ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
Thoroton and Croft Estate

Ulnaby Hall Farm
High Coniscliffe
Darlington

geophysical survey

report 5328
July 2020

Durham University

Contents

Figures

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1. Summary

The project

1.1 This report presents the results of geophysical surveys conducted in advance of proposed development at Ulnaby Hall Farm, High Coniscliffe, Darlington. The works comprised 0.5ha of magnetometer and subsequent earth-electrical resistance survey.

1.2 The works were commissioned by Thoroton and Croft Estate and conducted by Archaeological Services Durham University.

Results

1.3 The geophysical surveys have largely confirmed the results of the topographical survey of the site, particularly in the identification of two post-medieval field boundaries, broadly parallel, aligned approximately north/south in the central and eastern parts of the area. A small hollow at the northern end of the central boundary probably reflects a deliberately infilled pit, possibly a former spring or well.

1.4 No evidence of former buildings, posited in the eastern part of the area, has been identified.

1.5 The possible remains of a soil- and/or stone-filled ditch, perhaps marking a former boundary of Ulnaby Hall's gardens, has been identified in the central part of the area, although there is no existing topographic evidence of this.

1.6 The nature and age of the earthwork bank in the west of the survey area remains undetermined, although the geophysical data is indicative of at least a probable partial stone bank.

1.7 An area of disturbed ground, probably related to former agricultural buildings (pig huts), has been identified in the western part of the area, including probable drains.

1.8 An area of disturbed ground, possibly representing gravel and other dumped material associated with the construction of the barn to the north-east, has been identified in the north of the area.

1.9 Features related to the existing septic tank have been detected, including the tank itself and at least three associated drains.

2. Project background

Location (Figure 1)

2.1 The proposed development area (PDA) was located at Ulnaby Hall Farm, High Coniscliffe, Darlington (NGR centre: NZ 2262 1713). The buildings of Ulnaby Hall Farm and shop lie to the north, with Ulnaby Lane to the west, with agricultural land beyond. To the east and south are pasture fields.

2.2 Magnetometer and subsequent earth-electrical resistance surveys were undertaken in a single 0.5ha land parcel. The survey area lay wholly within the deserted medieval village of Ulnaby, which is a scheduled ancient monument (SAM, List entry no. 1008972).

Development proposal

2.3 The construction of a new septic tank and associated soakaway is proposed.

Objective

2.4 The aim of the surveys was to assess the nature and extent of any sub-surface features of potential archaeological significance within the survey area, 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.

2.5 The regional research framework *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (Petts & Gerrard 2006) contains an agenda for archaeological research in the region, which is incorporated into regional planning policy implementation. In this instance, the scheme of works was designed to address the following later medieval research priorities: MDi: Settlement, MDii: Landscape.

Methods statement

2.6 The surveys have been undertaken in accordance with instructions from the client, a methods statement provided by Archaeological Services Durham University (reference DH20.120) and national standards and guidance (see para. 5.1 below).

2.7 Since the PDA lay within an SAM the surveys were undertaken in accordance with a licence granted by Historic England under Section 42 of the Ancient Monuments and Areas Act 1979 (as amended by the National Heritage Act 1983). A Historic England Geophysical Survey Database Questionnaire is included as an Appendix to this report.

Dates

2.8 Fieldwork was undertaken on 26th June 2020. This report was prepared for July 2020.

Personnel

2.9 Fieldwork and geophysical data processing was conducted by Richie Villis. This report was prepared by Richie Villis and Rebekah Walsh, with illustrations by Janine Watson. This report was edited by Peter Carne.

Archive/OASIS

2.10 The site code is **DUH20**, for **D**arlington, **U**lnaby **H**all Farm 20**20**. The survey archive will be retained at Archaeological Services Durham University and a copy supplied on CD to the client for deposition with the project archive 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 **archaeol3-399345**.

Acknowledgements

2.11 Archaeological Services Durham University is grateful for the assistance of Mr Ian Dods, the tenant farmer, in facilitating this scheme of works.

3. Historical and archaeological background

3.1 The following information is taken from a search of the County Durham Historic Environment Record (HER) within a 1km radius of the PDA. Primary Reference Numbers (PRN) are shown in brackets below.

3.2 The PDA area lies within the Scheduled Monument of the deserted medieval village of Ulnaby (List no. 1008972; H1561). A detailed archaeological survey of the earthworks at Ulnaby was conducted in 2007 by Historic England (E31235; Grindey *et al* 2008); the results of that assessment are summarised here, along with reference to the HER. A programme of geophysical survey and trial trench excavation was subsequently undertaken in 2008 by Time Team, in the fields to the east and north-east of the PDA, which generally confirmed the findings of the earthworks survey and provided approximate dates of occupation (E33372; Wessex Archaeology 2008).

3.3 The earliest documentary evidence of a settlement at Ulnaby dates to the 12th century, when it was owned by an early founding member of the Greystoke family. The manor changed hands frequently over the years, before becoming part of the Neville estates in the 14th century. After the 'Rising of the North' in 1569, the Earl of Westmoreland, patriarch of the Neville family, was attainted for High Treason and his lands redistributed. A second period of swift changes in ownership followed, until the land was finally inherited in 1823 by Reverend Robert Croft and Thomas Thoroton, in right of their wives, the two co-heiresses of Bowes.

3.4 The main area of earthworks lies to the east of the current building complex. Two possible tofts (a house and accompanying yard or garden) were located in the centre of the village, which were originally thought to pre-date the main settlement. However, excavation indicated that they were more likely to be contemporary, and may have had a communal function. The main settlement was planned as a 2-row village with a green in the centre. It probably originated in the late 13th to early 14th century and may coincide with the manor passing into the hands of the Nevilles. The village was formed of a north row and south row of tofts, with a manorial enclosure to the south-west. This complex included a fishpond, dovecote and orchards, though some of these may have been later additions. A road passed through the centre of the village. The village underwent various phases of expansion and abandonment over the next two to three centuries, and by 1629 only 3 cottages remained.

3.5 The current Ulnaby Hall was built *c.*1600, and is Grade II listed (H34528; List no. 1121188). It probably replaced an earlier medieval manor house (H1562; H1563), but may still have used the fishpond and other features associated with it. The 17th century garden walls to the front of Ulnaby Hall are also Grade II listed in their own right (H34529; List no. 1121189), as are the walls, farm buildings and smithy to the north-east of the hall (H36631; List no. 1115489). The road was diverted to bypass the village at some point in the 17th century, which may reflect the decline of Ulnaby in size and in status. By 1855, only one medieval building was still standing, which was later replaced by 19th-century cottages.

3.6 Earthworks relating to two different systems of ridge and furrow cultivation can be seen in fields to the north of the village.

3.7 The survey area lies in the south-western part of the Scheduled Monument, in the field immediately west of the original manorial enclosure. The field is titled 'Garth' on an 1841 tithe map, meaning enclosed garden, yard or paddock. A sycamore tree stands in the north-eastern corner of the field, which is also marked on the 1855 1st Edition Ordnance Survey (OS) map.

3.8 Various earthworks survive within the field, including a plateau forming a probable garden terrace. This is precisely aligned with the south frontage of the Hall, and may therefore be associated. This is also the location of the sycamore tree mentioned above, which may also be contemporary. A curvilinear bank along the western side of the field could denote one side of the original medieval route through the village. Remains of two boundaries and two possible buildings were also recorded in the field during the survey; these are likely to be post-medieval in date.

3.9 Whilst there is no evidence of earlier occupation from within the PDA itself, there is evidence that the wider area was exploited in the prehistoric and Roman periods; most notably an early to middle Bronze Age copper alloy awl was recovered by metal detector approximately 575m south-west of the PDA (H3278). A field approximately 850m west of the PDA was walked as part of the Durham Archaeological Survey between 1983 and 1987 (E60421); Roman pottery, post-medieval pottery, tile, clay pipe and several pieces of worked flint were recovered.

3.10 The HER also lists a late 19th century milepost (H36272), approximately 600m east of the PDA.

4. Landuse, topography and geology

4.1 At the time of survey the PDA comprised one field of pasture. Three cows were removed prior to the start of survey. Hay filled cattle feeders stood in the north of the area, in between the metal five-bar gate providing access to the field in the north. A mature sycamore tree, shown on historic OS editions, stood in the north-east corner of the area. An immature tree, protected by wooden slat fencing, stood in the south-west of the area. The field was bounded to the north and east by dry-stone walls. To the north-east was a large barn. To the south was a stream, Ulnaby Beck, and a post and wire fence, with a metal five-bar gate and dry-stone wall in the south-west. To the west was a post and wire fence and mature hedgerow.

4.2 The area sloped from an elevation of around 69m OD in the north down to about 65m OD in the south. The Ulnaby Beck lay immediately to the south, with the Cocker Beck approximately 380m to the north-east.

4.3 The underlying solid geology of the area comprises Permian dolostone of the Ford Formation, overlain by Devensian till (British Geological Survey 2020).

5. Geophysical survey

Standards

5.1 The surveys and reporting were conducted in accordance with the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for archaeological geophysical survey* (2014); the *EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider* (Schmidt *et al*. 2015); 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 would be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) could also be present.

5.4 Given the anticipated nature and depth of targets, and the non-igneous geological environment of the study area, a magnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of 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.

5.5 Given the proximity of buildings and services and given the likely presence of wall-footings, an electrical resistance survey was also considered appropriate. Earth electrical resistance survey can be particularly useful for mapping stone and brick features. When a small electrical current is injected through the earth it encounters resistance which can be measured. Since resistance is linked to moisture content and porosity, stone and brick features will give relatively high resistance values while soil-filled features, which retain more moisture, will provide relatively low resistance values.

Field methods

5.6 A 20m grid was established across the survey area and related to the OS National Grid using a Leica GS15 global navigation satellite system (GNSS) with real-time kinematic (RTK) corrections typically providing 10mm accuracy.

5.7 Magnetic gradient measurements were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 20m grid units. The instrument sensitivity was effectively 0.03nT, the sample interval was 0.25m and the traverse interval was 1m, thus providing 1,600 sample measurements per 20m grid unit.

5.8 Measurements of earth electrical resistance were determined using Geoscan RM15D Advanced resistance meters with MPX15 multiplexers and a mobile twin probe separation of 0.5m. A zig-zag traverse scheme was employed and data were logged in 20m grid units. The instrument sensitivity was 0.1ohm, the sample interval was 0.5m and the traverse interval was 1m, thus providing 800 sample measurements per 20m grid unit.

5.9 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

5.10 Geoplot v.4 software was used to process the geophysical data and to produce both continuous tone greyscale images and a trace plot (magnetic only) of the raw (minimally processed) data. Plots of filtered data are also provided. The greyscale images and trace plots are presented in Figures 2-5; the interpretations are provided in Figures 6-7. In the greyscale images, positive magnetic/high resistance anomalies are displayed as dark grey and negative magnetic/low resistance anomalies as light grey. Palette bars relate the greyscale intensities to anomaly values in nanoTesla/ohm.

5.11 The following basic processing functions have been applied to the magnetometer 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
de-spike	locates and suppresses iron spikes in gradiometer data
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

5.12 The following filter has been applied to the magnetic data (Figure 2b):

low pass filter (applied with Gaussian weighting) to remove high frequency, small-scale spatial detail, such as some near-surface ferrous debris; for enhancing larger weak features

5.13 The following basic processing functions have been applied to the resistance data:

clip clips data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic

add adds or subtracts a positive or negative constant value to defined blocks of data; used to reduce discontinuity at grid edges

de-spike locates and suppresses spikes in data due to poor contact resistance

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

5.14 The following filter has been applied to the resistance data (Figure 4b):

low pass filter (applied with Gaussian weighting) to remove high frequency, small-scale spatial detail; for enhancing larger weak features

Interpretation: anomaly types

5.15 Colour-coded geophysical interpretation plans are provided. Three types of magnetic 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

5.16 Two types of resistance anomaly have been distinguished in the data:

high resistance regions of anomalously high resistance, which may reflect foundations, tracks, paths and other concentrations of stone or brick rubble

low resistance	regions of anomalously low resistance, which may be associated with soil-filled features such as pits and ditches

Interpretation: features

5.17 A colour-coded archaeological interpretation plan is provided. For ease of reference, anomaly labels shown bold in the text below (eg **1**, **2**, etc) are also shown on the archaeological interpretation plan.

5.18 A prominent linear magnetic anomalies has been detected, aligned broadly north/south, in the centre of the survey area. This corresponds to a part of a very well defined very high resistance anomaly; these anomalies reflect a linear earthwork in the field. The English Heritage topographic survey identified this earthwork as *Boundary C*, a post-medieval field boundary (**1**). The relatively diffuse, weak dipolar magnetic anomaly, combined with a high earth electrical resistance anomaly is indicative of a stone boundary, probably tumbledown. Occasional stronger dipolar magnetic anomalies may indicate sporadic metallic components. The strength of the resistance anomaly probably indicates a very near surface collection of stone. The anomalies detected here, and interpreted as probable post-medieval boundaries, are also virtually indistinguishable in their geophysical properties from a brick service. Given the location of the current septic tank, it is possible that these anomalies could reflect an associated service or drain, laid along the line of the previous boundary.

5.19 A second, parallel, similar magnetic anomaly has been detected to the east of the above. This is broader and more diffuse, and does not correspond to a similarly clearly defined resistance anomaly. In this instance a diffuse high resistance anomaly, with a parallel low resistance anomaly, have been detected, along with occasional patches of higher resistance anomalies. All of these correspond roughly to topographic features recorded in the English Heritage survey identified as *Boundary D*. This corresponds to a post-medieval field boundary also shown on historic OS editions (**2**). The diffuse nature of the magnetic anomaly, combined with the relatively complex surviving earthworks and assorted resistance anomalies is indicative of a probable former bank and ditch boundary with largely removed tumbled stone.

5.20 A relatively large and strong dipolar magnetic anomaly has been detected at the northern end of (**1**). This almost exactly corresponds to a sunken-feature identified in the topographical survey, approximately 5m in diameter. This almost certainly reflects a deliberately infilled hollow (**3**), such as a former spring or possibly a former well.

5.21 The vast majority of geophysical anomalies detected here correspond to topographic features identified in the English Heritage survey. A notable exception to this is a relatively narrow, curvilinear positive magnetic anomaly detected in the northern part of the area. This could reflect a soil-filled ditch (**4**). The western part of this roughly corresponds to a relatively well-defined high resistance anomaly, which also does not correspond to any surviving earthworks, and could reflect a stone fill. If the line of this feature was extrapolated to the north and the east it broadly aligns with the hall, and could represent an earlier garden boundary to the hall, enclosing the garden terrace on which the sycamore stands.

5.22 A broad band of dipolar magnetic anomalies, forming a rounded right-angle, has been detected in the north-eastern corner of the area. The south-east end of this corresponds to a feature identified in the topographic survey as a 'modern dump'. This broadly corresponds with both higher and lower resistance anomalies, which is indicative of a mixed matrix of material with differing water-draining properties. These anomalies almost certainly represent a relatively recently disturbed area of ground (**5**), possibly consisting of gravel and other dumped deposits. This feature broadly leads from the field-gate to the barn, and it is probable that this is a track or other feature related to the barn's construction. This feature can be seen as a parch-mark on Google Earth aerial photographs of the area.

5.23 Rectilinear high and low resistance anomalies have been detected in the south-east corner of the area. These are broadly contiguous with a diffuse, very weak positive magnetic anomaly and correspond to earthwork features identified as possible buildings and a trackway to the immediate west of the Manorial Enclosure in the English Heritage survey. The anomalies detected here are indicative of earthen banks (**6**), which could represent landscaping associated with post-medieval buildings, although there is no evidence in the geophysical data of structural remains in this region.

5.24 A broad band of weak dipolar magnetic anomalies and broadly corresponding weak high resistance anomaly broadly correspond to the earthwork feature identified as a garden terrace in the north-east corner of the area (**7**). A small unsurveyed region within this corresponds to the large sycamore tree.

5.25 Amorphous earthworks in the northern part of the area corresponding to dipolar magnetic anomalies to the west of the gate are unlikely to be of archaeological significance, and almost certainly reflect small amounts of dumped material (**8**), perhaps associated with the landscaping and remodelling of the boundary and farm track to the north.

5.26 An earth bank in the west of the survey area (**9**) can be distinguished in the geophysical data as a diffuse alignment of dipolar magnetic anomalies and broadly corresponding high resistance anomaly. This bank has been identified in the topographic survey as a possible western extent of the former medieval routeway into the village. The geophysical data is indicative of a stone and earth bank, although the exact age and provenance of this remains uncertain.

5.27 A roughly square region of anomalously high resistance and corresponding weak magnetic 'texture' has been detected in the western part of the area. This almost certainly reflects an area of ground disturbance (**10**) probably associated with a former pig hut shown on historic photographs of the area and indicated to the survey team by Mr Dodds, the farmer. Linear high resistance anomalies associated with this probably reflect related drains.

5.28 A high concentration of dipolar magnetic anomalies has been detected in the south-west corner of the area; the anomalously low resistance detected here probably corresponds to a deposit of free-draining gravel or other material. This broadly defines a small area enclosed by a former field boundary (**11**) shown on historic OS editions.

5.29 Magnetic and resistance anomalies have been detected reflecting the existing septic tank and inspection covers in the south of the area, and at least three associated drains (**12**).

5.30 An intense dipolar magnetic anomaly has been detected in the north-east corner of the area, within a related region of anomalously very low resistance. These correspond to a boggy area covered with hay and two steel-constructed animal feeders (**13**).

5.31 Intense dipolar magnetic anomalies detected in the north-east of the area correspond to the adjacent barn and the metal field gate.

6. Conclusions

6.1 Approximately 0.5ha of magnetometer and earth-electrical resistance survey was undertaken on land at Ulnaby Hall Farm, High Coniscliffe, Darlington prior to the proposed re-siting of a septic tank and associated soak-away.

6.2 The geophysical surveys have confirmed the results of the topographical survey of the site, in regards to two post-medieval field boundaries, broadly parallel, aligned approximately north/south in the central and eastern parts of the area. A small hollow at the northern end of the central boundary probably reflects a deliberately infilled pit, possibly a former spring or well.

6.3 No evidence of former buildings, posited in the eastern part of the area, has been identified.

6.4 The possible remains of a soil- and/or stone-filled ditch, perhaps marking a former boundary of Ulnaby Hall's gardens, has been identified in the central part of the area, although there is no existing topographic evidence of this.

6.5 The nature and age of the earthwork bank in the west of the survey area remains undetermined, although the geophysical data is indicative of at least a probable partial stone bank.

6.6 An area of disturbed ground probably related to former agricultural buildings (pig huts) has been identified in the western part of the area, including probable drains.

6.7 An area of disturbed ground, possibly representing gravel and other dumped material associated with the construction of the barn to the north-east, has been identified in the north of the area.

6.8 Features related to the existing septic tank have been detected, including the tank itself and at least three associated drains.

7. Sources

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Websites

www.bgs.ac.uk – British Geological Survey, accessed 17/06/2020

Appendix: Geophysical Survey Summary Questionnaire

Historic England

Historic England Geophysical Survey Summary Questionnaire

Survey Details

Name of Site: Ulnaby Hall Farm

County: Durham

NGR Grid Reference: NGR: NZ 2262 1713

Start Date: 26 June 2020 **End Date:** 20 July 2020

Geology at site (Drift and Solid):
Ford Formation (Permian dolostone), overlain by till (Devensian diamicton).

Known archaeological Sites/Monuments covered by the survey
Scheduled Monument: Deserted medieval village of Ulnaby (HE List Entry no. 1008972)

Archaeological Sites/Monument types detected by survey
Post-medieval field boundaries
Possible spring or well
Possible 17th-century garden features

Surveyor: Archaeological Services Durham University

Name of Client, if any: Thoroton and Croft Estate

Purpose of Survey: To support proposed planning application for new septic tank and associated soakwaway

Location of:
a) Primary archive, i.e. raw data, electronic archive etc:
Archaeological Services Durham University

b) Full Report:
Durham County Council HER
Historic England (North East Office, Newcastle)
Historic England (Geophysics Section, Portsmouth)
OASIS ref: **archaeol3-399345**
Archaeological Services Durham University

Historic England

Technical Details

Type of Survey: Magnetometer

Area Surveyed: 0.5ha

Traverse Separation, if regular: 1m **Reading/Sample Interval:** 0.25m

Type, Make and model of Instrumentation: Bartington Grad601-2 fluxgate gradiometer

Land use at the time of the survey: Grassland – pasture

Type of Survey: Resistance

Area Surveyed, if applicable: 0.5ha

Traverse Separation, if regular: 1m **Reading/Sample Interval:** 0.5m

Type, Make and model of Instrumentation: Geoscan RM15 & MPX15

Probe configuration: Twin

Probe Spacing: 0.5m

Land use at the time of the survey: Grassland – pasture

Additional Remarks: None

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Figure 1: Site location

site boundary

0 1km
scale 1:20 000 for A4 plot

A

B

172

171

226

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Figure 2: Magnetometer survey
(unfiltered A, filtered B)

0 50m
scale 1:1000 for A3 plot

site boundary

magnetometer survey

-4 nT 6

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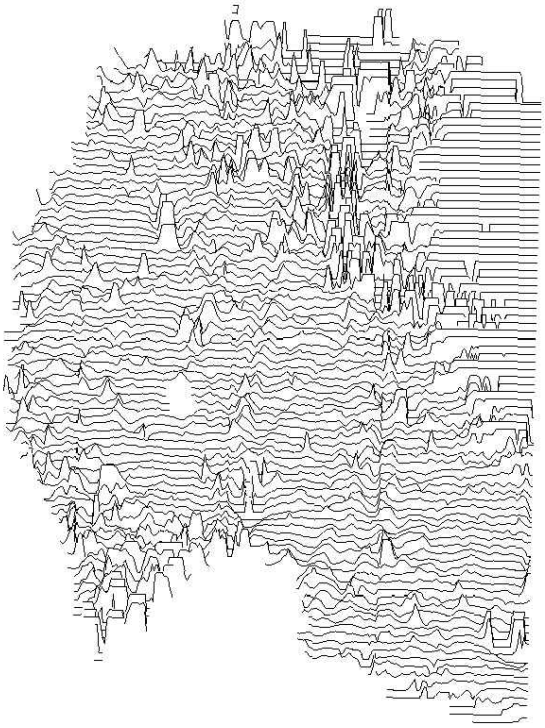
Figure 3: Trace plot of magnetometer data



40.00nT/cm

0 50m
scale 1:1000 for A4 plot

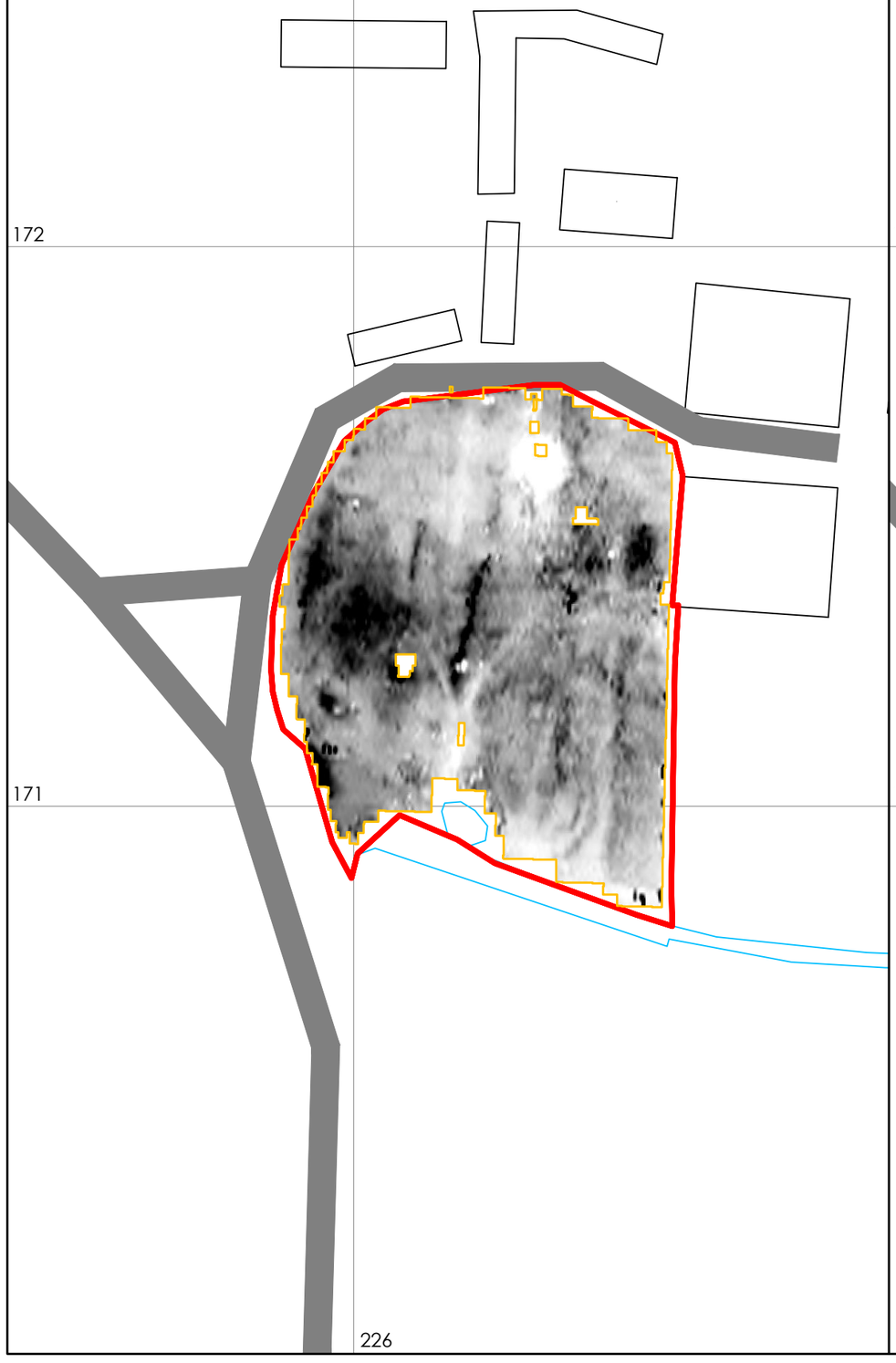
A

B

172

171

226



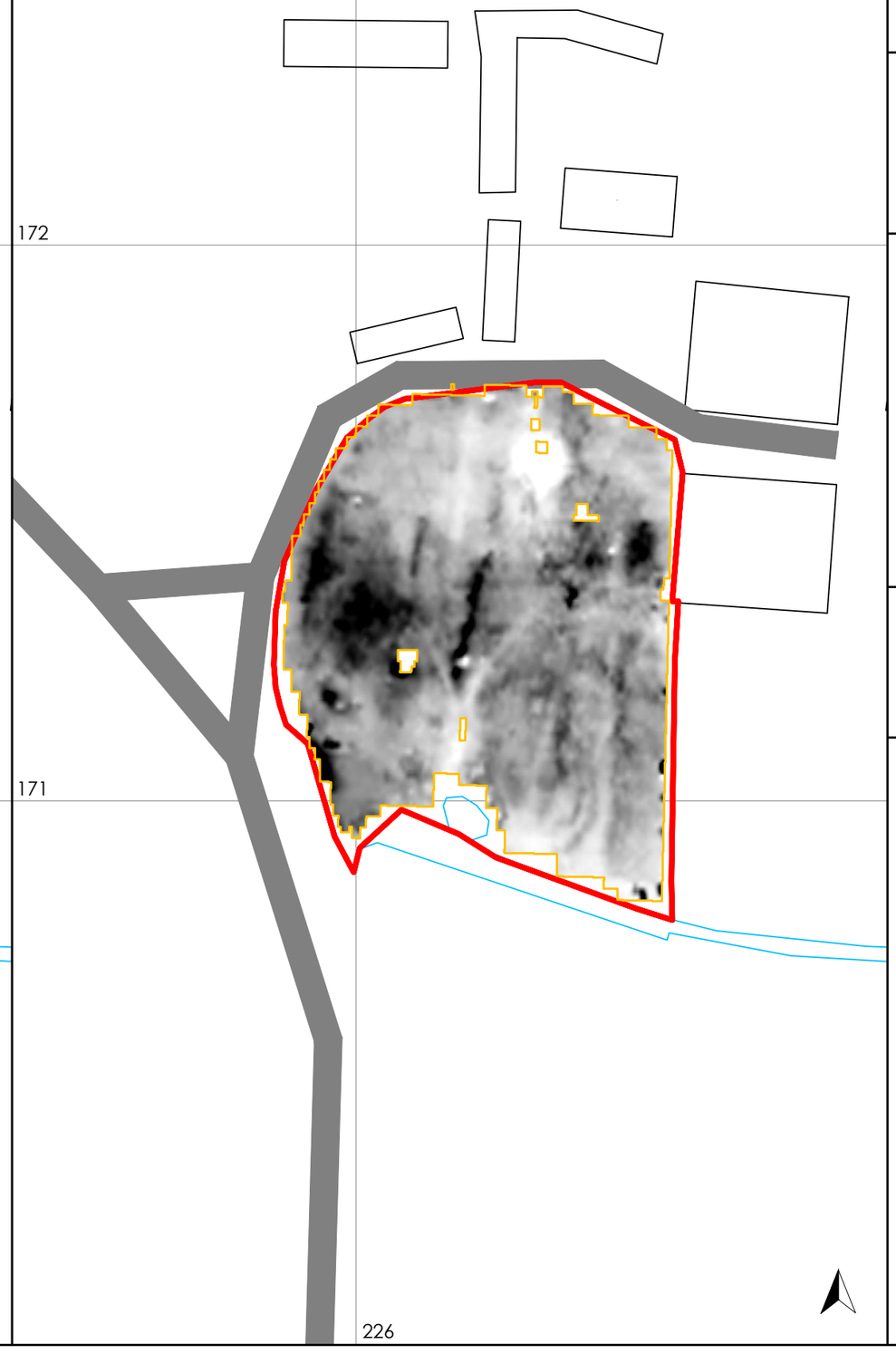


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Figure 4: Earth electrical resistance survey
(unfiltered A, filtered B)

0 50m
scale 1:1000 for A3 plot

site boundary

resistance survey

20 ohm 50

A

B

70m

Ulnaby Hall

172

171

226

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Figure 5: Geophysical surveys with topographic features

0 50m
scale 1:1000 for A3 plot

site boundary

magnetometer survey (A)

resistance survey (B)

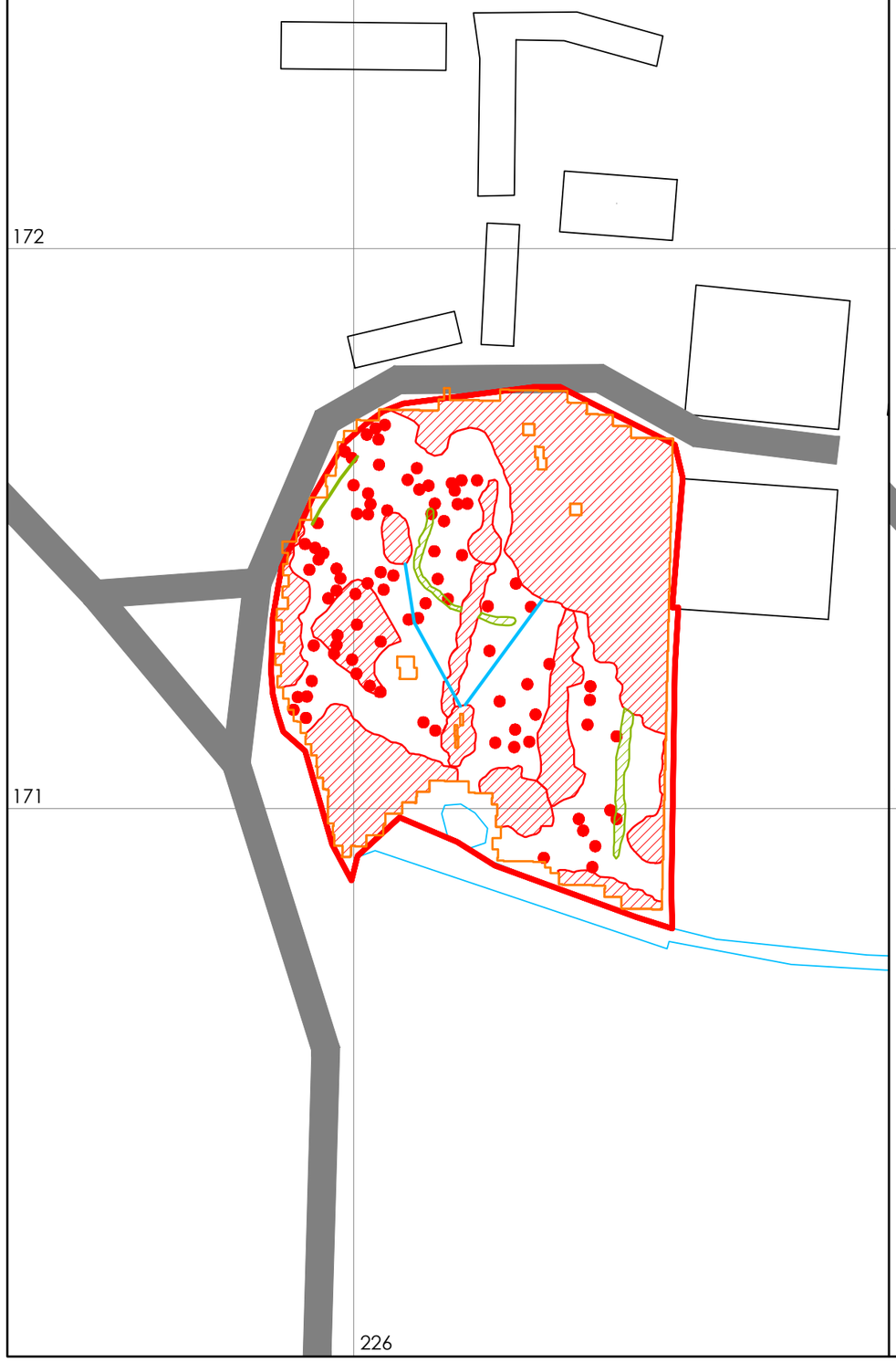
A

B

172

171

226



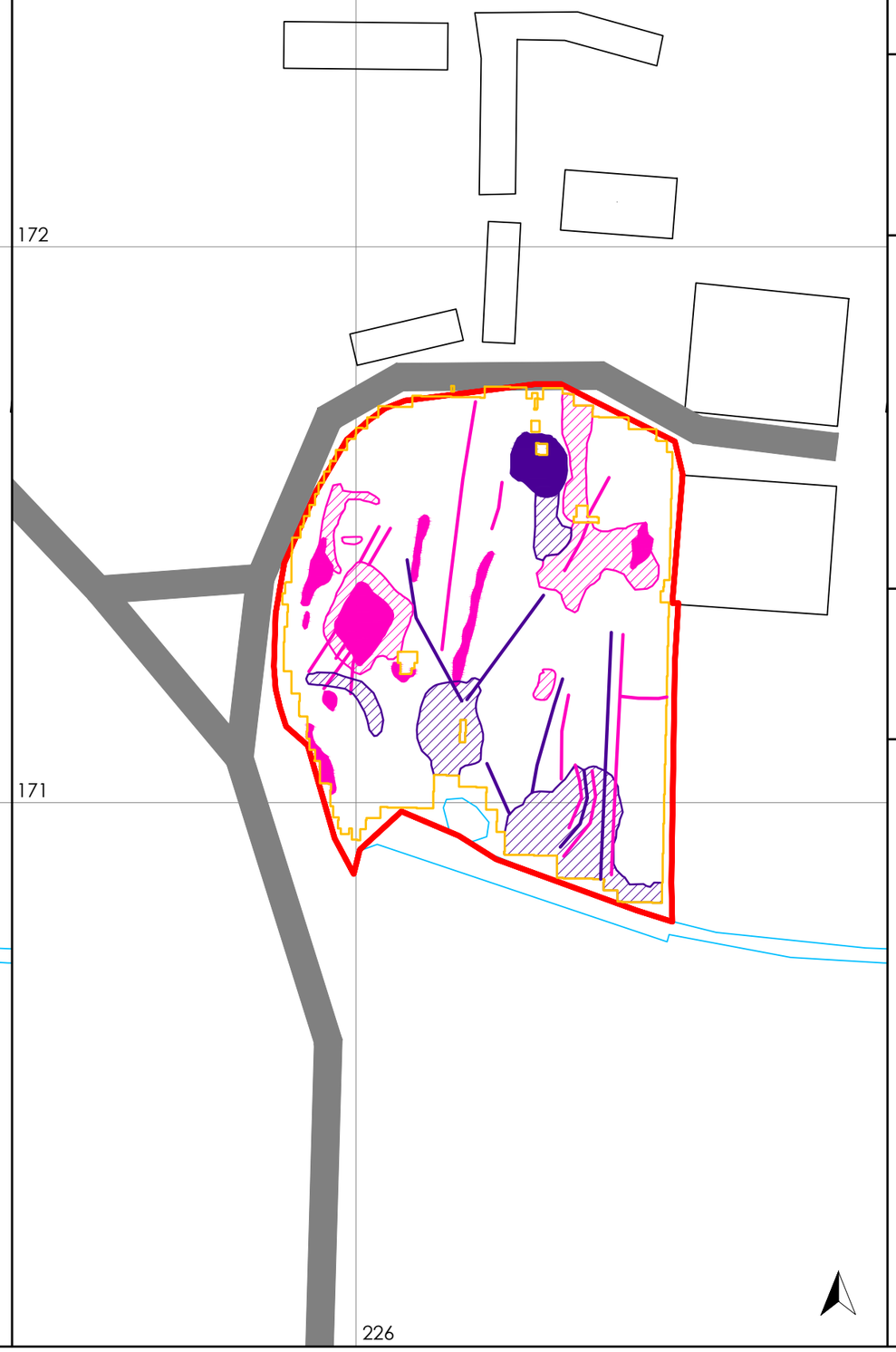


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Figure 6: Geophysical interpretation

0 50m
scale 1:1000 for A3 plot

- site boundary
- magnetometer survey (A)
- dipolar magnetic anomaly (A)
- positive magnetic anomaly (A)
- negative magnetic anomaly (A)
- resistance survey (B)
- high resistance anomaly (B)
- low resistance anomaly (B)

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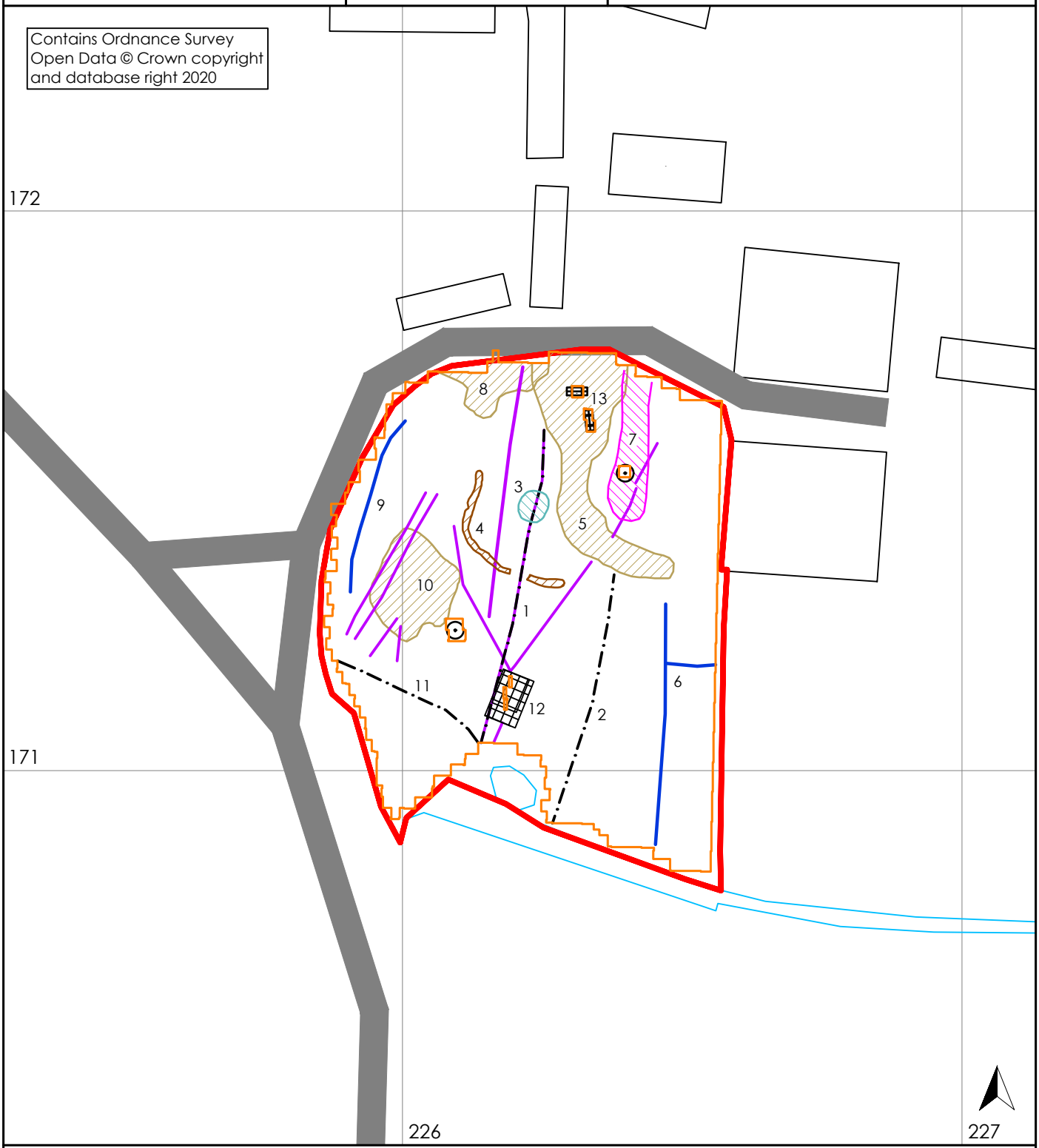
Figure 7: Archaeological interpretation



site boundary
magnetometer survey
possible ditch
disturbed area
in-filled hollow
garden terrace
former field boundary
land drain
earth banks
tree
existing tank
feeder

0 50m
scale 1:1000 for A4 plot