ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
Cussins Ltd

Land north of Rimside View Longframlington Northumberland

geophysical survey and archaeological evaluation

report 3450
July 2014

Durham University

Contents

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1. Summary

The project

1.1 This report presents the results of a geophysical survey and archaeological evaluation conducted in advance of a proposed development on land north of Rimside View, Longframlington. The works comprised 1.75 hectares of detailed geomagnetic survey and the excavation of seven evaluation trenches targeted on anomalies detected by the survey.

1.2 The works were commissioned by Cussins Ltd and conducted by Archaeological Services Durham University.

Results

1.3 Furrows, the remains of medieval or post-medieval ploughing, were recorded by the geophysical survey and in all the trenches.

1.4 Ditches were recorded in trenches 4 and 7. These related to post-medieval field boundaries visible on old mapping. Adjacent to one of these in Trench 7 was a linear scoop containing burnt material. *In situ* burning was also present in the base of two furrows. Strong magnetic anomalies in the geophysical survey reflected these. Other magnet anomalies of similar strength and character have been identified across the area which may also reflect burning.

1.5 A small assemblage of pot sherds was recovered from the archaeological features, indicating that they are likely to date from the post-medieval period.

1.6 The fragmentary nature of the palaeoenvironmental sample material and absence of diagnostic remains provides little information about the origin of the burning. The common occurrence of charred heather remains, particularly from deposit [15], and the presence of grass, sedge and birch remains provide possible evidence of a grassy heathland nearby.

1.7 The proposed development has the potential to remove or truncate an archaeological resource, comprising the remains of furrows and probable post-medieval burnt deposits. A sample of these have been excavated and recorded and the magnitude of the impact is regarded as limited.

Recommendations

1.8 No archaeological resource was identified which requires preservation *in situ*.

1.9 No further archaeological works are recommended.

2. Project background

Location (Figure 1)

2.1 The proposed development area was located on land north of Rimside View, Front Street, Longframlington, Northumberland (NGR centre: NU 12871 01260). Approximately 1.75ha of detailed geomagnetic survey was undertaken in a single pasture field. Seven evaluation trenches were targeted on anomalies detected by the geophysical survey. To the north and west was open farmland; to the south was housing; the A697 road bounded the area to the east.

Development proposal

2.2 The development proposal is residential.

Objective

2.3 The principal aim of the survey and trenching was to determine the nature and extent of any sub-surface features, including cut, built and fired features, of potential archaeological significance, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in relation to the development.

Methods statement

2.4 The scheme of works has been undertaken in accordance with a Written Scheme of Investigation (WSI) provided by Archaeological Services Durham University (reference DS14.185) and approved by the Assistant County Archaeologist for Northumberland County Council and national standards and guidance (see para. 5.1 below).

Dates

2.5 Fieldwork was undertaken between 29th May and 17th June 2014. This report was prepared for July 2014.

Personnel

2.6 The geophysical survey was conducted by Patricia Edwards (supervisor) and Tudor Skinner. The trial trench evaluation was conducted by Beverley Still and Nathan Thomas (supervisor). This report was prepared by Richard Villis (geophysics) and Nathan Thomas (evaluation), with illustrations by Janine Watson. The geophysical data were processed by Richard Villis. Specialist reporting was conducted by Jennifer Jones (pottery and clay pipe) and Lorne Elliott (palaeoenvironmental). The project manager was Daniel Still.

Archive/OASIS

2.7 The site code is **LRV14**, for **L**ongframlington **R**imside **V**iew 20**14**. The archive is currently held by Archaeological Services Durham University, and will be transferred to Alnwick Castle in due course. Archaeological Services Durham University is registered with the **O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S** project (**OASIS**). The OASIS ID number for this project is **archaeol3-181954**.

2.8 The palaeoenvironmental residues were discarded following examination. The flots and charred plant remains will be retained at Archaeological Services Durham University.

3. Historical and archaeological background

3.1 A Historic Environment Record (HER) search for surrounding 1km radius of the site was undertaken for the WSI.

3.2 There is evidence for prehistoric activity in the vicinity of Longframlington; this includes the discovery of a polished stone axe close to the junction of the Wooler to Morpeth and Longframlington to Felton roads.

3.3 Located on the west side of the A697, in the south part of the village, is the supposed site of a 'Roman Camp' known as Hall Hill; this site is annotated as such on historical mapping. The site has been identified as a rectangular earthwork with a single rampart, with the farmhouse of Hall Hill located in the south-east corner. There is no archaeological evidence that this was a Roman camp; the HER entry notes that a possible reused date stone of '1667' may indicate an earlier building on the site, and it has been suggested that the earthworks may relate to the 17th-century predecessor of the modern Hall Hill.

3.4 To the west of the proposed development area is the projected line of a Roman road known as the Devil's Causeway, the course of which is still partly in use at Longframlington as Villa Lane. As with the supposed Roman camp, this road is also labelled on historical mapping. Archaeological trial trenching at Netherwitton in 2001, identified the remains of this road.

3.5 Located to the south of the proposed development area is the Church of St Mary which dates back at least as far as the late 12th century, and has 14th-century additions. There is documentary evidence for a settlement, referred to as *Magna (Long) Framlington*. Several grants of land were made to Brinkburn Priory in the late 12th and 13th centuries. In 1296 there were 15 taxpayers in *Framlington Magna and Parva*.

Previous archaeological works

3.6 Previous schemes of archaeological works have been undertaken at Longnframlington. These comprise:

- a watching brief during water mains refurbishment conducted in 2002 during the installation of new water mains across the projected route of the Devil's Causeway
- 4ZY Stella West - Eccles OHL Cultural Heritage assessment and a Desk-Based Assessment, Longframlington
- a detailed description of the St Mary the Virgin church and its fabric undertaken in 2009
- archaeological recording of the laundry at Embleton Hall Hotel prior to conversion to a dwelling, undertaken by Archaeological Services in 2010
- a watching brief in 2011 during development on land adjacent to West House
- a watching brief undertaken at St Mary's Church in 2001 during groundworks for a new community room and the partial demolition of the north wall of St Mary's Church
- an archaeological trial trench evaluation in 2013 to the west of the village at Harecross. No archaeological deposits were identified

4. Landuse, topography and geology

4.1 At the time of the archaeological works, the proposed development area comprised the eastern part of a large pasture field.

4.2 The area was predominantly level in the west, with a mean elevation of between 161m to 162m OD. The area sloped down towards Front Street to approximately 154m OD. Subtle topographic variations, due to ridge and furrow cultivation systems, were present across the area.

4.3 The underlying solid geology of the area comprises Carboniferous mudstones, siltstones and sandstones of the Stainmore Formation, which are overlain by Devensian glaciolacustrine and glaciofluvial deposits (BGS 2014).

5. Geophysical survey

Standards

5.1 The surveys and reporting were conducted in accordance with English Heritage guidelines, *Geophysical survey in archaeological field evaluation* (David, Linford & Linford 2008); the Institute for Archaeologists (IfA) *Standard and Guidance for archaeological geophysical survey* (2011); the IfA Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service & Digital Antiquity *Geophysical Data in Archaeology: A Guide to Good Practice* (Schmidt 2013).

Technique selection

5.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a suite of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar, electromagnetic survey and topsoil magnetic susceptibility survey. Some techniques are more suitable than others in particular situations, depending on site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.

5.3 In this instance, based on previous work, it was considered likely that cut features such as ditches and pits might be present within the area, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.

5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the area a geomagnetic technique, fluxgate gradiometry, was considered appropriate. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Field methods

5.5 A 30m grid was established across the area and related to the Ordnance Survey National Grid using a Leica GS15 global navigation satellite system (GNSS) with real-time kinematic (RTK) corrections typically providing 10mm accuracy.

5.6 Measurements of the vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 30m grid units. The instrument sensitivity was nominally 0.03nT, the sample interval was 0.25m and the traverse interval was 1m, thus providing 3,600 sample measurements per 30m grid unit.

5.7 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

5.8 Geoplot v.3 software was used to process the geophysical data and to produce both a continuous tone greyscale image and a trace plot of the raw (minimally processed) data. The greyscale image and interpretation are presented in Figures 2-4; the trace plot is provided in Figure 5. In the greyscale image, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.

5.9 The following basic functions have been applied to the geomagnetic data:

clip	clips data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic
zero mean traverse	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities
de-stagger	corrects for displacement of geomagnetic anomalies caused by alternate zig-zag traverses
interpolate	increases the number of data points in a survey to match sample and traverse intervals; in this instance the data have been interpolated to 0.25m x 0.25m intervals

Interpretation: anomaly types

5.10 A colour-coded geophysical interpretation plan is provided. Three types of geomagnetic anomaly have been distinguished in the data:

positive magnetic	regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches
negative magnetic	regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids
dipolar magnetic	paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths

Interpretation: features

5.11 A colour-coded archaeological interpretation plan is provided based on the combined results of the geophysical survey and evaluation trenches.

5.12 Except where stated otherwise, positive magnetic anomalies are taken to reflect relatively high magnetic susceptibility materials, typically sediments in cut archaeological features (such as ditches or pits) whose magnetic susceptibility has been enhanced by decomposed organic matter or by burning.

5.13 A number of discrete positive magnetic anomalies have been detected across the area. These appear to be localised anomalies and do not form any coherent patterning. A concentration of these anomalies has been detected in the east of the area. Some of these correlate with burnt deposits identified in the evaluation trenching.

5.14 A single linear positive magnetic anomaly has been detected on a north-east to south-west alignment in the north-west of the area. This is likely to reflect a former furrow or field boundary.

5.15 A series of parallel, weak, positive magnetic anomalies run parallel to the identified linear magnetic anomaly above. These almost certainly reflect former ridge and furrow cultivation. These magnetic trends have been detected running across the area on a north-east to south-west alignment. In addition, a series of weak magnetic trends have been identified running perpendicular to the above anomalies in the south-west of the area. These again are likely to reflect former cultivation.

5.16 A north-east/south-west alignment of small dipolar anomalies has been detected across the centre of the area. This almost certainly reflects a former field boundary evident on historic maps.

5.17 Small, discrete dipolar magnetic anomalies have been detected in all of the survey areas. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. A sample of these is shown on the geophysical interpretation plan, however, they have been omitted from the archaeological interpretation plan.

5.18 Anomalies caused by stock feeders, telegraph poles, a brick watering trough and inspection covers (for a modern storm drain) have also been detected.

6. The evaluation trenches

Introduction

6.1 Seven trenches were positioned over a sample of the detected geophysical anomalies. Modern overburden was stripped using a mechanical excavator equipped with a toothless ditching bucket under archaeological direction. Trenches were hand cleaned for the identification of archaeological remains.

Trench 1 (Figure 7)

6.2 This trench was 30m by 1.5m, and was located over the linear magnetic anomaly detected in the north-west of the area. The natural drift geology, a mottled yellow

grey clay [2], was identified at a depth of 0.3m below ground level (BGL). Five shallow furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were oriented north-east to south-west and were filled with a light greyish yellow silty clay [4]. A furrow was recorded along the line of the detected magnetic anomaly. The remaining furrows accord with the detected magnetic trends. Above the furrows was a greyish brown silty clay topsoil [1: 0.3m deep].

Trench 2 (Figure 7)

6.3 This trench was 30m by 1.5m, and was located in the south-west of the area. The natural drift geology, a mottled yellow grey sandy clay [2], was identified at a depth of 0.3m BGL. Five shallow furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were oriented north-west to south-east and were filled with a light greyish yellow silty clay [4]. The furrows accord with a series of very weak magnetic trends detected in the geophysical survey. Above the furrows was a greyish brown silty clay topsoil [1: 0.3m deep].

Trench 3 (Figures 7, 9, 10)

6.4 This trench was 30m by 1.5m, and was located over a short positive linear magnetic anomaly. The natural drift geology, a mottled yellow grey sandy clay [2], was identified at a depth of 0.25m BGL. Cutting the natural [2], and coincident with the magnetic anomaly, was a probable furrow [F5: 1.5m long, 1.1m wide and 0.22m deep]. Furrow F5 was oriented north-east to south-west and contained two fills. The lower fill [6: 0.5m wide and 0.1m deep] was a black silty clay that contained common charcoal fragments. This deposit appeared to have been burnt *in situ* as evidenced by discolouration to the surrounding natural clay. Above fill [6] was a light yellow brown silty clay [7: 1m wide and 0.22m deep]. The identified *in situ* burning is likely to account for the detected magnetic anomaly. Three further furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were again oriented north-east to south-west and were filled with a light greyish yellow silty clay [4]. The furrows accord with the detected magnetic trends. Above the furrows was a greyish brown silty clay topsoil [1: 0.25m deep].

Trench 4 (Figure 7)

6.5 This trench was 30m by 1.5m, and was located in the centre of the area. The natural drift geology, a mottled yellow grey sandy clay [2], was identified at a depth of 0.3m BGL. Cutting the natural [2] were two ditches. Ditch [F8: 1.5m long, 1.15m wide and 0.22m deep] was oriented north-west to south-east and was filled with a light grey brown sandy clay [9]. The ditch was perpendicular to the identified ploughing. [F8] was interpreted as a probable former field boundary as depicted in the historic mapping. A second ditch [F10: 2.5m long, 0.75m wide and 80mm deep] was filled with a loose dark grey clayey silt [11]. Ditch [F10] was oriented north-east to south-west and was interpreted as a part of a former field boundary also visible on historic mapping. Ditch [F10] also corresponded with a detected line of dipolar positive magnetic anomalies. A furrow was recorded cutting the natural [F3: <50mm deep]. The furrow was again oriented north-east to south-west and was filled with a light greyish yellow silty clay [4]. Above the furrows was a greyish brown silty clay topsoil [1: 0.25m deep].

Trench 5 (Figures 8, 11, 12)

6.6 This trench was 20m by 1.5m, and was located over a strong positive magnetic anomaly. The natural drift geology, a mottled yellow grey sandy clay [2], was

identified at a depth of 0.4m BGL. Cutting the natural [2], and coincident with the magnetic anomaly, was a probable furrow [F12: 2m long, 0.5m wide and 90mm deep]. Furrow F12 was oriented north-east to south-west and was filled with a dark greyish black silty clay [13] that contained common charcoal fragments. This deposit appeared to have been burnt *in situ* as evidenced by discolouration to the surrounding natural clay. The identified *in situ* burning is likely to account for the detected magnetic anomaly. Four further furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were again oriented north-east to south-west and were filled with a light greyish yellow silty clay [4]. The furrows accord with the detected magnetic trends. Above the furrows was a greyish brown silty clay topsoil [1: 0.25m deep].

Trench 6 (Figure 8)

6.7 This trench was 30m by 1.5m, and was located over a discreet positive magnetic anomaly. The natural drift geology, a mottled yellow brown sandy clay [2], was identified at a depth of between 0.15m and 0.4m BGL. Four furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were again oriented north-east to south-west and were filled with a light greyish yellow silty clay [4]. An area of modern disturbance was recorded coincident with the identified magnetic anomaly. Above the features was a greyish brown silty clay topsoil [1: 0.15m to 0.4m deep].

Trench 7 (Figures 8, 13, 14)

6.8 This trench was 30m by 1.5m, and was located over a pair of strong positive magnetic anomalies. The natural drift geology, a mottled yellow grey sandy clay [2], was identified at a depth of between 0.25m and 0.65m BGL. The variation in overburden is attributable to the variation in topography in this part of the area. The overburden was deepest at the eastern end of the trench, which was at the base of a slope. Cutting the natural [2] were two features. A ditch [F16: 1.5m long, 0.95m wide and 0.45m deep] was recorded oriented north-east to south-west. Ditch [F16] contained a primary fill of light yellowish grey silty clay [17: 0.6m wide and 0.16m deep] that contained 19th-century pottery fragments. Above fill [17] was a light yellowish brown silty clay [18: 0.95m wide and 0.29m deep]. Ditch [F16] was interpreted as a possible post-medieval field-boundary. A shallow inear scoop [F14: 1.3m long, 0.76m wide and 0.3m deep]was recorded adjacent and parallel with this, filled with a mottled orange yellow silt [15] with evidence for *in situ* burning that is again likely to account for the detected magnetic anomaly. This may also be related to the field boundary. Both the recorded features accord with the detected magnetic anomalies. Three further furrows were recorded cutting the natural [F3: <50mm deep]. The furrows were again oriented north-east to south-west and were filled with a light greyish yellow silty clay [4]. Above the furrows was a greyish brown silty clay topsoil [1: 0.25m to 0.65m deep].

7. The artefacts

Pottery assessment

Results

7.1 Six sherds (170g wt) were recovered from contexts [4] and [17]. The single fragment from furrow fill [4] is an unglazed medieval body sherd in a coarse sandy fabric, oxidised outside with a reduced core and inside surface. The remaining five sherds from context [17] are 19th-century yellow-glazed coarseware, all probably from the same vessel.

Recommendation

7.2 No further work is recommended.

Clay pipe assessment

Results

7.3 A piece of post-medieval clay tobacco pipe stem came from context [11]. There is no decoration or maker's stamps.

Recommendation

7.4 No further work is recommended.

8. The palaeoenvironmental evidence

8.1 A palaeoenvironmental assessment was carried out on bulk samples, taken from three burnt deposits provisionally dated to the medieval period. The samples were manually floated and sieved through a 500μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification using a Leica MZ7.5 stereomicroscope for waterlogged and charred botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classification follows Preston *et al.* (2002).

8.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990) and Hather (2000), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University.

8.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Petts & Gerrard 2006; Hall & Huntley 2007; Huntley 2010).

Results

8.4 The bulk samples comprised small fragments of charcoal, burnt coal, clinker/cinder, fire-cracked stones, burnt clay, charred heather remains and charred rhizomes, providing evidence of burning. Charred plant macrofossil remains were sparse, consisting of two small sedge nutlets and a grass seed in [15]. Small fragments of oak and birch charcoal were present in [6] and oak charcoal comprising evidence of well-developed growth rings was common in [13]. Charcoal was absent from [15]. Material for radiocarbon dating is available for the samples, although some of this material may be unsuitable due to long-lived species or insufficient weight of carbon. The results are presented in Table 1.2.

Discussion

8.5 The fragmentary nature of the material and absence of diagnostic remains provides little information about the origin of the features. The common occurrence of charred heather remains, particularly from deposit [15], and the presence of grass, sedge and birch remains provide possible evidence of a grassy heathland nearby.

Recommendations

8.6 No further analysis is required for the plant macrofossils due to their low numbers and poor preservation. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

9. The archaeological resource

9.1 Furrows, the remains of medieval or post-medieval ploughing, were recorded by the geophysical survey and in all the trenches.

9.2 Ditches were recorded in trenches 4 and 7. These related to post-medieval field boundaries visible on old mapping. Adjacent to one of these in Trench 7 was a linear scoop containing burnt material. *In situ* burning was also present in the base of two furrows. Strong magnetic anomalies in the geophysical survey reflected these. Other magnet anomalies of similar strength and character have been identified across the area which may also reflect burning.

9.3 A small assemblage of pot sherds was recovered from the archaeological features, indicating that they are likely to date from the post-medieval period.

9.4 The fragmentary nature of the palaeoenvironmental sample material and absence of diagnostic remains provides little information about the origin of the burning. The common occurrence of charred heather remains, particularly from deposit [15], and the presence of grass, sedge and birch remains provide possible evidence of a grassy heathland nearby.

10. Impact assessment

10.1 The proposed development has the potential to remove or truncate an archaeological resource, comprising the remains of furrows and probable post-medieval burnt deposits. A sample of these have been excavated and recorded and the magnitude of the impact is regarded as limited.

11. Recommendations

11.1 No archaeological resource was identified which requires preservation *in situ*.

11.2 No further archaeological works are recommended.

12. Sources

BGS 2014 *Geology of Britain Viewer* online. Available from; http://mapapps.bgs.ac.uk/geologyofbritain/home.html

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Appendix 1: Data tables

Table 1.1: Context data

The • symbols in the columns at the right indicate the presence of artefacts of the following types: P pottery, B bone, M metals, F flint, I industrial residues, G glass, C ceramic building material, O other materials.

No	Area	Description	P	B	M	F	I	G	C	O
1	All	Topsoil								
2	All	Natural								
F3	All	Furrow cut (general)								
4	All	Furrow fill (general)	•							
F5	Tr3	Furrow cut								
6	Tr3	Fill F5								
7	Tr3	Fill F5								
F8	Tr4	Ditch cut								
9	Tr4	Fill F8								
F10	Tr4	Ditch cut								
11	Tr4	Fill F10								•
F12	Tr5	Furrow cut								
13	Tr5	Fill F12								
F14	Tr7	Feature cut								
15	Tr7	Fill F14								
F16	Tr7	Ditch cut								
17	Tr7	Fill F16	•							
18	Tr7	Fill F16								

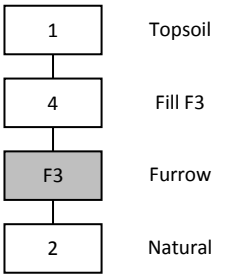
Table 1.2: Macrofossil results

Sample		**1**	**2**	**3**
Context		**6**	**13**	**15**
Feature number		**5**	**12**	**14**
Feature		**ditch**	**ditch**	**?pit**
Material available for radiocarbon dating		(✓)	(✓)	(✓)
Volume processed (l)		18	15	18
Volume of flot (ml)		250	1200	300
Residue contents				
Burnt clay		++++	-	-
Burnt / cracked stones		++	+++	-
Charcoal		-	+++	-
Coal		-	+++	-
Flot matrix				
Charcoal		+	+++	-
Clinker / cinder		++	+++	+
Coal		++	++	+
Heather leaves / flower heads (charred)		-	-	+
Heather twigs (charred)		++	++	+++
Monocot stems (charred)		-	-	+
Rhizomes / tubers (charred)		+	-	+++
Roots (modern)		+++	++	+++
Uncharred seeds		-	+	-
Charred remains (total count)				
(w) *Carex* sp (Sedges)	trigonous nutlet	-	-	2
(x) Poaceae undiff. <1mm (Grass family)	caryopsis	-	-	1
Identified charcoal (✓presence)				
Betula sp (Birches)		✓	-	-
Quercus sp (Oaks)		✓	✓	-

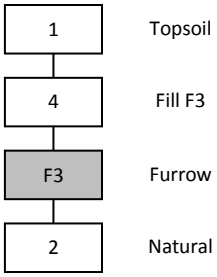
[w-wet/damp ground; x-wide niche. (+): trace; +: rare; ++: occasional; +++: common; ++++: abundant
(✓) may be unsuitable for dating due to size or species]

Appendix 2: Stratigraphic matrices

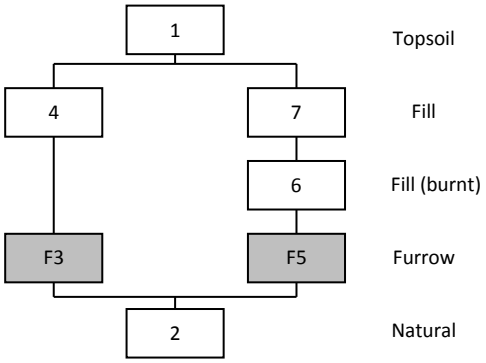
Trench 1



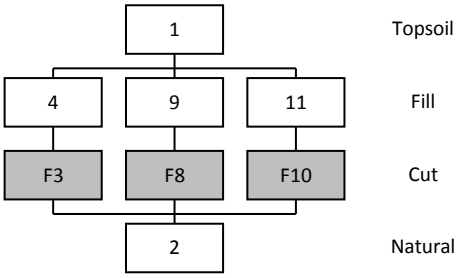
Trench 2



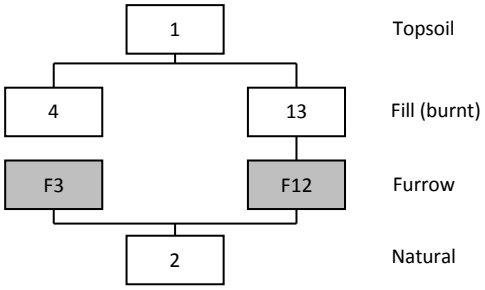
Trench 3



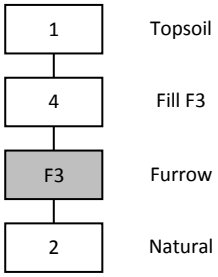
Trench 4



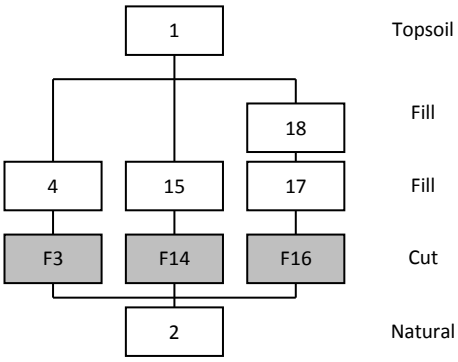
Trench 5



Trench 6



Trench 7



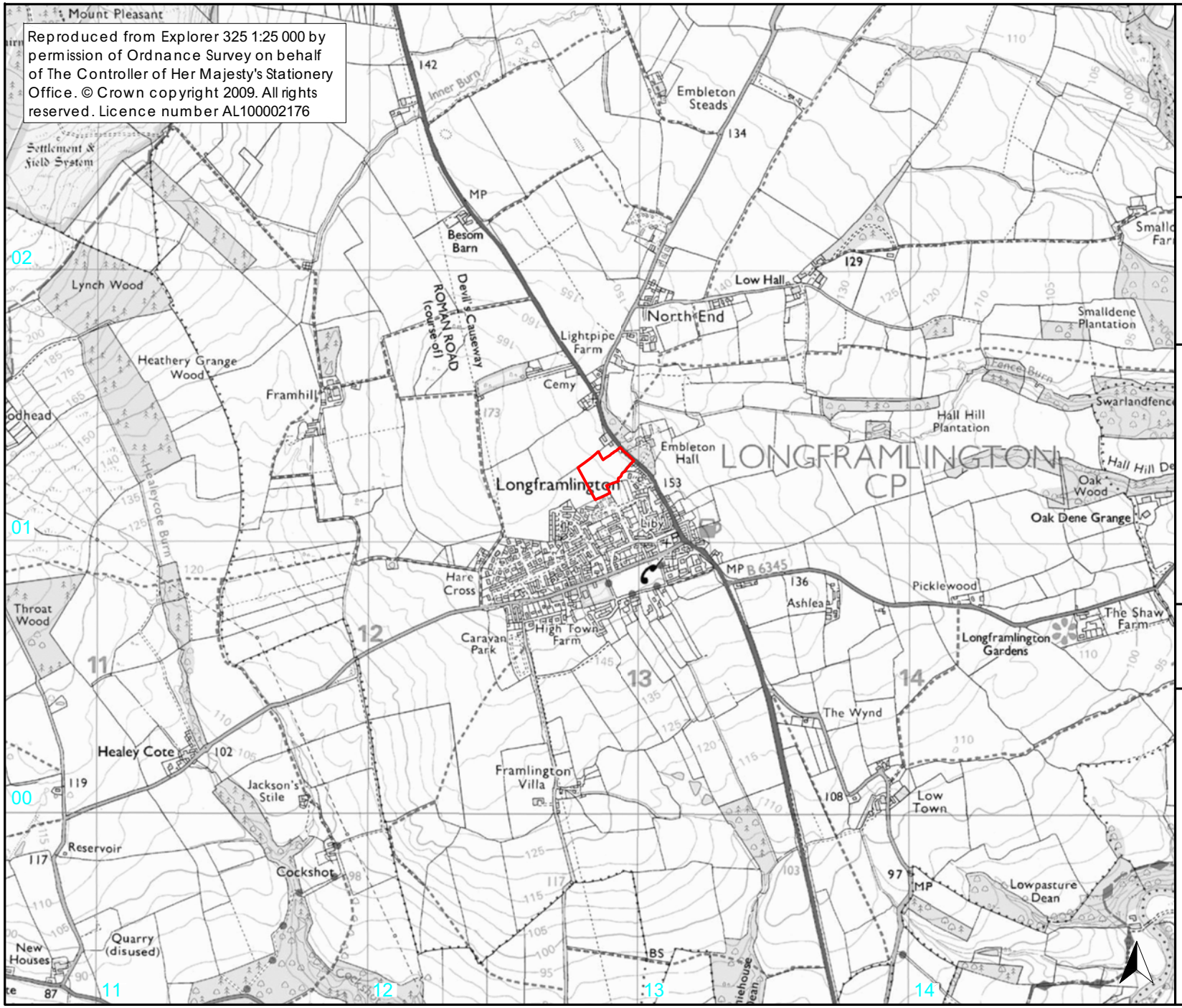


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Figure 1: Site location

0 1km
scale 1:20 000 for A4 plot

proposed development area

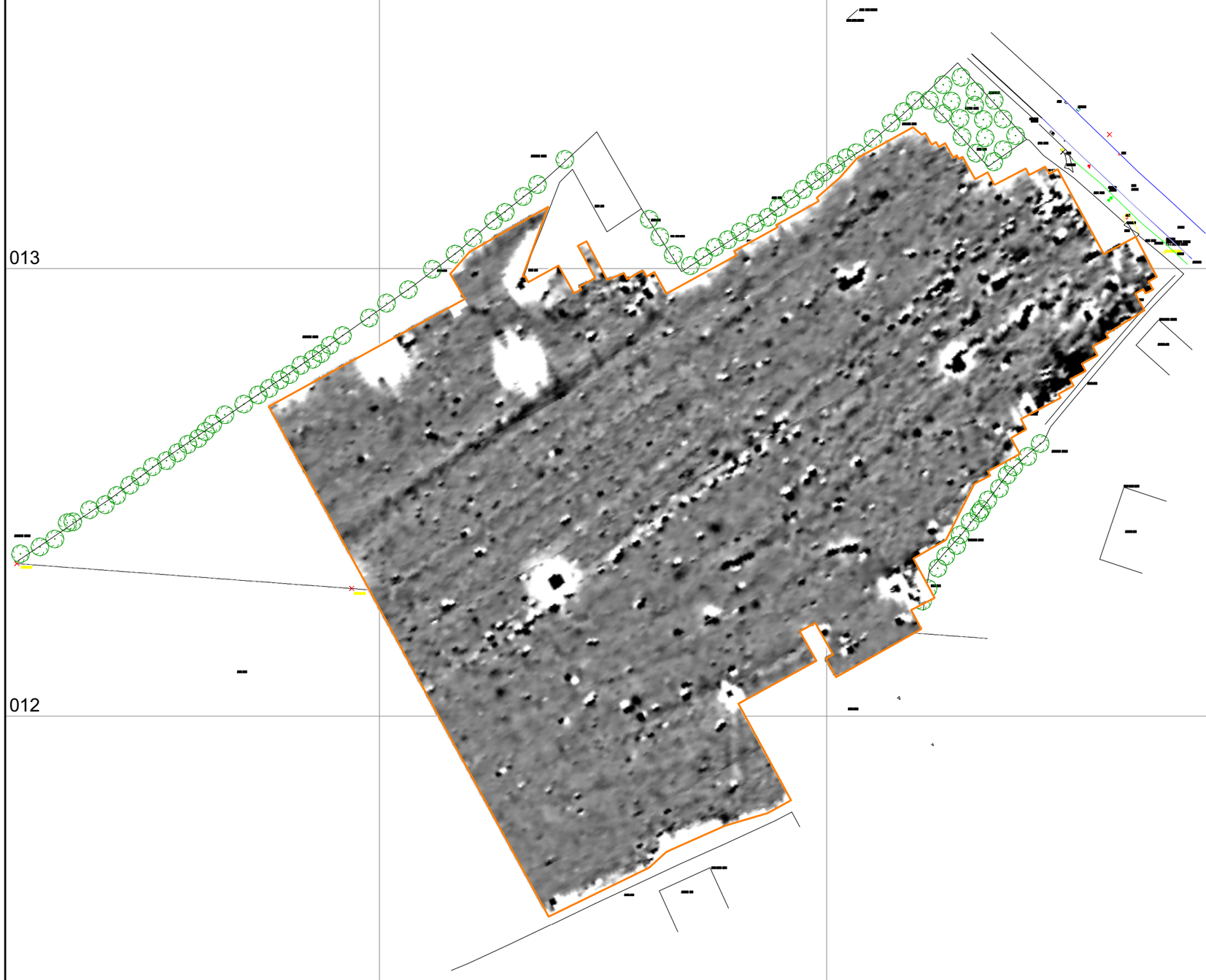

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Figure 2: Geophysical survey

0 50m
scale 1:1000 for A3 plot

magnetic survey

-5 nT 5

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Figure 3: Geophysical interpretation

0 50m
scale 1:1000 for A3 plot

- magnetic survey
- dipolar magnetic anomaly
- positive magnetic anomaly
- negative magnetic anomaly

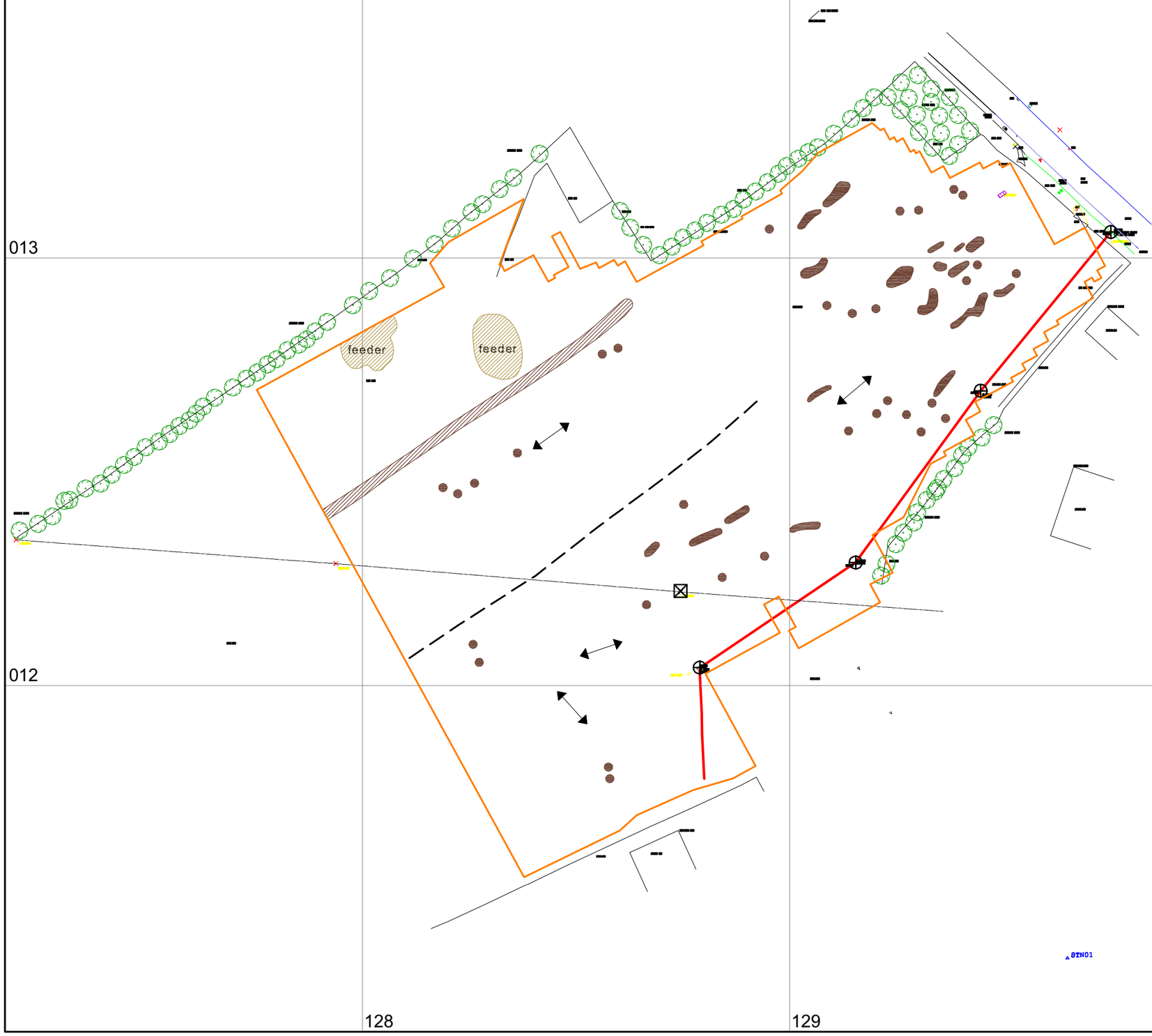

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Figure 4: Archaeological interpretation

0 50m
scale 1:1000 for A3 plot

- magnetic survey
- possible archaeological feature/ *in situ* burning
- area of feeders
- course of drain
- ridge and furrow
- inspection cover
- former field boundary
- brick water trough

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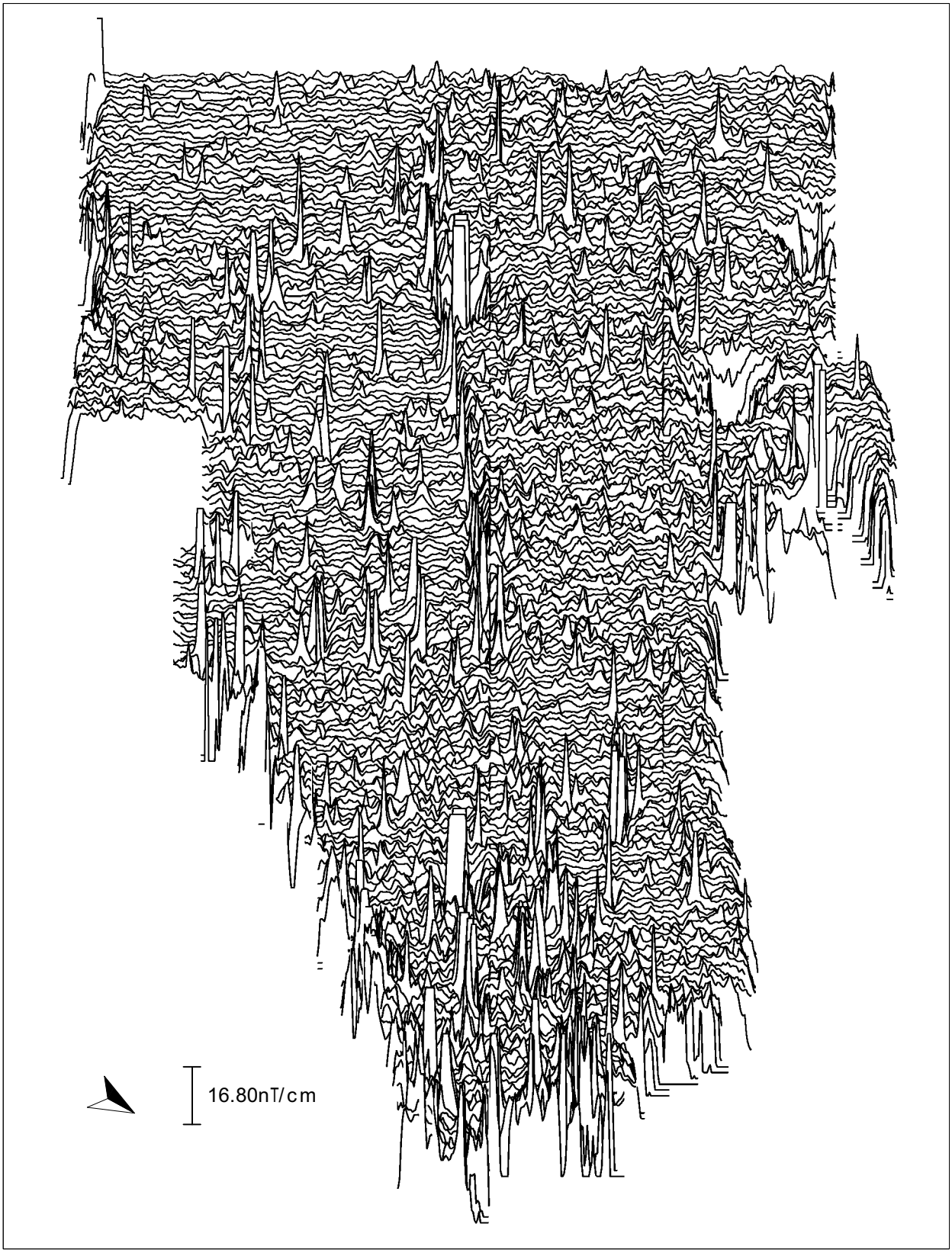
Figure 5: Trace plot of geomagnetic data



0 50m
scale 1:1000 for A4 plot

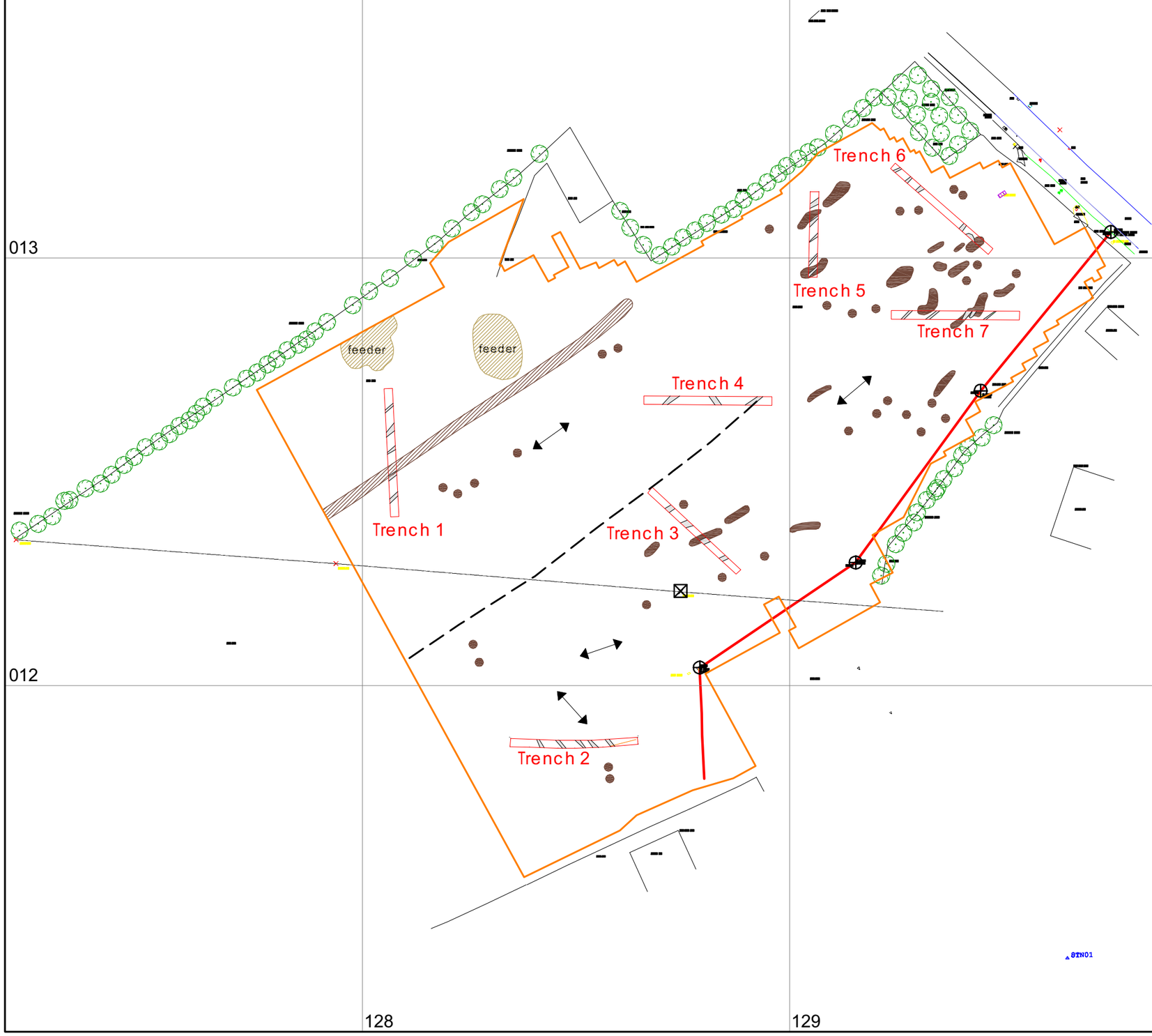


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Figure 6: Trench location

0 50m
scale 1:1000 for A3 plot

magnetic survey
- magnetic survey
- possible archaeological feature/ *in situ* burning
- course of drain
- ridge and furrow
- inspection cover
- former field boundary
- brick water trough

evaluation
- trench
- feature

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extent of excavation
furrow
drain

0 4m
scale 1:80 for A3 plot

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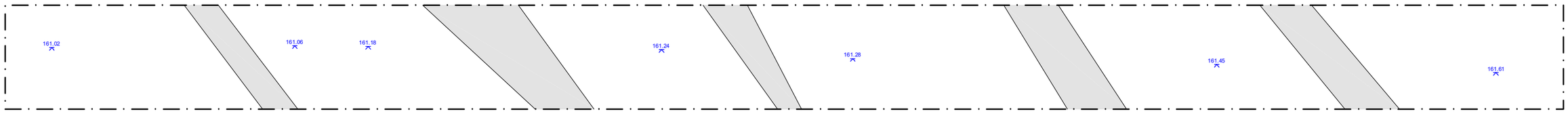
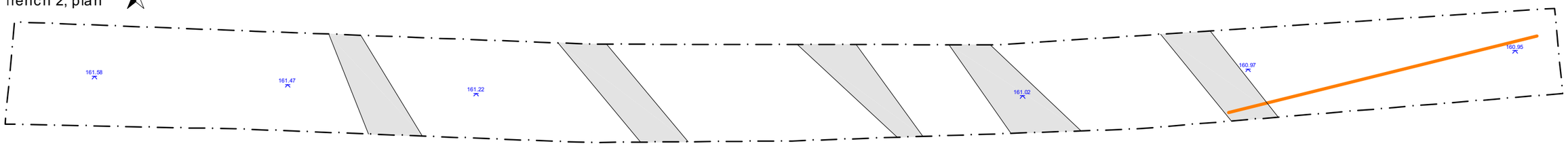
Figure 7: Trenches 1 - 4, plans and sections

Trench 1, plan

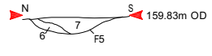


Trench 2, plan

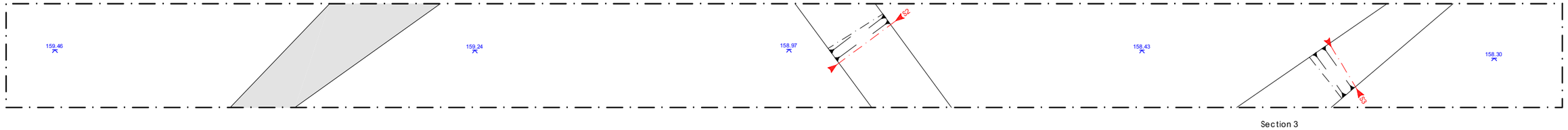


Trench 3, plan

Section 1

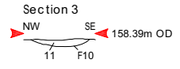


Trench 4, plan



Section 2

Section 3



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extent of excavation

furrow

0 4m
scale 1:80 for A3 plot

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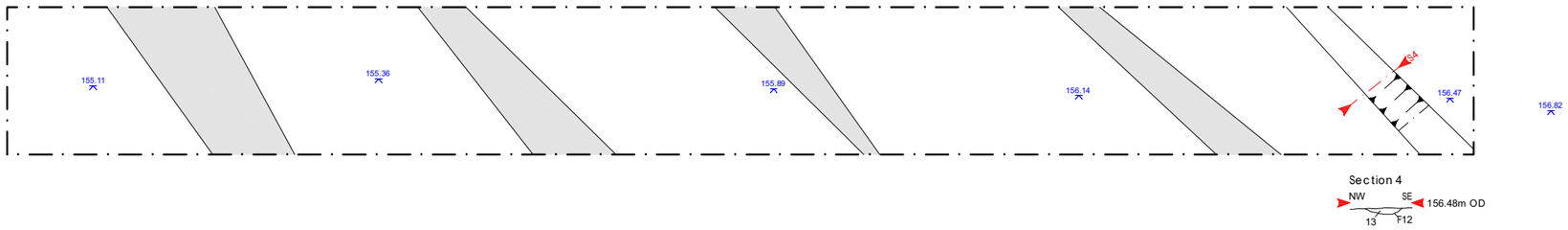
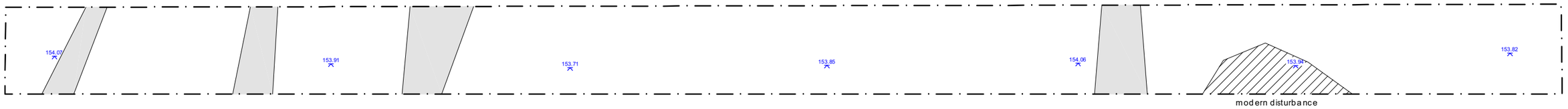
Figure 8: Trenches 5 - 7, plans and sections

Trench 5, plan



Trench 6, plan



Trench 7, plan

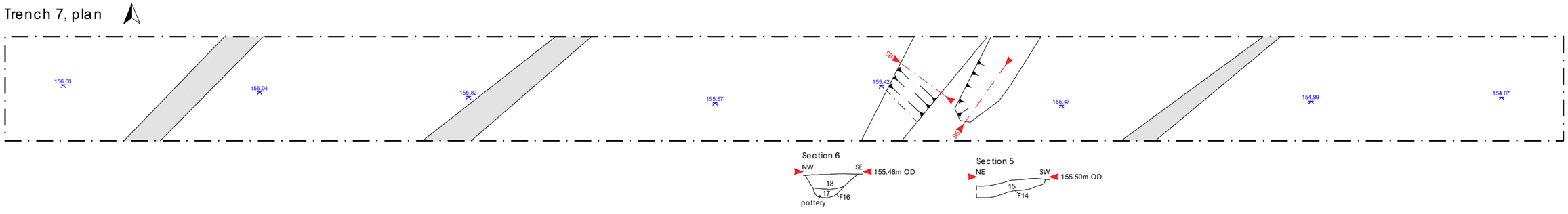


Figure 9: Trench 3, furrow [F5], looking east

Figure 10: Trench 3, ditch [F8], looking south-east

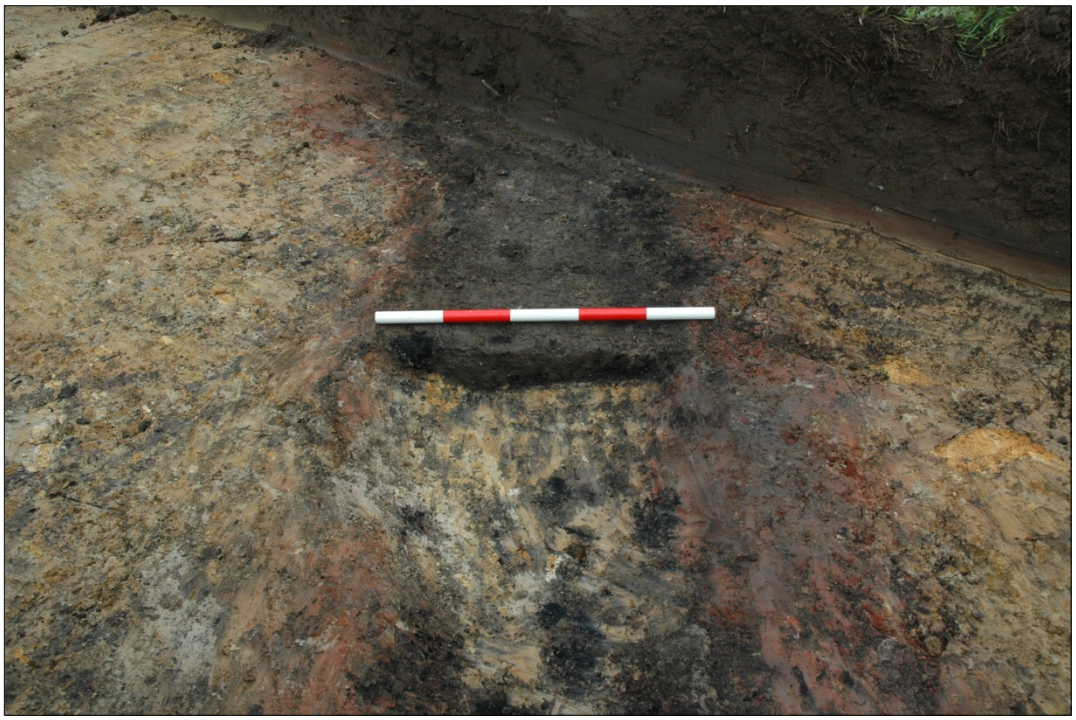


Figure 11: Trench 5, furrow [F12], looking north-east

Figure 12: Trench 5, looking north with [F12]

Figure 13: Trench 7, feature [F14], looking south-east

Figure 14: Trench 7, ditch [F16], looking north-east