



Land East of Leeds Road, Chidswell
Environmental Statement - Volume 2 – Chapter 8

April 2020

Important notice: This Environmental Statement has been prepared by Deloitte Real Estate, with technical input from Re-form; Delta Simons; Patrick Parsons; Brooks Ecological; Pell Frischmann; and Cotswold Archaeology ("the Consultants"). Chapter 1, Volume 1 of this Environmental Statement sets out the parties responsible for preparing each Chapter and associated figures and appendices.

Although we have read the Consultants' reports for consistency and provide our observations based on our knowledge and experience, we accept no liability or responsibility for the Consultant's Reports and will not be responsible for the technical content of Chapters 7-14 and Chapter 15, Volume 1; nor Volume 2, nor the technical content of the associated separate Non-Technical Summary.

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8.1 Heritage Desk-Based Assessment

Land to the East of Leeds Road, Chidswell

Heritage Desk-Based Assessment



Report prepared for:
CC Projects

CA Project: 661161

CA Report: 18467a

October 2018



Land to the East of Leeds Road, Chidswell

Heritage Desk-Based Assessment

CA Project: 661161

CA Report: 18467a

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1. INTRODUCTION

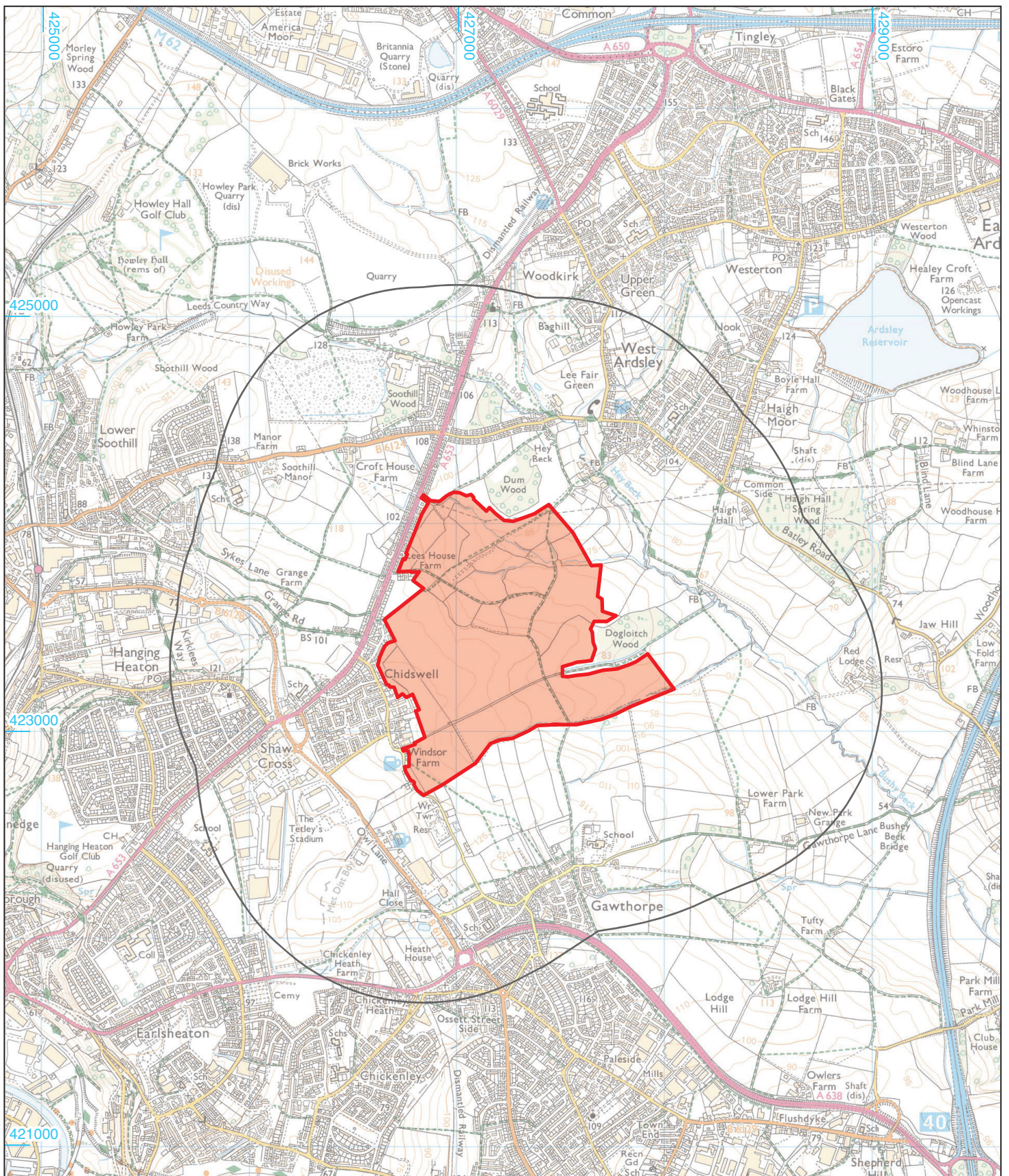
- 1.1. In July 2018, Cotswold Archaeology was commissioned by CC Projects to undertake a Heritage Desk-Based Assessment in respect of land to the east of Leeds Road, Chidswell, West Yorkshire, hereafter referred to as ‘the Site’ (NGR: 427121, 423660; Fig. 1). The Site at present is in use as arable land, formed from varying sized plots, split by hedgerows.
- 1.2. The Site’s immediate boundaries to the north, east and south broadly comprise arable land and woodland, whilst the western boundary is defined residential development at Chidswell and linear residential development alongside the A653 road.
- 1.3. The proposed development will comprise the construction of up to 1, 345 residential units, a 35ha area for employment development, local amenities including a primary school, green public space and associated infrastructure (see indicative masterplan and parameters plan for details of the development).

Objectives and professional standards

- 1.4. Cotswold Archaeology is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA). This report has been prepared in accordance with the ‘Standard and Guidance for Historic Environment Desk-Based Assessment’ published by the CIfA (2014).
- 1.5. The composition and development of the historic environment within the Site and wider landscape are discussed. A determination of the significance of any heritage assets located within the Site, and any heritage assets beyond the Site boundary that may potentially be affected by the development proposals, is then presented. Any potential development effects upon the significance of these heritage assets (both adverse and/or beneficial) are then described.
- 1.6. This approach is consistent with the CIfA’s ‘Standard and Guidance for Heritage Desk-Based Assessment’, which provides that, insofar as they relate to the determination of planning applications, heritage desk-based assessments should:

‘...enable reasoned proposals and decisions to be made [as to] whether to mitigate, offset or accept without further intervention [any identified heritage] impact’ (CIfA 2014, 4).

-
- 1.7. The 'Historic Environment Good Practice Advice in Planning Note 2: Decision-Taking in the Historic Environment' (Historic England 2015), further clarifies that a desk-based assessment should:



- Site boundary
- Study area

0 1km

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PROJECT TITLE
Land to the East of Leeds Road,
Chidswell, West Yorkshire

FIGURE TITLE
Site location plan

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‘...determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area, and the impact of the proposed development on the significance of the historic environment, or will identify the need for further evaluation’ (Historic England 2015, 3).

Statute, policy and guidance context

- 1.8. This assessment has been undertaken within the key statute, policy and guidance context presented within the table below (Table 1.1). The applicable provisions contained within these statute, policy and guidance documents are referred to, and discussed, as relevant, throughout the text. Fuller detail is provided in Appendix 1.

Statute	Description
Planning (Listed Buildings and Conservation Areas) Act (1990)	Act of Parliament placing a duty upon the Local Planning Authority (or, as the case may be, the Secretary of State) to afford due consideration to the preservation of Listed buildings and their settings (under Section 66(1)), and Conservation Areas (under Section 72(2)), in determining planning applications.
National Heritage Act 1983 (amended 2002)	One of four Acts of Parliament providing for the protection and management of the historic environment, including the establishment of the Historic Monuments & Buildings Commission, now Historic England.
Conservation Principles (Historic England 2008)	Guidance for assessing heritage significance, with reference to contributing heritage values, in particular: <i>evidential</i> (archaeological), <i>historical</i> (illustrative and associative), <i>aesthetic</i> , and <i>communal</i> .
National Planning Policy Framework (2018)	Provides the English government's national planning policies and describes how these are expected to be applied within the planning system. Heritage is subject of Chapter 16 (page 54).
Good Practice Advice in Planning: Note 2 (GPA2): Managing Significance in Decision-Taking in the Historic Environment (Historic England, 2015)	Provides useful information on assessing the significance of heritage assets, using appropriate expertise, historic environment records, recording and furthering understanding, neglect and unauthorised works, marketing and design and distinctiveness.
Good Practice Advice in Planning: Note 3 (GPA3): The Setting of Heritage Assets, Second Edition (Historic England, 2017)	Provides guidance on managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites, areas, and landscapes.
Kirklees Unitary Development Plan (2007)	Comprises the local development plan (local plan), as required to be compiled, published and maintained by the local authority, consistent with the requirements of the NPPF (2018). Intended to be the primary planning policy document against which planning proposals within that local authority jurisdiction are assessed. Where the development plan is found to be inadequate, primacy reverts to the NPPF (2018).
Hedgerows Regulations (1997)	Provides protection for 'important' hedgerows within the countryside, controlling their alteration and removal by means of a system of statutory notification.

Table 1.1 Key statute, policy and guidance

2. METHODOLOGY

Data collection, analysis and presentation

- 2.1. This assessment has been informed by a proportionate level of information sufficient to understand the archaeological potential of the Site, the significance of identified heritage assets, and any potential development effects. This approach is in accordance with the provisions of the NPPF (2018) and the guidance issued by ClfA (2017). The data has been collected from a wide variety of sources, summarised in the table overleaf (Table 2.1).
- 2.2. Prior to obtaining data from these sources, an initial analysis was undertaken in order to identify a relevant and proportionate study area. This analysis utilised industry-standard GIS software, and primarily entailed the generation of a digital terrain model (DTM) incorporating available topographic, elevation and historic landscape data (Fig. 2).
- 2.3. On this basis a 1km study area, set to the edge of the Site boundary, was considered sufficient to capture the relevant HER data, and provide the necessary context for understanding archaeological potential and heritage significance in respect of the Site. All of the spatial data held by the HER – the primary historic data repository – for the land within the study area, was requested. The records were analysed and refined in order to narrow the research focus onto those of relevance to the present assessment and presented in the gazetteer in Appendix 2. *Not all HER records are therefore referred to, discussed or illustrated further within the body of this report, only those that are relevant.*
- 2.4. A Site visit and walkover survey were undertaken as part of this assessment on 31st of July 2018. The primary objectives of the walkover survey were to assess the Site's prevailing historic landscape context, including its association with any known or potential heritage assets, and to identify any evidence for previous disturbance of known and potential earthwork and buried archaeological remains. The Site visit also allowed for the identification of any previously unknown heritage assets within the Site, and assessment of their nature, extent, condition, significance and potential susceptibility to impact. The wider landscape was examined, as relevant, from accessible public rights of way.

Source	Data
National Heritage List England (NHLE)	Current information relating to designated heritage assets, and heritage assets considered to be 'at risk'.
West Yorkshire Historic Environment Record (WYHER)	Heritage sites and events records, Historic Landscape Characterisation (HLC) data, and other spatial data supplied in digital format (shapefiles) and hardcopy.
Historic England Archives (EHA)	Additional sites and events records, supplied in digital and hardcopy formats.
West Yorkshire Archives and Local Studies Library (WYA)	Historic mapping, historic documentation, and relevant published and grey literature and other materials specific to the locality.
Historic England's Aerial Photograph Research Unit	Vertical and oblique aerial photography ranging in date from the 1940s to present.
Environment Agency (EA) website	LIDAR imagery and point cloud data, available from the Environment Agency website to a resolution of 1m.
Old-Maps, National Library of Scotland & other cartographic websites	Historic (Ordnance Survey and Tithe) mapping in digital format.
British Geological Survey (BGS) website	UK geological mapping (bedrock & superficial deposits) & borehole data.
Cranfield University's LandIS Soil Portal	UK soil mapping.

Table 2.1 Key data sources

Assessment of heritage significance

- 2.5. The significance of known and potential heritage assets within the Site, and any beyond the Site which may be affected by the proposed development, has been assessed and described, in accordance with paragraph 189 of the NPPF (2018), the guidance issued by ClfA (2014) and ‘Historic Environment Good Practice Advice in Planning Note 2’ (Historic England 2015). Determination of significance has been undertaken according to the industry-standard guidance on assessing heritage value provided within ‘Conservation Principles’ (Historic England 2008). This approach considers heritage significance to derive from a combination of discrete heritage values, principal amongst which are: **i)** evidential (archaeological) value, **ii)** historical (illustrative and associative) value, **iii)** aesthetic value, **iv)** communal value, amongst others. Further detail of this approach, including the detailed definition of those aforementioned values, as set out, and advocated, by Historic England, is provided in Appendix 1 of this report.

Assessment of potential development effects (benefit and harm)

- 2.6. This assessment report sets out, in detail, the ways in which identified susceptible heritage assets might be affected by the proposals, as well as the anticipated extent of any such effects. Both physical effects, i.e. resulting from the direct disturbance of archaeological remains, and non-physical effects, i.e. resulting from changes to the setting of heritage assets, have been assessed. With regard to non-physical effects or ‘settings assessment’, the five-step assessment methodology advocated by Historic England, and set out in the Second Edition of GPA3 (Historic England, 2017), has been adhered to (presented in greater detail in Appendix 1).
- 2.7. Identified effects upon **designated** heritage assets have been defined within broad ‘level of effect’ categories (Table 2.2 below). These are consistent with key national heritage policy and guidance terminology, particularly that of the NPPF (2018). This has been done in order to improve the intelligibility of the assessment results for purposes of quick reference and ready comprehension. These broad determinations of level of effect should be viewed within the context of the qualifying discussions of significance and impact presented in this report.

Level of effect	Description	Applicable statute & policy
Heritage benefit	The proposals would better enhance or reveal the heritage significance of the designated heritage asset.	Enhancing or better revealing the significance of a heritage asset is a desirable development outcome in respect of heritage. It is consistent with key policy and guidance, including the NPPF (2018) paragraphs 185 and 200.
No harm	The proposals would preserve the significance of the designated heritage asset.	Preserving a Listed building and its setting is consistent with s66 of the Planning (Listed Buildings and Conservation Areas) Act (1990). Preserving or enhancing the character or appearance of a Conservation Area is consistent with Section 72 of the Act. Sustaining the significance of a heritage asset is consistent with paragraph 185 of the NPPF, and should be at the core of any material local planning policies in respect of heritage.
Less than substantial harm (lower end)	The proposals would be anticipated to result in a restricted level of harm to the significance of the designated heritage asset, such that the asset's contributing heritage values would be largely preserved.	In determining an application, this level of harm should be weighed against the public benefits of the proposals, as per paragraph 196 of the NPPF (2018).
Less than substantial harm (upper end)	The proposals would lead to a notable level of harm to the significance of the designated heritage asset. A reduced, but appreciable, degree of its heritage significance would remain.	Proposals involving change to a Listed building or its setting, or any features of special architectural or historic interest which it possesses, or change to the character or appearance of Conservation Areas, must also be considered within the context of Sections 7, 66(1) and 72(2) of the 1990 Act. <i>The provisions of the Act do not apply to the setting of Conservation Areas.</i> Proposals with the potential to physically affect a Scheduled Monument (including the ground beneath that monument) will be subject to the provisions of the Ancient Monuments and Archaeological Areas Act (1979); <i>these provisions do not apply to proposals involving changes to the setting of Scheduled Monuments.</i>
Substantial harm	The proposals would very much reduce the designated heritage asset's significance or vitiate that significance altogether.	Paragraphs 193–195 of the NPPF (2018) would apply. Sections 7, 66(1) and 72(2) of the Planning Act (1990), and the Ancient Monuments and Archaeological Areas Act (1979), may also apply.

Table 2.2 Summary of level of effect categories (benefit and harm) referred to in this report in relation to designated heritage assets, and the applicable statute and policy.

2.8. It should be noted that the overall effect of development proposals upon the designated heritage asset are judged, bearing in mind both any specific harms or benefits (an approach consistent with the Court of Appeal judgement *Palmer v. Herefordshire Council & ANR* Neutral Citation Number [2016] EWCA Civ 1061).

2.9. In relation to non-designated heritage assets, the key applicable policy is paragraph 197 of the NPPF (2018), which states that:

*'The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the **scale of any harm or loss and the significance of the heritage asset** [our emphasis]'.*

2.10. Thus with regard to non-designated heritage assets, this report seeks to identify the significance of the heritage asset(s) which may be affected, and the scale of any harm or loss to that significance.

Limitations of the assessment

2.11. This assessment is principally a desk-based study and has utilised secondary information derived from a variety of sources, only some of which have been directly examined for this assessment. The assumption is made that data, as well as that derived from other secondary sources, is reasonably accurate. The records held by WYHER and HEA are not a record of all surviving heritage assets, but a record of a wider range of archaeological and historic components of the historic environment. The information held within the database is not complete and does not preclude the subsequent discovery of further element of the historic environment that are, at present, unknown.

2.12. Cartographic sources held by WYA and available online have been geo-referenced to locate any historic feature or any previous impacts within the Site. Whilst historic maps are an invaluable source for identifying historic development, the accuracy of geo-referencing cannot be guaranteed where maps are not produced in a standard form or scale.

2.13. Historic aerial photographs held by WYHER and HE were consulted as part of this assessment. The aerial photographs record the presence of potential buried archaeological remains observed as cropmarks. However, many of the photos in

which cropmarks are visible were taken at oblique angles and could not be accurately geo-referenced, and subsequently transcribed. The approximate areas in which these cropmarks are located is presented and discussed within the assessment.

- 2.14. The Site walkover was undertaken in favourable weather conditions sufficient to carry out the assessment of the recorded and potential impacts of the proposed development upon the historic environment within the study area.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Landscape context

- 3.1. The Site encompasses an area of arable land measuring approximately 112ha, and can be defined as an irregular parcel of land formed from several plots of varying sizes, divided by hedgerows and public footpaths, with a stream flowing east feeding into Hey Beck, located to the east of the Site. The eastern boundary of the Site is formed from arable land and two parcels of woodland; Dogloitch Wood and Dum Wood. Arable land also defines the south and northern boundaries of the Site, whilst to the west, the Site is defined by residential development at Chidswell and along the A653 Leeds Road.

- 3.2. At its greatest elevation, the south-western corner of the Site is located at approximately 122m above Ordnance Datum (aOD). This higher ground forms part of a ridgeline, along which the western boundary of the Site lies. Land within the Site then gently falls to approximately 75m aOD at the eastern boundary of the Site, corresponding to the eastern valley slope formed by the ridgeline and the course of Hey Beck (Fig. 2).

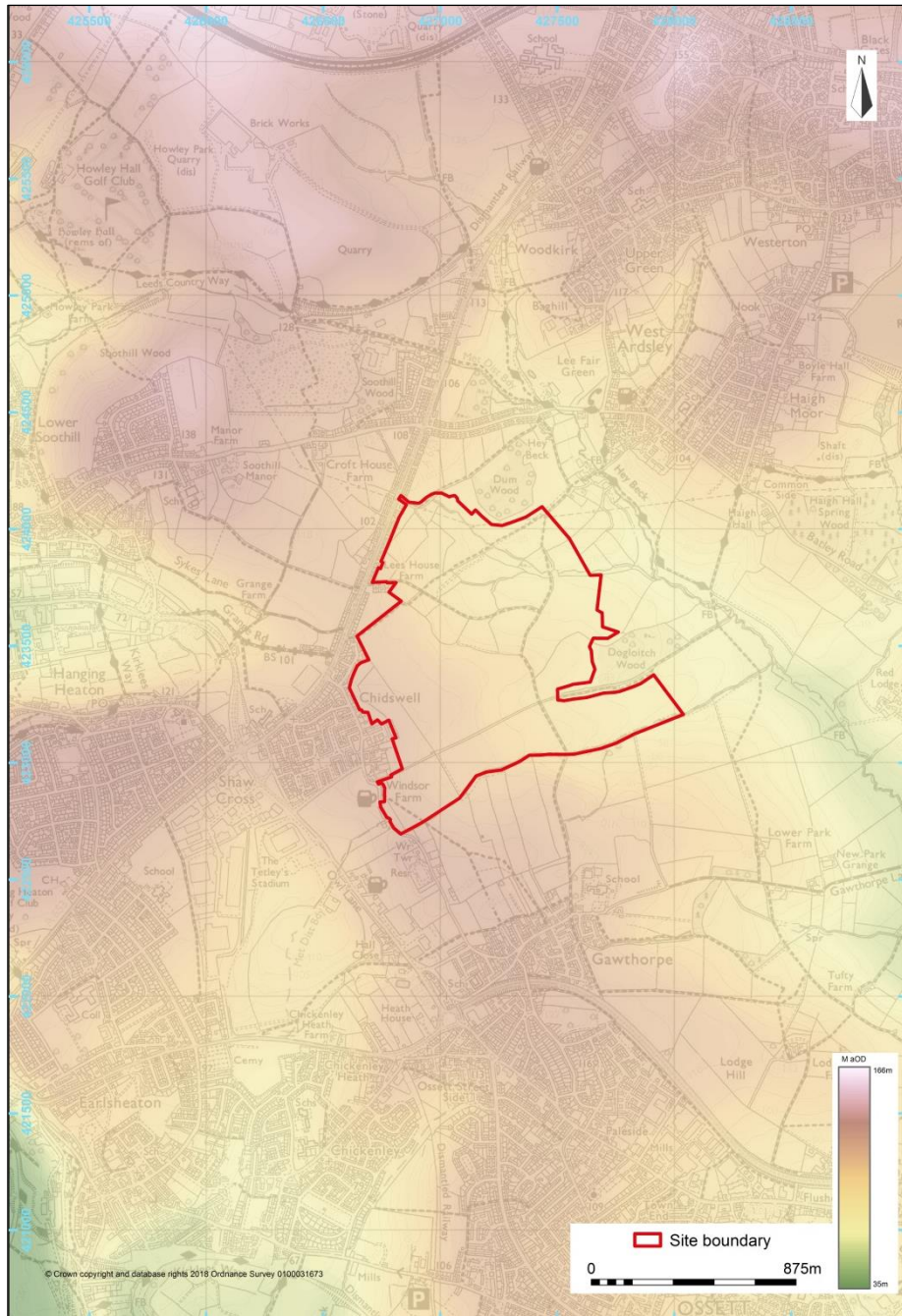


Fig. 2 Topographic model of the study area

Geology

- 3.3. The bedrock geology within the Site is recorded by the British Geological Survey (BGS 2018) as alternating bands of Pennine Middle Coal Measures and Horbury Rock. The former comprise Mudstone, Siltstone and Sandstone; sedimentary bedrock formed approximately 310 to 318 million years ago in the Carboniferous Period in a local environment previously dominated by swamps, estuaries and deltas. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin.

The latter; Horbury Rock, comprises Sandstone, a sedimentary bedrock also formed in the Carboniferous Period within a local environment previously dominated by rivers.

3.4. The BGS does not record extensive superficial geological deposits within the Site however, deposits of alluvium are recorded to the east, corresponding to the course of Hey Beck. It is possible similar deposits could be present within the Site where the streams flow east towards the beck.

3.5. There are several borehole logs recorded within the study area by the BGS, including one within the south-western area of the Site; however these appear to be of some antiquity and created for the purposes of coal extraction. Information derived from the National Coal Authority (2018) indicates extraction activity occurred within the Site, where mine shafts, and past and probable shallow coal mine workings were located (Fig. 15; paragraphs 4.13 - 4.17).

Previous archaeological investigations

3.6. There have been a limited number of archaeological investigations undertaken within the study area (Fig. 3). The investigations of relevance to this assessment are discussed further below.

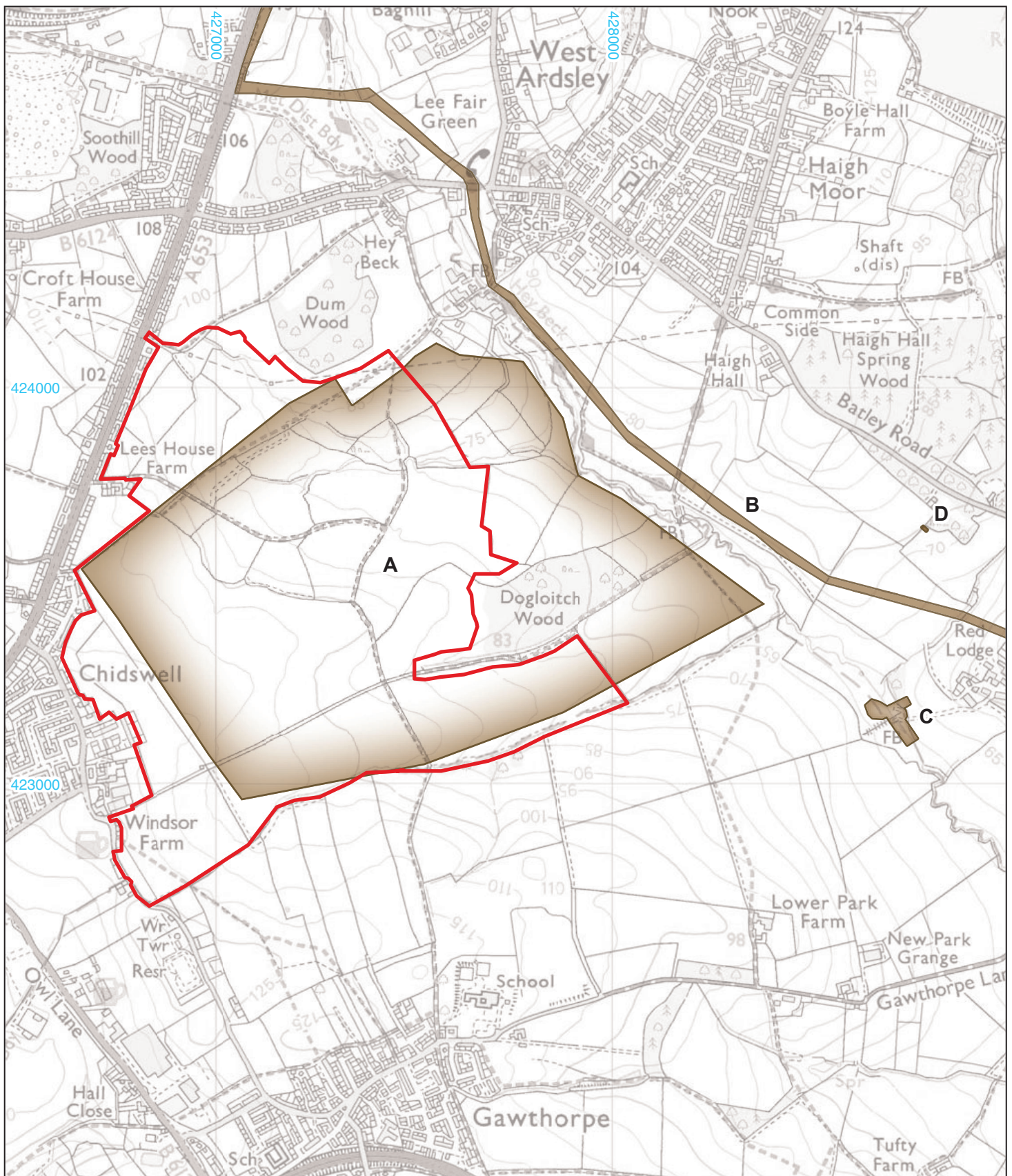
3.7. In 1998 a geophysical survey was undertaken across the majority of the Site (Fig. 3, **A**; GSB Prospection 1998), which confirmed the likely presence of buried archaeological features initially identified as cropmarks (Fig. 5, **2**; **3**; **4**)

3.8. Approximately 450m to the east of the Site archaeological salvage investigation occurred during the construction of a water pipeline between Brighthouse and Kirkhamgate (Fig. 3, **B**; ASWYAS 1999). The course of the pipeline bisected a large sub-rectangular enclosure initial identified from aerial photographs.

3.9. Investigation of the cropmarks determined the enclosure was likely to be the buried remains of a seasonal Roman military marching camp from, however datable finds were limited (Fig. 5, **6**).

3.10. In 2012 an archaeological watching brief was undertaken 600m to the east of the Site at Fenton Dam during flood alleviation works (Fig. 3, **C**; ASWYAS 2012). During the watching brief original elements of a post-medieval structure were

identified (Fig. 5, **21**). It was anticipated evidence would be present of the clay-lined channel running from New Park colliery, however this was not recorded.



- Site boundary
- Study area
- Previous archaeological investigations



0 1:15,000 500m



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FIGURE TITLE

Previous archaeological investigations

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- 3.11. In 2017 a programme of archaeological trial trenching was undertaken at Haigh Hall Farm (Fig. 3, **D**; ASWYAS 2017) ahead of the installation of a cable route from Haigh Hall Solar Farm to Wakefield, 860m to the east of the Site. Recorded archaeological evidence was limited to two plough furrows and an area of iron mineralisation only. The plough furrows were considered to represent the buried remains of ridge and furrow cultivation.

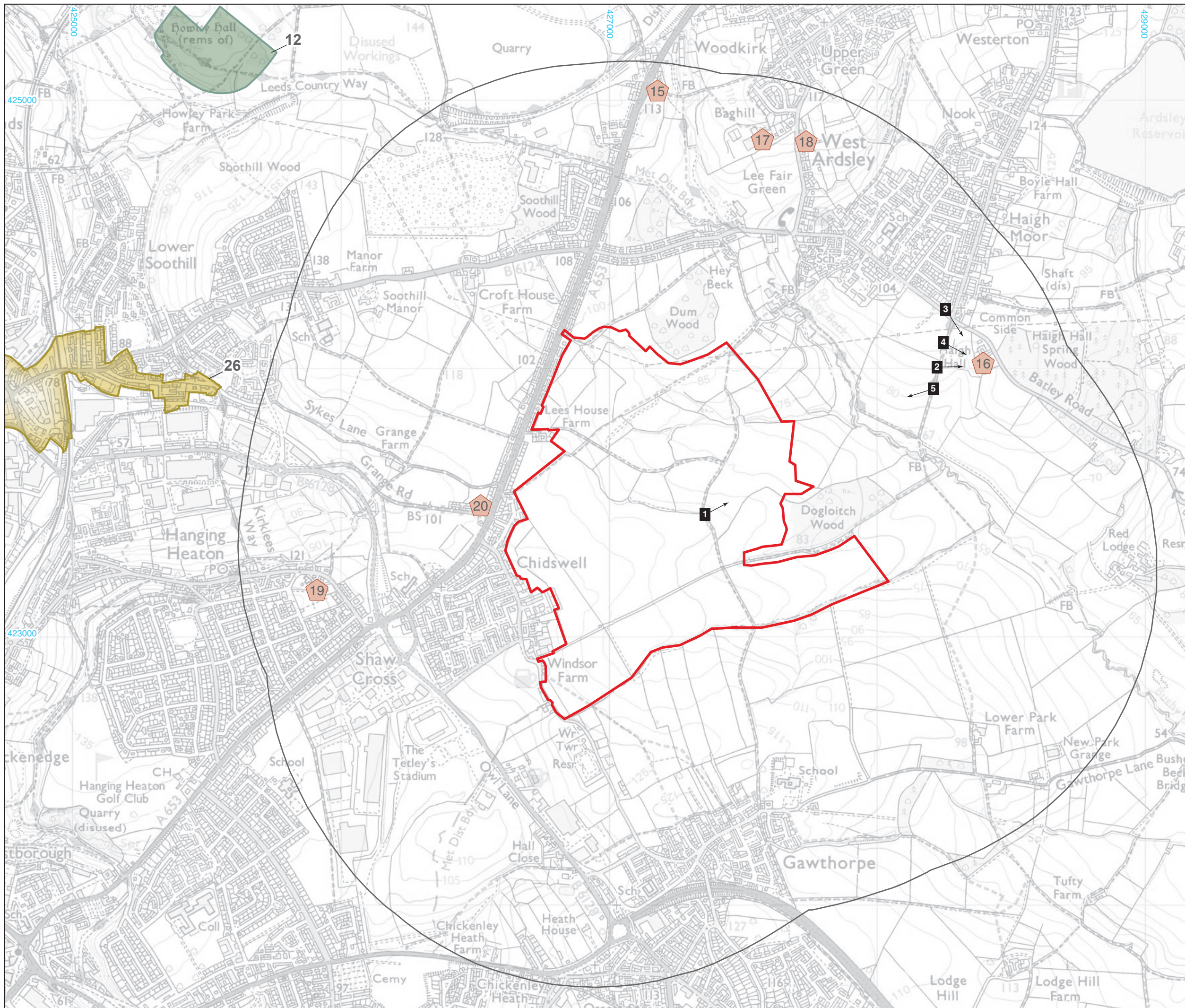
Summary of Designated Heritage Assets

- 3.12. There are no Designated heritage assets recorded within the Site. In the wider study area there are a total of eleven Grade II Listed structures, of which five are buildings (Fig. 4 and Appendix 2). Approximately 1.2km to the west of the Site lies Station Road, Batley Conservation Area and 1.5km to the north-west lies Howley Hall, a Scheduled Monument (Fig. 4). Although not Designated assets, there are also five areas of ancient woodland, most notably Dogloitch Wood which bounds the Site to the east, and Dum Wood located just to the north of the Site.

Prehistoric and Roman periods

- 3.13. There are few Palaeolithic sites recorded in West Yorkshire due to the region being located on the edge of, or under, glacial ice for much of the period; however, in contrast, evidence dating to the Mesolithic period is better represented, with the region having the highest density of sites in England and Wales (Spikins 2010). Vyner (2008) concludes the Neolithic period is also poorly represented through archaeological evidence.
- 3.14. This sparsity of evidence is apparent within the study area where the only archaeological evidence of the Neolithic period is a single hand axe located 650m to the north of the Site (Fig. 5, **1**). Further prehistoric archaeological evidence within the study area is derived from cropmark evidence and magnetic anomalies identified during geophysical survey.
- 3.15. Cropmarks recorded in the northern area of the Site (Fig. 5, **2**), comprise a double ditched linear feature located south-west of Dum Wood. Further linear ditches appear to abut those and follow a north/south alignment. A faint linear ditch and a possible small sub-rectangular enclosure were also identified from cropmarks, but have not been the subject of further investigation. Despite the lack of follow-up investigation, their form indicates that any associated buried archaeological remains may be prehistoric or Roman in date.

3.16. Cropmarks of a possible square enclosure and pits have also been recorded in the central part of the Site. The form and layout of the cropmarks indicates the possible evidence of settlement or agricultural activity (Fig. 5, **3**); however, as no further investigation has been undertaken this cannot yet be verified.



- Site boundary
- Study area
- Howley Hall Scheduled Monument
- Station Road Batley Conservation Area
- Grade II Listed Building
- Photograph location



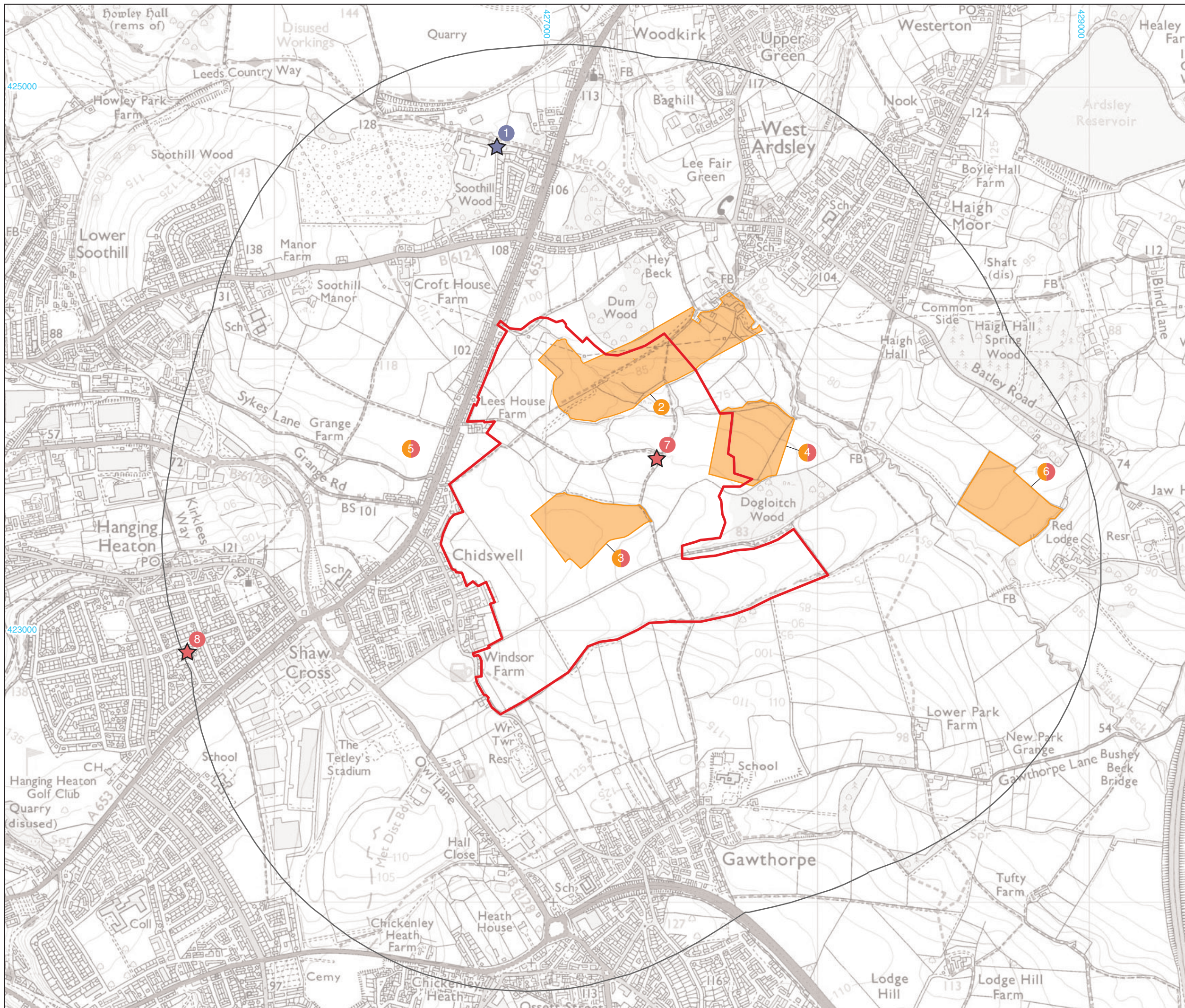
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FIGURE TITLE
Designated heritage assets

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- Site boundary
- Study area
- Neolithic
- Prehistoric
- Roman
- ☆ Findspot

0 1:15,000 500m

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FIGURE TITLE
 Prehistoric and Roman heritage assets

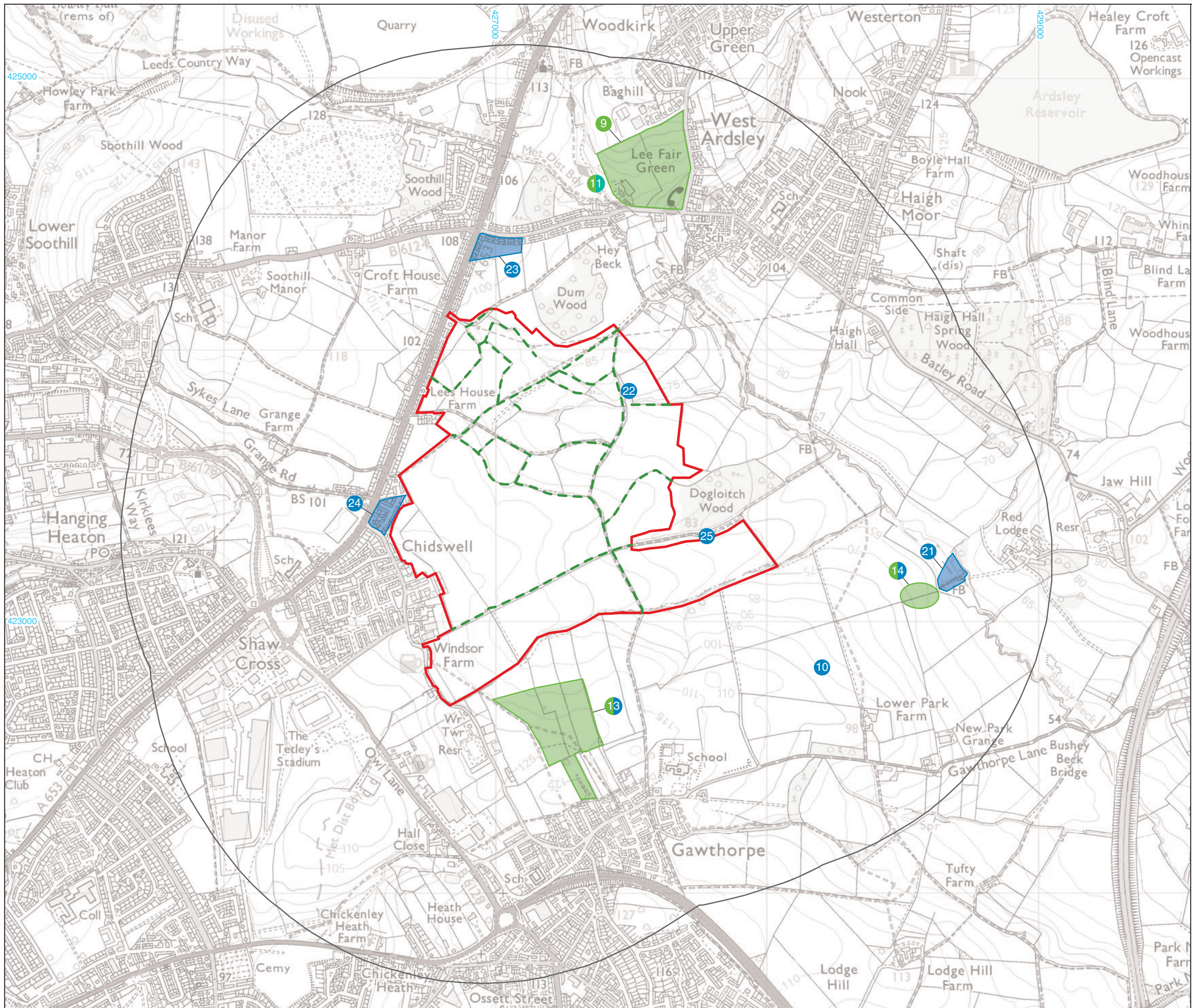
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- 3.17. A third cluster of cropmarks was recorded on the eastern boundary of the Site, north of Dogloitch Wood (Fig. 5, **4**) could represent the infilled remains of linear ditches. It is possible some of these may represent parts of large sub-rectangular enclosures; however, any clear morphology is difficult to determine.
- 3.18. A geophysical survey carried out across the Site (GSB 1998), to investigate the cropmarks, recorded corresponding magnetic anomalies in addition to a possible circular feature; representing a possible ring ditch and field system. No intrusive fieldwork has been undertaken to test these results, on which basis no further conclusions can yet be drawn.
- 3.19. More cropmarks representing the possible remains of infilled ditches and possible sub-rectangular enclosures are recorded elsewhere in the wider area (Fig. 5, **5** and **6**). These cropmarks could also represent evidence of agricultural land management and associated settlement from the prehistoric and Roman periods, perhaps contemporary with similar evidence recorded within the Site.
- 3.20. Archaeological investigation undertaken c.520m to the east of the Site in 1996, recorded the east and west sides of an enclosure ditch, which was v-shaped ('ankle breaker') in profile. A line of post holes was recorded that would have formed a revetted defensive bank and no apparent internal features identified. The lack of associated evidence, in conjunction with the recovery of a single sherd of 2nd-4th century AD pottery, leads to the interpretation of these remains as a possible Roman seasonal military marching camp (Fig. 5, **6**).
- 3.21. Single findspots have been recorded within the study area comprising a Roman coin dating from the 1st century AD and a Roman copper alloy headstud brooch dated between 1st and 3rd century (Fig. 5, **7**; **8**). These may be present as a result of chance loss.
- 3.22. The nearest recorded evidence of a Roman settlement is 2.8km to the south of the Site, with further evidence of a rural settlement recorded 3.9km to the east of the Site.
- 3.23. The evidence so far recorded that securely dates to the Roman period, along with the evident potential of cropmarks in the wider area suggests the area appears to have been sparsely populated throughout the prehistoric and Roman periods. It should be noted though that the sparseness of current evidence may also in part be

a result of hitherto limited archaeological investigation such that the presence of further archaeological remains, indicated both as cropmarks and in the geophysical survey, cannot be ruled out.

Early medieval and medieval periods

- 3.24. Archaeological evidence for the early medieval period is typically quite sparse, and not unsurprisingly none is recorded within the wider study area.
- 3.25. During the medieval period, rural settlement in West Yorkshire has been characterised as dispersed, with small clusters of farmsteads set in agricultural hinterland, as opposed to single homestead plots (Wrathmell, 2018).
- 3.26. The Domesday Book does not record any settlement within the immediate vicinity of the Site during the medieval period; the nearest settlements located at (Earls) Heaton, (Hanging) Heaton, Dewsbury, Batley (Palmer n.d.).
- 3.27. Goodall (1914) states settlement at Chidswell is first mentioned in 1275 in the Court rolls of the Manor of Wakefield as 'Chydeshill' and again in 1298 as 'Chideshill'. At a later date the place-name ceased to show any sign of its connection with a hill; in the Yorkshire Fines of 1550 it was spelt 'Chydsell', and in 1577 'Chitsele'.
- 3.28. Archaeological evidence of medieval activity within the study area is recorded to the north of the Site (Fig. 6, **9**) where documentary sources discuss the presence from the 12th century, of a fair located approximately 625m away. It is possible this may have been in proximity to a focus of hitherto unidentified settlement. Certainly industrial activity from the period was recorded during archaeological investigations. In 1977, a series of three well preserved dams and a sluice gate were surveyed in advance of construction work for a sewer, the evidence suggested they were probably constructed between the 12th and 16th centuries (Fig. 6, **11**; Moorhouse, 1978). Documentary sources also reference a corn mill dating from the 12th century.
- 3.29. Further evidence of medieval activity is recorded c.120m to the south of the Site, where aerial photographs recorded boundaries reflecting medieval field furlongs as part of the open field system (Fig. 6, **13**). The Site, and wider study area during this period has been identified in the Historic Landscape Characterisation (HLC) Project (WYJS 2017) as predominantly agricultural; likely to have been cultivated by the surrounding settlements.



- Site boundary
- Study area
- Medieval
- Post-medieval
- Modern
- Potentially important hedgerows



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PROJECT TITLE
 Land to the East of Leeds Road,
 Chidswell, West Yorkshire

FIGURE TITLE
 Medieval to modern heritage assets

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- 3.30. In addition to the cropmarks alluding to former agricultural practices, c.550m to the south-east of the Site samples of iron slag and medieval pottery have been recorded during metal detecting (Fig. 6, 14). It is likely these artefacts relate to purported metalworking activity occurring within New Park (see Fig. 16).
- 3.31. New Park was a demesne park owned by the Earls Warenne during the 16th century. The park comprised a herd of 300 deer, with two lodges and may also have been used to source iron-ore, with the ore smelted within the park pale. The Park is reported by Walker (1967) to have been of some considerable size; some 'six miles in circuit'. However, the HLC indicates this did not include the area encompassed by the Site boundary. It is possible the southern boundary of the Site in part formed the northern extent of New Park.

Post-medieval period

- 3.32. By the post-medieval period, much of the rural land within West Yorkshire was under the ownership of a few large estates that were governed remotely. During the period, the Site was located within the Savile Estate, as indicated on the 1779 Plan of the Manor of Soothill (Fig. 7). The Site during this period comprised several parcels of arable land, many of which, especially in the northern part of the Site, follow an irregular form. Fields in the southern part of the Site appear to be more regularly laid out and may represent part of a phase of formal enclosure. There are no Tithe or Enclosure maps for the area in which the Site lies.



Fig. 7 Extract of the 1779 Plan of the Manor of Soothill

3.33. Gomersall (2009) indicates the region’s economy during the post-medieval period was a mix between arable farming, textile manufacture and small scale mining. In the eastern part of the Site lies an area of woodland named on the plan ‘Dog Loach Wood’, which corresponds to the present day woodland (Dogloitch Wood) located outside the eastern boundary of the Site. Whilst the woodland is clearly present within the Site’s eastern boundary during at this time, it is considered the rest of the land within the Site would have been in agricultural use, as indicated by Gomersall and the HLC (See section 5).

3.34. As indicated by Gomersall, small scale mining was also undertaken in the wider area. Approximately 560m to the east of the Site (Fig. 6, 21), a watching brief during flood alleviation measures identified the remains of Fenton Dam, a structure documented as associated with New Park Colliery, however no remains indicating the dam was associated with the colliery were identified.

Modern period

Coal mining activity

3.35. At the time of publication of the First Edition Ordnance Survey (OS) map (1854; Fig. 8), depicts the site as numerous small and moderately-sized parcels of arable land and Dog Loach Wood. However, by 1895 amalgamation of plots had taken place in

the southern part of the Site (Fig 9), whilst in the northern area of the Site the arable parcels remain unchanged. The footprint of the woodland, which extends into the eastern part of the Site, remained unaltered except for a slight name change to 'Dogloitch Wood'. To the north the woodland, a small structure is set within a small parcel of land identified as 'Dogloach Water Pit' (Fig. 10).

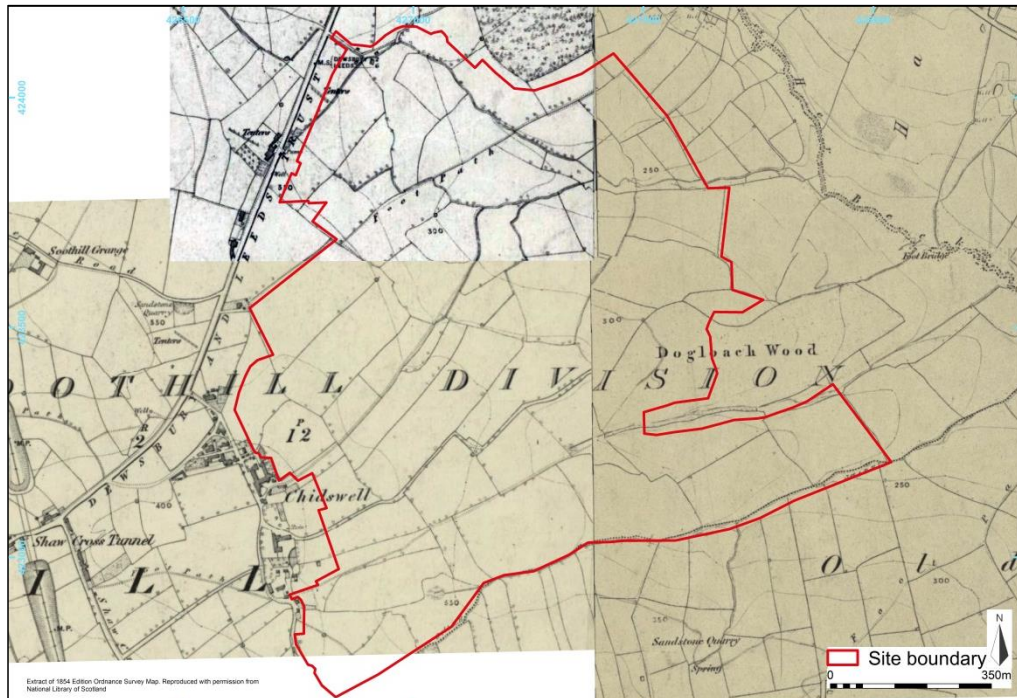


Fig. 8 Extract of First Edition OS Map (1854)

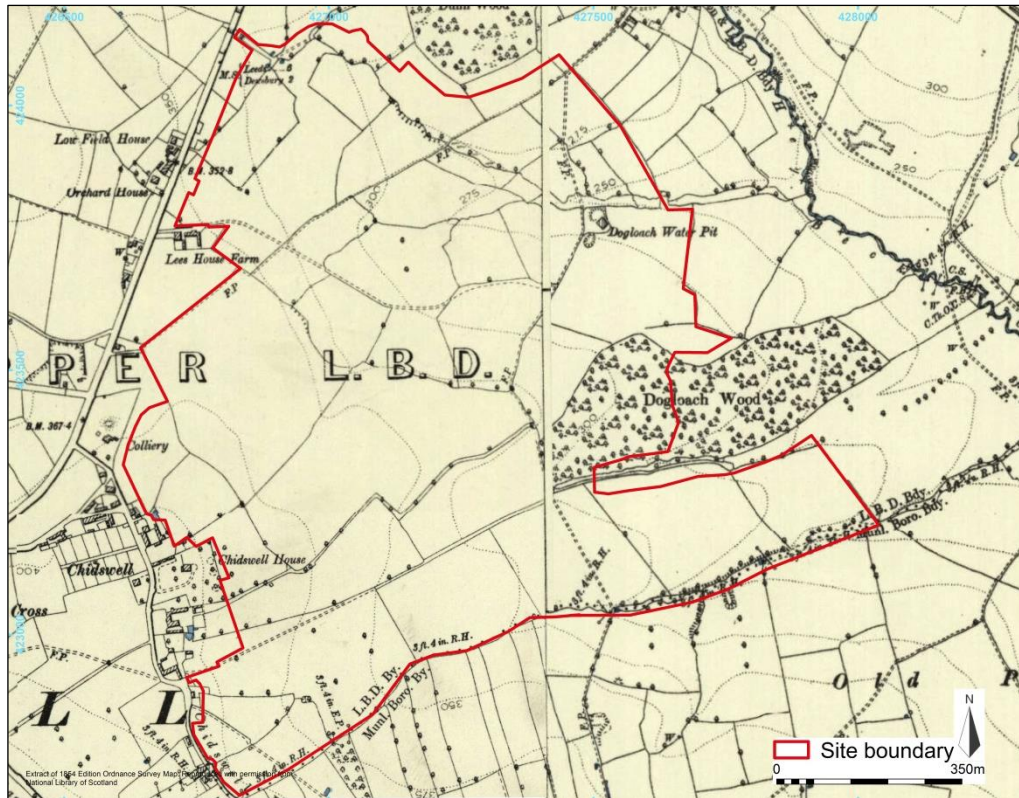


Fig. 9 Extract of 1895 OS Map

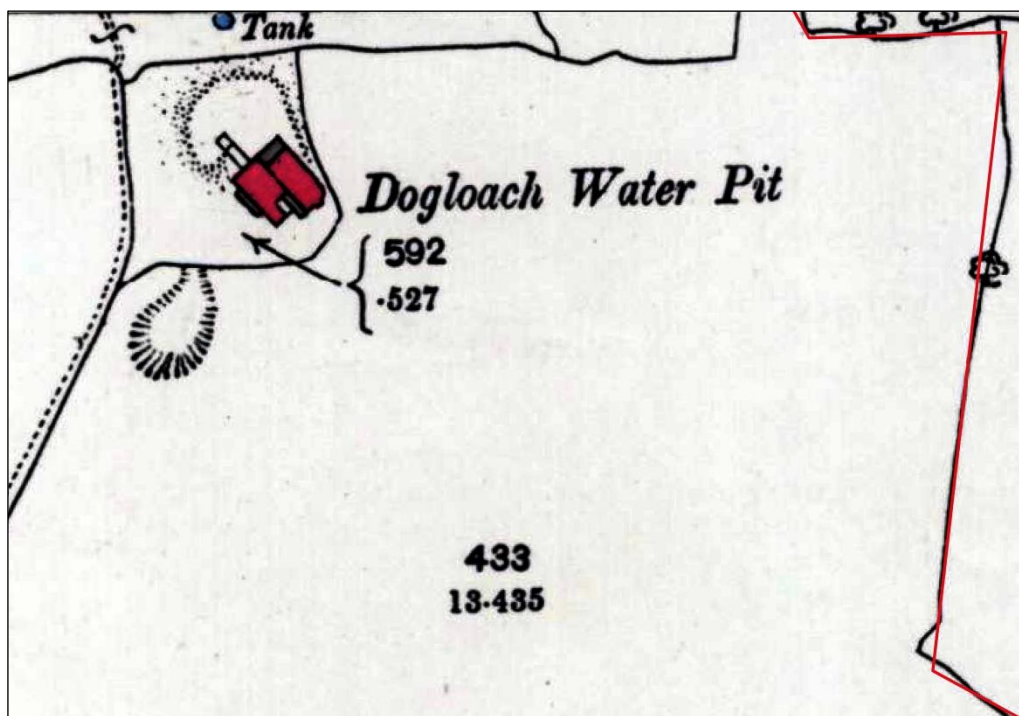


Fig. 10 Close-up extract of 1894 25-inch OS Map

3.36. The complex at Dogloitch (Dogloach) Water Pit includes two buildings surrounded to the north-west by, perhaps, an area of gravel extraction or refuse disposal. To

the south of the buildings and beyond the extent of land directly associated with the complex, is an area of extraction which is likely to be directly associated with the water pit complex (Fig. 6, **22**).

- 3.37.** Dogloitch Water Pit is likely to have been associated with mining activity, which was well documented within the vicinity of the Site. To the north of the Site lay the 'Babes in the Wood Colliery' (Fig. 6, **23**) and to the south-west, the 'Chidswell Colliery' (Fig. 6, **24**).
- 3.38.** The Babes in the Wood Colliery complex was owned by C. Crawshaw and Blakley and was operational from 1862 (Fig. 6, **23**; NMRS *nd*). In 1880, Chidswell Colliery was owned by C. Crawshaw and Warburton of Dewsbury and employed a total of 265 men - 248 below ground and 17 above. Any association between the mines is unclear, beyond ownership; however, it is possible these mines were part of a single operation, potentially with separate roles. Online sources held by The Coal Authority indicate a series of shafts were sunk at the location of the 'Dogloitch Water Pit', confirming the complex functioned as a mining facility (See section 4 for further detail). The 1907 publication of the OS map shows the complex at Dogloitch Water Pit includes tanks and a shaft, and has been extended slightly north. (Fig. 11). By 1922 the complex has been renamed 'Dogloitch Pit (Pumping)' with a shaft and processing facility, including a chimney. The precise function of the complex remains unclear; however, it is possible its primary purpose was to stabilise underground water levels, making use of water courses to channel water out of the pit (Fig. 11).

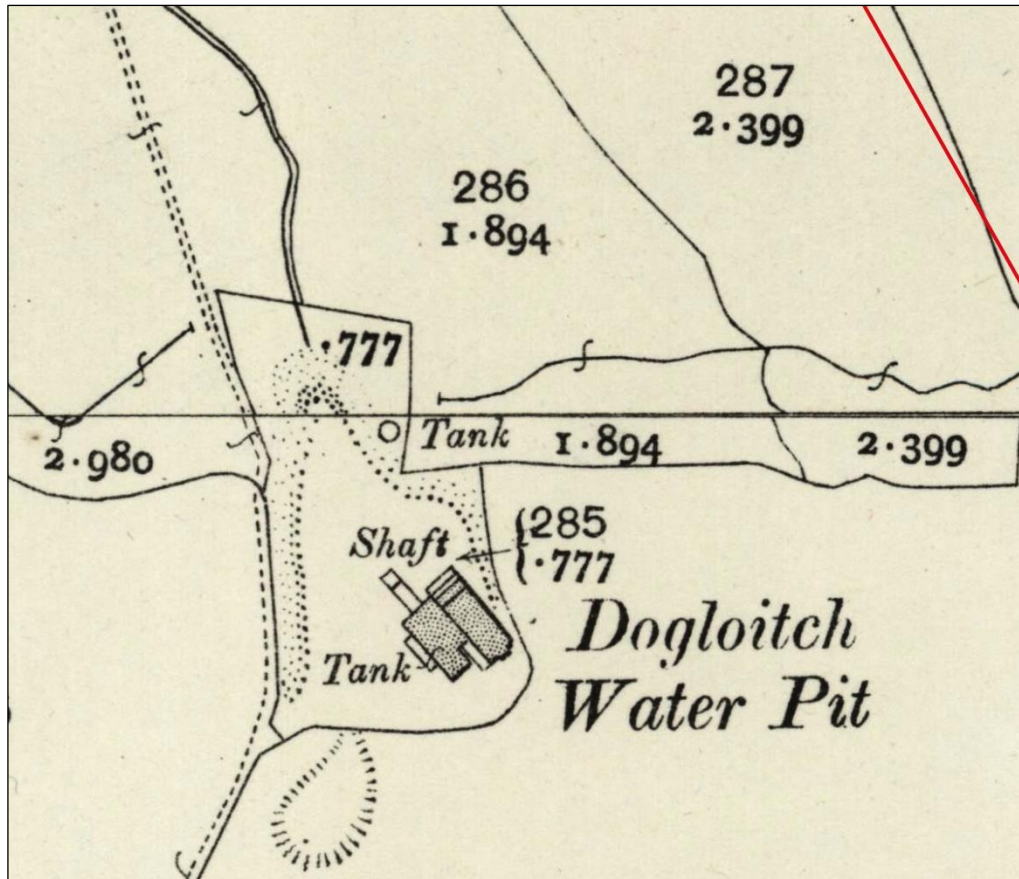


Fig. 11 Close-up extract of 1907 25-inch of OS Map

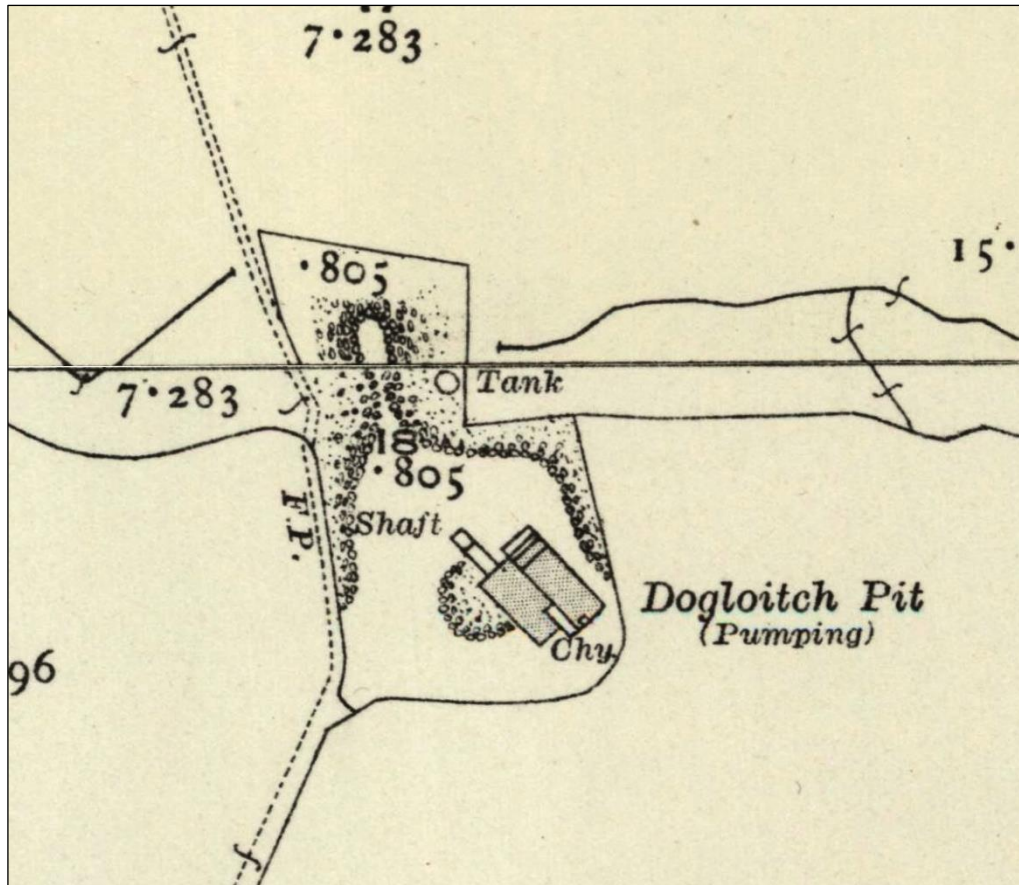


Fig. 12 Close-up extract of 1922 25-inch OS Map

- 3.39. With the publication of the 1931 OS Map, it is evident that the complex at Dogloitch Pit had been decommissioned and all associated built elements removed. Some restorative landscaping appears to have occurred; however, the undulating form caused by the earthworks to its north is still evident (Fig. 13).

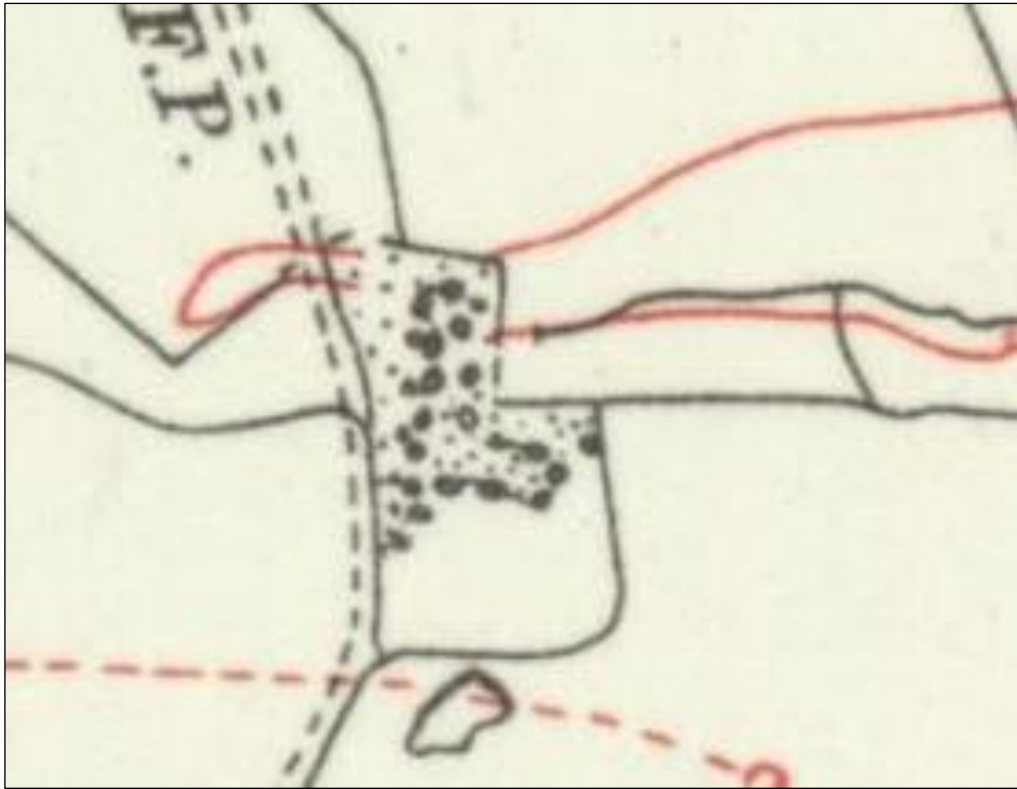


Fig. 13 Close-up extract of 1931 six-inch OS Map

Decoy site

- 3.40. The 1922 OS Map also records changes in the south-western of Dogloitch Wood. An area of the woodland appeared to have been removed to define land associated with a building facing south towards an access track (Fig. 14 circled). The purpose of the building is unclear, however by the time of the publication of the 1955 OS map the building is no longer in use and is identified as ruined. The landscape associated with the building appears to have been altered and a reduction of the footprint of Dogloitch Wood had taken place, with the land now depicted as rough grassland.



Fig. 14 Close-up extract of 1922 25-inch OS Map

- 3.41. The former woodland remains as grassland until the 1960s when a formal boundary to the woodland is created and the previous woodland converted for arable use. This parcel of arable land includes the area formerly occupied by the building. During the Site walkover, no above ground evidence of the former building was identified.
- 3.42. West Yorkshire HER records the remains of a possible World War II decoy present in the south-eastern region of the Site (Fig. 6, **25**). The feature is identified as a former 'starfish site'. During the Second World War bombing decoys were an integral element of passive defence against air raids on both sides of the conflict. Decoys formed one element of a nationwide integrated air defence system including RAF Fighter Command, barrage-balloons, anti-aircraft batteries, search-lights, and civil defence.
- 3.43. The assumption underpinning decoy sites was that bomber crews (especially those with less experience) would assess that a raging fire, visible from miles away, was the intended target and simply attack that. To achieve this, the decoy had to be sufficiently close to an industrial, military, or economic target so that navigators would be uncertain about which was the actual target, and decide that the decoy was credible. The theory was that once the first wave of bombers had attacked a

target, the decoy site would be activated, the extensive fires diverting subsequent waves. All potential strategic targets therefore needed their own manned decoy site and facilities in the form of a concrete bunker and other accommodation, for this strategy to be effective.

- 3.44. Four main decoy site types were developed in the early part of the war. A number were built during 1940, and many others established in 1941. Airfields (K and Q sites), for day and night operation, respectively, were the first to be developed in earlier 1940; aircraft factories (K sites), the second; diversionary sites (Special Fire, SF, or Starfish), the third, from November 1940 (following the attack on Coventry); and sites simulating urban lighting (QL sites), the fourth, from June 1941. Historically, decoy sites were of most importance during the Blitz, but continued to be built into the mid-war period. By April 1941, 130 Starfish sites had been built to protect the major towns of England and Wales (Dobinson 2000).
- 3.45. The bombing decoy facility at Chidswell was built in 1941 as a 'Permanent Starfish' site to deflect enemy bombing from the city of Leeds. By 1942 a 'QL' decoy was incorporated into the site as part of the 'C-series' of civil decoys to protect Dewsbury coke oven plant. The 'QL' decoy displayed lighting to simulate the railway marshalling yards and loco glows associated with the plant. The site is referenced as being operational until 1943, but could have been in use up until July 1944. The bombing decoy at Chidswell was one of twelve 'Starfish' sites for Leeds, and one of nine civil bombing decoys (Historic England 2015b).
- 3.46. The precise location of the decoy is unknown; however, it is possible the structure identified on historic OS Maps represents the decoy facility. The geophysical survey carried out over the Site in 1998 recorded two distinct linear responses that formed an 'L-shaped' feature. No earthworks or above ground features were identified that could relate to the anomalies. These then have the potential to correspond to buried remains associated with the military installation. No exact location references were provided within the geophysical survey results and the precise location of the anomalies is presently unclear; likely though to be located adjacent to the eastern boundary of the Site (Fig. 6, 25).
- 3.47. Beyond evidence of activity during World War II within the Site, no more recent changes within the Site are recorded. Today the Site comprises large parcels of arable land within which remnants of its historic landscape narrative remain.

4. ARCHAEOLOGICAL SIGNIFICANCE & POTENTIAL EFFECTS

The significance of known and potential archaeological remains within the Site

- 4.1. This assessment has identified that no designated archaeological remains are located within the Site; no *designated* archaeological remains will therefore be adversely physically affected by development within the Site
- 4.2. This assessment has identified a potential for buried archaeological remains to be present within the Site. As no previous extensive archaeological investigation has occurred to determine the presence, extent, and significance of any such archaeological remains, the scale of impact caused by proposed development of the Site is presently unquantifiable. Potential non-designated archaeological remains identified within the Site comprise:
- Buried remains of prehistoric or Roman activity including enclosures;
 - Buried remains of medieval or post-medieval cultivation practices;
 - Buried remains associated with industrial extraction practices; and,
 - Buried remains of a 20th century military installation.

Potential remains of prehistoric or Roman activity

- 4.3. Within the Site, cropmarks have been identified which could indicate the presence of sub-rectangular enclosures. A geophysical survey conducted across the Site confirmed the likely presence of buried archaeological remains consistent with the cropmarks, but provided no additional detail on their origin, date or function. It is possible that the buried archaeological remains of similar features could be present within the Site.
- 4.4. The significance of any such buried archaeological remains will derive from the evidential and historical (illustrative) value they may hold in providing a greater understanding of agricultural or settlement activity during these periods. It is possible any potential buried remains could contribute to a better understanding of the transition between the Iron Age and Roman periods for example. Furthermore, any potential buried archaeological remains that may relate to prehistoric or Roman field systems or settlements have the potential to contribute to a rationalisation of the classification of prehistoric landscape features, most notably enclosures, as set out in the Yorkshire Archaeological Research Framework (Roskams & Whyman, 2007).

Potential remains of medieval or post-medieval cultivation practices

- 4.5. The geophysical survey conducted across the Site recorded regular linear anomalies consistent with agricultural practices, including ridge and furrow cultivation. During the Site walkover, no above ground remains of ridges were identified, and the anomalies observed during the geophysical survey are considered typical of surviving buried and infilled furrows. Their significance is derived from the contribution they make to understanding of the changing historic landscape from the medieval period onwards. The remains of infilled furrows are not rare in the wider region and would make only a very limited contribution to understanding the historic landscape and historic agricultural practices, and are accordingly of only very limited heritage significance.

Potential remains associated with industrial extraction practices

- 4.6. Cartographic and documentary sources record coal extraction and processing occurring within the Site. The footprint of directly affected ground appears to be limited to a small area in the eastern part of the Site; however, it is possible associated features or structures are present deeper underground. No above ground remains of the Dogloitch Pit structures remain although it is possible foundations and other buried structural elements may be present within the Site.
- 4.7. The West Yorkshire Regional Archaeological Research Framework acknowledges the industrial heritage of the region and identifies potential for a greater understanding of the regions coal mining heritage. A fuller understanding of such activity within the Site has a potential to contribute to a limited extent to the national overview. The archaeological framework states that *'every available opportunity should take for the archaeological investigation and recording of surviving underground working where these are threatened by opencast or other development. Particular attention should be given to the area surrounding pit heads – especially the footprints of later spoil heaps which may be targeted for re-working or land reclamation'* (Gomerall 2005). On this basis, potential buried archaeological remains associated with coal extraction activity are likely to be of some heritage significance.

Potential remains of 20th century military installation

- 4.8. Within the eastern part of the Site lie the possible remains of a World War II decoy site for Leeds City and Dewsbury oven coke plant. Aerial photographs from the late 20th century record the site of the decoy had been given over to agriculture and any

upstanding remains of the complex lost. During the Site walkover no above ground remains were observed, nor were any features which may indicate the presence of below ground remains.

- 4.9. Civil Defences in England such as decoy sites were designed and created in a utilitarian way, but remain as historically and technological significant. Whilst there is good knowledge of these sites, Historic England identify the need for further research into 20th century civil defence structures remains, and although no above ground remains of the decoy structure have been identified within the Site the potential buried remains, which may include building foundations, have the potential to contribute to further research topics associated with military structures and as such any potential buried remains would be of heritage significance.

Previous Impacts

Cultivation

- 4.10. This assessment has identified that the Site comprises predominantly arable land, which has been the dominant historical primary function of the land throughout documented history. Agricultural practices will have impacted upon earlier archaeological horizons to an extent; however, it is likely any resultant truncation due to deep ploughing for example is only like to have affected the upper archaeological horizon.

Coal mining

- 4.11. Despite the limited truncation resulting from cultivation practices, more substantial truncation is known to have occurred in isolated areas of the Site as a result of coal mining, and potentially could have resulted in the loss of archaeological remains (where any such may have been present) in those areas of the Site where surface activities associated with mining are known to have occurred.
- 4.12. The data provided by The National Coal Authority indicates impacts are likely to have occurred at mine entry points and where shafts have been sunk. The ground immediately surrounding the shafts is also likely to have been impacted upon, however the extent to which this would have occurred is unclear (Fig. 15).

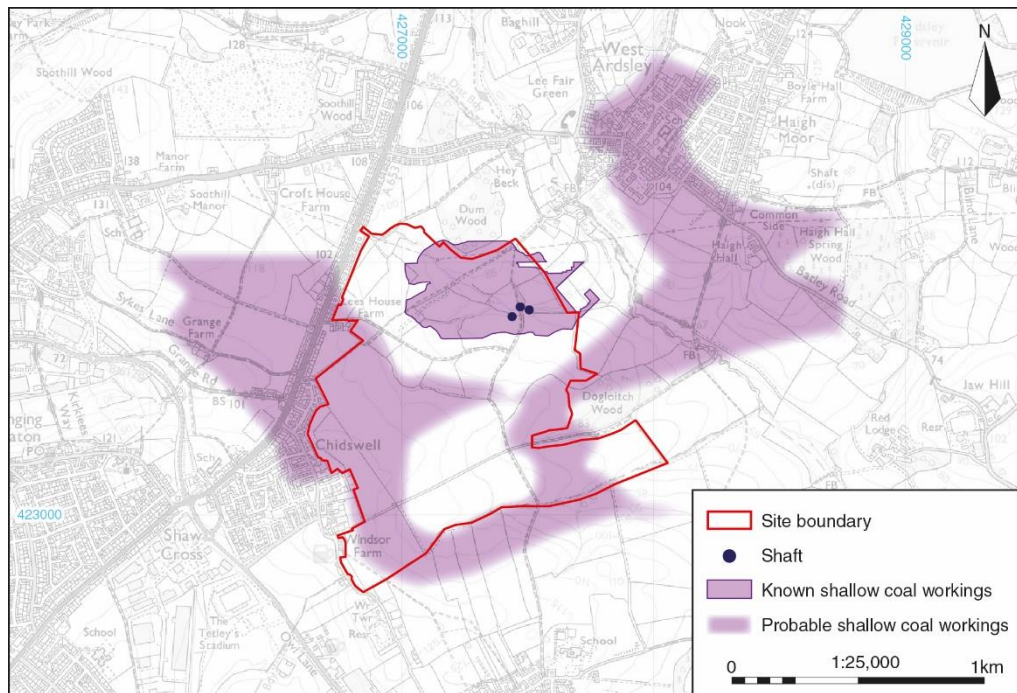


Fig. 15 Extract of coal working data from The National Coal Authority

- 4.13. In addition to the mine heads and shafts, further potential impact is recorded where past shallow coal mine workings have occurred. These workings appear to extend north from the Dogloitch Pit workings, with further possible shallow coal mine workings recorded on the eastern and western areas of the Site, most likely associated with other mining facilities to the west and south of the Site (Fig. 15).
- 4.14. Shallow coal mining is defined as ‘laying at a depth of up to 10 times the thickness of coal seam extraction down to a maximum depth of 30m’. (Coal Authority 2014a). Whilst it is likely the extraction process itself would not have directly physically affected potential archaeological remains, such mining is known to have limited overlying supporting strata, which can then result in subsidence of the upper-lying strata. This could affect the coherence of potential buried archaeological remains.
- 4.15. The location of probable shallow mining is estimated from mining records and predicts the location of possible workings prior to the enforcement of record keeping in 1872 (Coal Authority 2014b). Where such workings are predicted, it is likely similar impacts to potential archaeological remains are may have occurred.

Potential development effects

- 4.16. No significant known archaeological remains have been identified within the Site, and there is considered to be a broadly low potential for any significant unknown archaeological remains to be present within the Site.
- 4.17. Any disturbance (physical development effects) of less significant non-designated archaeological remains that may be present within the Site would primarily result from groundworks associated with construction. Such groundworks might include:
- pre-construction impacts associated with demolition and ground investigation works;
 - ground reduction;
 - construction ground works, including building and road foundation trench excavations and the excavation of service trenches;
 - excavation of new site drainage channels (including soakaways); and
 - landscaping and planting.

5. THE SETTING OF HERITAGE ASSETS

5.1. This section considers potential non-physical effects upon the significance of susceptible heritage assets within the Site environs. Non-physical effects are those that derive from changes to the setting of heritage assets as a result of new development.

Step 1: Identification of heritage assets potentially affected

5.2. Step 1 of the Second Edition of Historic England's 2017 'Good Practice Advice in Planning: Note 3' (GPA3) is to 'identify which heritage assets and their settings are affected' (see Appendix 1). GPA3 notes that Step 1 should identify the heritage assets which are likely to be affected as a result of any change to their experience, as a result of the development proposal (GPA3, page 9).

5.3. Heritage assets summarised in Table 5.1 below are those that have been identified, as part of Step 1, as potentially susceptible to impact as a result of changes to their setting (depicted on Fig. 4.). These assets have been identified using a combination of GIS analysis and field examination, which has considered, amongst other factors, the surrounding topographic and environmental conditions, built form, vegetation cover, and lines of sight, within the context of the assets' heritage significance.

Heritage Asset	Description	Setting
Howley Hall (Scheduled Monument; Fig. 4, 12)	The Scheduled Monument includes the ruins and below ground remains of the 16th century country house, and the earthworks associated with its gardens. There are some elements of standing fabric and earthworks which indicate the presence of a former bowling green. Howley Hall was commissioned by and was the residence of sir John Saville, a prominent local figure. Documentary sources suggest that it was also altered and augmented over time.	The remains protected under the designation are located upon a level spur of a south-west facing sandstone escarpment. The remains are situated to the eastern end of the spur and follow the alignment of the escarpment with the original intention of providing its residence with a view across the Calder Valley. Although its position on the escarpment survives, the remains are now incorporated within a golf course, which has been heavily landscaped in recent times.

Heritage Asset	Description	Setting
<p>The Church of St Mary and a group of Tombs and grave slabs (Grade II Listed; Fig. 4, 15)</p>	<p>The origins of the Church of St Mary are believed to lie in the 12th century. The nave was rebuilt in 1832, with the chancel being rebuilt and extended some two years later. Three semi-circular arches can be seen in the northern façade of the nave possibly relating to an earlier church. The main architectural feature is a large embattled stone tower. The main entrance is located to the west, at the base of the tower. Within its churchyard there also lies a group of Listed grave slabs and tombs dated to between 1681 and 1744.</p>	<p>The Church is set within its churchyard which expands to the south and comprising its principal setting. It lies directly to the east of Leeds Road but the views into the churchyard and towards the church are restricted by a stone wall and a line of well-established trees.</p>
<p>Haigh Hall (Grade II Listed; Fig. 4, 16)</p>	<p>A former farmhouse constructed of timber-framing dating to the mid-16th century, which was then encased in stone in approximately 1768. Internal and external features are specifically identified within the listing description. Haigh Hall is also noted to have been the residence of several key residents of the local area from the 16th century onwards.</p>	<p>Haigh Hall shares its associated grounds with a complex of outbuildings, which have been converted in the early 21st century from former agricultural buildings. These comprise its principal setting. To the north of the complex is a large 20th century residential development, whilst to the east, west and south lie arable land.</p>
<p>Manor Farm Barn (Grade II Listed; Fig. 4, 17)</p>	<p>A probable early 18th century barn; the front wall and the rafters have been dated to c.1800. The earliest phase is of thin coursed rubble, with rock-faced stone to the front elevation and a welsh blue-slate roof. In 1999, the barn was modernised and converted into a one-bedroom house.</p>	<p>Manor Farm Barn shares its associated grounds with a modern residential building. There are further modern residential buildings to the west, north and east while agricultural land expands to the south.</p>
<p>25 and 27, Baghill Road (Grade II Listed; Fig. 4, 18)</p>	<p>25 and 27 Baghill Road are two late 18th century cottages. Constructed of hammer-dressed stone, dressed quoins and a stone slate roof. Both cottages feature a 2-light flat-faced mullioned window to the ground floor with a 3-light flat-faced mullioned window to the second storey and a brick chimney stack on both gable ends.</p>	<p>The cottages lie on a street which is aligned broadly north/south and is principally composed of modern residential buildings. The landscape to the east and west is of open agricultural fields.</p>

Heritage Asset	Description	Setting
Church of St Paul (Grade II Listed; Fig. 4, 19)	The Church of St Paul was constructed between 1823 -1825 to designs by Thomas Taylor. The structure was altered in 1894 and restored in 1917 after a fire the year before. Architectural features include a projecting three-tier tower with perforated parapet and tall octagonal pinnacles. A clock face is located on three of the towers elevations. The main entrance to the Church is located at the base of the tower.	St Paul's principal setting is its associated churchyard, defined by well-established trees and vegetation. It occupies an area of higher ground which makes it a prominent feature in the local landscape. From within the churchyard, views of the wider landscape are limited due to residential development to the south and west of the Church. However, where views of the wider landscape are possible, these are characterised by large modern arable parcels of land (principally to the north).
Toll Gates outside Toll Bar Cottage (Grade II Listed; Fig. 4, 20)	A pair of cast and wrought iron gates defining a former toll road. the gates are formed from a pair of tall circular gate piers with conical tops that are flanked by panels created using a diamond lattice pattern. The Turnpike Road between Dewsbury to Leeds was given assent in 1841 and was constructed after 1850.	The toll gates mark the eastern extent of the turnpike road, which has since been abandoned. The gate now marks a length of private road used for modern residential properties. Surrounding the gates are further properties and a public park. No features of the landscape contemporary at the time of installation survives.
Station Road, Batley Conservation Area (Fig, 15, 26)	Measuring an area of 28ha the Conservation Area was designated in 1987 and contains 32 Listed Buildings. The character of the Conservation Area is a mix of industrial, commercial and residential uses.	The Conservation Area is located 1.1km to the west of the Site and is set within a wider area of mixed and recent urban development.

Table 5.1 Heritage Assets identified as part of Step 1

5.4. The Site visit and study area walkover identified there would be no non-physical impact upon the significance of Station Road Batley Conservation Area (Fig.4, 26), the Church of St Paul (Fig.4, 19), the Toll Gates outside Toll Bar Cottage (Fig.3, 20), the Church of St Mary (Fig.4, 15), Numbers 25 and 27 Baghill Road (Fig.4, 18), or the Manor Farm Barn (Fig.4, 17) as a result of proposed changes to the use and/or significance of the Site. These heritage assets are all located some distance to the west or north of the Site, where their setting comprises the principally 20th century residential suburbs of Dewsbury, Woodkirk or Batley. Their immediate settings would not be altered beyond their prevailing 20th century character by the proposed development and as such the contribution their setting makes to the significance of these heritage assets will not change. Views of the surrounding

landscape (including toward the Site), from these assets and those areas of their principal settings are negligible. Where glimpsed long-distance views are possible they are primarily crowded by intervening residential built form and influenced by undulations in the landscape. On this basis the proposed development will result in no harm to the significance of these assets and no further assessment is considered a requirement.

- 5.5. To the north-west of the Site lies Howley Hall (Fig.4, 12), a country house built in the 16th century; represented now principally by buried remains of former buildings and much changed former gardens. The associated grounds of Howley Hall now comprise a golf course, with the surviving remains of the former country house located adjacent to the modern landscaped driving ranges. Howley Hall is a Scheduled Monument and derives its significance primarily from the evidential and historical value embodied within its physical remains. The immediate setting of the designated remains has altered markedly over time and contributes very little to its existing significance. The Site lies c.1.7km to the south-east of Howley Hall and does not comprise an element of its setting that contributes to the significance of the asset. On this basis the proposed development of the Site will not result in harm to its significance. No further assessment is therefore considered a requirement.

Steps 2 – 4: Assessment of setting and potential effects of the development

- 5.6. This section presents the results of Steps 2 to 4 of the settings assessment. Step 2 assesses the degree to which setting contributes to the significance of the heritage assets, or how it allows their significance to be appreciated. Step 3 then considers how, if at all, and to what extent any anticipated changes to the setting of those assets, as a result of development within the Site, might affect their significance or the ability to appreciate it. Finally, Step 4 considers if/how any identified heritage enhancements might be maximised and if/how any identified harm to heritage significance might be minimised.

Haigh Hall (Grade II Listed); Fig. 4, 16

Significance (special historic and architectural interest)

- 5.7. The grade II Listed Haigh Hall is a two-storey, slated roof farmhouse. It is constructed from punch-dressed stone with ashlar dressings, with a timber frame dating from the mid-16th century; however, this was later encased in stone over two phases, around 1768 and again in the early 19th century. In the late-19th and 20th century, the farmhouse was subject to further additions and it is noted in the Listing

description that the later brick kitchen and stack are of no interest (NHLE: 1250888). Further distinctive, descriptive elements of the building include a keystone inscribed 'T 1768 W' beneath a cartouche of the Savile coat of arms. Internally the Listed Building still retains some of the 18th century fireplaces, their original surrounds and 6-panelled doors.

- 5.8. The earliest recorded resident at Haigh Hall is Jeremiah Marsden, a puritan Minister who preached in the parish between 1600-1662. The coat of arms engraved on the building refers to the Savile family, Lords of the Manor during the 16th and 17th centuries. In the 18th century, Haigh Hall was the residence of William Elmsall, Steward to George, Third Earl of Cardigan. The Earl is reportedly known to have stayed at the property in 1730, and a connection between the Savile family and the Cardigans is well documented through marriage.
- 5.9. The significance of the Listed Building is derived principally through the evidential and historic value of its fabric and architectural quality, which also provides a measure of aesthetic value. The documented association between the property and prominent figures in the local area during from the 16th to 18th centuries also provide historical (associative) value.

Physical Surrounds 'what matters and why'

- 5.10. Haigh Hall is located atop a west-facing valley slope which extends towards the eastern boundary of the Site. The valley bottom appears to be defined by parcels of woodland and hedgerows that define field boundaries (Photo 1). Agricultural parcels of land are present to the south and west of Haigh Hall, including the land immediately to the west. There is a continuity of agricultural use in the wider landscape, albeit somewhat ameliorated with the cessation of earlier mining activities within and close to the Site that can be considered to retain a loose historical association with Haigh Hall and its own agricultural past.



Photo 1 Looking north-east towards Haigh Hall from within the Site

- 5.11. The heritage asset itself is set within private grounds, which are shared with several outbuildings. This comprises the asset's principal setting, and that which most contributes to its significance. Historical satellite images show these previously functioned as farm outbuildings but were converted in the early 21st century to domestic dwellings (Photo 2). Despite the change in function, the location of the buildings has not altered and the relationship of the former outbuildings and grounds with Haigh Hall can still be appreciated.

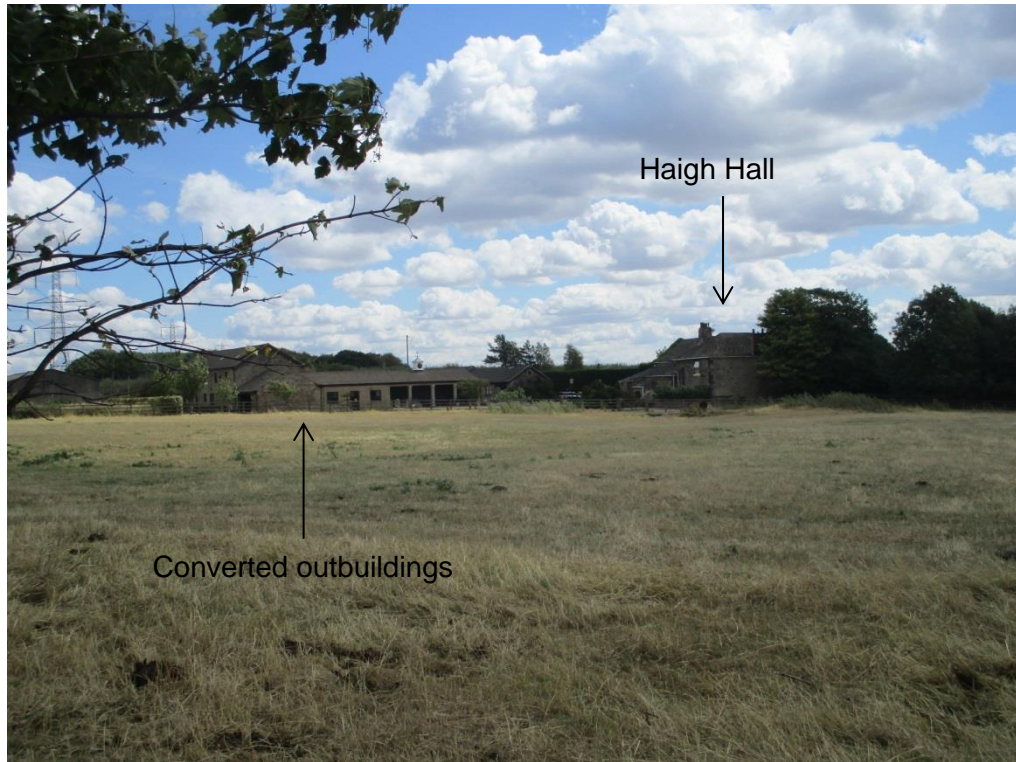


Photo 2 Looking east towards the complex of buildings at Haigh Hall

- 5.12. Whilst the principle character of the surrounding landscape could be identified as agricultural in form, 20th century development is evident. To the north of Haigh Hall is a large modern housing estate that extends north across slightly higher ground, so the dwellings act as dominant features in the landscape (Photo 3). Other dominant features in the landscape include high voltage pylons; one alignment located approximately 115m to the north of the Listed Building.



Photo 3 Looking south-east from Haigh Moor Road

Experience – ‘what matters and why’

- 5.13. Haigh Hall as a whole is best experienced from within its immediate setting (its grounds) where the architectural quality of the principal building can be appreciated, and from within the building itself. It may also be possible that within the building (not accessible for this assessment), an appreciation of its historical relationship with historic local figures may better be understood.
- 5.14. The historical function of the former farmhouse can be appreciated from its grounds, outwards into the immediate surrounding landscape. Most notably in views to the north-west and the south, which permit something of an appreciation of its former agricultural function.
- 5.15. Whilst the Listed Building is best appreciated from within its immediate grounds and surroundings, this also includes views of modern elements of the wider landscape including residential development to the north and high voltage pylons in the landscape. These reflect more recent changes in the wider landscape (Photo 2).
- 5.16. As Haigh Hall is set within private land, it is more commonly experienced from a public perspective along neighbouring public rights of way. The complex of buildings at Haigh Hall is defined to the north by Batley Road. From here only

glimpsed views of the Listed Building, which is set back from the road, are possible, in spaces where it is not screened by vegetation and intervening built form.

- 5.17. Approximately 200m to the west of Haigh Hall is a public footpath from which the west-facing elevation of the Listed Building can be viewed as one passes. From this footpath the Listed Building can be appreciated within its former farm complex; however its intrinsic architectural interest and historical association cannot readily be appreciated from this location (Photo 4). Within the northerly views from the footpath toward Haigh Moor Road the modern landscape is more pronounced, having something of a dominant effect on the complex at Haigh Hall (Photo 3). IN summary the former historical agricultural sense of the complex is now not measurably tangible.



Photo 4 Looking south-east towards Haigh Hall and its substantial surrounding vegetation

- 5.18. The Site is located 750m to the south-west of Haigh Hall occupying a gentle western slope formed by Hey Beck (Photo 5). The Site occupies an area of agricultural land, which comprises an element of the wider agricultural/rural character of the landscape in which Haigh Hall is set. The Site is not considered to comprise a notable element of the asset's setting though does make a nominal contribution to the asset's significance on the basis of its prevailing historical agricultural association.



Photo 5 Looking west towards the arable land associated with Haigh Hall, with the Site in the distance

- 5.19. The proposed development will result in some loss of the prevailing agricultural character of the wider landscape; however, no sense of this loss will be perceived within the immediate vicinity of Haigh Hall and its associated former outbuildings. The historic function of the building as part of a farmstead will on that basis remain intact. In the wider landscape locations from which the asset can be observed and best appreciated are primarily focused eastwards and southwards and the Site is not included within these views. Perception of the wider landscape in which Haigh Hall is set will change though and this will slightly alter an element of setting that contributes to the asset's significance. On this basis the proposed development is likely to result in a very slight measure of harm; at the lower end of less than substantial harm, to the significance of the asset.

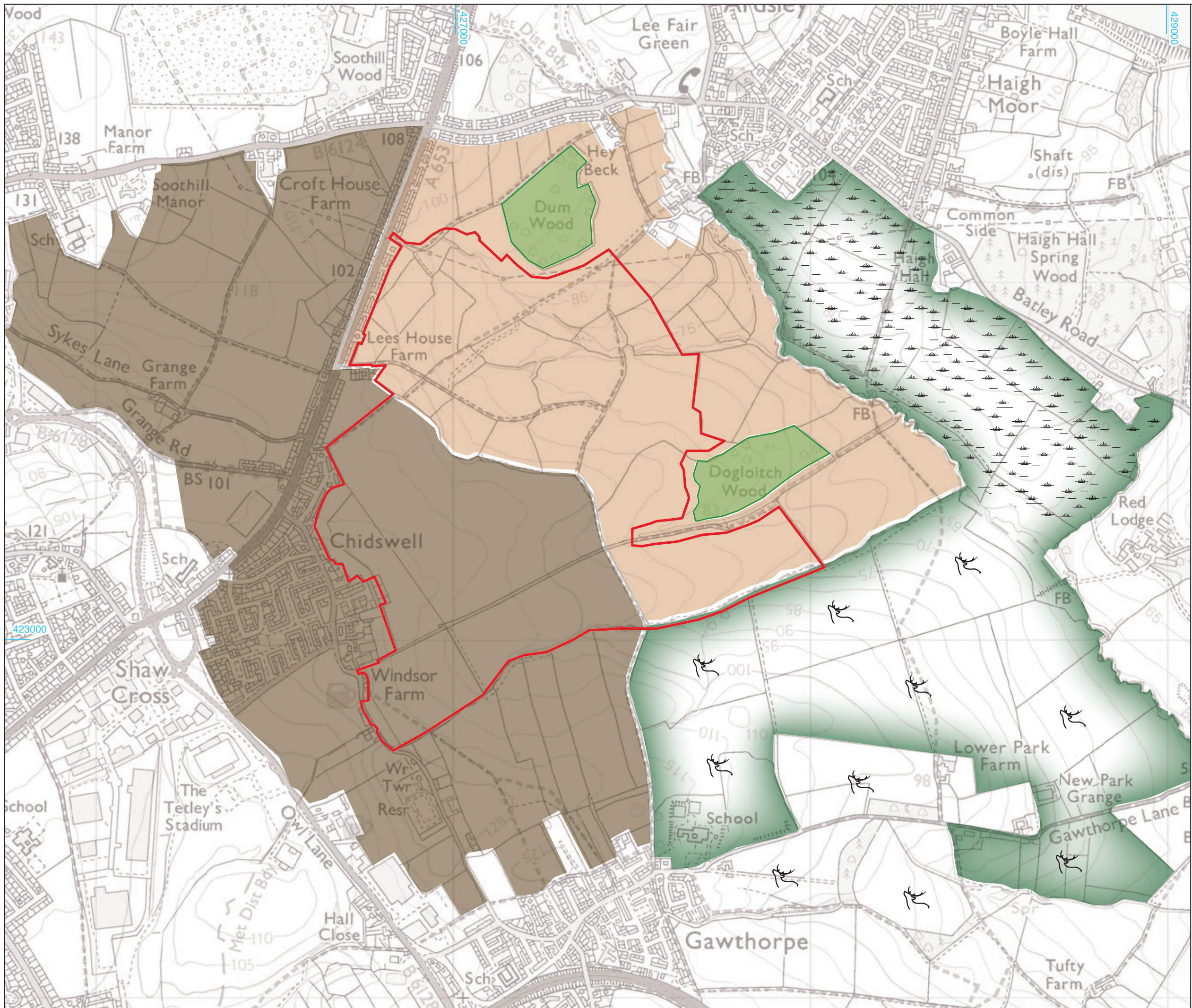
Historic Landscape Characterisation including Ancient Woodland and Hedgerows

- 5.20. The West Yorkshire Historic Landscape Characterisation project (WYHLC) was published in 2017 (WJAS). The project ran between 2011- 2017 and sought to identify the historic character of the region and its context in the modern landscape. The project identified that much of the West Yorkshire region comprises areas with both rural and urban attributes which are intermingled and not geographically distinct, indicating a dispersed settlement pattern. This historic development

suggests extensive ribbon development along roads and the margins of common land fronting areas, which retain their rural attributes. Due to this development trend, the project methodology required the region to be separated into sub-regions. The Site is located within the sub-region of Kirklees, and its southern boundary defines the Wakefield sub-region.

- 5.21. Land within the Site is broadly characterised as 'Enclosed Land', which is defined as *'land that has been demarcated and enclosed for agricultural purposes, particularly fields'* (Fig. 16).
- 5.22. This *Enclosed Land* can be further defined by different agricultural purposes, with the function apparently altering during different periods. The majority of the Site, extending to the north and east is identified as Assarted Land, *'Irregular enclosure with comparatively high levels of mature trees in pockets of woodland and in boundaries'*. Assarted land is generally taken as land reclaimed from nearby woodland and forest, with settlements in the vicinity likely to be associated with place names such as 'ley', 'hurst' and 'feld' (Rackham 1986). Where it is not possible to determine a date at which the land became assarted, it is assumed to be from at least 1066 when *'expansion of rural population in early medieval period caused the establishment of new fields on former waste and woodland'* (Hey 1979). To the north and east of the Site are two parcels of ancient woodland: Dogloitch Wood and Dum Wood. It is possible that the land within the Site at an early date would have comprised an element of more extensive woodland of which these remain surviving components. Certainly historic maps show Dogloitch Wood did extend within the Site before being reduced in size as a result of 20th century development.
- 5.23. The western and southern area of the Site, land is initially defined as *Open Fields*, which are formed from larger parcels of enclosed land initially formed during the medieval period (Fig. 16). These large parcels would have been farmed by the nearby community in linear strips known as ridge and furrow cultivation. These strips later become systems of larger blocks of land bounded by hedgerows or stone walls. Strip field enclosure is considered to have occurred from 1540; however a phase of irregular piecemeal enclosure occurs within the south-western part of the Site prior to formalised enclosure occurring across the region between the 18th and 19th century.

5.24. The character of the western half of the Site appears to be present until the 20th century when agglomeration of irregular parcels occurs to accommodate advances in mechanisation and production in the agricultural industry. With this agglomeration, significant field boundary loss occurred, through both the intentional removal of boundaries and a lack of maintenance; however, that a number of hedgerows which are present within the Site appear to follow the alignment of historic field boundaries as depicted on the 1799 Map of Soothill (Fig. 7). Whilst it is not possible to determine if the current vegetation is a surviving feature of the historic landscape, their alignment does appear to be of historical relevance and as such they have the potential in line with the Hedgerows Regulations (1997) to be of measurable historic value.



- Site boundary
- Study area
- Assarted land
- Ancient woodland
- Piecemeal enclosure
- Open fields
- Moorland
- Deer park

0 1:10,000 500m

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PROJECT TITLE
 Land to the East of Leeds Road,
 Chidswell, West Yorkshire

FIGURE TITLE
 Historic landscape characterisation

<small>DRAWN BY</small> EE	<small>PROJECT NO.</small> 661161	<small>FIGURE NO.</small>
<small>CHECKED BY</small> DJB	<small>DATE</small> 10/12/2019	16
<small>APPROVED BY</small> MH	<small>SCALE</small> @A3 1:10,000	

6. CONCLUSIONS

- 6.1. This assessment has considered the potential for buried archaeological remains to be present within the Site and has sought to appraise impacts of proposed redevelopment upon the significance of both buried archaeological remains and nearby designated heritage assets, notably the Grade II Listed Haigh Hall. The proposed development will comprise the construction of up to 1,345 domestic dwellings and the development of an area of 35ha of land for employment and public facilities.
- 6.2. There are no known buried archaeological remains recorded within the Site, however historic aerial photographs record cropmarks that may represent evidence of buried archaeological remains. A geophysical survey carried out across the Site recorded anomalies, which confirmed the likely presence of buried remains broadly similar in morphology to those identified as cropmarks. These could comprise the remains ditches and a possible sub-rectangular enclosure associated with agricultural practices or settlement. No further archaeological investigation has been undertaken to determine the accuracy of the survey results, and therefore the nature, date, extent and preservation of any such potential archaeological features is unknown.
- 6.3. It is considered there is potential of currently unknown archaeological remains to be present within the Site ranging in date from the prehistoric period, potentially through the modern period. However impacts recorded within the Site include colliery activity, and it is likely disturbance of potential buried archaeological remains may have occurred within the vicinity of these facilities. Further impact on potential buried archaeological remains is likely to have occurred as a result of historical agricultural from practices.
- 6.4. A detailed and proportionate settings assessment was undertaken on nearby designated heritage assets. There will be no harm to the physical components of any designated heritage assets and with the exception of Haigh Hall there will be no change to non-physical elements (settings) that contribute to the significance of any designated heritage assets. As noted, perception of the wider agricultural landscape in which Haigh Hall is set will change, slightly altering an element of setting that contributes to the asset's significance, which will result in less than substantial harm, albeit at the lower end, to the significance of the asset.

-
- 6.5. It is also concluded that change resulting from the proposed development will have a negligible effect on the prevailing character of the wider historic landscape. This assessment identified while the Site has predominantly an agricultural history, it has also experienced quite extensive use for mining in the late 19th and early 20th centuries. In addition the wider surrounding landscape today is dominated by modern residential development such that change within the Site will not be measurably harmful. It should be noted; however, that a number of hedgerows which are present within the Site appear to follow the alignment of historic field boundaries as depicted on the 1799 Map of Soothill. Whilst it is not possible to determine if the current vegetation is a surviving feature of the historic landscape, their alignment does appear to be of historical relevance and as such they have the potential in line with the Hedgerows Regulations (1997) to be of measurable historic value.
- 6.6. Paragraph 189 of NPPF requires that the level of detail accompanying an application 'should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance'. This assessment forms the evidence base on which consultation with the Local Authority's heritage advisors can commence to determine the requirement further investigation to ensure any future application is full informed.

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Cartographic sources

1779	Plan of the Manor of Soothill
1854	First Edition Ordinance Survey Map
1894	25 - inch Ordinance Survey Map
1895	Ordinance Survey Map
1907	25 – inch Ordinance Survey Map
1922	25 – inch Ordinance Survey Map
1931	six – inch Ordinance Survey Map

APPENDIX 1: HERITAGE STATUTE POLICY & GUIDANCE

Heritage Statute: Listed Buildings

Listed Buildings are buildings of ‘special architectural or historic interest’ and are subject to the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990 (‘the Act’). Under Section 7 of the Act *‘no person shall execute or cause to be executed any works for the demolition of a Listed Building or for its alteration or extension in any manner which would affect its character as a building of special architectural or historic interest, unless the works are authorised.’* Such works are authorised under Listed Building Consent.

Under Section 66 of the Act ‘In considering whether to grant planning permission for development which affects a Listed Building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any feature of special architectural or historic interest which it possesses’.

Note on the extent of a Listed Building

Under Section 1(5) of the Act, a structure may be deemed part of a Listed Building if it is:

- (a) fixed to the building, or
- (b) within the curtilage of the building, which, although not fixed to the building, forms part of the land and has done so since before 1st July 1948

The inclusion of a structure deemed to be within the ‘curtilage’ of a building thus means that it is subject to the same statutory controls as the principal Listed Building. Inclusion within this duty is not, however, an automatic indicator of ‘heritage significance’ both as defined within the NPPF (2018) and within Conservation Principles (see Section 2 above). In such cases, the establishment of the significance of the structure needs to be assessed both in its own right and in the contribution it makes to the significance and character of the principal Listed Building. The practical effect of the inclusion in the listing of ancillary structures is limited by the requirement that Listed Building Consent is only needed for works to the ‘Listed Building’ (to include the building in the list and all the ancillary items) where they affect the special character of the Listed Building as a whole.

Guidance is provided by Historic England on ‘Listed Buildings and Curtilage: A Historic England Advice Note’ (Historic England 2016).

Heritage Statute: Conservation Areas

Conservation Areas are designated by the local planning authority under Section 69(1)(a) of the Planning (Listed Buildings and Conservation Areas) Act 1990 ('the Act'), which requires that *'Every local planning authority shall from time to time determine which parts of their area are areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance'*. Section 72 of the Act requires that *'special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area'*.

The requirements of the Act only apply to land within a Conservation Area; not to land outside it. This is set out within 'Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets' (2017; see below) which states that *'In primary legislation, the setting of Conservation Areas is not a statutory duty'* (page 5). This fact is also clarified in various Appeal Decisions (for example APP/F1610/A/14/2213318 Land south of Cirencester Road, Fairford, Paragraph 65: *'The Section 72 duty only applies to buildings or land in a Conservation Area, and so does not apply in this case as the site lies outside the Conservation Area'*).

The NPPF (2018) also clarifies in Paragraph 201 that *'Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance'*. Thus land or buildings may be a part of a Conservation Area, but may not necessarily be of architectural or historical significance. Similarly, not all elements of the setting of a Conservation Area will necessarily contribute to its significance, or to an equal degree.

Heritage Statute: Scheduled Monuments

Scheduled Monuments are subject to the provisions of the Ancient Monuments and Archaeological Areas Act 1979. The Act sets out the controls of works affecting Scheduled Monuments and other related matters. Contrary to the requirements of the Planning Act 1990 regarding Listed Buildings, the 1979 Act does not include provision for the 'setting' of Scheduled Monuments.

National heritage policy: the National Planning Policy Framework ('NPPF')

Heritage assets and heritage significance

Heritage assets comprise 'a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest' (NPPF (2018), Annex 2).

The NPPF (2018), Annex 2, states that the significance of a heritage asset may be archaeological, architectural, artistic, or historic. Historic England's 'Conservation Principles' (2008) looks at significance as a series of 'values' which include 'evidential', 'historical', 'aesthetic' and 'communal' (see below).

Designated heritage assets include World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields and Conservation Areas (designated under the relevant legislation; NPPF (2018), Annex 2).

The setting of heritage assets

The 'setting' of a heritage asset comprises '*the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral*' (NPPF (2018), Annex 2). Thus it is important to note that 'setting' is not a heritage asset: it may contribute to the value of a heritage asset.

Guidance on assessing the effects of change upon the setting and significance of heritage assets is provided in 'Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets', which has been utilised for the present assessment (see below).

Levels of information to support planning applications

Paragraph 189 of the NPPF (2018) identifies that '*In determining applications, local planning authorities 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.*'

Designated heritage assets

Paragraph 184 of the NPPF (2018) explains that heritage assets '*are an irreplaceable resource and should be conserved in a manner appropriate to their significance*'.

Paragraph 193 notes that *'when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance'*.

Paragraph 194 goes on to note that *'substantial harm to or loss of a grade II listed building...should be exceptional and substantial harm to or loss of designated heritage assets of the highest significance (notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites) 'should be wholly exceptional'.*

Paragraph 196 clarifies that *'Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including, where appropriate, securing its optimum viable use.'*

Development Plan

Local planning policy is contained within Kirklees Unitary Development Plan (UDP) which was updated in September 2007. The update took into consideration changes to national policy, relating to the historic environment (PPG 15 and PPG 16), with the removal of some policies occurring. Those removed included BE3 and BE4 relating to Listed Buildings; BE7 and BE8 relating to Conservation Areas

The saved policies relevant to this assessment include the following:

Archaeology- BE9

'New development should have no detrimental effect on the archaeological value of Class I or II site. Only when other planning considered constitute and overriding factor will development be permitted, subject to policy BE10'.

Archaeology – BE10

'where a development proposal affects the archaeological value of a Class I, II or III site, the applicant may be required to provide an archaeological evaluation of the area do that the council, before deciding the application can determine whether:

- i) The site merits preservation in situ;*

ii) Proper provision for excavation and recording needs to be made before development proceed; or

iii) no action is necessary

Kirklees council are currently developing the Local Plan. The draft plan was submitted for independent inspection in April 2017. Modifications to the Local Plan are due to be consulted on in the autumn of 2018. When the Local Plan is adopted, the policy DLP36 - Historic Environment as published in the Draft local Plan (2015). This policy states:

‘Proposals should normally retain those elements of the historic environment which contribute to the distinct identity of the Kirklees area and ensure they are appropriately conserved considering in particular the need to:

a. ensure that proposals maintain and reinforce local distinctiveness and conserve the significance of designated and non-designated heritage assets;

b. ensure that proposals within Conservation Areas conserve those elements which have been identified as contributing to their significance in the relevant Conservation Area Appraisals;

c. secure a sustainable future for heritage assets associated with the local textile industry, historic farm buildings and places of worship;

d. identify opportunities, including use of new technologies, to mitigate, and adapt to, the effects of climate change in ways that do not harm the significance of heritage assets and, where conflict is unavoidable, to balance the public benefit of climate change mitigation measures with the harm caused to the heritage assets’ significance; and

e. accommodate innovative design where this does not prejudice the significance of heritage assets;

f. preserve the setting of Castle Hill and proposals which detrimentally impact on the setting of Castle Hill will not be permitted’.

Good Practice Advice 1-3

Historic England has issued three Good Practice Advice notes (‘GPA1–3’) which support the NPPF. The GPAs note that they do not constitute a statement of Government policy, nor do

they seek to prescribe a single methodology: their purpose is to assist local authorities, planners, heritage consultants, and other stakeholders in the implementation of policy set out in the NPPF (2018). This report has been produced in the context of this advice, particularly ‘GPA2 – Managing Significance in Decision-Taking in the Historic Environment’ and ‘GPA3 – The Setting of Heritage Assets’.

GPA2 - Managing Significance in Decision-Taking in the Historic Environment

GPA2 sets out the requirement for assessing ‘heritage significance’ as part of the application process. Paragraph 8 notes that ‘*understanding the nature of the significance is important to understanding the need for and best means of conservation.*’ This includes assessing the extent and level of significance, including the contribution made by its ‘setting’ (see GPA3 below). Page 3 notes that ‘*a desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area, and the impact of the proposed development on the significance of the historic environment, or will identify the need for further evaluation to do so*’.

GPA3 – The Setting of Heritage Assets

The NPPF (Annex 2: Glossary) defines the setting of a heritage asset as ‘*the surroundings in which a heritage asset is experienced*’. Step 1 of the settings assessment requires heritage assets which may be affected by development to be identified. Historic England notes that for the purposes of Step 1 this process will comprise heritage assets ‘*where that experience is capable of being affected by a proposed development (in any way)...*’.

Step 2 of the settings process ‘*assess[es] the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated*’, with regard to its physical surrounds; relationship with its surroundings and patterns of use; experiential effects such as noises or smells; and the way views allow the significance of the asset to be appreciated. Step 3 requires ‘*assessing the effect of the proposed development on the significance of the asset(s)*’ – specifically to ‘*assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it*’, with regard to the location and siting of the development, its form and appearance, its permanence, and wider effects.

Step 4 of GPA3 provides commentary on ‘*ways to maximise enhancement and avoid or minimise harm*’. Paragraph 37 notes that ‘*Maximum advantage can be secured if any effects on the significance of a heritage asset arising from development liable to affect its setting are*

considered from the project's inception.' Paragraph 39 notes that *'good design may reduce or remove the harm, or provide enhancement'*.

Heritage significance

Discussion of heritage significance within this assessment report makes reference to several key documents. With regard to Listed Buildings and Conservation Areas it primarily discusses 'architectural and historic interest', which comprises the special interest for which they are designated.

The NPPF provides a definition of 'significance' for heritage policy (Annex 2). This states that heritage significance comprises 'The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic'. This also clarifies that for World Heritage Sites *'the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance'*.

Regarding 'levels' of significance the NPPF (2018) provides a distinction between: designated heritage assets of the highest significance; designated heritage assets not of the highest significance; and non-designated heritage assets.

Historic England's 'Conservation Principles' (2008) expresses 'heritage significance' as comprising a combination of one or more of: evidential value, historical value, aesthetic value, and communal value.

Effects upon heritage assets

Heritage benefit

The NPPF clarifies that change in the setting of heritage assets may lead to heritage benefit. Paragraph 200 of the NPPF (2018) notes that *'Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably'*.

GPA3 notes that *'good design may reduce or remove the harm, or provide enhancement'* (Paragraph 14). Historic England's 'Conservation Principles' states that *'Change to a significant place is inevitable, if only as a result of the passage of time, but can be neutral or beneficial in its effects on heritage values. It is only harmful if (and to the extent that) significance is reduced'* (Paragraph 84).

Specific heritage benefits may be presented through activities such as repair or restoration, as set out in Conservation Principles.

Heritage harm to designated heritage assets

The NPPF (2018) does not define what constitutes ‘substantial harm’. The High Court of Justice does provide a definition of this level of harm, as set out by Mr Justice Jay in *Bedford Borough Council v SoS for CLG and Nuon UK Ltd*. Paragraph 25 clarifies that, with regard to ‘substantial harm’: *‘Plainly in the context of physical harm, this would apply in the case of demolition or destruction, being a case of total loss. It would also apply to a case of serious damage to the structure of the building. In the context of non-physical or indirect harm, the yardstick was effectively the same. One was looking for an impact which would have such a serious impact on the significance of the asset that its significance was either vitiated altogether or very much reduced’.*

Effects upon non-designated heritage assets

Paragraph 197 of the NPPF (2018) guides that *‘The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgment will be required having regard to the scale of any harm or loss and the significance of the heritage asset’*

APPENDIX 2: GAZETTEER OF HERITAGE ASSETS

Asset No.	Orig. Ref.	Description	Period
1	21265	Neolithic hand axe.	Neolithic
2	4543	Cropmarks of a double ditched lane were recorded extending south from Dum Wood.	Possible prehistoric
3	4342	Cropmarks identified from historical aerial photographs were recorded within the Site and subject to later investigation.	Prehistoric – Roman
4	4544	Cropmarks were identified within the Site which have been considered to represent the remains of linear ditches and possible enclosures.	Prehistoric – Roman
5	4060	Cropmarks of linear ditch were recorded to the west of the Site from aerial photographs.	Prehistoric - Roman
6	6305	To the east of the Site, cropmarks record the presence of a large sub-rectangular enclosure, which was recorded by archaeological investigation as a series of 'v'; shaped ditches.	Prehistoric – Roman
7	PAS: 1898	A findspot of a Roman coin.	Roman
8	PAS: 1348	Copper alloy headstud brooch.	Roman
9	5231	Settlement at Lee Fair is known to have been in existence since the medieval period.	Medieval
10	HLC	New Park deer park.	Medieval
11	2866	A watermill and dam were present that were associated with Lee Fair but were later subject to loss through construction work.	Medieval – post-medieval
12	NHLE: 1016323	The Designated Scheduled remains of a 16th century county house Howley Hall, are located to the north-west of the Site.	Medieval – post-medieval
13	1521	To the south of the Site the Her recorded the identified remains of a medieval field system within the burial ground of the Zion Congregational Church.	Medieval – modern
14	15754	To the east of the Site, iron slag was identified by metal detecting. Sherds of medieval pottery was also identified which may relate to metal processing.	Medieval – modern
15	NHLE: 1250737; 1251112; 1262922; 125122; 126921	The church of St Mary, a Grade II Listed Building, and a collection of Grade II Listed headstones and tombs are located to the north of the Site.	Medieval – modern
16	NHLE: 1250888	Haigh Hall is a Grade II Listed former farmhouse which has had some alterations and extension, however internal and external original elements survive.	Post-medieval

Asset No.	Orig. Ref.	Description	Period
17	NHLE: 1263115	To the north of the Site is the Grade II Listed Manor Farm Barn, a structure which is considered likely to date from the early 18th century.	Post-medieval
18	NHLE: 1250807	To the north of the Site is pair of late 18 th century cottages located on Baghill road. The structures are built from stone and are designated as Grade II Listed Buildings.	Post-medieval
19	NHLE: 1134649	The Church of St Paul is located to the west of the Site, within the modern domestic expansion of Hanging Heaton. The Church is a Grade II Listed Building.	Post-medieval
20	NHLE: 1253264	To the west of the Site is a pair of gat piers which mark the location of a mid-19 th century toll road from Dewsbury to Leeds. They are designated as Grade II Listed Building.	Post-medieval
21	3421	Fenton Dam was formed to link with New Park Colliery.	Post-medieval
22	OS Mapping	Dogloach Water Pit Colliery.	Modern
23	OS Mapping	Babes in the Wood Colliery.	Modern
24	OS Mapping	Chidswell Colliery.	Modern
25	6398	The remains a WWII decoy was recorded within the Site and potential remains associated with the structure were identified during geophysical survey.	Modern
26	Kirklees Council	To the west of the Site is Designated Conservation Area of Station Road, Batley.	Modern

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8.2 Geophysical Survey Report



magnitude
surveys

Geophysical Survey Report
of
Land to the East of Leeds Road and Heybeck Lane, Chidswell

For
Cotswold Archaeology

On Behalf Of
CC Projects

Magnitude Surveys Ref: MSSE562

HER Event Number: To be issued when submitted to HER

October 2019



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Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 119 ha area of Land to the East of Leeds Road and Heybeck Lane, Chidswell, West Yorkshire. The report covers both the Heybeck Lane site and Land to the East of Leeds Road site which together make up the total survey area. A fluxgate gradiometer survey was successfully completed across the site, identifying extensive archaeological activity in the form of former field systems comprising connected rectilinear enclosures, possibly showing a continuity of land use since the Iron Age. Historical agricultural use has been recorded as large areas of ridge and furrow cultivation and former field boundaries. Mining and/or extraction activity, including the remains of a colliery, have been identified. Natural variations relating to geological faulting and slope slumping have also been identified. The impact of modern activity is limited to the area's peripheries and pylons.

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1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Cotswold Archaeology on behalf of CC Projects to undertake a geophysical survey on a c. 119 ha area of land at Chidswell, Dewsbury, West Yorkshire (SE 27262 23492). The survey and the report cover both the Heybeck Lane site and Land to the East of Leeds Road site which together make up the total survey area.
- 1.2. The geophysical survey comprised hand-pulled and quad-towed, cart-mounted GNSS-positioned fluxgate gradiometer survey.
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute for Archaeologists (CifA, 2014) and the European Archaeological Council (Schmidt et al., 2015).
- 1.4. It was conducted in line with a WSI produced by MS (2019).
- 1.5. The survey commenced on 30th of September 2019 and took three weeks to complete.

2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CifA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society of Archaeological Prospection).
- 2.2. Director Dr. Chrys Harris is a Member of CifA, has a PhD in archaeological geophysics from the University of Bradford and is the Vice-Chair of ISAP. Director Finnegan Pope-Carter is a Fellow of the London Geological Society, the chartered UK body for geophysicists and geologists, as well as a member of GeoSIG, the CifA Geophysics Special Interest Group. Reporting Analyst Dr. Kayt Armstrong has a PhD in archaeological geophysics from Bournemouth University, is the Vice Conference Secretary and Editor of ISAP News for ISAP, and is the UK Management Committee representative for the COST Action SAGA.
- 2.3. All MS managers have relevant degree qualifications in archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees and/or field experience.

3. Objectives

- 3.1. The objective of this geophysical survey is to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The site is located immediately adjacent to the village of Chidswell, West Yorkshire (Figure 1). Survey was undertaken across multiple fields under agricultural use. The site is bounded by Hey Beck Lane to the north, arable land and woodland to the east and south, and the A653 and the village of Chidswell to the west (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Arable stubble, sloping downward from northeast to southwest.	Bound to the north by houses, to the east by hedgerow, the south by a track and hedgerow and to the west by more houses. A hedgerow divided the field northeast to southwest. The southern boundary was crossed by overhead power lines.
2	Grassland, sloping northeast to southwest.	Bound to the north by houses, to the east by hedgerow, the south was a continuation of the same field.
3	Grassland, sloping northeast to southwest.	Bound to the north by houses, to the east by hedgerow, the south was a continuation of the same field.
4	Flat arable stubble.	Bound on all sides by hedgerows. A metal pylon was located in the field with overhead cables aligned west to east.
5	Arable stubble with a slight rise to the southwest.	Bound by hedgerows on all sides.
6	Arable, stubble sloping southwest to northeast.	Bound by hedgerows with houses to the south and west.
7	Arable stubble, sloping downwards to the southeast.	Bound by hedgerows on all boundaries, as well as ditches to the north, east and south. The field was bisected by a trackway orientated northeast to southwest. Overhead cables crossed the northwestern edge of the survey area.
8	Arable stubble, flat.	Bound by hedgerows on all sides.
9	Arable stubble with a slight rise to the southeast.	Bound by hedgerows on all sides and a trackway to the northeast.
10	Arable stubble with a fairly steep decline on the southern boundary towards the stream.	Bound by a stream and trees to the south, hedgerows to the west, northwest and north east and a woodland to the north. Two metal pylons were positioned in the area with overhead cables running roughly northwest to southeast.
11	Arable stubble, sloping downwards northwest to southeast.	Bound by hedgerows on all sides.
12	Arable stubble, sloping down to the south towards a stream.	Bound on all sides by hedgerow apart from the south, which was a stream.
13	Arable stubble, sloping down to the north towards a farm track.	Bound to the north by a wire fence and farm track, all other boundaries were hedgerow.

14	Arable stubble, sloping down to the northwest towards a farm track.	Bound on all sides by hedgerow.
15	Arable stubble, sloping down from south to north.	Bound on all sides by hedgerow, with a farm track following the northern boundary. An area of standing water in the northeastern corner was not surveyable.
16	Arable stubble, flat.	Bound on all sides by hedgerow.
17	Arable, young crop. Sloping down from the centre of the field to the northwest and southeast.	Bound to the north and northwest by hedgerow, to the west by wooden fencing, to the southwest, south and east by wire fencing. A metal tank was located in the southwestern corner of the area.
19	Grassland, horse paddock, flat.	Bound to the west by wire fencing, to the north and west by both wire fencing and hedgerow. Two hay bales and a trailer were located in the northern extent of the area.
20	Arable field, largely flat but sloping upwards in the south eastern extent.	Bound on all sides by wire fencing and hedgerows.
21	Arable, with short stubble, sloping down to the south.	Bound by hedgerows and trees to the north, south and east. To the west there was no physical boundary.
22	Arable, with short stubble, slightly sloping down to the northeast.	Bound by trees and hedges to the south and west. Bound by metallic and wire fencing to the north and east.
23	Arable, recently sown field. Largely flat with a slight slope to the centre.	Bound on all sides by trees and hedgerows.

4.3. The underlying geology comprises of Pennine Middle Coal Measures Formation (mudstone, siltstone and sandstone) as well as Horbury Rock (sandstone). No superficial deposits are recorded (British Geological Survey, 2019).

4.4. The soils consist of slowly permeable, seasonally wet, acidic, loamy and clayey soils, as well as freely draining slightly acidic loamy soils (Soilscapes, 2019).

5. Archaeological Background

- 5.1. The following is a summary of two Heritage Assessments produced and provided by Cotswold Archaeology (Cotswold Archaeology 2018a, 2018b).
- 5.2. No heritage assets of prehistoric or Roman origin were identified within the site. However, in 1998 a geophysical survey across parts of the site suggested possible prehistoric or Roman period features corresponding with known cropmarks. Cropmarks are recorded in the northern part of the site to the southwest of Dum Wood and in the centre of the site. They are not dated but their shapes indicate a probable prehistoric or Roman origin.
- 5.3. Approximately 450m to the east of the site, archaeological salvage investigations found a large sub-rectangular enclosure, previously identified by cropmarks. Further investigation of the cropmarks determined that the marks were likely to be the buried remains of a seasonal Roman military marching camp.
- 5.4. On the First Edition Ordnance Survey (OS map 1854) a small structure referred as “Dogloitch Water Pit” located c.240m north of Dogloitch Wood is likely to have been associated with mining activity. The northern part of the Site is occupied by the Babes in the Wood Colliery (25-inch First Edition Ordnance Survey map of 1894). However, further documentary evidence suggests the colliery was in used from 1862 until 1887. Two mine shafts are labelled on the map in addition to several small buildings related to the colliery. It was then noted as “Disused” on the 1908 Ordnance Survey map.
- 5.5. West Yorkshire HER records the remains of a possible World War II bombing decoy site in the southeastern part of the site, just south of Dogloitch Wood. The precise location is unknown, but the 1998 geophysical survey identified two strong linear anomalies that formed an ‘L’ shape in the region where the decoy is expected to be, although no exact location references were provided with the geophysical survey results.

6. Methodology

6.1. Data Collection

6.1.1. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.3. The magnetic data were collected using MS' bespoke hand-pulled and quad-towed cart system GNSS-positioned system.

6.1.3.1. MS' cart system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.3.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.3.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to Historic England's standards for "raw or minimally processed data" (see sect 4.2 in David et al., 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al. (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3. Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the upper and/or lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 9, 12, 15, 18, 21, 24, 27, 30, 33 & 36). XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historic maps, LiDAR data, and soil and geology maps. Google Earth (2019) was consulted as well, to compare the results with recent land usages.

6.3.3. Geodetic position of results - All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

7. Results

7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports as well as reports of further work in order to constantly improve our knowledge and service.

7.2. Discussion

7.2.1. The geophysical results are presented in consideration with historic maps (Figures 4 & 6).

7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area. The geophysical data is characterised by strong magnetic enhancement that is typical of coal measure geology (see section 4.3). This provides a high magnetic contrast that aids the detection of magnetic anomalies of archaeological origin, though it also serves to enhance anomalies of recent origin, including modern ploughing trends. Modern interference is limited to magnetic haloes around electricity pylons, services, as well as wire fences along some of the field edges (see section 4.2). Natural variations have been identified as broad, high-variance anomalies characteristic of geological fault zones and anomalies associated with subaerial slope slumping and surface water runoff.

7.2.3. Archaeological activity has been identified across the survey area in the form of broadly rectilinear field systems and enclosures possibly dating from the Iron Age. The densest concentration of which have been detected near the centre of survey area (Figures 17 and 23). A group of similar rectilinear features was also identified in the northeastern extent of the site, likely representing a continuation of the same system, although they are somewhat separated from the centre group (Figure 14). Intervening historic field boundaries follow a similar alignment and in two cases appear to follow the course of natural features that may have served as useful field divisions back into prehistory (Figure 23). These suggest a long period of continuous cultivation since possibly the Iron Age until recently (former field boundaries visible on the First Edition Ordnance Survey).

7.2.4. A further field system of archaeological origin was detected in the southern extent of the survey area (Figure 32). The system follows a radial pattern somewhat distinct from that of the neighbouring rectilinear fields. This may indicate a separate temporal phase, but it is likely that this morphology is dictated by the steep topography in this part of the site. Intervening historic field boundaries also suggest a continuation of land use. A smaller enclosure, located close to the northern boundary of the survey area, was also identified (Figure 8). This feature does not have an apparent relationship with the extensive field system further south.

7.2.5. Evidence for industrial activity related to coal extraction is present in the northern, southeastern, and southwestern corners of the survey area. Demolition rubble from the Babes in the Wood Colliery (Figure 4) has been detected at the northern boundary of the site. In the southwest is a dense concentration of anomalies related to coal extraction pits.

7.2.6. Agricultural activity has been detected across the site in the form of the remains of extensive ridge and furrow agriculture of varying orientations, modern ploughing (especially in areas of the site with more pronounced magnetic enhancement), and a large number of modern drains. Multiple former field boundaries were detected, most of which are evident in historic OS mapping (Figures 4 & 6).

7.2.7. Multiple linear features of undetermined origin were detected across the survey area, these appear anthropological in origin though it is unclear whether they relate to more recent agricultural or archaeological activity.

7.3. Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

7.3.1.2. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures along the edges of the field have been classified as ‘Magnetic Disturbance’. These magnetic ‘haloes’ will obscure the response of any weaker underlying features, should they be present, often over a greater footprint than the structure they are being caused by.

7.3.1.3. **Ferrous (Spike)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of isolated modern metallic debris on or near the ground surface.

7.3.1.4. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentrated deposition of discrete, dipolar ferrous anomalies and other highly magnetic material.

7.3.1.5. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally not ferrous in nature.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Probable/Possible Archaeology** – In the centre and west of the survey area, several strong linear anomalies [21a], [24a], [14b], [15a], [20a] and [25a] have been identified. These cross Area 21, the central and western parts of Area 24, and extend into the western parts of Areas 14, 15, 20 and 25 (Figures 17, 23, 26 & 29). These form an interconnected field system and network of rectilinear enclosures covering an area of c. 28ha, which may extend to the north and south where features appear truncated by the survey extents. The enclosure system is broadly aligned northeast to southwest

and approximately aligns with two prominent natural features that show clearly in the magnetic data (a pronounced ridge towards the south of the field [21b] and a gully that runs from the centre of the field towards its northeastern boundary [21c] (Figure 5)). There is little clear evidence for multiple phases of activity; those linear anomalies that do appear to cut through the general pattern may be the result of modern agricultural activity, and so have been classified as possible rather than probable archaeology. It is notable that former field boundaries and the ridge and furrow follows a similar alignment to the archaeological field systems, which suggests a long period of continuous cultivation in this part of the survey area.

7.3.2.2. Probable/Possible Archaeology – Further east, in the southern-most fields of the survey area (in the east of Area 24 and west of Area 23), linear and curvilinear anomalies [24b] and [23a] have been identified (Figure 32). These exhibit strong positive magnetic signals most explicit in the total field data (Figure 5). These are suggestive of a network of irregular enclosures covering an area of c. 4ha and broadly aligned on a north to south orientation, which may extend beyond the boundaries of the survey to the south. These anomalies may represent an extension of the archaeological field system immediately to the west [21a, 24a, 14a, 14b, 15a, 20a & 25a], though they lack a shared alignment or clear physical connection with these anomalies. Therefore the relationship between the two field systems is undetermined.

7.3.2.3. Probable/Possible Archaeology – In the northeastern extent of the survey area (in the southern part of Area 10 and across much of Area 7), strong linear positive anomalies [10a], [10b], [7a], [7b] and [7c] have been identified (Figure 14). Most clear in the magnetic gradient data, these anomalies are recorded running broadly northeast to southwest. Two parallel linear anomalies [10a] and [7a], c. 280m in length are characteristic of a trackway feature, and [10b], [7b] and [7c] are indicative of enclosures positioned off this trackway. This may represent a continuation of the field systems c. 320m to the southwest [21a, 24a, 14b, 15a, 20a & 25a] and c. 680m to the south [10a, 10b, 7a, 7b & 7c], with which it shares both an alignment and similar magnetic signal. However, there are no clear anomalies of archaeological origin connecting these two field systems, therefore the precise relationship between them is unclear.

7.3.2.4. Probable/Possible Archaeology – In the southeastern corner of the survey area (in the east of Area 23), three strongly enhanced linear anomalies with a right-angular return [23b] have been identified (Figure 35). These exhibit a similar magnetic signal to other anomalies of archaeological origin identified within the survey area, which are most visible in the total field data (Figure 5). The anomalies [23b] are suggestive of fragmentary remnants of enclosures possibly enclosing an area of c. 2ha, on a northwest to southeast alignment. These anomalies are situated c. 320m east of the nearest other anomalies of archaeological origin, with no clear relationship between these features and others detected during the survey.

7.3.2.5. Probable/Possible Archaeology – Close to the northern boundary of the survey area, towards the northeastern corner of Area 1, a rectilinear anomaly and possible

associated linear anomalies [1a] have been identified (Figure 8). These exhibit a strong positive magnetic signal most explicit in the total field data (Figure 3). The rectilinear anomaly measures c. 30m by c. 25m and is recorded running on a northeast to southwest orientation. The anomaly is suggestive of a small enclosure, which appears to be connected to further possible archaeological activity northwards, the full extent of which appears to be obscured by modern activity relating to [1b].

7.3.2.6. Agricultural – Towards the centre of Areas 8 and 14, strongly enhanced linear and curvilinear positive anomalies [8a] and [14c] have been identified as historic field boundaries (Figures 4 and 17). These are recorded running in a northeast to southwest alignment, and [14c] is recorded on 2nd Edition OS mapping (Figure 4). [8a] can be inferred to be agricultural in origin due to its shared alignment and similar magnetic signal to [14c] and other nearby agricultural activity relating to former field boundaries. [8a] and [14c] also share a similar alignment and magnetic signal to archaeological activity in the survey area, most clearly [21a] to the southwest, and [7b] to the northeast (figure 14). The natural anomaly [21c] also shares this alignment; it is possible that [8a] and [14c] follow the path of earlier archaeological field boundaries, which may correspond to the course of a natural barrier such as a stream.

7.3.2.7. Mining/Extraction – In the north of Area 1, a spread of dipolar anomalies with broad linear anomalies within it [1b] has been identified (Figure 8). It exhibits a very strong magnetic signal most explicit in the total field data (Figure 3). It corresponds to the location of the Babes in the Wood Colliery recorded on 2nd Edition OS mapping (Figure 4). [1b] is indicative of demolition rubble associated with this colliery.

7.3.2.8. Mining/Extraction – In Areas 1, 2, 21, 22 and 23, discrete linear anomalies, pit-like anomalies, and spreads of dipolar anomalies [1c], [2a], [21b], [22a] and [23c] have been identified, which are typical of extraction (Figure 6). [23c] has been identified at the approximate location of a decoy facility dating from WWII (see section 5.5) which may indicate a possible other origin. These are generally confined to the edges of the survey area, and as such have had minimal impact on the interpretation of other anomalies within the survey area.

8. Conclusions

8.1. A fluxgate gradiometer survey has successfully been undertaken across the site. The geophysical survey has detected a range of different types of anomalies of archaeological, agricultural, natural, industrial and modern origin. Underlying coal measures geology has contributed to the strong enhancement of the magnetic data. Natural activity has been detected across the site as geological faulting, subaerial slope slumping and other, broader natural variations. Modern interference is limited to the peripheries of fields and some small areas of magnetic disturbance created by pylons within fields.

8.2. Archaeological activity has been identified across much of the site. A large, long-lived field hyper system, possibly of Iron Age origin, comprising multiple connected rectilinear enclosures covers much of the central and southern areas of the site. Further rectilinear enclosures have been identified in the north, east and southeast of the site, which may also relate to the field system in the centre and south.

- 8.3. Agricultural activity has been detected across the site as ridge and furrow, modern ploughing and drainage, and historic field boundaries.
- 8.4. Activity relating to mining and extraction has been identified in the north, southeast and southwest of the site as areas of strong magnetic disturbance, which is most pronounced at the location of the Babes in the Wood Colliery recorded on historic mapping.

9. Archiving

- 9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.
- 9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

10. Copyright

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11. References

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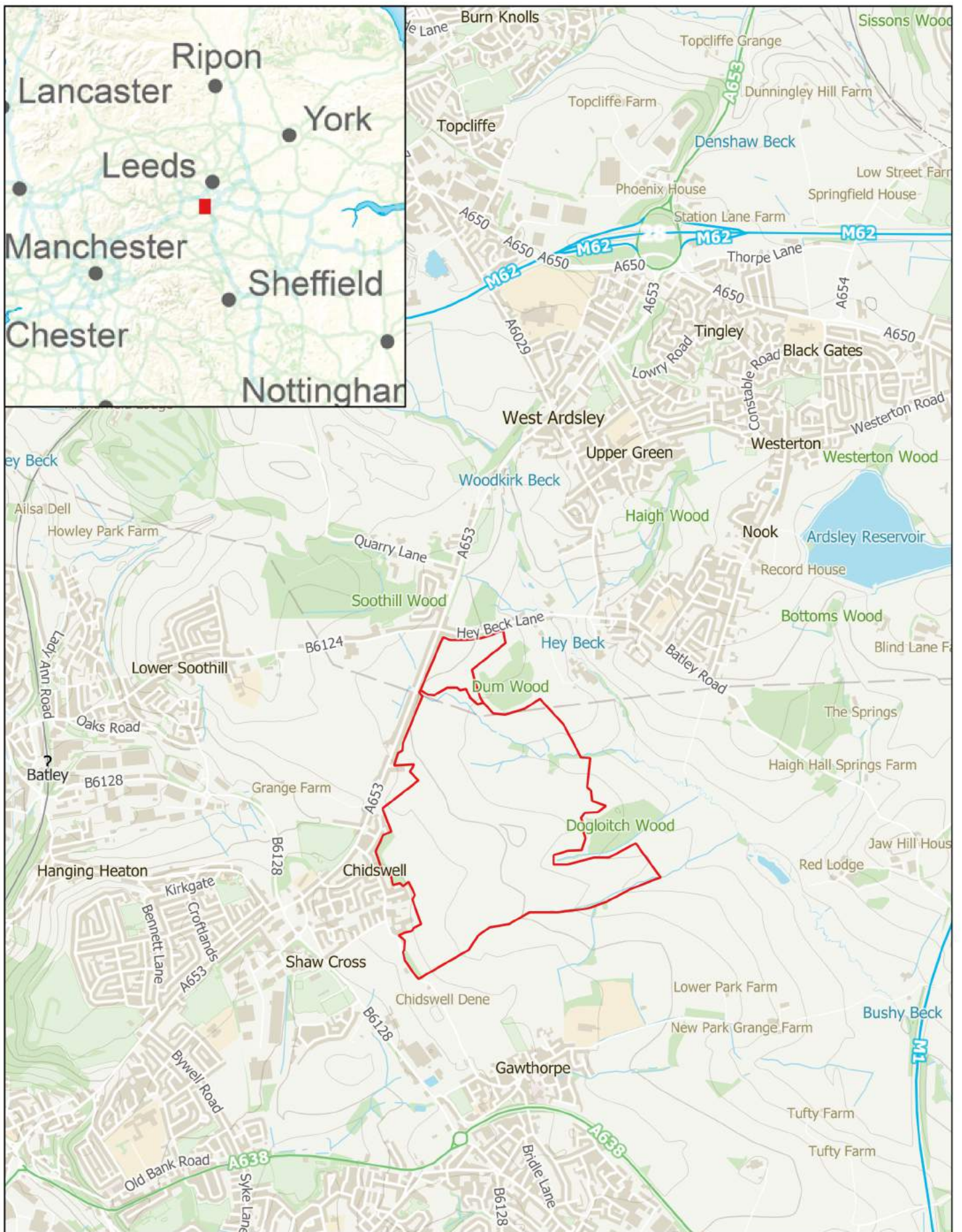
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12. Project Metadata

MS Job Code	MSSE562
Project Name	Land at Chidswell, West Yorkshire
Client	Cotswold Archaeology
Grid Reference	SE 27262 23492
Survey Techniques	Magnetometry
Survey Size (ha)	119ha (Magnetometry)
Survey Dates	30/09/ 2019 to 18/10/2019
Project Manager	Chrys Harris BA MSc PhD approved by Finnegan Pope-Carter BSc (Hons) MSc FGS
Project Officer	Julia Cantarano <i>Ingénieur</i> PCIfA
HER Event No	To be attributed when the report has been accepted by West Yorkshire Archaeological Advisory Service
OASIS No	N/A
S42 Licence No	N/A
Report Version	2.2

13. Document History

Version	Comments	Author	Checked By	Date
1.0	Initial draft for Project Officer to Review	HK, LB, PT, MC, RL, CN	JC	29/10/2019
1.1	Internal corrections	HK, LB, MF	FPC	30/10/2019
2.0	Corrections from Client	JC	JC	08/11/2019
2.1	Corrections from Client's Client	JC	JC	09/12/2019
2.2	Site Name Updated	JC	JC	11/12/2019



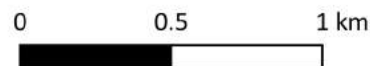
MSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell

Figure 1 - Site Location

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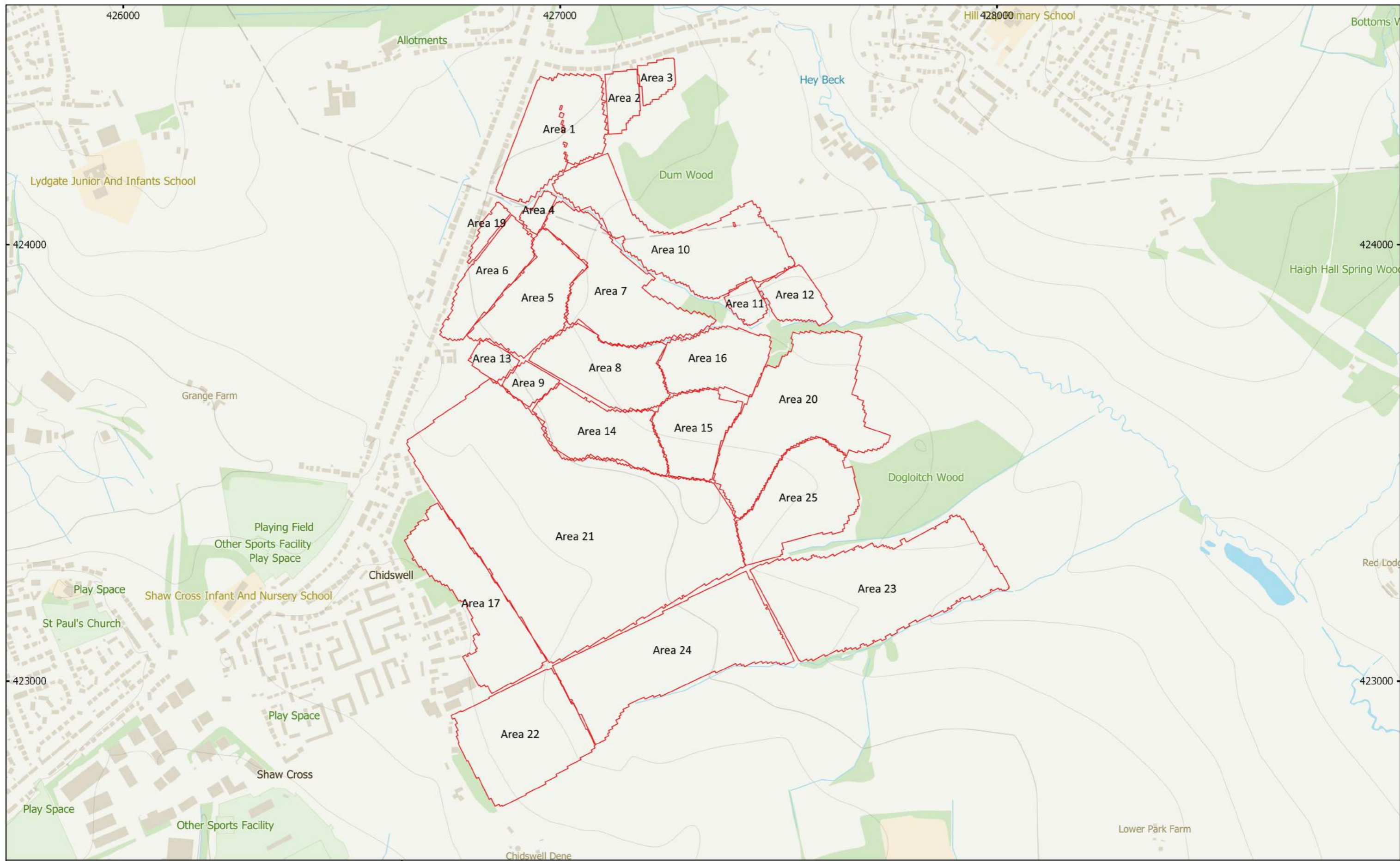
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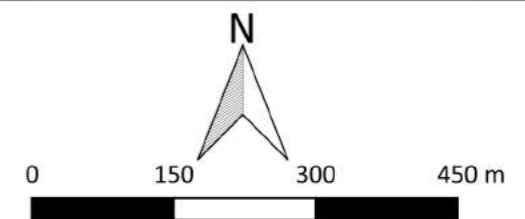
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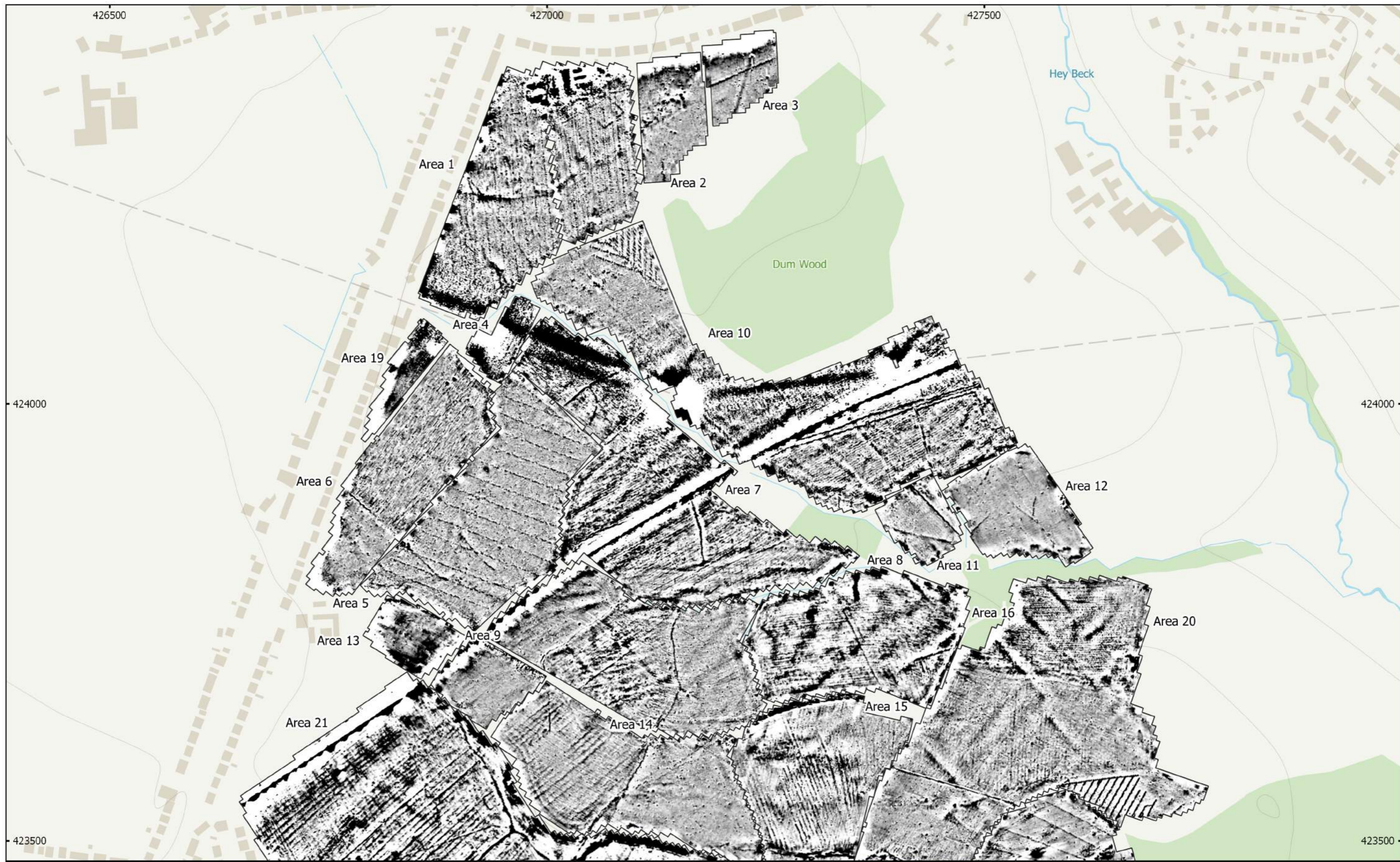
 Site Boundary



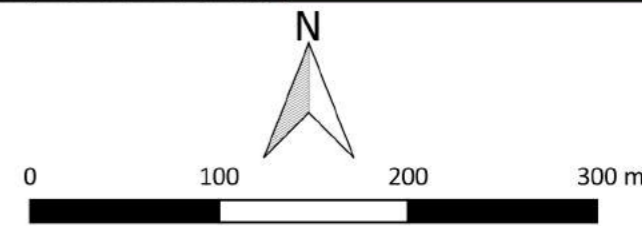
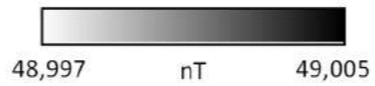
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 2 - Location of Survey Areas
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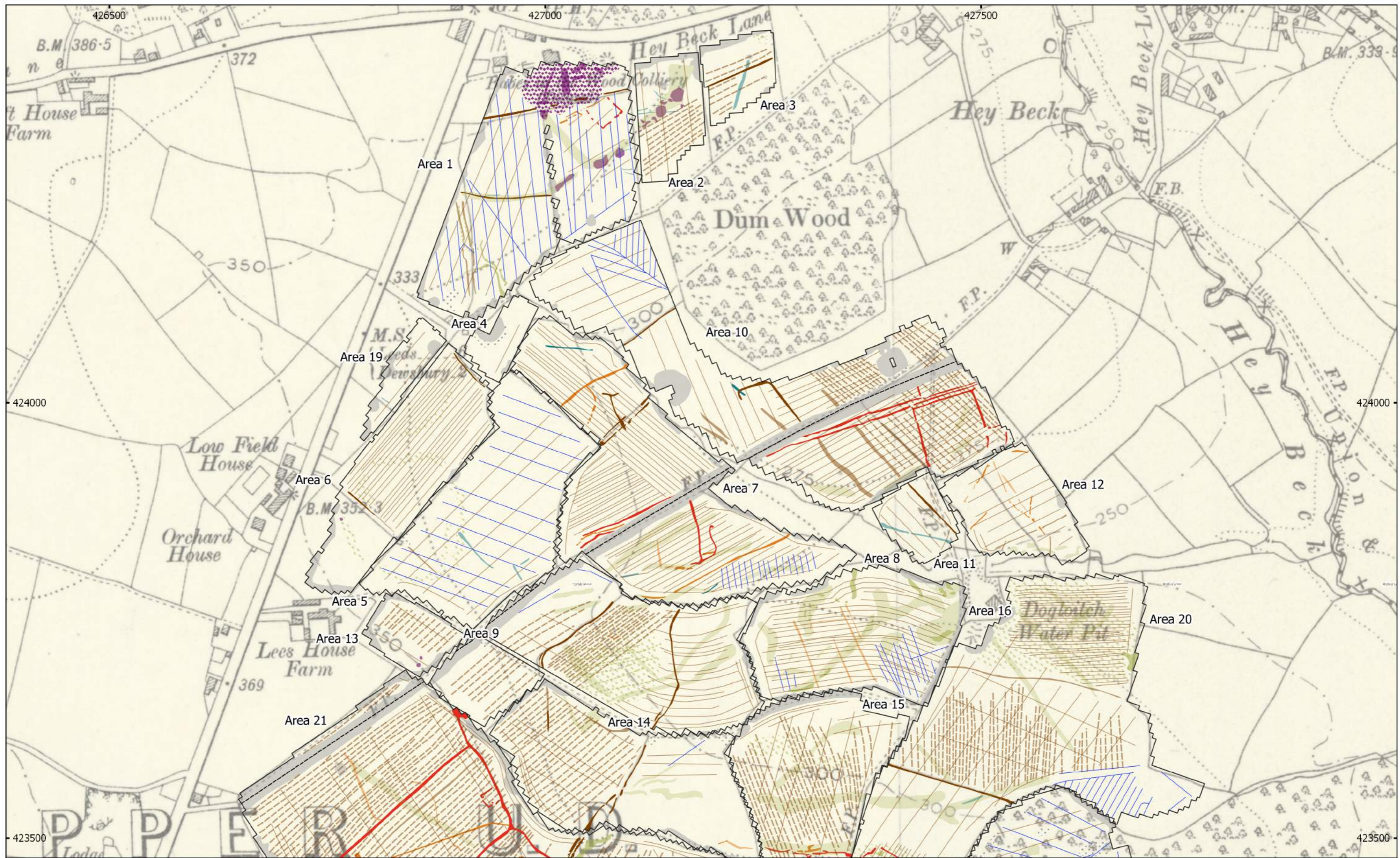
 Survey Extent





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 Figure 3 - Magnetic Total Field (Lower Sensor) (Overview North)
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 Figure 4 - Magnetic Interpretation Over Historic Maps (Overview North)
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	Archaeology Probable (Strong)		Magnetic Disturbance		Agricultural (Trend)
	Archaeology Possible (Strong)		Ferrous/Debris (Spread)		Natural (Trend)
	Archaeology Possible (Weak)		Natural (Strong)		Service
	Agricultural (Strong)		Natural (Weak)		Ridge and Furrow (Trend)
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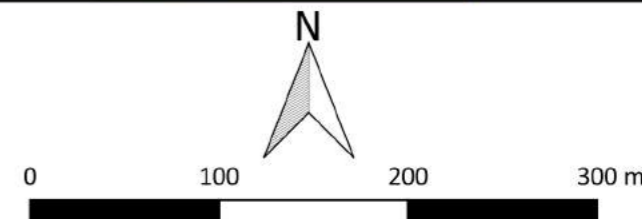
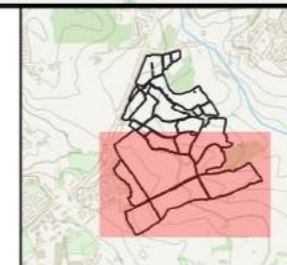
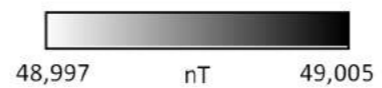


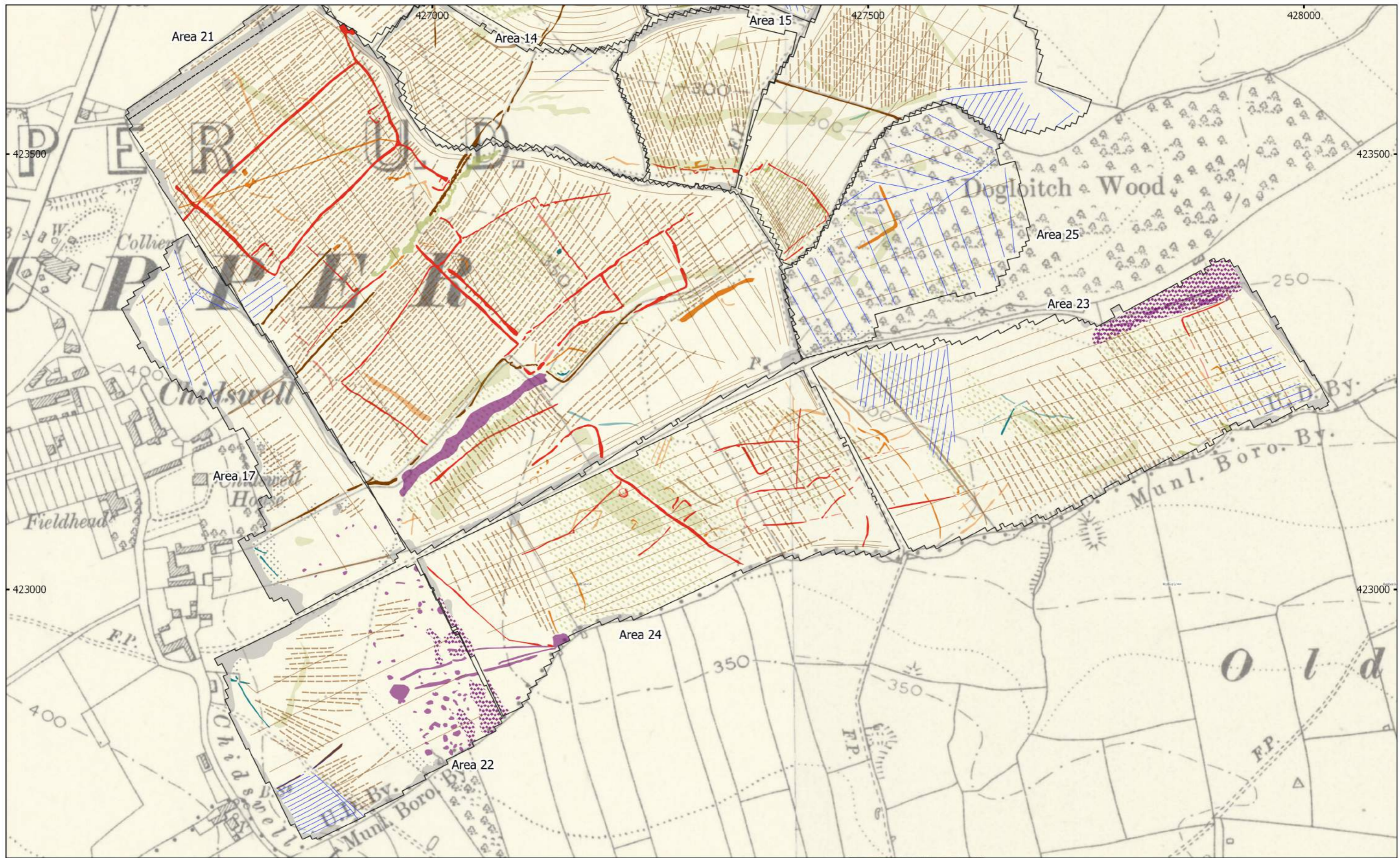
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 Figure 5 - Magnetic Total Field (Lower Sensor) (Overview South)
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 Figure 6 - Magnetic Interpretation Over Historic Maps (Overview South)
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	Archaeology Probable (Strong)		Mining/Extraction		Natural (Spread)
	Archaeology Probable (Weak)		Mining/Extraction (Spread)		Undetermined (Strong)
	Archaeology Possible (Strong)		Magnetic Disturbance		Undetermined (Weak)
	Archaeology Possible (Weak)		Ferrous/Debris (Spread)		Agricultural (Trend)
	Agricultural (Strong)		Natural (Strong)		Ridge and Furrow (Trend)
	Agricultural (Weak)		Natural (Weak)		Drainage Feature

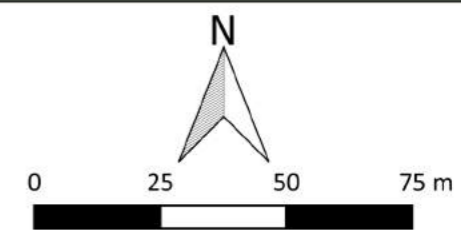
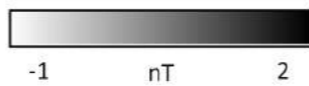


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 Figure 7 - Magnetic Gradient (North)
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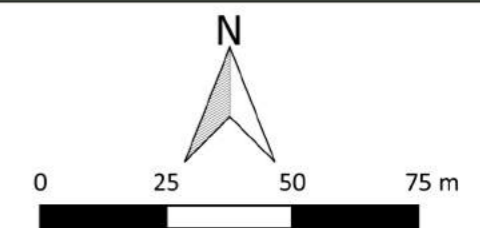


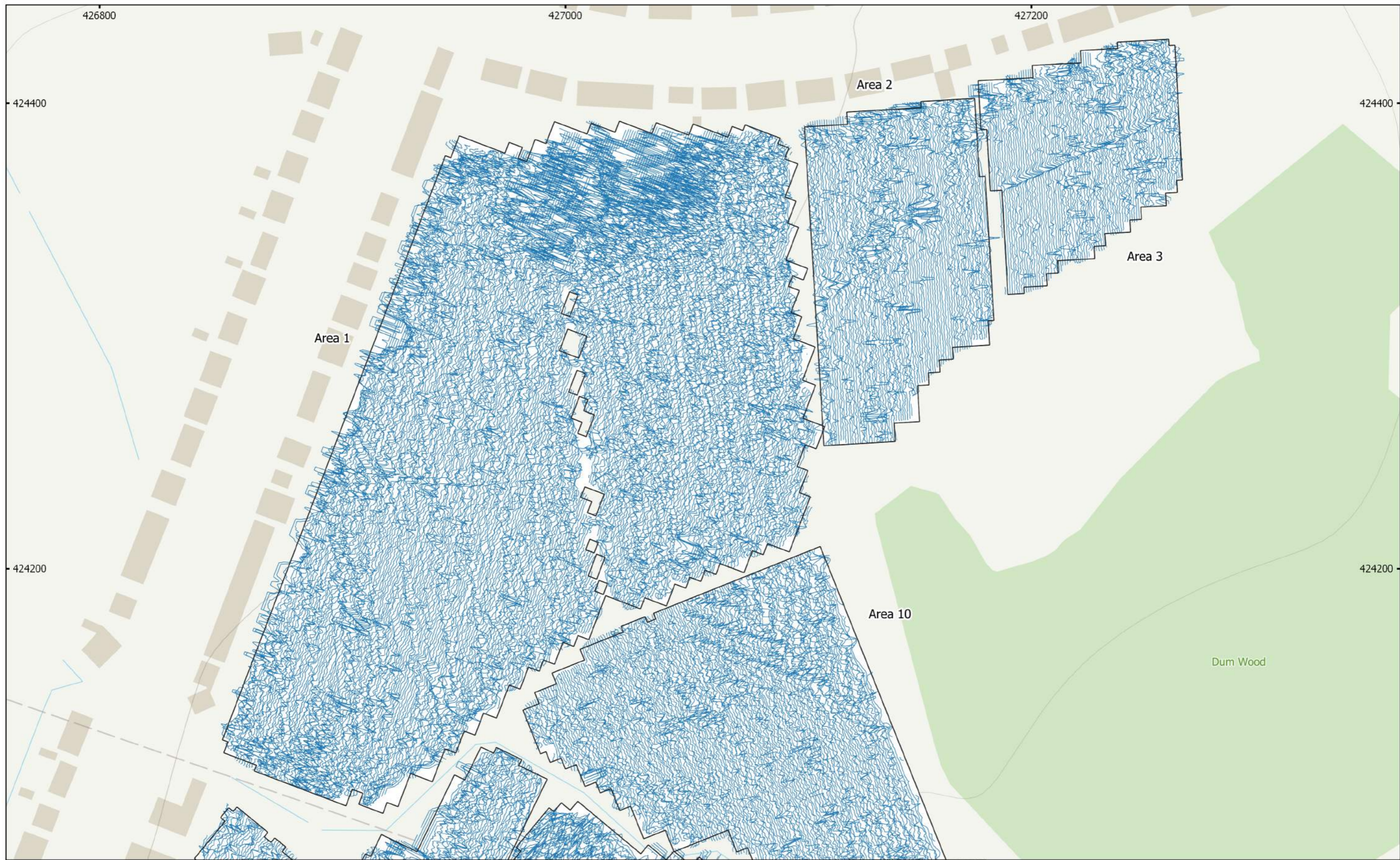
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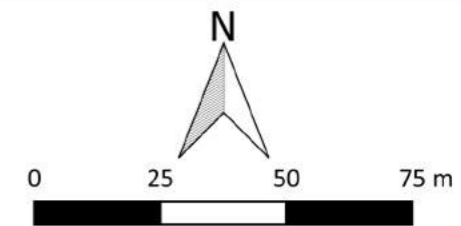
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 8 - Magnetic Interpretation (North)
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- | | | |
|-------------------------------|----------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction (Spread) | Agricultural (Trend) |
| Archaeology Possible (Strong) | Magnetic Disturbance | Natural (Trend) |
| Archaeology Possible (Weak) | Ferrous/Debris (Spread) | Ridge and Furrow (Trend) |
| Agricultural (Strong) | Natural (Strong) | Drainage Feature |
| Agricultural (Weak) | Natural (Weak) | Ferrous (Spike) |
| Mining/Extraction | Undetermined (Weak) | |



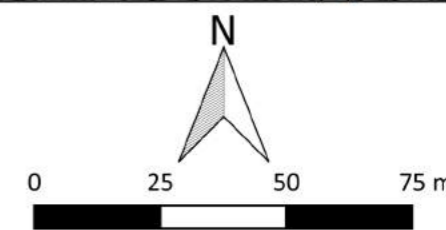
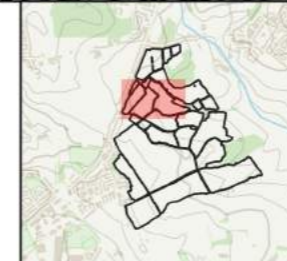


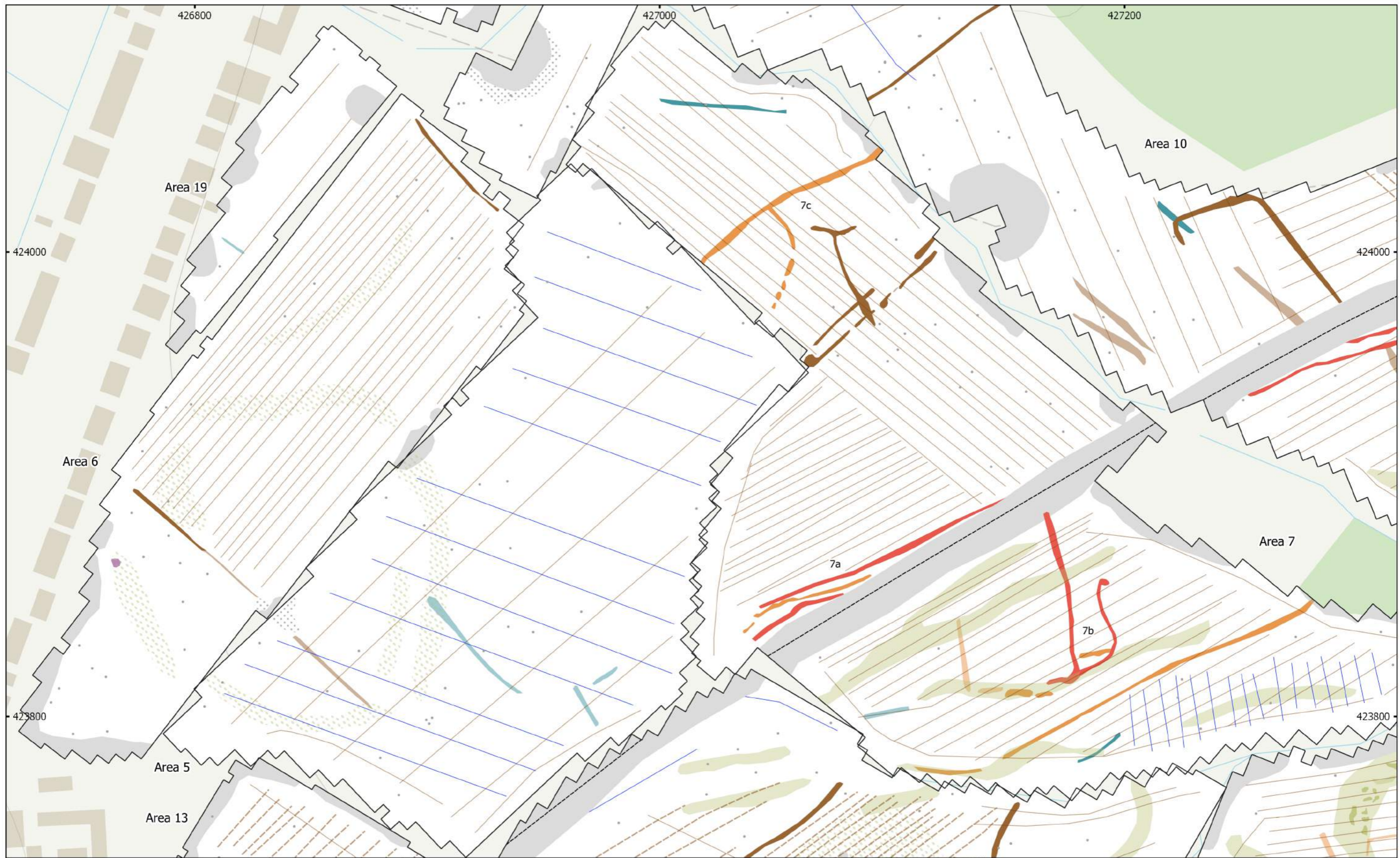
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Figure 9 - XY Trace Plot (North)
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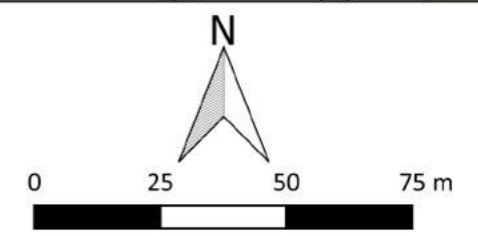
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 Figure 10 - Magnetic Gradient (North-West)
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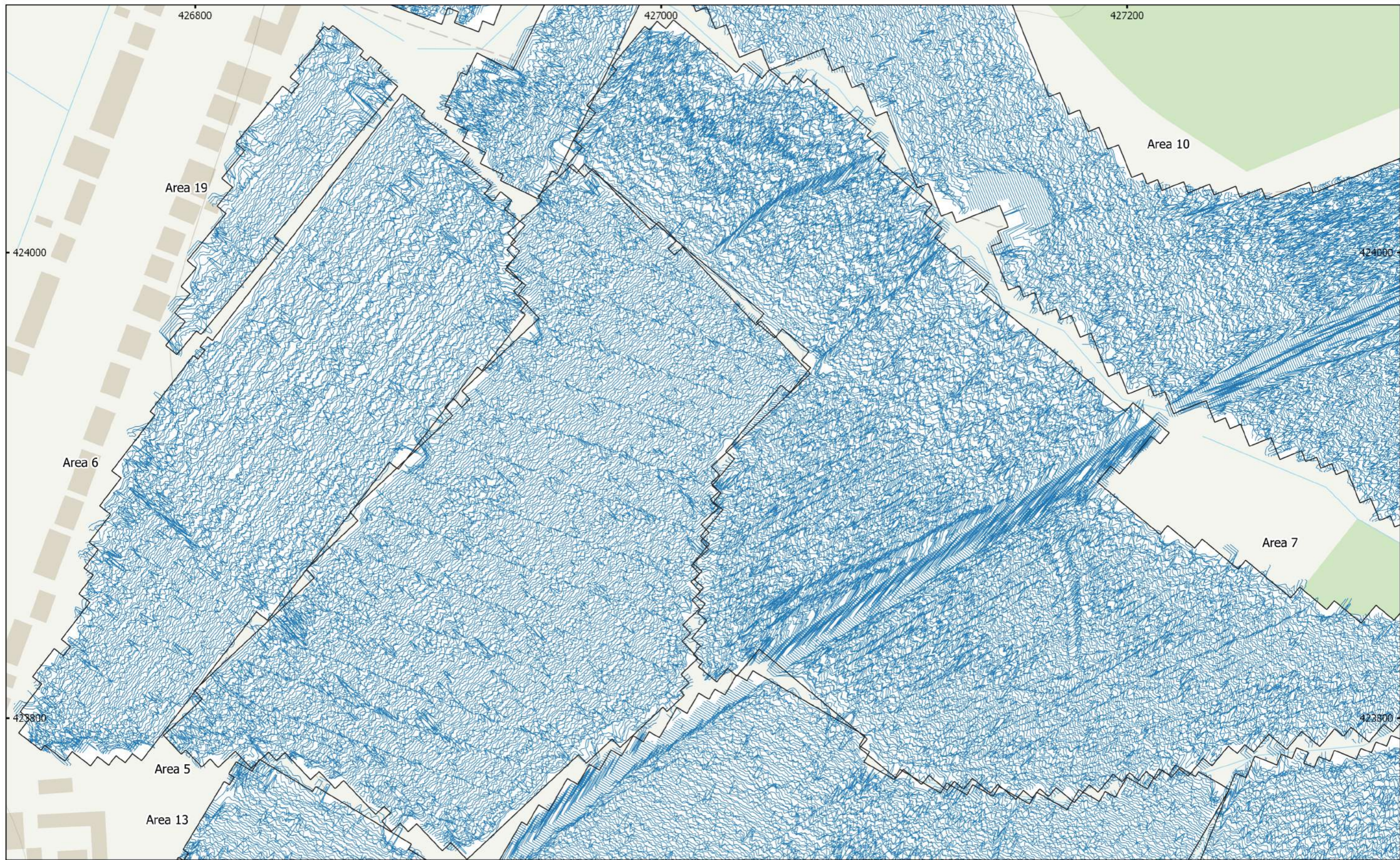




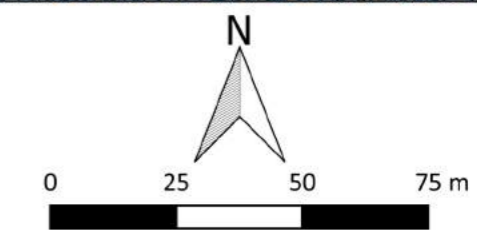
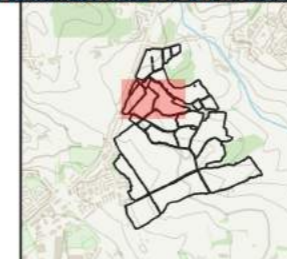
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 Figure 11 - Magnetic Interpretation (North-West)
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Magnetic Disturbance | Undetermined (Weak) |
| Archaeology Possible (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Weak) | Natural (Strong) | Service |
| Agricultural (Strong) | Natural (Weak) | Ridge and Furrow (Trend) |
| Agricultural (Weak) | Natural (Spread) | Drainage Feature |
| Mining/Extraction | Undetermined (Strong) | Ferrous (Spike) |



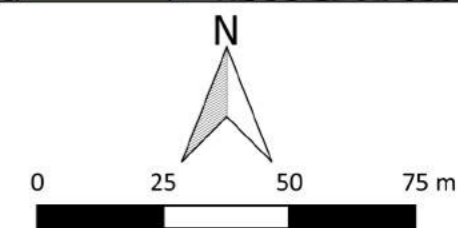
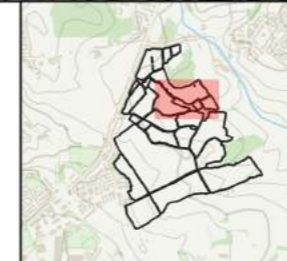


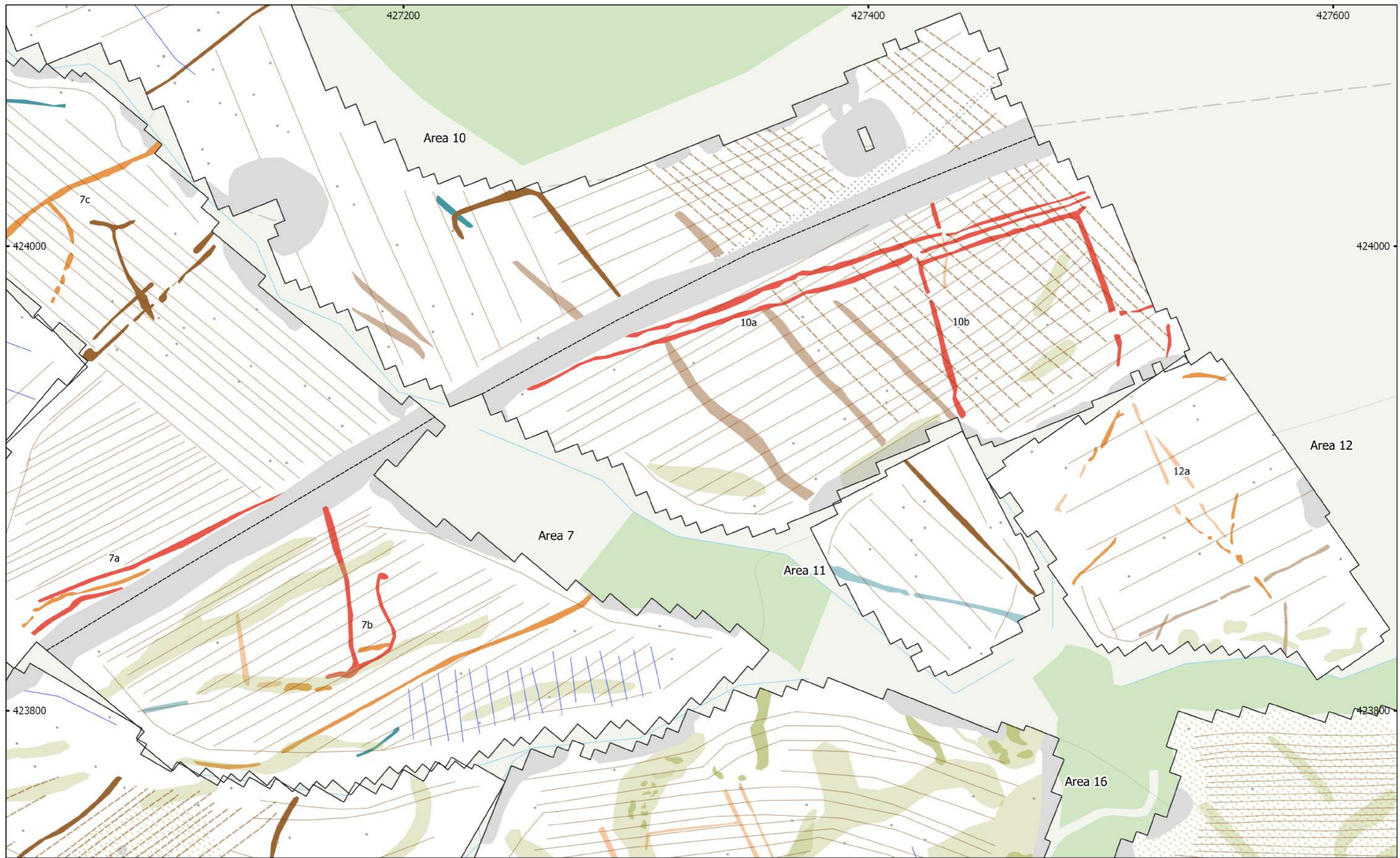
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 12 - XY Trace Plot (North-West)
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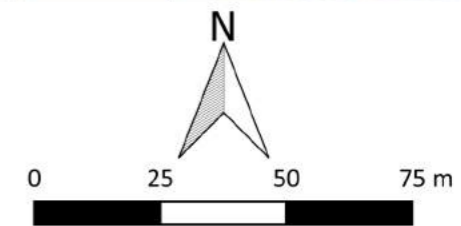
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 13 - Magnetic Gradient (North-East)
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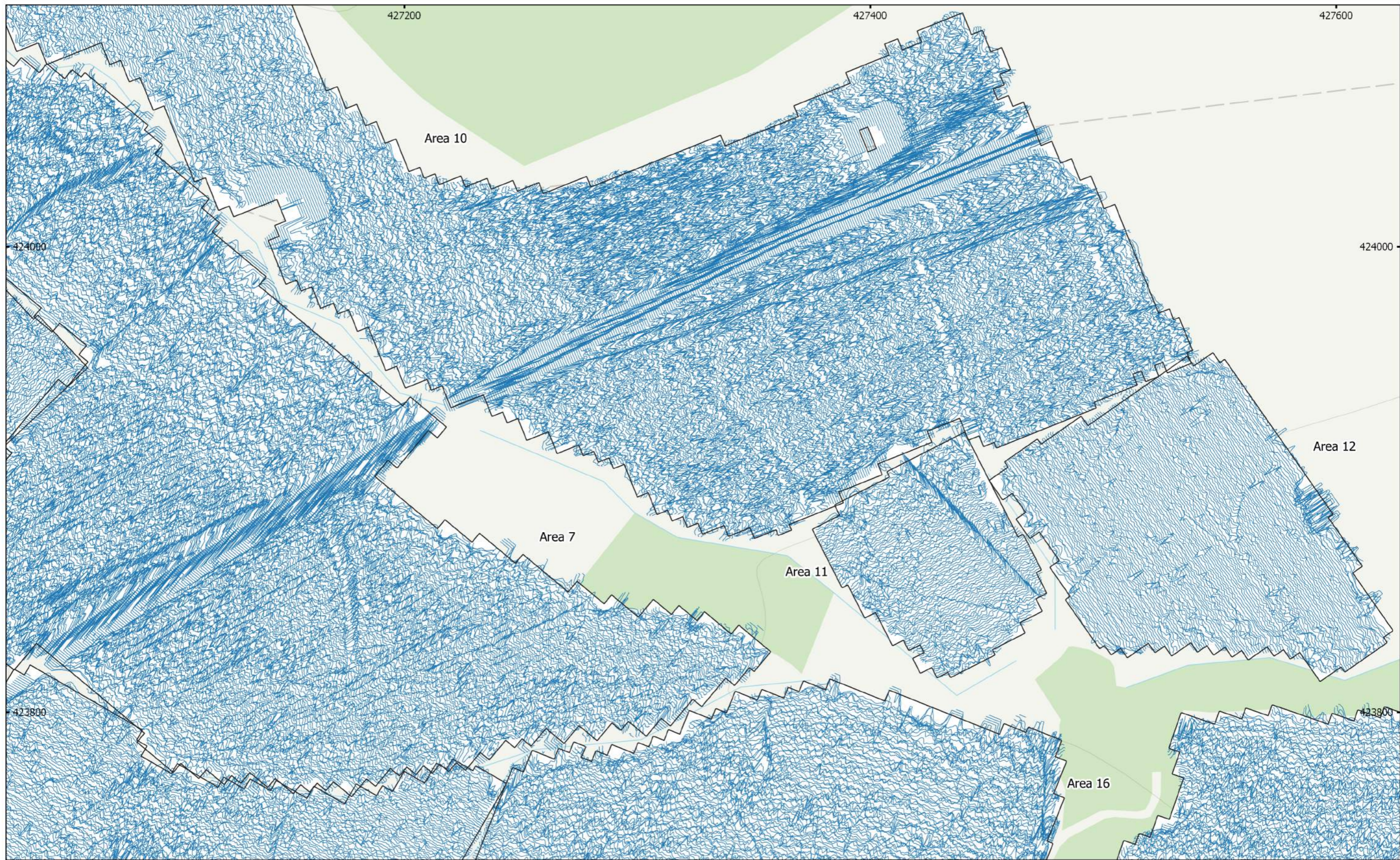




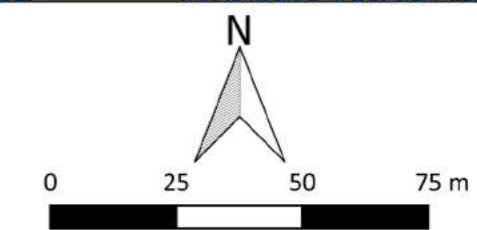
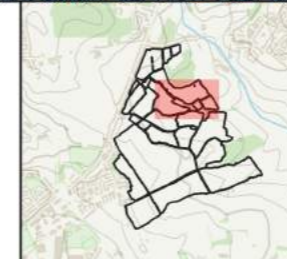
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 14 - Magnetic Interpretation (North-East)
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Strong) | Natural (Strong) | Service |
| Archaeology Possible (Weak) | Natural (Weak) | Ridge and Furrow (Trend) |
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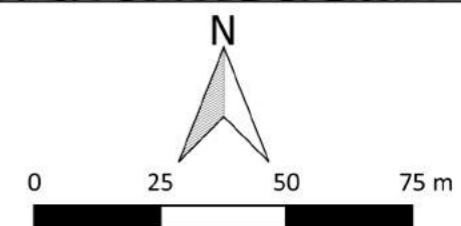
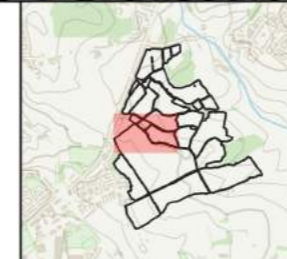


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Figure 15 - XY Trace Plot (North-East)
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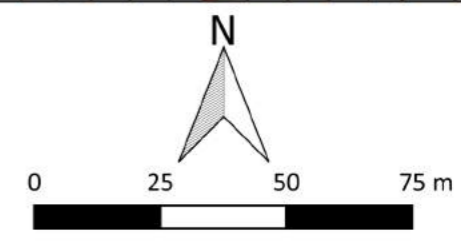
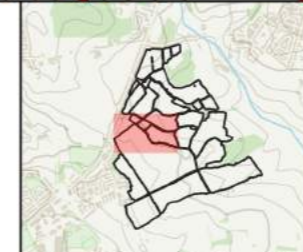
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 16 - Magnetic Gradient (Centre-Northwest)
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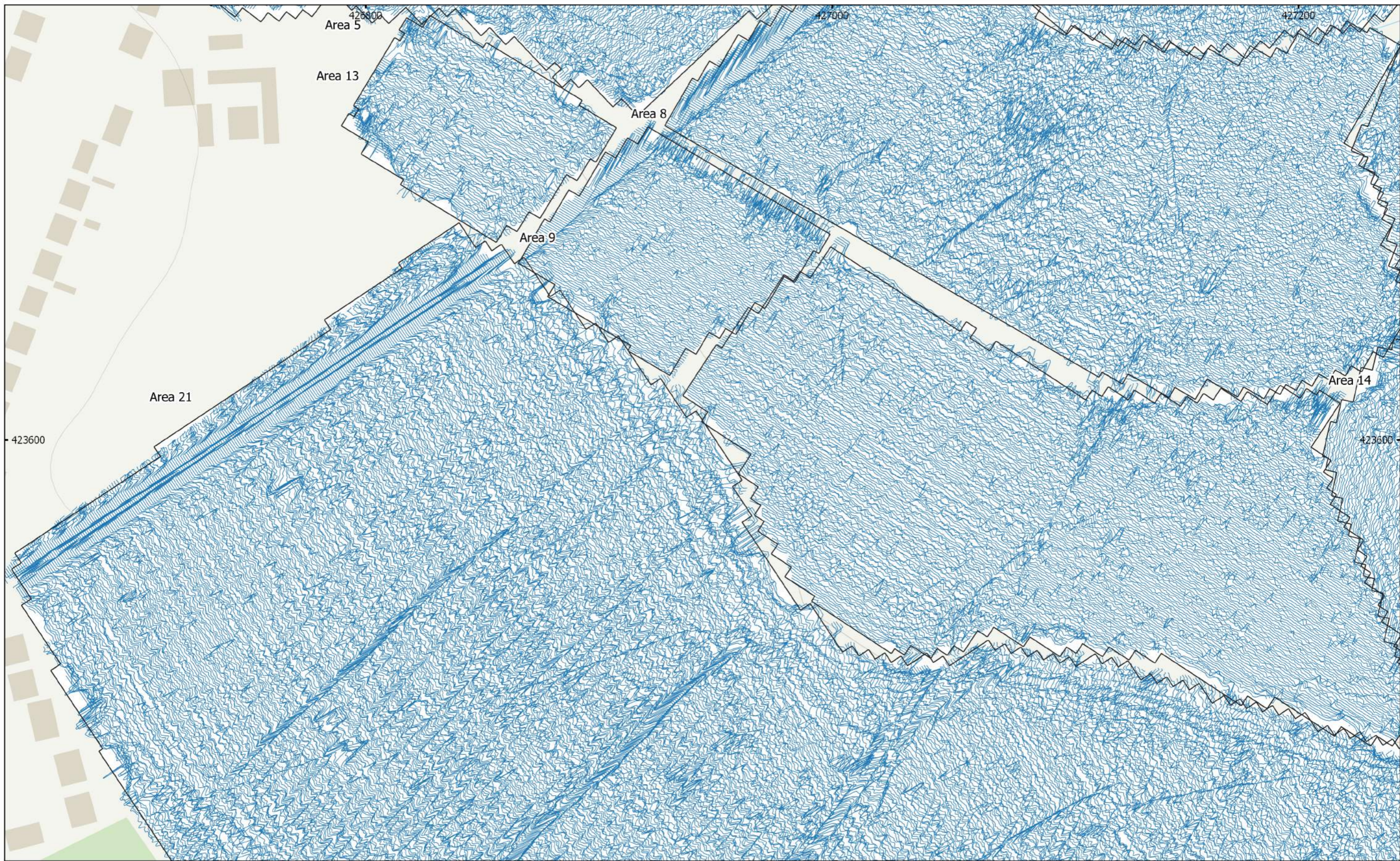




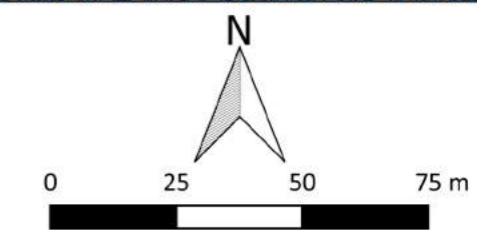
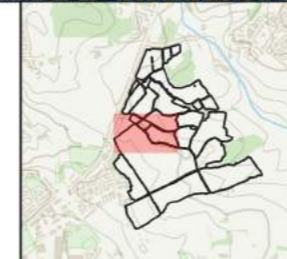
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 17 - Magnetic Interpretation (Centre-Northwest)
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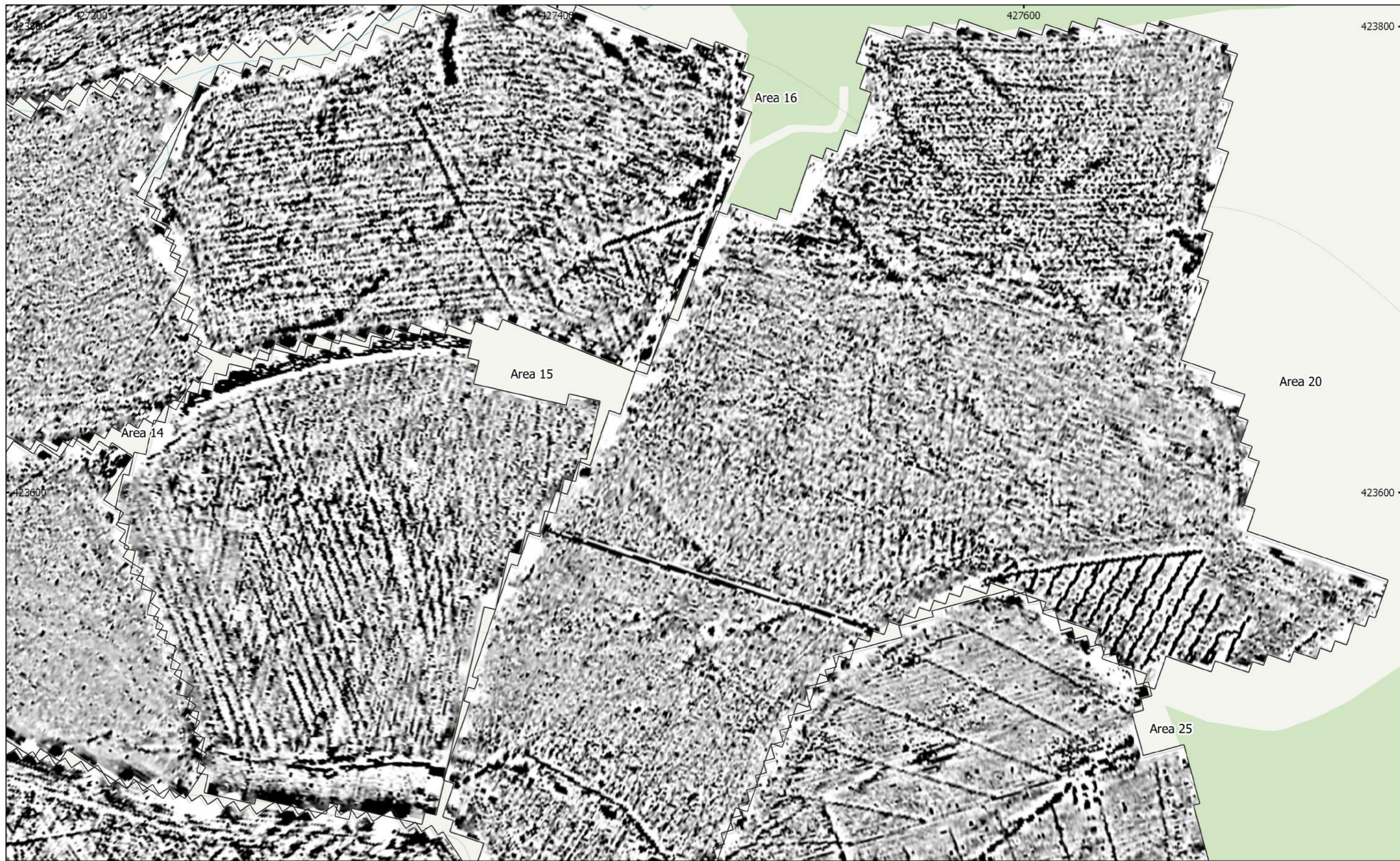
- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Magnetic Disturbance | Natural (Trend) |
| Archaeology Probable (Weak) | Ferrous/Debris (Spread) | Service |
| Archaeology Possible (Strong) | Natural (Strong) | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Natural (Weak) | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Strong) | |
| Mining/Extraction | Agricultural (Trend) | |



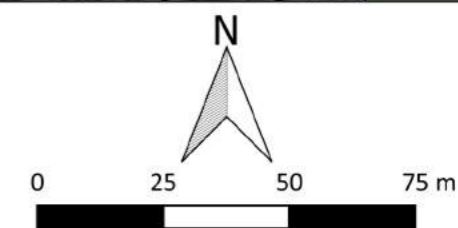
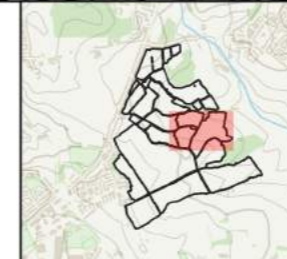


MSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 18 - XY Trace Plot (Centre-Northwest)
30nT/cm at 1:1,500 @ A3
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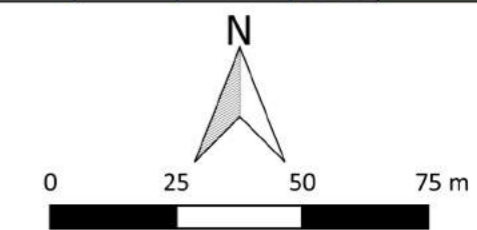
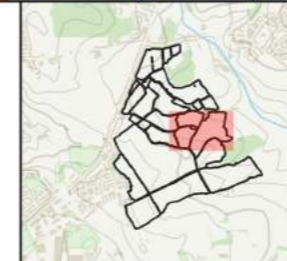
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 19 - Magnetic Gradient (Centre-Northeast)
 1:1,500 @ A3
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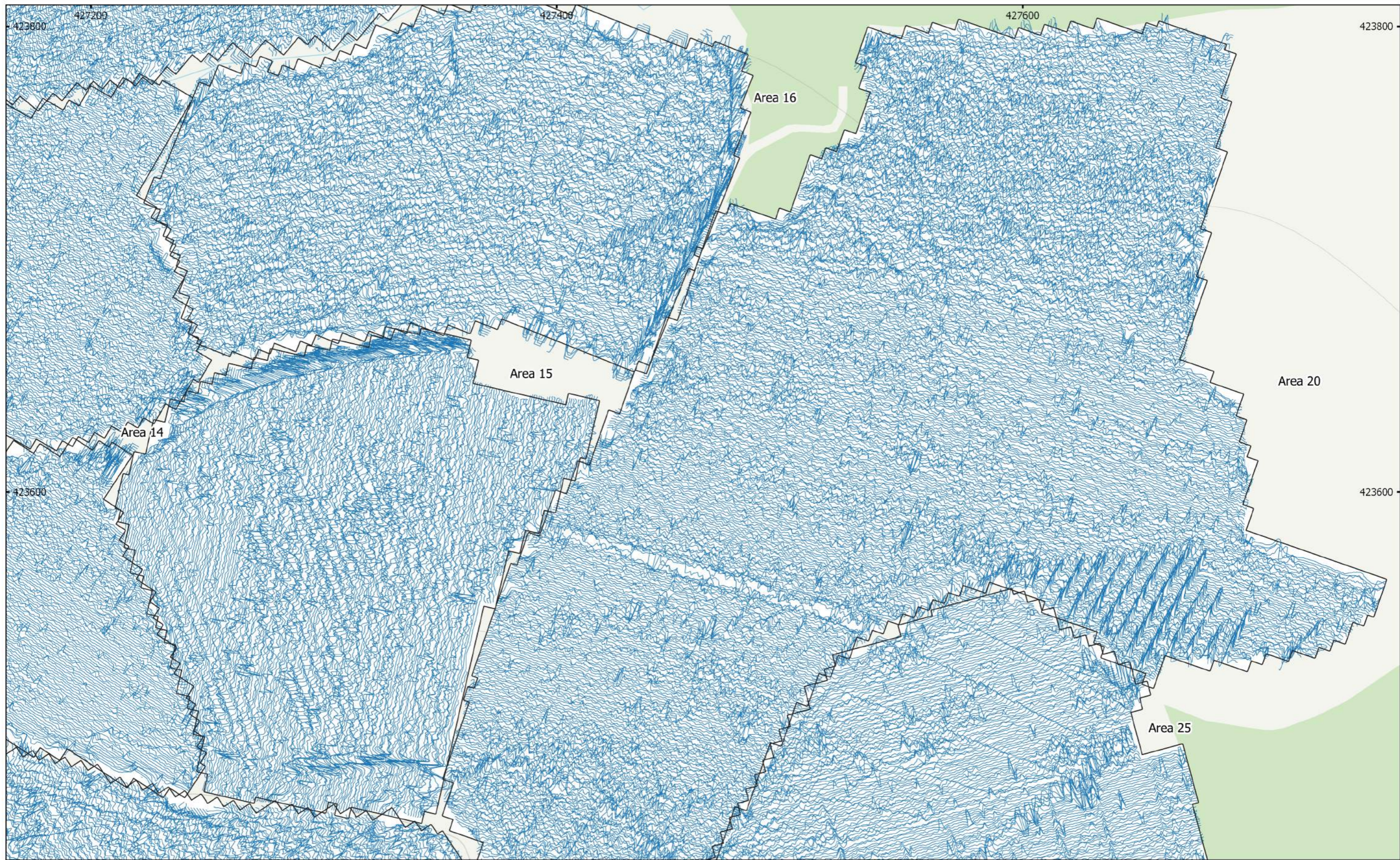




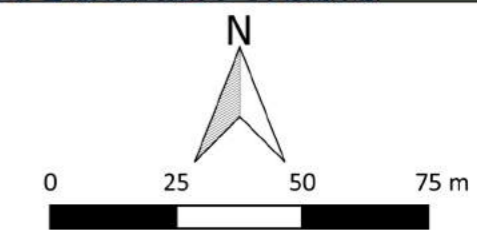
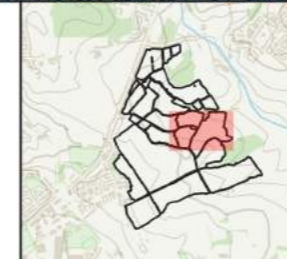
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 20 - Magnetic Interpretation (Centre-Northeast)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Strong) | Natural (Strong) | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Natural (Weak) | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Strong) | |
| Magnetic Disturbance | Undetermined (Weak) | |



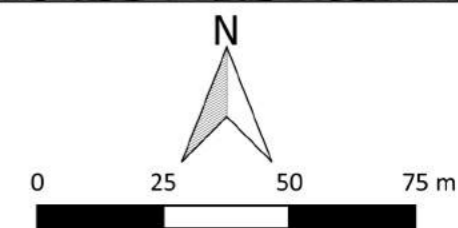
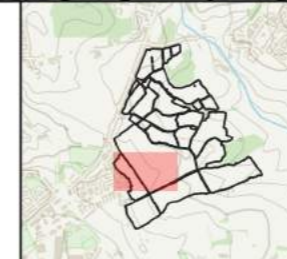


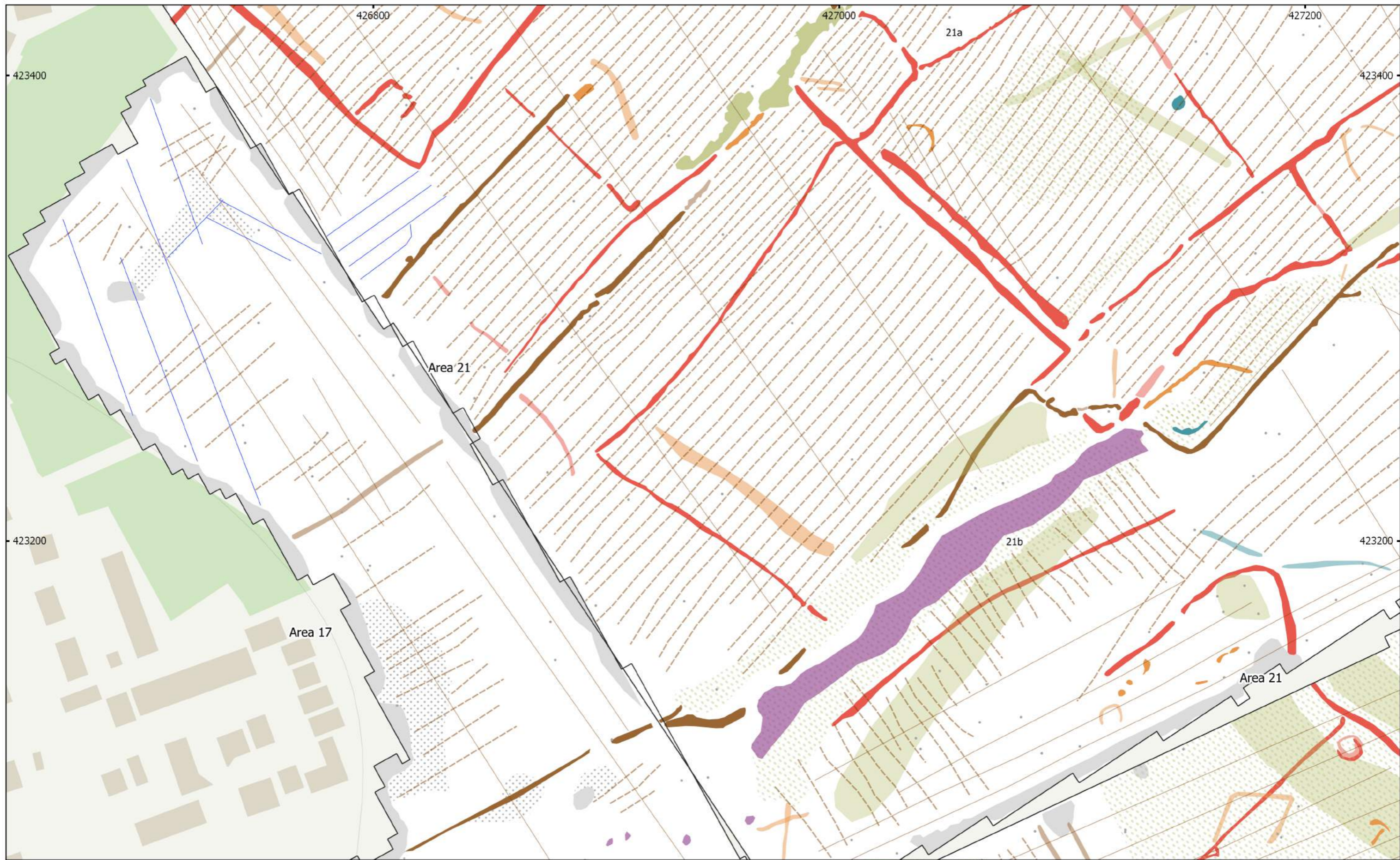
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 21 - XY Trace Plot (Centre-Northeast)
30nT/cm at 1:1,500 @ A3
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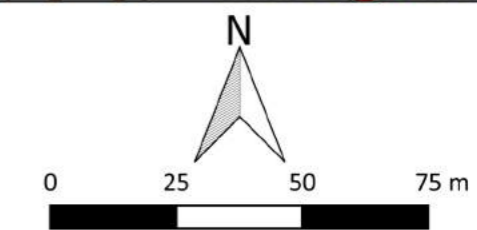
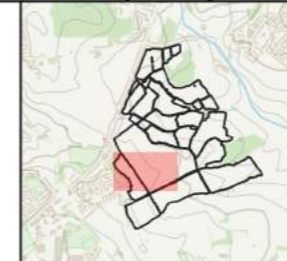
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 22 - Magnetic Gradient (Centre-West)
1:1,500 @ A3
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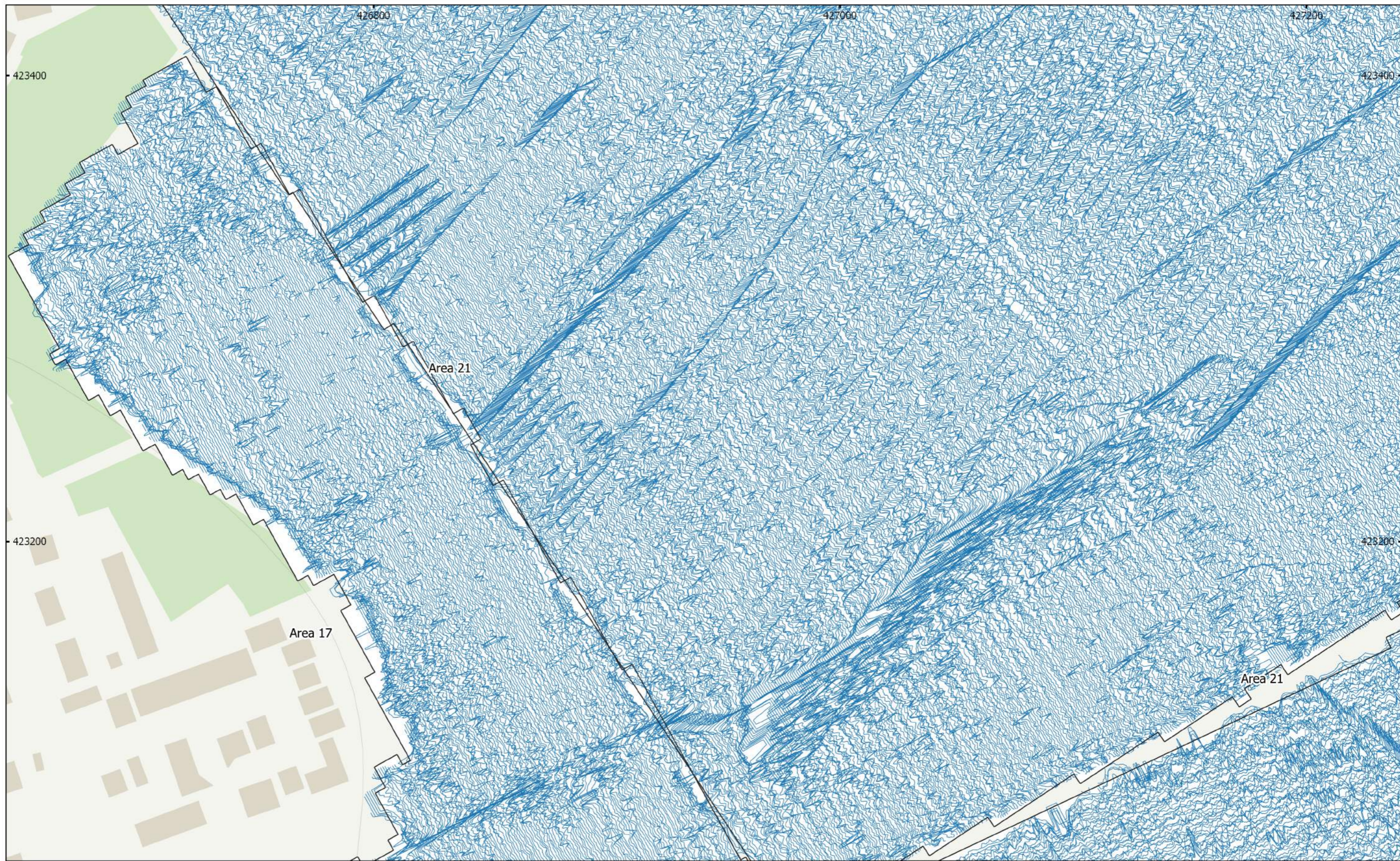




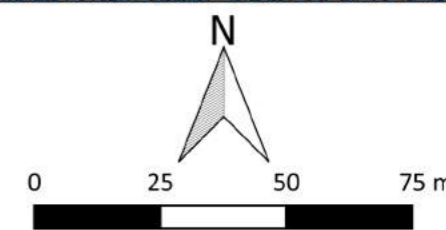
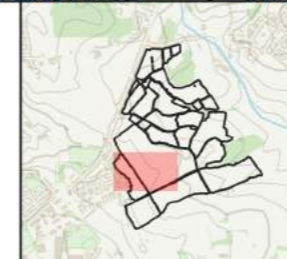
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 23 - Magnetic Interpretation (Centre-West)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction | Undetermined (Strong) |
| Archaeology Probable (Weak) | Magnetic Disturbance | Undetermined (Weak) |
| Archaeology Possible (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Weak) | Natural (Strong) | Ridge and Furrow (Trend) |
| Agricultural (Strong) | Natural (Weak) | Drainage Feature |
| Agricultural (Weak) | Natural (Spread) | Ferrous (Spike) |



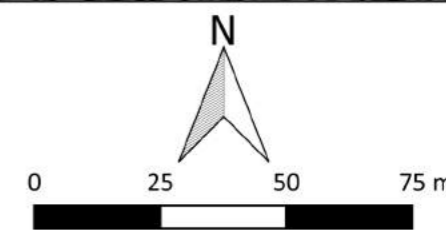


MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 24 - XY Trace Plot (Centre-West)
30nT/cm at 1:1,500 @ A3
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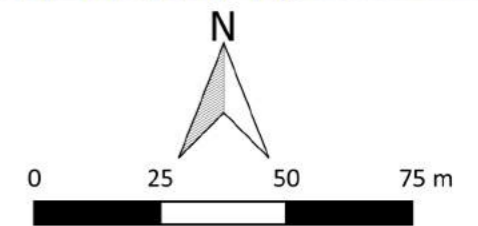
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 25 - Magnetic Gradient (Centre-East)
 1:1,500 @ A3
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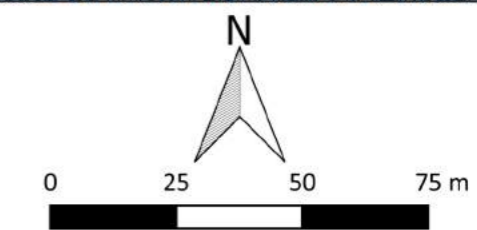
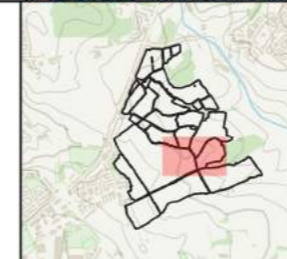
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 26 - Magnetic Interpretation (Centre-East)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction | Undetermined (Strong) |
| Archaeology Probable (Weak) | Magnetic Disturbance | Undetermined (Weak) |
| Archaeology Possible (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Weak) | Natural (Strong) | Ridge and Furrow (Trend) |
| Agricultural (Strong) | Natural (Weak) | Drainage Feature |
| Agricultural (Weak) | Natural (Spread) | Ferrous (Spike) |



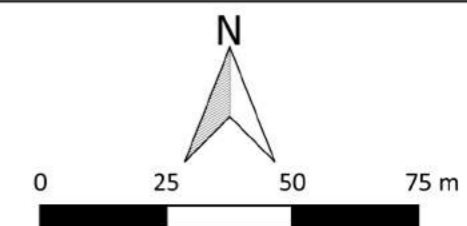
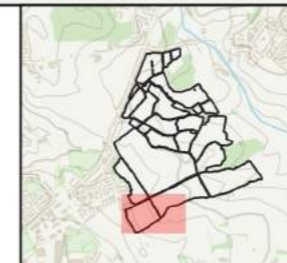
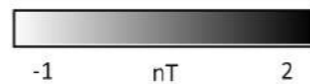


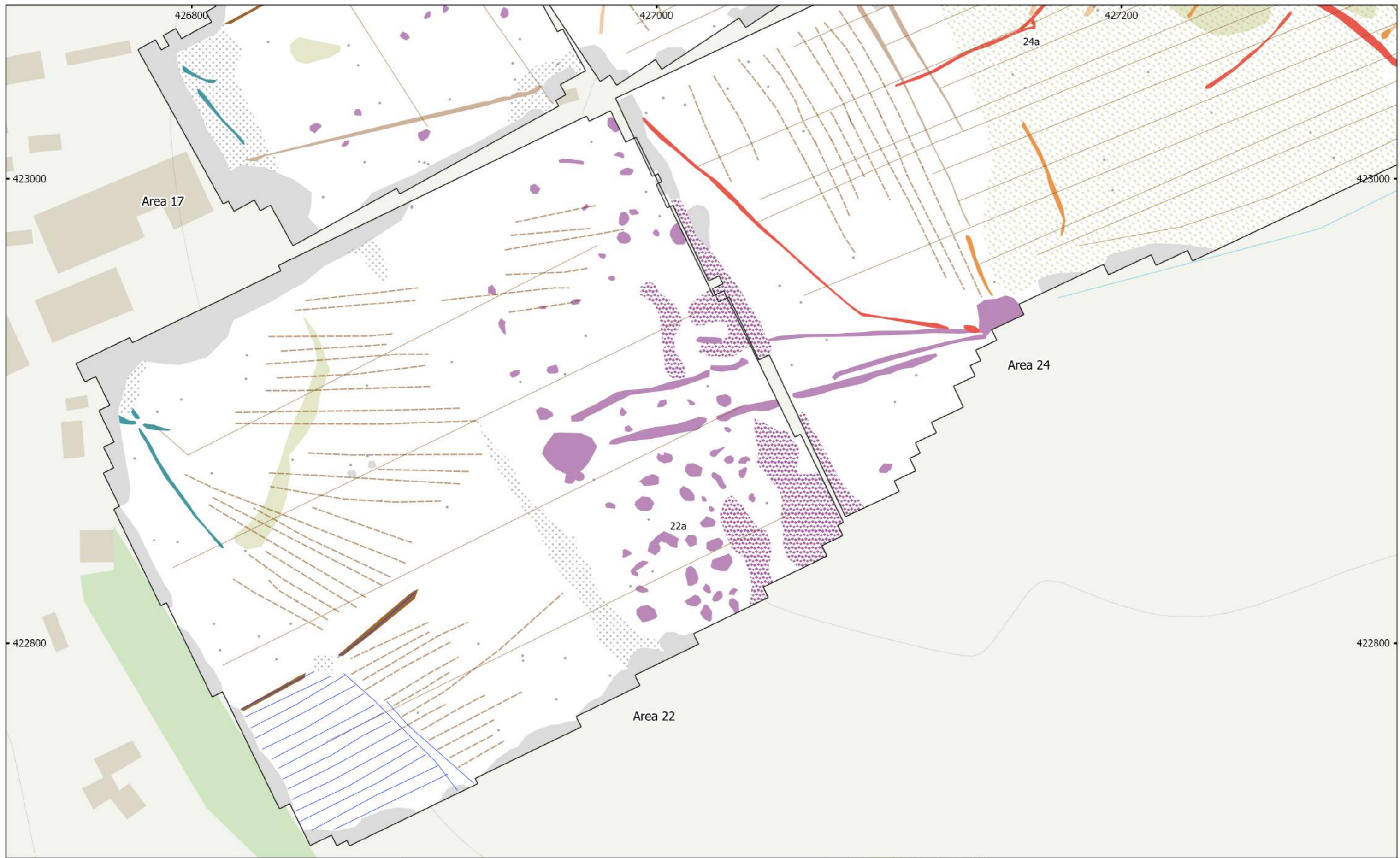
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 27 - XY Trace Plot (Centre-East)
30nT/cm at 1:1,500 @ A3
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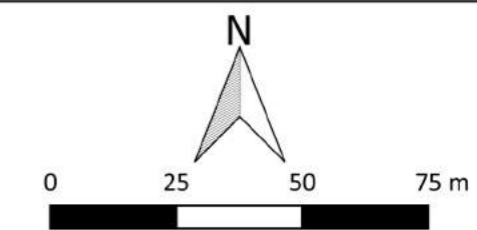
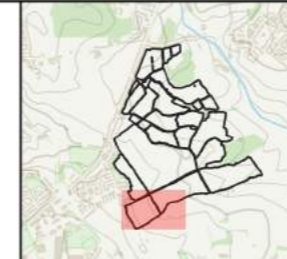
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 28 - Magnetic Gradient (South-West)
1:1,500 @ A3
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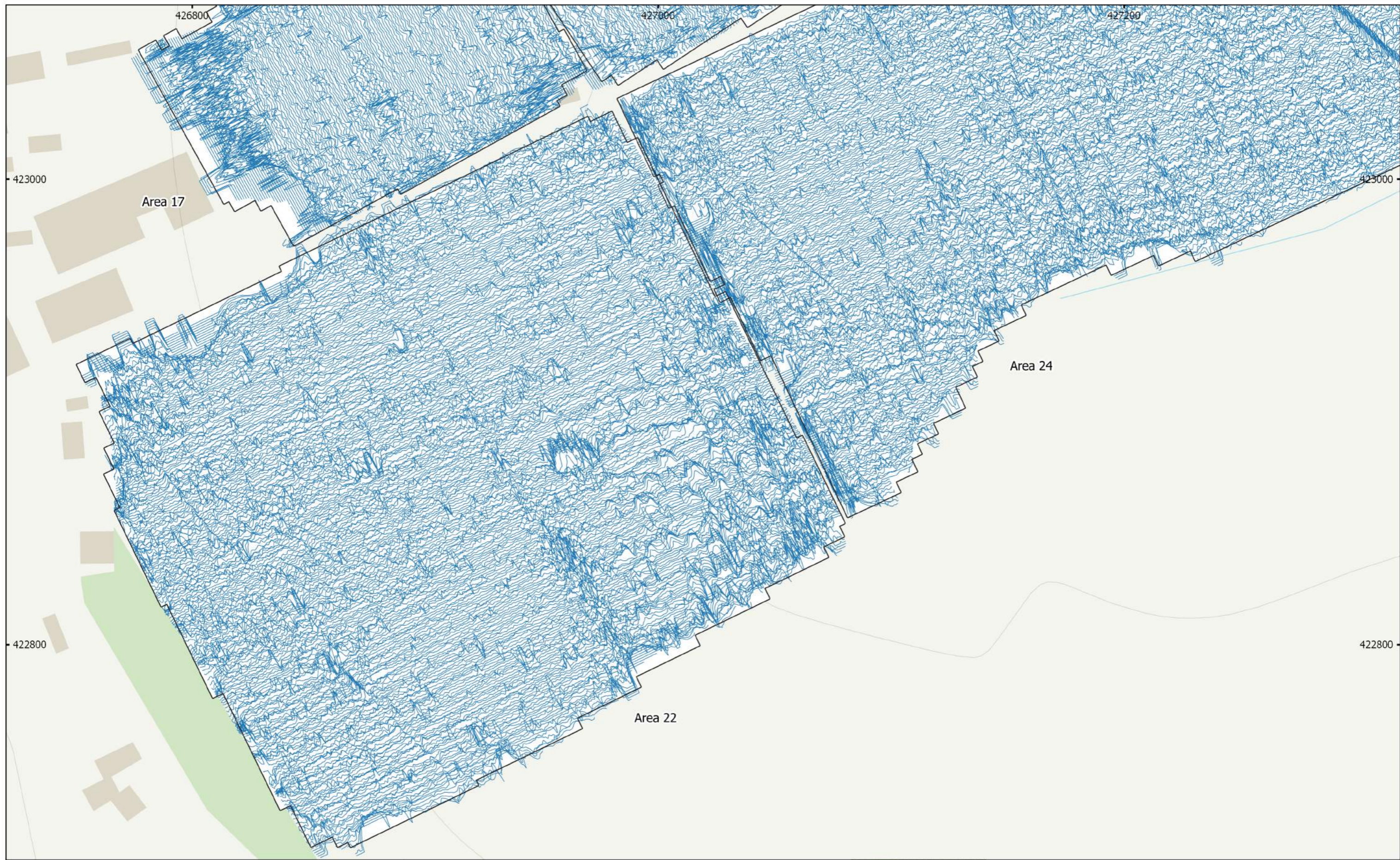




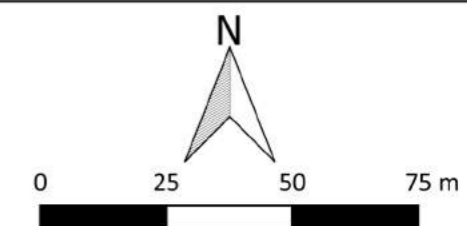
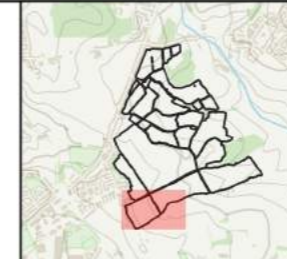
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 29 - Magnetic Interpretation (South-West)
 1:1,500 @ A3
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- | | | |
|-------------------------------|----------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction (Spread) | Agricultural (Trend) |
| Archaeology Possible (Strong) | Magnetic Disturbance | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Ferrous/Debris (Spread) | Drainage Feature |
| Agricultural (Strong) | Natural (Weak) | Ferrous (Spike) |
| Agricultural (Weak) | Natural (Spread) | |
| Mining/Extraction | Undetermined (Strong) | |



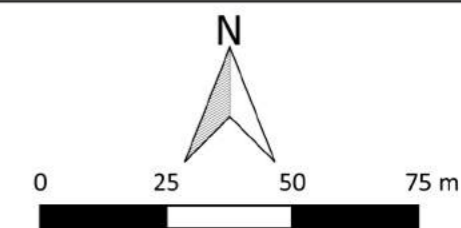
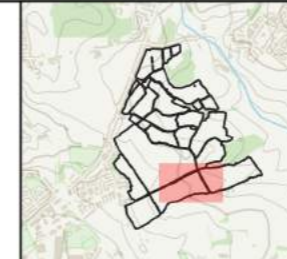


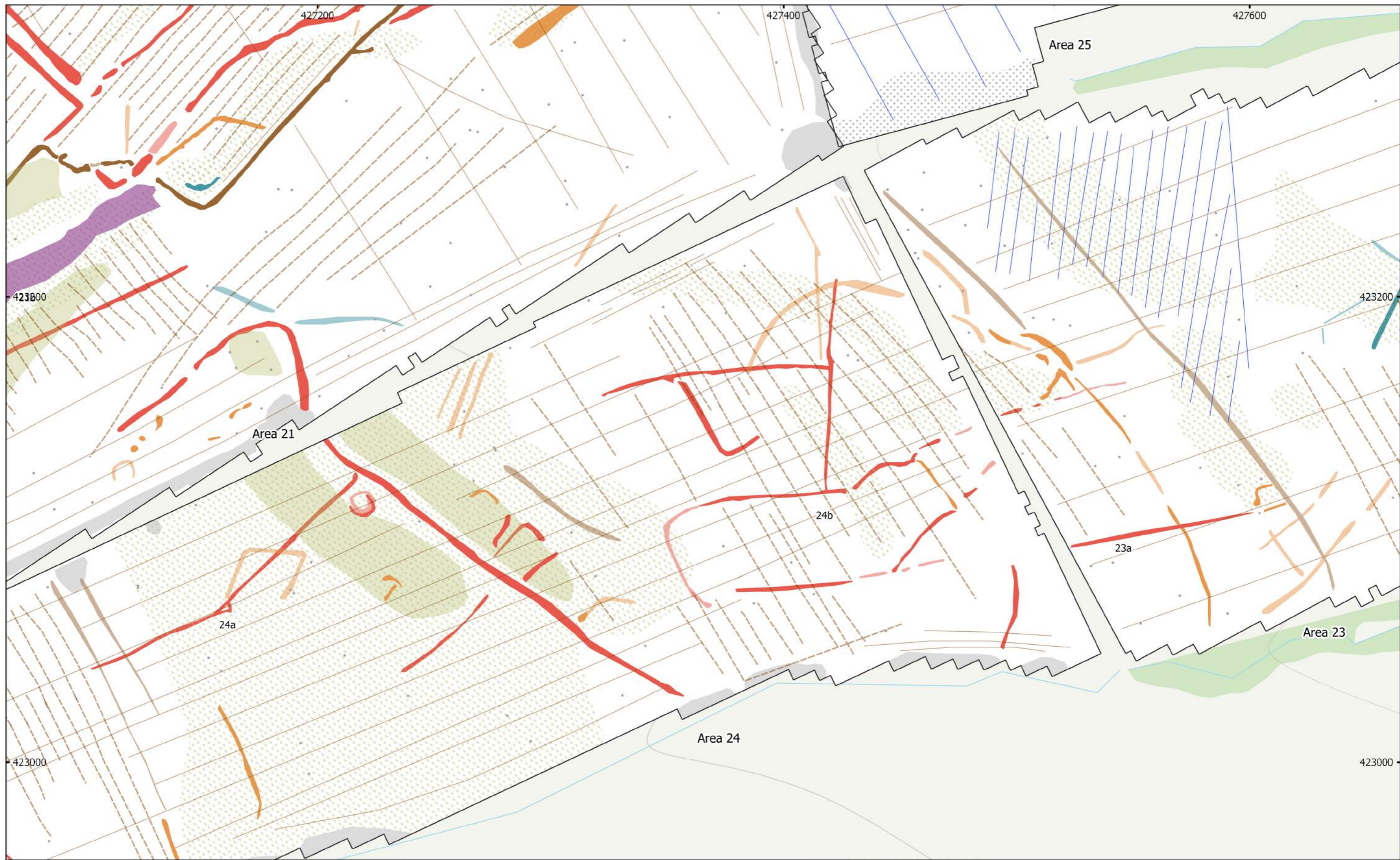
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 30 - XY Trace Plot (South-West)
30nT/cm at 1:1,500 @ A3
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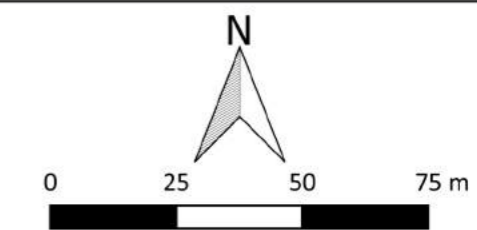
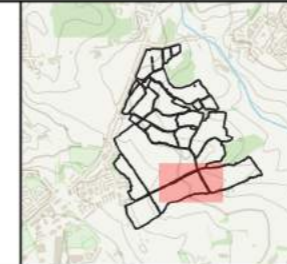
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 31 - Magnetic Gradient (South-Centre)
 1:1,500 @ A3
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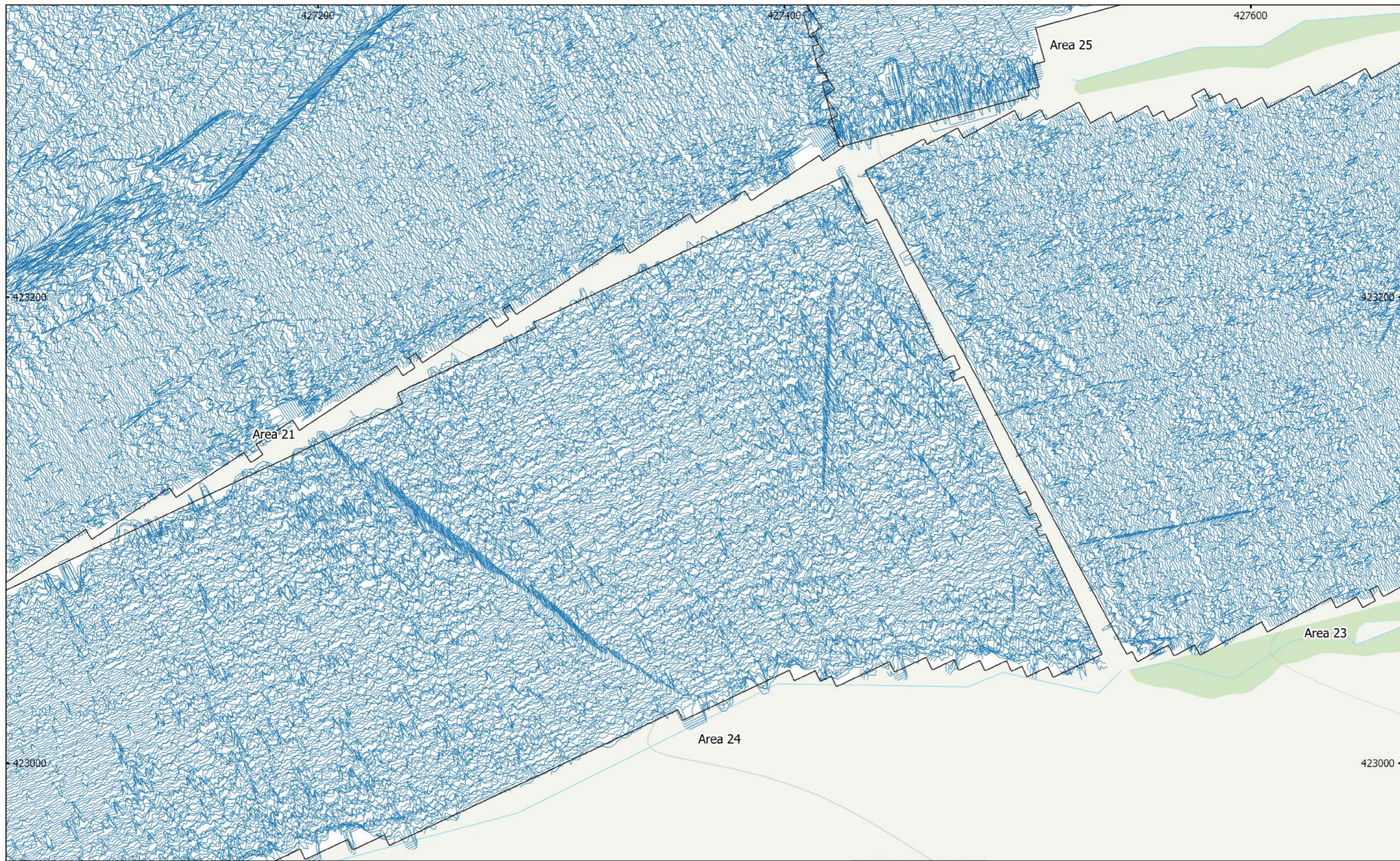




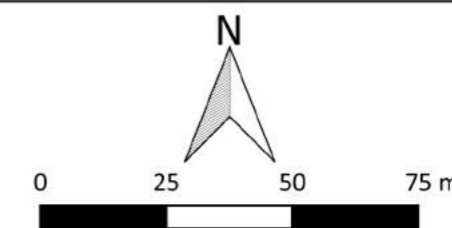
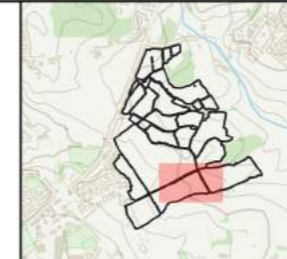
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 32 - Magnetic Interpretation (South-Centre)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction | Undetermined (Weak) |
| Archaeology Probable (Weak) | Magnetic Disturbance | Agricultural (Trend) |
| Archaeology Possible (Strong) | Ferrous/Debris (Spread) | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Natural (Weak) | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Strong) | |



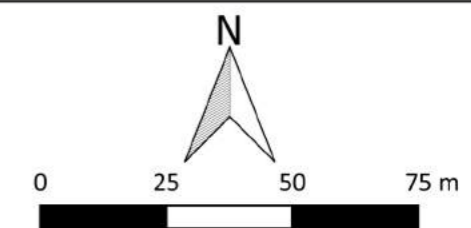
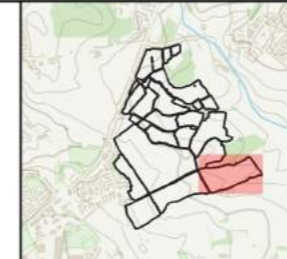


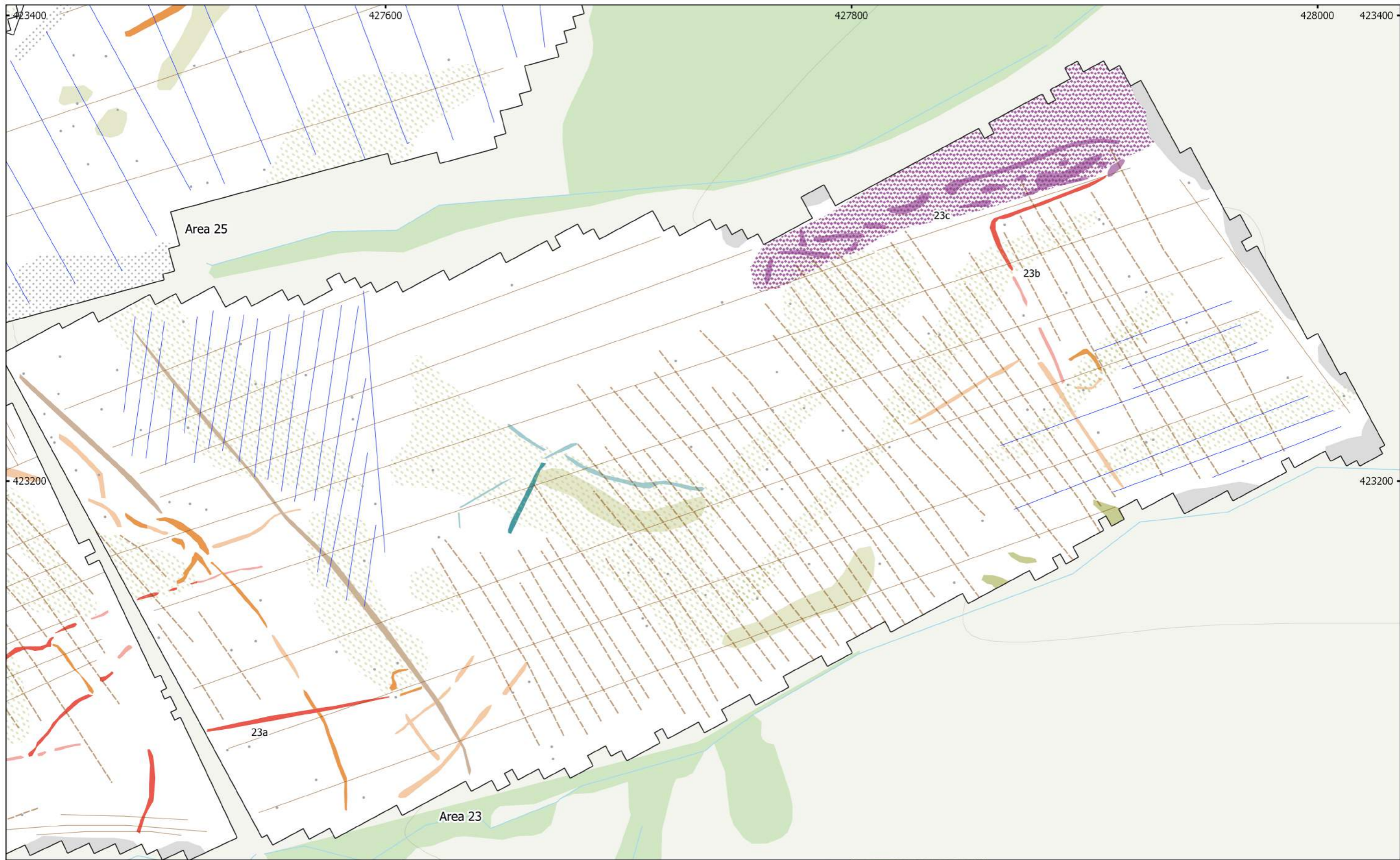
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 33 - XY Trace Plot (South-Centre)
30nT/cm at 1:1,500 @ A3
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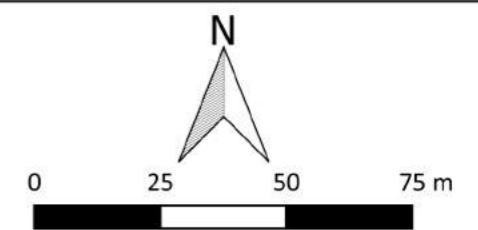
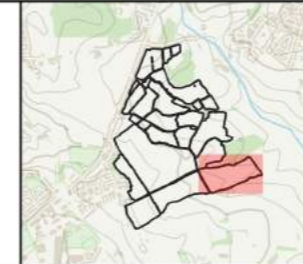
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 34 - Magnetic Gradient (South-East)
1:1,500 @ A3
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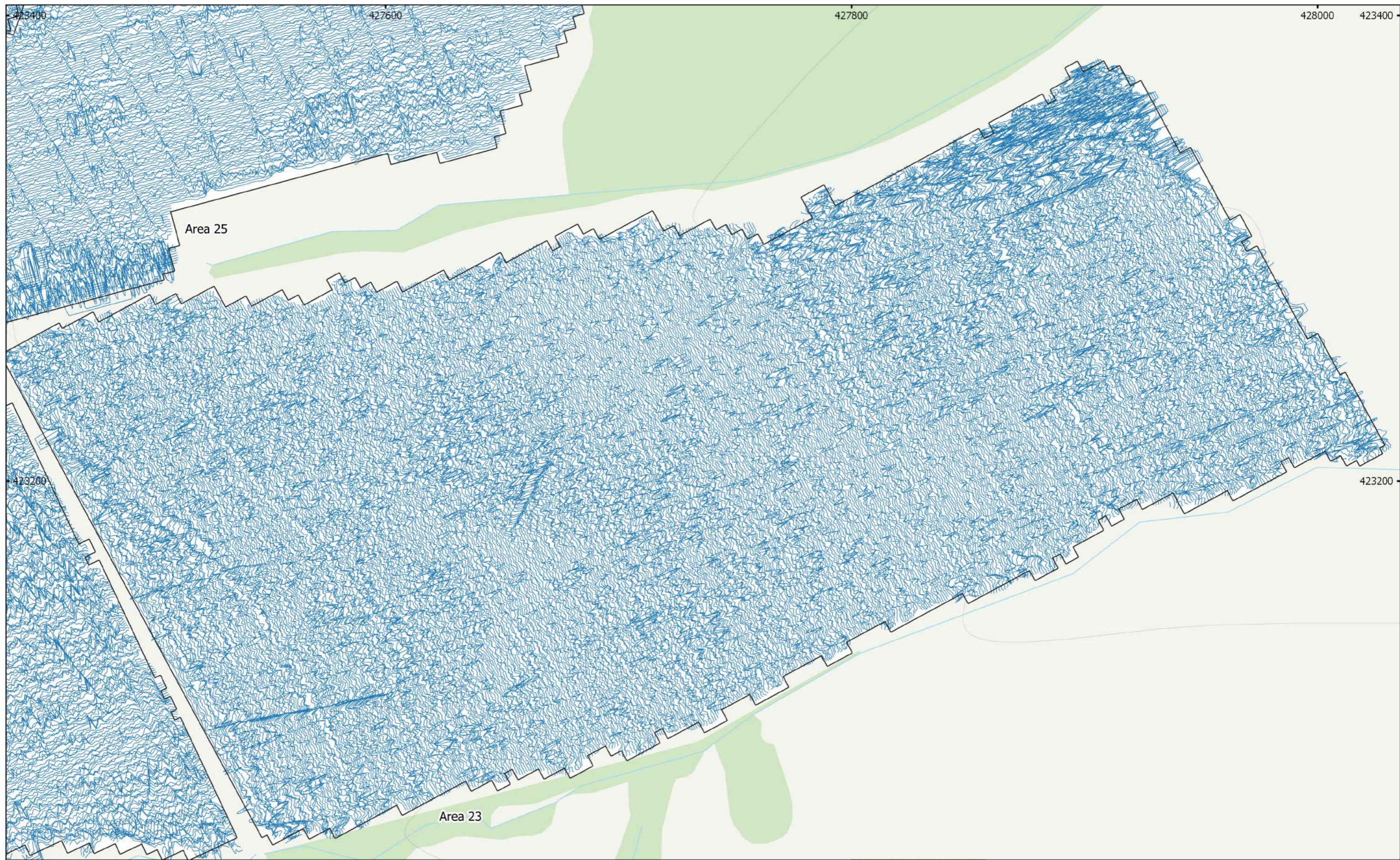




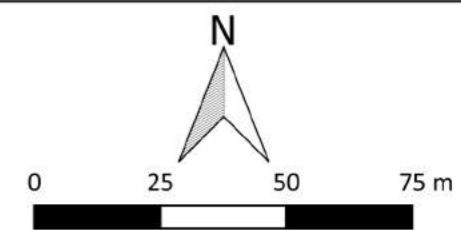
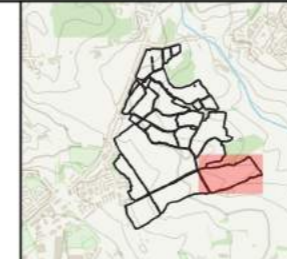
MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
 Figure 35 - Magnetic Interpretation (South-East)
 1:1,500 @ A3
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|-------------------------------|----------------------------|--------------------------|
| Archaeology Probable (Strong) | Mining/Extraction (Spread) | Undetermined (Strong) |
| Archaeology Probable (Weak) | Magnetic Disturbance | Undetermined (Weak) |
| Archaeology Possible (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Archaeology Possible (Weak) | Natural (Strong) | Ridge and Furrow (Trend) |
| Agricultural (Weak) | Natural (Weak) | Drainage Feature |
| Mining/Extraction | Natural (Spread) | Ferrous (Spike) |





MSSE562 - Land to the East of Leeds Road and Heybeck Lane, Chidswell
Figure 36 - XY Trace Plot (South-East)
30nT/cm at 1:1,500 @ A3
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