.36 Trenches 5 & 9 were sited to test the WSW-ESE aligned geophysical anomaly 13; ditches were recorded in both trenches that corresponded with the geophysical anomaly. The profile of the field enclosure ditch in both slots, [504] & [910], was U-shaped and measured up to 1.31m wide by up to 0.45m deep (Sections 1 & 21, Figure 7; Plate 6).

5.2.37 Both excavated slots contained two fills (Group 3) generally comprising compact sandy gravel. The dimensions of the fills are summarised below:

Trench No.	*Backfill No.*	*Cut No.*	*Thickness (m)*	*mAOD*	
				Highest	*Lowest*
Group 3					
5	[503]	[504]	0.30	56.80	56.73
5	[505]	[504]	0.10	56.58	56.45
9	[911]	[910]	0.24	56.38	56.35
9	[912]	[910]	0.28	56.39	56.14

Table 3: Dimensions of ditch fills (Group 3)

5.2.38 A palaeoenvironmental sample (Sample 14) from the lower backfill (912) of field enclosure ditch slot [910].

5.3 Phase 3: Subsoil

5.3.1 A subsoil deposit was recorded in all trenches overlying Phase 2 prehistoric features and deposits and the natural geological material. The subsoil comprised weakly compact mid reddish brown gravelly sand ([101] Trench 1; [201] Trench 2; [301] Trench 3; [401] Trench 4; [501] Trench 5; [601] Trench 6; [701] Trench 7; [801] Trench 8; [901] Trench 9; [1001] Trench 10; [1101] Trench 11; [1201] Trench 12; [1301] Trench 13; [1401] Trench 14; [1501] Trench 15; [1601] Trench 16; [1701] Trench 17) and had a maximum and minimum thicknesses of 0.31m in Trench 17 and 0.10m in Trench 9, respectively.

5.4 Phase 4: Medieval

5.4.1 The north-eastern end of Trench 9 was sited to test a group of NW-SE and NE-SW aligned geophysical anomalies 24 that were presumed to be post-medieval based on cartographic evidence. A north-south aligned ditch [908] exposed at the north-eastern end of Trench 9 for a distance of at least 3.14m produced a single sherd of medieval pottery. It had a U-shaped profile and was up to 0.69m wide and 0.26m deep (Section 27, Figure 10; Plate 12). Its single fill comprised loose mid grey gravelly sand [909].

5.4.2 The function of this ditch is uncertain, it is on a different orientation to the NE–SW ridge and furrow agriculture across the site; the alignment of which later became incorporated into post-medieval field boundaries.

5.5 Phase 5: Post-Medieval

5.5.1 Trench 3 was sited to examine the intersection of a NE-SW aligned linear geophysical anomaly 7 that was presumed to be post-medieval in date with the prehistoric field system). Anomaly 7 was traced for a distance of 90m and correlates to a former field boundary of depicted on the first edition OS map which followed the earlier ridge and furrow system (Figure 3).

5.5.2 The intersection of the features was not exposed within the trench, and the field boundary ditch was situated a short distance to the south of the anomaly. The NE-SW aligned ditch, [307] was exposed for a distance of 6.40m and was up to 0.30m wide, encountered at a maximum height of 56.34m AOD (Figure 9). Its fill comprised loose mid brownish grey gravelly sand [306] from which two large fragments of ceramic building material were recovered.

5.5.3 Trench 9 was sited to investigate a ENE-WSW orientated anomaly which corresponded with the position of a boundary and track depicted on the first edition OS map and a series of anomalies extended at right angles from it to the north (anomaly 24). A small building is also shown in this area depicted alongside the track in this locality.

5.5.1 Two ditches [903] and [906] were recorded at the north-eastern end of Trench 9 that broadly correspond with these geophysical anomalies. ENE-WSW aligned ditch [903] exposed for a distance of 2.00m, had a U-shaped profile up to 0.85m wide by 0.28m deep (Section 9 Figure 10). No datable material was recovered from its soft mid greyish brown silty sand fill [904].

5.5.2 NW–SE aligned ditch, [906], was exposed for a distance of 2.00m and had a shallow U-shaped profile up to 0.51m wide by 0.15m deep (Section 16, Figure 10). Its fill comprised loose mid grey gravelly sand [907], from which a single sherd of post-medieval pottery was recovered.

5.6 Phase 6: Modern

5.6.1 Topsoil comprised soft mid greyish brown sandy silt ([100] Trench 1; [200] Trench 2; [300] Trench 3; [400] Trench 4; [500] Trench 5; [600] Trench 6; [700] Trench 7; [800] Trench 8; [900] Trench 9; [1000] Trench 10; [1100] Trench 11; [1200] Trench 12; [1300] Trench 13; [1400] Trench 14; [1500] Trench 15; [1600] Trench 16; [1700] Trench 17) and varied in thickness across the site from a maximum of 0.40m in Trench 4 to a minimum of 0.11 in Trench 10. The existing ground surface ranged from a maximum of 57.80m AOD at Trench 17 to a minimum of 56.38m AOD at Trench 9.

6. DISCUSSION

6.1 The proposed development lies within a landscape that is rich in prehistoric activity and the archaeological investigations undertaken have identified the presence of significant prehistoric monuments in the southern part of the site. Features associated with the Neolithic Scorton Cursus monument and six barrows were recorded. Although no artefactual material was recovered from these features and no AMS dates obtained, these features can be assigned to specific periods based on comparisons with known monument types and other archaeological excavations in the vicinity. Low ridge and furrow earthworks survive across the site from a former open field system of agriculture which probably originated in the medieval period.

6.2 The geophysical survey detected ENE-WSW aligned linear magnetic anomalies across the site between 4m-6m apart from a ridge and furrow system that had probably originated in the medieval period. This ploughing had resulted in truncation of archaeological features leaving only the truncated remains of deep cut features; no upstanding earthworks such as the bank associated with the cursus or barrow mounds survived.

6.3 The trial trenching evaluation confirmed the interpretation of geophysical anomalies of prehistoric origin as elements of the Scorton Cursus, barrows, and boundary ditches forming an extensive field system. Anomalies interpreted as being of post-medieval origin were also confirmed to be of this date. The survey also detected several anomalies of uncertain origin; these were targeted by the trial trenches, but no archaeological features were encountered to account for these anomalies.

6.4 The Scorton Cursus is a major middle Neolithic monument comprising an elongated rectangular enclosure *c.* 2km in length visible as cropmarks on aerial photographs. The feature is defined by ditches with traces of a central mound, placing it in the rare category of a bank barrow class of cursus monument (NAA 2009). The north-eastern side of the Scorton Cursus crosses the far southern corner of the site and was identified by geophysical survey as a NW-SE aligned linear anomaly traced for a distance of 75m. The southern terminal of the monument is situated in the field to the south of the B6271 Scorton Road, outside the proposed development site.

6.5 Cursus monuments are, for the most part, long and relatively narrow earthwork enclosures generally defined by an enclosing bank with a ditch on the outside which range in length from 10 km down to around 100m (Barber 2011). The width of cursus monuments varies across the class as a whole and within individual monuments; there is no relationship between length and width of such monuments, and the proportional dimensions of each show considerable variation. In some examples the enclosing earthworks are breached by causeways presumably to allow access into and out of the enclosed area, although some causeways have proved to be extremely narrow. These gaps or causeways tend to occur along the sides of cursus monuments, and not through the terminals. In some cases, such

as at Scorton, the internal banks are replaced (or accompanied) by a central linear mound, though this is rare. There have been very few artefactual remains recovered from cursus monuments, however they have generally considered to represent paths or processional ways, although whether they represented the enclosure or monumentalisation of an existing path or route, or marked something new in the landscape is open to debate (Barber 2011). The monuments generally appear to have been closely integrated with the landscape that they were constructed across, both in terms of the natural topography and pre-existing monuments. No radiocarbon AMS dates have been obtained from any previous investigations of the Scorton Cursus. Radiocarbon dates obtained from several other cursus monuments over the last twenty years or so indicate that they were probably constructed somewhere in the period 3600 to 3000 BC, with the most recently obtained dates tending to focus on the earlier part of this period, that is 3600 to 3300 BC (Barber 2011).

6.6 Much of the Scorton Cursus has been removed by quarrying, including the southern terminal sometime prior to 1975 and a 1km stretch of the northern part between the mid 1970s and 1996 (NAA 2009). Short lengths of the monument have been excavated or recorded in the quarry faces in the 1970s to 1990s. A length of the monument was investigated ahead of quarrying *c*. 500m to the north-west of the site and this work allowed the examination of smaller external flanking linear features to the main cursus ditches which had been identified on aerial photographs but not previously excavated (NAA 2009). The outer features proved to be a sequence of palisade trenches which may have held lines of posts revetting banks originally running external to the main cursus ditches. No traces of the internal bank survived which had presumably been truncated by deep ploughing. In total the monument measured *c*. 47m wide. The north-eastern cursus ditch was up to 3.85m wide and 0.96m deep and had a shallow U-shaped profile. The south-western cursus ditch was 34m (centre to centre) from the north-eastern and was up to 4m wide with a similar depth and profile to the opposing ditch.

6.7 Trenches 16 and 17 were sited to target elements of the north-eastern side of the cursus ditch and a feature interpreted as possibly being the flanking ditch which was traced as a geophysical anomaly for a distance of 10m. The flanking ditch does not appear on aerial photographs. A section excavated through the main cursus ditch in Trench 16 revealed a similar profile to previously excavated parts of the ditch; a shallow U-shaped profile up to 4.18m wide and 1.12m deep. The flanking ditch was located *c*. 3.60m to the north-east of the main cursus ditch. This had a U-shaped profile and was up to 1.07m wide by 0.40m deep. With such a small area exposed interpretation cannot be definite however, it may represent a continuation of the palisade trench to hold lines of posts revetting the bank which would have been situated external to the main cursus ditch excavated to the north-west (NAA 2009). The palisade trench excavated to the north-west was situated closer to the main ditch, set 2m apart, but was of the same size and profile, 1.05m wide and up to 0.54m deep, as in Trench 17.

6.8 It is evident from the numerous barrows and a few examples of Late Neolithic henge monuments clustered around the Scorton Cursus that this cursus monument, like many other examples across the country, retained significance in the landscape long after its original use. Investigations at the site further demonstrated the continued significance of the southern end of the monument. Round barrows are funerary monuments which were constructed in the Late Neolithic and Early Bronze Age periods usually comprising earthen mounds which covered single or multiple burials encircled by ditches, although occasionally penannular ditches and other variations do occur (Field 2011). This class of burial monument is found across Yorkshire, with most dated examples belonging to the Early Bronze Age period (Roskams and Whyman 2005).

6.9 The three round barrows in the south-eastern part site of the identified by geophysical survey comprised incomplete circular anomalies. Investigation of the northernmost barrow in Trench 10 identified part of the round barrow ditch that was not detected as an anomaly indicating that all three may survive as ring ditches. Two examples measured 12m in external diameter and one 9.60m. A slightly larger example 13m in diameter appeared to survive as a complete ring ditch in the south-east corner of the site although this would need to be confirmed by further exposure and excavation of the feature due to the presence of a later field boundary at the eastern side of the ring ditch. The barrows at the site, in common with most lowland examples, had been ploughed flat with no survival of central mounds and ditches evidently denuded. The ditch of the largest barrow measured 2.34m wide by 0.82m deep and the ditches of the three eastern barrows ranged from 0.96–1.83m in width and 0.40–0.50m in depth. Features in the internal areas of two of the barrows identified by geophysical survey and partially revealed within the evaluation trenches may indicate the locations of central burial pits.

6.10 Two square barrows were also identified; this regional burial tradition dates middle Iron Age period between *c*. 500 BC and *c*. 50 BC. The majority of these monuments are found between the river Humber and the southern slopes of the North Yorkshire Moors, but a wider distribution has also been identified, principally through aerial photography, spreading through the river valleys of the Midlands and south Essex. Square barrows were constructed as earthen mounds surrounded by a ditch and covering one or more bodies. Square barrows can vary in shape, the majority are truly square, although many have rounded corners and some are more rectangular in plan. The main burial is normally central and placed in a rectangular or oval grave pit. A number of different types of burials have been identified, accompanied by grave goods which vary greatly in range and type. The most elaborate include the dismantled parts of a two-wheeled vehicle placed in the grave with the body of the deceased.

6.11 The square barrow closest to the cursus ditch had external dimensions of 12m and a central pit which may have contained a burial. The ditch survived up to 0.98m wide by up to 0.43m deep. The square barrow to the east was smaller, with an external measurement of 8m, and

had rounded corners. This barrow ditch was up to 1.20m wide by 0.39m deep and there was no indication that a central burial pit survived.

6.12 An extensive field system comprising at least two substantial parcels of land defined by ditches extended across the site. This field system was evidently laid out to respect the alignment of the much earlier cursus monument and may also have incorporated part of one of the barrow ditches, although further exposure of the archaeological remains would be required to determine this. Beyond the south-eastern corner of the field system the western side appeared to curve outwards to incorporate the eastern side of the barrow. The geophysical survey identified a NNE-SSW aligned linear feature running across the western side of the site for a distance of *c*. 380m. At its southern extent it turned to run south-eastwards, running parallel to the main cursus ditch for a distance of *c*. 48m which was located 6m from the field boundary. A curvilinear anomaly situated *c*. 140m north and traced for a distance of c. 180m defined the boundary of the two parcels of land. The southern parcel of land thus measured 140m NNE-SSW by at least 180m and the northern parcel at least 240m NNE-SSW by at least 180m. Several gaps in the geophysical anomalies were visible along the lengths of all elements of the field boundaries. It is possible that some of these may be where the ditch was not detected by geophysics as well as actual gaps providing access into these parcels of land. Excavated slots through the ditches demonstrated that it survived 1.05–1.80m in width and 0.53–0.95m in depth.

6.13 No artefactual material was recovered from the field boundary ditches, but fields systems of Late Iron Age and Roman period date have been examined in the vicinity. A system of large rectangular fields delineated by ditches probably originated in the Iron Age and continued into the Roman period at Hollow Banks Farm, c. 1.7km to the west of the site (NAA 2002). At Grange Farm, *c.* 1km to the north-west of the site, remains of an extensive Iron Age field system and settlement of 6th to 3rd century BC date were recorded with the field system remaining in use into the 2nd to 4th centuries AD (Copp and Roe 1996; 1997). Elements of a field system were also recorded to the east of the Grange Farm site (NAA 2008). Traces of a field system delineated by small ditches or gullies formed part of an extensive field system of Iron Age or Roman period date recorded ahead of quarrying *c*. 400m to the west of the site (NAA 2009). Also recorded at that site were five four-post structures, a form of building generally interpreted as granaries and likely to be of Iron Age date. Such small structures are unlikely to be identified by geophysical survey and it is possible that similar structural remains could be present within the parcels of land identified at the site.

6.14 With the exception of a single sherd of medieval pottery and post-medieval ceramic building material, no artefactual material was recovered from the investigations.

6.15 The ten palaeoenvironmental samples processed from the prehistoric features (cursus ditch, barrows and field boundary ditches) produced very little ecofactual material. Any charred plant material occurred in single counts and was poorly preserved and/or fragmented, so identification was prohibited. Where present, charcoal tended to occur in very small

amounts, usually <0.01g, and identification, where possible, tended to be oak (*Quercus* sp.). No artefactual or large ecofactual material was observed in the samples. The pH levels taken from the samples should inhibit the preservation of bone particularly as the site is on a bedrock of Sherwood Sandstone with superficial deposits of freely-draining River Terrace Deposits. The unreliable nature of the assemblage is illustrated by the presence of earthworm capsules and modern roots within the flots as the presence of each may suggest a large quantity of bioturbation has occurred. Furthermore, the gravel nature of the fills of the features would allow for the movement of ecofactual material through it resulting in the potential loss of palaeoenvironmental evidence.

6.16 Two fragments of charcoal have been identified as suitable for radiocarbon AMS dating: willow/poplar (*Salix*/*Populus*) from upper fill of field boundary ditch [703] and hazel (*Corylus avellana*) from a fill of cursus ditch. However, the contexts from which these fragments occur may negate them being fit for dating purposes because of soil porosity, bioturbation and size of their relative assemblage.

7. REFERENCES

7.1 Bibliography

AD Archaeology, 2017. *Land west of Scorton, North Yorkshire. Archaeological Geophysical Survey.* Unpublished report.

Barber, M. 2011. *Prehistoric Avenues and Alignments*. Historic England.

Brown, D.H. 2007. *Archaeological Archives. A guide to best practice in creation, compilation, transfer and curation,* Archaeological Archives Forum.

Chartered Institute for Archaeologists (CIfA), 2014a. *Code of Conduct*, CIfA.

Chartered Institute for Archaeologists (CIfA), 2014b. *Standard and guidance for an archaeological watching brief*, CIfA.

Chartered Institute for Archaeologists (CIfA), 2014c. *Standard and guidance for an archaeological evaluation*, CIfA.

Chartered Institute for Archaeologists (CIfA), 2014d. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, CIfA.

Copp, A. & Roe, A. 1996. *Archaeological Investigations, Scorton Quarry, Scorton, Richmondshire: Assessment Report.* Unpublished report.

Copp, A. & Roe, A. 1997. *Archaeological Investigations, Scorton Quarry, Scorton, Richmondshire: Post-Excavation Assessment Report.* Unpublished report.

Department of the Environment, 1997. *Archaeological Excavation 1976.* London, HMSO.

Field, D. 2011. *Prehistoric Barrows and Burial Mounds.* Historic England.

Greenhalf, D, 1980. *Scorton*. Unpublished report.

Harding, J. 1998. *Recent fieldwork at the Neolithic monument complex at Thornborough, North Yorkshire. Northern Archaeology **15/16**, 27-38.*

Museum of London, 1994. *Archaeological Site Manual, Third Edition,* Museum of London.

NAA 2002. *Hollow Banks Quarry, Scorton, North Yorkshire*. Unpublished report.

NAA 2008. *Scorton Quarry, North Yorkshire Area 1A Archaeological Monitoring and Excavation: Post-Excavation Assessment Report.* Unpublished report.

NAA 2009. *Scorton Quarry, North Yorkshire, Areas 2 and 4B*. Unpublished report.

PCA, 2009. *Fieldwork Induction Manual,* PCA Operations Manual I. Unpublished document.

Roskams, S. and Whyman, M. 2005. Yorkshire Archaeological Research Framework: *resource assessment*. University of York.

Roskams, S. and Whyman, M. 2007. *Yorkshire Archaeological Research Framework: research agenda.* University of York.

SYAS 2011. *Yorkshire, the Humber & The North East: A Regional Statement of Good Practice for Archaeology in the Development Process*.

Topping, P, 1982. *Excavation at Cursus at Scorton, North Yorkshire 1978* in *The Yorkshire Archaeological Journal **54**, 7-21.*

Walker, K., 1990. *Guidelines for the Preparation of Excavation Archives for Long-term Storage*, Archaeology Section, United Kingdom Institute for Conservation.

7.2 Online Sources

The **British Geological Survey** website: www.bgs.ac.uk. This was consulted for information regarding the geology of the study area.

8. ACKNOWLEDGEMENTS AND CREDITS

Acknowledgements

Pre-Construct Archaeology would like to thank John Saddington of Savills for commissioning the archaeological investigations on behalf of Tancred Gravel Limited. Thanks to Mark Westgarth of Tancred Gravel for arranging access. PCA would also like to thank Peter Rowe (North Yorkshire County Council) for discussing the project and Andy Abson for assisting on site.

PCA Credits

Fieldwork: Aaron Goode (Supervisor), Alex Beacock, Fred Garrett and James Hopper

Report: Aaron Goode and Jennifer Proctor

Project Manager: Jennifer Proctor

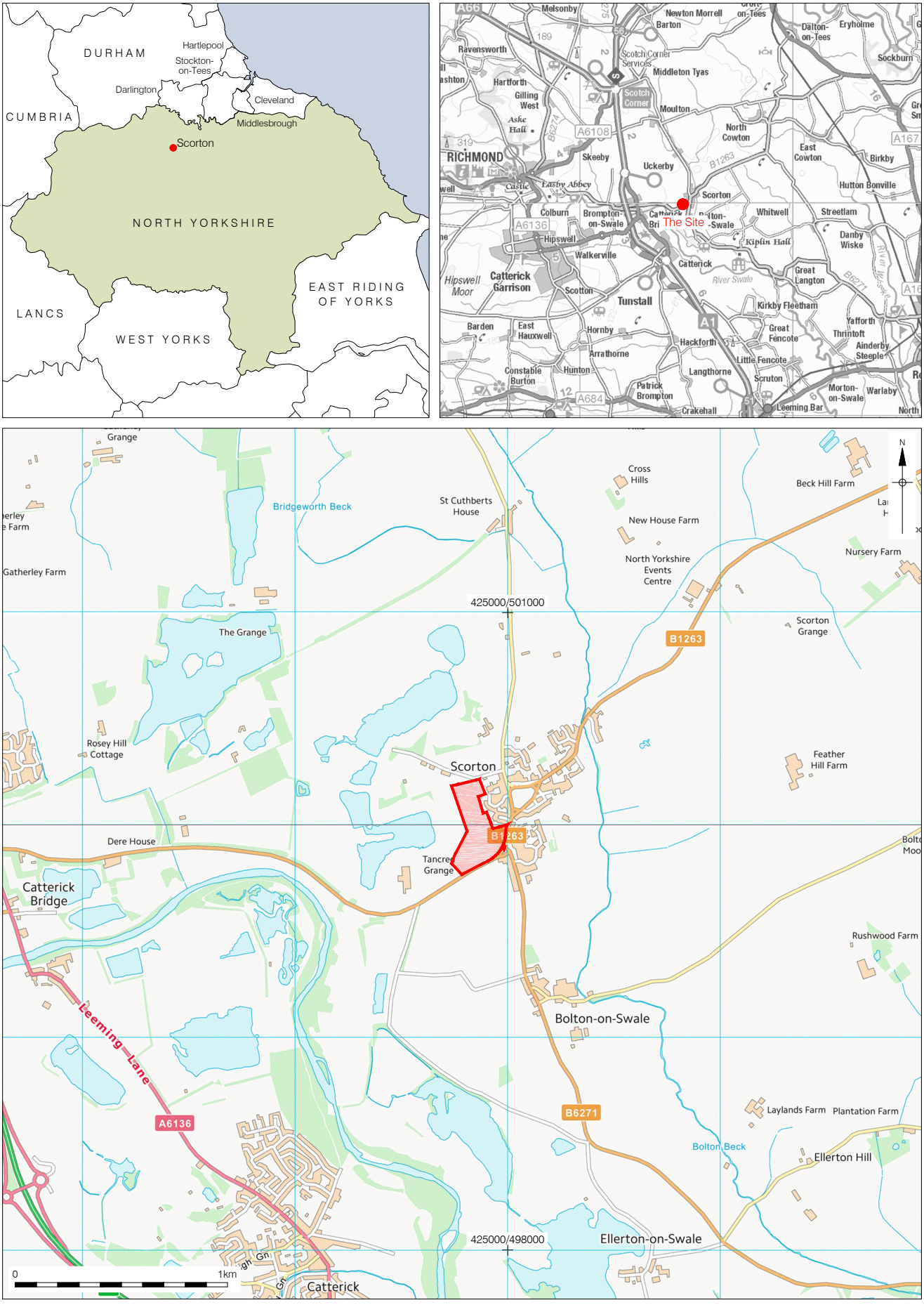
CAD: Mick Steel

Other Credits

Geophysical Survey: AD Archaeology

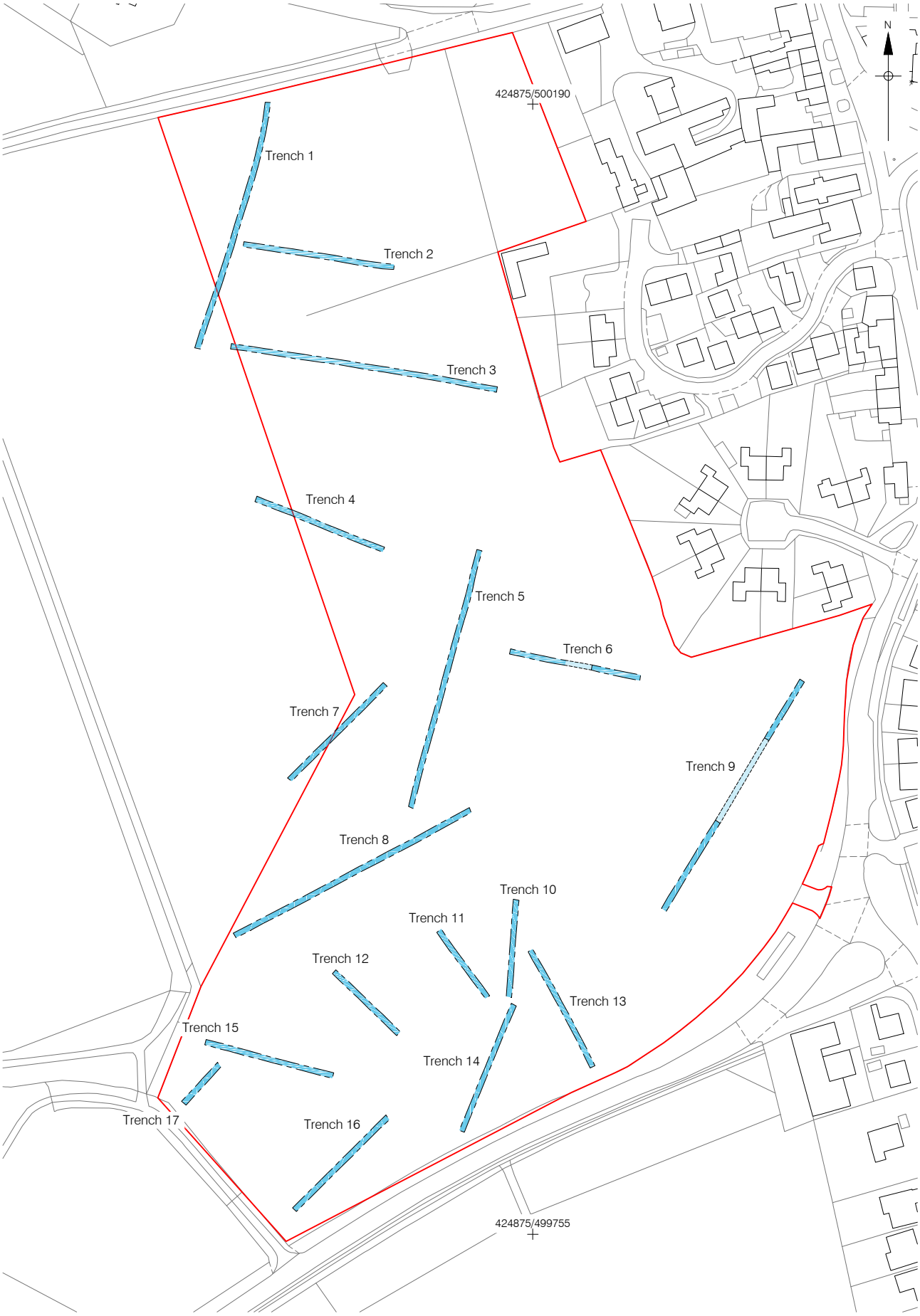
Palaeoenvironmental Assessment: Lynne Gardiner (Wardell Armstrong)

APPENDIX 1: FIGURES



08/02/18 MS

Figure 1
Site Location
1:2,000,000; 250,000 & 25,000 at A4

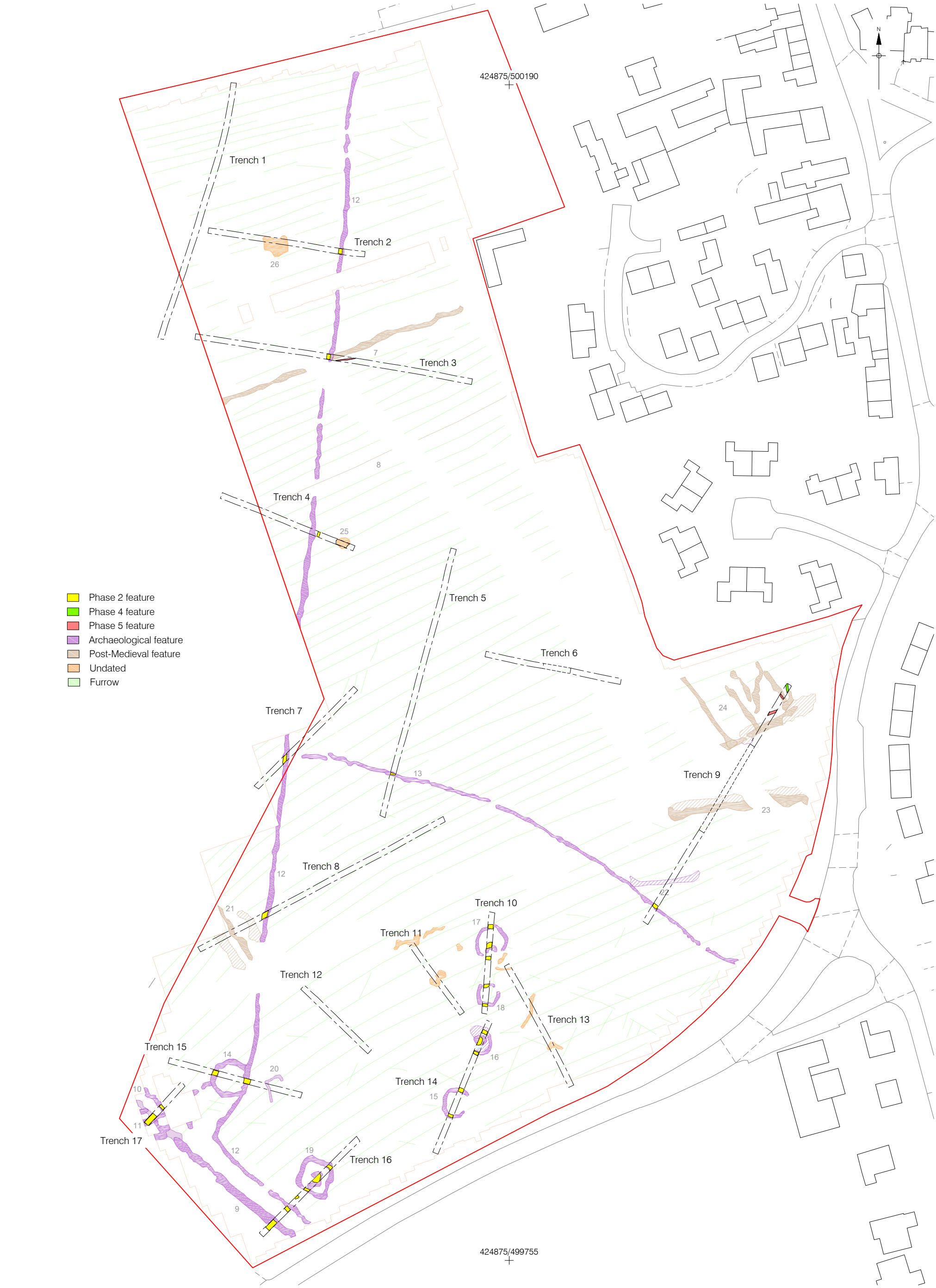


0 100m

Base mapping and Map data supplied by the client

08/02/18 MS

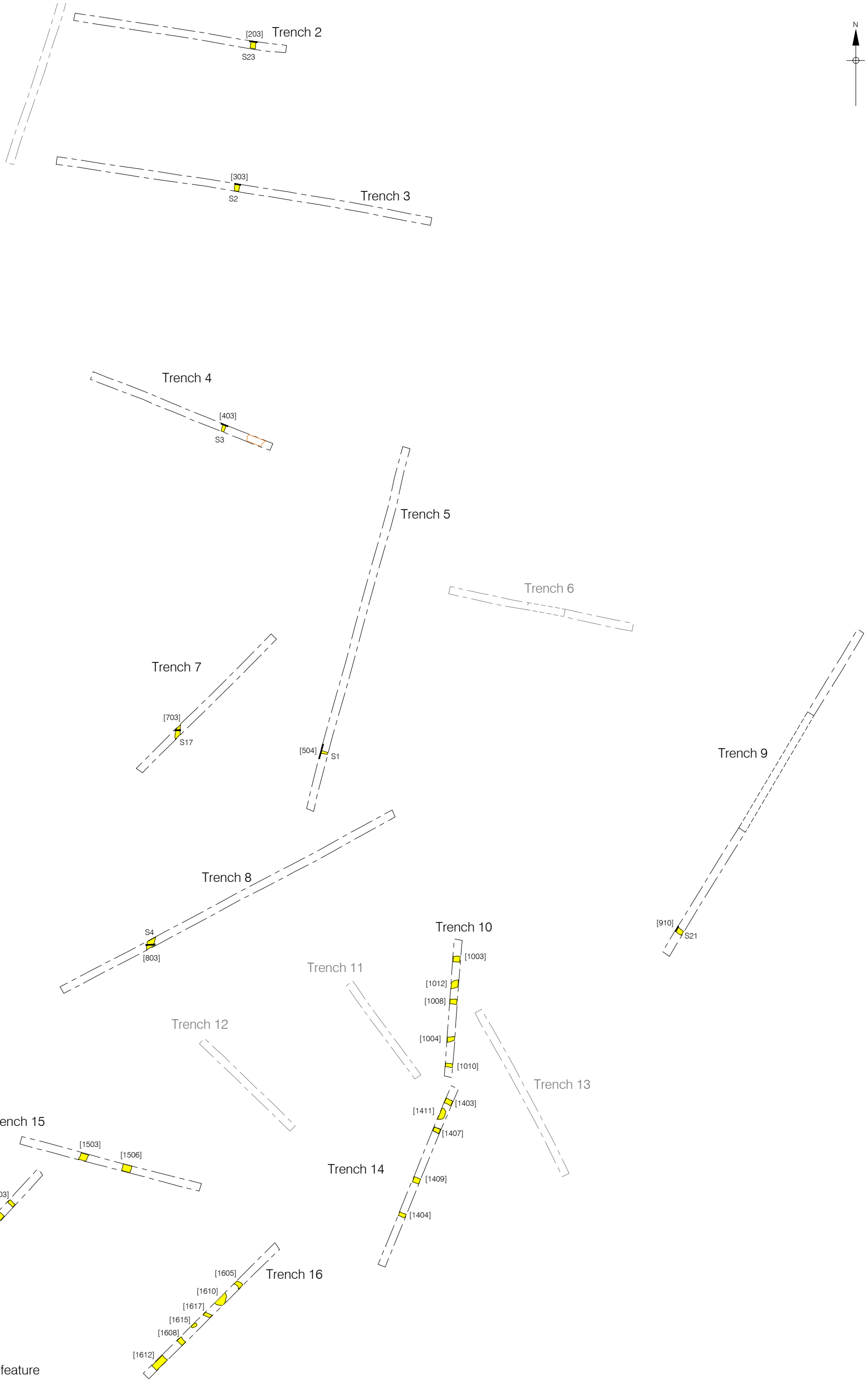
Figure 2
Trench Locations
1:2,000 at A4



Base mapping and Map data supplied by the client
Geophysical survey data supplied by AD Archaeology

08/02/18 MS

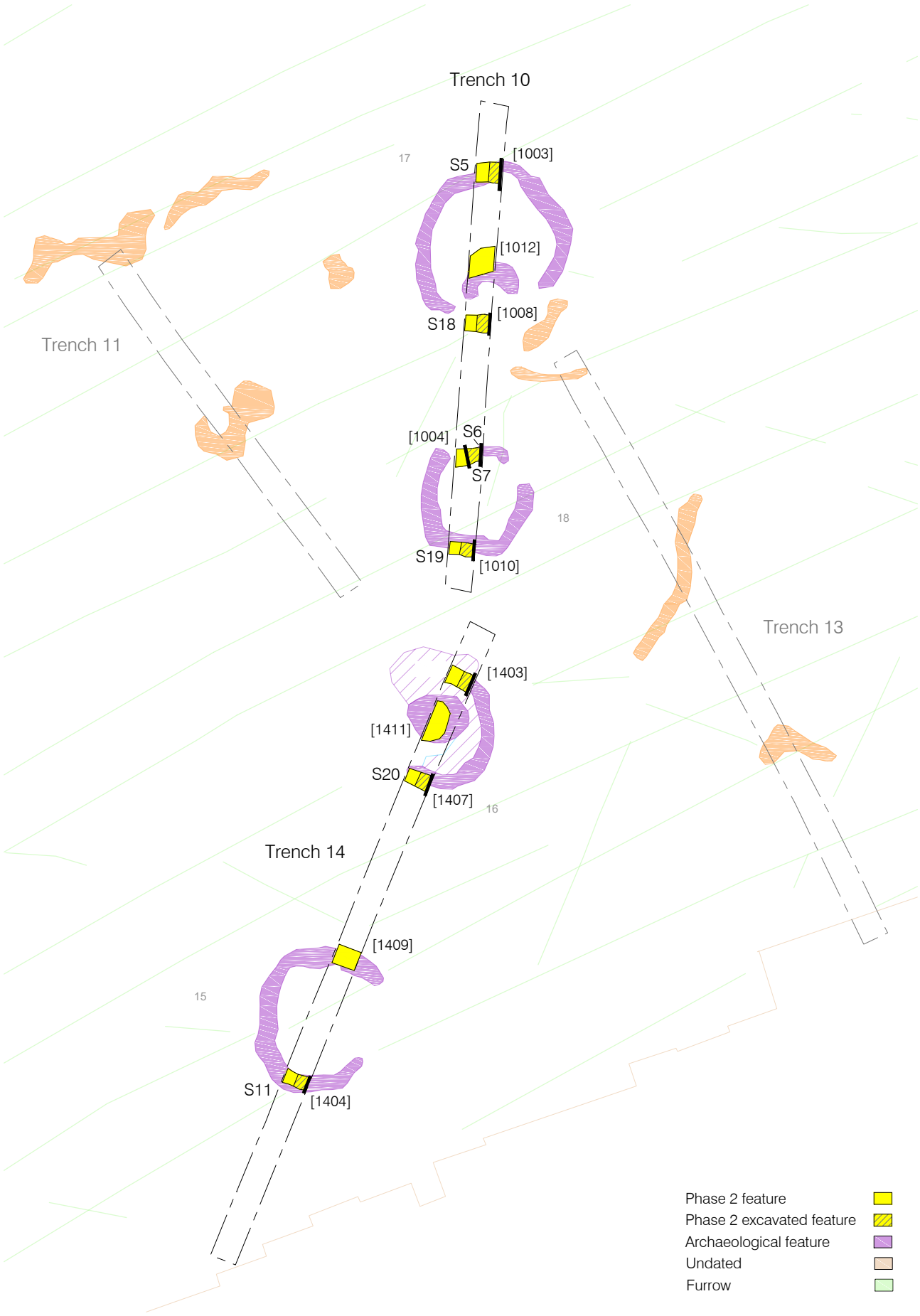
Figure 3
Features all Phases and Geophysical Survey Interpretation
1:1,250 at A3



Base mapping and Map data supplied by the client

08/02/18 MS

Figure 4
Phase 2 Prehistoric Features
1:1,000 at A3



0 20m

Geophysical survey data supplied by AD Archaeology

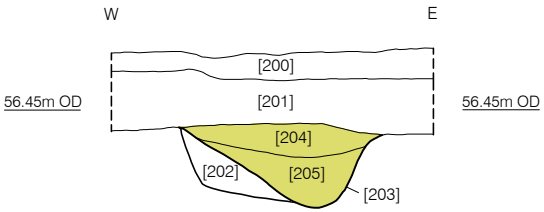
12/02/18 MS

Figure 5
Phase 2 Trenches 10 & 14 detail of barrows
1:400 at A4

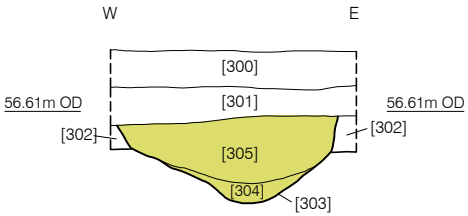
Geophysical survey data supplied by AD Archaeology

12/02/18 MS

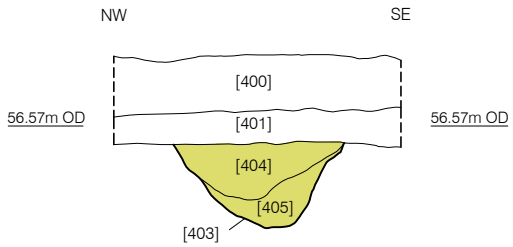
Figure 6
Phase 2 Trenches 15, 16, 17 detail of barrows and Scorton Cursus
1:400 at A4



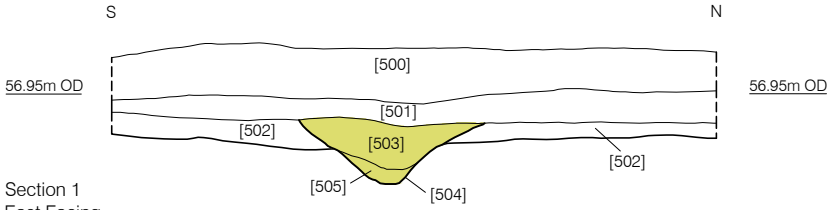
Section 23
South Facing
Trench 2



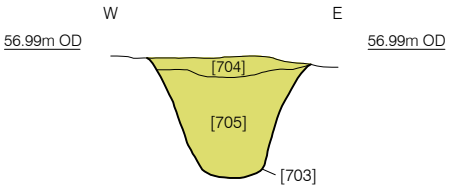
Section 2
South Facing
Trench 3



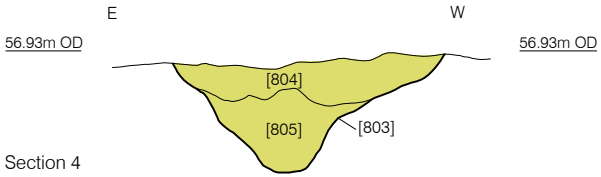
Section 3
Southwest Facing
Trench 4



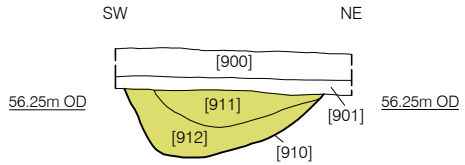
Section 1
East Facing
Trench 5



Section 17
South Facing
Trench 7



Section 4
North Facing
Trench 8



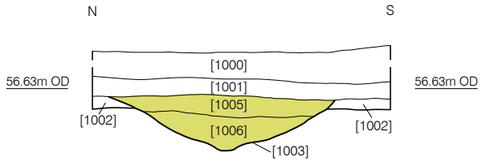
Section 21
Southeast Facing
Trench 9

Phase 2 Prehistoric feature

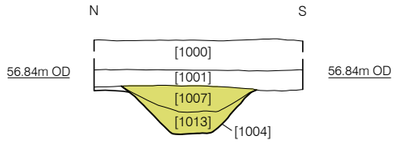
0 2m

12/02/18 MS

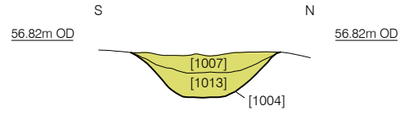
Figure 7
Phase 2 Prehistoric sections, boundary ditch
1:50 at A4



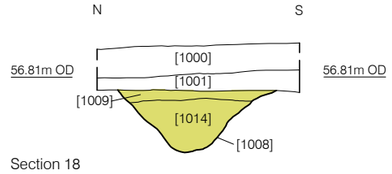
Section 5
West Facing
Trench 10



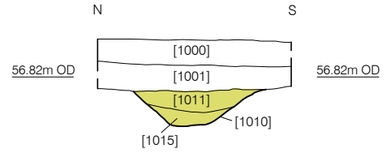
Section 6
West Facing
Trench 10



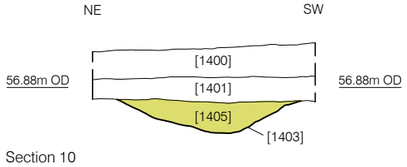
Section 7
East Facing
Trench 10



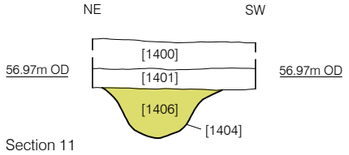
Section 18
West Facing
Trench 10



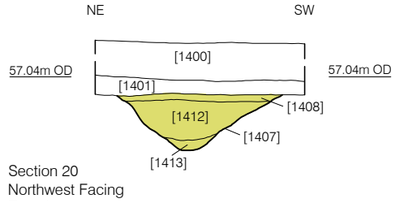
Section 19
West Facing
Trench 10



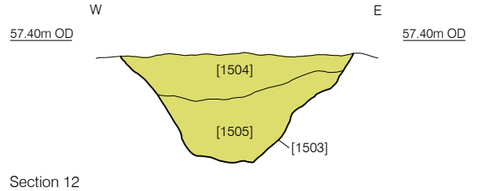
Section 10
Northwest Facing
Trench 14



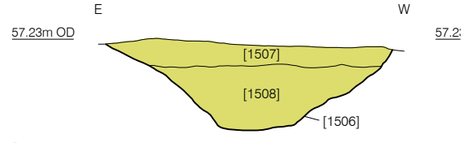
Section 11
Northwest Facing
Trench 14



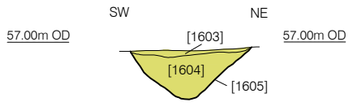
Section 20
Northwest Facing
Trench 14



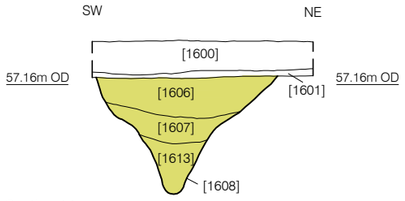
Section 12
South Facing
Trench 15



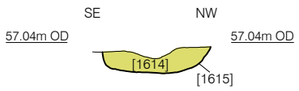
Section 22
North Facing
Trench 15



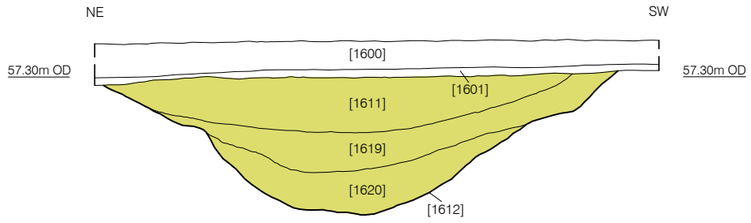
Section 13
Southeast Facing
Trench 16



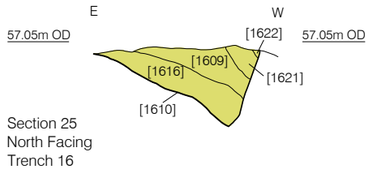
Section 14
Southeast Facing
Trench 16



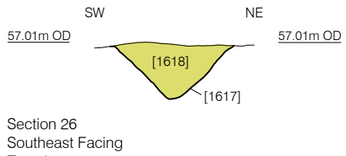
Section 15
Northeast Facing
Trench 16



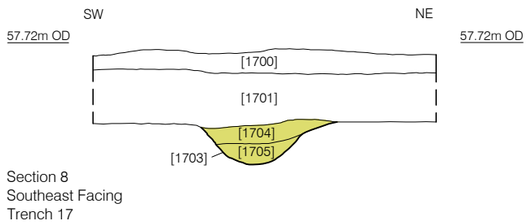
Section 24
Northwest Facing
Trench 16



Section 25
North Facing
Trench 16



Section 26
Southeast Facing
Trench 16



Section 8
Southeast Facing
Trench 17

Phase 2 Prehistoric feature

0 2m

12/02/18 MS

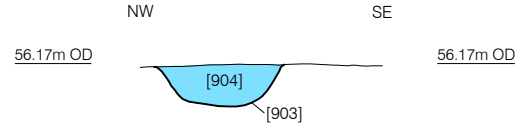
Figure 8
Phase 2 Prehistoric sections, Scorton Cursus and barrows
1:50 at A3

0 20m

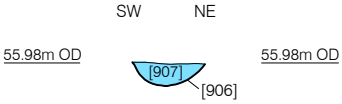
Geophysical survey data supplied by AD Archaeology

12/02/18 MS

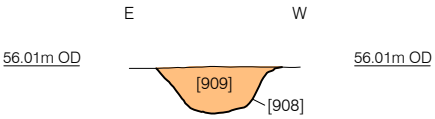
Figure 9
Phase 4 Medieval and Phase 5 Post-Medieval features
1:400 at A4



Section 9
West Facing
Trench 9



Section 16
Southeast Facing
Trench 9



Section 27
North Facing
Trench 9

Phase 4 Medieval feature
Phase 5 Post-Medieval feature

0 2m

12/02/18 MS

Figure 10
Phase 4 & 5 sections
1:50 at A4

APPENDIX 2: CONTEXT INDEX

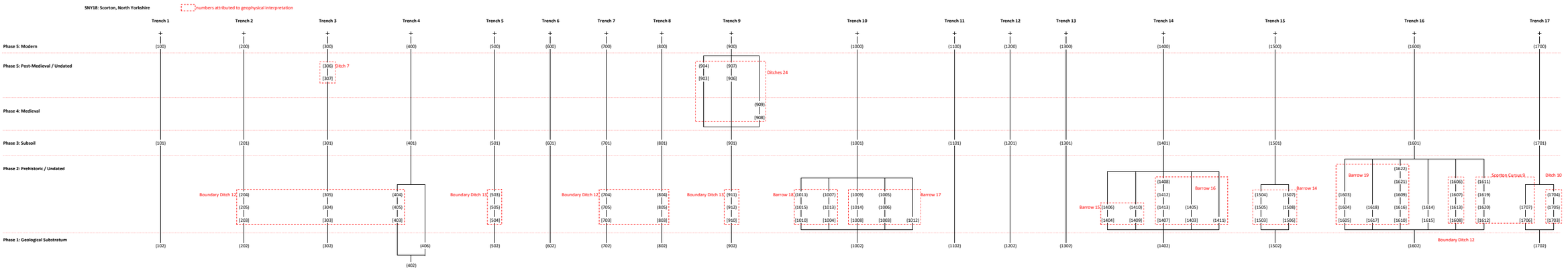
Context	*Phase*	*Group*	*Type 1*	*Type 2*	*Fill of*	*Interpretation*
Trench 1						
100	6	-	Deposit	Layer	-	Topsoil
101	3	-	Deposit	Layer	-	Subsoil
102	1	-	Deposit	Layer	-	Natural
Trench 2						
200	6	-	Deposit	Layer	-	Topsoil
201	3	-	Deposit	Layer	-	Subsoil
202	1	-	Deposit	Layer	-	Natural
203	2	-	Cut	Linear	-	Boundary ditch filled by (204), (205)
204	2	-	Deposit	Fill	[203]	Fill of boundary ditch [203]
205	2	-	Deposit	Fill	[203]	Fill of boundary ditch [203]
Trench 3						
300	6	-	Deposit	Layer	-	Topsoil
301	3	-	Deposit	Layer	-	Subsoil
302	1	-	Deposit	Layer	-	Natural
303	2	-	Cut	Linear	-	Boundary ditch filled by (304), (305)
304	2	1	Deposit	Fill	[303]	Fill of boundary ditch [303]
305	2	2	Deposit	Fill	[303]	Fill of boundary ditch [303]
306	5	-	Deposit	Fill	[307]	Fill of ditch [307]
307	5	-	Cut	Linear	-	Ditch filled by (306)
Trench 4						
400	6	-	Deposit	Layer	-	Topsoil
401	3	-	Deposit	Layer	-	Subsoil
402	1	-	Deposit	Layer	-	Natural
403	2	-	Cut	Linear	-	Boundary ditch filled by (404), (405)
404	2	1	Deposit	Fill	[403]	Fill of boundary ditch [403]
405	2	1	Deposit	Fill	[403]	Fill of boundary ditch [403]
406	1	-	Deposit	Layer	-	Natural
Trench 5						
500	6	-	Deposit	Layer	-	Topsoil
501	3	-	Deposit	Layer	-	Subsoil
502	1	-	Deposit	Layer	-	Natural
503	2	3	Deposit	Fill	[504]	Fill of boundary ditch [504]
504	2	-	Cut	Linear	-	Boundary ditch filled by (503), (505)
505	2	3	Deposit	Fill	[504]	Fill of boundary ditch [504]
Trench 6						
600	6	-	Deposit	Layer	-	Topsoil
601	3	-	Deposit	Layer	-	Subsoil
602	1	-	Deposit	Layer	-	Natural
Trench 7						
700	6	-	Deposit	Layer	-	Topsoil
701	3	-	Deposit	Layer	-	Subsoil
702	1	-	Deposit	Layer	-	Natural
703	2	-	Cut	Linear	-	Boundary ditch filled by (704), (705)
704	2	2	Deposit	Fill	[703]	Fill of boundary ditch [703]
705	2	1	Deposit	Fill	[703]	Fill of boundary ditch [703]

Trench 8						
800	6	-	Deposit	Layer	-	Topsoil
801	3	-	Deposit	Layer	-	Subsoil
802	1	-	Deposit	Layer	-	Natural
803	2	-	Cut	Linear	-	Boundary ditch filled by (804), (805)
804	2	2	Deposit	Fill	[803]	Fill of boundary ditch [803]
805	2	1	Deposit	Fill	[803]	Fill of boundary ditch [803]
Trench 9						
900	6	-	Deposit	Layer	-	Topsoil
901	3	-	Deposit	Layer	-	Subsoil
902	1	-	Deposit	Layer	-	Natural
903	5	-	Cut	Linear	-	Ditch filled by (904)
904	5	-	Deposit	Fill	[903]	Fill of ditch [903]
905		-				Number not used
906	5	-	Cut	Linear	-	Ditch filled by (907)
907	5	-	Deposit	Fill	[906]	Fill of ditch [906]
908	4	-	Cut	Linear	-	Ditch filled by (909)
909	4	-	Deposit	Fill	[908]	Fill of ditch [908]
910	2	-	Cut	Linear	-	Boundary ditch filled by (911), (912)
911	2	3	Deposit	Fill	[910]	Fill of boundary ditch [910]
912	2	3	Deposit	Fill	[910]	Fill of boundary ditch [910]
Trench 10						
1000	6	-	Deposit	Layer	-	Topsoil
1001	3	-	Deposit	Layer	-	Subsoil
1002	1	-	Deposit	Layer	-	Natural
1003	2	-	Cut	Linear	-	Barrow ditch filled by (1005), (1006)
1004	2	-	Cut	Linear	-	Barrow ditch filled by (1007), (1013)
1005	2	-	Deposit	Fill	[1003]	Fill of barrow ditch [1003]
1006	2	-	Deposit	Fill	[1003]	Fill of barrow ditch [1003]
1007	2	-	Deposit	Fill	[1004]	Fill of barrow ditch [1004]
1008	2	-	Cut	Linear	-	Barrow ditch filled by (1009), (1014)
1009	2	-	Deposit	Fill	[1008]	Fill of barrow ditch [1008]
1010	2	-	Cut	Linear	-	Barrow ditch filled by (1011), (1015)
1011	2	-	Deposit	Fill	[1010]	Fill of barrow ditch [1010]
1012	2	-	Deposit	Layer	-	Deposit central to barrow [1003] & [1008]
1013	2	-	Deposit	Fill	[1004]	Fill of barrow ditch [1004]
1014	2	-	Deposit	Fill	[1008]	Fill of barrow ditch [1008]
1015	2	-	Deposit	Fill	[1010]	Fill of barrow ditch [1010]
Trench 11						
1100	6	-	Deposit	Layer	-	Topsoil
1101	3	-	Deposit	Layer	-	Subsoil
1102	1	-	Deposit	Layer	-	Natural
Trench 12						
1200	6	-	Deposit	Layer	-	Topsoil
1201	3	-	Deposit	Layer	-	Subsoil
1202	1	-	Deposit	Layer	-	Natural
Trench 13						
1300	6	-	Deposit	Layer	-	Topsoil
1301	3	-	Deposit	Layer	-	Subsoil

1302	1	-	Deposit	Layer	-	Natural
Trench 14						
1400	6	-	Deposit	Layer	-	Topsoil
1401	3	-	Deposit	Layer	-	Subsoil
1402	1	-	Deposit	Layer	-	Natural
1403	2	-	Cut	Linear	-	Barrow ditch filled by (1405)
1404	2	-	Cut	Linear	-	Barrow ditch filled by (1406)
1405	2	-	Deposit	Fill	[1403]	Fill of barrow ditch [1403]
1406	2	-	Deposit	Fill	[1404]	Fill of barrow ditch [1404]
1407	2	-	Cut	Linear	-	Barrow ditch filled by (1408), (1412), (1413)
1408	2	-	Deposit	Fill	[1407]	Fill of barrow ditch [1407]
1409	2	-	Cut	Linear	-	Barrow ditch filled by (1410)
1410	2	-	Deposit	Fill	[1409]	Fill of barrow ditch [1409]
1411	2	-	Deposit	Layer	-	Deposit central to barrow [1403] & [1407]
1412	2	-	Deposit	Fill	[1407]	Fill of barrow ditch [1407]
1413	2	-	Deposit	Fill	[1407]	Fill of barrow ditch [1407]
Trench 15						
1500	6	-	Deposit	Layer	-	Topsoil
1501	3	-	Deposit	Layer	-	Subsoil
1502	1	-	Deposit	Layer	-	Natural
1503	2	-	Cut	Linear	-	Barrow ditch filled by (1504), (1505)
1504	2	-	Deposit	Fill	[1503]	Fill of barrow ditch [1503]
1505	2	-	Deposit	Fill	[1503]	Fill of barrow ditch [1503]
1506	2	-	Cut	Linear	-	Barrow ditch filled by (1507), (1508)
1507	2	-	Deposit	Fill	[1506]	Fill of barrow ditch [1506]
1508	2	-	Deposit	Fill	[1506]	Fill of barrow ditch [1506]
Trench 16						
1600	6	-	Deposit	Layer	-	Topsoil
1601	3	-	Deposit	Layer	-	Subsoil
1602	1	-	Deposit	Layer	-	Natural
1603	2	-	Deposit	Fill	[1605]	Fill of barrow ditch [1605]
1604	2	-	Deposit	Fill	[1605]	Fill of barrow ditch [1605]
1605	2	-	Cut	Linear	-	Barrow ditch filled by (1603), (1604)
1606	2	2	Deposit	Fill	[1608]	Fill of barrow ditch [1608]
1607	2	1	Deposit	Fill	[1608]	Fill of barrow ditch [1608]
1608	2	-	Cut	Linear	-	Barrow ditch filled by (1606), (1607), (1613)
1609	2	-	Deposit	Fill	[1610]	Fill of pit [1610]
1610	2	-	Cut	Discrete	-	Square pit central to barrow, [1605] & [1617], filled by (1622), (1621), (1609), (1616)
1611	2	-	Deposit	Fill	[1612]	Fill of Cursus ditch [1612]
1612	2	-	Cut	Linear	-	Cursus ditch filled by (1611), (1619), (1620)
1613	2	1	Deposit	Fill	[1608]	Fill of barrow [1608]
1614	2	-	Deposit	Fill	[1615]	Fill of pit [1615]
1615	2	-	Cut	Discrete	-	Pit filled by (1614)
1616	2	-	Deposit	Fill	[1610]	Fill of pit [1610]
1617	2	-	Cut	Linear	-	Barrow ditch filled by (1618)

1618	2	-	Deposit	Fill	[1617]	Fill of barrow ditch [1617]
1619	2	-	Deposit	Fill	[1612]	Fill of Cursus ditch [1612]
1620	2	-	Deposit	Fill	[1612]	Fill of Cursus ditch [1612]
1621	2	-	Deposit	Fill	[1610]	Fill of pit [1610]
1622	2	-	Deposit	Fill	[1610]	Fill of pit [1610]
Trench 17						
1700	6	-	Deposit	Layer	-	Topsoil
1701	3	-	Deposit	Layer	-	Subsoil
1702	1	-	Deposit	Layer	-	Natural
1703	2	-	Cut	Linear	-	Ditch filled by (1704), (1705)
1704	2	-	Deposit	Fill	[1703]	Fill of ditch [1703]
1705	2	-	Deposit	Fill	[1703]	Fill of ditch [1703]
1706	2	-	Cut	Linear	-	Cursus ditch filled by (1707)
1707	2	-	Deposit	Fill	[1706]	Fill of Cursus ditch [1706]

APPENDIX 3: STRATIGRAPHIC MATRIX


SNY18: Scorton, North Yorkshire
numbers attributed to geophysical interpretation
Trench 1
Trench 2
Trench 3
Trench 4
Trench 5
Trench 6
Trench 7
Trench 8
Trench 9
Trench 10
Trench 11
Trench 12
Trench 13
Trench 14
Trench 15
Trench 16
Trench 17
Phase 5: Modern
Phase 5: Post-Medieval / Undated
Phase 4: Medieval
Phase 3: Subsoil
Phase 2: Prehistoric / Undated
Phase 1: Geological Substratum
(100)
(200)
(300)
(400)
(500)
(600)
(700)
(800)
(900)
(1000)
(1100)
(1200)
(1300)
(1400)
(1500)
(1600)
(1700)
(306)
Ditch 7
(307)
(904)
(907)
(903)
(906)
Ditches 24
(909)
(908)
(101)
(201)
(301)
(401)
(501)
(601)
(701)
(801)
(901)
(1001)
(1101)
(1201)
(1301)
(1401)
(1501)
(1601)
(1701)
Boundary Ditch 12
(204)
(205)
(203)
(305)
(304)
(303)
(404)
(405)
(403)
Boundary Ditch 13
(503)
(505)
(504)
Boundary Ditch 12
(704)
(705)
(703)
(804)
(805)
(803)
Boundary Ditch 13
(911)
(912)
(910)
Barrow 18
(1011)
(1015)
(1010)
(1007)
(1013)
(1004)
(1009)
(1014)
(1008)
(1005)
(1006)
(1003)
Barrow 17
(1012)
Barrow 15
(1406)
(1404)
(1410)
(1409)
(1408)
(1412)
(1413)
(1407)
(1405)
(1403)
Barrow 16
(1411)
Barrow 14
(1504)
(1505)
(1507)
(1508)
(1503)
(1506)
Barrow 19
(1622)
(1623)
(1603)
(1604)
(1618)
(1605)
(1609)
(1616)
(1617)
(1610)
(1606)
(1607)
(1613)
(1608)
(1611)
(1619)
(1620)
(1612)
Scorton Cursus 3
(1614)
(1615)
(1707)
(1706)
Ditch 10
(1704)
(1705)
(1703)
Boundary Ditch 12
(102)
(202)
(302)
(406)
(402)
(502)
(602)
(702)
(802)
(902)
(1002)
(1102)
(1202)
(1302)
(1402)
(1502)
(1602)
(1702)

APPENDIX 4: PHOTOGRAPHIC PLATES

Plate 1: Trench 16, NW facing section of cursus ditch [1612], 1m scale

Plate 2: Trench 2 overview of boundary ditch [203]: view north, 1m scale

Plate 3: Trench 3, south facing section of boundary ditch [303], 1m scale

Plate 4: Trench 8, NNE facing section of boundary ditch [803], 1m scale

Plate 5: Trench 16, SE facing section of boundary ditch [1608], 1m scale

Plate 6: Trench 9, NW facing section of boundary ditch [903], 1m scale

Plate 7: Trench 14, overview of barrow ring ditch [1404], east view, 1m scale

Plate 8: Trench 14, west facing section of barrow ring ditch [1407], 1m scale

Plate 9: Trench 10, west facing section of barrow ring ditch [1008], 1m scale

Plate 10: Trench 15, north facing section of barrow ring ditch [1506], 1m scale

Plate 11: Trench 116, square pit [1610] central to square barrow, east view, 1m scale

Plate 12: Trench 9, overview of ditch [908], east view, 1m scale

APPENDIX 5: Environmental Sample Assessment

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

PRE-CONSTRUCT ARCHAEOLOGY LTD.

LAND WEST OF SCORTON VILLAGE
NORTH YORKSHIRE

ENVIRONMENTAL SAMPLE ASSESSMENT

FEBRUARY 2018

your earth our world

wardell armstrong

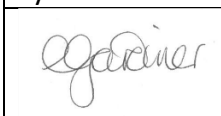
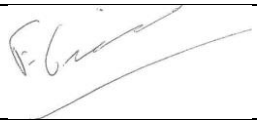
Wardell Armstrong LLP
Marconi Road, Burgh Road Industrial Estate, Carlisle, Cumbria CA2 7NA, United Kingdom
Telephone: +44 (0)1228 550575 www.wardell-armstrong.com

DATE ISSUED:	February 2018
JOB NUMBER:	CL12103
REPORT NUMBER:	001
VERSION:	001
STATUS:	DRAFT

PRE-CONSTRUCT ARCHAEOLOGY LTD.

LAND WEST OF SCORTON VILLAGE, NORTH YORKSHIRE

ENVIRONMENTAL SAMPLE ASSESSMENT

PREPARED BY:	EDITED BY:	APPROVED BY:
Lynne Gardiner	Damion Churchill	Frank Giecco
		
Senior Environmental Archaeologist	Senior Project Officer	Technical Director

CONTENTS

SUMMARY

Wardell Armstrong (WA) was commissioned by Jenny Proctor of Pre-Construct Archaeology Ltd. to undertake palaeoenvironmental works on their samples taken during archaeological fieldwork on land to the west of Scorton village, North Yorkshire (site code: SNY18).

Ten samples were selected by the excavator for these works. All the submitted samples were processed and sorted along with the examination of the resulting flots. No artefactual or large ecofactual material was observed.

Any charred plant material occurred in single counts and was poorly preserved and/or fragmented, so identification was prohibited. Where present, Charcoal tended to occur in very small amounts, usually <0.01g, and identification, where possible, tended to be oak (*Quercus* sp.).

Two fragments of charcoal have been identified as suitable for radiocarbon AMS dating: willow/poplar (*Salix*/*Populus*) from upper fill of ditch **[703]**, **(704) <4>** and hazel (*Corylus avellana*) from fill of cursus ditch **[1612]**, **(1619) <15>**. The contexts from which these fragments occur may negate them being fit for dating purposes because of soil porosity, bioturbation and size of their relative assemblage.

No further work is required on this assemblage, and if the charcoal is not deemed suitable for radiocarbon dating, may be discarded.

Should further archaeological interventions occur near Scorton village, any sampling strategies should reflect the requirement to collect palaeoenvironmental remains, especially archaeobotanical and charcoal remains.

1 INTRODUCTION

1.1 Wardell Armstrong was invited to undertake an assessment on ten environmental samples, selected by the excavator, from an archaeological site west of Scorton village, North Yorkshire (centred on NGR NZ 24804 00044).

1.2 This report presents the results of the assessment of the environmental samples and any palaeoenvironmental remains from the result of processing the samples in accordance with Campbell et al. (2011) and English Heritage (2008).

2 METHODOLOGY

2.1 The bulk environmental samples were processed at Wardell Armstrong's paleoenvironmental facility based in Carlisle. The colour, lithology, weight and volume of each sample was recorded using standard Wardell Armstrong pro forma sheets (Table 1). A sub-sample (c. 5ml) was used to establish a pH reading prior to processing to address any preservation and/or absence issues with regards to environmental material. The samples were subsequently processed with 500-micron retention and flotation meshes using the Siraf method of flotation (Williams 1973). Once dried, the residues from the retention mesh were sieved to 4mm and any artefacts and ecofacts removed from the larger fraction returned to PCA Ltd. The smaller fraction was scanned with a magnet for microslags such as hammerscales and examined for smaller artefacts such as beads.

2.2 The flot, plant macrofossils and charcoal were retained and scanned using a stereo microscope (up to x45 magnification). Any non-palaeobotanical finds were noted on the flot pro forma (Table 2).

2.3 The plant remains and charcoal were identified to species where possible, using Cappers *et al.* (2012), Cappers and Bekker (2013), Cappers and Neef (2012), Hather (2000), Jacomet (2006) and Schweingruber (1982) and the author's reference collection. Nomenclature for plant taxa followed Stace (2010) and cereals followed Cappers and Neef (2012).

3 RESULTS

3.1 ***(704) <4>**: upper fill of ditch **[703]** and **(705) <5>:** lower fill of ditch **[703]***

3.1.1 Both samples were comparative with their lack of artefactual and ecofactual yield from the retent residue. The pH reading of the lower fill, **<5>**, of 4.92 was slightly more acidic than that of the upper fill, **<4>**, 5.30. Both flots were similar in their components largely

comprising very fine rootlets. The flot from the upper fill, **<4>**, was both heavier and larger than the lower fill's flot. The lower fill **<5>** also contained earthworm capsules which were absent from the upper fill **<4>**. A very small quantity of charcoal fragments were observed in both flots, and were extremely comminuted. The two largest fragments of charcoal recovered from sample **<4>** were identified as alder/hazel (*Alnus*-type) and willow/poplar (*Salix*/*Populus*). The lower fill's flot's single fragment of identifiable charcoal was identified as likely willow/poplar. A single, poorly preserved, fragment of indeterminate cereal grain was also observed in the flot from **<5>**.

3.2 **(1013) <8>: fill of barrow ditch [1004]**

3.2.1 The 57kg (48l) sample gave a pH reading of 6.16. No artefactual or ecofactual material was observed in the sample retent. The flot largely comprised very fine rootlets with 12 earthworm capsules identified. A single un-charred bramble (*Rubus* sp.) seed was observed.

3.3 **(1405) <9>: fill of barrow ditch [1403]**

3.3.1 The 59kg (36l) sample yielded the largest flot from the selected samples (70.8g/360ml). The flot consisted largely of very fine rootlets and four earthworm capsules were observed. No ecofactual material was present.

3.4 **(1604) <11>: lower fill of barrow ditch [1605]**

3.4.1 A pH reading of 6.81 was given for the 61kg (40l) sample. The small flot (4.5g/35ml) contained two earthworm capsules and two very small fragments of oak (*Quercus* sp.) charcoal. Single un-charred seeds of goosefoots (*Chenopodium* sp.) and elder (*Sambucus nigra*) were also observed.

3.5 **(1505) <13>: lower fill of barrow ditch [1503]**

3.5.1 The sample weighed 59kg (36l) and yielded a pH reading of 6.40. The majority of material comprising the 25ml (9.7g) flot consisted of very fine rootlets and yielded a single indeterminate cereal grain.

3.6 **(912) <14>: lower fill of ditch [910]**

3.6.1 The 58kg (38l) sample gave the most alkaline reading from the site with a pH of 9.23. The largish flot (44.5g/125ml) contained 16 earthworm capsules and a single fragment of ash (*Fraxinus excelsior*) charcoal.

3.7 **(1619) <15>: fill of cursus ditch [1612], and, (1620) <16>: lower fill of cursus ditch [1612]**

3.7.1 The sample from the lower fill **<16>** (47kg/40l) gave a lower alkaline reading to that from the upper fill **<15>** (57kg/38l) – pH 6.18 to pH 8.77 respectively. The flot from the lower fill **<16>** yielded no ecofactual material. The upper fill **<15>** contained three earthworm capsules and three un-charred goosefoots. Furthermore, the sample **<15>** produced a probable charred wheat (cf. *Triticum* sp.) grain and the largest volume of charcoal from the samples presented for this site. The combined charcoal weight, however, was small, weighing 0.05g. Of this charcoal, those fragments that were identifiable comprised mostly oak with a single fragment of hazel (*Corylus avellana*).

3.8 **(1616) <17>: lower fill of pit [1610]**

3.8.1 The 56kg (33l) sample gave a pH reading of 8.72. The 44.8g (85ml) predominately sandy flot yielded only three very small comminuted fragments of oak charcoal.

4 DISCUSSION

4.1 The paucity of any identifiable charred plant material has prohibited meaningful discourse.

4.2 The lack of large charcoal assemblages has also prevented any discussion on topics such as fuel procurement or woodland management.

4.3 The pH levels taken from the samples should inhibit the preservation of bone particularly as the site is on a bedrock of Sherwood Sandstone with superficial deposits of River Terrace Deposits (BGS) that are freely draining (landis.org). Therefore, the absence of bone should not be considered as relevant.

4.4 The unreliable nature of the assemblage is illustrated by the presence of earthworm capsules and modern roots within the flots as the presence of each may suggest a large quantity of bioturbation has occurred. Furthermore, the gravel nature of the fills of the features would allow for the movement of ecofactual material through it resulting in the potential loss of palaeoenvironmental evidence.

5 STATEMENT OF POTENTIAL AND RECOMMENDATIONS

5.1 The unreliable nature of the assemblage, lack of charred plant remains, the extremely small quantities of charcoal, make recommendations for radiocarbon AMS dating difficult. Despite this, the fragment of willow/poplar from **<4>** and the hazel from **<15>** are better candidates than the surviving oak.

5.2 The small quantities of charcoal may be discarded as no further work is warranted on the assemblage; unless required for radiocarbon dating.

5.3 If further archaeological interventions occur in the vicinity of the site, any future sampling strategies should reflect the necessity to collect charred plant remains and charcoal. Hall and Huntley (2007, 39-40, 283) provided evidence of prehistoric charred plant remains from Scorton and charcoal was recovered from deposits during fieldwork between 2010-2012 (Lowrie 2012). This would enhance our understanding of the Scorton landscape and its environs and how it was utilised by human agency.

6 ACKNOWLEDGEMENTS

6.1 Wardell Armstrong would like to thank Jenny Proctor of Pre-Construct Archaeology Ltd. for commissioning us to undertake the environmental sample assessment, and for providing data relevant to the samples. Freddie Sisson, Faidra Katsi, Kevin Horsley and Jaime Levell processed and sorted the environmental samples. Damion Churchill who edited the report and to Frank Giecco who approved it.

7 REFERENCES

Campbell, G., Moffett, L. and Straker, V. (2011) *Environmental Archaeology. A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (second edition), English Heritage, Portsmouth

Cappers, R.T.J., Bekker, R.M. and Jans, J.E.A. (2012) *Digitale Zadenatlas Van Nederland: Digital Seed Atlas of the Netherlands* (2nd Ed), Barkhuis Publishing, Groningen

Cappers, R.T.J. and Bekker, R.M. (2013) *A Manual for the Identification of Plant Seeds and Fruits*, Barkhuis Publishing, Groningen

Cappers, R.T.J. and Neef, R. (2012) *Handbook of Plant Palaeoecology*, Barkhuis Publishing, Groningen

English Heritage (2008) *MoRPHE Project Planning Note 3 Archaeological Excavations*

Hall, A.R. and Huntley, J.P. (2007) *A Review of the Evidence for Macrofossil Plant Remains from Archaeological Deposits in Northern England*, EH Res. Dep. Rep. Ser. 87-2007

Hather, J.G. (2000) *The Identification of the Northern European Woods: A Guide for Archaeologists and Conservators*, Archetype, London

Jacomet, S. (2006) *Identification of cereal remains from archaeological sites* (2nd Ed.), Archaeobotany Lab, IPAS, Basel University

Lowrie. L. (2012) Assessment of Palaeobotanical and Charcoal Remains, Scorton Quarry, unpub. archive report

Stace, C. (2010) *New Flora of the British Isles* (3rd Ed.), C.U.P., Cambridge

Schweingruber, F.H. (1982) *Microscopic Wood Anatomy* (2nd Ed), Swiss Federal Institute of Forestry Research, Zurich

Williams, D. (1973) Flotation at Siraf, *Antiquity*, **47**: 198-202

Websites

BGS, **https://www.bgs.ac.uk/data/mapViewers/home.html?src=topNav** accessed on 09/02/18

Landis.org, **http://www.landis.org.uk/soilscapes/index.cfm accessed on 09/02/18**

TABLE 1: SAMPLE DATA

C	<>	pH	CP	TP	MP	PW	PV	CS	Components (sorting)	SW	SV
704	4	5.30	very dark reddish brown	loose	sand	44	28	pale greyish brown	stone>1cm 50%: stone<1cm 20%: sand 30%	16969	7900
705	5	4.92	dark reddish brown	loose	sand	59	32	dark yellowish brown	stone>1cm 60%: stone<1cm 20%: sand 20%	39337	25600
1013	8	6.16	mid brown	loose	silty sand	57	48	pale greyish brown	stone>1cm 60%: stone<1cm 10%: sand 30%	38127	21600
1405	9	6.39	reddish brown	plastic	sandy silt	59	36	mid brown	stone>1cm 60%: stone<1cm 10%: sand 30%	41450	26000
1604	11	6.81	mid reddish brown	plastic	sandy silt	61	40	pale grey	stone>1cm 70%: stone<1cm 20%: sand 10%	44861	31606
1505	13	6.40	yellowish brown	loose	silty sand	59	36	pale yellowish grey	stone>1ccm 60%: stone<1cm 20%: sand 20%	32676	20200
912	14	9.23	reddish brown	plastic	sandy silt	58	38	pale greyish brown	stone>1cm 50%: stone<1cm 20%: sand 30%	20406	17700
1619	15	8.77	reddish brown	plastic	silty clay	57	38	mid brown	stone>1cm 40%: stone<1cm 30%: sand 30%	8875	7500
1620	16	6.18	dark brown	loose	silty sand	47	40	mid brown	stone>1cm 50%: stone<1cm 20%: sand 30%	12211	8800
1616	17	8.72	dark reddish brown	loose	clayey silt	56	33	mid brown	stone>1cm 30%: stone<1cm 40%: sand 30%	114343	10100

Key: C= context, <>= sample number, CP= colour of pre-processed sediment, TP= texture of pre-processed sediment, MP= matrix of pre-processed sediment, PW= weight (kg) of pre-processed sediment, PV= volume (ml) of pre-processed sediment, CS= colour of dried residues, SW= weight (g) of dried residues, SV= volume (ml) of dried residues

TABLE 2: FLOT DATA

Context	<>	Wt flot (g)	V flot (ml)	CPR	AMS?	Charcoal (g)	Components	EWC	Comments
704	4	32.5	175	-	yes	<0.01 (2)	sand 20%: very fine rootlets 80%	-	-
705	5	12.2	30	1	no	<0.01 (1)	sand 20%: very fine rootlets 80%	3	-
1013	8	15.1	70	-	no	-	sand 10%: very fine rootlets 90%	12	u/c *Rubus* sp. (1)
1405	9	70.8	360	-	no	-	sand 5%: very fine rootlets 95%	4	weighed slightly damp
1604	11	4.5	35	-	no	<0.01 (2)	sand 20%: very fine rootlets 80%	2	u/c *Chenopodium* sp. (1), u/c *Sambucus nigra* (1)
1505	13	9.7	25	1	no	-	sand 30%: very fine rootlets 70%	-	-
912	14	44.5	125	-	no	<0.01 (1)	sand 5%: very fine rootlets 95%	16	weighed slightly damp
1619	15	12.8	85	1	yes	0.05 (10)	sand 10%: very fine rootlets 80%: rhizomes 10%	3	u/c *Chenopodium* sp. (3)
1620	16	66.9	110	-	no	-	sand 60%: rhizomes 10%: very fine rootlets 30%	-	-
1616	17	44.8	85	-	no	<0.01 (3)	sand 70%: very fine rootlets 30%: very occasional small comminuted charcoal fragments	-	-

Key: C= context, <>= sample number, EWC= earthworm capsule count, u/c= uncharred (NB quantities in parenthesis), CPR= charred plant remains

APPENDIX 6: Archaeological Geophysical Survey

AD265

Land west of Scorton, North Yorkshire

Archaeological Geophysical Survey

Author	Warren Muncaster
Commissioned by	Pre-Construct Archaeology
Project Number	265
OASIS Number	adarchae1-302739
Date	November 2017

For further information please contact:

AD Archaeology Ltd

South Shields Business Works,
Henry Robson Way,
South Shields,
NE33 1RF
Tel: 0191 603 0377
Email: info@adarchaeology.co.uk

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF PLATES

EXECUTIVE SUMMARY

AD Archaeology Ltd was commissioned by Pre-Construct Archaeology to carry out a geophysical survey (magnetometry) in advance of a proposed residential development on land west of Scorton, North Yorkshire.

The geophysical survey identified a number of features of archaeological interest concentrated mainly in the southwest portion of the site through which ran the eastern edge of the Scorton Cursus Neolithic monument. In addition to the cursus there were anomalies likely to represent boundary ditches, and ring ditches that may represent barrows. A number of other anomalies likely to relate to the agricultural use of the site were identified including ridge and furrow which is still extant as an earthwork throughout most of the site. Several anomalies that corresponded with boundaries depicted on the first edition Ordnance Survey map were identified.

The position of the cursus is well known through aerial photography and its eastern outer ditch was detected by the survey. An anomaly (10) was also detected that is likely to represent the line of an outer flanking 'ditch' from the cursus, interpreted as a palisade trench during excavations at the quarry adjacent to the site. Anomaly 10 did not extend along the full length of the survey with an apparent gap before another linear anomaly (12) turned from its course northwards across the length of the site to run parallel with the cursus. Although linear anomaly 12 follows closely the cursus monument the overall layout of linear anomalies 12 and 13 is similar to field systems of likely Iron-Age or Roman date identified elsewhere in Yorkshire and during recent archaeological excavations nearby. Regardless of their date these boundaries clearly formed part of an extensive sub-division of the landscape, and the relationship between anomaly 12 and the cursus is of great interest.

Six potential barrows were identified with varying degrees of clarity (14, 15, 16, 17, 18, 19). These linear anomalies varied in shape from circular to square-shaped (there is a well-known tradition of square-shaped barrows dating from the Iron-Age in Yorkshire) and each may represent the ditches that once encircled a barrow that has been completely ploughed flat. Their positon alongside a cursus monument supports this interpretation as the cursus would have served as a foci for ceremonial and ritual activity during the Neolithic and Bronze Age periods and would have continued as a prominent landmark in the Iron Age period. An alternative, and less likely interpretation, is that these anomalies may instead represent roundhouse drainage gullies associated with a small settlement.

1 INTRODUCTION

1.1 The Project (Figs. 1, 2)

1.1.1 AD Archaeology Ltd was commissioned by Pre-Construct Archaeology to carry out a geophysical survey (magnetometry) in advance of a proposed residential development on land west of Scorton, North Yorkshire.

1.1.2 The proposed development measures 6.5ha and lies on the western edge of the village of Scorton (NGR centre: SE 2482 9997).

1.1.3 The geophysical survey was carried out in the week commencing 20th November 2017.

1.2 Aims and Objectives

1.2.1 The objective of the geophysical survey was to evaluate the presence of sub-surface archaeological remains on the site by means of the location and interpretation of geophysical anomalies.

1.3 Geology and Topography (Figs. 1, 2)

1.3.1 The bedrock geology of the site comprises of Sandstone from the Tyne Sherwood Sandstone Group formed approximately 237 to 272 million years ago in the Triassic and Permian Periods. The bedrock is overlain by River Terrace Deposits of sand and gravel formed up to 3 million years ago in the Quaternary Period (BGS 2017).

1.3.2 The site consists of a relatively flat large field of pasture located immediately to the west of the village of Scorton, north of the B6271 road which runs to Brompton-on-Swale.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND (Figs. 1, 10; Plate 1)

2.1 The site lies within a landscape that is rich in prehistoric sites, perhaps most notable being the Scorton Cursus, a major middle Neolithic monument visible as a cropmark on aerial photographs. The cursus formed an elongated rectangular enclosure defined by ditches with traces of a central mound that was approximately 2km in length. The cursus is orientated northwest-southeast and a cropmark of its eastern outer ditch can be seen across the south western edge of the site, alongside Back Lane. Sections of the cursus have been excavated (NAA 2009) prior to quarrying which has now removed much of the monument (Plate 1). Excavations have exposed parallel ditches with smaller flanking ditches identified as possible palisade trenches (ibid). The cursus is also associated with other monuments and during the later Neolithic and Early Bronze Age periods a widespread 'ritual' and funerary landscape seems to have developed to the west of the Scorton Cursus, centred on the River

Swale (ibid). Excavation of a pennannular ditch within Scorton Quarry in 1977 revealed a central pit (presumably a grave) containing an Early Bronze Age Beaker (ibid). Two ring ditches probably associated with barrows are visible as cropmarks immediately to the south of the southern terminal, a short distance from the site in the adjacent field to the south.

2.2 Evidence of Iron Age occupation has been identified at several sites nearby. Excavations at Grange Farm revealed extensive remains of an Iron Age field system and settlement site of 6th-3rd BC century date, and other excavations to the east revealed further elements of a field system, together with groups of inhumation burials presumed to be of Iron Age or Romano-British date (ibid). Excavations nearby at the quarry to the west of the site revealed further field boundaries, 4-post structures and possible evidence of iron-working likely to be of a similar date (ibid).

2.3 The site lies *c.*2km to the east of the Roman town and fort of Cataractonium. There was ribbon-development during this period along Dere Street to the north and south of the town, and a separate focus of settlement at Bainesse adjacent to Marne Barracks (the former Catterick Aerodrome). Civilian occupation of the town probably continued into the 5th century (ibid). Catterick was also an important centre during the early Anglian period, and was mentioned several times in early sources, although the nature and form of settlement in the area is unknown (ibid).

2.4 Scorton village was first recorded in the 1173 version of the Domesday survey (ibid). Ridge and furrow earth works survive across the site from a former open field system of agriculture which probably originated in the medieval period.

2.5 Elements of the former ridge and furrow system were incorporated into the boundaries of the post-medieval enclosure field layout and can be seen subdividing the site with four principal fields on the first edition OS Survey map of 1857 (Fig. 10). Several footpaths and a Bridle road are depicted, the later still visible as an earthwork across the field, and perhaps lying on the road of an earlier medieval routeway from the village. The first edition OS Survey map shows the southeast portion of the site occupied by several buildings and associated small enclosures and gardens, it was not until the 1970's OS edition surveys until the last of these structures were gone from the site.

3 THE GEOPHYSICAL SURVEY

3.1 Technique

3.1.1 Geophysical survey is a method by which examination of the Earth's physical properties takes place using non-invasive ground survey techniques in order to reveal buried sub-surface features and anomalies (Gaffney and Gater 2004). A hand-held magnetic fluxgate gradiometer records differences in electromagnetic field to a depth of approximately 1 metre into the ground. Differences or disturbances in sub-soil magnetic susceptibility can be the result of archaeological features, geology or modern intrusions.

3.1.2 This geophysical survey was conducted in line with all professional guidelines (CIfA 2014a, b) and recommendations as laid out and presented in *EAC Guidelines for the use of geophysics in archaeology* (Schmidt et al. 2015) *Geophysical survey in archaeological field evaluation* (David, Linford and Linford 2008), *Geophysical Data in Archaeology* (Schmidt 2001), and discussed in, *Revealing the Buried Past: Geophysics for Archaeologists* (Gaffney & Gater 2004).

3.2 **Methodology** (Fig. 2)

3.2.1 The magnetometer survey was carried out using a *Bartington Grad 601-2* fluxgate gradiometer, which scanned and stored all magnetic data. The sample interval was set at 0.25m and the traverse interval at 1m using a northeast-southwest traverse direction in a zigzag scheme. The data was then downloaded onto a laptop computer on site for assessment, and later processed on a PC.

3.2.2 The survey comprised 78 full and partial 30m by 30m grids (see Fig. 2) which were set out using a Trimble R6 GNSS GPS system. A small horse paddock along the NE corner of the site could not be surveyed.

3.2.3 All grid locations have been accurately tied in to Ordnance Survey mapping and NGR co-ordinates.

3.3 Post-Processing

3.3.1 *TerraSurveyor* software was used to process all of the data recorded. AutoCAD software was used for the presentation of the figures.

3.3.2 The post-processing of the recorded raw data includes the application of certain functions in order to aid both the presentation and interpretation of the results. In this instance, data has been 'de-striped' to negate the effect of a zig-zag traverse a cause of striped data; 'despiked' to remove data spikes caused by small surface iron anomalies usually the result of metal 'rubbish' in the topmost surface layers; 'Destagger' to adjust the displacement of geomagnetic anomalies caused by alternate zig-zag traverses; 'clipped' to limit data to specified minimum and

maximum values; thus removing extreme data point values. The data presentation includes three formats: Greyscale Plot (demonstrating processed data); Magnetic Anomaly Interpretation Plan (identifying possible archaeological features, modern features and other anomalies); Trace plot of the minimally processed survey data clipped +/- 20nT.

4 SURVEY RESULTS (Figs. 3-11)

4.1 Magnetic Anomaly Interpretation

4.1.1 The data displays three different types of magnetic anomalies:

- *Positive magnetic anomalies* identifiable through darker grey shades on the greyscale images, which can be suggestive of soil-filled pit and ditch type features representing high magnetic susceptibility.

- *Negative magnetic anomalies* are identifiable through lighter grey shades on the greyscale images, which can be suggestive of wall footings and other stone concentrations or features representing low magnetic susceptibility.

- *Dipolar magnetic anomalies* identifiable through concentrations of mixed dark and light grey shades on the greyscale images which can be suggestive of fired and ferrous materials and structures; and/or modern intrusion and disturbance, representing paired positive and negative magnetic susceptibility.

4.2 Services, Modern Disturbance and Geological Features (Figs. 3-9)

4.2.1 Very strong magnetic disturbance (grey on Fig. 4, 7, 9) was detected from several services that cross the site. Anomaly **1** crossed the site in NW-SE orientation and another service (**2**) was detected across the southern portion of the survey orientated ENE-WSW. Another service (**3**) was detected between the services (**1** & **2**). Two very strong dipolar anomalies (**4**, **5**) were detected along the south side of anomaly **2** caused by a telegraph pole and support wires from an overhead power line.

4.2.2 Magnetic disturbance (**6**) of likely modern origin detected along the south eastern portion of the survey corresponds with the footprint of a former enclosure (refer 2.5, fig 10). The magnetic disturbance was likely to mainly be caused by magnetically enhanced material within the topsoil.

4.2.3 There was strong magnetic disturbance (grey on Fig. 4) alongside the edges of the field boundaries caused by wire fencing.

4.2.4 A scatter of small isolated positive and dipolar magnetic responses (red on Fig. 4, smaller or weaker anomalies not marked) throughout the field are likely to relate to stray ferrous objects.

4.3 Ridge and Furrow and Later Field Boundaries (Figs. 3-10)

4.3.1 The survey detected linear magnetic anomalies (green on Figs. 4, 7, 9) throughout the site from a ridge and furrow system orientated ENE-WSW that was spaced at intervals of mainly between 4m-6m apart.

4.3.2 Two linear positive anomalies (**7**, **8**, magenta on Fig. 4, 7) detected across the northern portion of the site corresponded with the position of former field boundaries depicted on the first edition OS map which both followed the former ridge and furrow system.

4.3.3 A broad strong linear positive anomaly (**23**), with a negative response alongside its northern flank, was detected in the southeast corner of the survey. The anomaly was orientated E-W and is likely to postdate the ridge and furrow. Although the anomaly did not correspond with any feature depicted on the OS edition maps, it was notable that its western terminal respected the projected line of a former boundary and track and also a service (**3**). It may represent a cut feature such as a ditch or track of post-medieval origin, or alternatively the line of a service trench.

4.3.4 An ENE-WSW orientated linear positive and negative anomaly (**24**) detected in the southeast corner of the survey corresponded with the position of a boundary and track depicted on the first edition OS map (Fig. 10). A small building is also depicted alongside the track in this locality. The negative magnetic disturbance may relate to demolition material from this structure and it was notable that the wider local area of the survey in this area was more disturbed with a number of negative magnetic readings in the background. A series of positive anomalies that extended from the north side of anomaly **24** mainly in a NNW-SSE orientation are likely relate to the agricultural use of an enclosure.

4.3.5 A weak linear positive anomaly (**21**) was detected in the southwest portion of the survey flanked by broad weak positive magnetic responses which were orientated NNW-SSE. The anomalies extended beyond the edge of the survey and corresponded with a faint cropmark visible on the 2001 google earth aerial photograph which may represent an extension of the projected line of a former post-medieval field boundary (Fig.10).

4.3.6 A series of faint linear striations across the site often in a NE-SW and NW-SE orientation are probably agricultural in origin and may represent furrows (green on Fig. 4, not all faint anomalies have been marked).

4.4 Other Magnetic Anomalies (Figs. 3-9)

4.4.1 A linear positive anomaly (**9**, magenta on Figs. 4, 9) orientated NW-SE in the southwest edge of the field almost certainly represents the eastern ditch of the Neolithic Scorton Cursus (refer 2.1, Plate 1). The northern end of the ditch could only be traced as a fragmentary weak anomaly. The lack of clarity in this area was exacerbated by magnetic disturbance from both the nearby field boundary and thick mud that was heavily churned by livestock, which also resulted in a small area that could not be surveyed. This small unsurveyed area partially obscured the course of anomaly **10** that ran parallel between 3m-4m to the east of the cursus ditch (**9)**. Anomaly **10** is likely to represent the small ditch identified as a 'palisade trench' (refer 2.1) that flanks the outer side of the cursus ditches. Anomaly **10** did not extend alongside the full length of anomaly **9**, and was replaced after a short gap by linear anomaly **12** which flanked the cursus (refer 4.4.2). A fragmentary linear anomaly (**11**) of uncertain origin, which may simply represent a furrow, intersected the cursus ditch (**10**) and extended ENE-WSW beyond the unsurveyed area before intersecting the western side of ring ditch anomaly **14** (refer 4.4.3).

4.4.2 Two extensive linear positive anomalies (**12**, **13**, magenta on Figs. 4, 7, 9) detected across the length of the survey are likely to represent soil filled ditches which continued beyond the confines of the site. Anomaly **12** extended in a N-S orientation across the length of the site before curving gently westwards at its south end for a short distance before making a sharp perpendicular turn to run parallel with the line of the cursus ditch (**9**) which lay 6.5m to the southwest. Linear anomaly **13** ran perpendicular from the eastern side of anomaly **12** gently curving towards the southeast and beyond the limit of the site. A gap of 4.5m between anomalies **12** and **13** may have provided an access route between the two areas of land sub-divided by anomaly **13**.

4.4.3 A series of sub-circular shaped positive linear anomalies (**14**, **15**, **16**, **17**, magenta on Figs. 4, 9) detected in the southern end of the site are likely to represent ring ditches, most likely soil filled ditches surrounding a barrow, rather than drainage gullys associated with roundhouses. Anomalies **15**, **16**, **18**, **17** were positioned approximately in a row and were all fragmentary with none of the anomalies forming a complete circuit. A strong positive anomaly detected within anomaly **16** may represent an internal feature such as a pit or grave. Another positive anomaly was detected south of centre within anomaly **17**. To the west of the row the largest of this group, (anomaly **14**) intersected the putative boundary ditch (**12**) which ran along its eastern side. A positive linear anomaly (**11**) of uncertain origin was detected that extended westwards from the side of anomaly **14** (refer 4.4.1). Anomaly **14** measured 10m in diameter which was similar in size to anomaly **17** to the east and larger than anomalies **15**, **16**, **18** that measured 5.7m, 6m, 7.8m in diameter respectively. Anomaly **19**, detected in the southwest corner of the site, was distinctly square shaped, as was to a lesser extent anomaly **18** from the row to the east. These anomalies may represent a funerary tradition known as square barrows (refer 5.3). Anomaly **19** measured an internal width of 9 - 9.5m and contained another positive

anomaly within the interior possibly representing an internal feature, such as a grave.

4.4.4 A very weak positive linear anomaly (**20**) of uncertain origin was detected a short distance to the east of anomaly **14**. Fragmentary positive anomalies of uncertain origin were also detected in the proximity of anomalies **17** and **18**, which although potentially archaeological in origin may alternatively have been caused by geological factors, ploughing or agricultural machinery.

4.4.5 The origin is uncertain of a broad weak linear positive anomaly (**22**) detected in the southeast of the site immediately east of linear anomaly **13**. The anomaly does not respect the ridge and furrow and may post-date it.

4.4.6 The origin is uncertain of a discrete sub-oval shaped positive anomaly (**25**) in the central portion of the survey (magenta on Figs. 4, 7). The anomaly measured 4.8m by 3.8m and may represent a soil filled cut feature or simply a soil filled natural depression in the subsoil. Another discrete positive anomaly (**26**) of uncertain origin which measured 8.75m by 6.1m was detected in the northern portion of the survey

5 DISCUSSION (Figs. 4, 5, 10; Plate 1)

5.1 The geophysical survey identified a number of features of archaeological interest, concentrated mainly in the southwest portion of the site through which ran the Scorton Cursus Neolithic monument. In addition to the cursus were anomalies likely to represent boundary ditches, and ring ditches potentially representing barrows. A number of other anomalies likely to relate to the agricultural use of the site were identified including ridge and furrow which is still extant as an earthwork throughout most of the site. Several anomalies that corresponded with boundaries depicted on the first edition Ordnance Survey map were identified (Fig. 10).

5.2 The position of the cursus is well known through aerial photography and its eastern outer ditch was identified by the survey (anomaly **9**). Anomaly **10** is likely to represent the line of an outer flanking 'ditch' interpreted as a palisade trench (NAA 2009) in excavations at the quarry to the west of the site (Plate 1). Anomaly **10** did not extend along the full length of the survey with an apparent gap of at least 7.3m before another ditch represented by linear anomaly **12** turned from its course northwards across the length of the site to run parallel with the cursus (refer 5.4). This outer ditch (**10**) has earlier been detected from cropmarks alongside the cursus at a similar distance from the cursus immediately south of the site in the adjacent field but not appearing to continue around the terminal.

5.3 Six potential barrows were identified with varying degrees of clarity (**14**, **15**, **16**, **17**, **18**, **19**), they varied in shape from circular to square-shaped linear anomalies and may represent the remaining ditches once encircling a barrow that has been completely ploughed out. It is less likely, though still possible until proven through excavation, that rather than barrows these anomalies instead represent the remains

of roundhouse drainage gullys. The cursus would have served as a foci for ceremonial and ritual activity during the Neolithic and Bronze Age periods (refer 2.1) and would have continued as a prominent landmark in the Iron Age period. The positon of the anomalies alongside a cursus monument supports an interpretation that they represent a group of funerary monuments, forming part of a landscape with barrows identified elsewhere in the local area alongside the cursus (refer 2.1). There is a well-known tradition in Yorkshire of square-shaped barrows dating from the Iron-Age such as anomaly **19**, and possibly anomaly (**18**) by which time the cursus would have remained an impressive ancient monument with which to be associated. Anomaly **14** was incorporated into the boundary represented by anomaly **12** the exact sequence is unclear without physical examination through excavation.

5.4 Although the likely ditch represented by linear anomaly **12** follows closely the cursus monument the overall layout of linear anomalies **12** and **13** is similar to field systems of likely Iron-Age or Roman date identified elsewhere in Yorkshire and during recent archaeological excavations (NAA 2009) in the adjacent quarry. Whatever date these likely ditches are they clearly formed part of an extensive sub-division of the landscape, and the relationship between anomaly **12** and the cursus is of great interest.

6 BIBLIOGRAPHY

BGS 2017 British Geological Survey, Geology of Britain viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Chartered Institute for Archaeologists, 2014 (a)*, Code of Conduct*

Chartered Institute for Archaeologists, 2014 (b), *Draft Standard and Guidance for Archaeological Geophysical Survey*

David, A., Linford, N., and Linford, P. 2008. *Geophysical Survey in Archaeological Field Evaluation,* 2nd Ed., Research and Professional Services Guideline No **1**: English Heritage.

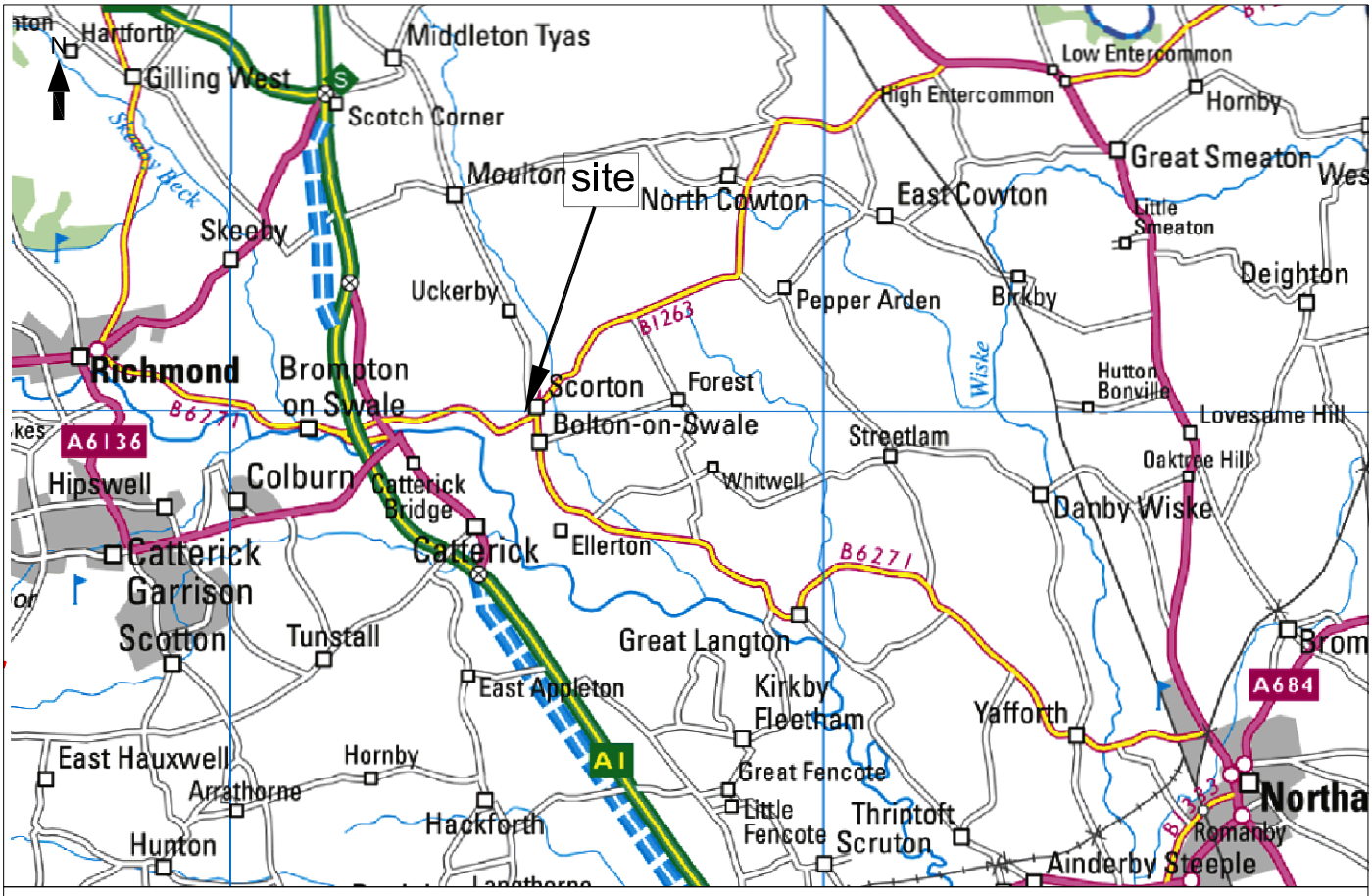
Gaffney, C., & Gater, J. 2004. *Revealing the Buried Past: Geophysics for Archaeologists*, Stroud: Tempus.

NAA 2009. *Archaeological Excavation and Watching Brief Post-Excavation Assessment Report Scorton Quarry, North Yorkshire Areas 2 And 4b* (unpublished client report)

Schmidt, A. 2001. *Geophysical Data in Archaeology: A Guide to Good Practice*. Archaeological Data Service.

Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris A., Fassbinder J., 2015 EAC Guidelines for the use of geophysics in archaeology, questions to ask and points to consider EAC guidelines 2

Deegan A. *Prehistoric Monuments in the A1 Corridor. A guide to the henges, cursus, barrows, standing stones and other monuments* booklet funded by English Heritage (Historic England)
Digital copy downloaded http://new.archaeologyuk.org/news/new-booklet-on-the-prehistoric-monuments-in-the-a1-corridor



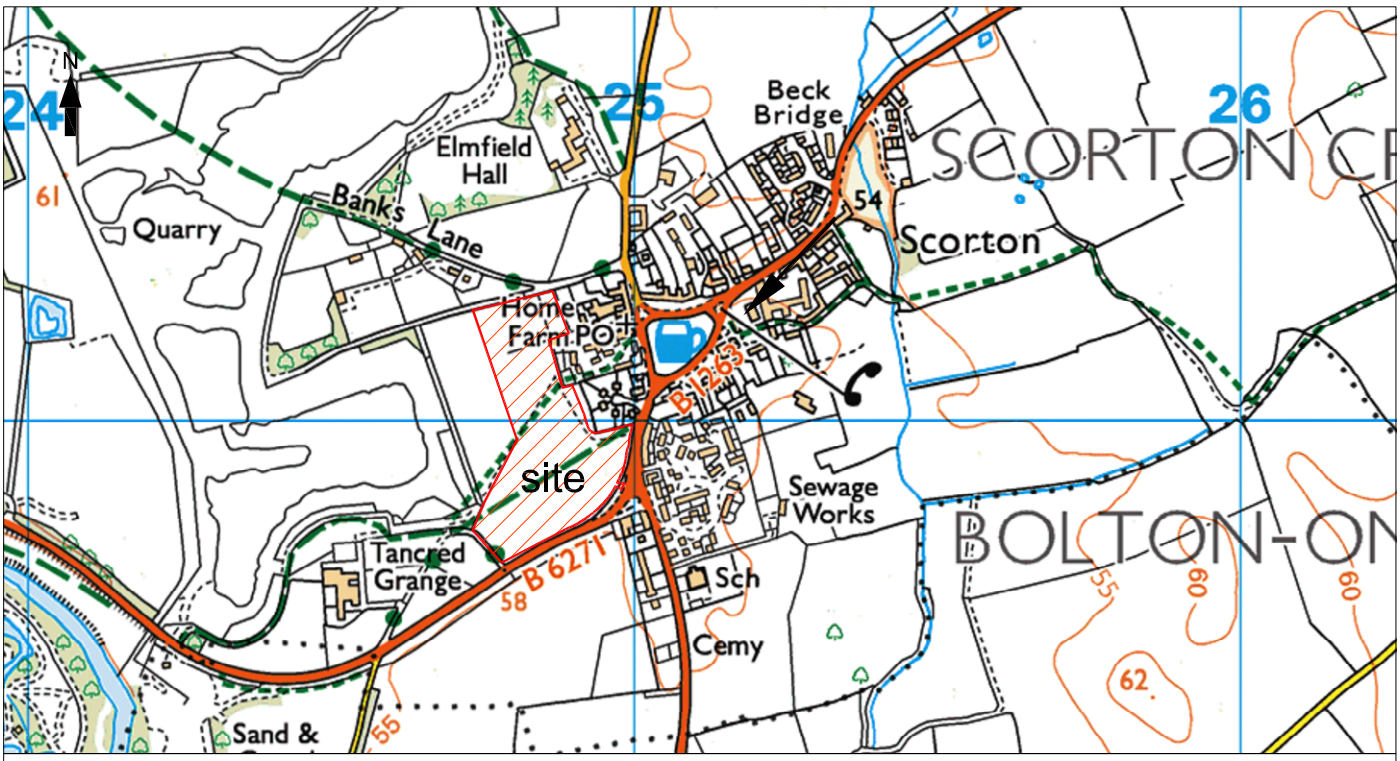


Figure 1: Location of site

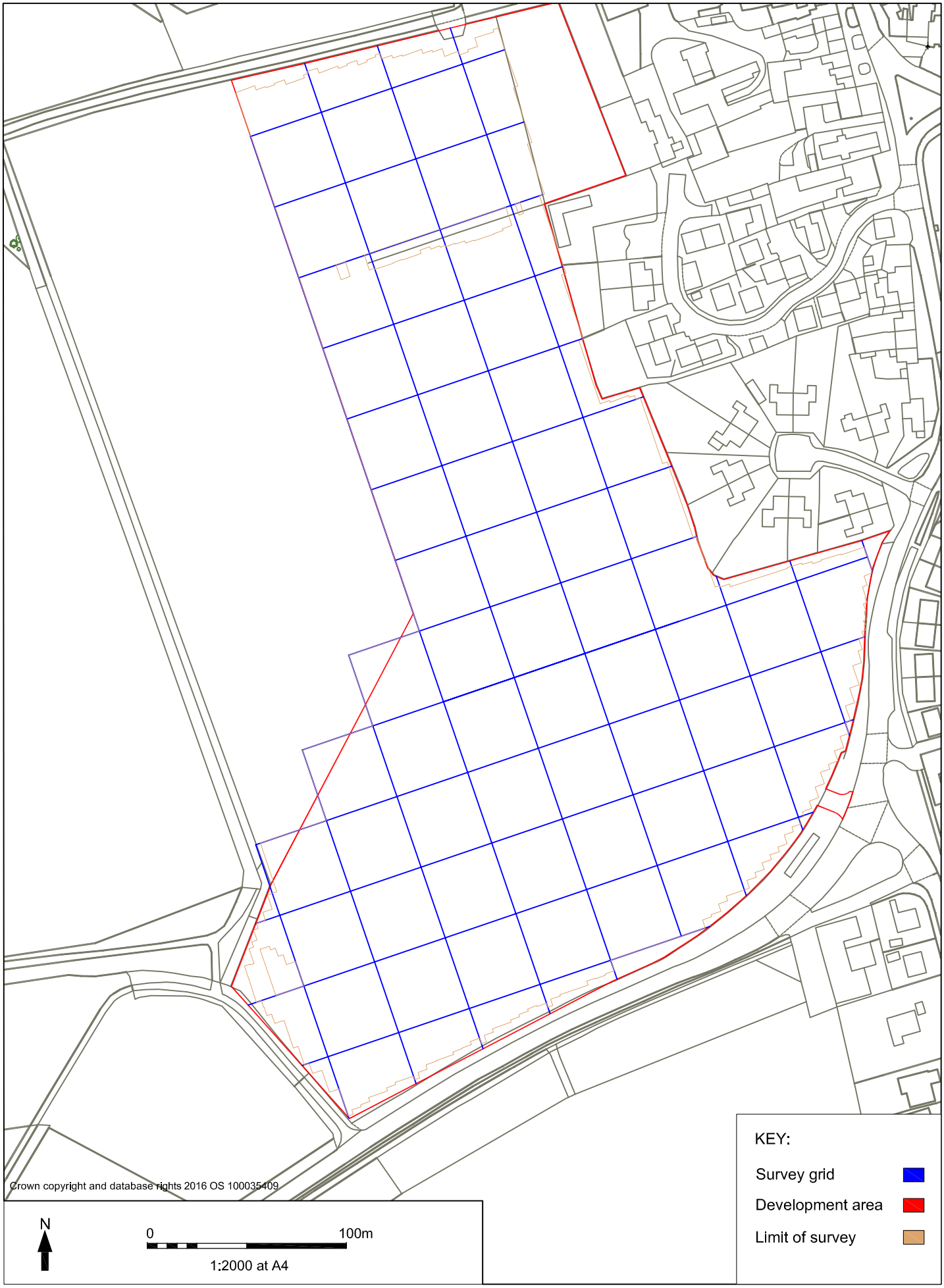


Figure 2: Plan of geophysical survey grids

Figure 3: Overall greyscale plot of geophysical survey

KEY:
Dipolar anomalies
modern
other anomalies
Positive anomalies
Negative anomalies
Furrow

N

0 1:1250 at A3 100m

Figure 4: Overall interpretative plan of geophysical survey

archaeology

KEY:

archaeological feature?

post-medieval feature?

Unknown origin

Furrow

12
26
7
8
25
24
13
23
12
22
21
17
18
16
14
20
15
10
11
12
19
9

N

0 1:1250 at A3 100m

Figure 5: Archaeological interpretation of geophysical survey

AD archaeology

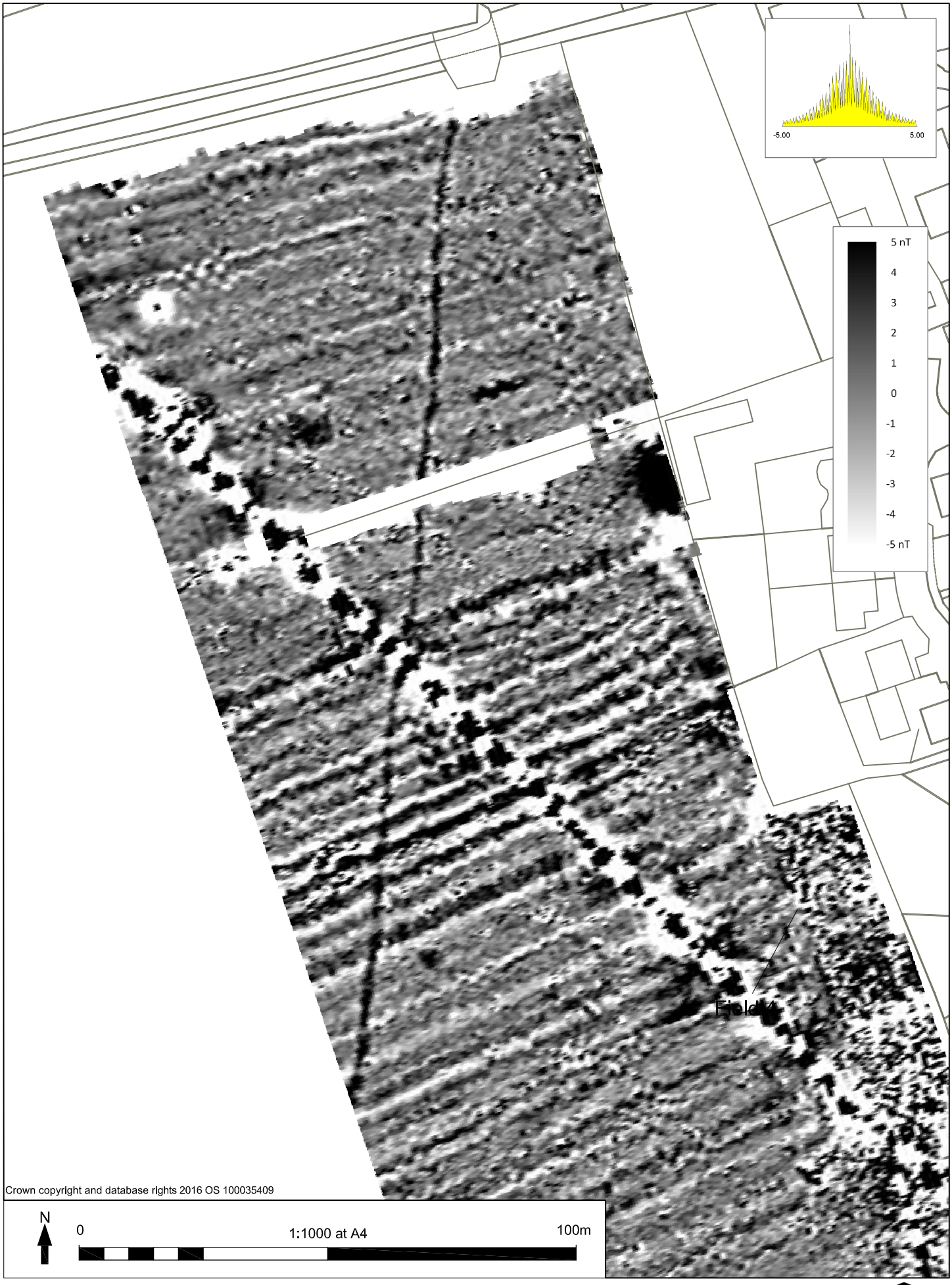


Figure 6: Greyscale plot of processed geophysical survey (north)

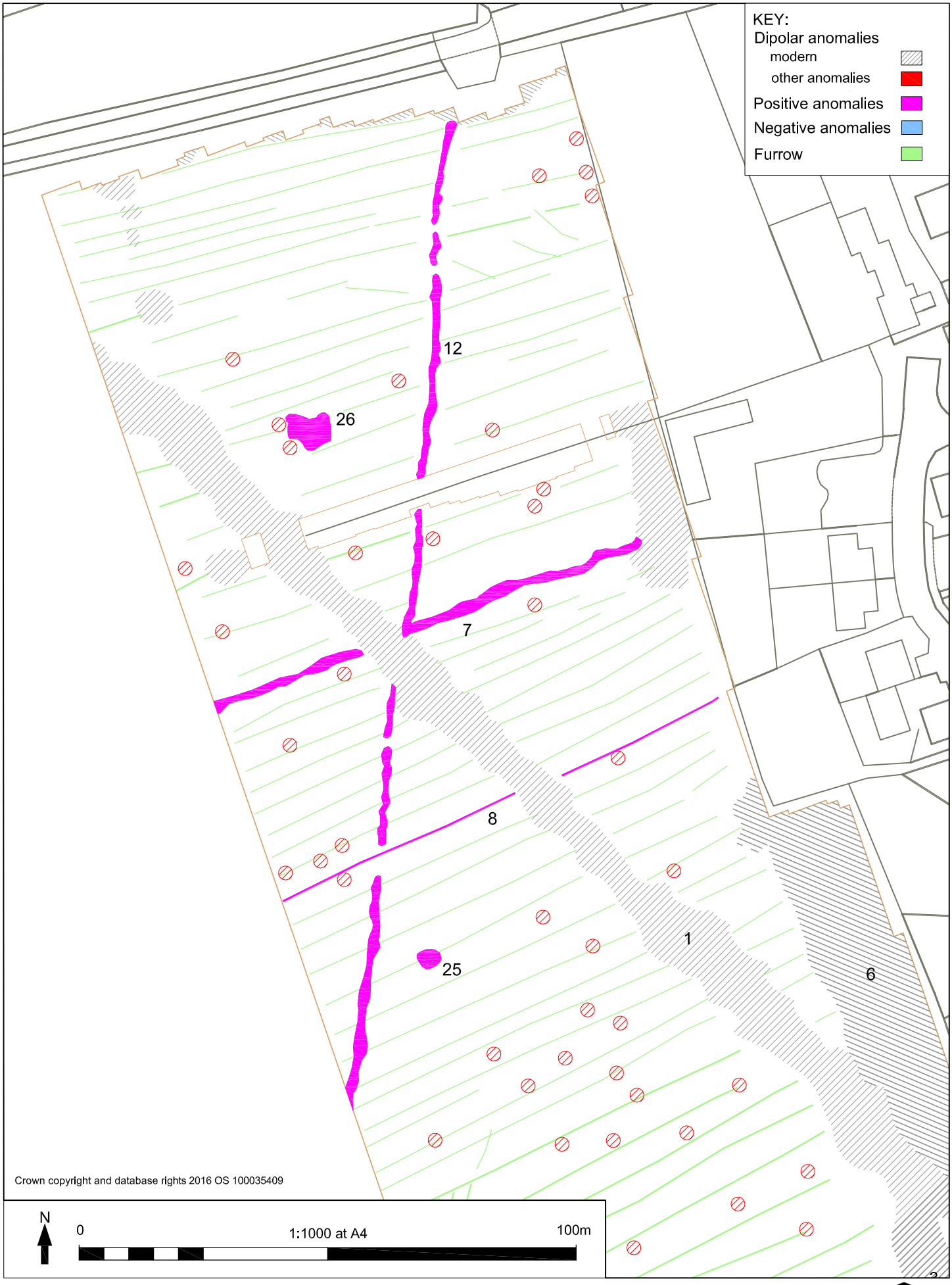


Figure 7: Interpretative plan of geophysical survey (north)

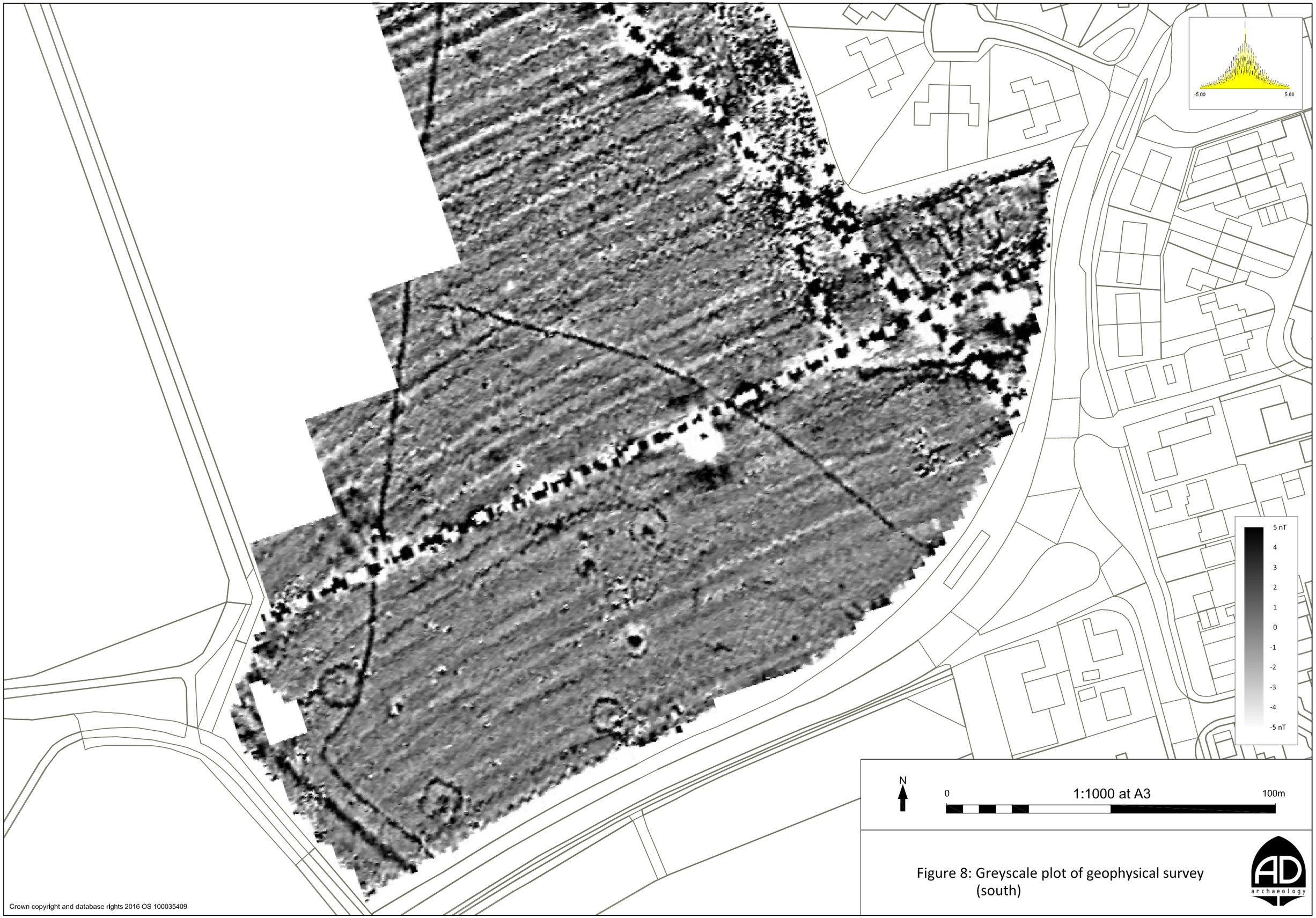


Figure 8: Greyscale plot of geophysical survey (south)

KEY:
Dipolar anomalies
modern
other anomalies
Positive anomalies
Negative anomalies
Furrow

25
6
3
24
5
13
1
23
12
2
4
22
21
17
18
16
14
20
10
15
11
12
19
9

N

0 1:1000 at A3 100m

Figure 9: Interpretation plan of geophysical survey (south)

Figure 10: Overall interpretative plan of Scorton geophysical survey showing First edition OS map

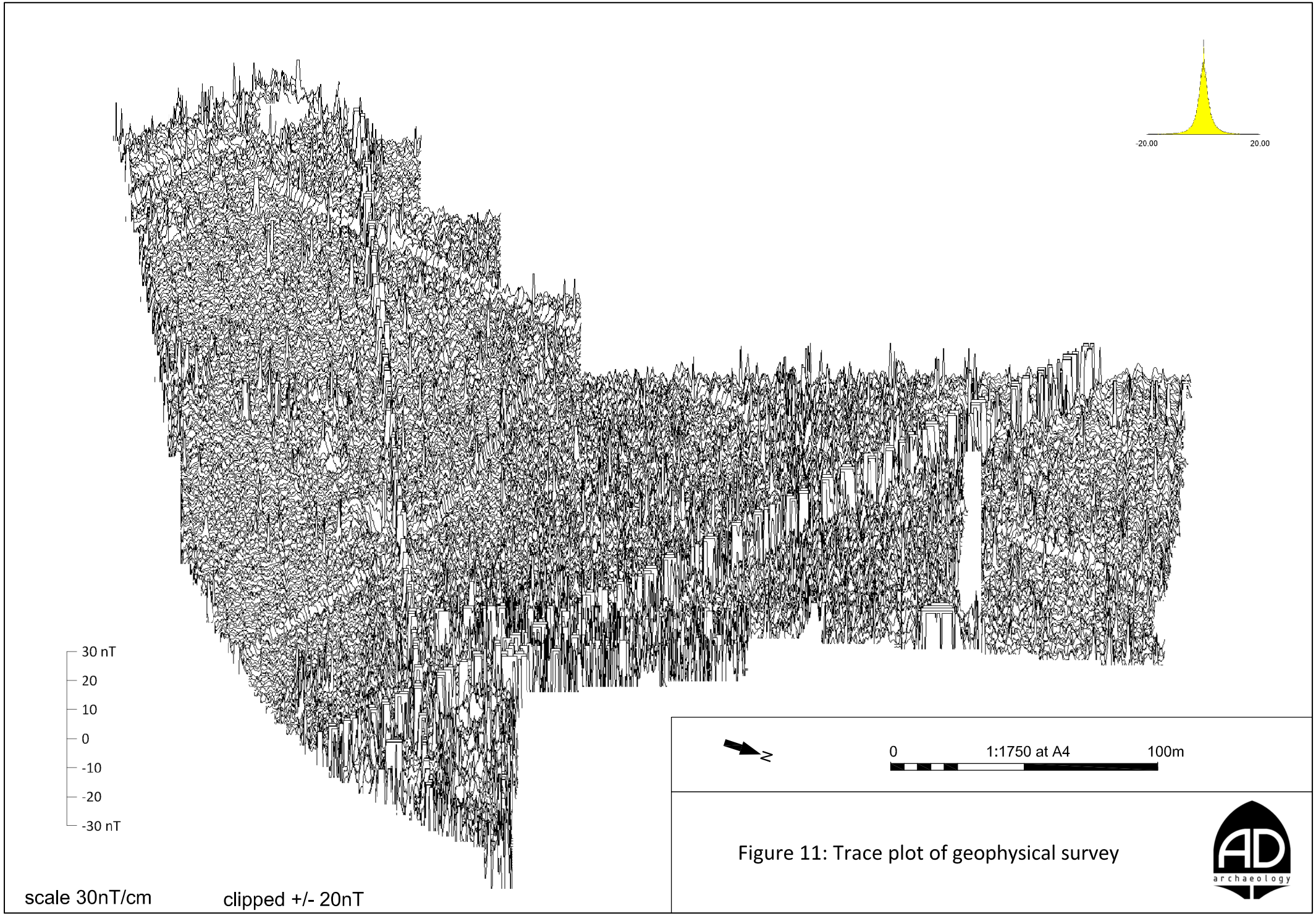


Figure 11: Trace plot of geophysical survey

Plate 1: Aerial view of Scorton Cursus excavations adjacent to southwest corner of site (image taken from Bing maps)

P C A

PCA CAMBRIDGE
THE GRANARY, RECTORY FARM
BREWERY ROAD, PAMPISFORD
CAMBRIDGESHIRE CB22 3EN
t: 01223 845 522
e: cambridge@pre-construct.com

PCA DURHAM
UNIT 19A, TURSDALE BUSINESS PARK
TURSDALE
DURHAM DH6 5PG
t: 0191 377 1111
e: durham@pre-construct.com

PCA LONDON
UNIT 54, BROCKLEY CROSS BUSINESS CENTRE
96 ENDWELL ROAD, BROCKLEY
LONDON SE4 2PD
t: 020 7732 3925
e: london@pre-construct.com

PCA NEWARK
OFFICE 8, ROEWOOD COURTYARD
WINKBURN, NEWARK
NOTTINGHAMSHIRE NG22 8PG
t: 01636 370410
e: newark@pre-construct.com

PCA NORWICH
QUARRY WORKS, DEREHAM ROAD
HONINGHAM
NORWICH NR9 5AP
T: 01223 845522
e: cambridge@pre-construct.com

PCA WARWICK
UNIT 9, THE MILL, MILL LANE
LITTLE SHREWLEY, WARWICK
WARWICKSHIRE CV35 7HN
t: 01926 485490
e: warwick@pre-construct.com

PCA WINCHESTER
5 RED DEER COURT, ELM ROAD
WINCHESTER
HAMPSHIRE SO22 5LX
t: 01962 849 549
e: winchester@pre-construct.com