

Intermodal Logistics Park North Ltd

INTERMODAL LOGISTICS PARK NORTH (ILPN)

Intermodal Logistics Park North (ILPN) Strategic Rail Freight Interchange (SRFI)

Project reference TR510001

Preliminary Environmental Information Report (PEIR)

Appendix 13.1: Archaeological Desk-Based Assessment

October 2025

Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

This document forms a part of a Preliminary Environmental Information Report (PEIR) for the Intermodal Logistics Park North (ILPN) project.

A PEIR presents environmental information to assist consultees to form an informed view of the likely significant environmental effects of a proposed development and provide feedback.

This PEIR has been prepared by the project promoter, Intermodal Logistics Park North Ltd. The Proposed Development is described in Chapter 3 of the PEIR and is the subject of a public consultation.

Details of how to respond to the public consultation are provided at the end of Chapter 1 of the PEIR and on the project website:

<https://www.tritaxbigbox.co.uk/our-spaces/intermodal-logistics-park-north/>

This feedback will be taken into account by Intermodal Logistics Park North Ltd in the preparation of its application for a Development Consent Order for the project.

Archaeological Desk-Based Assessment
of the Proposed Development at
Intermodal Logistics Park
North Rail Freight Interchange (ILPN SRFI)

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1. Non-Technical Summary

Iceni Project has been commissioned by Intermodal Logistics Park North Ltd to carry out an Archaeological Desk-Based Assessment to inform the archaeological assessment of the Proposed Development of the proposed Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI) on potential archaeological assets.

The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) will involve a Strategic Rail Freight Interchange (SRFI) and a range of associated infrastructure works. The development needs to be consented through a Development Consent Order (DCO).

This Archaeological Desk-Based Assessment assesses the potential presence and significance of archaeological assets within the Draft Order Limits, and the impact of the Proposed Development on such assets. Historic structures, above-ground heritage assets and their setting are not specifically considered in this assessment except where they are relevant to the archaeological interpretation of the Site.

This assessment concludes that the potential presence and significance of archaeology on the Draft Order Limits is as follows:

- **Varying Potential** for Prehistoric evidence:
 - o **Low Potential** for palaeoenvironmental remains associated with localised remnants of peat. Any surviving peat is expected to be of **Low to Medium Significance**.
 - o **Low potential** for paleoenvironmental remains and Mesolithic remains from transient hunter-gatherer activity, considered of **Local Significance**
 - o **Moderate Potential** for Neolithic settlement or subsistence activity; of **medium significance**
 - o **Moderate Potential** for Bronze Age funerary and possible settlement remains near barrow sites, of **Medium Significance** with **Localised High Potential**
 - o **Low Potential** for Iron Age remains due to limited evidence, of **Low Significance**
- **Low Potential** for Roman isolated artifacts which are considered to be of **Low Significance**.
- **Moderate Potential** for medieval remains associated with agricultural practices and minor settlement activity of **Low Significance**.

- **Moderate Potential** for post-medieval remains associated with agriculture use, field systems, and possibly minor industrial use of **Low Significance**.

The report concludes that the development will have an impact on archaeological remains where they are present. The main impact is expected to occur on the Main Site and Western Rail Chord, while effects on the Northern Mitigation Area, Potential Lane Head South Relief Road, and Soil Reuse Area are anticipated to be minimal.

Consultation with the Archaeological Advisors to the Local Planning Authorities (LPA) is ongoing about the scope of intrusive and non-intrusive archaeological evaluation strategies required to be undertaken in support of the Development Consent Order (DCO) submission.

2. Introduction

2.1. Overview

- 2.1.1 This Archaeological Desk-Based Assessment (DBA) has been prepared by Icen Projects on behalf of Intermodal Logistics Park North Ltd ('the Applicant') to provide a baseline archaeological assessment at the proposed Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI) ('the Proposed Development', Figure 1).
- 2.1.2 The purpose of this document is to assess, as far as reasonably possible using existing records, the potential nature, extent, and significance of the buried heritage within the Site, identify the potential for unknown assets, and evaluate the potential impact on the historic environment arising from the Proposed Development.
- 2.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) and therefore needs to be consented through a Development Consent Order (DCO), which is planned to be submitted in 2026.
- 2.1.4 This document has also been undertaken in accordance with the relevant Legislation, Policy, and Technical Guidance. A full summary of the relevant professional Technical Guidance is provided in **Section 3** and **Appendix A**, which also includes an overview of the relevant Historic England policy and Chartered Institute for Archaeologists (CIfA).
- 2.1.5 A Historic Environmental Record (HER) search of a 1km radius from the Site boundary has been utilised to produce a comprehensive baseline of the archaeological background of the Site (Figure 2).

2.2. Site Location

- 2.2.1 The Proposed Development will be sited across c. 425 hectares (ha) (the 'Draft Order Limits') located on the eastern extent of Newton-le-Willows in a flat, agricultural landscape. The Draft Order Limits are located within the local authority areas of St Helens Borough Council, within the Liverpool City Region Combined Authority, and Wigan Council, within the Greater Manchester Region Combined Authority. The Draft Order Limits also include land within the local authority area of Warrington Borough Council.

2.2.2 The Draft Order Limits is split broadly in five sections (Figure 2)¹:

- Main Site: land to the east of the M6 motorway, to the south of the Chat Moss Line and to the west of Winwick Lane incorporating the triangular parcel of land located to the west of Parkside Road and to the north of the Chat Moss Line.
- Western Rail Chord: land to the west of the M6 motorway, which bisects the Draft Order Limits in a northwest southeast orientation, and to the east of the West Coast Mainline.
- Northern Mitigation Area: land to the north of the Liverpool to Manchester railway lines.
- Potential Lane Head South Relief Road: land to the north of Liverpool to Manchester Railways and east of Winwick Lane.
- Soil Reuse Area: land to the east of Winwick Lane, south of the Liverpool to Manchester railway line.
- Eastern Off-Site Planting Area: an area of landscape and visual effects mitigation east of the Soil Reuse Area.

2.2.3 The majority of the land contained within the Main Site is bound to the north by the Chat Moss Line (Liverpool-Manchester railway line), to the west by the M6 motorway and to the southeast by Winwick Lane (A579). The Main Site south of the Chat Moss Line is approximately 198 hectares in size. The Highfield Moss Site of Special Scientific Interest (SSSI) is also adjacent to the north of the Main Site and comprises land either side of Liverpool-Manchester railway line.

2.2.4 The approximate centre of the Draft Order Limits lies at National Grid Reference 361332, 394902.

2.2.5 The Draft Order Limits lie within a flat, low-lying part of the Merseyside and Cheshire Plain, where elevations are modest and relief is minimal. Across both the Main Site and the Western Rail Chord, the ground level generally ranges between 20 and 30 m above Ordnance Datum (m OD). The lowest parts of the site are typically located near the Chat Moss Line and towards Highfield Moss to the north, reflecting the natural topography of the former peat bog landscape. Moving slightly south and east across the Main Site, the land rises gradually but remains within the same low elevation band,

¹ At this stage, Highway Options have not been incorporated in the assessment.
Archaeology, Desk-Based Assessment © Iceni Projects 2025

rarely exceeding 30 m OD.

2.3. *Planning Policy and Guidance*

2.3.1 In the context of planning and development, the conservation of the historic environment is a material consideration. The National Networks National Policy Statement (NPSNN, 2024) provides overarching policy for NSIPs on the national road and rail networks in England, including assessment of impacts and mitigation. Sections 5.204 to 5.226 focus on the historic environment, recognising that such infrastructure can adversely affect heritage assets. Non-designated assets of equivalent significance to Scheduled Monuments should be treated as designated assets. Applicants must assess impacts on assets and their settings, consulting Historic Environment Records. Where harm is justified, recording and measures for undiscovered archaeology may be required. Decisions should minimise conflict with conservation, give weight to designated assets, balance less than substantial harm against public benefits, and seek opportunities to enhance significance.

2.3.2 Section 16 of the National Planning Policy Framework (NPPF) (as amended December 2024) specifically Paragraphs 202 to 221 address the conservation and enhancement of the historic environment; these set out the local planning authority's responsibilities when dealing with planning proposals which have the potential to impact on cultural heritage assets. These policies emphasise the importance of balancing the need for the conservation of heritage assets with the desirability of new development.

2.4. *Summary of Local Policies relevant to archaeology.*

2.4.1 A comprehensive summary of all the relevant planning legislation and policy is provided in **Appendix A and Section 2.**

2.4.2 St Helens Borough Local Plan up to 2037, (July 2022) states:

Policy LPC11 (7) – Historic Environment

“Any development proposal that may affect one or more asset(s) of archaeological interest (whether designated or not) must include an appropriate desk-based assessment and where necessary a field evaluation, carried out by a suitably qualified person(s). Such evidence should identify any likely features of archaeological interest within or close to the site and how these would be affected by the proposal.”

2.4.3 Wigan Local Plan Remaining Policies (WLPRP), March 2024 states:

Policy CP 11 – Historic Environment

“We will conserve and enhance our historic environment, thereby helping to make the borough a better place to live, visit and work in, by: 1. Conserving and enhancing where appropriate our heritage assets and their settings, including scheduled monuments, listed buildings, conservation areas, historic parks and gardens, locally listed buildings and structures, key historic landscape characteristics and other important features, in accordance with legislation and national planning policy as appropriate.”

2.4.4 The Initial Draft Wigan Local Plan (April 2025) has recently finished Regulation 18 Consultation. Draft Policy PL2 would be relevant to heritage assessment; this follows existing policy and requires the preservation and enhancement of heritage assets, in line with national planning policy. Draft Policy J6: Land west of Winwick Lane, Lowton allocates part of the Main DCO Site for employment use linked to the cross-boundary Parkside East Strategic Rail Freight Interchange. This draft policy notes that development should take appropriate account of the impact upon the heritage significance of Kenyon Hall on Winwick Lane, including its setting, in accordance with Places for Everyone Policy JP-P2.

2.4.5 Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 To 2039 (March 2024) states:

Policy JP-P2: Heritage:

“We will proactively manage and work with partners to positively conserve, sustain and enhance our historic environment and heritage assets and their settings. Opportunities will be pursued to aid the promotion, enjoyment, understanding and interpretation of heritage assets, as a means of maximising wider public benefits and reinforcing Greater Manchester's distinct character, identity and sense of place.

Local Plans will set out the key elements which contribute to the district's identity, character and distinctiveness and which should be the priority for conserving and enhancing in the future and demonstrate a clear understanding of the historic environment and the heritage values of sites, buildings or areas and their relationship with their surroundings. This knowledge should be used to inform the positive management and integration of our heritage by:

- 1. Setting out a clear vision that recognises and embeds the role of heritage in place-making;*

2. *Ensuring that the heritage significance of a site or area is considered in accordance with national planning policy in the planning and design process and opportunities for interpretation and local engagement are optimised;*
3. *Integrating the conservation and enhancement of heritage assets and their settings, with creative contextual architectural responses that contribute to their significance and sense of place;*
4. *Delivering positive benefits that sustain and enhance the historic environment, as well as contributing to the economic viability, accessibility and environmental quality of a place, and to social wellbeing; and*
5. *Exploring opportunities to reduce greenhouse gas emissions that restoration of historic buildings offer.*

Particular consideration will be given to ensure that the significance of key elements of the historic environment which contribute to Greater Manchester's distinctive identity and sense of place are protected from harm. These include historic town centres, places of worship, historic transport routes including the canal network, industrial buildings and structures including textile mills, farmsteads and other sites, buildings, and areas of identified archaeological, architectural, artistic and/or historic value.

Development proposals affecting designated and non-designated heritage assets and/or their settings will be considered having regard to national planning policy.

Where heritage assets have been identified as being at risk, Local Plans should identify specific opportunities for them to contribute to regeneration and place-making, and they should set out strategies for their repair and re-use. Development proposals which will help safeguard the significance of and secure a sustainable future for Greater Manchester's heritage at risk will be supported in principle, provided they are not contrary to national policy or other policies in the development plan.

Proposals should be informed, as necessary, by the findings and recommendations of the appropriate heritage assessment(s) in the development plan evidence base and/or any updated heritage assessment submitted as part of the planning application process."

2.4.6 Warrington Local Plan, 2021/22 - 2038/39, adopted December 2023 states:

2.4.7 Policy DC2 - Historic Environment: "General Principles

1. The Council will, through planning decisions and in fulfilling its wider functions, proactively manage and work with developers, the local community and others to support proposals which conserve or, where appropriate, enhance the historic environment of Warrington.

2. Particular consideration will be given to ensure that the significance of those elements of the historic environment, including both designated and non-designated heritage assets, which contribute most to the Borough's distinctive identity and sense of place are conserved and where appropriate enhanced. These include, but not exclusively:

- a. Evidence of Roman activity such as the settlement at Wilderspool and the roads at Appleton and Stretton.*
- b. Moated sites, country houses, farmhouses and associated outbuildings in the countryside including Bradley Old Hall, Barrow Old Hall and Bewsey Old Hall.*
- c. The site of the Battle of Winwick, also known as the Battle of Red Bank, now a registered Battlefield.*
- d. The Borough's industrial heritage including the Bank Quay Transporter Bridge, Sankey Canal, Bridgewater Canal, Manchester Ship Canal, Sankey Viaduct and other associated infrastructure and buildings.*
- e. Places of worship of different denominations.*
- f. The range of civic and institutional buildings, including the Town Hall, Libraries and Schools.*
- g. The town's mid to late nineteenth century terraces around Palmyra Square.*
- h. The buildings associated with the Borough's role as a major centre for brewing including the range and quality of its public houses.*
- i. Conservation Areas and Listed Buildings across the Borough.*
- j. Key cultural assets encompassing parklands, woodlands, landscapes, canals and riversides, museums, libraries, art galleries, public art, food and drink, customs and traditions.*

3. As well as fulfilling its statutory obligations, the Council will:

- a. *Seek to identify, protect and enhance local heritage assets through the review and update of its Local List;*
- b. *Promote heritage-led regeneration including in relation to development opportunities;*
- c. *Produce new Conservation Area Appraisals and Management Plans;*
- d. *Develop a positive strategy to safeguard the future of any heritage assets that are considered to be “at risk”;*
- e. *Adopt a proactive approach to utilising development opportunities to increase the promotion and interpretation of the Borough’s rich archaeological wealth; and*
- f. *Develop a positive heritage strategy for the Borough.*

Assessing Development Proposals

4. *Development proposals that would lead to substantial harm to (or total loss of significance of a designated heritage asset (including an archaeological site of national importance) will be refused permission unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or total loss, or other circumstances as set out in the NPPF. Where a proposal would lead to less than substantial harm to the significance of a designated heritage asset, the harm will be weighed against the public benefits of the proposal and permission will only be granted where the benefits outweigh the harm.*

5. *Where permission is granted for a development which would result in the partial or total loss of a designated heritage asset, approval will be conditional upon the asset being fully recorded and the information deposited with the Historic Environment Record (HER).*

6. *Proposals which would remove, harm or undermine the significance of a non-designated heritage asset will only be permitted where the benefits are considered sufficient to outweigh the harm to the character of the local area.*

7. *Where the proposal affects (non-designated) archaeological sites of less than national importance it should conserve those elements which contribute to their*

significance in line with the importance of the remains. In those cases where development affecting such sites is acceptable in principle, mitigation of damage will be ensured through the preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development, the findings of which should be deposited with the Historic Environment Record.

8. Proposals within or affecting the setting of a Conservation Area will only be permitted where it preserves or enhances the character and appearance of the area including those elements which have been identified within the Conservation Area appraisal as making a positive contribution to the significance of that area.

9. All applications which affect a heritage asset should be accompanied by a Statement of Significance which may form part of a Design and Access statement and/or a Heritage Impact Assessment. This should provide the information necessary to assess the impact of the proposals on the heritage asset and its setting including demonstrating how the proposal has taken into account the elements that contribute to its significance, including where relevant, its architectural and historic interest, character and appearance”.

2.5. Description of Development

2.5.1 The Proposed Development comprises a Strategic Rail Freight Interchange (SRFI) and associated infrastructure, including a rail terminal capable of handling up to 16 trains per day, extensive warehousing with potential for rail connectivity, new road, bridge, and pedestrian links, and a lorry park with welfare and refuelling facilities. It also includes an energy centre(s), battery storage, drainage works with attenuation ponds, and extensive landscape and ecological enhancements. The scheme involves demolition of existing structures and significant earthworks to create development plateaus and supporting infrastructure (See PEIR Chapter 3: The Proposed Development). The development involves demolition of existing structures and widespread earthworks to reshape the Main Site, with potential archaeological implications due to the scale, depth, and extent of ground disturbance across an area known to hold low to medium archaeological potential in places (high potential in localised areas).

2.5.2 The Proposed Development is classified as a Nationally Significant Infrastructure Project (NSIP) and therefore requires a Development Consent Order (DCO) under

Sections 14(1)(a) and 15(2) of the Planning Act 2008. The Applicant will undertake an EIA scoping exercise which has concluded that the Proposed Development does require an Environmental Impact Assessment (EIA) due to the potential for significant environmental effects.

2.6. Consultation

2.6.1 Early consultations started on the 27th of June 2024 with Historic England to introduce the Proposed Development. Further consultations were undertaken on the 26th of March 2025 with the relevant consultees (including the Merseyside Archaeological Advisory Services (MEAS), Greater Manchester Archaeological Advisory Service (GMAAS) and Cheshire West Development Control Archaeologist (CWDCA) in support of the proposed development to discuss the ongoing geophysical survey, the scope of the DBA and the forthcoming archaeological interventions.

2.6.2 See Table 1 below for a summary of the relevant considerations from these meetings.

Table 1 Overview of Stakeholder Consultation

Stakeholder	Date of Consultation	Relevant Considerations for the DBA
Historic England	27/06/2024	- Iceni Projects presented the Proposed Development and discussed the approach to intrusive survey.
		-
MEAS, GMAAS, CWDCA	26/03/2025	- Iceni Projects presented the Proposed Development and discussed the approach to DBA, geophysical survey and trial trenching evaluation for the Main Site. - The following was agreed: A geophysical survey map was requested to confirm the coverage and results of previous investigations, with Iceni to provide the mapping. Any gaps in coverage may need to be addressed through further survey work, particularly in the northern areas of the Draft Order Limits. Where possible, the entire area within the Draft Order Limits will be surveyed, with walkover assessments carried out in advance to identify areas unsuitable for geophysical methods. A Written Scheme of Investigation (WSI) will be prepared by the archaeological contractor and approved by the relevant advisory teams. - The DBA will also be preceded by a full walkover, focusing on identifying and recording visible features such as earthworks and hedgerows, supported by photographic and locational data. Trial trenching will be guided by the combined results of the DBA, geophysical and paleoenvironmental surveys. A flexible, proportionate trenching strategy will be used rather than a fixed percentage approach, with trench locations agreed upon based on

		- archaeological potential, previous survey findings, and expected development impacts. - Paleoenvironmental assessment will focus on areas around Highfield Moss and other peatland features indicated by historic mapping and HER data, using techniques such as augering to determine the extent and significance of buried environmental deposits. Initial ground investigation (SI) results may inform the scope of this work. - Archaeological advisors confirmed that no formal briefs will be issued; instead, county-specific WSIs will be produced, referencing the North West Regional Research Framework. In areas with validated geophysical survey data, trial trenching may be brought forward. - Known archaeological features in the area, such as barrows near Kenyon Hall and a Roman brooch find, underline the importance of thorough evaluation. Where geophysics is unsuitable, metal detecting may supplement the survey to identify artefacts. Local archival research will also support the investigation, with the results to be disseminated through local publication, including a proposed booklet under the MEAS series.
MEAS, GMAAS, CWDCA	14/04/2025	- The 2007 geophysical survey is acceptable and the area which was surveyed does not require any further geophysics.
MEAS	16/05/2025	- Written Scheme of Investigation for Geophysical Survey Approved
MEAS, GMAAS, CWDCA	18/08/2025	- Icen Projects met with the archaeological advisors to discuss the updated Draft Order Limits, extended to include the Northern Mitigation Area, the Potential Lane Head South Relief Road, and the Soil Reuse Area. It was confirmed that while these areas fall largely outside the development footprint, they will still be assessed as part of a “realistic worst-case” archaeological scenario due to potential ground disturbance from planting and pond creation. - Updates were provided on progress since the previous consultation: geophysical survey, LiDAR, and aerial photographic assessments have been completed, with results to be circulated. HER data have been received from Cheshire and Merseyside, with Greater Manchester pending. The DBA will be updated to reflect the extended boundary and will include separate sections for each county.
MEAS	21/08/2025	- Scope of Work for Walkover Survey of the draft Main Site Approved

2.6.3 A HER search of a 1km radius from the Draft Order Limits was submitted to the Merseyside HER (MHER), Cheshire HER (CHER), and to the Greater Manchester (GMHER) in March 2025 and then updated in August 2025. This was acknowledged,

and the records subsequently issued by the HER Officers².

2.6.4 Once complete, this assessment will be sent to the Archaeological Advisors.

² Merseyside records were issued on the 31/03/2025 then updated on the 12/08/2025; Greater Manchester records were issued on the 09/04/2025 and updated on the 04/09/2025; Cheshire records were issued on the 28/03/2025 and updated on the 13/08/2025.

3. Scope and Objectives

3.1. Scope

3.1.1 Paragraph 207 of the National Planning Policy Framework (NPPF) advises that:

Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

3.1.2 The objective of this DBA is to provide the Local Planning Authority with sufficient information to determine how the Proposed Development will affect any buried heritage assets surviving on site.

3.1.3 A DBA will identify all known assets potentially affected by the Proposed Development, and the potential for currently unknown buried heritage assets; to gain an understanding of the buried heritage resource in order to understand their Significance and to inform strategies for evaluation, mitigation, or management as appropriate.

3.1.4 Any archaeological remains present with Site have the potential to contribute to the research questions and research agenda set out in the North West Regional Research Framework.³

3.2. Standard and Guidance

3.2.1 This document has been undertaken pursuant to the professional guidance issued within the ClfA guideline (2014b) for Desk-Based Assessments as:

Standard

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. Desk-based assessment will be undertaken using appropriate methods and practices which satisfy the stated aims of the project, and which comply with the Code of conduct and other relevant regulations of ClfA. In a development context desk-based assessment will establish the impact of the proposed development on the significance of the historic environment (or will identify the need for further evaluation to do so) and will enable reasoned proposals and decisions to be made whether to mitigate, offset or accept without further intervention that impact.

Guidance

³ <https://researchframeworks.org/nwrf/>

A desk-based assessment is a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest. Significance is to be judged in a local, regional, national, or international context as appropriate.

3.3. Objectives

3.3.1 To summarise, the key objectives of this Archaeological DBA are to:

- Identify and map all the known DHAs and NDHAs within the Draft Order Limits and surrounding Study Areas;
- Describe the significance of such assets;
- Assess the potential for unknown buried heritage assets that may be affected by the proposals;
- Identify the extent of previous ground disturbance which may have affected buried heritage assets survival; and,
- Assess the likely impacts upon the significance of the assets arising from the Proposed Development.

4. Methodology and Sources Consulted

4.1.1 This section presents the definition and describes the technical methods used to determine the **Archaeological Potential** of the Draft Order Limits, and the **Significance (Value)** of the buried heritage assets potentially affected by the Proposed Development.

4.2. *Archaeological Potential*

4.2.1 The **Archaeological Potential** is assessed based on existing baseline evidence and the likely preservation of known or unknown buried heritage assets within the Draft Order Limits, considering previous ground disturbances. However, the physical nature and extent of any surviving archaeological resources cannot be fully confirmed without further evaluation. As such, the potential is determined through professional judgment and expertise, informed by the available baseline data.

4.2.2 **Archaeological Potential** takes into consideration the possibility that unrecorded buried heritage assets may survive within the Draft Order Limits in addition to the known baseline.

4.2.3 The Archaeological **Potential** for surviving unknown buried heritage assets of various periods is defined within this report as presented in Table 3:

Table 2 Archaeological Potential

Potential	Description of receptors
High	The available evidence suggests a high likelihood for past activity within the Draft Order Limits and a strong potential for archaeological evidence to survive intact or reasonably intact.
Moderate	The available evidence suggests a reasonable likelihood for past activity within the Draft Order Limits and a potential that archaeological evidence may survive although the nature and extent of survival is not thought to be significant.
Low	The available evidence suggests archaeological evidence of significant activity is unlikely to survive within the Draft Order Limits, although some minor land-use may have occurred.
Uncertain	Insufficient information to assess.

4.2.4 Archaeological potential may be reduced based on known historic or modern impacts.

4.3. *Archaeological significance*

4.3.1 The NPPF defines significance as ‘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. Significance derives not only from a heritage asset’s

physical presence, but also from its setting.’ Historic England’s Advice Note 12 also offers an interpretation of the various forms of heritage interest that an asset can possess, based on the terms provided in the NPPF Glossary

4.3.2 The **Significance (Value)** of each buried heritage asset is evaluated as being high, medium, low, or very low based on a review of the baseline position of each receptor and its performance against benchmark areas. Each buried heritage asset is assessed on both an individual basis and as part of the entire buried heritage baseline. The attributed value also considers regional variations, individual qualities, professional judgement, and the results of consultation with relevant stakeholders.

4.3.3 The **Significance (Value)** buried heritage assets is defined in this report as presented in Table 4:

Table 3 Archaeological Significance (Value)

Significance	Designation of Asset
International / National (very high)	The highest status of asset and indicative of national importance: e.g. World Heritage Sites (WHS), Scheduled Monuments (SMs), Grade I and II* Listed Buildings (LBs), Grade I and II* Registered Parks and Gardens (RPGs), Protected Wrecks, Heritage assets of national importance, well preserved historic landscapes with exceptional coherence, time depth, or other critical factor(s).
National / Regional / County (high)	Archaeological sites that may be designated or undesignated, may contain well preserved or in situ structures, buildings of historical significance, historic landscapes with a reasonably defined extent, or reasonable evidence of occupation/settlement or activities (ritual, industrial etc.). e.g. Grade II RPGs, Conservation Areas (CAs), Designated historic battlefields, Grade II LBs, burial grounds, protected heritage landscapes such as Ancient Woodland, heritage assets of regional or county importance.
Sub-regional / District (medium)	Designated or undesignated archaeological sites with reasonable evidence of human activity. Assets may be of limited historic value but may contribute to district or local knowledge and/or research objectives. May contain structures or buildings of potential historic merit. e.g. Historic village settlements, associated historic field systems and boundaries, historic road systems.
Local Area / Parish (Low)	Heritage assets with a local level cultural or education value only e.g. Historic field systems and boundaries, agricultural features such as ridge and furrow, ephemeral archaeological evidence, artefacts of poor contextual stratigraphy.
Very Low	Historic assets with very little or no surviving archaeological interest or stratigraphic integrity. Buildings and landscapes of no historical significance. e.g. Destroyed objects, buildings of no architectural merit, relatively modern landscape features or disturbances such as quarries, field boundaries, drains etc.

Unknown

Insufficient information exists to assess the importance. Significance of below ground archaeological remains is often unknown until their nature and extent has been sufficiently determined through archaeological fieldwork.

4.3.4 Potential and significance values are based on guidance in the following documents:

- ClfA, 2014, *Standards and Guidance for Historic Environment Desk-Based Assessment*;
- English Heritage (2008 – updated 2018) *Conservation Principles, Policies and Guidance*
- Historic England (2017) *The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning: 3. Historic England and Historic Environment Forum*;
-
- Historic England (2007, updated 2019) *Piling and Archaeology guidance and good practice*
- Historic England (2020) *Good Practice in Planning 4: Enabling Development and Heritage Assets*
- Historic England (2019) *Historic Environment Advice Note 12. Statements of Heritage Significance: Analysing Significance in Heritage Assets*
- Historic England (2022), *Planning and Archaeology: Historic England Advice Note 17*

4.4. Sources

4.4.1 The following sources were consulted in the production of this assessment:

- **Aerial Photography** - Historic and modern aerial photography held by Historic England Archives, Merseyside HER, Cheshire HER and Greater Manchester HER and included in the Historic England Aerial Photo Explorer (<https://historicengland.org.uk/images-books/archive/collections/aerial-photos/>).
- **Archaeological Data Service (ADS)** - A comprehensive archive of published and unpublished fieldwork reports.
- **British Geological Survey (BGS)** - Solid and Drift geology digital mapping and geological borehole data where applicable.
- **Details of the Proposed Development** - Existing and proposed development plans, engineering data and schematic plans relating to the construction of the Proposed Development as presented in Chapter 02: Site Description and Chapter 03: Project Description of the PEIR.
- **Geophysical Survey** – A previous geophysical survey covering part of the DCO Site was undertaken prior to the Parkside Phase 1 development (planning reference P/2018/0048/OUP; Stratascan 2007). In 2025, an additional geophysical survey was carried out across the areas of the Main Site not previously assessed, in accordance with a Written Scheme of Investigation (WSI;

Magnitude 2025) approved by the Archaeological Advisory Teams to the Local Planning Authorities (LPAs).

- **Historic England** - Information on statutory designated assets data including the National Heritage List for England (NHLE), World Heritage Sites, Scheduled Monuments, Listed buildings, and any identified Heritage at Risk.
- **Historic Environment Record (HER) Data** detailing the results of previous archaeological investigations within the Draft Order Limits and in the surrounding Study Areas. The HER Data was obtained in March and updated in August 2025;⁴
- **Host Authority planning policies** - Details within the local planning authority (LPA) Local Plan's and other information on historic environment policies, conservation areas and locally listed buildings where published online.
- **LiDAR imagery** - Site LiDAR imagery as available from:
 - <https://historicengland.maps.arcgis.com/apps/webappviewer/index.html?id=d45dabecef5541f18255e12e5cd5f85a&mobileBreakPoint=300>; **National Library of Scotland** - Ordnance Survey (OS) maps from their historic first edition through to modern OS mapping. Earlier historic maps were also consulted where available.
- **Site Reports** - Reports on past archaeological investigations (see **Section 6**).

4.4.2 Archive visits were undertaken on 28th of May both at the St Helens Archives and the Wigan and Leigh Archives. During these visits, historical maps, documents, and other archival materials were reviewed to support the Desk-Based Assessment. The purpose of the visits was to gather detailed information on historic land use, past settlement, industrial activity, and previously recorded heritage assets within the Draft Order Limits. The findings have informed the understanding of the site's archaeological potential and contributed to the development of a targeted and proportionate evaluation strategy. A further visit will also be undertaken to Cheshire Archives to review material relevant to the updated Order Limits.

4.4.3 A site visit will be undertaken, during which a visual assessment and photographic survey will be carried out to understand the topography, ground disturbance, existing land use, and to assess the suitability of the areas selected for trial trenching evaluation for intrusive archaeological works. Where relevant, the results of the site visit will be incorporated into the buried heritage baseline below.

⁴ Data received in March then updated in August 2025, Merseyside HER data Reference No. CME3391, Greater Manchester HER data, and Cheshire HER Reference No. 2663/421/0/CCH13398.

5. Limitations and Assumptions

- 5.1.1 The HER is not a record of all surviving heritage assets, but only of all the known buried heritage assets recorded in the area so far. The HER information is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.
- 5.1.2 The assessment has relied upon data and records provided by third parties, and therefore it has been assumed that this information is accurate and up to date at the time of reporting.
- 5.1.3 In addition to the geophysical surveys previously conducted within the Draft Order Limits, a further survey has been undertaken to cover the areas not surveyed by previous investigation in 2007 and 2017, comprising 86ha of the approximately 194ha within the superseded Draft Order Limits. The geophysical survey will also be extended to include those areas now incorporated within the updated Draft Order Limits.
- 5.1.4 Considering the scale of the Draft Order Limits, and the small number of areas which were unsuitable for survey due to inadequate ground condition or access constraints, it is not believed that the absence of geophysical survey on a relatively small percentage of the Draft Order Limits constitute a limitation of this assessment.
- 5.1.5 A walkover survey is being undertaken to further characterise the site and inform subsequent stages of investigation. A more detailed account of the survey, including methodology and results, will be provided in a future version of this document to be included as part of the DCO application. The results of the walkover surveys will be integrated into the buried heritage baseline below and presented in **Appendix G**.

6. Archaeological and Historical Background

6.1. *Study Areas and scope*

- 6.1.1 To assess the archaeological potential and significance of the Proposed Development, data has been obtained from the Merseyside, Greater Manchester and Cheshire HER within a 1km radius of the boundary of the Draft Order Limits. The HER data has been examined to identify known archaeological sites and to develop an archaeological baseline by predicting potential archaeological survival on Site.
- 6.1.2 References to archaeological interventions, findspots, and monuments in Figures 3 and Figure 4 will be presented in parenthesis throughout this document. Since many HER records result from chance discoveries, additional sources been consulted to supplement this data, as detailed in Section 3.
- 6.1.3 Historic structures (Built Heritage) are not specifically considered within this assessment except where they are relevant to the archaeological interpretation of the Draft Order Limits.
- 6.1.4 A basic understanding of the geology and topography is essential to appropriately assess potential archaeological impacts, in accordance with ClfA guidance (Standard and Guidance for the Historic Environment, Annex 2). The following sections outline the key geological and topographical factors relevant to this assessment.

6.2. *Geology*

- 6.2.1 The Draft Order Limits are predominantly overlain by topsoil and glacial till, representing superficial deposits formed during the last glacial and post-glacial periods (Figure 5). On 30/04/2025, a series of trial pits were excavated as part of the site investigation programme to assess the subsurface conditions. The topsoil typically measures between 0.30 m and 0.40 m in thickness and is underlain by Devensian glacial till (boulder clay), which varies in thickness from approximately 0.60 m to over 2.00 m, depending on location. This till comprises firm to stiff, clay-rich material, often containing sandy lenses, cobbles, and occasional organic inclusions, with localised wet ground conditions recorded in several trial pits. Full trial pit logs and descriptions are provided in Appendix B.
- 6.2.2 Within the Highfield Moss, substantial peat deposits are present, consistent with historic waterlogged environments where organic material accumulated over extended periods; these deposits can exceed 1.00 m in thickness in some areas (Hall, Wells &

Huckerby, 1995; Figure 5). Beneath the superficial layers lies the bedrock geology of the Sherwood Sandstone Group, specifically the Chester Formation, comprising weathered red sandstones and interbedded mudstones. This Triassic bedrock was encountered in several trial pits at depths ranging from 1.50 m to over 3.00 m, often as weathered Chester Formation sands indicative of near-surface exposure. These sediments formed in arid, fluvial environments typical of the Merseyside and Cheshire Plain (BGS, 2025).

6.3. *Topography*

- 6.3.1 The draft Order Limits is characterised by a flat and open terrain that reflects the broader topography of the Merseyside and Cheshire Plain. The land is dominated by arable agriculture, with large, geometrically shaped fields stretching across much of the site. These are occasionally interrupted by narrow tree belts and patches of woodland, most noticeably in the eastern sections, which soften the otherwise broad and uninterrupted views.
- 6.3.2 Although the Draft Order Limits is primarily rural in appearance, there are scattered features that give the landscape a more layered character. The presence of small-scale airfields and model flying areas lends the area a distinctive, if lightly used, recreational function. Occasional farmsteads and isolated houses punctuate the farmland, anchoring the open fields with structures that reflect the site's continuing agricultural use.
- 6.3.3 The landform remains largely consistent throughout, flat and subtly undulating in places, with little topographic variation. This lack of relief contributes to a strong sense of openness, allowing long-distance views, particularly where tree cover is sparse. The northern boundary of the Main Site is marked by the Chat Moss Line, a key element of regional rail infrastructure that also delineates a change in land use and ecological character. Just beyond this line lies Highfield Moss, a designated Site of Special Scientific Interest (SSSI), which introduces an area of peatland with a more sensitive and ecologically valuable terrain (Figure 6).
- 6.3.4 To the west of the M6, the Western Rail Chord comprises a smaller area of roughly 12 hectares. Though it shares the flat topography of the Main Site, the character of this section differs notably. Here, the land is less intensively managed and more transitional in nature, with rough grassland, areas of scrub, and pockets of woodland suggesting an edge landscape situated between active rail infrastructure and areas allocated for

commercial development in the St Helens Local Plan (some of which is consented), known as Parkside West. It lies between the West Coast Mainline to the west and Parkside West, and its use is intended to provide rail sidings integral to the operation of the SRFI.

6.4. *Designated Heritage Assets*

6.4.1 Within the Draft Order Limits the Huskisson Memorial, a Grade II listed building (List Entry Number 1075900), lies on the South Side of the Railway. The Memorial will be retained in-situ with no direct impacts anticipated. Potential enhancements, including heritage interpretation, have been considered to improve public appreciation of the Memorial, which is currently limited. No development is proposed on or immediately adjacent to the Listed Building within the Draft Order Limits. Significant setbacks around the Memorial have been incorporated to safeguard its historic context. Within the Study Area, but outside the Draft Order Limits, there are two scheduled monuments.

6.4.2 The Castle Hill motte and bailey and bowl barrow, c. 830m north of the Western Rail Chord, (LEN:1009867; MME9294) and the Bowl barrow west of Highfield Lane, c. 380m south of the Main and Topsoil Reuse Area, (LEN: 1011124; MCH8786). Full Historic England Listing descriptions are provided in Appendix C.

6.5. *Historic Land characterisation*

6.5.1 The landscape within the Draft Order Limits presents a historically layered and evolving rural environment shaped by agricultural expansion, infrastructural development, and wetland reclamation. Through Historic Landscape Characterisation (HLC), several key typologies are evident, reflecting significant changes in land use and management from the post-medieval period to the present day (Merseyside Historic Characterisation Project, 2011).

6.5.2 The most prominent character type within the area is the Field System, comprising regular medium and semi-regular large enclosures. These field patterns are characteristic of the surveyed enclosure movement that took place primarily between the mid-18th and late-19th centuries. During this time, formerly open or marginal lands, including mossland, were divided and enclosed by formal survey to improve productivity. In the 20th century, these enclosed landscapes were further modified through agglomeration: the removal of internal field boundaries to create larger, more

efficient parcels of land for mechanised agriculture (St Helens Council and Land Use Consultants, 2006).

- 6.5.3 Historical evidence shows that this area was agglomerated by 1894. Mapping from 1851 indicates that it was previously composed of small regular enclosures situated along the edge of Highfield Moss. These earlier field patterns are thought to represent reclaimed mossland, enclosed for agricultural use after drainage. The site is recorded in the archaeological database as HGM50856 and forms part of a broader pattern of wetland reclamation identified in the North West Wetlands Survey. These changes reflect the transformation of lowland peat bogs into productive arable land, a process widely undertaken across Greater Manchester and south Lancashire during the post-medieval and Victorian periods (Hall, Wells, Huckerby, 1995).
- 6.5.4 The Western Rail Chord falls within the Rough Land broad type. This parcel exhibits rough grassland, scrub, and transitional vegetation, and appears to be a marginal or edge landscape. Such areas commonly emerge between zones of active infrastructure and residual or future development land. In this case, the site lies between the West Coast Main Line and the Parkside West development area, and its character reflects low-intensity land use shaped largely by 20th-century infrastructural expansion (Merseyside Historic Characterisation Project, 2011).
- 6.5.5 Isolated farmsteads are scattered throughout the wider landscape and correspond to the Residential (Agricultural) HLC type. These buildings, generally dating from the 18th to the 20th centuries, represent long-standing agricultural presence and provide continuity within a changing rural environment. Their dispersed nature and modest size are characteristic of the traditional agricultural settlement pattern in Merseyside. These features act as visual and historical anchors in an otherwise extensively reorganised fieldscape (St Helens Council and Land Use Consultants, 2006).
- 6.5.6 The Chat Moss railway line, which forms the northern edge of the site, is a defining element of the Communication broad type. Constructed in the 19th century as part of the pioneering Liverpool to Manchester Railway, it remains a key piece of transportation infrastructure today. In landscape terms, it acts as both a physical and perceptual boundary. Beyond it lies Highfield Moss which preserves remnants of the area's original lowland peatland ecology and contrasts sharply with the intensively managed farmland to the south (Merseyside Historic Characterisation Project, 2011).
- 6.5.7 This landscape therefore reflects a sequence of changes from wetland fringe and

small-scale enclosure to large-scale mechanised farming and infrastructural integration. The combined presence of Field System, Rough Land, Residential (Agricultural), and Communication typologies demonstrates the significant role that human intervention has played in shaping this rural landscape across the past two and a half centuries (St Helens Council and Land Use Consultants, 2006).

6.6. *Prehistoric period (Palaeolithic to Iron Age – before AD 43)*

6.6.1 The prehistoric is a broad period comprising the Palaeolithic (c.500,000 – 10,000BC), Mesolithic (c.10,000 – 4,000BC), Neolithic (c.4,000 – 2,500BC), Bronze Age (c.2,500 – 700BC), and Iron Age (c.700BC – 43AD). Continuous human occupation of Britain began as the climate improved at the end of the last Ice Age, with nomadic hunter gatherer societies exploiting wild plants and animals. Farming was first introduced from the continent to Britain around 4,000BC and was accompanied by changes in pottery, burial customs, new types of monuments and a sedentary population. The arrival of metalworking in the Bronze Age saw a gradual shift in burial practices, an increase in permanent occupational evidence, distinctive field systems and ceremonial landscape monuments. During the Iron Age, elaborate hillfort type structures are constructed, with evidence of ritual offerings and fine iron metalwork suggestive of a warrior aristocracy and the emergence of extensive tribal territories.

6.6.2 Within the Study Area, numerous archaeological investigations have revealed evidence of prehistoric activity. However, no Palaeolithic remains have been identified to date.

6.7. *Mesolithic (c.10,000 – 4,000BC), Neolithic (c.4,000 – 2,500BC),*

6.7.1 An excavation at Newton Hall (EME2227), c. 200m west of the Western Rail Chord, recovered two Mesolithic flints from Cheshire Court (MME15544). Fieldwalking conducted east of Castle Hill Trail (EME1448), c. 490m north of the Western Rail Chord, identified possible Mesolithic and Neolithic worked flint east of Newton Lake (MME15009).

6.7.2 More recently, an excavation south of Barrow Lane (EME3387), located within the southern end of the Main Site, uncovered a tree throw feature containing a piece of natural flint and charred hazelnuts, with radiocarbon dating confirming an Early Neolithic origin (MME22971).

6.7.3 Nineteen worked flints and five natural pieces were recovered during a fieldwalking

event in Field NT4, c. 490m north of the Western Rail Chord, with artefacts described as “Mesolithic, Neolithic and prehistoric,” and their spatial distribution recorded (MME15009). Worked flint of uncertain prehistoric date was also found north of High Street, c. 670m northwest of the Western Rail Chord by a metal detectorist (MME15010).

- 6.7.4 These findings indicate low-level, dispersed activity within the Study Area during the Mesolithic and Neolithic periods, likely associated with transient settlement, resource exploitation, and tool production. The evidence largely consists of worked flint and charred plant remains, typical of ephemeral prehistoric occupation.

6.8. *Bronze Age (c.2,500 – 700BC)*

- 6.8.1 The Study Area contains a notable concentration of Bronze Age barrows, evidenced by both surviving monuments and historic excavations, which collectively indicate a widespread and long-standing tradition of funerary and ceremonial activity across the prehistoric landscape (Figure 7).
- 6.8.2 Castle Hill, c. 830m north of the Western Rail Chord, is thought to be a prehistoric bowl barrow, later repurposed as a motte and bailey castle and is a scheduled monument (LEN:1009867; MME9294). Surrounding the mound on the south and west sides is a substantial ditch, resulted from the material excavated to form the mound. Excavations in 1843 revealed a chamber within the barrow, including a reported body impression on the chamber’s roof. A nearby mound, once thought to be a chambered tumulus, was excavated in 1987 (EME542), revealing a rock-cut ditch incomplete on the southern side due to steep land slopes.
- 6.8.3 Near the junction of the M6 and Winwick Lane, within the Main Site towards the southern end, a field named 'Barrow Field' appears on the 1839 Tithe map, indicating a possible barrow location (MME9338). Although LiDAR data shows no distinct topographic features here, the field name could imply historical burial significance.
- 6.8.4 Another round barrow west of Highfield Lane, c. 380m south of the Main and Topsoil Reuse Area, was excavated in 1859, uncovering burnt bones and pottery fragments; the barrow, standing two metres high at that time, is now a Scheduled Monument (LEN: 1011124; MCH8786). Here, minor excavation by local antiquarians uncovered fragments of unornamented funerary urns and human bones, though these appeared heavily disturbed by agricultural activity (ECH3180). At Winwick fronting the above-

mentioned scheduled monument, a barrow was levelled in 1859 by farm labourers who discovered a large urn containing human bones, a stone axe hammer, and a bronze spearhead (ECH2424). Subsequent re-excavation in 1980 found only small pits and fragments of Bronze Age pottery (MCH8664).

- 6.8.5 The Kenyon Hall tumulus, situated west of Winwick Lane in Newchurch and within the Main Site, is a Bronze Age barrow believed to have been destroyed between 1887 and 1903. Excavations prior to its destruction revealed fragments of at least three cinerary urns, cremation remains, a bronze pin, and the tongue of a bronze brooch (MCH8557; MGM21359).
- 6.8.6 Another possible Bronze Age barrow was recorded c. 540m south of the Main and Topsoil Reuse Area but no longer survives (MCH8663). Here a Bronze Age palstave and broad flat bronze ring were found together in 1858 (MCH8513), while a decorated late Bronze Age socketed bronze axe-head was discovered around 1859 (MCH8516). Additionally, a damaged palstave, possibly decorated with a shield motif, was found near Croft, c. 265m south of the Topsoil Reuse Area (MCH8515). A rectangular cropmark east of Highfield Lane, identified from 2018 aerial photographs c. 200 m south of the Topsoil Reuse Area, further suggests prehistoric activity in the area (MCH24868). A Bronze Age ring ditch and round barrow, also identified from 2018 aerial photographs, lies c. 830m southwest of the Topsoil Reuse Area (MCH24867).
- 6.8.7 Excavations at Southworth Hall Farm Cemetery, c. 50m west of the Main Site (ECH2787), revealed a round barrow containing cremations, including an off-centre un-urned cremation and another cremation in the ditch (MCH8905). Following mound levelling, two concentric rings of stakes supporting a wooden structure were erected and burned, later covered by a large turf mound surrounded by a ditch. Nine cremations were identified within the mound, some within pottery vessels. Quarrying has since destroyed the excavation site.
- 6.8.8 Adjacent to the northern edge of the Main Site is the Highfield Moss (MGM5816). Although finds have been made in the wider area, no prehistoric sites are known within the moss itself. Present field boundaries align with historic enclosure banks, and no palaeoecological assessment has yet been conducted. Within this landscape, two moss pits are recorded, one currently filled with water and another c. 35m away, potentially representing a second moss-working feature (3153.1.0). These contribute to the character of the Highfield Moss landscape at Parkside Manchester Junction, classified as unenclosed mossland (HGM50855; Type Code: OPG-ULMOS).

6.8.9 Finally, a notable prehistoric flint dagger was found in a potato field, within the Topsoil Reuse Area, and donated to Liverpool Museum in 1965. Made from reddish-orange flint likely sourced locally, it is considered exceptional for its fine workmanship and rarity in Western Britain (MCH8782).

6.8.10 These records demonstrate a significant Bronze Age presence in the Study Area, characterised by a dense concentration of burial and ceremonial monuments, including barrows, cremations, and associated artefacts. The evidence reflects a long-standing tradition of funerary practices and landscape use throughout the Bronze Age, leaving a significant and varied archaeological signature.

6.9. *Iron Age (c.700BC – 43AD)*

6.9.1 No significant Iron Age sites have been uncovered within the Study Area, suggesting the area may have been less densely occupied during this period or that any Iron Age remains are poorly preserved or remain undiscovered. The limited scope of archaeological investigation in the area further contributes to this apparent absence, indicating that additional research and excavation may be necessary to clarify Iron Age presence.

6.10. *Roman period (AD 43 – 410)*

6.10.1 Roman activity within the Study Area appears to have been limited, with few substantial remains identified. The presence of a Roman Road connecting Wilderspool and Wigan indicates some level of Roman infrastructure, but archaeological investigations have revealed only fragmentary evidence of this route and associated occupation. Overall, the evidence suggests intermittent use rather than dense settlement or extensive Roman development in the area.

6.10.2 The Roman Road between Wilderspool and Wigan, was probably constructed between AD 69–77 or AD 85–117 and ran 1 km west of the Western Rail Chord (MME9025). The road crossed what are now the Newton-le-Willows, Haydock, and Ashton-in-Makerfield townships as part of the main arterial route between Northwich and Lancaster, crossing the Mersey at Wilderspool and possibly continuing to the Lake District. This route forms the western of two main Roman Road alignments west of the Pennines. While the eastern route was traditionally considered the principal conquest route of the late 1st century, recent studies in Staffordshire and Cheshire suggest this western route may date to the earlier Flavian period. Descriptions from 1836 identified

the road's course from Heydock Lodge to New Hey Farm in Newton, including surviving earthworks, ditches, and gravel spreads. The road was noted near Holly House Farm. Between 1928 and 1932, Dunlop and Fairclough investigated its alignment across Newton Brook, confirming the OS projection. Near Newton Brook, the structure comprised gravel laid over sandstone blocks. Similar construction was observed further south in Winwick. Multiple historic accounts and modern investigations have documented the course of the road. For example, it was observed near Ashton, continuing past Haydock Hall, where about 300 yards of the road were still visible, including a well-preserved 150-yard stretch. The road was constructed from sandstone masses six to seven yards wide, laid over a bed of gravel and occasionally a preparatory sand layer. Depth varied from two to three feet, with a cambered profile and minimal evidence for flanking ditches.

- 6.10.3 Evaluation at the former Vulcan Works, Wargrave Road, c. 1km west of the Western Rail Chord, involved two trenches excavated across the projected line of the Roman road but no trace of the road was identified (EME2516). In 1909, excavations east of Wargrave Road exposed a well-preserved section of the Roman road, c. 1 km west of the Western Rail Chord (EME1930). A layer of pebbles was found over a clay sub-base, with another segment showing pebbles atop irregular sandstone blocks. The road, approximately 22 feet wide, lay three feet below modern ground level in the centre, rising to one foot at the sides. A rapid visit in 1980 reported no trace of the road in a farmyard, but it was visible in Tanyard Meadow as a slight agger, and gravel spread.
- 6.10.4 In 1985, a deep sewer trench c. 1 km west of the of the Western Rail Chord exposed the road over natural silty sand, with a bedding of red sand, a layer of small pebbles, flattish Bunter sandstone slabs (up to 30cm across), and a top layer of fine pebbles. It was 6.2m wide with shallow ditches on both sides (EME1648).
- 6.10.5 In 1992, a portion of the road near Pine Avenue, c. 1 km west of the of the Western Rail Chord, was examined (EME540). The investigation revealed the road's alignment was 13 meters west of its projected path depicted on the OS map. Despite a slight variation in construction style, the trench provided valuable information about the road's profile and lack of side ditches. Similarly, evaluations in 1995 behind 87–89 Acorn Street (EME1726) and 2001/2002 at Latham Avenue (EME2152) further documented the Roman road's surviving remnants, including its characteristic gravel foundation and camber.

- 6.10.6 In 2004, Oxford Archaeology North evaluated the site of Holly House Farm, Crow Lane East c. 1 km west of the of the Western Rail Chord (EME2135). Although no traces of the Roman road were found, a post-medieval metalled surface was recorded, potentially indicating reuse of the Roman route. Similarly, in 2005, at Pipit Close (EME2137), parallel ditches were discovered, but the road surface itself was not identified, suggesting truncation of the road in this area.
- 6.10.7 Most recently, in 2007, ARS conducted an evaluation at Park Road South, Newton-le-Willows, c. 1 km west of the Western Rail Chord EME2153), where a spread of gravel was found along the alignment of the Roman road indicated by the Ordnance Survey. However, no ditches were discovered, possibly suggesting the road's remains had been truncated or disturbed.
- 6.10.8 In Croft, c. 55 m east of the Topsoil Reuse Area, an Archaeological evaluation at Southworth Hall Farm, revealed a sub-rectangular cropmark enclosure previously identified from aerial reconnaissance (ECH3550). The excavation of the enclosure confirmed it as a Romano-British farmstead, dating to the 2nd century AD (MCH8833). A 2013 open-area excavation prior to quarrying revealed that the western half of the enclosure had already been destroyed. The northern and eastern ditches were found to have been re-cut, suggesting two phases of use, both dating to the mid-2nd century. Features within the enclosure, including pits, postholes, and curvilinear features, were heavily truncated by ploughing, with some curvilinear features possibly representing roundhouses and linear features interpreted as windbreaks. No hearths or evidence of burning were found. The northern side of the enclosure was cut by pits containing charred oat grains, typically associated with the medieval period, suggesting these features may be later. A linear ditch boundary to the north, cutting the enclosure, may also date to a later period.
- 6.10.9 A possible prehistoric–Romano-British farmstead is located c. 932m south of the Topsoil Reuse Area (MCH8901). Visible as a cropmark enclosure of irregular quadrilateral form with rounded corners, the site appears as a dark green mark within lighter cereal crops. The placename Arbury, first recorded in c. 1215 as *Herdberi*, derives from the Old English *eorþburg* (“earth fortification”). The enclosure, probably a Romano-British farmstead, must have survived as a prominent earthwork into the post-Roman period and almost certainly gave its name to the surrounding township.
- 6.10.10 A number of stray finds have been recovered from the Winwick area, indicating sporadic activity. These include the early Roman cast copper-alloy one-piece brooch

of the continental 'eye' type, dating from 27 BC to 75 AD, found c. 680m south of the Main and Topsoil Reuse Area (MCH13025), a cast lead weight (MCH15218) possibly dating from the Roman to medieval period, a Roman brooch of the Polden Hill type (MCH13141), and a lead figurine of Mars (MCH16095). While discovered out of context, these objects contribute to the broader understanding of intermittent settlement, movement, or activity in the area over time.

- 6.10.11 Roman activity within the Study Area appears to have been limited and largely non-permanent, with the primary evidence comprising fragments of a major Roman road and isolated Romano-British farmstead remains. The road likely provided important infrastructure, but there is little evidence for significant settlement or urban development. The evidence overall suggests an intermittent Roman presence, with the area mainly used for transport and perhaps occasional rural settlement or activity.

6.11. *Saxon and Medieval Period (AD 410 –1485)*

- 6.11.1 The medieval period within the Study Area and its surroundings is marked by a variety of sites. Investigations reveal a landscape shaped by manorial estates, agricultural activity, religious sites, and local conflicts, contributing to a nuanced understanding of medieval life in this part of Merseyside. Agricultural practices are indicated by ridge and furrow identified east of Newton Lake, c. 400m north of the Draft Order Limits (MME9272; MME9263).
- 6.11.2 Within the core of the village of Newton-le-Willows, the St Peter's Churchyard, located on Church Street, c. 330m north of the Western Rail Chord, is an important historical site with significant connections to both the medieval and early modern periods (MME22309). The Chapel of Rokeden, recorded from the late 13th century, marks the earliest known religious structure on the site. This chapel, along with the Newton chapel first recorded in the mid-17th century, suggests a long history of worship and burial at this location. The Newton chapel, located c. 600m north of the Western Rail Chord, had a burial yard associated with it, reinforcing the site's role as a key place of both spiritual and communal significance. In the late 1980s, a detailed survey of the memorials in the churchyard was conducted, further cementing the site's archaeological and historical importance (EME3381).
- 6.11.3 The former site of Newton Hall manor house, c. 200m west of the Western Rail Chord, is thought to be a medieval moated site established after the Norman Conquest and recorded from the 14th century, features defensive and ecclesiastical elements,

including an oratory licensed in 1367. By the 19th century, the site was obscured beneath the Liverpool and Manchester Railway embankment (MME9145).

- 6.11.4 Excavations behind Nos. 76–88 High Street, Newton-Le-Willows, c. 650m north of the Western Rail Chord, uncovered medieval and post-medieval ditches, pits, and a post-built structure, reflecting settlement activity (EME2151; EME2211).
- 6.11.5 On the outskirts of the village, the Newton Mill, with a history dating back to the early 12th century, was excavated in 2002 c. 145 m west of the Western Rail Chord. Documented in records from 1200–1204, the mill was held by notable families such as the Banastres and involved in various disputes and transactions through the centuries and remained a significant landmark until its destruction by fire in 1906 (EME2449).
- 6.11.6 Newton Park, extending west and within the Western Rail Chord, was originally a medieval park. It is first recorded in the early 14th century and back then would have been an enclosed area used by the local lord for hunting. The park likely belonged to the manorial lords of Newton, including the Langton and later the Fleetwood families, who held the title of Barons of Newton (MME9311).
- 6.11.7 In the Cheshire area, the manor of Southworth, c. 165m east of the Topsoil Reuse Area held from the 13th century by the Croft and Southworth families before passing to Sir Thomas Ireland in the early 17th century, included a medieval chapel and a manor house known as Southworth Hall. The hall, existing since the reign of Henry VI, partially survives in a 20th century farmhouse (MCH8683; MCH8512; MCH8758).
- 6.11.8 Southworth Hall Farm Cemetery excavation revealed a Christian cemetery and church overlying a Bronze Age burial mound, with evidence of multiple phases of use, c. 50m southeast of the Topsoil Reuse Area (MCH8904).
- 6.11.9 St Oswald's Well, a Listed Building at Grade II (LEN: 1343263), associated with King Oswald's death in AD 642 and located c. 450m west of the Main Site, remains a significant medieval spiritual site (MCH8894).
- 6.11.10 The manor of Kenyon, located between the Main Site and the Topsoil Reuse Area but outside of the Draft Order Limits, was established in the early 13th century, with a timber-framed manor house recorded in the 17th century and later rebuilt or demolished in the 19th century. Kenyon persisted as a hamlet from the medieval period through to modern times (MCH25334; MCH9365).

- 6.11.11 Medieval pottery was found during a watching brief at No. 8 Church Street, c. 334m north of the Western Rail Chord, showing typical coarse fabrics with glazing, indicative of domestic use (EME 1652; MME15008) while traces of medieval wind and watermills have been identified at Golbourne Mill next to Kenyon Hall, showing the continued importance of milling (MCH8559).
- 6.11.12 Stray medieval finds include a finger ring, formed from a single thick wire loosely twisted back on itself, discovered c. 680m south of the Main and Topsoil Reuse Area (MCH12800). The ring has a row of small circular cells at the bezel containing traces of enamel, as well as traces of gilding. A medieval cast copper-alloy sword pommel was also found by metal detectorists c. 1 km south of the Topsoil Reuse Area (MCH22738).
- 6.11.13 The medieval period in the Study Area reveals a diverse and vibrant landscape. Key features include manorial estates such as Newton Hall, agricultural sites like ridge and furrow cultivation, and ongoing settlement activity across several localities. Evidence of mills, parks, and cemeteries further highlights the importance of agriculture, and industry during this period, alongside the establishment of prominent local families and their landholdings. The archaeological evidence paints a picture of a region shaped by a mix of rural, ecclesiastical, and defensive uses during medieval times.
- 6.12. *Post-medieval to Modern Period (AD 1485 – present)*
- 6.12.1 Within the Study Area, the post-medieval period is represented by a diverse range of archaeological and historic features, illustrating the gradual transformation of the landscape from primarily agricultural and rural use towards more structured settlements, industrial development, and improved infrastructure. This period saw the establishment and evolution of farmsteads, transport hubs such as railway stations, and associated buildings that reflect social and economic changes from the 16th century through to the early 20th century.
- 6.12.2 Evidence within the Study Area demonstrates the adaptation of the area to post-medieval land management practices, industrial expansion, particularly related to brickmaking and railway development, and civic growth, contributing to the shaping of the modern settlement pattern visible today.
- 6.12.3 The Site of Newton Hall was once the home of a grand mansion with both architectural and historical significance located c. 200m east of the Western Rail Chord (MME9143).

Traces of a moat that once surrounded the hall were also documented. A 19th century drawing of the hall provides a glimpse into its former grandeur and structure. Historical accounts suggest the hall was built in the late 16th to early 17th century, possibly towards the end of Queen Elizabeth's reign. In 1991, an evaluation of the site revealed well-preserved foundations (EME1728). Later, in 2006, an excavation uncovered the full extent of the hall's layout, further contributing to the understanding of its architectural history (EME2227).

- 6.12.4 The former site of the Town Hall of Newton-le-Willows, c. 376m north of the Western Rail Chord, appears to date back to the 18th century (MME9196). In 1987, a building survey was conducted, recording and photographing the structure. In 1994, following demolition, an evaluation revealed that the Civic Hall building did not have cellars, and most features related to the Victorian building (EME1729). Next to the Town Hall, a building on High Street, is shown on the Legh estate plan of 1745 (MME9198). An early 19th century plan illustrates two narrow buildings facing the street and two smaller square structures to the south (not reproduced). These buildings also appear on the Tithe map of 1839. During a 1994 evaluation, a feature at the rear of these properties filled with loosely compacted sand and roughly dressed red sandstone blocks was uncovered. The upper part of the fill contained late 18th century pottery, suggesting the feature was likely a drainage feature associated with the houses (EME1729).
- 6.12.5 The Newton-le-Willows Cemetery was laid out around 1884 c. 600m southwest of the Western Rail Chord (MME18702) and includes a chapel (MME18703) and Cemetery Lodge at No. 80 Park Road South (MME18704).
- 6.12.6 Newton Park, extending west and within the Western Rail Chord, underwent significant changes from the mid-17th century onwards. Like many former medieval parks during this period, Newton Park was gradually sold off and repurposed for agricultural use. Economic pressures, particularly following the English Civil War, led many landowners to convert these once-recreational landscapes into farmland, which was more profitable and better suited to the needs of a growing population. Today, the original extent of Newton Park has been largely obscured by centuries of agricultural activity and subsequent urban development. While no formal boundaries remain, historical records, surviving field patterns, and possibly faint earthworks may still provide evidence of its earlier layout. In some cases, the names of local fields or roads may preserve the memory of the former parkland, even where its physical features have long since disappeared (MME9311).

- 6.12.7 The former site of Newton Mill on Mill Lane, c. 135m west of the Western Rail Chord, is thought to have originated as a medieval watermill, with a post-medieval mill recorded from the 17th century onward. Excavations in 1985 and 2002 identified multiple construction phases, including 18th century sandstone and brick foundations, demolition layers, and a surviving flagstone floor. Finds included 18th–19th century pottery and a pierced Elizabeth I threepence dated to the 1570s, indicating earlier activity. Substantial earlier stonework was also identified within the later mill structure (EME541; MME9144).
- 6.12.8 To the south of this, Newton Park hosts the recorded site of a kiln, c. 167m east of the Western Rail Chord (MME22542), with the 1839 Tithe map naming the area “Lane by the Kiln.” The kiln is believed to have been associated with the brickmaking required for the construction of Newton Park Farmhouse in 1774. Another kiln was shown by the Legh estate plan of 1745 c. 90m west of the Main Site along the railways (MME19648).
- 6.12.9 The site of the Battle of Winwick Pass lies immediately south of Newton Park, immediately south of the Western Rail Chord and it is a registered battlefield (LEN: 1412878). Also known as the Battle of Red Bank, it took place in 1648 during the English Civil War and is a key historical event that underscores the strategic significance of the area in the 17th century (MME13856). An archaeological excavation south of St Oswald’s Brook uncovered a double-ditched enclosure, likely of late medieval date, which may represent a temporary military encampment associated with the Wars of the Roses (MCH8902).
- 6.12.10 Lastly, the former Newton-le-Willows Water Tower, c. 200m north of the Western Rail Chord (MME9947), built in 1903, once stood prominently on Waterworks Drive until its demolition sometime after 1978.
- 6.12.11 To the east of the M6 motorway, aerial photographs have identified possible post-medieval field boundaries, within the southern end of the Main Site (MME9360; MME9367), features which likely align with enclosures seen on the first edition 6" Ordnance Survey map of 1850.
- 6.12.12 The original site of Parkside Station, located within the northern end of the Main Site represents a significant milestone in transport history (MME9333). Opened in 1830 as part of the Liverpool and Manchester Railway, Parkside was located midway between the two cities and served as a key watering station. Although it ceased operation in

1839 following the opening of a replacement further east, the site's layout persisted into later mapping and was repurposed as a pumping station by 1893.

- 6.12.13 Closely connected to Parkside is the Grade II listed Huskisson Memorial adjacent to the Parkside Station (MME9332), commemorating Robert Huskisson MP, who was fatally struck by a locomotive during the railway's inaugural journey in 1830. The trackside monument remains, though today it is in a state of neglect, overgrown and missing its nameplate. A watching brief at Newton-le-Willows Railway Station, immediately west to the Western Rail Chord, involved monitoring groundworks after an unmonitored period of work on the site, with no significant archaeological finds or features observed (EME2998).
- 6.12.14 The site of a former gas works at Parkside, c. 200m east of the Train Station (MME20529), which appears on the 1849 OS map labelled as the Gas House, later transitioned to a pumping station by the end of the 19th century. The structures remained in use into the 20th century but had disappeared by 1967. Another early infrastructure feature is a stone milestone on Parkside Road (MME16173), dating to the early 20th century and inscribed with distances to Wigan and Warrington, first appearing on OS maps in 1907.
- 6.12.15 Evidence of local civic and postal history is preserved in a George V wall box (MME18978) on Oak Avenue, c. 1 km west of the Western Rail Chord, characteristic of early 20th century urban fixtures. Meanwhile, Legh's Cattle Archway, c. 1 km west of the Draft Order Limits (MME18956), recorded in 1830 as a square brick tunnel under the railway between Sandy Main's Bridge and the Sankey Viaduct, exemplifies how agricultural access was maintained during early railway development. Although not depicted on the 1839 Tithe map, land ownership records indicate the area north of the railway belonged to Thomas Legh.
- 6.12.16 A watching brief at Rough Farm and Rough Cottage, at the southern end within the Main Site, was undertaken in 2022 (EME3389; MME9365), revealing that the structure was of 19th century construction, although the cellar beneath the southwestern end was built using handmade bricks and sandy lime mortar, suggesting it may have had 18th century origins.
- 6.12.17 An evaluation at land southwest of the former site of Parkside Colliery, located south of the western Rail Chord, involved trenches targeting possible cropmarks identified in an earlier desk-based assessment, which were found to be most likely of geological

origin (EME2450: EME2882).

- 6.12.18 The Village of Lowton, immediately north of the Northern Mitigation Area and the Lanehead South Relief Road, is depicted on the Yates' 1786 map (note reproduced) as several buildings along Newton Road in what was referred to as the "Town of Lowton" (MGM3975). The name "Lowton" is derived from Old English, meaning a "settlement or village on a hill." A Methodist chapel is believed to have been established on Newton Road in 1788 (MGM6426). It appears on OS maps from the 1890s through to the 1960s but the site is now occupied by a modern dwelling. Lowton Railway Station is located south of the main settlement of Lowton operated from 1847 until its closure in 1949 (MME18153).
- 6.12.19 Lowton Common Battlefield, c. 930m north of the Northern Mitigation Area, was the location where on 27th November 1642 Lord Derby's men were routed by local forces during one of the earliest skirmishes of the Wigan Army (MGM3931). In the 17th century, Lowton Hall, a brick mansion owned by Thomas Leigh of Lyme and located c. 295m north of the Lanehead South Relief Road, stood as a principal landed property, though it was demolished between 1925 and 1959, leaving only a mound and remnants of timbering (MGM856). Around the same period, Fair House Farmhouse, a 2-storey T-plan timber-framed farmhouse over 300 years old and located c. 590m northeast of the Northern Mitigation Area, was constructed, featuring a sandstone plinth, wattle and daub construction, ovolo-moulded ceiling beams, and a pair of back-to-back inglenook fireplaces, representing a significant survival of timber-framing in the area (MGM6439). Mathers House, a timber cottage along the highway from Lowton Common to Lane Head, c. 240m north of the Lanehead South Relief Road, also dates from this period and survived into the early 20th century before being replaced by a bungalow (MGM4943).
- 6.12.20 Within the historical core of the village, several structures date back to the post-medieval period; Lowton House (MGM3929), a three-storey brick-built structure with five windows and projecting sides, is shown on mapping from at least the mid-19th century. It had a hipped slate roof with plain bracketed eaves and was formerly listed as a Grade 3 building. The address was originally recorded as Newton Road, and the name as Lowton Heath House. However, following further investigation and photographic evidence, the HER record was corrected to reflect the former Lowton House on Newton Road. By the late 1990s, the house had been demolished and replaced with a detached residence within the Lowton Gardens development.

- 6.12.21 The village of Lowton is also depicted with linear growth along Golborne Road, Slag Lane, and Church Lane, c. 830m north of the Northern Mitigation Area, as recorded in the 1849 Yates map (MGM3897). Within the core settlement, St Luke's Episcopal Chapel was built in 1732 in the form of a cross, with transepts added in 1771, alterations in 1813, a probable chancel of 1856, and a west tower of 1862. The brown Flemish-bond brick church has a slate roof, with a three-bay nave featuring rusticated quoins, round-headed windows with keystones, Y-tracery, and raised brick panels. The one-bay transepts, chancel with simple Venetian windows, and west tower, which conceals the original pedimented entrance, form a coherent architectural sequence reflecting post-medieval development (MGM4948). A late 18th-century sundial, vase-shaped with a scalloped base and classical egg-and-dart enrichment, is associated with the chapel, though the head, dial, and gnomon are now partially missing (MGM4949). Wood stocks with stone side posts bearing Gothic moulded heads and inscribed "RL 1766" are also present in the village (MGM4927).
- 6.12.22 Among some of the historical farm of the area, Sandup Farm is a two-storey brown brick farmhouse located c. 120m northwest of the Northern Mitigation Area (MGM3941). A modern farmhouse is believed to exist on or near the original site. Several ancillary buildings, including a square chimney and brick barns, survive.
- 6.12.23 Locking Stoop Farm, which retains 17th century beams at ground floor level, is located c. 50m west of the Northern Mitigation Area along Winwick Lane. The rendered brown brick farmhouse has undergone some alterations, such as the replacement of original flush casements (MGM5911). The flagstone roof is said to incorporate remnants of a toll-bar, although no physical evidence remains. The site also includes a brown brick barn and a cottage with a modern roof and windows. It was formerly listed as a Grade 3 building.
- 6.12.24 Holly House (MGM13174) is a detached brick residence dating to around 1830 and located adjacent to the Northern Mitigation Area, featuring a pyramid roof of Welsh slate and a double-depth floor plan with a central entrance hall. It is two storeys high, with a symmetrical three-window front façade fitted with 12-pane hornless sash windows and a central door framed by engaged Doric columns. The house retains a fanlight with glazing bars and a half-glazed door. Side walls include double chimney stacks, and the rear has a 19-pane round-headed stair window. The interior, though not inspected, is believed to preserve its original stair, fireplaces, shutters, and joinery. It is a Grade II Listed Building (List Entry No. 1253103).

- 6.12.25 By the mid-18th century, stone or marl pits were recorded c. 160m northwest of the Northern Mitigation Area, including a group marked “Stone Pits” on a 1762 plan, and another c. 150m west-northwest shown on mid-19th century OS mapping, used primarily for soil improvement (MGM6443; MGM6444). By the early 19th century, field boundaries and enclosures shaped the landscape, with banks and ditches recorded on tithe maps of 1838 and observed in walkover surveys, representing a largely intact post-medieval landscape (MGM18710; MGM18364). Several farmsteads and cottages were established, including Little Lowes Fold, Thompsons Farm, Holly Bank Cottage, Lowton Heath House Farm, and Stirrups Farm (MGM18360–63). Oaklands Lodge, a villa built in 1883 for industrialist John Green, was demolished in 2020 for housing (MGM21352). The Hare and Hounds public house, dating from the 18th century, survives with later alterations (MGM3942).
- 6.12.26 Industrial and transport developments also characterised this period. Mill Bank Cotton Mill, later a confectionery works operated by William Hindley’s Sovereign Confectionery Company from 1906, provided large-scale local employment until its closure and demolition in the late 20th century (MGM5857). Lowton Junction Railway, constructed in the late 19th century and extended to Wigan Central Station by 1892, run adjacent of the Lanehead South Relief Road and closed in 1964–65 (MGM5014).
- 6.12.27 Archaeological investigations in the 21st century along Heath Lane and surrounding areas, immediately north of the Lanehead South Relief Road, recorded sandstone foundations, linear ditches, and phases of post-medieval dwellings at Little Lowes Fold and Thompsons Farm (EGM4860; EGM4904; EGM6204). Geomagnetic surveys and targeted trenching along Heath Lane found minimal settlement remains ((EGM5239; EGM6105; EGM6106), while pipeline works between 2009 and 2011 revealed 18th–19th century brick kilns, culverts, wall footings, and plough furrows across Greater Manchester (EGM5341). Landscape features, such as large hollows or depressions, were also recorded, though they may instead represent post-enclosure marl extraction (MGM18712).
- 6.12.28 The Manor of Arbury, located c. 740m south of the Main and Topsoil Reuse Area (MCH8716), was held in 1212 by the Lord of Lawton, its rating being half a ploughland. It was granted to Geoffrey Gernet, who enfeoffed Thurston Banastre. Thurston gave half of the manor to Cockersand Abbey in alms. The remainder later came into the possession of the Southworth family, descending in the same line as Southworth. The present building, dated 1641, was altered and extended in the 18th and early 19th

centuries. Constructed of brick with sandstone quoins, it has a stone-slate roof now covered in felt.

- 6.12.29 A "Stone-Delph House" is recorded in Middleton (MCH8509). Known to have existed in 1626 as the residence of the Rigbys, there is no surviving local knowledge of the house, and it may have been confused with Stone House (MCH8770), which was built in 1636 and demolished around 1950. The latter was located 410m south of the Topsoil Reuse Area.
- 6.12.30 Myddleton Hall, a Grade II listed building, lies c. 300m south of the Topsoil Reuse Area (MCH8555). The present house dates to 1658 with later 19th century alterations. Built of brick on a sandstone plinth, it has a roof of artificial stone slates. A datestone above the door reads "1658 EH RAS." The manor of Middleton, originally part of the medieval administrative area of Makerfield, was divided in 1212 into four equal shares, each providing a judge in turn for the court at Newton. The manor was later subdivided further, with the Southworth family acquiring the principal share. Two junior branches were seated at Middleton and Houghton Peel.
- 6.12.31 Myddleton Hall Farmhouse, a Grade II listed building, is located c. 375m south of the Topsoil Reuse Area (MCH8530). Built in 1656, it was extended in the 18th century and altered in the 19th and 20th centuries. The farmhouse is of brown brick with stone quoins and a stone-slate roof.
- 6.12.32 The manor of Middleton, c. 765m south of the Topsoil Reuse Area (MCH8682), was originally part of the medieval administrative area of Makerfield. In 1212 it was divided into four equal shares, each of which provided a judge in turn at the court of Newton. The manor was later subdivided further, with the Southworth family acquiring the principal share. Two junior branches were seated at Middleton and Houghton Peel.
- 6.12.33 Church House Farmhouse, a Grade II listed former farmhouse, lies c. 1km south of the Topsoil Reuse Area (MCH8622). Built in the early 17th century, it has been much altered. The building is pebbledashed, probably over an oak frame, with a concrete-tile roof.
- 6.12.34 Winwick Free Grammar School was founded in 1547 by Gowther Walter Legh, c. 950m southwest of the Topsoil Reuse Area (MCH8537). It was likely established following the Reformation, when the Legh of Lyme Hall Chantry Chapel at Winwick Church was abolished. Its deposed priest probably became the school's first master, and the

master was always a priest. In 1619, Sir Peter Legh added the same sum to the endowment, having earlier provided a building. A century later, another Peter Legh of Lyme substituted an annual payment of £24 for the earlier benefactions. In the 17th century, the school sent boys to the universities. By 1865 it was a small boarding school, but it closed in 1890 when the endowment was combined with the Dean School in Newton, founded in 1699.

6.12.35 At the intersection of Stone Cross Lane with the main turnpike road between Newton and Leigh, evidence indicates the existence at one time of an ancient cross (MGM6448). At about 300 yards to the south-west of the corner stood the village stocks, referred to on historic mapping as the “Locking Stoup.” Stone Cross Lane was also the location of a tollgate and toll house (MGM4058), shown on the 1848 OS map to the west of the lane’s junction with Peel Ditch Lane. These were removed later in the 19th century.

6.12.36 Surrounding the village of Lowton, the landscape is characterised by agricultural land that has historically supported a dispersed pattern of farmsteads and associated features, many of which are preserved or recorded in the Historic Environment Record. Hermitage Green is a farmstead located c. 500m south of the Western Rail Chord and shown on mid-19th century maps, named Lower Farm (MCH26050). The site of a farmstead south of Hermitage Farm, consisting of two buildings, a yard, and two small plots, is depicted on historic maps (MCH24559). A post-medieval rectangular barn survives with the redeveloped farmstead. A large brick-built Dutch barn, dating to the mid–late 19th century and present by 1893, stands end-on to the lane with a prominent buttressed gable at Barrows Farm, c. 160 m east of the Topsoil Reuse Area, close the Kenyon Settlement, (MCH24499; MCH8801; MCH9365).

6.13. *Map regression*

6.13.1 The post-medieval period witnessed significant changes in the rural landscape, driven by evolving agricultural practices, estate management, and settlement patterns. Small, fragmented fields and farmsteads gradually gave way to larger, more consolidated parcels of land, reflecting shifts in land tenure and improved farming efficiency. Throughout this time, estates played a central role in shaping the countryside, influencing both the distribution of buildings and the organization of fields, as documented in historic maps and estate plans.

6.13.2 The Leigh Estate map of 1745 (not reproduced), along with later historic maps such as

the 1839 Tithe map and the 1845 Ordnance Survey, consistently depict a landscape defined by numerous small allotments. This fragmented pattern of land division reflects the agricultural practices and land tenure typical of the period, with fields oriented in multiple directions and a patchwork of farms, cottages, and associated buildings. These maps reveal how the estate lands were organized and managed across the 18th and 19th centuries. Over time, as seen in the 19th and early 20th century maps, these smaller allotments gradually consolidated into larger parcels, reflecting evolving rural settlement patterns and changing agricultural practices within the Leigh Estate. On the map, a site along Parkside Road, adjacent to the Main Site (MME9312) featuring a T-shaped building is also depicted on plans from the mid-1830s. The 1839 Tithe map associates this house with a garden and records it as owned by James Worsley and occupied by Robert Lawson. By the publication of the 1965 OS map, these buildings had disappeared. The former site of Parkside Farm (MME19659) and another building (MME19660), located within the centre of the Main Site, both identified on the 1745 estate plan and occupied by James Lawton in the 1830s, had disappeared by the mid-19th century; the former was no longer visible by 1853, and the latter appeared on the 1849 OS map but was absent on later plans. The Stables (MME9317) appear as a long building on the 1745 Leigh estate plan and later as a T-shaped building on the 1839 Tithe map. By the 1980s, a site visit noted that these farm buildings, likely dating to the 18th century, had been altered, with a new farmhouse constructed in the 1980s.

6.13.3 The 1839 Newton-in-Makerfield tithe map provides further detail on landholding and use during that period (not reproduced). The sites of former houses within the Main Site, many tracing back to the 17th and 18th centuries, reflect the shifting regional landscape shaped by influential estates. For example, a potential house site in Newton Park (MME15014), recorded as "Stone House Field" on the 1839 Tithe map, may relate to stone extraction rather than an actual building, as only a barn was recorded in the park during the 17th century. This and other fields hint at earlier medieval structures, possibly a lodge, though their exact locations remain uncertain.

6.13.4 The 1845 Ordnance Survey (OS) map offers a detailed representation of the landscape around Highfield Moss during the mid-19th century (Figure 8). In the northeastern portion of the Main Site and Topsoil Reuse Area, the map shows Main Pits and Moss Pits, along with a series of ponds, indicative of historic peat extraction or other industrial activity, and earthworks (MCH8802). Immediately west of Highfield Moss, Moss House, later known as Highfield Farm, is marked, and further west along the eastern edge of the Draft Order Limits, both Parkside Farm and Kenyon Hall are clearly shown.

Highfield Farm (MME9323) on Parkside Road, located within the northern part of the Main Site, shows continuous history from the Leigh estate plan of 1745, where a building is first marked, through to the 1980s. By the mid-1830s, the layout remained consistent, with the 1839 Tithe map noting the farm, garden, orchard, ownership by Thomas Legh, and occupation by John Rigby. Over time, the building evolved from Moss House (labelled on the 1849 OS map) to Parkside Farm in 1891, and finally Highfield Farm in 1907. A 1985 site visit revealed that the original farmhouse was demolished in the early 1970s and replaced by a modern house, though the original structure bore a Roman numeral inscription whose date is now lost to memory.

- 6.13.5 The Highfield Farm barn (MME9329) also dates back to the Leigh estate of 1745. The 1839 Tithe map shows the barn, which underwent several construction phases. A 1985 report detailed its sandstone walls dating from the 17th century, with brick additions from the late 17th and 18th centuries. The barn was altered and extended, with a western extension added in the late 18th or early 19th century, reflecting its long agricultural use.
- 6.13.6 Near Kenyon Hall, although a tumulus was excavated in 1826, it is not referenced on the 1845 map. Instead, a sandy pit, a "pennyless bench," and a finger post are depicted nearby, suggesting that by then the tumulus had either been obscured or overlooked by surveyors. In the southern portion, South Barrow Lane is identified, along with Barrow Lane House, and at the very southern edge, an orchard and a structure associated with Rough Farm are depicted. The former farmstead at Rough Farm, Winwick Lane, within the southern end of the Main Site (MME19661), initially shown as a small building in 1745, expanded by the mid-1830s into an L-shaped structure. The 1839 Tithe map records it as part of Thomas Legh's farm, occupied by Betty Mason. Aerial photos from 1945 show the building likely extended for domestic use, indicated by two roof ridges. It appeared on the 1965 OS map but had disappeared by 1985. Archaeological work in 2023 uncovered two wells, confirming long-term occupation. Additionally, a barn (MME9339) labeled "Barn Field" on the 1839 Tithe map was likely built in the 19th century, as no barn appears on the 1745 estate plan. A 1985 site visit noted features including a grey slate roof, a circular hay loft window, and a large cart door. A 2022 building survey revealed a date stone inscribed "B M 1843," confirming its construction date.
- 6.13.7 Field boundaries in 1845 consisted of small allotments-oriented northwest, south, and northeast, reflecting the agricultural practices and land tenure of the time.

- 6.13.8 By the 1907 OS map (Figure 9), changes were limited but notable. Kenyon Hall appears extended, though the sandy pit, bench, and finger post near the earlier-recorded tumulus are no longer shown. Parkside Farm shows signs of expansion. Barrow Lane House has been replaced or reclassified as Barrow Lane Cottages, indicating redevelopment or subdivision. Rough Farm was extended with new outbuildings. Moss Farm also developed notably and is now recorded as Highfield Farm, reflecting growth and possible name or ownership changes. Field boundaries had evolved, with many smaller allotments consolidated into larger parcels, especially in the west, while the east experienced less extensive enlargement. These modest changes reflect gradual evolution of agricultural holdings and rural settlement patterns between the mid-19th and early 20th centuries.
- 6.13.9 The 1928 OS map reveals more noticeable alterations to the Study Area (Figure 10). The Main Pits near Kenyon Farm are no longer shown, indicating extraction had ceased or features had been backfilled. Significantly, this map marks the tumulus near Kenyon Farm (MCH8557; MGM21359) for the first time, excavated in 1826 but absent on earlier maps, possibly reflecting renewed archaeological interest or improved survey detail.
- 6.13.10 Along Parkside Road, within the Main Site, many buildings were constructed, altered, and eventually demolished. Rough Cottage (MME9365) appears on the 1745 estate plan and later as a mid-18th century two-storey brick cottage. Another site on Barrow Lane (MME9361) and its associated buildings noted in 1745 had disappeared by the late 19th century. Similarly, Barrow Lane Cottages (MME9362) and Barrow Lane Cottage (MME9363) show a clear evolution of buildings; both sites are identified on the 1745 plan, confirmed on the 1839 Tithe map, and then disappear by the early 20th century, MME9362 by 1965, and MME9363 by 1928. The 1947 and 1951 OS maps show no significant changes from 1928 (Figures 11 and 12). Landscape layout, built structures, and recorded features remain consistent. However, the process of merging small allotments into larger parcels, which began in the 1920s, continued, particularly in the eastern fields, resulting in a simpler, more unified field pattern.
- 6.14. *Undated*
- 6.14.1 In addition to the securely dated archaeological evidence, a small number of features within the Study Area remain undated but are still of potential archaeological interest.
- 6.14.2 A depression or mound southwest of Myddleton Hall, shown on the Ordnance Survey

2nd and 3rd edition 6" maps of Lancashire, is located c. 320m south of the Topsoil Reuse Area (MCH12500).

- 6.14.3 Cropmarks of former field boundaries north of Jacques Farm, Croft, are located c. 226m east of the Topsoil Reuse Area (MCH24942).

7. Summary of investigations carried out within the Draft Order Limits

7.1. *2007 Geophysical Survey at Newton-le-Willows, Merseyside (EME2060; EME2061)*

7.1.1 A geophysical survey was conducted over 185 hectares of agricultural land at Newton-le-Willows, in preparation for potential development in 2007 within the western portion of the Main Site. The work was commissioned by Oxford Archaeology North and carried out by Stratascan (Stratascan 2007).

7.1.2 The survey employed magnetic susceptibility, detailed magnetometry, and resistivity techniques to detect potential archaeological features.

Magnetic Susceptibility Survey

7.1.3 Magnetic susceptibility measurements were taken across the entire 185ha site, revealing a higher susceptibility to the east of the M6 motorway compared to the west (Figure 13).

7.1.4 Based on these results, targeted detailed magnetometry surveys were conducted in selected areas.

Detailed Magnetometry Survey

7.1.5 Detailed magnetometry was carried out over areas highlighted by the results of the magnetic susceptibility survey (Figure 14; for details Appendix D). Grids were positioned over areas of high susceptibility and areas of lesser enhancement in order to sample the area and ground-truth the results of the magnetic susceptibility.

7.1.6 Area 2, Area 3, Area 4 and Area 16a could not be surveyed due to access issues.

7.1.7 Some of the anomalies recorded have interpreted as potential cut features, such as ditches or enclosures, and are considered potentially of archaeological nature. Specifically:

- Rectilinear cut features in the western limits of Area 12 and a smaller arrangement in the central part of the same area.
- Curvilinear anomalies in Areas 14 and 15, which may indicate prehistoric activity.
- Agricultural-related anomalies, such as former field boundaries and ploughing patterns, across multiple areas.

- 7.1.8 Some of the anomalies recorded suggest the presence of earthworks or banks and were identified in Areas 7, 10, 12, 13, 14, 15, and 16. Specifically:
- Rectilinear negative anomalies in Area 7, which may indicate an enclosure.
 - Negative curvilinear anomaly in Area 14, whose function remains uncertain.
 - Bank-and-ditch arrangements in Areas 12, 13, 15, and 16, where negative linear anomalies are found adjacent to positive ones.
- 7.1.9 Anomalies, tentatively interpreted as pits of unknown origin were observed in most survey areas except Areas 6 and 8. The highest concentrations were recorded in Areas 10, 11, 12, and 15.
- 7.1.10 Numerous areas of magnetic disturbance were identified, suggesting the presence of ground disturbances such as:
- A large thermoremanent feature in Area 6, of uncertain origin.
 - Potential industrial activity or dumping of industrial waste, inferred from multiple thermoremanent anomalies.
 - Significant magnetic variance in Areas 6, 7, and 8, possibly related to geological or soil variations.
- 7.2. *2017 Geophysical Survey Report of Land at Parkside Link Road, Warrington (EME 2874)*
- 7.2.1 Magnitude Surveys conducted a geophysical assessment of 9.37 hectares of a land at Parkside Link Road, Warrington, within the western portion of the Main Site (Figure 15). The south-eastern section was unsuitable for surveying due to poor ground conditions, and access was not granted to the western areas. The results showed mainly dipolar ferrous anomalies, likely caused by the spread of material across the land (Magnitude Surveys 2017).
- 7.2.2 The geophysical survey comprised hand-pulled, cart-mounted fluxgate gradiometer survey.
- 7.2.3 The survey was completed in Area 1, where no anomalies of probable or possible archaeological origin were identified. The geophysical results primarily reflect modern land use, showing a broad spread of dipolar, ferrous-type responses. These are likely caused by the scattering of ferrous debris on or near the surface, typical of 'Green Waste'. A small test area was surveyed in Area 2. Although the test confirmed that the ground conditions were unsafe for further survey, it also indicated that the material

found in Area 1 was not present in the test area, suggesting that the same material may not have been spread in this section.

7.3. *2018 Archaeological Evaluation (EME2875)*

7.3.1 Oxford Archaeology North (OA North) was commissioned by The Environment Partnership (TEP) on behalf of Ramboll UK to carry out a trial trench evaluation near Junction 22 of the M6 motorway (Figure 15). The evaluation involved 14 trenches, targeting features identified in the geophysical survey, which were subsequently confirmed, with most of the revealed features likely related to drainage or post-medieval field boundaries (OA 2018).

7.4. *2025 Lidar and Aerial Photography Archaeological Landscape Assessment, ILPN⁵*

7.4.1 Lichenstone was commissioned by Icen Projects to undertake a LiDAR and aerial photographic archaeological landscape assessment within the Draft Order Limits. The objective was to identify potential archaeological features using available terrain and aerial imagery data sources.

7.4.2 The assessment has identified a diverse range of features of potential archaeological interest across the study area (Figure 17). These include both discrete and extensive anomalies visible in LiDAR data and aerial imagery, some of which may reflect past human activity, land use, and industrial processes. The findings comprise possible prehistoric or historic features such as ring ditches, ridge-and-furrow cultivation patterns, former field boundaries, extractive pits, and industrial earthworks. Together, these features provide valuable insight into the landscape's development and usage over time and help inform the archaeological potential of the area.

7.4.3 A summary of the anomalies that have been interpreted as of archaeological origin as part of the LiDAR and aerial photographic archaeological landscape assessment is presented below, and the assessment is produced in Appendix E (Lichenstone 2025). The potential areas of archaeological interest have been assigned a provisional identification number (starting with ILPN) as part of this DBA and reproduce in Figure 18.

7.4.4 Semi-parallel linear features (I) captured in pre-colliery aerial photographs may be

⁵ This will be extended to include those areas now incorporated within the updated Order Limits.
Archaeology, Desk-Based Assessment © Icen Projects 2025

linked to historical farming, located within the Western Rail Chord (ILPN001).

- 7.4.5 Set of linear earthworks (J) potentially to the construction, operation, or demolition of Parkside Colliery, located within the Western Rail Chord (ILPN002, ILPN003, ILPN004)
- 7.4.6 Three distinct areas of ridge-and-furrow (E), located on the southwest section of the Draft Order Limits (ILPN005, ILPN006, ILPN007; ILPN008).
- 7.4.7 Cluster of broad linear and rectilinear depressions and mounds (B) occupies a shallow valley on the southeast of the Draft Order Limits (ILPN009). These are thought to reflect a combination of natural fluvial processes and anthropogenic modification of uncertain date.
- 7.4.8 Circular anomaly (A) visible on Google Earth imagery dated 25 June 2018, interpreted as a possible ring ditch, suggesting prehistoric activity within the study area (ILPN010). The Draft Order Limits also features numerous straight linear elements, many of which correspond to historic field boundaries, though some may instead relate to land drainage infrastructure or buried services.
- 7.4.9 In the northeast, several discrete topographic depressions (C) are observed, with a few extending southwards (ILPN011 to ILPN020)
- 7.4.10 Historic Ordnance Survey maps identify some as 'Mains Pits' (C1; ILPN021) and 'Moss Pits' (C2; ILPN022), indicating past extractive use; others may be former ponds. Adjacent linear earthworks (D; ILPN023) may also have industrial origins. Additional features of interest include a central group of small, rectilinear features (F; ILPN024), measuring approximately 6–8 metres each, whose function remains unclear. To the west of Kenyon Hall, sharply defined rectangular crop marks (G; ILPN025), visible in 2005 imagery, are likely the result of modern agricultural activity but may warrant further investigation. Two rectangular crop marks (H; ILPN026) found at the site of the former Barrow Lane House do not align with the known building footprint and may also represent ponds. Finally, in the centre of the Site additional earthworks of unclear nature have been identified (ILPN0027, ILPN28, ILPN29).
- 7.4.11 The landscape assessment has revealed a complex palimpsest of features reflecting a range of land uses, from prehistoric through historic agricultural and extractive practices to more recent industrial developments. These findings enhance the understanding of the area's past and highlight locations with archaeological potential

warranting further investigation.

7.5. *Geophysical Survey 2025⁶*

- 7.5.1 A fluxgate gradiometer survey was successfully conducted across approximately 86 hectares within the parts of the Draft Order Limits that had not been previously investigated during the 2007 and 2017 surveys. The survey identified a range of magnetic anomalies of agricultural, industrial, natural, and undetermined origin. However, no anomalies suggestive of definitive archaeological activity were detected (Figure 19). The full assessment is produced in Appendix F (Magnitude Surveys 2025).
- 7.5.2 Modern disturbance was recorded in the form of magnetic interference, typically concentrated along field boundaries and in proximity to buried services. Additionally, extensive spreads of green waste were observed, which may have masked weaker anomalies of potential archaeological interest.
- 7.5.3 Evidence of agricultural activity was detected, including former field boundaries shown on historic mapping, substantial systems of drainage features, and signs of modern cultivation practices.
- 7.5.4 Magnetically enhanced zones likely associated with historic extraction pits, subsequently backfilled with magnetically enhanced material, were identified in the eastern part of the Draft Order Limits. A single isolated extraction pit was also recorded.
- 7.5.5 Natural spreads, thought to reflect depositional patterns within the underlying bedrock geology, were detected in areas where superficial geology is absent.
- 7.5.6 The results broadly align with those of a 2007 geophysical survey, with similar magnetic background conditions and patterns of agricultural disturbance. However, significantly fewer anomalies of possible archaeological significance were recorded in the recent survey. This may be due to the obscuring effects of green waste or the potential destruction or degradation of previously identified features. Alternatively, the archaeological activity recorded in 2007 may not extend into the current survey area.

7.6. *Correlation between the geophysical survey, the LiDAR, and Aerial Photographic Assessment*

- 7.6.1 The results of the geophysical survey complement the 2025 LiDAR and aerial

⁶ This will be extended to include those areas now incorporated within the updated Order Limits.
Archaeology, Desk-Based Assessment © Iceni Projects 2025

photographic archaeological landscape assessment (Lichenstone 2025), providing additional context for understanding the site's historical development (Figure 20).

- 7.6.2 In particular, the extraction pits identified through geophysical survey correspond closely with depressions interpreted as historic "Mains Pits" and "Moss Pits" (ILPN021–ILPN022) visible in LiDAR data, as well as other discrete topographic features (ILPN009–ILPN020). This suggests a consistent pattern of extractive activity across the landscape, reinforcing interpretations derived from both datasets.
- 7.6.3 Furthermore, ridge-and-furrow features identified in LiDAR data (ILPN007–ILPN008) may, in some cases, correspond to the system of linear anomalies interpreted in the geophysical survey as agricultural drainage features.
- 7.6.4 Together, the integrated datasets provide a more comprehensive understanding of past land use, extractive industries, and agricultural practices within the Draft Order Limits, enhancing the archaeological potential assessment of the area. However, despite this improved understanding of the historic landscape, the combined results of the geophysical survey and LiDAR/aerial imagery analysis revealed a notable absence of definitive archaeological features across the site. This suggests that either such remains are genuinely scarce within the surveyed areas or have been obscured or removed by later agricultural and industrial activities, modern disturbance, or natural processes.

8. Archaeological Potential and Significance

8.1. *Factors affecting archaeological survival*

- 8.1.1 A review has been undertaken of the sources detailed in **Section 5 and 6**. The potential for archaeological evidence originating from the various periods is summarised below. HER Data is only a partial reflection of the buried archaeological record, and the true archaeological potential of the area may be different than suggested. Historic impacts are also taken into consideration when assessing potential.
- 8.1.2 Agricultural activities such as ploughing and the use of heavy agricultural machinery, are likely to have contributed to localised removal of buried remains in some areas.
- 8.1.3 Localised impacts on buried heritage deposits are also expected as result of a number of other land management activities, such as the installation of fence lines, the excavation of sumps or drainage ditches and the movement of traffic which may also have locally impacted or disturbed underlying archaeological deposits.
- 8.1.4 The construction works for the railway running along the northern edge of the Draft Order Limits from west to east would have likely truncated or removed any potential buried heritage remains within close proximity of the railway lines.
- 8.1.5 Additionally, the development and occupation of farm buildings and cottages within the Draft Order Limits would have likely disturbed, truncated, or removed any potential buried heritage remains within their immediate footprints and surrounding areas.
- 8.1.6 Nonetheless, the substantially undeveloped and rural nature of the Draft Order Limits suggests that any potential truncation arising from historic and modern developments should be considered localised to specific areas.

8.2. *Archaeological Potential*

Palaeoenvironment

- 8.2.1 Across the Draft Order Limits, potential for preservation of peat strata of palaeoenvironmental interest is generally **negligible**, however, there is a **Low Potential** for localised remnants of peat to survive in the areas of the Order Limits immediately adjacent to Highfield Moss SSSI in the north, and in the small areas of apparent peat extent recorded in 1992-93 by the North West Wetlands Survey to the

west⁷.

- 8.2.2 Surviving peat associated with Highfield Moss, and the remnants of other former peatlands would likely be of **Low to Medium Significance**, depending on their extent and degree of preservation. Where peat survives in waterlogged condition it has the potential to preserve a range of palaeoenvironmental indicators such as pollen and plant remains that can provide information on both local patterns of land-use and agricultural practice through time and regional environmental change⁸, and such localised remains would be likely be of medium significance. Preservation of palaeoenvironmental remains will be much lower in degraded and/or drained peat, with a consequent reduction in the quantity and quality of evidence that such remains can provide, and as such would be of low significance.

Prehistoric

- 8.2.3 This assessment has identified sporadic evidence for prehistoric activity within the Draft Order Limits, with varying levels of potential across different periods. While no **Palaeolithic** material has been recovered, the presence of **Mesolithic** worked flint from multiple locations, including Castle Hill Trail and Cheshire Court, indicates a low level of archaeological potential for this period, likely associated with transient activity by mobile hunter-gatherer groups. Due to the ephemeral nature of such material, activity dating to later prehistoric and historic periods may have also reduced the potential. There is therefore considered to be **Low Potential** for **Palaeolithic–Mesolithic** remains surviving within the area, although isolated finds may still emerge in future investigations.
- 8.2.4 **Neolithic** activity is more securely evidenced by worked flint scatters and an Early Neolithic tree-throw feature containing charred hazelnuts, recovered south of Barrow Lane. These finds suggest small-scale settlement or subsistence activity. As such, there is **moderate potential** for the survival of further Neolithic remains, particularly in areas of low modern disturbance or around previously identified findspots.
- 8.2.5 The **Bronze Age** is the best represented prehistoric phase within the Study Area, with a concentration of barrows and funerary features recorded both within and adjacent to the Main Site. Key sites include the Kenyon Hall tumulus and barrows at Highfield

⁷ Hall et al 1995, p.102-104.

⁸ English Heritage 2011; Historic England 2024

Lane, Winwick, and Southworth Hall Farm Cemetery, all of which have yielded cremated remains and grave goods. Additional metalwork finds and cropmarks further support the interpretation of a structured funerary landscape. There is **moderate potential** for the survival of unrecorded Bronze Age remains within the Draft Order Limits, with **localised areas of high potential** particularly around known barrow concentrations. While direct evidence for Bronze Age settlement is limited, the presence of widespread funerary activity suggests the surrounding landscape may also contain occupation remains, and as such, the potential for encountering domestic or settlement-related features should not be discounted.

- 8.2.6 By contrast, no significant **Iron Age** sites have been identified within the Draft Order Limits. This may reflect a genuine decline in activity during the period, or it may result from limited archaeological investigation and poor preservation of Iron Age deposits. As such, the current potential for Iron Age remains is considered **low**, though this could change with further targeted investigation.

Roman

- 8.2.7 There is **low potential** for significant Roman archaeology within the Draft Order Limits. While a Roman road connecting Wilderspool and Wigan is known to have existed, archaeological investigations have revealed only fragmentary and intermittent evidence of this infrastructure and associated occupation. Excavations and evaluations across the area have yielded limited traces of the road and few substantial Roman features. Although stray Roman artefacts have been recovered, these are isolated finds and do not indicate dense settlement or extensive Roman activity within the site.

Saxon and medieval

- 8.2.8 There is **low to moderate potential** for medieval archaeological remains within the Draft Order Limits. The area was predominantly agricultural and located away from major medieval settlements, resulting in a dispersed and limited presence of medieval features. While some isolated sites related to manorial estates, chapels, and burial grounds exist nearby, the Draft Order Limits primarily reflect rural land use characterized by farming activities and associated landscape features. This suggests that medieval occupation was limited, though scattered evidence of agricultural practices and minor settlement activity indicates some level of human use during the period.

Post-medieval

- 8.2.9 There is **moderate potential** for post-medieval archaeological remains within the area, supported by both geophysical survey results and trial trench evaluations. Previous surveys at Newton-le-Willows and Parkside Link Road revealed a range of features primarily related to post-medieval agricultural activity, including field boundaries, ditches, and enclosures. While Newton-le-Willows showed some potential industrial or dumping-related anomalies, Parkside Link Road mainly reflected modern land use with ferrous debris and drainage features confirmed through trial trenching, collectively indicating continued landscape modification during the post-medieval period. Taken together, these investigations suggest that while some areas have been disturbed by modern activity, underlying post-medieval features, particularly related to agriculture, field systems, and possibly minor industrial use, are likely to survive in the subsoil, offering potential for further archaeological study.

8.3. *Archaeological Significance*

- 8.3.1 There is one Designated Heritage Asset located within the Draft Order Limits: the Huskisson Memorial on south side of Railway, a listed building at Grade II (LEN: 1075900).
- 8.3.2 Any archaeological remains present within the Draft Order Limits have the potential to contribute to the research questions and research agenda set out in the North West Regional Research Framework, which are an essential element to be considered when defining significance.⁹

Prehistoric

- 8.3.3 Given the absence of Palaeolithic finds and the limited nature of Mesolithic evidence, primarily comprising isolated worked flints, any remains associated with these early periods would be considered of **low to medium significance**, reflecting their rarity but also their typically limited potential to inform on broader settlement or land-use patterns.
- 8.3.4 Neolithic activity within the Study Area is better evidenced and includes subsistence-related features and worked flint assemblages. As such, any additional Neolithic remains identified through future investigation would likely be of **medium**

⁹ <https://researchframeworks.org/nwrf/>

significance, particularly if they contribute to understanding settlement, land use, or the transition from foraging to farming.

8.3.5 In consideration of the general archaeological background, remains associated with Bronze Age barrows and funerary activity would be considered of **medium significance** due to their regional value and their contribution to understanding prehistoric ritual landscapes. In cases where undisturbed cremation burials or associated artefacts are encountered, the significance could rise to high.

8.3.6 Due to the absence of recorded Iron Age sites and uncertainty regarding preservation, any Iron Age remains discovered would be expected to be of **low to medium** significance, unless they offer rare or well-preserved evidence of domestic or industrial activity, in which case a reassessment may be warranted.

Roman

8.3.7 The significance of any currently unknown Roman buried heritage assets would relate to their potential contribution to the Roman Agenda of the North West Regional Research Framework. Although Roman activity within Study Area appears to have been limited, the known alignment of the Roman road between Wilderspool and Wigan and the presence of a Romano-British enclosure at Southworth Hall Farm provide some insight into the area's role within wider regional infrastructure and rural settlement patterns. Most remains identified to date are fragmentary or have been truncated, and investigations have often yielded negative or inconclusive results. Therefore, it is expected that any such remains would generally be considered as having **low to medium significance**.

Saxon and medieval

8.3.8 Within the Study Area, a range of medieval sites, including Newton Hall, St Peter's Churchyard, Newton Mill, and Newton Park, highlight the historical depth and diversity of activity in the region. However, while these features contribute to a nuanced understanding of the medieval landscape, most are either partially preserved, have been extensively altered by later activity, or are known primarily through documentary or limited archaeological evidence. As such, it is expected that any such remains would generally be considered as having **low significance**.

Post-medieval

8.3.9 Considering that the majority of the Draft Order Limits have been predominantly under agricultural use throughout the post-medieval and modern periods, it is expected that the only post-medieval buried heritage remains that are likely to be present might be associated with recent agricultural use. Such remains would be **very low significance**.

9. Impact of Proposals

9.1. Summary of Proposed Development

9.1.1 The Proposed Development is a Strategic Rail Freight Interchange (SRFI) (Figure 21). A full description is in Chapter 3 of the PEIR. The associated development includes a range of elements; the following list presents only those elements relevant to archaeology:

- *provision of a logistics park comprising up to c.767,000 square metres (m²) (gross internal area or GIA) of warehousing and ancillary buildings with a total footprint of up to 590,000m²;*
- *provision of a rail terminal including connections to the mainline and ancillary development such as container storage, cranes for the loading and unloading of shipping containers, Heavy Goods Vehicle (HGV) parking, rail control building, fuelling facilities and staff facilities;*
- *a rail turn-back facility within the Western Rail Chord*
- *potential for new road and pedestrian/cycle bridges across the Chat Moss Line;*
- *new internal roads and works to existing road infrastructure on the Main Site;*
- *closure of existing access and provision of new access to Newton Park Farm and neighbouring properties;*
- *new electricity substations;*
- *new energy centre(s) and battery storage;*
- *strategic landscaping and open space, including: terrain remodelling to create development plateaus; bunds up to 3m above the reprofiled ground level, hard and soft landscape works, amenity features and planting;*
- *earthworks to regrade the Main Site to provide appropriate access, connections to the railway, development plots and landscape zones;*
- *habitat creation, enhancements, compensation and provision of publicly accessible space;*
- *an amenity area north of the railway line bounded by rail lines and Parkside Road, providing amenity open space, landscaping and screening as well as heritage interpretation;*
- *farmland to the north of the Liverpool to Manchester railway and south of the A572 Newton Road for the provision of BNG requirements, new and*

realigned PRow and landscaping including tree belts to screen views from the north;

- farmland to the east of Winwick Lane for the reuse of topsoil and landscaping including stopping up gaps in hedgerow and tree belts to screen views from the east;*
- noise attenuation measures;*
- new pedestrian and cycle access routes and connections and infrastructure including provision of new, diversion and stopping up of existing PRow where required (see Table 3.3);*
- provision of public transport hub;*
- demolition of existing on-site structures (including existing residential dwellings / farmsteads and commercial premises);*
- utility compounds, plant and service infrastructure;*
- drainage works including creation of attenuation ponds and sustainable drainage features.*

9.2. *Main Site*

Demolition and Site Clearance

- 9.2.1 The existing buildings on the Main Site would be vacated and demolished in order to facilitate the regrading of the land in preparation for development (Figure 22).
- 9.2.2 The demolition of existing buildings will primarily affect post-medieval and modern structures, with limited potential to impact significant archaeological remains. The highest sensitivity is associated with historic farmsteads (Highfield Farm and Parkside Farm), where buried archaeological features such as former farmyards, structural remains, or artefact deposits may survive beneath existing buildings. Most other buildings, including industrial, commercial, and recreational structures (e.g., Croft IGP Club, Golden Orb Solutions, airfields, and model flying areas), have low archaeological potential due to previous ground disturbance.
- 9.2.3 Site clearance activities, as presented in Table 3.7 of the Chapter 3 of the PEIR and including removal of foundations, hardstanding, and associated ground reduction, may result in further disturbance or loss of any surviving subsurface archaeological deposits.
- 9.2.4 Overall, the potential impact is considered high.

Rail Infrastructure – Mainline connection

- 9.2.5 The Rail Terminal for the Proposed Development will be situated south of the Chat Moss Line, which connects Liverpool to Manchester, and east of the West Coast Mainline. The location of the mainline connections is expected to be on the short section of track between Newton-le-Willows Station and Newton-le-Willows Junction towards Golborne and avoids existing railway power infrastructure associated with the former colliery track.
- 9.2.6 The area has potential to contain remains associated with post-medieval industrial and transport activity, including features related to former railway and colliery use; however, extensive past ground disturbance from these activities is likely to have truncated or removed earlier archaeological deposits.
- 9.2.7 Overall, the potential impact in this area is considered medium.

Rail Terminal

- 9.2.8 The Rail Terminal will be located on the Draft Order Limits to the south of the Chat Moss Line and to the east of the West Coast Mainline.
- 9.2.9 The construction of the rail terminal south of the Chat Moss Line involves extensive groundwork, hardstanding for container operations, and foundation infrastructures for cranes. These activities will significantly impact any archaeological layers within the footprint, especially given the area's historic importance as a transportation corridor. The Rail Terminal development may truncate subsurface deposits or stratified remains associated with historic rail or pre-industrial activity.
- 9.2.10 Overall, the potential impact is considered high.

B8 logistics buildings

- 9.2.11 The majority of the Main Site (outside the rail terminal area) would be occupied by buildings falling within use class B8, i.e. storage or distribution.
- 9.2.12 These buildings will incorporate freight loading bays in the external walls and will have associated areas for lorry manoeuvring and parking. The whole Main Site will be rail served and around each building will be boundary land for elements including landscape works and surface water drainage features.
- 9.2.13 An High impact on archaeological deposits is also expected during the construction of the proposed warehouses, as the extensive groundworks for foundations, loading

bays, and service yards will lead to widespread destruction of subsurface features. As these are likely to be sited in previously undeveloped areas, the potential for encountering unknown archaeological deposits is high. The intensity of development increases the likelihood of permanent loss of archaeological data.

- 9.2.14 Overall, the potential impact is considered high.

Utilities

- 9.2.15 The Proposed Development will include appropriate provision for water, electricity, telecommunications and gas supply and for the disposal of foul and surface water. An energy centre(s) incorporating an electricity substation connected to the local electricity distribution network and potential battery storage will be provided.

- 9.2.16 The installation of utilities will involve extensive trenching across the site. These linear intrusions often intersect unknown archaeological features, particularly in areas with low prior disturbance. The impact ranges from low to medium depending on depth, alignment, and concentration of services, but cumulatively may affect wide swathes of subsoil. The proposed energy centre(s) and substations may have localized but below ground impacts in previously undisturbed areas.

- 9.2.17 Overall, the potential impact is considered low to medium.

Access and pedestrian routes

- 9.2.18 Within the Main Site, internal distributor roads would branch from the Parkside Link Road (PLR) to serve B8 buildings across the Main Site. These internal distributor roads would be single carriageway roads incorporating cycle paths and footpaths, set in landscaped corridors. The impact is elevated in areas where access routes intersect historic farmsteads, field boundaries, or lie close to known heritage assets.

- 9.2.19 Overall, the potential impact is considered low to medium.

Terrain remodelling, landscape and habitats

- 9.2.20 The Main Site will be developed with a landscape strategy that will incorporate elements including tree and shrub planting and surface water features. These will be designed with a view to providing biodiverse wildlife habitats. Appropriate landscape offsets will be provided around the Highfield Moss SSSI boundary and other identified sensitive receptors following further assessment work.

- 9.2.21 Earthworks are planned to regrade the Main Site to provide appropriate access, connections to the railway, development plots, and landscape zones; these include the removal of topsoil and the creation of level plateaus for the Rail Terminal, Railport, and logistics buildings.

- 9.2.22 Bunds up to 3m above the reprofiled ground level will be formed within the south-

western boundary (adjacent to the M6), along the Winwick Lane frontage, and on part of the northern boundary, to the east of Highfield Moss SSSI (Figure 23). These will provide acoustic attenuation and/or visual screening depending on their location within the Main Site. The bunds will be formed using material from the Main Site, so far as practicable, and will be landscaped, with the precise form of planting to be determined.

9.2.23 The formation of bunds has the potential to affect any buried archaeological remains through ground compaction, and the redeposition of material. For some especially rare and sensitive buried remains, such disturbance could have a material impact. Particularly sensitive archaeological remains include:

- *Waterlogged deposits*, where changes to soil chemistry or drainage conditions could affect preservation;
- *Human remains*, where even minimal disturbance could result in a disproportionate loss of archaeological evidence; and
- *Complex structured deposits*, such as burial features, floor surfaces, or structural foundations.

9.2.24 Based on the assessments and non-intrusive evaluation work carried out to date, no inhumations, mounds, burial structures, or waterlogged remains have been recorded or are assumed to be present within the Draft Order Limits. Consequently, the proposed bund formation is considered to pose a low archaeological risk.

9.2.25 Nonetheless, should further archaeological works identify any such remains, the detailed design of the bunds could incorporate micro-siting adjustments or construction method modifications (e.g., avoiding specific areas) to minimise or prevent direct impact on any newly identified archaeological features.

9.2.26 The proposed landscape strategy, including planting, surface water features, and biodiversity enhancements, is anticipated to have a low to medium archaeological impact in areas of shallow ground disturbance. However, the extensive earthworks required to regrade the Main Site will involve both excavation (cut) and import or redistribution of material (fill) to create level development plateaus. It is expected that these activities will have an overall significant potential effect depending on the depth, extent and volume of material, with expected removal, compaction and displacement of archaeological assets..

9.2.27 Overall, the potential impact is considered high mainly due to the earthworks.

9.3. *Western Rail Chord* *Rail Connection*

9.3.1 The Western Rail Chord provides a critical link between the Rail Terminal and the wider rail network. In addition to track infrastructure, the Chord accommodates drainage,

vehicular access for Network Rail and the terminal operator, and includes sound barriers and landscaping along the western boundary to provide visual screening, ensuring the Chord integrates effectively with the overall Strategic Rail Freight Interchange layout.

9.3.2 The works within the Western Rail Chord are likely to disturb previously undisturbed soils. Areas that have experienced past development generally have low archaeological potential; however, any surviving subsurface remains, such as former field boundaries, agricultural features, or minor structural deposits, could be affected.

9.3.3 Overall, the potential impact is considered medium.

Access and pedestrian routes

9.3.4 Access to the Draft Order Limits will be from M6 Junction 22 and the Parkside Link Road. The Proposed Development will connect directly to the link road. For construction purposes, further temporary accesses may be required.

9.3.5 There is potential that remote highway works will be required and, in any event, a new bridge taking Parkside Road over the railway lines serving the Rail Terminal will need to be provided.

9.3.6 A network of internal estate roads is proposed to provide access to the Rail Terminal, and warehousing and a new access will be provided to Newton Park Farm via the Parkside West development.

9.3.7 Pedestrian and cycle access across, and into the Draft Order Limits will be maintained. A detailed review of pedestrian facilities will be incorporated in the supporting Transport Assessment (TA).

9.3.8 The new access to Newton Park Farm and internal road infrastructure will likely disrupt any remaining archaeological deposits associated with the historical rural landscape.

9.3.9 Overall, the potential impact is considered low to medium.

9.4. Northern Mitigation Area

Terrain remodelling, landscape and habitats

9.4.1 ILPN RFI will provide at least 10% Biodiversity Net Gain (BNG) as part of the Proposed Development, this may be via a mixture of on- and off-site habitat creation areas. The Northern Mitigation Area comprising an area of land to the north of the railway line has been included in the Draft Order Limits to provide open space for landscape and BNG measures.

9.4.2 The landscape strategy will involve regrading, planting, and habitat creation. While these works are generally less invasive, they may still result in a low to medium impact on archaeological layers, particularly where topography is altered or water features

requiring deep excavations are introduced. Tree planting and wetland creation could disturb shallow or buried features, and moderate impacts may occur in ecological buffer zones or along public rights of way, which are often historically significant routes.

9.4.3 Overall, the potential impact is considered low to medium.

9.5. *Soils Reuse Area*

Terrain remodelling, landscape and habitats

9.5.1 There would be a surplus of topsoil of varying grades. Higher quality soil, suitable for best and most versatile agricultural land, would be placed, where practicable, on farmland to the immediate east (the Soils Reuse Area), which has been included within the Draft Order Limits. Alternatively, it may be used for landscaping or restoration schemes on other development sites in the wider area. The reuse of topsoil is expected to have a low impact on archaeological remains.

9.6. The proposed works at the Eastern Off-Site Planting Area include limited landscaping activities, such as the establishment of small tree belts. These activities have the potential to affect buried archaeological remains during the construction phase.

9.7. Given the minimal extent of ground disturbance anticipated, primarily associated with shallow excavations for tree planting, impact on any potential archaeological assets is assessed as Low. The risk of disturbance to subsurface deposits is considered negligible due to the limited depth and spatial extent of the proposed interventions.

9.7.1 Overall, the potential impact is considered low.

9.8. *Potential Lane Head South Relief Road*

9.8.1 The proposed work comprises a road corridor 1.4km long connecting Winwick Lane to the A580. The proposed carriageway cross section includes a single traffic lane in each direction and a 3m wide shared footway on each side of the carriageway.

9.8.2 As the route lies predominantly within open, previously undisturbed agricultural fields, there is potential for the presence of buried archaeological features or deposits of prehistoric or historic date. The required groundworks for the road formation, drainage, and associated services will result in significant ground disturbance, which may impact or remove any surviving subsurface remains.

9.8.3 Overall, the potential impact is considered medium to high.

9.9. *Summary of Impacts*

9.9.1 Below a summary of the expected overall impacts in each of the different areas of the draft Order Limits:

Main Site

- 9.9.2 Demolition of existing buildings, combined with extensive groundwork for B8 logistics buildings, the Rail Terminal, and associated infrastructure, involves the removal of foundations, hardstanding, and topsoil, as well as deep excavation for service yards, crane bases, and freight handling areas, which could lead to permanent loss of stratified deposits, buried features, and any artefactual material that may survive beneath the surface, resulting in substantial disturbance or loss of subsurface archaeological deposits, determining a **high impact**.

Western Rail Chord

- 9.9.3 This area is expected to have a **medium impact**, as track installation, drainage, and access works may disturb surviving agricultural features, minor structural deposits, and previously undisturbed soils.

Northern Mitigation Area

- 9.9.4 Landscape regrading, planting, and habitat creation are anticipated to result in a **low to medium impact** on archaeological remains, primarily affecting shallow or buried features in areas of topographical modification or water feature construction.

Soils Reuse Area

- 9.9.5 Activities in the Soils Reuse Area generally poses a **low impact** on archaeological remains, as no significant human remains or complex deposits have been recorded to date, and localized effects from ground compaction or soil redeposition are considered minor. In the Eastern Off-Site Planting Area, limited landscaping and tree planting will result in only shallow ground disturbance, leading to a **low impact** on potential archaeological remains. No known assets are recorded within this area, and the likelihood of encountering unknown deposits is considered low.

10. Conclusions

- 10.1.1 The primary objectives of this report were to identify all known assets potentially affected by the Proposed Development, and the potential for currently unknown buried heritage assets; to gain an understanding of the buried heritage resource in order to understand their significance and to inform strategies for further evaluation, mitigation, or management as appropriate.
- 10.1.2 The Proposed Development involves large-scale construction, and infrastructure works across the Main Site, Western Rail Chord, Northern Mitigation Area, and Soils Reuse Area, resulting in a combined archaeological impact where, when the effects of multiple different activities (i.e. demolition, earthworks etc) are considered together, their overall impact could be greater than the sum of each impact assessed separately.
- 10.1.3 The baseline assessment indicates a **variable potential**, from **Low to Moderate**, for the survival of localised buried heritage within the Draft Order Limits. However, it concludes that the majority of currently unknown buried heritage deposits that may be present are unlikely to be of more than **Low or Medium Significance**, based on the available evidence and the character of the surrounding historic environment.
- 10.1.4 It is intended that this report, and the evaluation that will be carried out to inform the ES chapter and the DCO, provide enough information to understand the potential effects arising from the Proposed Development and ensure that proportionate and effective mechanisms are implemented to mitigate these effects. This will enable an informed decision on the Proposed Development, with confidence that full consideration will be given to the archaeological environment throughout its completion.

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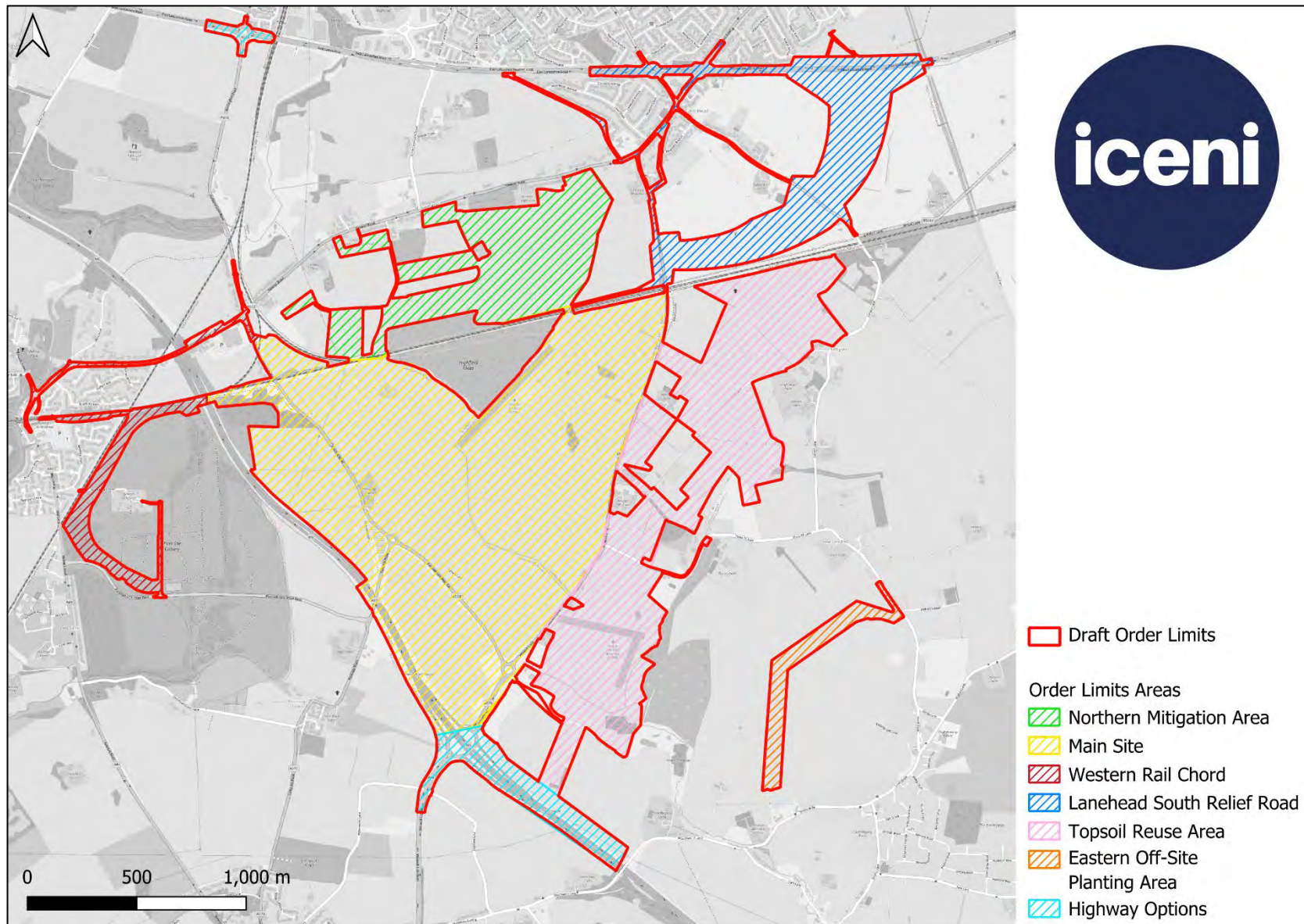
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12. Figures



Figure 1 Draft Order Limits Location



iceni

Cheshire

- Event Point
- Event Line
- Event Polygon

Greater Manchester

- Event Point
- Event Line
- Event Polygon

Merseyside

- Event Point
- Event Polygon
- Draft Order Limits

0 500 1,000 m

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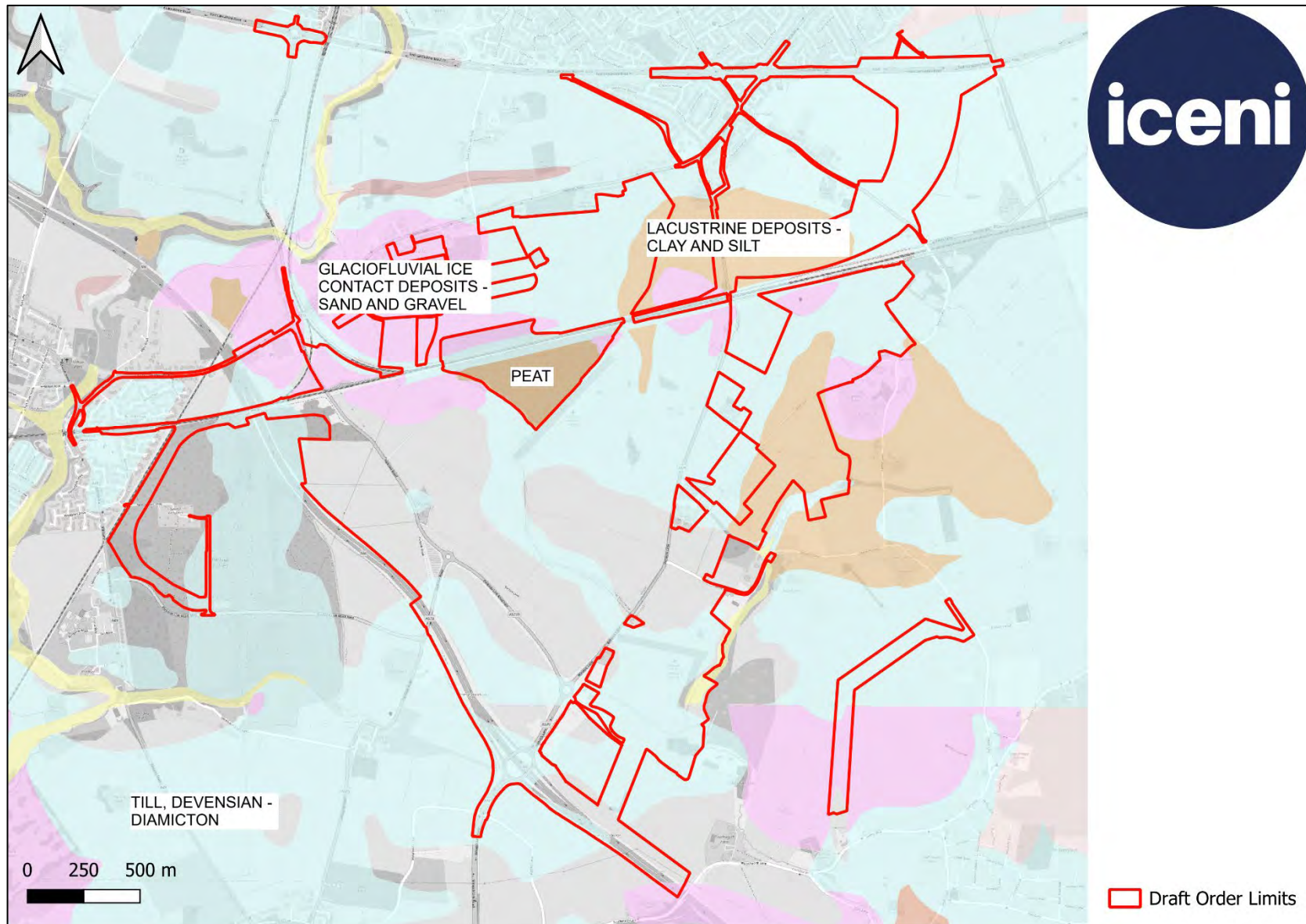


Figure 5 BGS 2025, Superficial Deposits

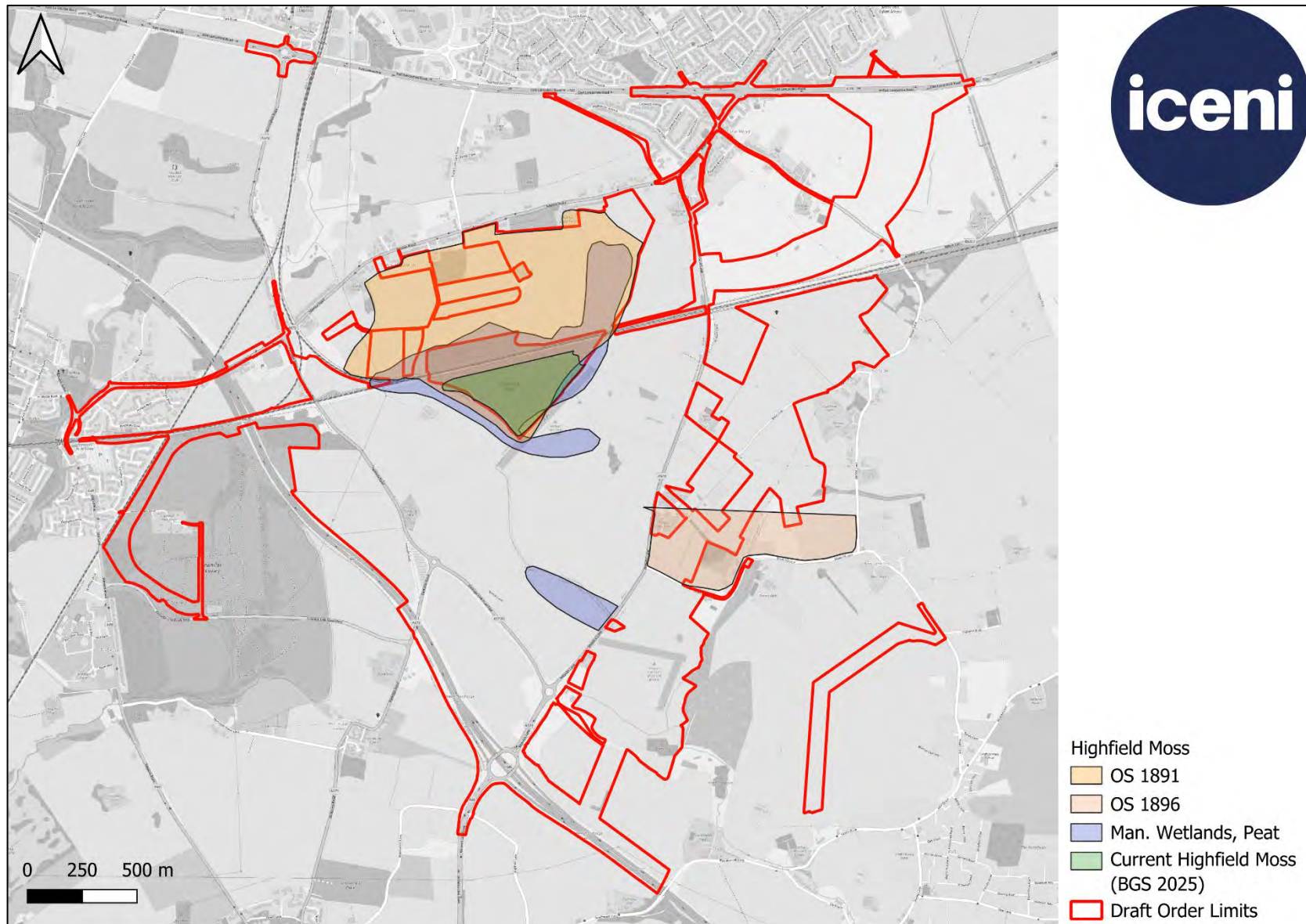


Figure 6 Peat – historical records

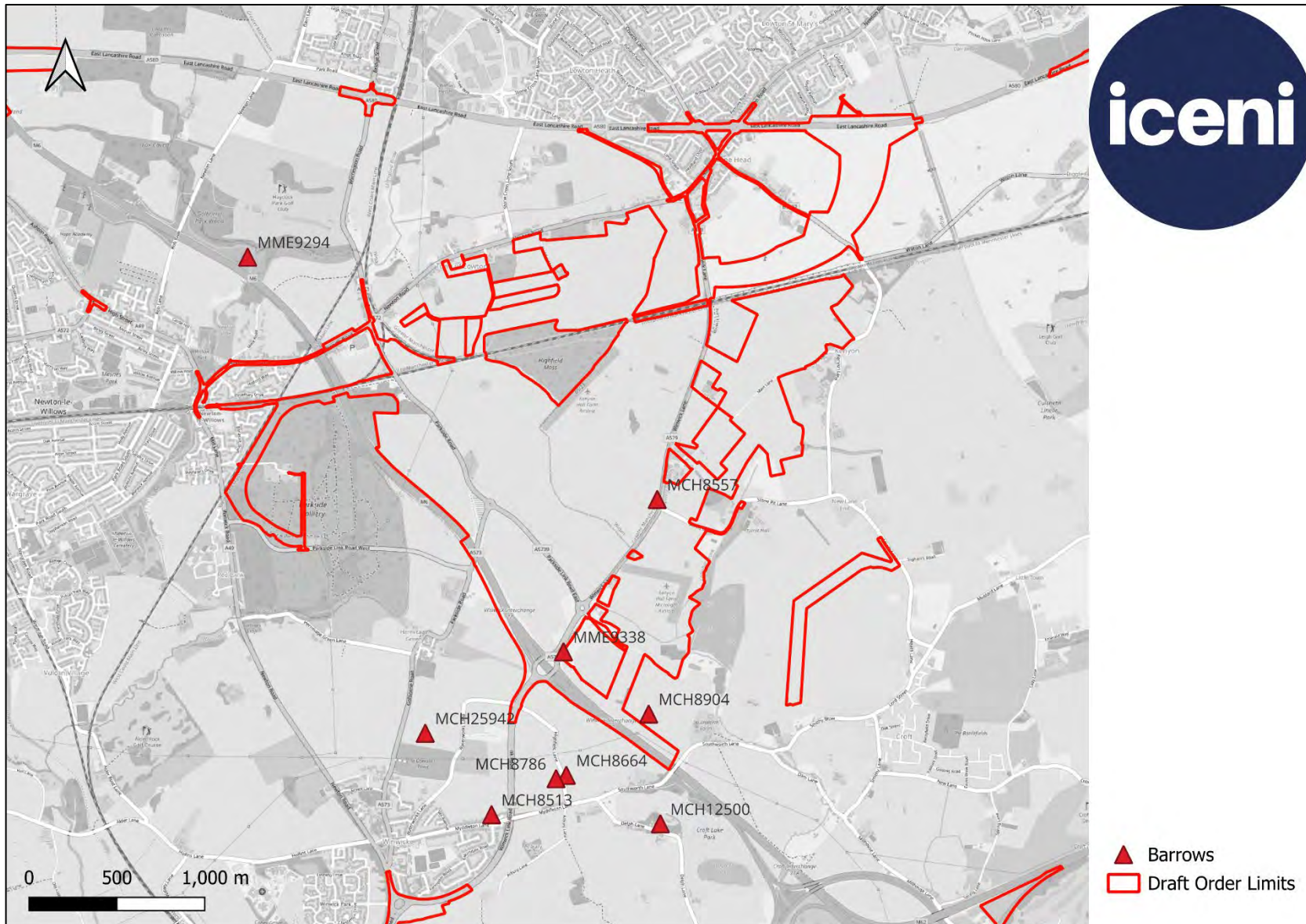


Figure 7 HER Data Bronze age barrows' location

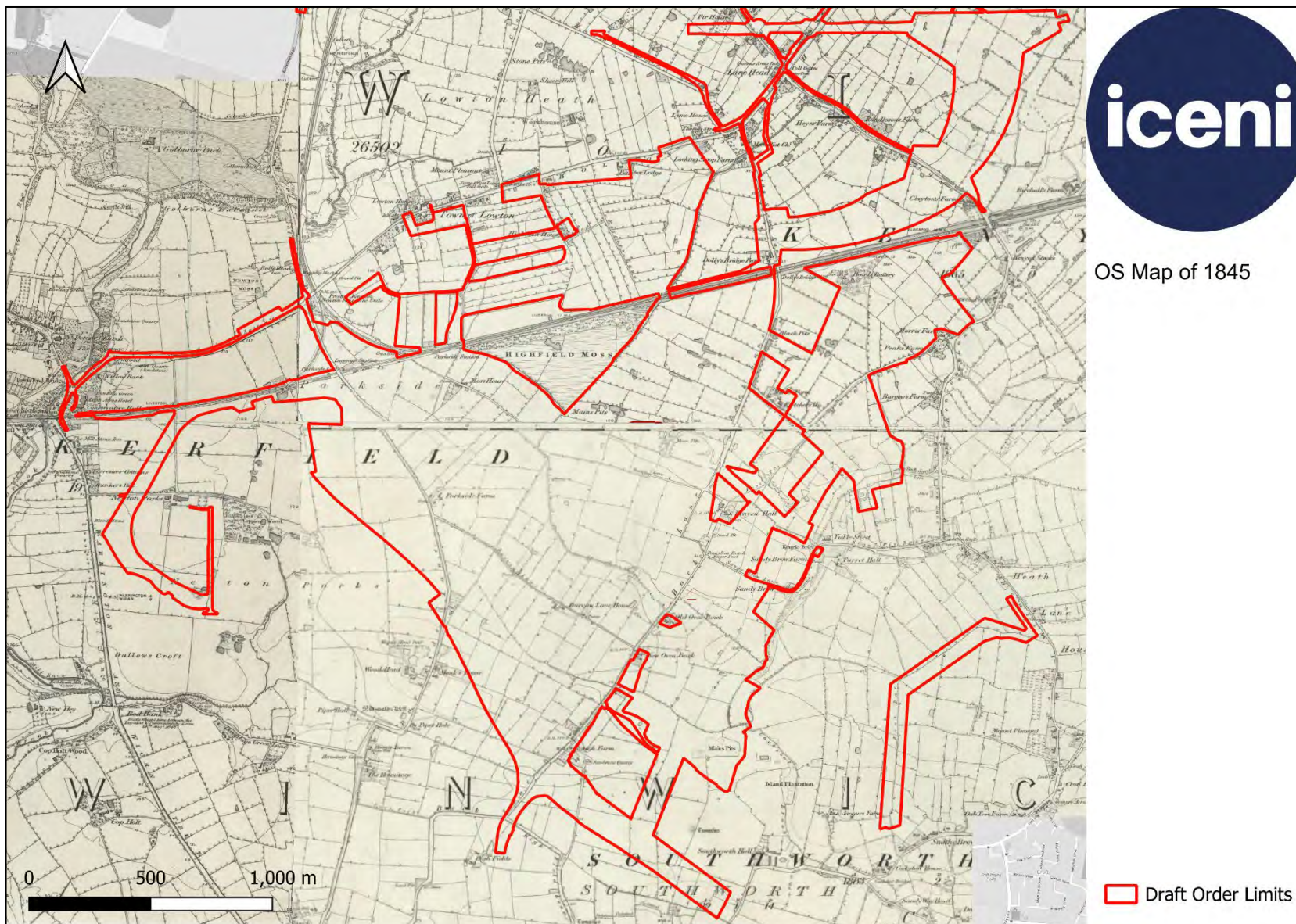


Figure 8 1845 OS map

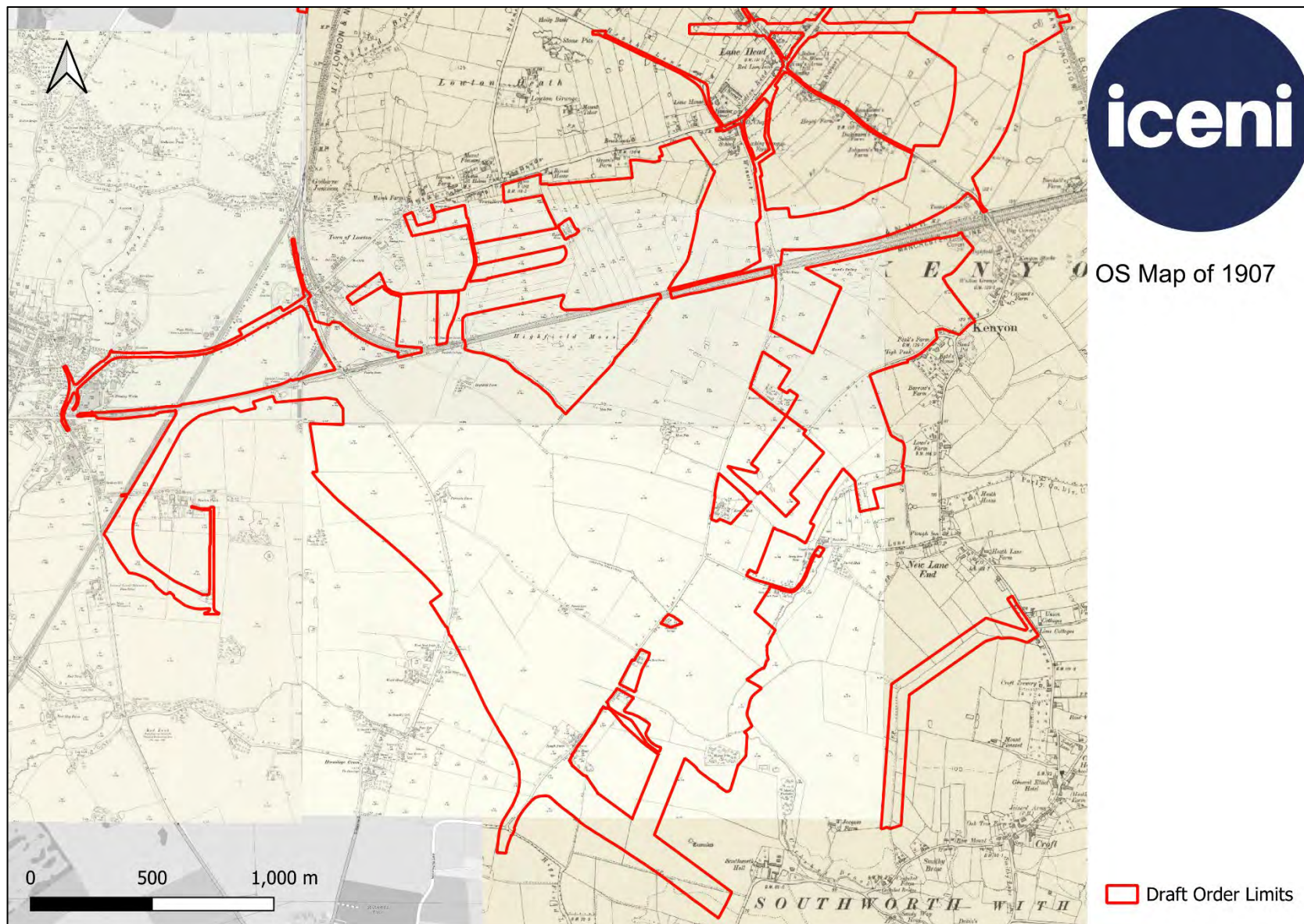


Figure 9 1907 OS map

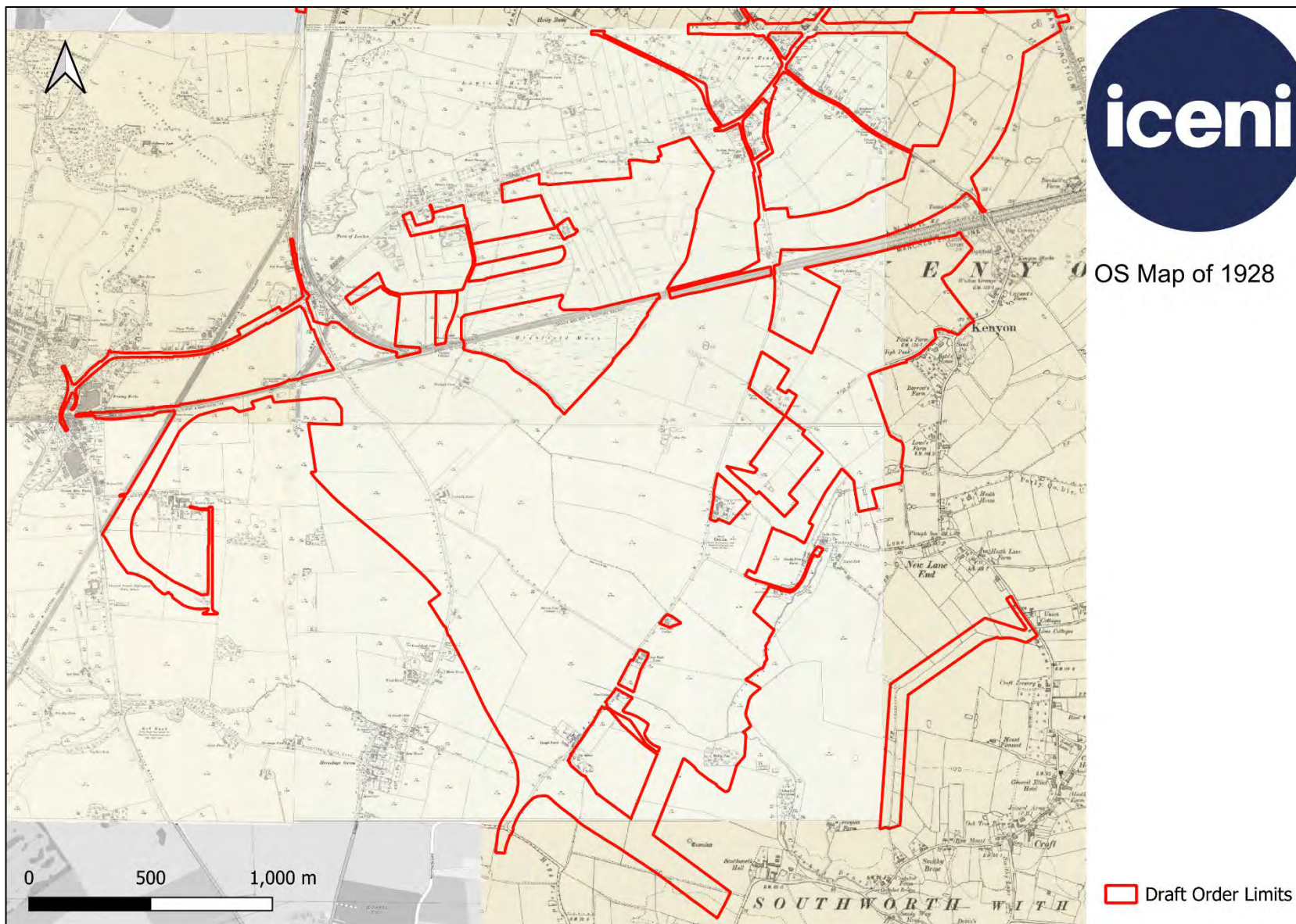


Figure 10 1928 OS map

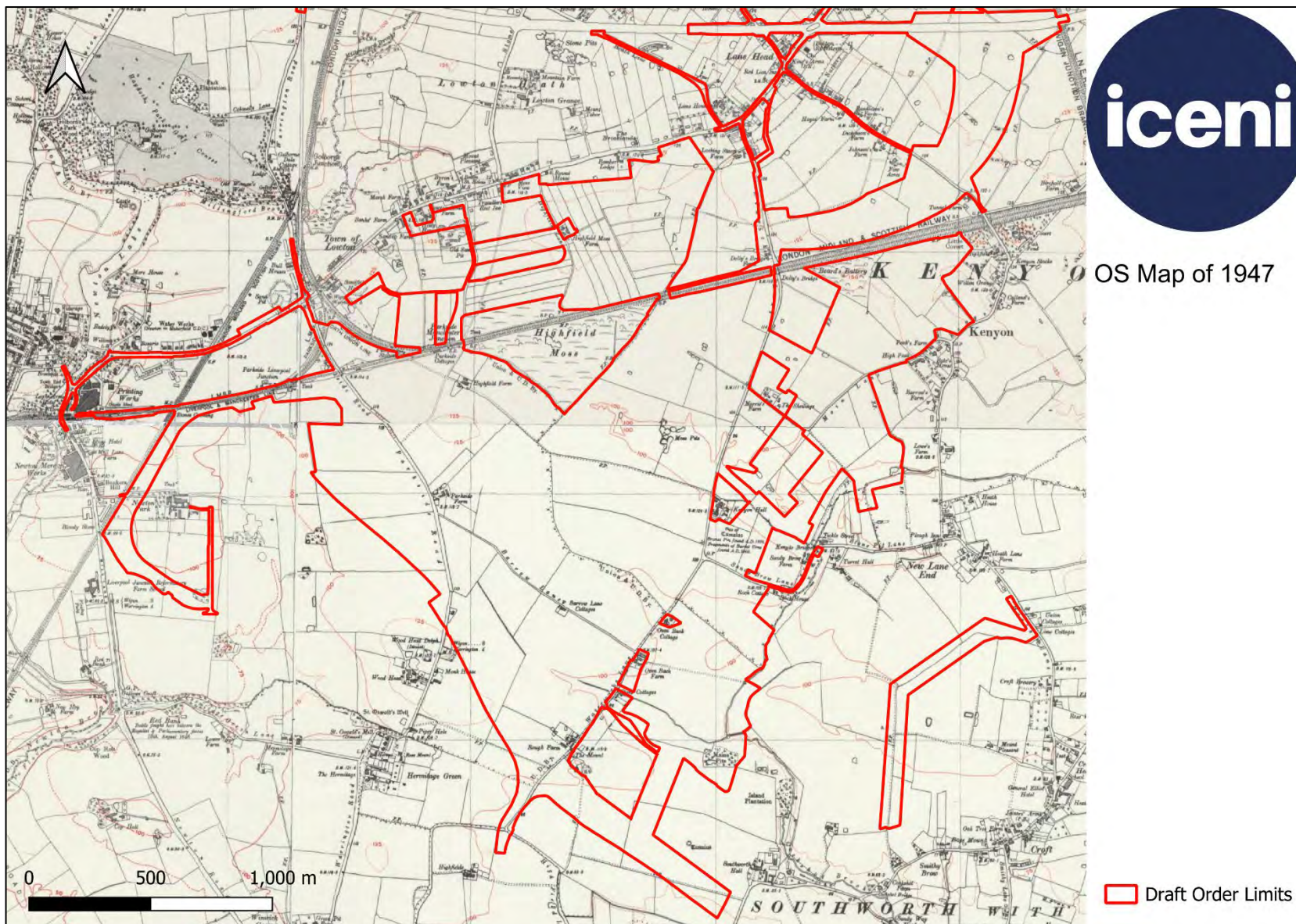


Figure 11 1947 OS map

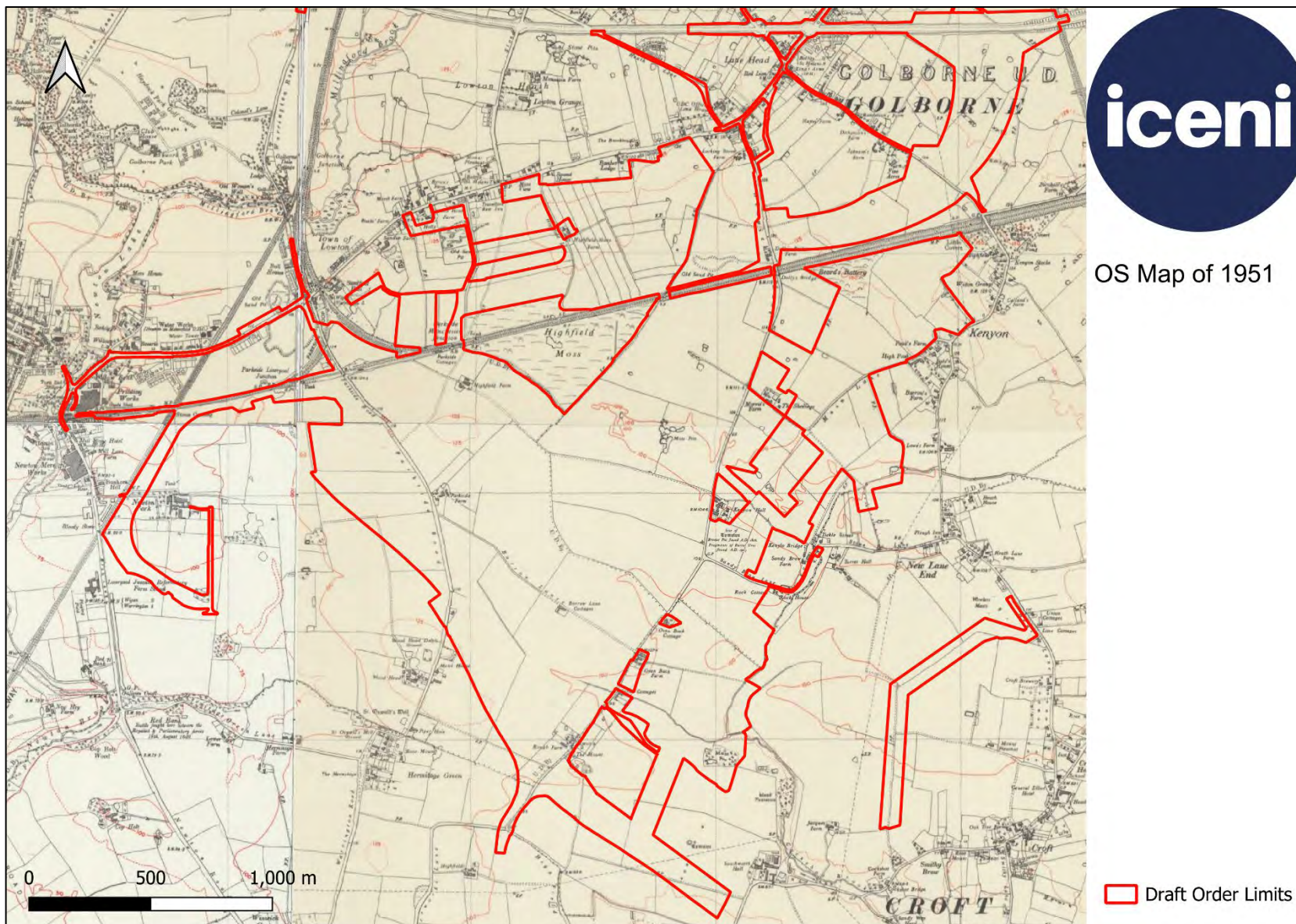
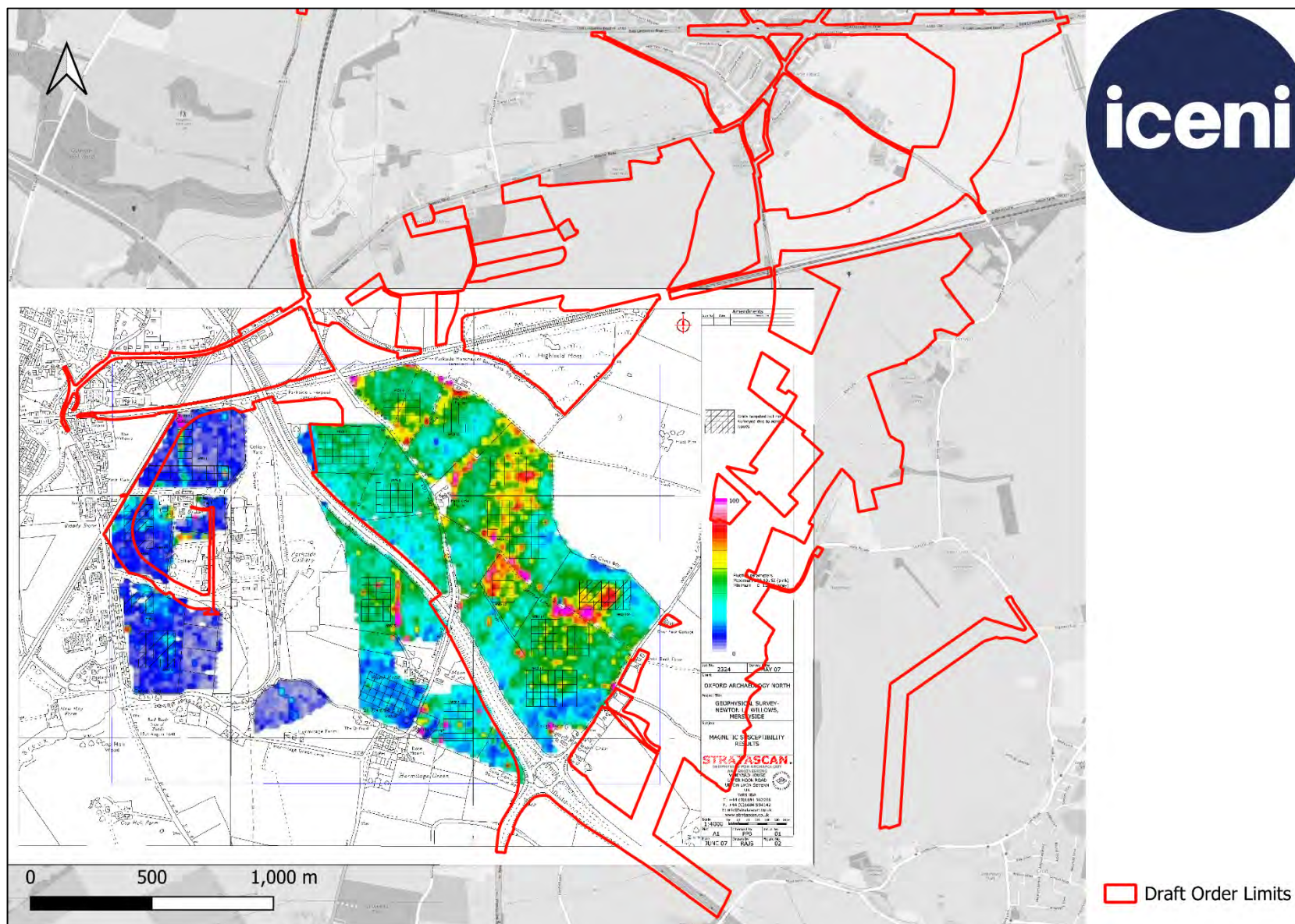


Figure 12 1951 OS map



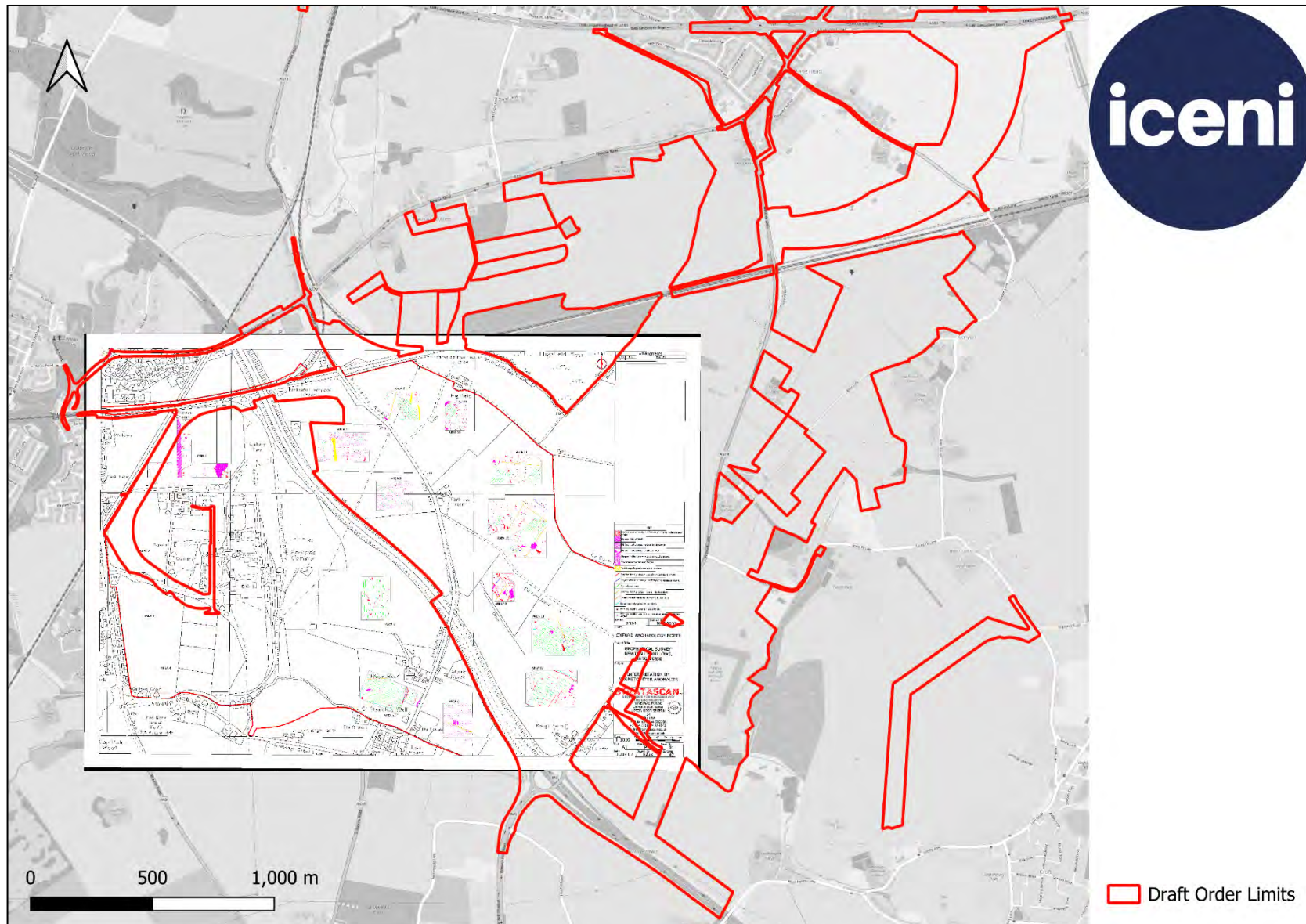


Figure 14 Magnetometer 2007

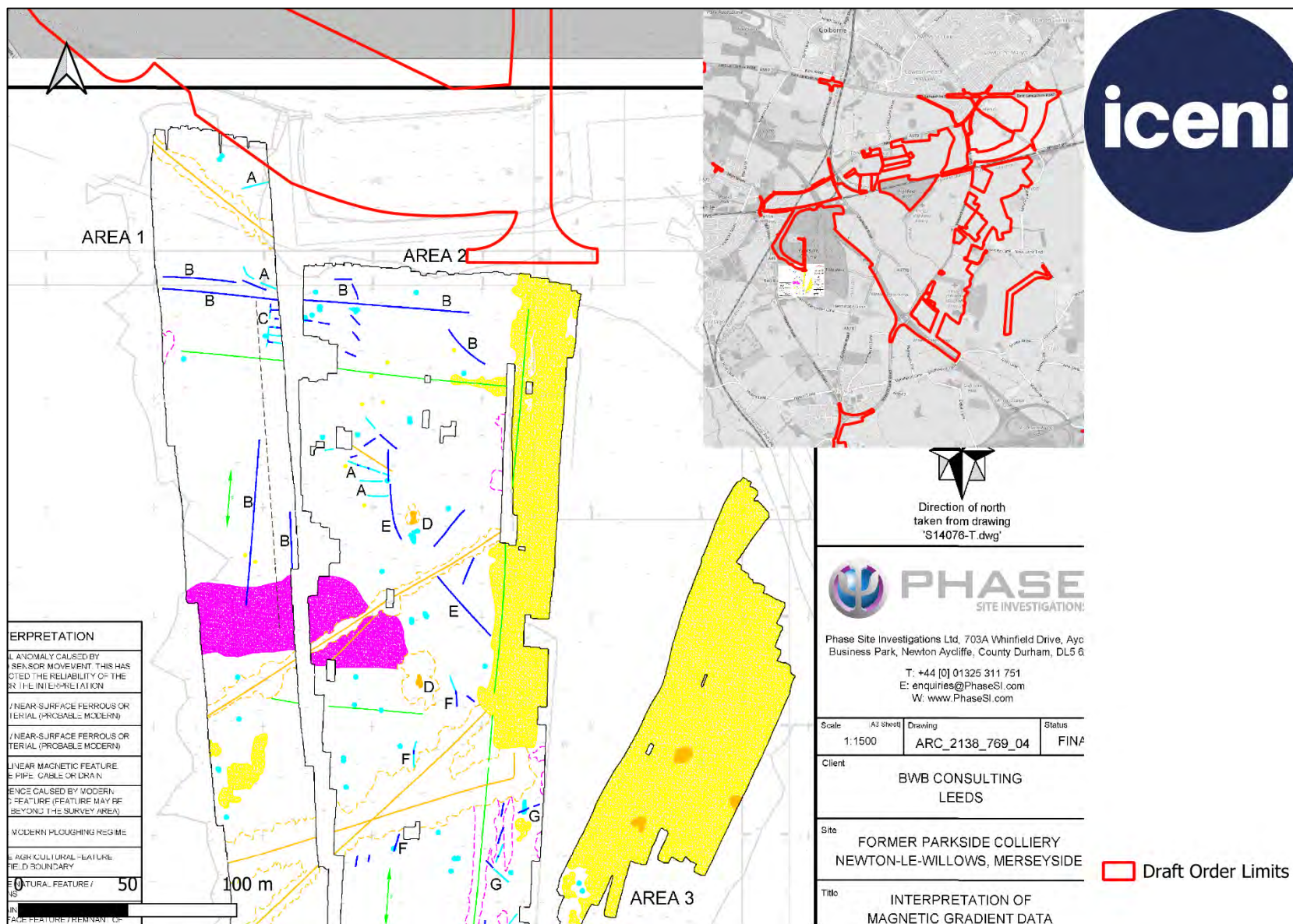


Figure 15 Survey 2017

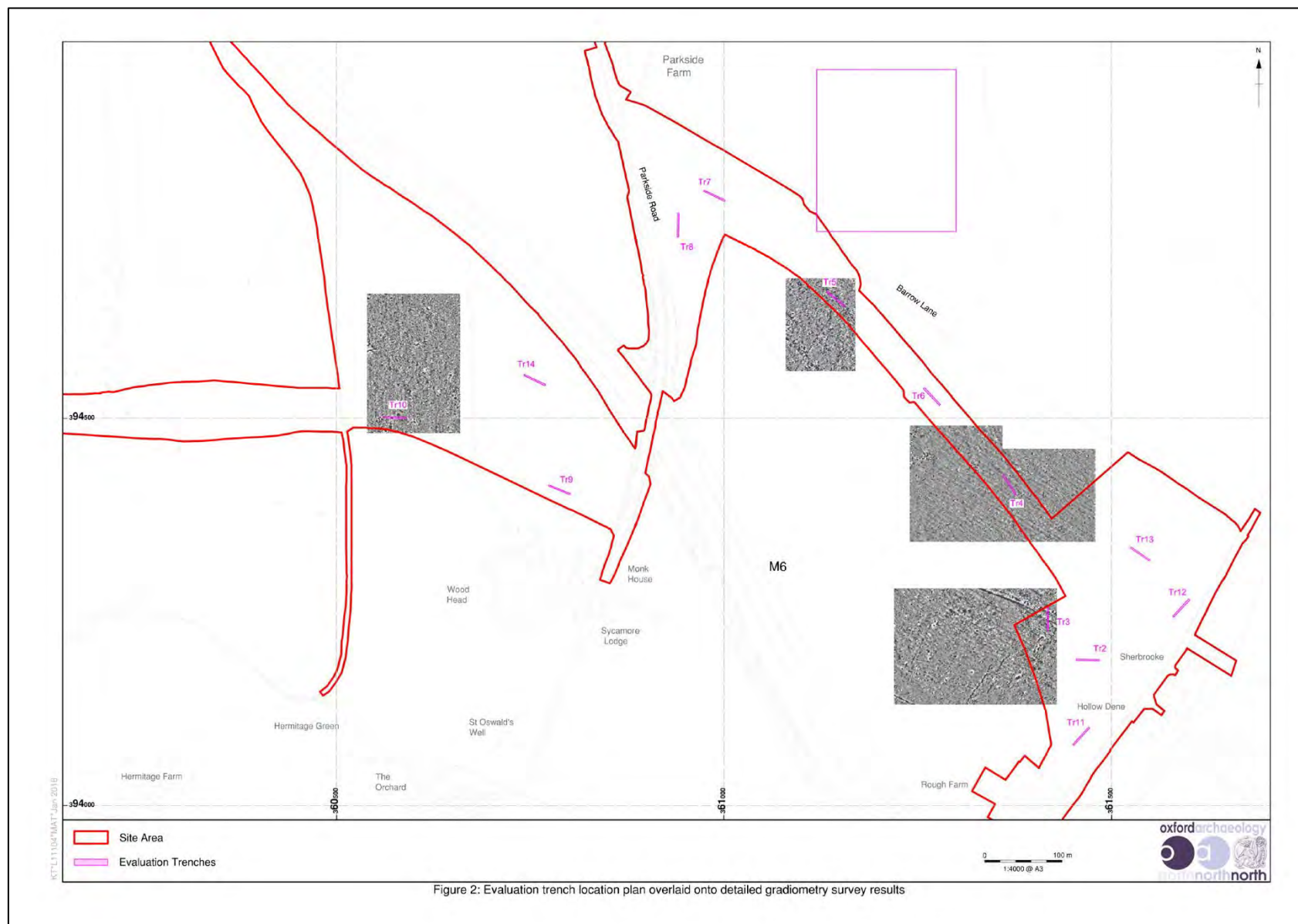


Figure 16 Evaluation 2018

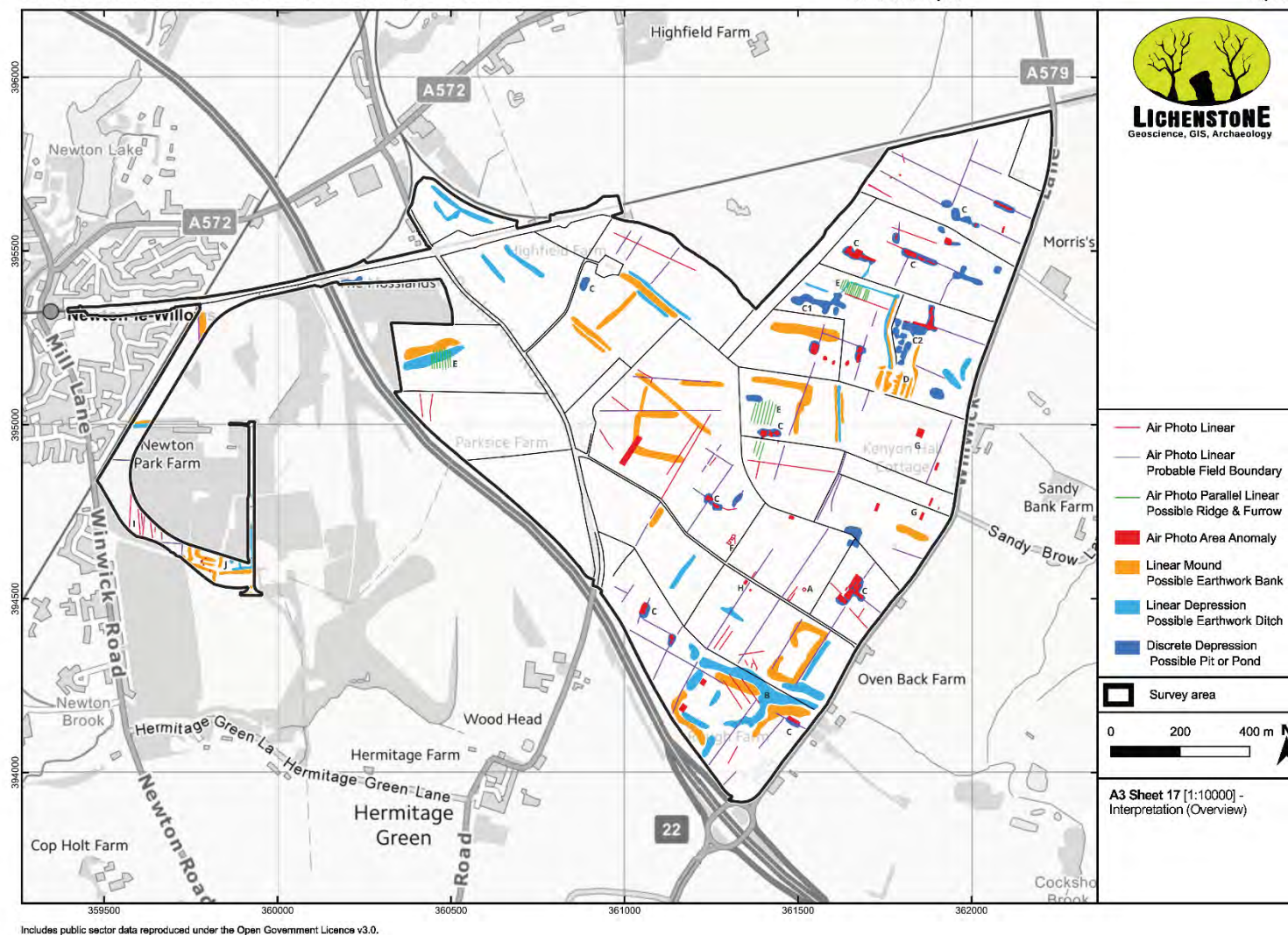


Figure 17 LiDAR interpretation from Lichenstone 2025

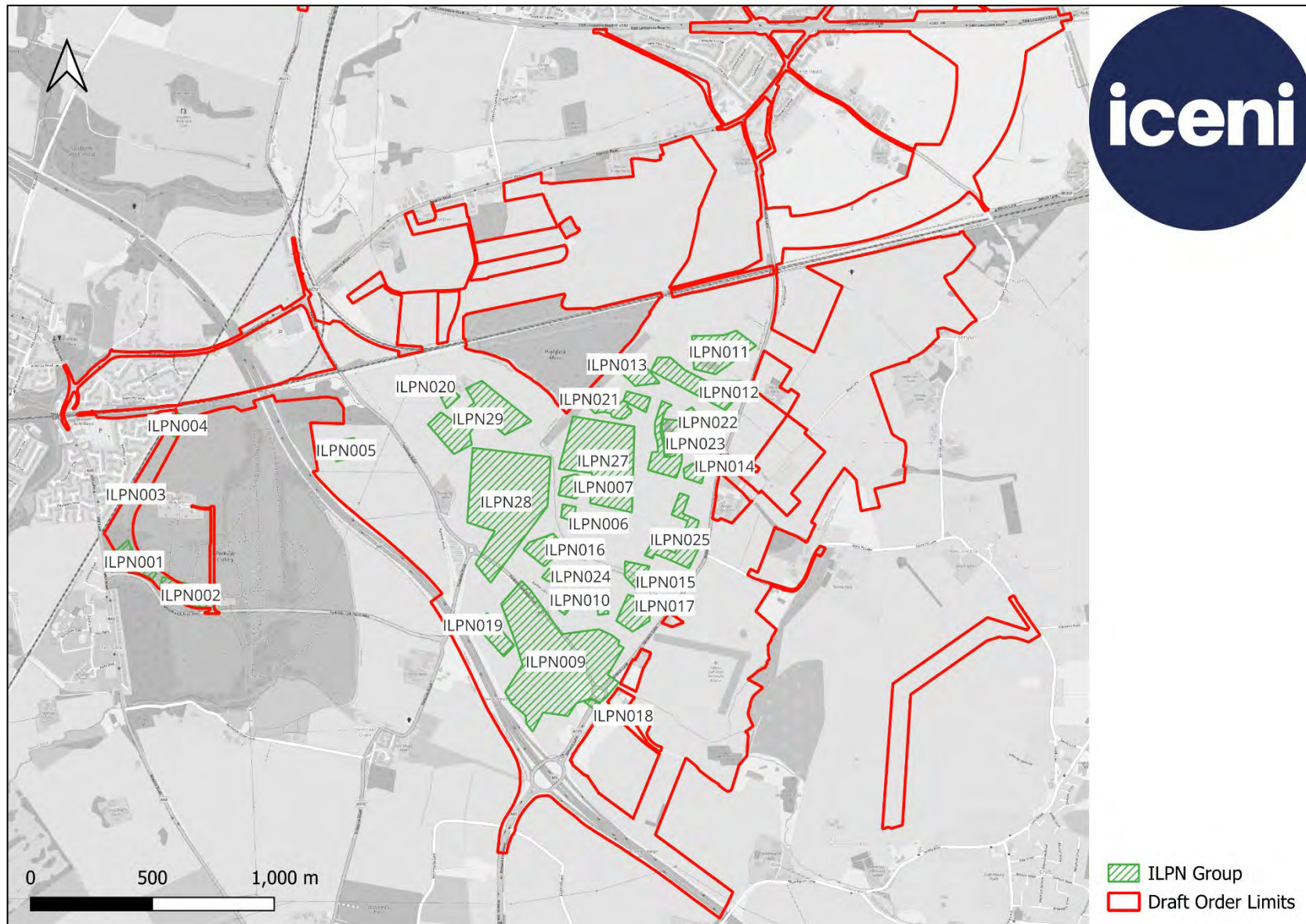


Figure 18 LiDAR groups

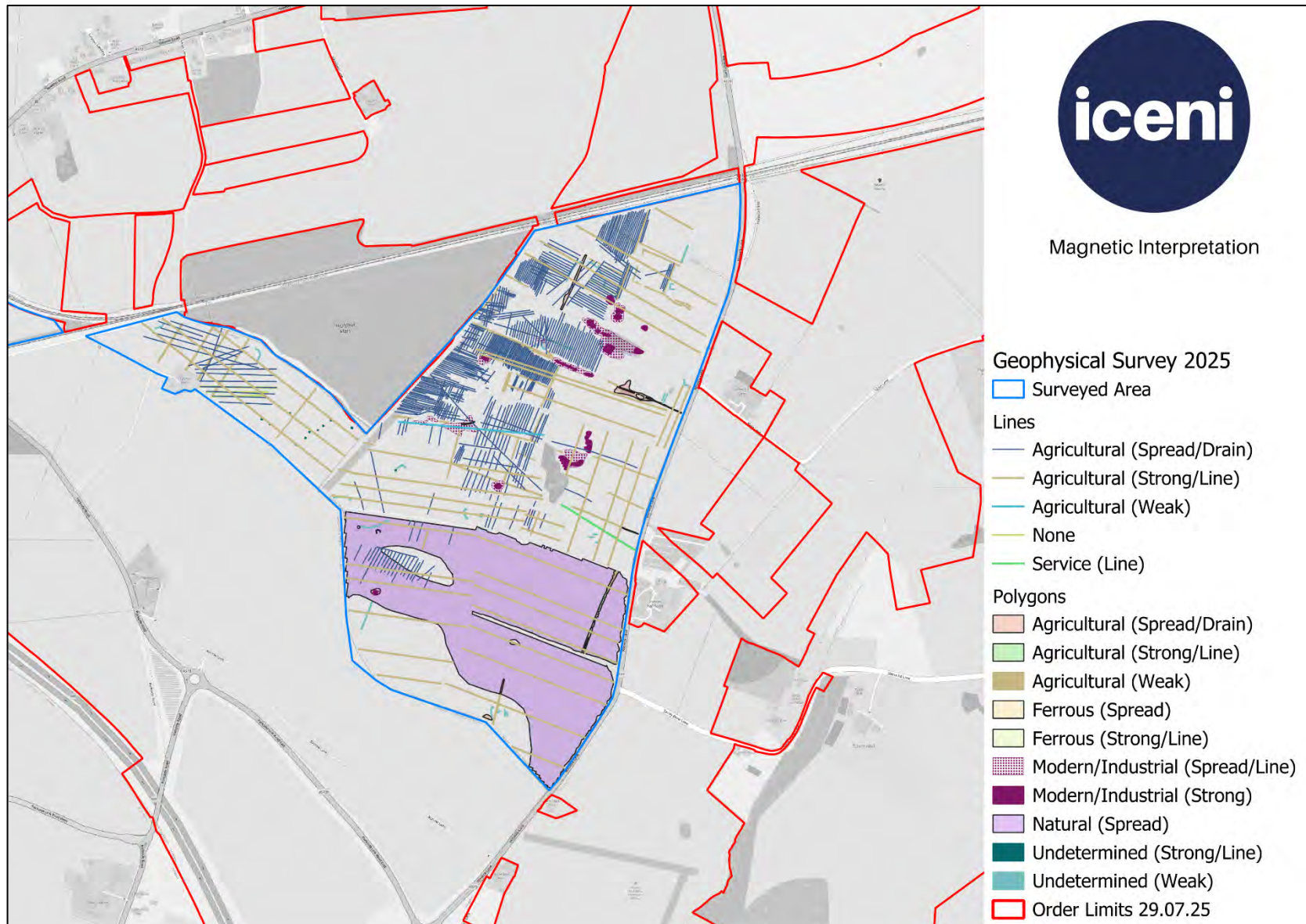


Figure 19 Magnetic Interpretation 2025

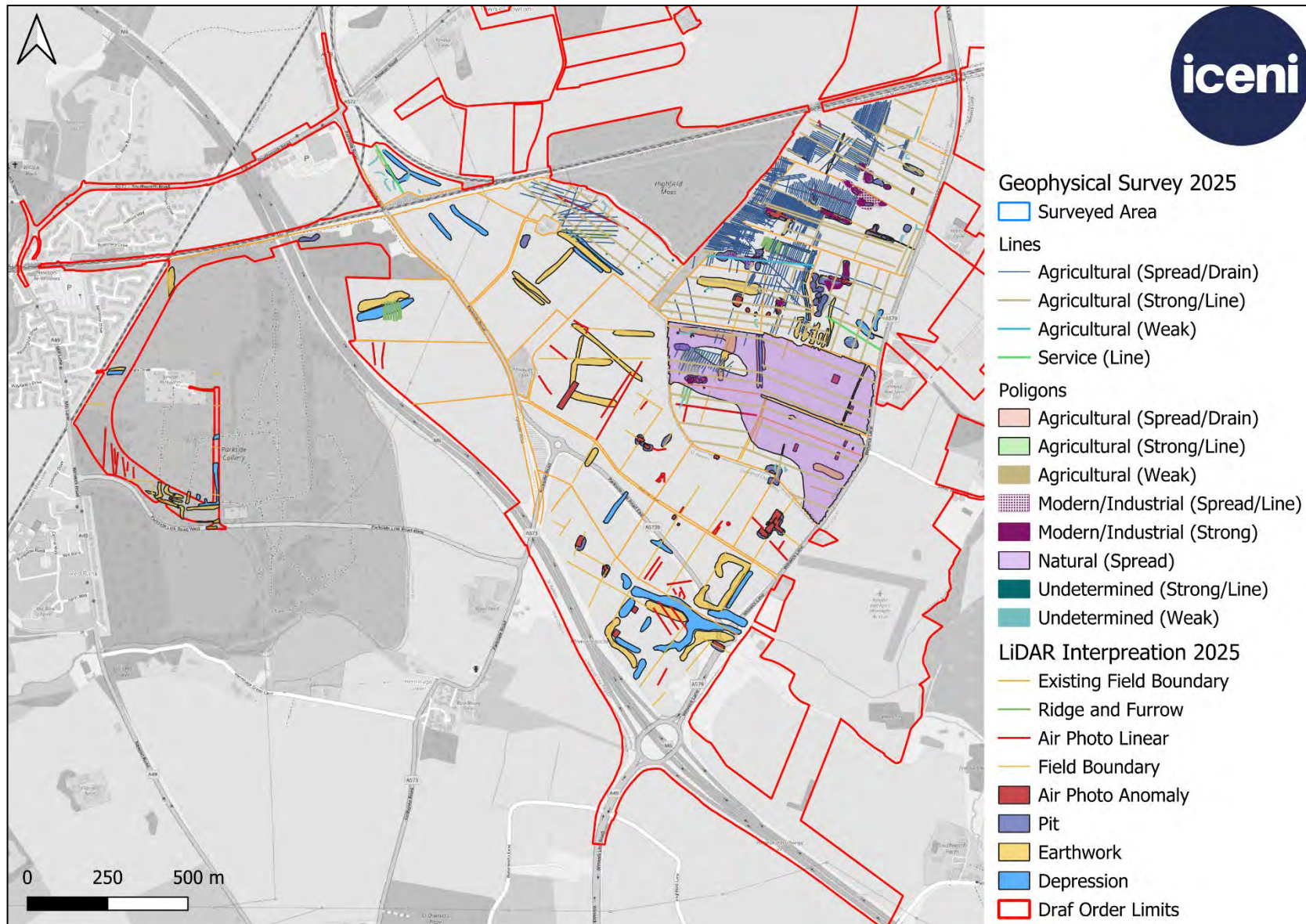


Figure 20 LiDAR and Geophysical Survey Overlap



Figure 21 Masterplan

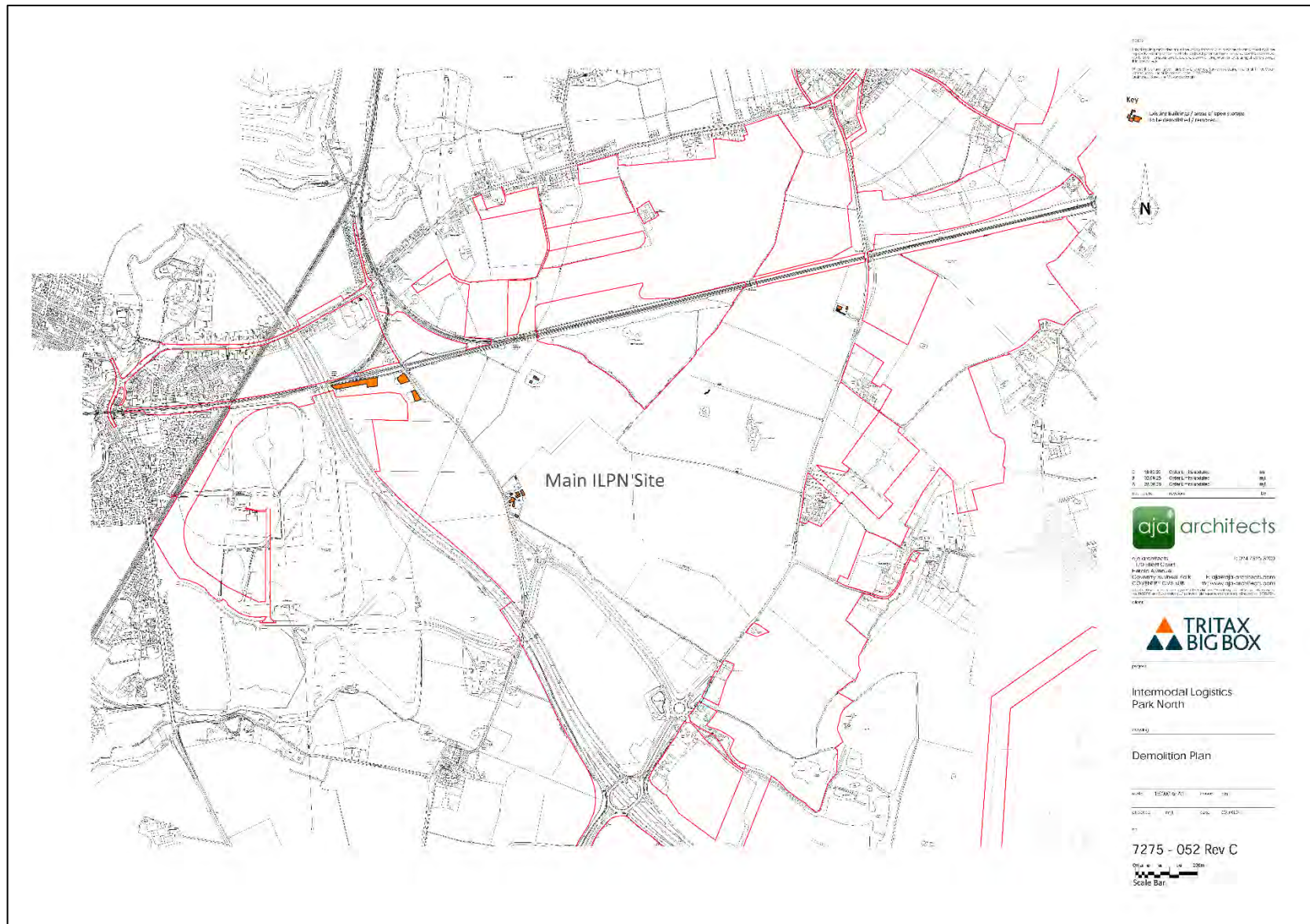
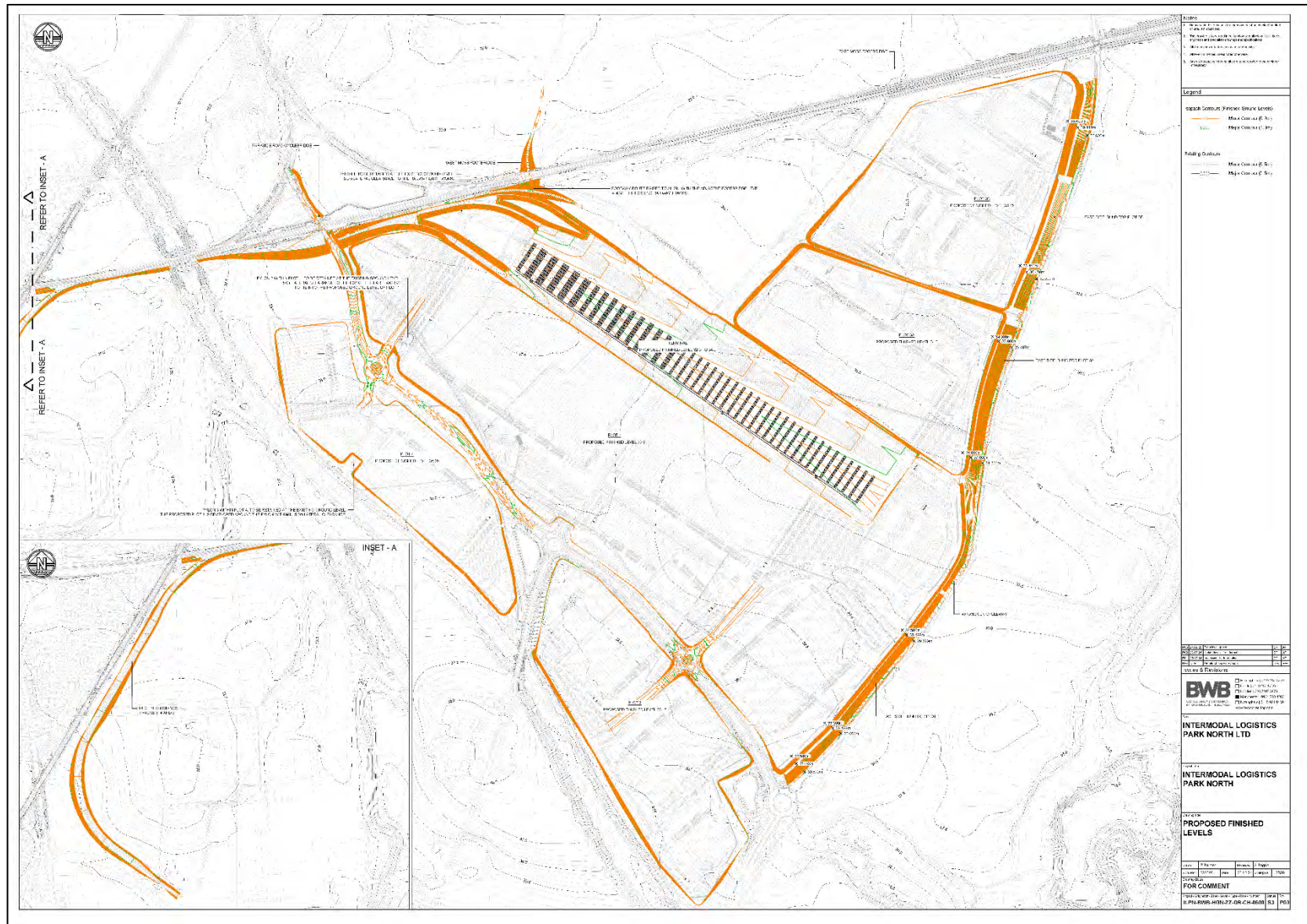


Figure 22 Demolition Plan



13. Appendices A-F

Appendix A

Appendix A: Legislation, Planning Policy and Professional Guidance

- A.1.1.1. Legislation, planning policy and guidance relating to cultural heritage, and pertinent to the Proposed Development comprises:

Legislation

Infrastructure Planning (Decisions) Regulations 2010 – specific reference to Regulation 3

- A.1.1.2. This regulation set out the matters which the decision-maker must have regard to, for development consent order applications under the Planning Act 2008. Regulation 3 specifically outlines that if a proposal potentially affects a scheduled monument or its setting, the decision-maker must take into account the desirability of preserving the scheduled monument or its setting, or indeed other features of historical interest. This principle is also mirrored for development consent order applications affecting conservation areas and listed buildings and their settings.

Ancient Monuments and Archaeological Areas Act 1979 – Part I Ancient Monuments: Protection of Scheduled Monuments

- A.1.1.3. This legislation established the protection of archaeological heritage in England, Wales and Scotland, and further introduced the legal protection of sites of national significance/archaeological importance as ‘Scheduled Monuments’. Through this Act, damage to a scheduled monument became a criminal offence.

National Planning Policy

National Networks National Policy Statement (NNNPS) (2024)

- A.1.1.4. This provides overarching government policy on Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England and the way in which any impacts and mitigation measures will be considered. Section 5.204 to 5.226 of this policy statement focusses on the Historic Environment. These developments are referred to as national road, rail, and strategic rail freight interchangea (SRFI) developments.
- A.1.1.5. Paragraph 5.204 states that “*The construction and operation of national networks infrastructure has the potential to result in adverse impacts on the historic environment.*”
- A.1.1.6. Paragraph 5.208 states that “*Non-designated heritage assets of archaeological interestff that are demonstrably of equivalent significance*

to Scheduled Monuments, should be considered subject to the policies for designated heritage assets. The absence of designation for such heritage assets does not indicate lower significance.”

- A.1.1.7. Paragraph 5.209 states that *“The Secretary of State should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including ‘local listing’, or through the nationally significant infrastructure project examination and decision-making process), on the basis of clear evidence that the assets have a significance that merit consideration in that process.”*
- A.1.1.8. Paragraph 5.210 states that *“The applicant should undertake an assessment of any significant heritage impacts of the proposed project and should describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the asset’s importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the relevant Historic Environment Record should have been consulted and the heritage assets assessed using appropriate expertise. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation.”*
- A.1.1.9. Paragraph 5.213 states that *“Where the loss of the whole or part of a heritage asset’s significance is justified, the Secretary of State should require the applicant to record and advance understanding of the significance of the heritage asset before it is lost (wholly or in part). The extent of the requirement should be proportionate to the importance and the impact. Applicants should be required to deposit copies of the reports with the relevant Historic Environment Record. They should also be required to deposit the archive generated in a local museum or other public depository willing to receive it.”*
- A.1.1.10. Paragraph 5.214 states that *“The Secretary of State may add requirements to the Development Consent Order to ensure that this is undertaken in a timely manner in accordance with a written scheme of investigation that meets the requirements of this section, and has been agreed in writing with the relevant Local Authority, Historic England or Marine Management Organisation.”*
- A.1.1.11. Paragraph 5.215 states that *“Where there is a high probability that a development site may include as yet undiscovered heritage assets with archaeological interest, the Secretary of State should consider requirements to ensure that appropriate procedures are in place for the identification and treatment of such assets discovered during construction.”*

A.1.1.12. Paragraph 5.216 states that *“In determining applications, the Secretary of State should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development (including by development affecting the setting of a heritage asset). The Secretary of State should take account of the available evidence and any necessary expertise from:*

- *relevant information provided with the application and, where applicable,*
- *relevant information submitted during examination of the application*
- *any designation records*
- *the relevant Historic Environment Record(s), and similar sources of information*
- *representations made by interested parties during the examination*
- *expert advice, where appropriate, and when the need to understand the*
- *significance of the heritage asset demands it”*

A.1.1.13. Paragraph 5.217 states that *“In considering the impact of a proposed development on any heritage assets, the Secretary of State should take into account the particular nature of the significance of the heritage asset, and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between their conservation and any aspect of the proposal”.*

A.1.1.14. Paragraph 5.218 states that *“The Secretary of State should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities – including their economic vitality. The Secretary of State should also take into account the desirability of new development making a positive contribution to the character and local distinctiveness of the historic environment. The consideration of design should include scale, height, massing, alignment, materials, use and landscaping (for example, screen planting)”.*

A.1.1.15. Paragraph 5.219 states that *“When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset’s conservation. The more important the asset, the greater the weight should be. Once lost, heritage assets cannot be replaced, and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Given that heritage assets are irreplaceable, harm or loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II Listed Building, or a grade II Registered Park or Garden should*

be exceptional. Substantial harm to, or loss of, designated assets of the highest significance, including World Heritage Sites, Scheduled Monuments, grade I and II Listed Buildings, Registered Battlefields, and grade I and II* Registered Parks and Gardens should be wholly exceptional”.*

A.1.1.16. Paragraph 5.220 states that *“Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset, the greater the justification that will be needed for any loss”.*

A.1.1.17. Paragraph 5.221 states that *“Where the proposed development will lead to substantial harm to, or total loss of, significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that it is necessary to deliver substantial public benefits that outweigh that loss or harm. Alternatively, that all of the following apply:*

- the nature of the heritage asset prevents all reasonable uses of the site*
- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation*
- conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible*
- the harm or loss is outweighed by the benefit of bringing the site back into use”*

A.1.1.18. Paragraph 5.222 states that *“Where the proposed development 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 securing its optimum viable use”.*

A.1.1.19. Paragraph 5.223 states that *“Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. The Secretary of State should treat the loss of a building (or other element) that makes a positive contribution to the site’s significance either as substantial harm or less than substantial harm, as appropriate. This should take into account the relative significance of the elements affected and their contribution to the significance of the Conservation Area or World Heritage Site as a whole”.*

A.1.1.20. Paragraph 5.224 states that *“Where the loss of significance of any heritage asset has been justified by the applicant based on the merits of the new development and the significance of the asset in question, the Secretary of State should consider imposing a requirement that the applicant will prevent the loss occurring, until the relevant development or part of development has commenced”.*

- A.1.1.21. Paragraph 5.225 states that *“Applicants 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, or better reveal, the significance of the asset should be treated favourably”*.
- A.1.1.22. Paragraph 5.226 states that *“Where there is evidence of deliberate neglect of, or damage to, a heritage asset the Secretary of State should not take its deteriorated state into account in any decision”*.

National Planning Policy Framework (2024)

- A.1.1.23. The National Planning Policy Framework (NPPF) is an overarching document which sets out government planning policy for development outside of the NSIP regime in England, and how this is expected to be applied by local authorities and developers. The NPPF can be an important and relevant consideration for NSIPs as well, but in the event of any conflict, the NPS policy prevails. The NPPF provides a framework for local sustainable development via local plans. **Chapter 16** focusses specifically on ‘conserving and enhancing the historic environment’.
- A.1.1.24. The NPPF sets out the importance of being able to assess the significance of heritage assets that may be affected by a development. Significance is defined in Annex 2 of the NPPF as being 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”*. Significance is not only derived from an asset's physical presence, but also from its setting. The setting of a heritage asset is defined in Annex 2 as *“the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve”*.
- A.1.1.25. Paragraph 207 of the NPPF states 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 asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance.”*
- A.1.1.26. Paragraph 208 states that *“Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal.”*

- A.1.1.27. Paragraph 212 states 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.”*
- A.1.1.28. Paragraph 214 states that *“where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss.”*
- A.1.1.29. Paragraph 215 states 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.”*
- A.1.1.30. Paragraph 216 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.”*

Local Planning Policy

- A.1.1.31. Local planning policy relevant to our Site is set out below. Local policies can be an important and relevant consideration for NSIPs as well, but in the event of any conflict, the NPS policy prevails.

St Helens Borough Local Plan up to 2037, (July 2022)

- A.1.1.32. The St Helens Borough Local Plan (July 2022) sets out the framework for the growth and development of the Borough. It identifies how and where new development and regeneration should take place and thereby promotes and manages the future development of the Borough. Specific policies within the 2013 version of the AADMPD that remain relevant to the Proposed Development include Policies LPA03, LPA09, and LPC11.
- A.1.1.33. Policy LPA03.1:Strategic Employment Sites identifies 7EA: Parkside East, Newton-le-Willows as a Strategic Employment Site.
- A.1.1.34. Policy LPA03.1:Strategic Employment Sites (5) states *“The masterplans for each Strategic Employment Site, and any planning application for development within any other allocated employment site, must address site specific requirements set out in Policies LPA09 in the case of sites 7EA.”*

A.1.1.35. Policy LPA09: Parkside East states states:

"1. The Parkside East site (identified as Site 7EA in Policy LPA03) shall be considered suitable in principle for development of a Strategic Rail Freight Interchange (SRFI) with the primary purpose of facilitating the movement of freight by rail and its on-site storage and transfer between rail and other transport modes.

2. The site is also considered suitable in principle for other forms of B2 and B8 employment use provided that they would:

a) bring significant inward investment, local employment, and training benefits for the local community; and

b) (i) be rail served (i.e., requiring on-site access to a railway); or

(ii) be of a layout and scale that would not prejudice the ability to develop an effectively laid out SRFI or other rail served employment development (including any necessary rail and road infrastructure, buildings, and landscaping), on at least 60ha of the site, at any time in the future.

3. Proposals for development within site 7EA will be required to:

a) satisfy the masterplanning requirements set out in Policy LPA03.1;

b) create safe and convenient access from Junction 22 of the M6 for Heavy Goods Vehicles and other vehicles;

c) mitigate any adverse impacts on the surrounding strategic and local road network;

d) comply with Policy LPC11 in relation to the protection of designated heritage assets;

e) achieve direct rail access to and from the Liverpool / Manchester ('Chat Moss') and the West Coast Main Lines (unless agreed otherwise by the Council);

f) be designed to minimise impacts on residential amenity;

g) establish and implement a Travel Plan that incorporates measures to encourage travel to / from the development using sustainable transport modes, including access by public transport, cycle and foot, in accordance with Policy LPA07;

- h) make provision for the positive management of existing and new environmental assets;*
- i) put training schemes in place (where practicable) to increase the opportunity for the local population to obtain access to employment at the site; and*
- j) ensure the timely delivery of the rail terminal infrastructure of the SRFI or other rail served employment development, in accordance with the comprehensive masterplan to be prepared for the whole site as required by Policy LPA03.1, section 2. Within this, details of the phasing for the whole site must include a clear and justified employment floorspace trigger for the delivery of the rail terminal infrastructure.*

4. That part of site 7EA which falls to the west of the M6 is safeguarded from all forms of development unless it can be shown that such development within it will not prejudice, or may provide, effective and deliverable future siding facilities in connection with the development of an SRFI or other rail-enabled development within the part of the site which falls to the east of the M6 (see Policies Map)."

A.1.1.36. Policy LPC11 (2): Historic Environment states "proposals for development that may affect a heritage asset, or its setting should be accompanied by an Assessment of Significance that should form part of a Design and Access Statement and / or a Heritage Impact Assessment and clearly set out the significance of the heritage asset including any contribution made by its setting. The proposals should demonstrate how they respond to the significance of the asset. Merseyside Historic Environment Record (HER) should be consulted as a minimum."

A.1.1.37. Policy LPC11 (3): Historic Environment states "Development proposals that would lead to substantial harm to (or total loss of significance of) a designated heritage asset will be refused permission unless it can be demonstrated that:

- a) the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or total loss; or*
- b) all the other exceptions set out in paragraph 195 of the National Planning Policy Framework (or any successor national policy that supersedes this paragraph) apply."*

A.1.1.38. Policy LPC11 (5): Historic Environment states "Development involving harm to or loss of any non-designated heritage asset (such as any building identified on a Local List prepared by the Council) will only be permitted where the benefits are considered sufficient to outweigh the harm, having regard to the scale of the harm and the significance of the heritage asset."

- A.1.1.39. Policy LPC11 (7): Historic Environment states *“Any development proposal that may affect one or more asset(s) of archaeological interest (whether designated or not) must include an appropriate desk-based assessment and where necessary a field evaluation, carried out by a suitably qualified person(s). Such evidence should identify any likely features of archaeological interest within or close to the site and how these would be affected by the proposal.”*
- A.1.1.40. Policy LPC11 (8): Historic Environment states *“Development proposals affecting archaeological remains may be required (depending on the significance of the remains) to preserve the remains in situ or to secure the appropriate excavation and recording of the significance of the remains by a suitably qualified person.”*
- A.1.1.41. Policy LPC11 (9): Historic Environment states *“the Council will:*
- a) prepare, update and promote the implementation of Heritage Asset Appraisals and Management Plans and give appropriate weight to these in development control decisions;*
 - b) work with partner organisations to interpret and educate the public about the heritage of the Borough;*
 - c) take appropriate measures to improve public access to heritage assets; and*
 - d) seek to secure the effective conservation and use of all heritage assets that are ‘at Risk’ within the Borough.”*

Wigan Local Plan Remaining Policies (WLPRP), March 2024

- A.1.1.42. On adoption of the Places for Everyone Plan in March 2024, a number of policies in the Wigan Local Plan Core Strategy were replaced and no longer form part of the Development Plan for Wigan Borough. The remaining policies continue to form part of the Development Plan.
- A.1.1.43. Specific policies within the WLPRP relevant to the Proposed Development include Policy CP11:
- A.1.1.44. Policy CP 11 Historic environment states *“We will conserve and enhance our historic environment, thereby helping to make the borough a better place to live, visit and work in, by: 1. Conserving and enhancing where appropriate our heritage assets and their settings, including scheduled monuments, listed buildings, conservation areas, historic parks and gardens, locally listed buildings and structures, key historic landscape characteristics and other important features, in accordance with legislation and national planning policy as appropriate.”*

Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 To 2039 (March 2024)

A.1.1.45. The Places for Everyone Joint Development Plan Document is part of the Local Development Framework for the area. This strategy outlines the overarching issues and objectives to address, contextualising them into wider vision, series of objectives and core policies toward delivery.

A.1.1.46. Policy JP-C7: Freight and Logistics states *“We will support the more efficient and sustainable movement of freight, including by:*

- 1. Protecting existing rail- and water-served sites and associated infrastructure;*
- 2. Completing the tri-modal Port Salford, including a rail spur from the Manchester-Liverpool line, canal berths on the Manchester Ship Canal, and a container terminal;*
- 3. Accommodating the expansion of air freight activities at Manchester Airport;*
- 4. Enabling the provision of consolidated distribution centres and the use of low-and zero-emission vehicles including electric vehicles, cargo bikes and E-cargo bikes for local and last mile deliveries;*
- 5. Enabling the provision of overnight parking and rest areas, with appropriate facilities, for heavy goods vehicle drivers, where there is likely to be demand, and it is appropriate to the location;*
- 6. Ensuring that new development makes appropriate provision for deliveries and servicing in terms of road safety, traffic congestion and environmental impacts, in accordance with Policy JP-C8.”*

A.1.1.47. Policy JP-G4: Lowland Wetlands and Mossland: *“The distinctive flat, open landscape and network of habitats of ecologically valuable lowland wetlands and mosslands, as identified by the Mosslands and Lowland Farmland Landscape Character Type, will be protected, enhanced and restored, with a strong emphasis on reconnecting local communities to the natural and historic environments.*

In making planning decisions and carrying out other associated activities, we will seek to deliver the following priorities:

- 1. Maintain and enhance the extensive and varied mosaic of semi-natural habitats including brooks, ditches, open water bodies, bog,*

fen, swamp, flashes, ponds, wet and broadleaved woodland, and grassland;

- 2. Manage and restore the remnant pockets of lowland raised bog, including through restoration from farmland, significantly expanding and connecting the areas of active bog to contribute to important functions such as flood risk management and carbon sequestration;*
- 3. Positively manage land adjacent to lowland raised bog and other sensitive wetland habitats in a complementary and coordinated manner, ensuring that their hydrology is not adversely affected and the water table is restored;*
- 4. Increase features that act as steppingstones for wildlife moving through the area, such as field ponds, hedgerows and trees, and minimise barriers to movement;*
- 5. Removal of derelict structures and the remediation of land where it is beneficial to green infrastructure provision and there is no historic value in their retention; and*
- 6. Expand public access across the area considerably, including through the creation of new circular routes, and enhance recreation and active travel opportunities.”*

A.1.1.48. Policy JP-G9: The Green Belt: *“The Green Belt serves the five purposes set out in national policy:*

- to check the unrestricted sprawl of large built-up areas;*
- to prevent neighbouring towns merging into one another;*
- to assist in safeguarding the countryside from encroachment;*
- to preserve the setting and special character of historic towns; and*
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.*

The beneficial use of the Green Belt will be enhanced where this can be achieved without harm to its openness, permanence or ability to serve its five purposes. In particular, the enhancement of its green infrastructure functions will be encouraged, such as improved public access and habitat restoration, helping to deliver environmental and social benefits for our residents and providing the high quality green spaces that will support economic growth.”

A.1.1.49. Policy JP-P2: Heritage: *"We will proactively manage and work with partners to positively conserve, sustain and enhance our historic environment and heritage assets and their settings. Opportunities will be pursued to aid the promotion, enjoyment, understanding and interpretation of heritage assets, as a means of maximising wider public benefits and reinforcing Greater Manchester's distinct character, identity and sense of place. Local Plans will set out the key elements which contribute to the district's identity, character and distinctiveness and which should be the priority for conserving and enhancing in the future and demonstrate a clear understanding of the historic environment and the heritage values of sites, buildings or areas and their relationship with their surroundings. This knowledge should be used to inform the positive management and integration of our heritage by:*

- 1. Setting out a clear vision that recognises and embeds the role of heritage in place-making;*
- 2. Ensuring that the heritage significance of a site or area is considered in accordance with national planning policy in the planning and design process and opportunities for interpretation and local engagement are optimised;*
- 3. Integrating the conservation and enhancement of heritage assets and their settings, with creative contextual architectural responses that contribute to their significance and sense of place;*
- 4. Delivering positive benefits that sustain and enhance the historic environment, as well as contributing to the economic viability, accessibility and environmental quality of a place, and to social wellbeing; and*
- 5. Exploring opportunities to reduce greenhouse gas emissions that restoration of historic buildings offer.*

Particular consideration will be given to ensure that the significance of key elements of the historic environment which contribute to Greater Manchester's distinctive identity and sense of place are protected from harm. These include historic town centres, places of worship, historic transport routes including the canal network, industrial buildings and structures including textile mills, farmsteads and other sites, buildings, and areas of identified archaeological, architectural, artistic and/or historic value.

Development proposals affecting designated and non-designated heritage assets and/or their settings will be considered having regard to national planning policy.

Where heritage assets have been identified as being at risk, Local Plans should identify specific opportunities for them to contribute to regeneration and place-making, and they should set out strategies for their repair and re-use. Development proposals which will help safeguard the significance of and secure a sustainable future for Greater Manchester's heritage at risk will be supported in principle, provided they are not contrary to national policy or other policies in the development plan.

Proposals should be informed, as necessary, by the findings and recommendations of the appropriate heritage assessment(s) in the development plan evidence base and/or any updated heritage assessment submitted as part of the planning application process."

Warrington Local Plan, 2021/22 - 2038/39, adopted December 2023

Policy DC2 - Historic Environment: "General Principles

1. The Council will, through planning decisions and in fulfilling its wider functions, proactively manage and work with developers, the local community and others to support proposals which conserve or, where appropriate, enhance the historic environment of Warrington.

2. Particular consideration will be given to ensure that the significance of those elements of the historic environment, including both designated and non-designated heritage assets, which contribute most to the Borough's distinctive identity and sense of place are conserved and where appropriate enhanced. These include, but not exclusively:

a. Evidence of Roman activity such as the settlement at Wilderspool and the roads at Appleton and Stretton.

b. Moated sites, country houses, farmhouses and associated outbuildings in the countryside including Bradley Old Hall, Barrow Old Hall and Bewsey Old Hall.

c. The site of the Battle of Winwick, also known as the Battle of Red Bank, now a registered Battlefield.

d. The Borough's industrial heritage including the Bank Quay Transporter Bridge, Sankey Canal, Bridgewater Canal, Manchester Ship Canal, Sankey Viaduct and other associated infrastructure and buildings.

e. Places of worship of different denominations.

f. The range of civic and institutional buildings, including the Town Hall, Libraries and Schools.

g. The town's mid to late nineteenth century terraces around Palmyra Square.

h. The buildings associated with the Borough's role as a major centre for brewing including the range and quality of its public houses.

i. Conservation Areas and Listed Buildings across the Borough.

j. Key cultural assets encompassing parklands, woodlands, landscapes, canals and riversides, museums, libraries, art galleries, public art, food and drink, customs and traditions.

3. As well as fulfilling its statutory obligations, the Council will:

a. Seek to identify, protect and enhance local heritage assets through the review and update of its Local List;

b. Promote heritage-led regeneration including in relation to development opportunities;

c. Produce new Conservation Area Appraisals and Management Plans;

d. Develop a positive strategy to safeguard the future of any heritage assets that are considered to be "at risk";

e. Adopt a proactive approach to utilising development opportunities to increase the promotion and interpretation of the Borough's rich archaeological wealth; and

f. Develop a positive heritage strategy for the Borough.

Assessing Development Proposals

4. Development proposals that would lead to substantial harm to (or total loss of significance of a designated heritage asset (including an archaeological site of national importance) will be refused permission unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or total loss, or other circumstances as set out in the NPPF. Where a proposal would lead to less than substantial harm to the significance of a designated heritage asset, the harm will be weighed against the public benefits of the proposal and permission will only be granted where the benefits outweigh the harm.

5. Where permission is granted for a development which would result in the partial or total loss of a designated heritage asset, approval will be conditional upon the asset being fully recorded and the information deposited with the Historic Environment Record (HER).

6. Proposals which would remove, harm or undermine the significance of a non-designated heritage asset will only be permitted where the benefits are considered sufficient to outweigh the harm to the character of the local area.

7. Where the proposal affects (non-designated) archaeological sites of less than national importance it should conserve those elements which contribute to their significance in line with the importance of the remains. In those cases where development affecting such sites is acceptable in principle, mitigation of damage will be ensured through the preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development, the findings of which should be deposited with the Historic Environment Record.

8. Proposals within or affecting the setting of a Conservation Area will only be permitted where it preserves or enhances the character and appearance of the area including those elements which have been identified within the Conservation Area appraisal as making a positive contribution to the significance of that area.

9. All applications which affect a heritage asset should be accompanied by a Statement of Significance which may form part of a Design and Access statement and/or a Heritage Impact Assessment. This should provide the information necessary to assess the impact of the proposals on the heritage asset and its setting including demonstrating how the proposal has taken into account the elements that contribute to its significance, including where relevant, its architectural and historic interest, character and appearance

National Guidance

Planning Practice Guidance (2023), Historic Environment (2019)

- A.1.1.50. This guidance sets out the key issues on enhancing and conserving the historic environment. This guidance sets out how the historic environment should be addressed in local plans, the designation process for designated and non-designated heritage assets, the overarching heritage consent process, as well as further information on the consultation process for and other planning issues associated with heritage related proposals.

English Heritage (2008) Conservation Principles, Policies and Guidance

- A.1.1.51. English Heritage, now Historic England, published guidance which aids best practice for a wide range of stakeholders in regard to the historic environment. This guidance mainly focuses on creating and implementing a management regime for its users and further defines value and significance upon heritage receptors.

Historic England (2015), Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 1. The Historic Environment in Local Plans ('GPA2')

- A.1.1.52. This advice note provides information to a wide range of stakeholders in aid of implementing national historic environment policy within the NPPF and PPG. Therefore, this advice from Historic England should be utilised to support national policy implementation. This guidance further outlines that information required for planning and listed building consent should be proportionate, and any activities around conservation or investigation should again be balanced against heritage significance.

Historic England (2017) The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning: 3. Historic England and Historic Environment Forum

- A.1.1.53. This advice note provides information to a wide range of stakeholders, in tandem with NPPF and PPG guidance, on managing modification to the setting of several heritage assets. This document furthermore gives practitioners advice on understanding what heritage setting is and how it contributes to the overall heritage significance.

Historic England (2007, updated 2019) Piling and Archaeology guidance and good practice

- A.1.1.54. This document specifically provides information on piling types, impacts, and solutions for sustainable foundation design to assist planning authorities and archaeological officers, developers and their consultants to make clear and informed decisions about piling schemes and their potential impact upon archaeological remains..

Historic England (2020) Good Practice in Planning 4: Enabling Development and Heritage Assets

- A.1.1.55. This document specifically outlines guidance regarding development to safeguard a heritage asset, which would not normally be approved through the planning system nor be in-line with national or local planning policy. Therefore, this direction from Historic England is to encourage developers and authorities to work together to ensure appropriate development and acceptability, and if required any alternative arrangements.

Historic England (2021) Historic Environment Advice Note 15. Commercial Renewable Energy Development and the Historic Environment ('HEAN15', Historic England)

- A.1.1.56. This Historic England advice note is specifically aimed at developers of renewable energy projects of various sizes (including NSIP and other large proposals), to improve consideration of heritage issues within the proposal process. The overarching detail within this advice note focuses on potential impacts upon the historic environment, associated with the development of renewable energy projects.
- A.1.1.57. This guidance note reflects the requirements of NPS EN-1 and the NPPF and that the process set out in these two documents should be followed when considering renewable energy proposals that may have a harmful impact on the significance of designated and non-designated heritage assets. This is set out in paragraphs 35 to 38. Of particular note is paragraph 36 which states that *“any harmful impact on the significance of a designated heritage asset requires a clear and convincing justification, detailing the benefits of the proposal and enabling them to be weighed against any harm that would be caused to the historic environment. In this regard, EN-3 notes the positive role that large-scale renewable projects play in the mitigation of climate change, the delivery of energy security and the urgency of meeting the national targets for renewable energy supply and emissions reductions. Determining the balance between harm and benefits is done on a case-by-case basis, informed by evidence and assessment (as described in national policy) and taking account of a range of factors and relevant policy and guidance (including other relevant advice in this advice note).”*

Historic England (2022) Planning and Archaeology: Historic England Advice Note 17

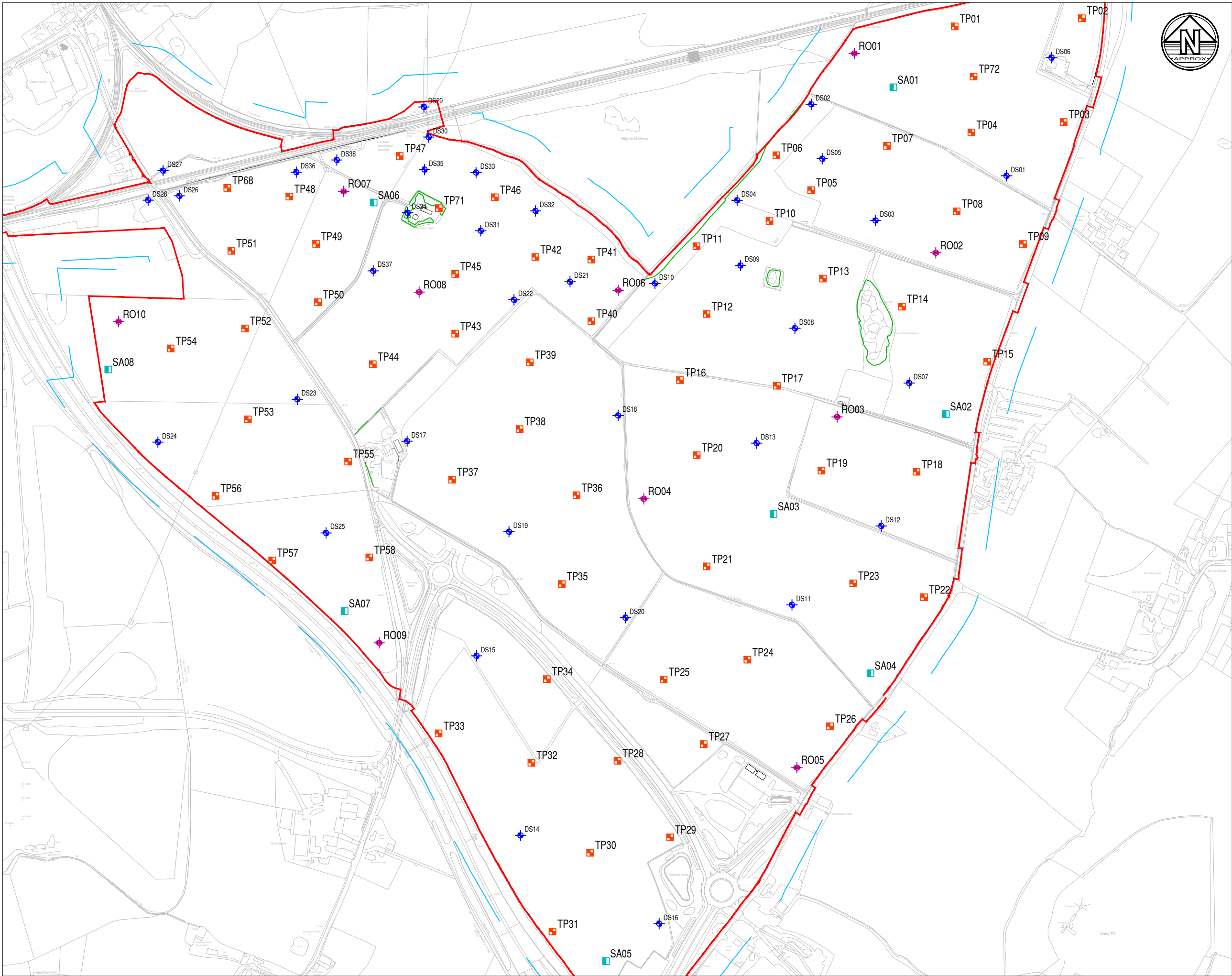
- A.1.1.58. This advice note sets the context for archaeology within the planning system. The guidance produced by Historic England summarises responsibility that planning authorities and developers have regarding archaeology through a planning application, how legislation, national policy and guidance should be applied, promoting accuracy and the benefits of implementation.

Professional Regulations and Standards & Guidance

- A.1.1.59. In addition to the above, the following professional regulations, standards and guidance have been considered::
- > Chartered Institute for Archaeologists (CIfA), 2023, Standard for archaeological excavation
 - > Chartered Institute for Archaeologists (CIfA), 2023, Standard for archaeological monitoring and recording

- > Chartered Institute for Archaeologists (CIfA), 2014a, Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (revised 2020)
- > Chartered Institute for Archaeologists (CIfA), 2014b, Standard and Guidance for Archaeological Field Evaluation (revised 2023)
- > Chartered Institute for Archaeologists (CIfA), 2014c, Code of Conduct (revised 2025)
- > Chartered Institute for Archaeologists (CIfA), 2014d, Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives (revised 2020)
- > Chartered Institute for Archaeologists (CIfA), 2014e, Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.
- > Chartered Institute for Archaeologists (CIfA), 2014f, Standard and guidance for historic environment desk-based assessment (revised 2020)
- > The British Association for Biological Anthropology and Osteoarchaeology (BABAO) 2019, Code of Ethics and Code of Practice

Appendix B



- Notes**
1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
 2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
 3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
 4. Any discrepancies noted on site are to be reported to the engineer immediately.

- Legend**
- Site Boundary
 - TP** Denotes Proposed Location of Trial Pit
 - SA** Denotes Proposed Location of Soakaway Test
 - RO** Denotes Proposed Location of Deep Rotary Open Borehole
 - DS** Denotes Proposed Location of Dynamic Sample Borehole

P02	27.01.25	OS Map Data Boundary Added	RT	RR
P01	03.09.24	DRAFT	RT	RR
Rev	Date	Details of issue / revision	Drw	Rev

Issues & Revisions

BWB
AECOM COMPANY

Client: **Tritax Symmetry SRFI North Ltd**

Project Title: **ILP North - GI Investigations / Preferred Locations**

Drawing Title: **Exploratory Hole Location Plan - East Segment**

Drawn: R. Theobalds Reviewed: R. Robinson

BWB Ref: 233398 Date: 03.09.24 Scale@A3: 1:250

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number: **ILPN-BWB-ZZ-XX-DR-GI-0001** Status: **S1** Rev: **P02**

TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID: TP01

Project Name: ILP-North

Project Number: 233398

Client: Intermodal Logistics Park North Ltd

Plant: JCB 3CX

Start & End Date: 30/04/2025

1.80

0.70

Pit Dimensions (m)

Orientation:

Stability: Stable

Ground Level (m AOD): 34.67

Eastings & Northings: 361979E 395831N

Engineer: DZ

Checker:

Strata				Samples			In-Situ Tests					
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
		0.40m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite., plastic and brick. (Topsoil)		0.40	D1	0.50	0.60	HSV	0.80	(100)kPa	
		34.27										
		0.80m	Firm mottled brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. (Till)		1.20					HSV	0.80	(90)kPa
		33.47	Brown silty fine SAND. (Weathered Chester Formation)		1.20	B1	1.70	1.90				
		2.20m										
		31.27	Hole Terminated at 3.40m bgl.		3.40	B2	3.30	3.40				

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

Wet soils below 1.20m bgl. Slow water inflow.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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TRIAL PIT LOG

Scale: 1:50

Sheet 1 of 1

Sheet 1 of 1

LOCATION ID:	Project Name: ILP-North			1.90 0.70 Pit Dimensions (m) Orientation: • Stability: Unstable below 1.60m.		
TP02	Project Number: 233398					
	Client: Intermodal Logistics Park North Ltd					
	Plant: JCB 3CX	Start & End Date: 30/04/2025				
Ground Level (m AOD): 37.28		Eastings & Northings: 362189E 395799N		Engineer: DZ	Checker:	

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite., plastic and brick. (Made Ground)		0.30	D1	0.10	0.20			
		36.98			B1	0.60	0.70				
		1.30m	Firm mottled brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. (Reworked Natural)		1.60	D2	1.90	2.00			
		35.68			B2	2.50	2.60				
			34.58	Hole Terminated at 2.70m bgl.		2.70					

Remarks	
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Reason for Termination:

Terminated on collapse of wet soils.

Groundwater Notes:

Wet soils below 1.60m bgl. Moderate water inflow.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.



TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North			2.10 0.70 Pit Dimensions (m) Orientation:															
TP03		Project Number: 233398																		
		Client: Intermodal Logistics Park North Ltd																		
		Plant: JCB 3CX	Start & End Date: 30/04/2025							Stability: Stable										
Ground Level (m AOD): 34.56		Eastings & Northings: 362162E 395589N			Engineer: DZ		Checker:													
Strata										Samples			In-Situ Tests							
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result									
▼		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35	D1	0.40	0.50	HSV	0.60	(85)kPa									
		34.21	(Topsoil)									B1	0.60	0.70	HSV	0.60	(90)kPa			
		1.75m	Firm mottled orange, brown and grey slightly gravelly, very sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium.															HSV	0.60	(90)kPa
			(Till)																	
			Between 1.50m bgl and 2.1m bgl: up to 5mm thick sand bands.																	
32.46	Brown very clayey fine SAND. (Weathered Chester Formation)	2.10	D2	2.20	2.30	HSV	2.00	(70)kPa												
0.90m	Light brown slightly gravelly fine SAND. Gravel is sub-rounded to rounded fine and medium quartzite. (Weathered Chester Formation)								3.00	B2	3.10	3.20	HSV	2.00	(75)kPa					
31.56																				
0.70m		3.70	D3	3.50	3.70															
30.86	Hole Terminated at 3.70m bgl.																			
Remarks																				
Reason for Termination: Terminated at agreed depth.																				
Groundwater Notes: Slightly wet soils below 1.50m bgl.																				
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.																				
BWB CAF GROUP COMPANY AGS REGISTERED USER 2023																				

TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID: TP04

Project Name: ILP-North

Project Number: 233398

Client: Intermodal Logistics Park North Ltd

Plant: JCB 3CX

Start & End Date: 30/04/2025

1.90

0.70

Pit Dimensions (m)

Orientation:

Stability: Stable

Ground Level (m AOD): 32.40

Eastings & Northings: 361955E 395604N

Engineer: DZ

Checker:

Strata				Samples			In-Situ Tests				
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.60m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite, plastic and brick. (Topsoil)		0.60	D1	0.20	0.40			
		31.80	Soft dark grey and black silty, sandy slightly gravelly CLAY with occasional partially decomposed leaves and rootlets. Gravel is sub-angular to sub-rounded medium quartzite. Sand is fine.()			B1	0.90	1.00	HSV	0.80	(40)kPa
		1.40m				ES1	0.90	1.00	HSV	0.80	(40)kPa (45)kPa
		30.40	Soft dark brown, grey and black CLAY with partially decomposed leaves, rootlets and wood. ()		2.00						
		0.90m	at 2.50m bgl: Large up to 70cm in diameter pieces of metal.			D2	2.40	2.50	HSV	2.40	(30)kPa
		29.50				B2	2.50	2.60	HSV	2.40	(35)kPa
		0.20m	Firm to stiff light brown silty CLAY. (Till)		2.90	ES2	2.50	2.60	HSV	2.40	(40)kPa
		29.30	Brown and light brown medium SAND. (Chester Formation)		3.10	D3	2.80	2.90	HSV	2.80	(100)kPa
		0.60m							HSV	2.80	(100)kPa (95)kPa
		28.70	Hole Terminated at 3.70m bgl.		3.70	B3	3.60	3.70			

Remarks

Reason for Termination:

Terminated at agreed depth.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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AGS

REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		2.10 0.70 Pit Dimensions (m) Orientation:	
TP05	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 30/04/2025			
Ground Level (m AOD): 31.48		Eastings & Northings: 361688E 395510N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30	D1	0.10	0.20			
		31.18									
			Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine. (Till)			B1	0.70	0.80	HSV HSV HSV	0.80 0.80 0.80	(60)kPa (60)kPa (65)kPa
		2.20m									
		28.98	Firm mottled orange, brown and grey slightly gravelly, very sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium. (Till)		2.50	B2	2.50	2.60	HSV	2.60	(65)kPa
		0.40m									
		28.58			2.90	D2	2.80	2.90	HSV HSV	2.60 2.60	(65)kPa (70)kPa
		0.60m	Firm brown pale grey slightly clayey gravelly SILT. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. (Weathered Chester Formation)			B3	3.40	3.50			
		27.98									
			Hole Terminated at 3.50m bgl.								

Remarks

Reason for Termination:

Terminated at agreed depth.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation:	
TP06		Project Number: 233398			
		Client: Intermodal Logistics Park North Ltd			
		Plant: JCB 3CX	Start & End Date: 30/04/2025		
Ground Level (m AOD): 30.17		Eastings & Northings: 361618E 395540N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35	D1	0.70	0.80	HSV HSV HSV	0.60 0.60 0.60	(55)kPa (60)kPa (65)kPa
		29.82	(Topsoil) Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine.								
		2.25m	(Till)								
		27.57	Soft grey brown clayey sandy SILT. Sand is fine.		2.60	D2	2.70	2.80	HSV HSV HSV	2.70 2.70 2.70	(65)kPa (70)kPa (70)kPa
	1.00m	(Till)									
		26.57	Hole Terminated at 3.60m bgl.		3.60	D3	3.50	3.60			

Remarks

Reason for Termination:

Terminated at agreed depth.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North			2.10 0.70 Pit Dimensions (m) Orientation: Stability: Stable						
TP07		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 30/04/2025								
Ground Level (m AOD): 32.89		Eastings & Northings: 361895E 395569N			Engineer: DZ		Checker:				
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil) Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine. (Till)		0.30	B1	0.40	0.50	HSV HSV HSV	0.80 0.80 0.80	(85)kPa (90)kPa (90)kPa
		32.59									
		1.90m									
		30.69	Firm brown and grey slightly gravelly silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. (Till)		2.20	B2	2.30	2.40			
		0.60m									
		30.09									
		0.80m	Soft to firm brown sandy and gravelly SILT. Gravel is sub-angular to sub-rounded fine to coarse sandstone, quartzite and shale. Sand is fine. (Till)		2.80	B3	3.50	3.60			
		29.29									
		Hole Terminated at 3.60m bgl.									
Remarks											
Reason for Termination: Terminated at agreed depth.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:							
TP08		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 30/04/2025								
Ground Level (m AOD): 32.74		Eastings & Northings: 361882E 395471N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30	B1	0.10	0.30			
		32.44				Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine. (Till)	B2	0.70	0.80	HSV HSV HSV	0.60 0.60 0.60
		2.10m				D1	2.10	2.20			
		30.34	Red clayey, gravelly medium SAND with cobbles. Gravel is angular to sub-rounded medium to coarse sandstone and quartzite. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		2.40						
		1.00m				B3	3.30	3.40			
		29.34	Hole Terminated at 3.40m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
										BWB AGS REGISTERED USER 2023	

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LOCATION ID:		Project Name: ILP-North		1.95 0.70 Pit Dimensions (m) Orientation: •	
TP09	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 30/04/2025			
Ground Level (m AOD):		Eastings & Northings:		Stability: Stable	
				Engineer: DZ	Checker:

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30	D1	0.50	0.60	HSV HSV HSV	0.70 0.70 0.70	(65)kPa (65)kPa (70)kPa
		0.90m	Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone. Sand is fine. (Till)		1.20						
		2.00m	Red gravelly medium SAND with cobbles. Gravel is angular to sub-rounded medium to coarse sandstone and quartzite. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		3.20						
			Hole Terminated at 3.20m bgl.			D2	2.30	2.40			
						D3	3.00	3.20			

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.



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LOCATION ID:		Project Name: ILP-North			1.90 0.60 Pit Dimensions (m) Orientation: Stability: Stable												
TP10		Project Number: 233398															
		Client: Intermodal Logistics Park North Ltd															
		Plant: JCB 3CX	Start & End Date: 28/04/2025														
Ground Level (m AOD): 31.11		Eastings & Northings: 361643E 395414N			Engineer: DZ		Checker:										
Strata						Samples			In-Situ Tests								
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result						
▼		0.40m	Dark brown clayey silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil) Firm mottled orange, grey, red and brown very sandy CLAY. Sand is fine. (Till)		0.40	B1	0.90	1.00	HSV HSV HSV	0.80 0.80 0.80	(80)kPa (80)kPa (85)kPa						
		30.71															
		1.20m	Soft to firm very sandy clayey slightly gravelly SILT. Gravel is angular fine and medium sandstone and quartzite. Sand is fine. (Till)		1.60							D1	2.00	2.10	HSV HSV HSV	2.50 2.50 2.50	(50)kPa (60)kPa (65)kPa
		29.51										B2	2.30	2.50			
		1.90m										B3	3.40	3.50			
		27.61	Hole Terminated at 3.50m bgl.		3.50												
Remarks																	
Reason for Termination: Terminated at agreed depth.																	
Groundwater Notes: Wet soils below 1.60m bgl. Slow water inflow.																	
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.																	
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LOCATION ID:		Project Name: ILP-North		1.80 0.60 Pit Dimensions (m) Orientation: Stability: Stable														
TP11		Project Number: 233398																
		Client: Intermodal Logistics Park North Ltd																
		Plant: JCB 3CX	Start & End Date: 28/04/2025															
Ground Level (m AOD): 30.28		Eastings & Northings: 361440E 395372N		Engineer: DZ		Checker:												
Strata					Samples			In-Situ Tests										
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result							
		0.40m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.40	B1	0.20	0.40										
		29.88	(Topsoil)										B2	0.80	0.90			
			Soft to firm mottled brown, orange and grey very sandy silty CLAY. (Till)															
		1.70m																
		28.18	Red gravelly fine and medium SAND. Gravel is angular to sub-rounded medium and coarse sandstone. (Weathered Chester Formation)															
		1.40m			2.10	D2	2.80	2.90										
			Below 3.00m bgl: With cobbles. Cobbles are angular sandstone.															
		26.78	Hole Terminated at 3.50m bgl.		3.50	B3	3.30	3.50										
Remarks																		
Reason for Termination: Terminated at agreed depth.																		
Groundwater Notes: No groundwater encountered.																		
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.																		
										BWB AGS REGISTERED USER 2023								

TRIAL PIT LOG

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LOCATION ID:		Project Name: ILP-North		2.00 0.60 Pit Dimensions (m) Orientation: Stability: Stable							
TP12		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 28/04/2025								
Ground Level (m AOD): 29.28		Eastings & Northings: 361609E 395306N		Engineer: DZ		Checker:					
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35						
		28.93	(Topsoil)								
		0.85m	Brown, yellow and grey slightly gravelly fine and medium SAND. Gravel is sub-rounded to rounded fine and medium quartzite and sandstone.			B1	0.90	1.20			
		28.08	(Till)		1.20						
		1.00m	Soft brown, orange and grey very sandy slightly gravelly CLAY. Gravel is sub-angular to sub rounded fine to coarse sandstone, quartzite and shale. Sand is fine.			D2	1.50	1.60			
		27.08	(Till)		2.20	B2	1.90	2.10	HSV	2.00	(45)kPa
		1.20m	Red and orange gravelly fine and medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular sandstone.						HSV	2.00	(50)kPa
			(Weathered Chester Formation)								
		25.88	Hole Terminated at 3.40m bgl.		3.40	B3	3.30	3.40			
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											

TRIAL PIT LOG

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LOCATION ID:		Project Name: ILP-North		1.80 0.60 Pit Dimensions (m) Orientation: Stability: Unstable below 1.70m.			
TP13		Project Number: 233398					
		Client: Intermodal Logistics Park North Ltd					
		Plant: JCB 3CX	Start & End Date: 28/04/2025				
Ground Level (m AOD): 30.71		Eastings & Northings: 361758E 395319N		Engineer: DZ		Checker:	

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
▼		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30	D1	0.10	0.20	HSV	0.70	(110)kPa (90)kPa (95)kPa
		30.41				B1	0.60	0.70			
		1.40m	Light brown and yellow medium SAND. (Weathered Chester Formation)		1.70	B2	1.80	2.00			
		29.01									
1.60m	Below 2.50m: Soft clay bands up to 10cm.			3.30	D3 D2	3.10 3.20	3.20 3.30				
27.41	Hole Terminated at 3.30m bgl.										

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

Wet soils below 1.70m bgl. Slow water inflow.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:		Project Name: ILP-North		2.00 0.60 Pit Dimensions (m) Orientation:							
TP14		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 28/04/2025					Stability: Stable			
Ground Level (m AOD): 28.46		Eastings & Northings: 361843E 395273N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.30						
		28.16	(Topsoil)								
		0.80m	Soft dark brown, black silty CLAY with brown and green partially decomposed leaves and rootlets.()			B1	0.70	0.90	HSV	0.60	(50)kPa
									HSV	0.60	(55)kPa
									HSV	0.60	(60)kPa
		27.36	Firm brown and pale grey very silty slightly gravelly CLAY. Gravel is sub-angular to sub-rounded medium sandstone.		1.10	B2	1.10	1.20	HSV	1.10	(100)kPa
			(Till)						HSV	1.10	(105)kPa
									HSV	1.10	(90)kPa
		1.90m									
		25.46	Red slightly gravelly fine and medium SAND. Gravel is sub-angular to sub-rounded medium and coarse sandstone.		3.00	D1	2.90	3.00			
		0.50m	(Weathered Chester Formation)			B3	3.20	3.50			
		24.96			3.50						
			Hole Terminated at 3.50m bgl.								
Remarks											
Reason for Termination:											
Terminated at agreed depth.											
Groundwater Notes:											
No groundwater encountered.											
Other Remarks:											
1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

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LOCATION ID:	Project Name: ILP-North			1.90 0.60 Pit Dimensions (m) Orientation:		
TP15	Project Number: 233398					
	Client: Intermodal Logistics Park North Ltd					
	Plant: JCB 3CX	Start & End Date: 28/04/2025				
Ground Level (m AOD): 30.43		Eastings & Northings: 362006E 395169N			Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35	B1	0.10	0.30			
		30.08	(Topsoil)			D1	0.50	0.60	HSV	0.55	(70)kPa
			Firm mottled brown, orange and yellow silty, very sandy and slightly gravelly CLAY. Gravel is sub-angular to rounded medium and coarse sandstone and quartzite. Sand is fine and medium.						HSV	0.55	(75)kPa
			(Till)			B2	1.00	1.30	HSV	0.55	(85)kPa
			at 0.40m bgl: Clay drainage pipe.								
		2.05m							HSV	1.30	(75)kPa
									HSV	1.30	(75)kPa
						D2	2.00	2.10	HSV	2.00	(80)kPa
									HSV	2.00	(85)kPa
		28.03			2.40	B3	2.60	2.70	HSV	2.00	(90)kPa
		0.90m	Firm brown very gravelly sandy CLAY with occasional cobbles. Gravel is angular to rounded fine to coarse sandstone, quartzite and shale. Cobbles are sub-angular and sub-rounded sandstone. Sand is fine.								
			(Till)								
		27.13			3.30	D3	3.20	3.30			
			Hole Terminated at 3.30m bgl.								

Remarks

Reason for Termination:
Terminated due to hard dig.

Groundwater Notes:
No groundwater encountered.

Other Remarks:
1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:		Project Name: ILP-North			1.80 0.70 Pit Dimensions (m) Orientation: Stability: Stable						
TP16		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 29/04/2025								
Ground Level (m AOD): 33.90		Eastings & Northings: 361434E 395134N			Engineer: DZ		Checker:				
Strata						Samples			In-Situ Tests		
Groundwa ter Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub- rounded to rounded fine and medium quartzite.		0.35	D1	0.10	0.20			
		33.55	(Topsoil)								
		0.95m	Red gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)			B1	0.70	0.90			
		32.60			1.30	D2	1.20	1.30			
Hole Terminated at 1.30m bgl.											
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:		Project Name: ILP-North			2.00 0.60 Pit Dimensions (m) Orientation: Stability: Stable						
TP17		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 28/04/2025								
Ground Level (m AOD): 32.68		Eastings & Northings: 361622E 395114N			Engineer: DZ		Checker:				
Strata						Samples			In-Situ Tests		
Groundwa ter Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m 32.33	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub- rounded to rounded fine and medium quartzite. (Topsoil)		0.35	B1	0.20	0.30			
		1.25m	Red, orange and yellow fine and medium SAND. (Weathered Chester Formation)			B2	1.40	1.50			
		31.08 0.50m 30.58	Red gravelly fine and medium SAND with cobbles. Gravel is angular to sub- angular medium and coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.60 2.10	B3	2.00	2.10			
			Hole Terminated at 2.10m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation: Stability: Stable								
TP18		Project Number: 233398										
		Client: Intermodal Logistics Park North Ltd										
		Plant: JCB 3CX	Start & End Date: 29/04/2025									
Ground Level (m AOD): 30.59		Eastings & Northings: 361912E 395017N		Engineer: DZ		Checker:						
Strata						Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30	B1	0.10	0.20				
		30.29					B2	0.40	0.50			
		0.60m		Red gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone. (Weathered Chester Formation)		0.90						
		29.69	Red gravelly medium SAND with cobbles. Gravel is angular to sub-rounded medium to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)									
		1.10m					B3	1.70	2.00			
		28.59	Hole Terminated at 2.00m bgl.		2.00							
Remarks												
Reason for Termination: Terminated on rock.												
Groundwater Notes: No groundwater encountered.												
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.												
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LOCATION ID:		Project Name: ILP-North			2.10 0.70 Pit Dimensions (m) Orientation: Stability: Stable						
TP19		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 29/04/2025								
Ground Level (m AOD): 33.22		Eastings & Northings: 361439E 395040N			Engineer: DZ		Checker:				
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.40m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.40	B1	0.20	0.40			
		32.82	(Topsoil)								
		0.50m	Red medium SAND. (Weathered Chester Formation)		0.90	D1	0.60	0.70			
		32.32	Red, orange and yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular to sub-angular sandstone. (Weathered Chester Formation)			B2	1.00	1.30			
		1.20m									
		31.12	Hole Terminated at 2.10m bgl.		2.10	D2	2.00	2.10			
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

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LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:	
TP20	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 29/04/2025			
Ground Level (m AOD): 33.22		Eastings & Northings: 361439E 395040N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
▼		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35	B1	0.10	0.30	HSV HSV HSV	0.70	(90)kPa (90)kPa (95)kPa
		32.87	(Topsoil)			B2	0.50	0.70			
		1.25m	Firm mottled grey, brown and orange silty, sandy and slightly gravelly CLAY. Gravel is sub-angular to rounded fine and medium sandstone, quartzite and rare shale. Sand is fine and medium.								
			(Till)								
			at 0.50m bgl: Clay drainage pipe.								
		31.62	Red slightly clayey fine and medium SAND.		1.60	D1	1.50	1.60			
		0.20m	(Weathered Chester Formation)		1.80	D2	1.70	1.80			
		31.42	Red gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone.								
		0.90m	(Weathered Chester Formation)								
		30.52	Hole Terminated at 2.70m bgl.		2.70	B3	2.60	2.70			

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

Wet soils between 1.60m bgl and 1.80.0m bgl.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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TRIAL PIT LOG

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LOCATION ID:	Project Name: ILP-North			2.00 0.70 Pit Dimensions (m) Orientation:							
TP21	Project Number: 233398										
	Client: Intermodal Logistics Park North Ltd										
	Plant: JCB 3CX	Start & End Date: 29/04/2025									
Ground Level (m AOD): 31.10		Eastings & Northings: 361412E 394787N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.30						
		30.80									
		0.60m									
		30.20									
		0.20m									
		30.00	Firm mottled orange, brown and grey silty sandy CLAY. Sand is fine and medium. (Till)			D1	0.60	0.70	HSV	0.60	(90)kPa
			at 0.50m bgl: Plastic drainage pipe.						HSV	0.60	(95)kPa
			Firm mottled light brown and light grey CLAY. (Till)			B1	1.00	1.10	HSV	1.00	(80)kPa
									HSV	1.00	(80)kPa
									HSV	1.00	(85)kPa
		1.40m	Red and yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)								
		28.60	Hole Terminated at 2.50m bgl.		2.50	B2	2.30	2.50			
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:	Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:		
TP22	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 29/04/2025			
Ground Level (m AOD): 33.15		Eastings & Northings: 361916E 394740N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.30	D1	0.10	0.20			
		32.85	(Topsoil)				B1	0.50	0.60		
		1.50m	Red gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone.								
		31.35	(Weathered Chester Formation)								
		1.10m	Red gravelly medium SAND with cobbles. Gravel is angular to sub-rounded medium to coarse sandstone. Cobbles are angular and sub-angular sandstone.		1.80						
	30.25	(Weathered Chester Formation)				B2	2.70	2.80			
			Hole Terminated at 2.90m bgl.		2.90	D2	2.80	2.90			

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation:			
TP23		Project Number: 233398					
		Client: Intermodal Logistics Park North Ltd					
		Plant: JCB 3CX	Start & End Date: 29/04/2025				
Ground Level (m AOD): 33.61		Eastings & Northings: 361797E 394789N		Engineer: DZ		Checker:	

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.30	D1	0.10	0.20			
		33.31	(Topsoil)								
			Soft to firm red brown very sandy silty and slightly gravelly CLAY. Gravel is sub-angular to rounded fine and medium quartzite.			B1	0.60	0.70			
		1.20m	(Till)								
			Red clayey medium SAND.		1.50	B2	1.60	1.80			
		32.11	(Weathered Chester Formation)								
		0.80m									
		31.31	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded medium to coarse sandstone. Cobbles are angular and sub-angular sandstone.		2.30	B3	2.30	2.50			
		0.20m	(Weathered Chester Formation)		2.50						
		31.11	Hole Terminated at 2.50m bgl.								

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:		Project Name: ILP-North		2.10 0.70 Pit Dimensions (m) Orientation: Stability: Stable							
TP24		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 29/04/2025								
Ground Level (m AOD): 31.15		Eastings & Northings: 361609E 394587N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown clayey silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35						
		30.80	(Topsoil)			B1	0.50	0.60			
			Firm mottled orange, brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone. Sand is fine.			D1	0.90	1.00			
		1.55m	(Till)								
			at 0.50m bgl: Clay drainage pipe.								
		29.25	Red and yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular and sub-angular sandstone.		1.90						
		0.50m	(Weathered Chester Formation)			B2	2.20	2.40			
		28.75	Between 1.90m bgl and 2.40m bgl: Up to 10cm pockets of yellow medium SAND.		2.40						
			Hole Terminated at 2.40m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:		Project Name: ILP-North		1.80 0.70 Pit Dimensions (m) Orientation:							
TP25		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 29/04/2025					Stability: Stable			
Ground Level (m AOD): 34.31		Eastings & Northings: 361469E 394536N		Engineer: DZ		Checker:					
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.30	D1	0.10	0.20			
		34.01	(Topsoil)								
		0.50m	Red gravelly medium SAND. Gravel is angular to sub-rounded medium and coarse sandstone.		0.80	D2	0.50	0.70			
		33.51	(Weathered Chester Formation)								
		0.90m	Red and yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular and sub-angular sandstone.			B1	1.20	1.30			
		32.61	(Weathered Chester Formation)		1.70	B2	1.60	1.70			
			Hole Terminated at 1.70m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:	
TP26		Project Number: 233398			
		Client: Intermodal Logistics Park North Ltd			
		Plant: JCB 3CX	Start & End Date: 29/04/2025		
Ground Level (m AOD): 29.87		Eastings & Northings: 361696E 394531N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown clayey silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite. (Topsoil)		0.35	D1	0.10	0.20			
		29.52									
		0.55m	Soft to firm mottled orange, brown and grey slightly gravelly silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone. (Till) <i>at 0.50m bgl: Clay drainage pipe.</i>		0.90	B1	0.50	0.70	HSV	0.70	(50)kPa
		28.97									
		0.60m	Red and brown fine and medium SAND. (Weathered Chester Formation)		1.50	B2	1.20	1.30	HSV	0.70	(55)kPa
		28.37									
		1.30m	Light brown, yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular to sub-angular sandstone. (Weathered Chester Formation)		2.80	B3	2.70	2.80			(60)kPa
		27.07									
			Hole Terminated at 2.80m bgl.								

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:	Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:		
TP27	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 29/04/2025			
Ground Level (m AOD): 32.47		Eastings & Northings: 361637E 394368N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.30	B1	0.10	0.30			
		32.17	(Topsoil)								
			Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded medium and coarse sandstone.			B2	0.80	0.90			
		1.60m	(Weathered Chester Formation)								
			Between 0.30m bgl and 1.90m bgl: Up to 15cm pockets of yellow medium SAND.			D1	1.50	1.70			
		30.57			1.90						
		0.30m	Red and yellow gravelly medium SAND with occasional cobbles. Gravel is angular to sub-rounded medium and coarse sandstone. Cobbles are angular and sub-angular sandstone.		2.20	B3	2.00	2.20			
		30.27	(Weathered Chester Formation)								
			Hole Terminated at 2.20m bgl.								

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:	Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation: Stability: Stable								
TP28	Project Number: 233398										
	Client: Intermodal Logistics Park North Ltd										
	Plant: JCB 3CX	Start & End Date: 01/05/2025									
Ground Level (m AOD): 33.36		Eastings & Northings: 361363E 394366N		Engineer: DZ		Checker:					
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite.		0.30	B1	0.10	0.30			
		33.06	(Topsoil)								
			Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone.			B2	0.90	1.00			
		1.80m	(Weathered Chester Formation)								
		31.26	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone.		2.10	B3	2.10	2.30			
		0.20m	(Weathered Chester Formation)		2.30	D1	2.10	2.30			
		31.06	Hole Terminated at 2.30m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:	Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation:								
TP29	Project Number: 233398										
	Client: Intermodal Logistics Park North Ltd										
	Plant: JCB 3CX	Start & End Date: 01/05/2025									
Ground Level (m AOD): 30.58		Eastings & Northings: 361389E 394256N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.70m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil)			B1	0.50	0.60			
		29.88	Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone. (Weathered Chester Formation)		0.70	B2	1.50	1.60			
		1.80m									
		28.08	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		2.50						
		1.10m									
		26.98	Hole Terminated at 3.60m bgl.		3.60	D1	3.50	3.60			
Remarks											
Reason for Termination: Terminated at agreed depth.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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LOCATION ID:	Project Name: ILP-North			1.90 0.70 Pit Dimensions (m) Orientation: •		
TP30	Project Number: 233398					
	Client: Intermodal Logistics Park North Ltd					
	Plant: JCB 3CX	Start & End Date: 01/05/2025				
Ground Level (m AOD): 33.87		Eastings & Northings: 361275E 394184N		Stability: Stable		
				Engineer: DZ	Checker:	

Strata						Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil)		0.30	B1	0.10	0.30			(120)kPa (120)kPa (130)kPa	
		33.57										
		0.80m	Firm brown and grey slightly gravelly silty sandy CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium.	1.10	B2	0.60	0.70	HSV HSV HSV				0.60 0.60 0.60
		32.77	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.90	B3	1.70	1.90				
0.80m												
		31.97	Hole Terminated at 1.90m bgl.									

Remarks	
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Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.



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LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation: •	
TP31	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 01/05/2025			
Ground Level (m AOD): 35.10		Eastings & Northings: 361222E 394063N		Engineer: DZ	Checker:

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.40m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite.			D1	0.20	0.40			
		34.70	(Topsoil)		0.40	D2	0.40	0.60			
		0.20m	Firm mottled grey, orange and brown very sandy silty CLAY.		0.60				HSV	0.60	(60)kPa
		34.50	(Till)						HSV	0.60	(65)kPa
			Firm mottled grey, orange and brown very silty, sandy and gravelly CLAY. Gravel is angular to sub-rounded fine and medium sandstone, quartzite and shale.						HSV	0.60	(70)kPa
		1.60m	(Till)			B1	1.50	1.60			
									HSV	1.60	(65)kPa
									HSV	1.60	(70)kPa
									HSV	1.60	(70)kPa
		32.90	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-		2.20						
		0.40m	rounded fine to coarse sandstone. Cobbles are angular and sub-angular								
		32.50	sandstone.		2.60	B2	2.50	2.60			
			(Weathered Chester Formation)								
			Hole Terminated at 2.60m bgl.								

Remarks	
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Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.



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LOCATION ID:		Project Name: ILP-North		1.95 0.70 Pit Dimensions (m) Orientation:	
TP32	Project Number: 233398				
	Client: Intermodal Logistics Park North Ltd				
	Plant: JCB 3CX	Start & End Date: 01/05/2025			
Ground Level (m AOD): 31.74		Eastings & Northings: 361161E 394419N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil)		0.30	B1	0.10	0.20			
		31.44									
		0.80m		Firm to stiff brown and grey slightly gravelly silty sandy CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium.			D1	0.60	0.70	HSV	0.60
		30.64	(Till)		1.10	B2	0.90	1.10	HSV	0.60	(110)kPa
		1.10m	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)								
		29.54	Hole Terminated at 2.20m bgl.		2.20	B3	2.00	2.20			

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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LOCATION ID:		Project Name: ILP-North		1.80 0.70 Pit Dimensions (m) Orientation:								
TP33		Project Number: 233398										
		Client: Intermodal Logistics Park North Ltd										
		Plant: JCB 3CX	Start & End Date: 01/05/2025					Stability: Stable				
Ground Level (m AOD): 32.09		Eastings & Northings: 361087E 394511N		Engineer: DZ		Checker:						
Strata						Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded fine to medium quartzite. (Topsoil) Firm brown and grey slightly gravelly silty sandy CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium. (Till) Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		0.30	D1	0.10	0.20				
		31.79					B1	0.50	0.70			
		0.50m										
		31.29			0.80							
		1.30m				B2	1.90	2.00				
		29.99			2.10	D2	2.00	2.10				
Hole Terminated at 2.10m bgl.												
Remarks												
Reason for Termination: Terminated on rock.												
Groundwater Notes: No groundwater encountered.												
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.												
BWB CAF GROUP COMPANY AGS REGISTERED USER 2023												

TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation:								
TP34		Project Number: 233398										
		Client: Intermodal Logistics Park North Ltd										
		Plant: JCB 3CX	Start & End Date: 01/05/2025					Stability: Stable				
Ground Level (m AOD): 33.59		Eastings & Northings: 361193E 394559N		Engineer: DZ		Checker:						
Strata						Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result	
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil) Soft red brown very sandy CLAY. Sand is fine and medium. (Till)		0.30	D1	0.10	0.20				
		33.29					D2	0.60	0.70	HSV	0.70	(40)kPa
		1.40m					B1	1.20	1.30	HSV	0.70	(45)kPa
		31.89	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.70							
		0.40m					B2	2.00	2.10			(50)kPa
		31.49			2.10							
Hole Terminated at 2.10m bgl.												
Remarks												
Reason for Termination: Terminated on rock.												
Groundwater Notes: No groundwater encountered.												
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.												
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TRIAL PIT LOG

Scale: 1:50

Sheet 1 of 1

Sheet 1 of 1

LOCATION ID:	Project Name: ILP-North			1.95 0.70 Pit Dimensions (m) Orientation: •		
TP35	Project Number: 233398					
	Client: Intermodal Logistics Park North Ltd					
	Plant: JCB 3CX	Start & End Date: 02/05/2025				
Ground Level (m AOD): 31.98		Eastings & Northings: 361247E 394744N		Stability: Stable		
				Engineer: DZ	Checker:	

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite.		0.30	B1	0.10	0.30			
		31.68	(Topsoil)			B2	0.40	0.50			
		0.30m	Firm brown and grey slightly gravelly silty sandy CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium.		0.60	D1	0.70	0.80			
		31.38	(Till)								
		1.30m	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone.			B3	1.70	1.90			
		30.08	(Weathered Chester Formation)		1.90						
			Hole Terminated at 1.90m bgl.								

Remarks

Reason for Termination:

Terminated on rock.

Groundwater Notes:

No groundwater encountered.

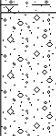
Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.



TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		1.90 0.70 Pit Dimensions (m) Orientation: Stability: Stable							
TP36		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 02/05/2025								
Ground Level (m AOD): 32.74		Eastings & Northings: 361279E 395011N		Engineer: DZ		Checker:					
Strata						Samples		In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded fine to medium quartzite. (Topsoil)		0.30	D1	0.10	0.20			
		32.44					D2	0.40	0.50		
		1.00m	Firm brown and grey slightly gravelly silty sandy CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale. Sand is fine and medium. (Till)			B1	0.70	0.80			
		31.44									
		0.90m	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.30	B2	2.00	2.20			
		30.54									
			Hole Terminated at 2.20m bgl.		2.20						
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation: Stability: Stable							
TP37		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 02/05/2025								
Ground Level (m AOD): 36.67		Eastings & Northings: 361021E 394963N		Engineer: DZ		Checker:					
Strata						Samples			In-Situ Tests		
Groundwa ter Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite.		0.30	B1	0.10	0.20			
		36.37	(Topsoil)			B2	0.50	0.70			
		1.00m	Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone and quartzite.								
			(Weathered Chester Formation)								
		35.37	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone.		1.30	B3	1.80	2.00			
		0.80m	(Weathered Chester Formation)			D1	2.00	2.10			
		34.57	Hole Terminated at 2.10m bgl.		2.10						
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:	Project Name: ILP-North			2.10 0.70 Pit Dimensions (m) Orientation: Stability: Stable							
TP38	Project Number: 233398										
	Client: Intermodal Logistics Park North Ltd										
	Plant: JCB 3CX	Start & End Date: 02/05/2025									
Ground Level (m AOD): 36.00		Eastings & Northings: 361147E 395152N			Engineer: DZ		Checker:				
Strata						Samples			In-Situ Tests		
Groundwa ter Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil)		0.30	D1	0.10	0.20			
		35.70									
		1.10m	Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone. (Weathered Chester Formation)			B1	0.70	0.80			
		34.60	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.40	B2	1.80	1.90			
		0.50m									
		34.10			1.90						
Hole Terminated at 1.90m bgl.											
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

Scale: 1:50Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation:							
TP39		Project Number: 233398									
		Client: Intermodal Logistics Park North Ltd									
		Plant: JCB 3CX	Start & End Date: 02/05/2025					Stability: Stable			
Ground Level (m AOD): 35.44		Eastings & Northings: 361173E 395235N		Engineer: DZ		Checker:					
Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Dark brown slightly gravelly SILT with rootlets. Gravel is sub-rounded to rounded fine to medium quartzite. (Topsoil)		0.30	B1	0.10	0.30			
		35.14					B2	0.50	0.70		
		0.90m	Red and yellow gravelly medium SAND. Gravel is angular to sub-rounded fine to coarse sandstone. (Weathered Chester Formation)								
		34.24	Red and yellow gravelly medium SAND with cobbles. Gravel is angular to sub-rounded fine to coarse sandstone. Cobbles are angular and sub-angular sandstone. (Weathered Chester Formation)		1.20	D1	1.50	1.60			
		0.50m					B3	1.60	1.70		
		33.74			1.70						
			Hole Terminated at 1.70m bgl.								
Remarks											
Reason for Termination: Terminated on rock.											
Groundwater Notes: No groundwater encountered.											
Other Remarks: 1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.											
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TRIAL PIT LOG

Scale: 1:50

Sheet 1 of 1

LOCATION ID:		Project Name: ILP-North		2.00 0.70 Pit Dimensions (m) Orientation:	
TP72		Project Number: 233398			
		Client: Intermodal Logistics Park North Ltd			
		Plant: JCB 3CX	Start & End Date: 30/04/2025		
Ground Level (m AOD): 33.17		Eastings & Northings: 362004E 395678N		Engineer: DZ	Checker:

Strata					Samples			In-Situ Tests			
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.35m	Dark brown silty slightly gravelly fine SAND with rootlets. Gravel is sub-rounded to rounded fine and medium quartzite.		0.35	D1	0.10	0.20			
		32.82	(Topsoil)								
		0.25m	Firm light brown and light grey CLAY.		0.60						
		32.57	(Lacustrine Deposits)								
			Firm mottled brown and grey slightly gravelly, sandy and silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale.			B1	1.00	1.20	HSV HSV HSV	0.70 0.70 0.70	(60)kPa (60)kPa (65)kPa
		1.60m	(Till)								
			Brown orange silty medium SAND.		2.20						
		30.97	(Till)			B2	2.80	2.90			
		0.80m									
		30.17	Firm brown and grey slightly gravelly silty CLAY. Gravel is sub-angular and sub-rounded fine and medium sandstone, quartzite and shale.		3.00	D2	3.10	3.20	HSV HSV HSV	3.10 3.10 3.10	(55)kPa (60)kPa (60)kPa
		0.50m	(Till)								
		29.67	Hole Terminated at 3.50m bgl.		3.50						

Remarks

Reason for Termination:

Terminated at agreed depth.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination recorded. 2. Trial Pit backfilled with arisings.

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Appendix C

Appendix C: Scheduled Monuments and Listed Buildings

Huskisson Memorial on south side of railway, 60 metres from road,

Heritage Category: Listed Building

Grade: II

List Entry Number: 1075900

Details:

Memorial. 1831. Painted stone. The memorial is in the form of a simplified Classical temple, being single celled without a portico. The flanking antae have dentilated panels, and support a plain frieze, dentilated cornice and a blocking course. Within the cell is an inscribed tablet that is flanked by pilasters supporting an entablature adorned with wreaths. The tablet, (a reproduction of the original which is kept at the National Railway Museum in York) is a memorial to William Huskisson, MP for Liverpool. Huskisson is reputed to have been the world's first fatality of the Railway Age, being knocked down and fatally injured by the Rocket during the opening celebrations of the Liverpool and Manchester Railway in 1830.

The Castle Hill motte and bailey and bowl barrow

Heritage Category: Scheduled Monument

List Entry Number: 1009867

Reasons for Designation:

Motte and bailey castles are medieval fortifications introduced into Britain by the Normans. They comprised a large conical mound of earth or rubble, the motte, surmounted by a palisade and a stone or timber tower. In a majority of examples an embanked enclosure containing additional buildings, the bailey, adjoined the motte. Motte castles and motte-and-bailey castles acted as garrison forts during offensive military operations, as strongholds, and, in many cases, as aristocratic residences and as centres of local or royal administration. Built in towns, villages and open countryside, motte and bailey castles generally occupied strategic positions dominating their immediate locality and, as a result, are the most visually impressive monuments of the early post-Conquest period surviving in the modern landscape. Over 600 motte castles or motte-and-bailey castles are recorded nationally, with examples known from most regions. As one of a restricted range of recognised early post-Conquest monuments, they are particularly important for the study of Norman Britain and the development of the feudal system. Although many were occupied for only a short period of time, motte castles continued to be built and occupied from the 11th to the 13th centuries, after which they were superseded by other types of castle.

The motte at Castle Hill, Newton, remains reasonably well preserved, despite the earth-moving activities which have obscured the bailey which originally lay at its base. The site is unusual in that limited excavation into the base of the mound in the 19th century revealed evidence of burials, indicating that the medieval motte was constructed over an earlier, possibly Prehistoric, burial monument.

Details:

The monument is Castle Hill motte, Newton. The motte is situated on a commanding site at the northeast corner of an elevated platform within the elbow formed by the deep-cut valley of the River Dene - latterly dammed to form Newton Lake. The monument includes a slightly oval mound of sandy earth raised upon largely bare sandstone bedrock. The motte measures c.5m high and has diameters of 32m at the base and 13m across the summit. There are faint traces of an encircling ditch some 10m wide with a maximum depth of 0.2m on the motte's southwest side. All traces of the associated bailey have been obscured by massive earthmoving operations undertaken during construction of the nearby motorway. Limited excavation of the motte was undertaken in 1843. An opening 1.2m square was made on the western side of the mound at the level of the original ground surface. This was driven forward horizontally towards the centre of the motte until it met a shaft 1.8m diameter that was sunk at the same time from the top of the mound. From this point a tunnel 0.9m square was driven horizontally along the original ground surface into the south side of the motte. At a distance of some 3m from the centre of the motte a narrow chamber 6.4m long and 0.6m high, possessing an arched roof made of pressed clay, was found. Within this chamber lay wood ash and burnt bone. Newton was the seat of a medieval barony, while documentary evidence from the 15th century refers to Castle Hill Field.

The Bowl barrow west of Highfield Lane

Heritage Category: Scheduled Monument

List Entry Number: 1011124

Reasons for Designation:

Bowl barrows, the most numerous form of round barrows, are funerary monuments dating from the Late Neolithic period to the Late Bronze Age, with most examples belonging to the period 2400-1500 BC. They were constructed as earthen or rubble mounds, sometimes ditched, which covered single or multiple burials. They occur either in isolation or grouped as cemeteries and often acted as a focus for burials in later periods. Often superficially similar, although differing widely in size, they exhibit regional variations in form and a diversity of burial practices. There are over 10,000 surviving bowl barrows recorded nationally (many more have already been destroyed), occurring across most of lowland Britain. Often occupying prominent locations, they are a major

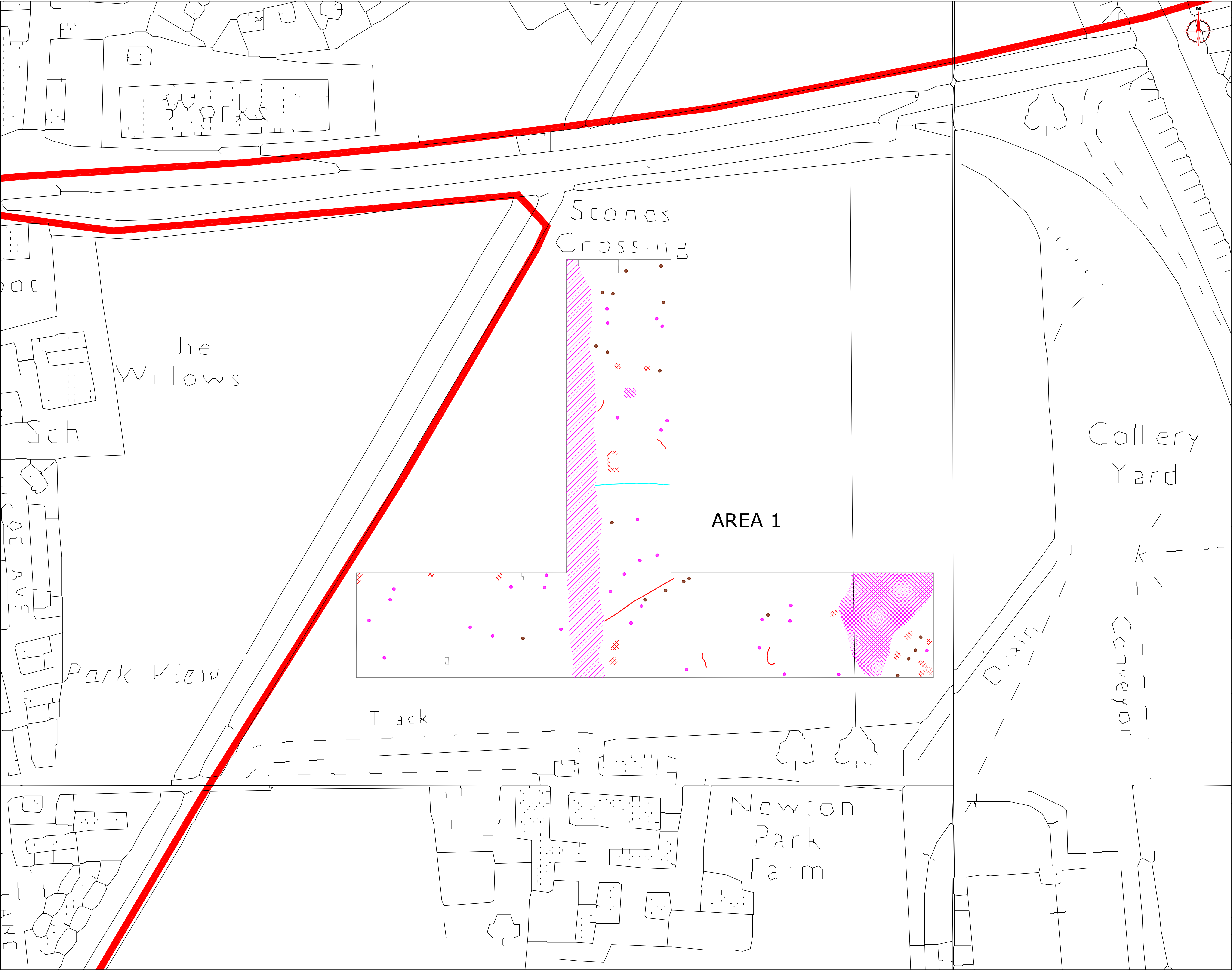
historic element in the modern landscape and their considerable variation of form and longevity as a monument type provide important information on the diversity of beliefs and social organisations amongst early prehistoric communities. They are particularly representative of their period and a substantial proportion of surviving examples are considered worthy of protection.

Despite a combination of limited antiquarian investigation and regular ploughing, the bowl barrow west of Highfield Lane survives reasonably well. This investigation located human remains and pottery, and further evidence of interments and grave goods will exist within the mound and upon the old landsurface beneath.

Details:

The monument is a bowl barrow located on flat land west of Highfield Lane. It includes an oval-shaped earthen mound up to 1.2m high with maximum dimensions of 37m north-south by 25m east-west. Limited antiquarian investigation of the barrow in 1859 located fragments of funerary urns and cremated human bones.

Appendix D



Amendments		
Issue No.	Date	Description
-	-	-
-	-	-

KEY

- Area of magnetic debris/disturbance- possibly related to pipe/cable
- Area of magnetic debris/disturbance
- Positive area anomaly- cut feature of possible archaeological origin
- Positive linear anomaly - cut feature of possible archaeological origin
- Linear anomaly- possibly related to land drain
- Discrete positive anomaly with negative response - ferrous object
- Discrete positive anomaly - possible pit

Job No.	2324	Survey Date	MAY 07
Client	OXFORD ARCHAEOLOGY NORTH		
Project Title	GEOPHYSICAL SURVEY- NEWTON-LE-WILLOWS, MERSEYSIDE		
Subject	INTERPRETATION- AREA 1		

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0m 10 20 30 40 50 60m

Scale 1:1000

Plot	Checked by	Issue No.
A1	PPB	01
Date	Drawn by	Figure No.
JUNE 07	RAJS	07



Amendments

Issue No.	Date	Description
-	-	-
-	-	-
-	-	-

KEY

	Positive area anomaly- cut feature of possible archaeological origin
	Positive linear anomaly - cut feature of possible archaeological origin
	Agricultural mark
	Linear anomaly- possibly related to land drain
	Discrete positive anomaly with negative response - ferrous object
	Discrete positive anomaly - possible pit

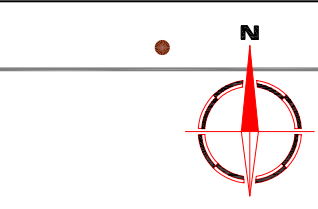
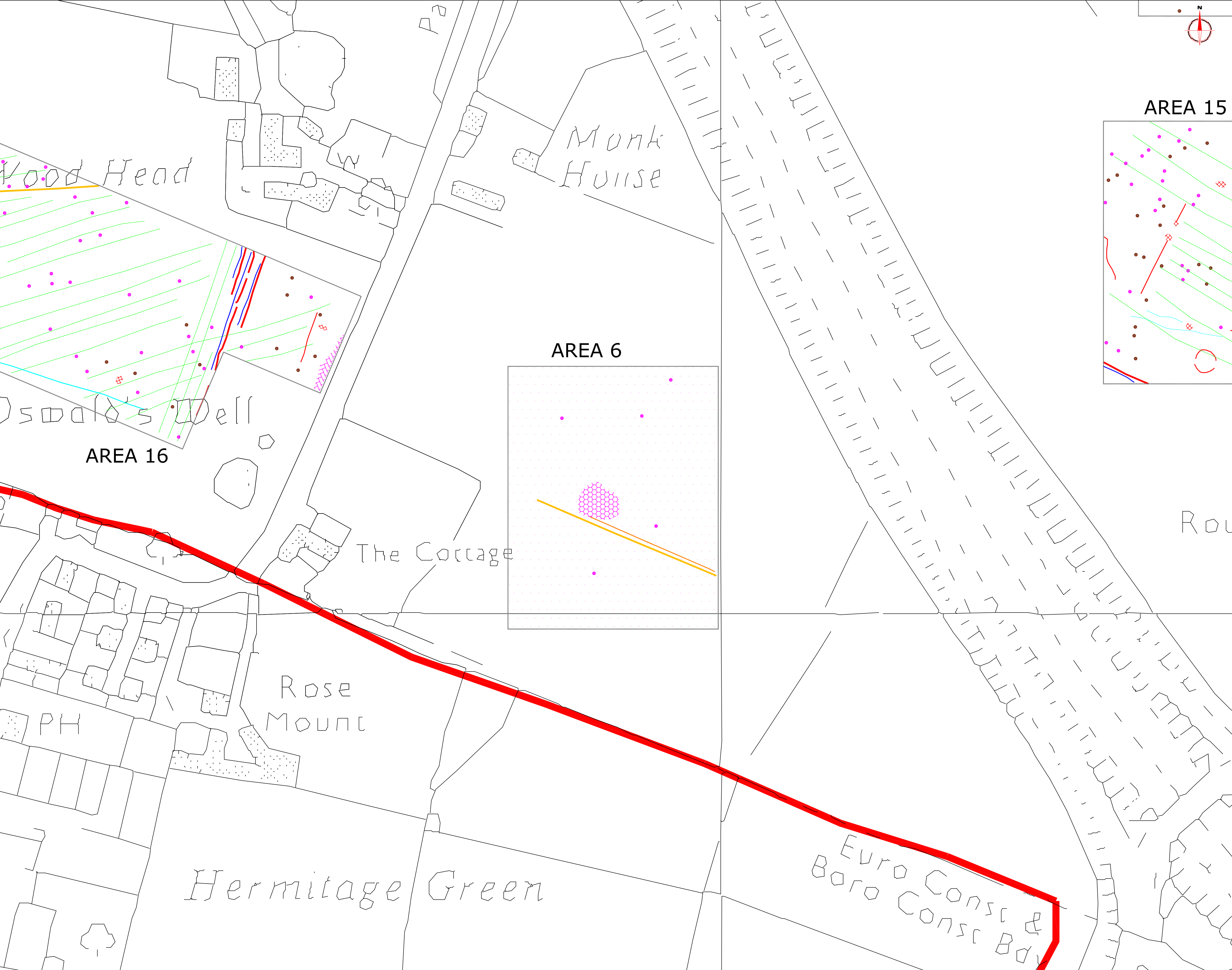
Job No.	2324	Survey Date	MAY 07
Client			
OXFORD ARCHAEOLOGY NORTH			
Project Title			
GEOPHYSICAL SURVEY- NEWTON-LE-WILLOWS, MERSEYSIDE			
Subject			
INTERPRETATION- AREA 5			

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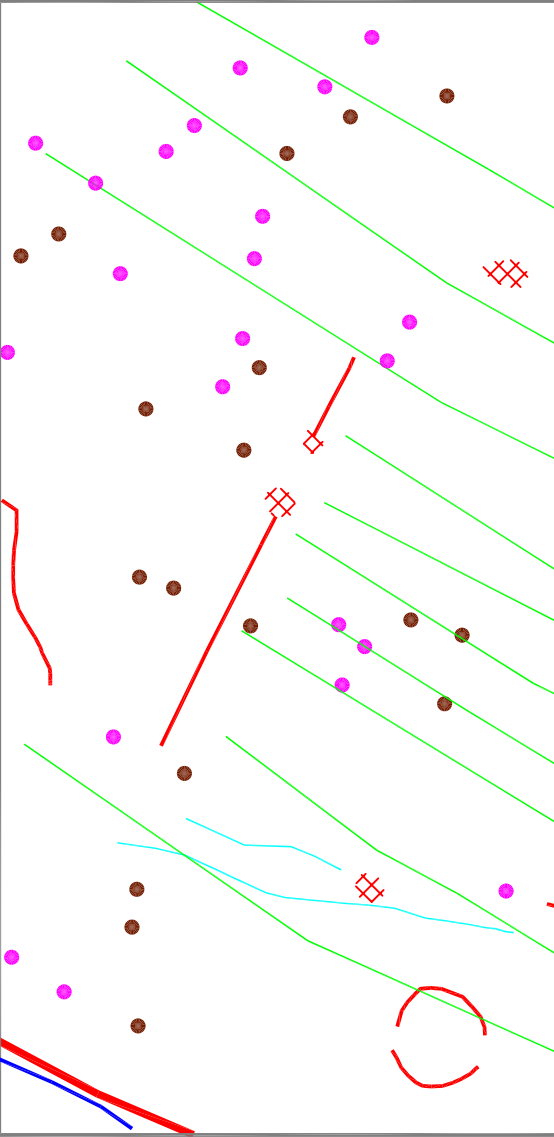
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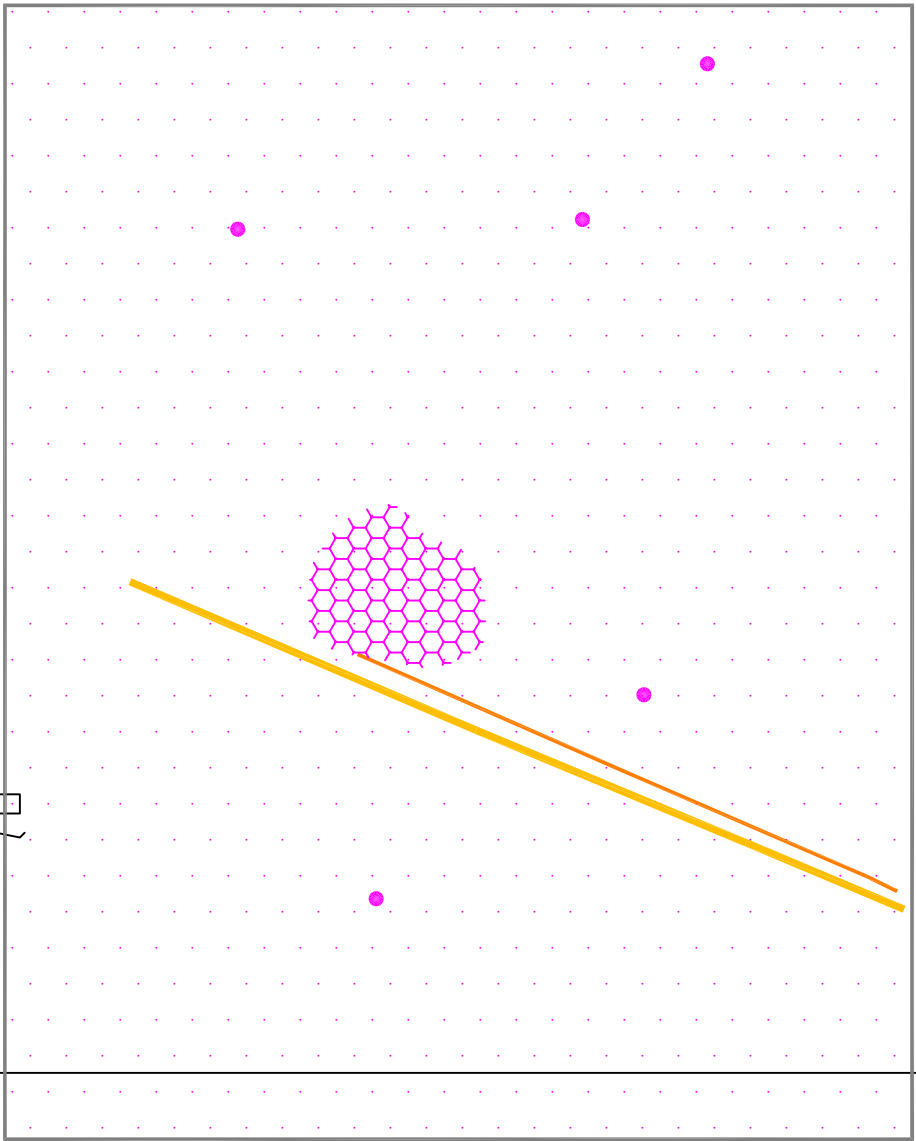
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A1	PPB	01
Date	Drawn by	Figure No.
JUNE 07	RAJS	12



AREA 15



AREA 6



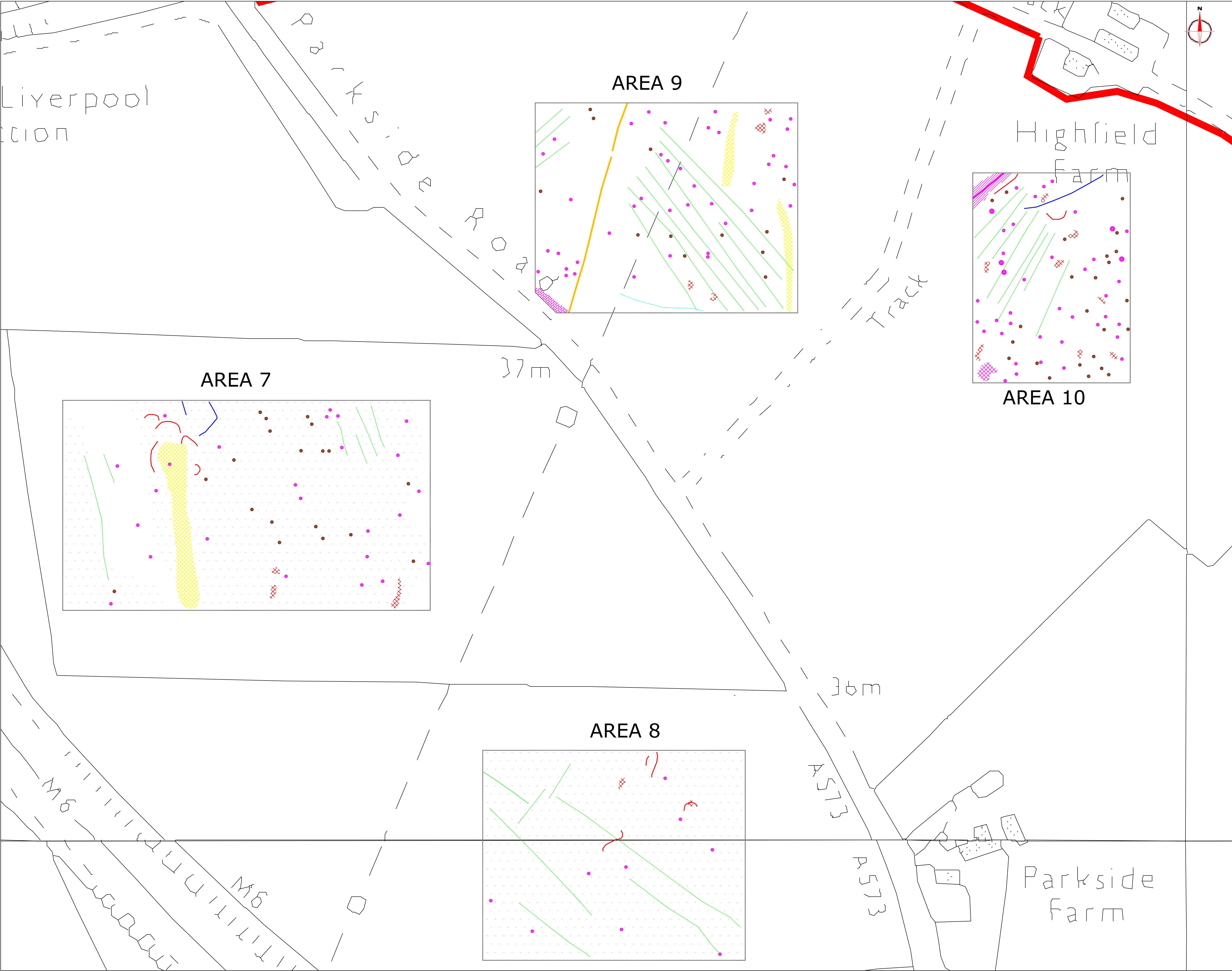
Amendments		
Issue No.	Date	Description
-	-	-
-	-	-

KEY	
	Positive area anomaly- cut feature of possible archaeological origin
	Positive area anomaly with associated negative response- possible thermomennant feature
	Positive linear anomaly- former field boundary
	Negative linear anomaly- former field boundary
	Discrete positive anomaly with negative response - ferrous object

Job No.	2324	Survey Date	MAY 07
Client			
OXFORD ARCHAEOLOGY NORTH			
Project Title			
GEOPHYSICAL SURVEY- NEWTON-LE-WILLOWS, MERSEYSIDE			
Subject			
INTERPRETATION- AREA 6			

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Scale	1:1000		
Plot	A1	Checked by	PPB
Date	JUNE 07	Drawn by	RAJS
Issue No.	01	Figure No.	17



Amendments

Issue No.	Date	Description
-	-	-
-	-	-

KEY

	Positive area anomaly- cut feature of possible archaeological origin
	Positive area anomaly- cut feature of possible geological/pedological origin
	Magnetic debris of uncertain origin
	Magnetic disturbance
	Magnetic disturbance- associated with pipe/cable
	Magnetic disturbance- associated with fence
	Positive linear anomaly- possible archaeological origin
	Negative linear anomaly- possible former earthwork/bank
	Agricultural mark
	Possible former field boundary
	Discrete positive anomaly- possible pit
	Discrete positive anomaly with negative response - ferrous object

Job No.	2324	Survey Date	MAY 07
Client			
OXFORD ARCHAEOLOGY NORTH			
Project Title			
GEOPHYSICAL SURVEY- NEWTON-LE-WILLOWS, MERSEYSIDE			
Subject			
INTERPRETATION- AREAS 7 TO 10			

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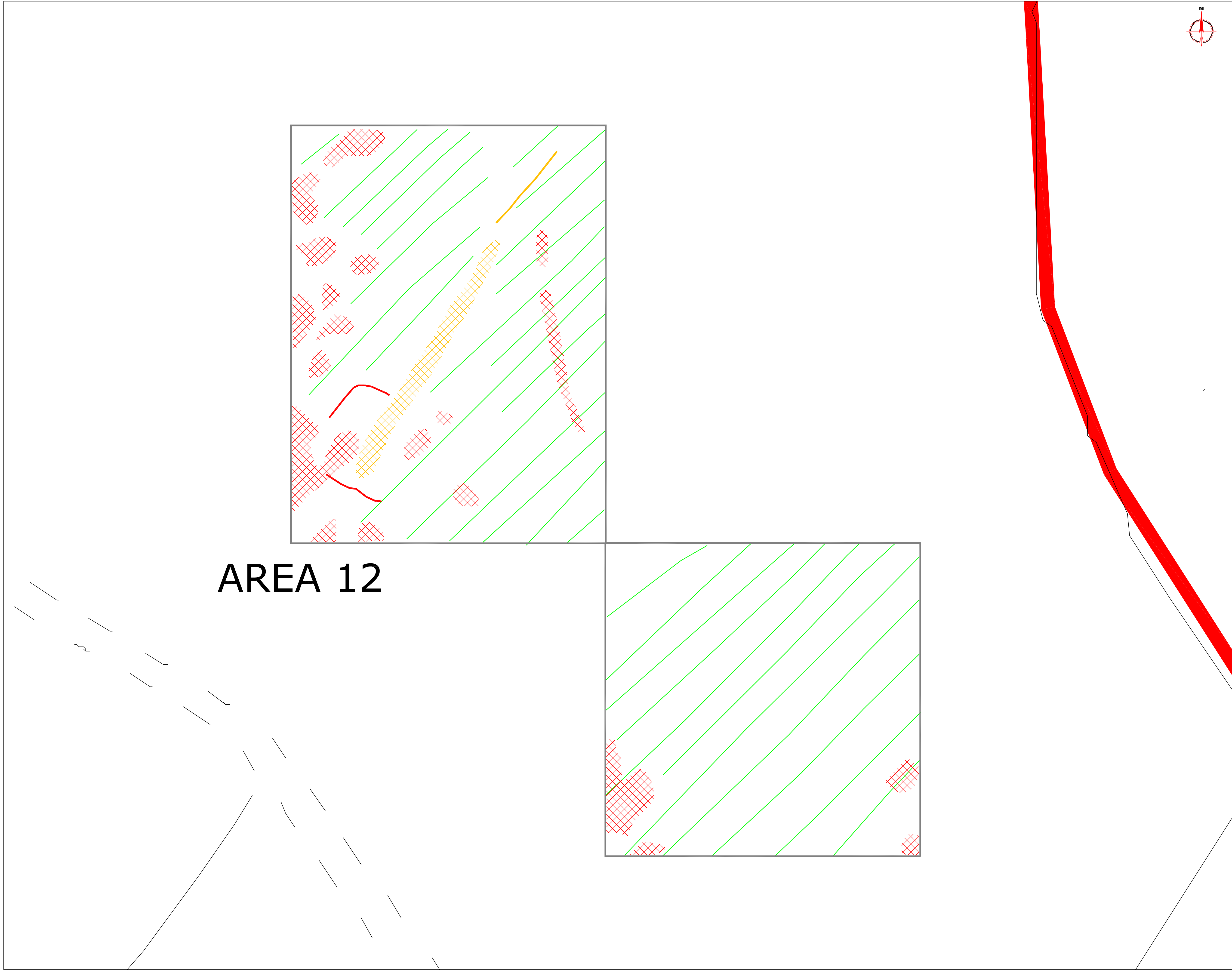
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Scale	0m 10 20 30 40 50 60m		
1:1000			
Plot	Checked by	Issue No.	
A1	PPB	01	
Date	Drawn by	Figure No.	
JUNE 07	RAJS	22	



Amendments		
Issue No.	Date	Description
-	-	-
-	-	-
KEY		
	Positive area anomaly- cut feature of possible archaeological origin	
	Magnetic disturbance	
	Magnetic disturbance- related to metallic fences	
	Positive linear anomaly- possible archaeological origin	
	Negative linear anomaly- possible former earthwork/bank	
	Agricultural mark	
	Possible former field boundary	
	Linear anomaly- possible land drain	
	Discrete positive anomaly- possible pit	
	Discrete positive anomaly with negative response - ferrous object	
Job No.	2324	Survey Date MAY 07
Client OXFORD ARCHAEOLOGY NORTH		
Project Title GEOPHYSICAL SURVEY- NEWTON-LE-WILLOWS, MERSEYSIDE		
Subject INTERPRETATION- AREA 16		
STRATASCAN GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk REGISTRATION - IFA		
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Plot A1	Checked by PPB	Issue No. 01
Date JUNE 07	Drawn by RAJS	Figure No. 37



AREA 12

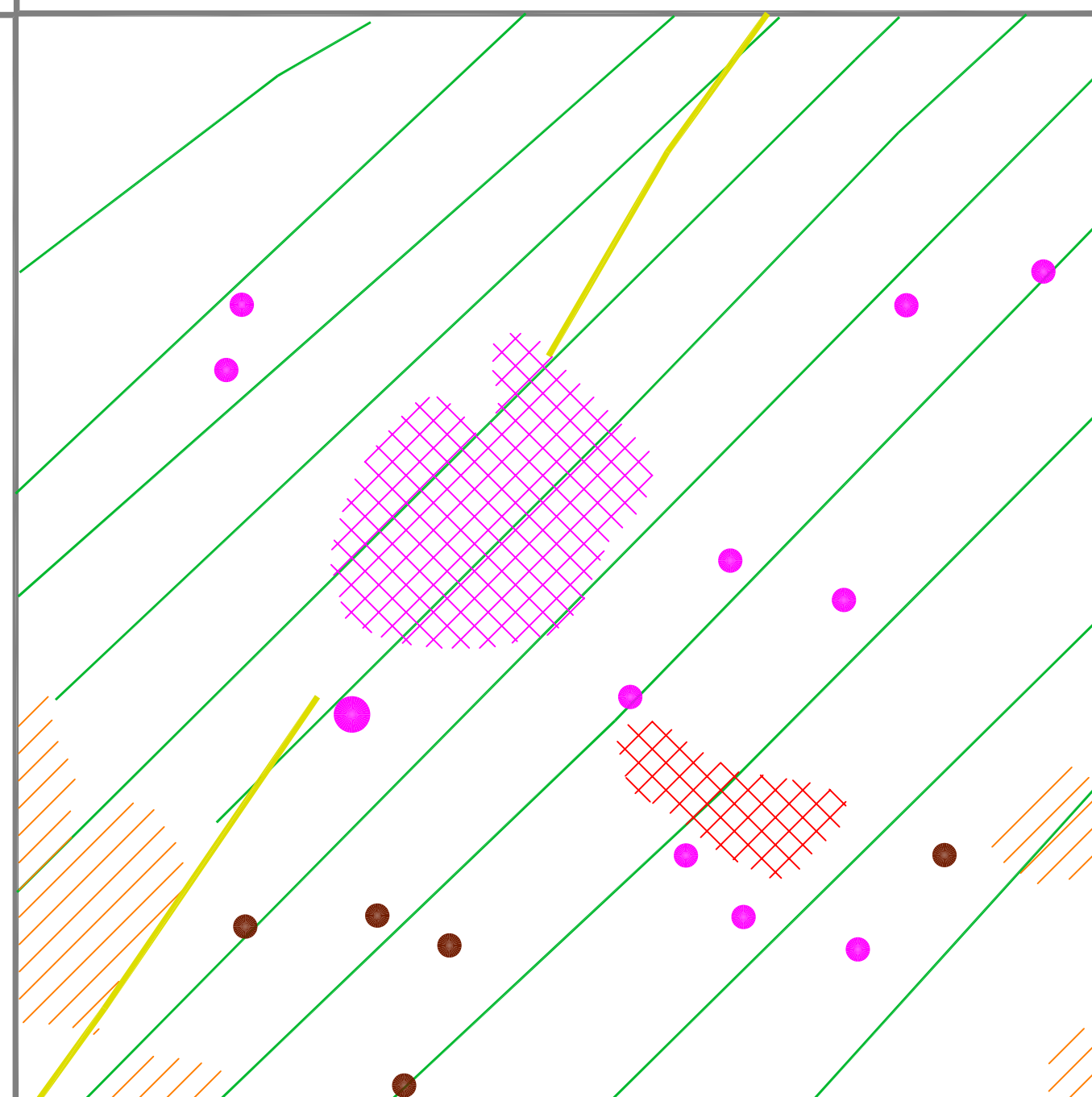
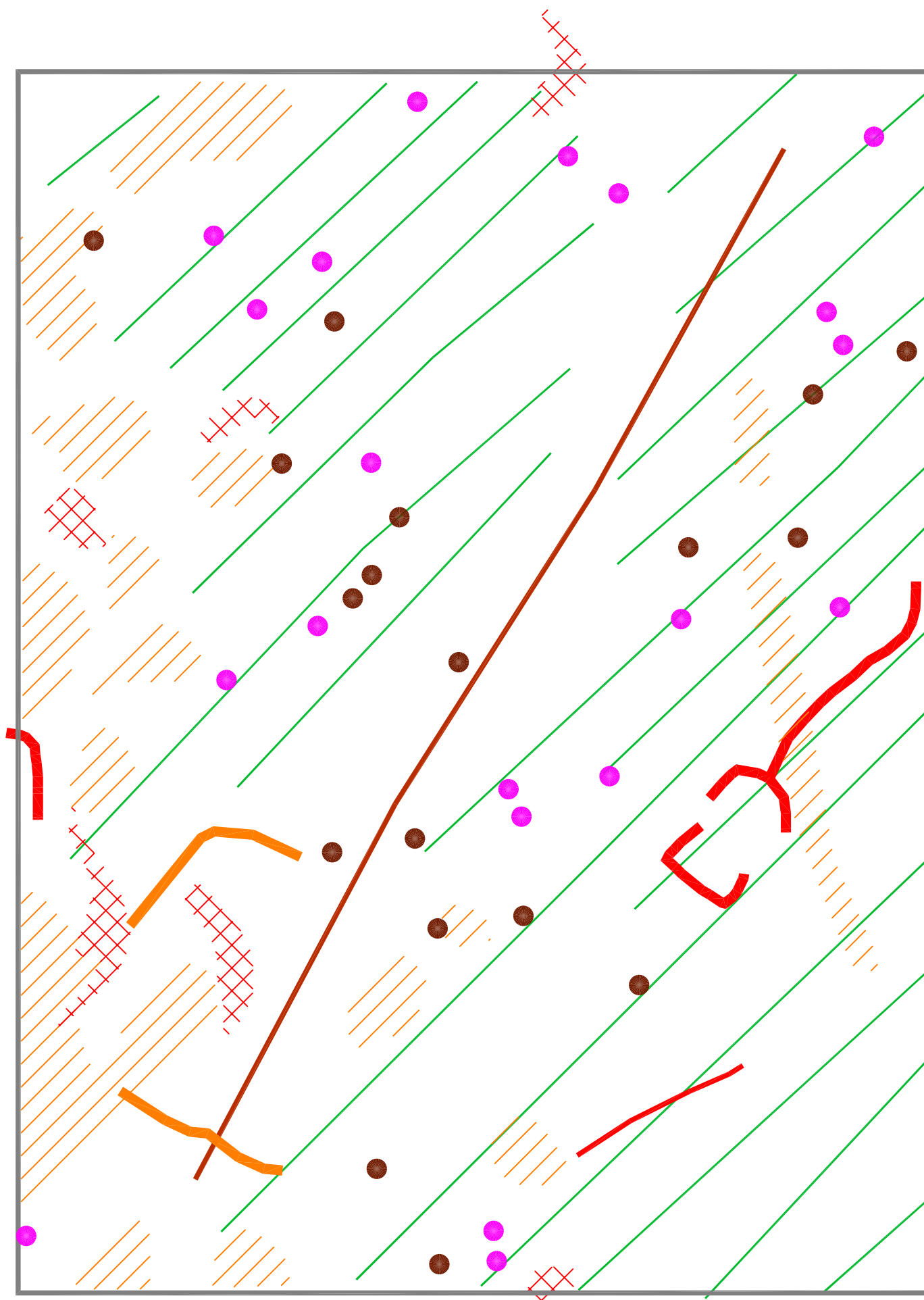
Amendments

Issue No.	Date	Description
-	-	-
-	-	-

KEY

	High resistance linear anomaly - possible structural remains or compacted ground
	Agricultural mark
	High resistance linear anomaly- possibly related to former field boundary
	High resistance area anomaly - possible structural remains or compacted ground
	High resistance area anomaly - possibly related to former field boundary

Job No.	2324	Survey Date	MAY 07
Client			
OXFORD ARCHAEOLOGY NORTH			
Project Title			
GEOPHYSICAL SURVEY- NEWTON'LE'WILLOWS, MERSEYSIDE			
Subject			
INTERPRETATION OF RESISTIVITY ANOMALIES			
STRATASCAN™ GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK WR8 0SA T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk IFA INSTITUTION REGISTERED			
Scale 1:500			
Plot	A1	Checked by	PPB
Date	JUNE 07	Issue No.	01
		Figure No.	40

[illegible]

Appendix E



Lichenstone Report LS2502

Lidar and Aerial Photography

Archaeological Landscape Assessment

Intermodal Logistics Park North

Newton-Le-Willows, Merseyside, UK

For

Iceni Projects

Version 1

23 June 2025

Report Author

Robbie Austrums BSc (Hons)

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A3 Sheet 7 [1:5,000] – Terrain Slope and Curvature (S)

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A3 Sheet 17 [1:10,000] – Interpretation (Overview)

1. Introduction

1.1. Project Background

Lichenstone were commissioned by Icen Projects to carry out a lidar and aerial photography archaeological landscape assessment for 206ha of land east of Newton-Le-Willows, Merseyside, UK.

1.2. Objectives

To identify potential archaeological features using available terrain and aerial photographic data sources.

1.3. Site Details

NGR	SJ 612 950
Location	The site covers land east of the M6 motorway north of J22, south of the Chat Moss railway line, and to the west of A579 Winwick Lane. It also includes a narrow strip of land extending west and south to the former Parkside Colliery.
HER	Merseyside HER
District	St Helens; Wigan
Topography	The site comprises flat low-lying farmland. Three shallow valleys lie in the eastern portion of the site, draining to the east.
Current Land Use	Arable farmland
Geology	Bedrock: Chester Formation (pebbly, gravelly sandstone) underlies most of the area, with Kinnerton Formation (sandstone) and Manchester Marl Formation (mudstone) in the far west of the site. Superficial: Lacustrine Deposits (clay and silt) and Glaciofluvial Ice Contact Deposits (sand and gravel) cover some areas at the north of the site. (BGS 2025)
Methods	Lidar and aerial photograph interpretation
Study Area	206 ha

1.4. Location Map

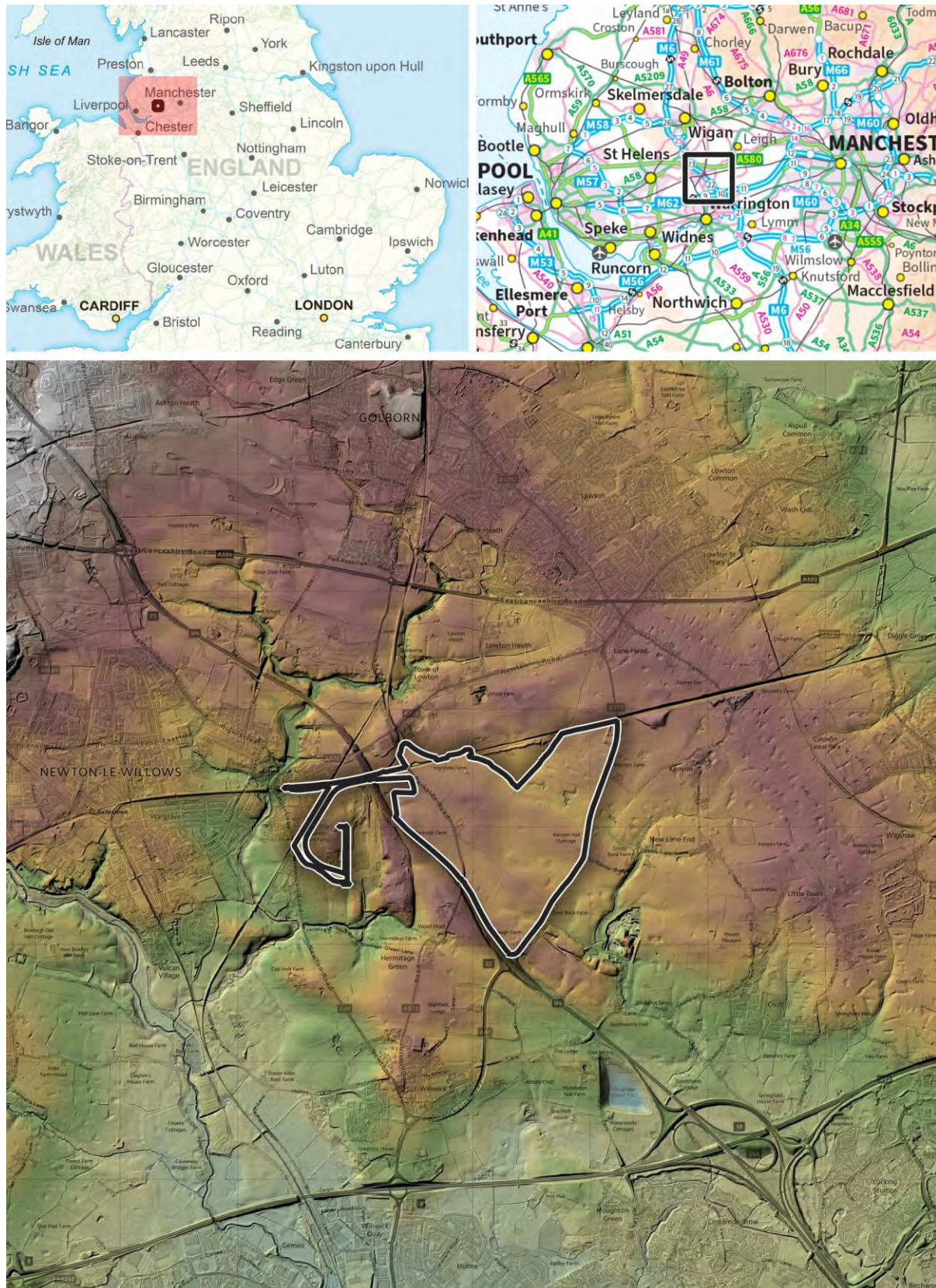


Figure 1 – [1:50,000] Site Location Map

2. Data Sources

2.1. Base-Mapping

This report uses Ordnance Survey OpenData © Crown copyright 2024, reproduced under the Open Government Licence v3.0.

2.2. National Mapping Programme

The Historic England National Mapping Programme (NMP) was accessed through the Aerial Archaeology Mapping Explorer (<https://historicengland.org.uk/research/results/aerial-archaeology-mapping-explorer>). However, no mapping has been undertaken within the study area.

2.3. Lidar Topographic Data

2.3.1. 1m DTM

Environment Agency 1m Digital Terrain Model (DTM) raster data was obtained from the DEFRA Digital Services Platform (<https://environment.data.gov.uk/survey>). This public sector dataset is reproduced under the Open Government Licence v3.0.

2.4. Aerial Photographic Data

2.4.1. Web Map Services

The following web map imagery layers were used for the identification and mapping of potential archaeological features. These data sources are under non-permissive copyright and are not reproduced within this report.

Source	Date	Coverage
ESRI World Imagery	Undated	Full
Bing Aerial	Undated	Full
Google Earth	2025-04-17	Partial
Google Earth	2024-03-07	Full
Google Earth	2023-09-07	Partial
Google Earth	2023-06-12	Partial
Google Earth	2023-06-09	Partial
Google Earth	2023-06-05	Partial
Google Earth	2023-06-03	Partial
Google Earth	2022-07-18	Partial
Google Earth	2021-04-22	Full
Google Earth	2020-04-25	Full
Google Earth	2019-09-20	Full
Google Earth	2018-06-25	Full
Google Earth	2016-06-06	Full
Google Earth	2015-04-21	Full
Google Earth	2013-04-06	Full

Google Earth	2013-03-04	Full
Google Earth	2012-07-22	Full
Google Earth	2009-06-02	Full
Google Earth	2005	Full
Google Earth	2000	Full

2.4.2. DEFRA / Environment Agency

Environment Agency aerial photography was sought from the DEFRA Digital Services Platform (<https://environment.data.gov.uk/survey>), however no datasets intersect the study area.

2.4.3. Historic England Vertical

84 vertical aerial photographs covering the area were inspected at the Historic England archive. Selected relevant images were georeferenced to allow accurate mapping of features. These images are under non-permissive copyright and are not reproduced within this report.

Sortie number	Library number	Frame number	Centre point	Date	Scale 1:
RAF/106G/UK/626	4	3357	SJ 607 954	10 AUG 1945	10200
RAF/106G/UK/626	4	3358	SJ 606 947	10 AUG 1945	10200
RAF/106G/UK/626	4	4357	SJ 588 956	10 AUG 1945	10200
RAF/106G/UK/622	11	3152	SJ 610 939	10 AUG 1945	10000
RAF/106G/UK/622	11	3153	SJ 608 946	10 AUG 1945	10000
RAF/106G/UK/622	11	3154	SJ 606 953	10 AUG 1945	10000
RAF/106G/UK/622	11	4154	SJ 626 958	10 AUG 1945	10000
RAF/3G/TUD/UK/192	363	5201	SJ 616 963	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5202	SJ 620 961	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5203	SJ 623 960	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5318	SJ 601 958	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5319	SJ 604 956	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5320	SJ 607 954	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5321	SJ 610 953	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5322	SJ 613 952	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5323	SJ 616 950	09 MAY 1946	5400
RAF/3G/TUD/UK/192	363	5324	SJ 619 949	09 MAY 1946	5400
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RAF/58/709	1194	4448	SJ 601 955	03 JUN 1951	10000
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RAF/540/765	1281	3055	SJ 615 945	10 JUN 1952	4999
RAF/540/765	1281	3056	SJ 611 945	10 JUN 1952	4999
RAF/540/765	1281	3057	SJ 607 945	10 JUN 1952	4999
RAF/540/765	1281	3058	SJ 603 946	10 JUN 1952	4999
RAF/540/765	1281	3059	SJ 599 946	10 JUN 1952	4999
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RAF/540/765	1281	4058	SJ 602 954	10 JUN 1952	4999
RAF/540/765	1281	4059	SJ 598 954	10 JUN 1952	4999
RAF/540/765	1281	4060	SJ 594 954	10 JUN 1952	4999
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RAF/540/765	1281	4083	SJ 605 948	10 JUN 1952	4999
RAF/540/765	1281	4084	SJ 610 948	10 JUN 1952	4999
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RAF/540/1422	1587	229	SJ 599 946	28 SEP 1954	5000
RAF/540/1422	1587	230	SJ 596 946	28 SEP 1954	5000
RAF/540/1422	1587	280	SJ 601 956	28 SEP 1954	5000
RAF/540/1422	1587	281	SJ 598 955	28 SEP 1954	5000
RAF/540/1422	1587	225	SJ 613 954	28 SEP 1954	5000
RAF/540/1422	1587	226	SJ 610 955	28 SEP 1954	5000
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RAF/540/1422	1587	229	SJ 599 956	28 SEP 1954	5000
RAF/540/1422	1587	230	SJ 596 956	28 SEP 1954	5000
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HSL/UK/66497	9222	8485	SJ 615 946	30 MAY 1966	10000
HSL/UK/66497	9222	8506	SJ 620 964	30 MAY 1966	10000
HSL/UK/66497	9222	8507	SJ 610 964	30 MAY 1966	10000
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OS/86122	12850	68	SJ 604 942	21 JUN 1986	10600
OS/91204	13876	321	SJ 615 939	30 AUG 1991	5900
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OS/91204	13876	539	SJ 618 947	30 AUG 1991	5900
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OS/93202	14391	43	SJ 606 947	05 JUN 1993	7600
OS/93202	14391	44	SJ 612 947	05 JUN 1993	7600
OS/93202	14391	45	SJ 616 946	05 JUN 1993	7600

2.4.4. Historic England Oblique

27 oblique aerial photographs were inspected at the Historic England archive. All are close-up images of Parkside Colliery prior to demolition and were of limited use to the present study. These images are under non-permissive copyright and are not reproduced within this report.

Photo reference	Film and frame number		Original number	Date	Map Reference
SJ 5994 / 1	CCX 14368	/ 01	52	28 OCT 1992	SJ 599947
SJ 5994 / 2	CCX 14368	/ 02	52	28 OCT 1992	SJ 599947
SJ 5994 / 3	CCX 14368	/ 04	52	28 OCT 1992	SJ 599947
SJ 5994 / 4	CCX 14368	/ 05	52	28 OCT 1992	SJ 599947
SJ 5994 / 5	CCX 14368	/ 07	52	28 OCT 1992	SJ 599947
SJ 5994 / 6	CCX 14368	/ 08	52	28 OCT 1992	SJ 599947
SJ 5994 / 7	CCX 14368	/ 10	52	28 OCT 1992	SJ 599947
SJ 5994 / 8	CCX 14368	/ 11	52	28 OCT 1992	SJ 599947
SJ 5994 / 9	CCX 14368	/ 12	52	28 OCT 1992	SJ 599947
SJ 5994 / 10	CCX 14368	/ 14	52	28 OCT 1992	SJ 599947
SJ 5994 / 11	CCX 14368	/ 15	52	28 OCT 1992	SJ 599947
SJ 6094 / 1	GBJ 9357	/ 5	CS 118	26 JUN 1977	SJ 602945
SJ 6094 / 2	CCX 14498	/ 03	C17	28 OCT 1992	SJ 600946
SJ 6094 / 3	CCX 14498	/ 04	C17	28 OCT 1992	SJ 600946
SJ 6094 / 4	CCX 14498	/ 08	C17	28 OCT 1992	SJ 600948
SJ 6094 / 5	CCX 14498	/ 10	C17	28 OCT 1992	SJ 600946
SJ 6094 / 6	CCX 14498	/ 11	C17	28 OCT 1992	SJ 600946
SJ 6094 / 7	CCX 14498	/ 15	C17	28 OCT 1992	SJ 600946
SJ 6094 / 8	CCX 14497	/ 33	C16	28 OCT 1992	SJ 600947
SJ 6094 / 9	CCX 14497	/ 34	C16	28 OCT 1992	SJ 601947
SJ 6094 / 10	CCX 14497	/ 35	C16	28 OCT 1992	SJ 601947
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SJ 6094 / 12	CCX 14497	/ 37	C16	28 OCT 1992	SJ 600947
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SJ 6094 / 14	CCX 14368	/ 06	52	28 OCT 1992	SJ 600948
SJ 6094 / 15	CCX 14368	/ 09	52	28 OCT 1992	SJ 600947
SJ 6094 / 16	CCX 14368	/ 13	52	28 OCT 1992	SJ 600947

3. Methods

3.1. Lidar Topographic Data

3.1.1. Directional Light Shading

Simulated illumination of the terrain surface from a chosen light source direction. This gives the viewer an intuitive sense of the 3D topography but can fail to reveal some features that are aligned with the light source.

3.1.2. Ambient Light Shading

Simulated illumination of the terrain surface from a continuous encompassing light source. Illumination of a given point is determined by surrounding terrain and other objects which occlude incoming light. It gives the viewer an intuitive sense of the 3D topography but can fail to reveal subtle features near much larger objects.

3.1.3. Local Topographic Anomaly

Terrain flattening by constructing a mathematical model that approximates broad-scale variation in the topography. This model surface is then subtracted from the original DEM to produce a new dataset that reflects only smaller scale features.

3.1.4. Terrain Slope and Curvature

Maximum convex and concave curvature values are calculated from the parameters of a second-order polynomial approximation of the terrain surface over a 10m window. Slope is similarly calculated over a 4m window.

3.2. Aerial Photographic Data

3.2.1. Georeferencing

Where images are obtained in a non-orthorectified format, georeferencing was undertaken in QGIS. Sets of control point pairs were generated by matching recognizable features in the source image to the same feature in a rectified target dataset. A projective or polynomial transformation is then derived using linear regression and applied to the image. Assumed positional accuracy, based on best-fit residuals, is approximately 3-5m.

3.2.2. Contrast Enhancement

Images were contrast-enhanced using a histogram stretch in their native colour space.

4. Results

Letters in bold refer to labels on the A3 interpretation plots.

A circular feature (**A**) is clearly visible on Google Earth imagery dated 25 June 2018, and represents a possible ring ditch.

The site contains a large number of straight linear features. Many of these are associated with former field boundaries. Others may relate to land drainage or underground services.

A concentration of broad linear and rectilinear depressions and mounds (**B**) at the southern tip of the area are situated in and around a shallow valley, and probably represent a combination of natural-fluvial processes and human activity of unknown date.

A number of discrete topographic depressions (**C**) are clustered primarily in the northeast of the area, with a lesser scatter extending to the south. Some of these are labelled as 'Mains Pits' (**C1**) and 'Moss Pits' (**C2**) on old Ordnance Survey maps and these and others are likely to be the remains of extractive industries. Some features in this category could be former ponds.

A set of linear earthworks (**D**) adjacent to the Moss Pits site are likely to relate to industrial activity.

Three areas of apparent ridge-and-furrow (**E**) are visible on aerial photographs.

A small cluster of 6-8m rectilinear features (**F**) near the centre of the site are of unknown origin.

A set of sharply rectangular crop marks (**G**) west of Kenyon Hall, visible on Google Earth image Dec 31 2005, are most probably due to some modern farming practice but may warrant further investigation.

Two rectangular crop marks (**H**) lie at the former site of Barrow Lane House on old Ordnance Survey maps, but do not appear coincident with the buildings. These might be the remains of ponds.

A set of semi-parallel linear features (**I**) in the narrow western portion of the site are visible on an aerial photograph predating the construction of Parkside Colliery. These are of unknown origin, but could relate to farming activity at the time.

A set of linear earthworks (**J**) adjacent to the east are most probably related to the construction, operation or demolition of Parkside Colliery.

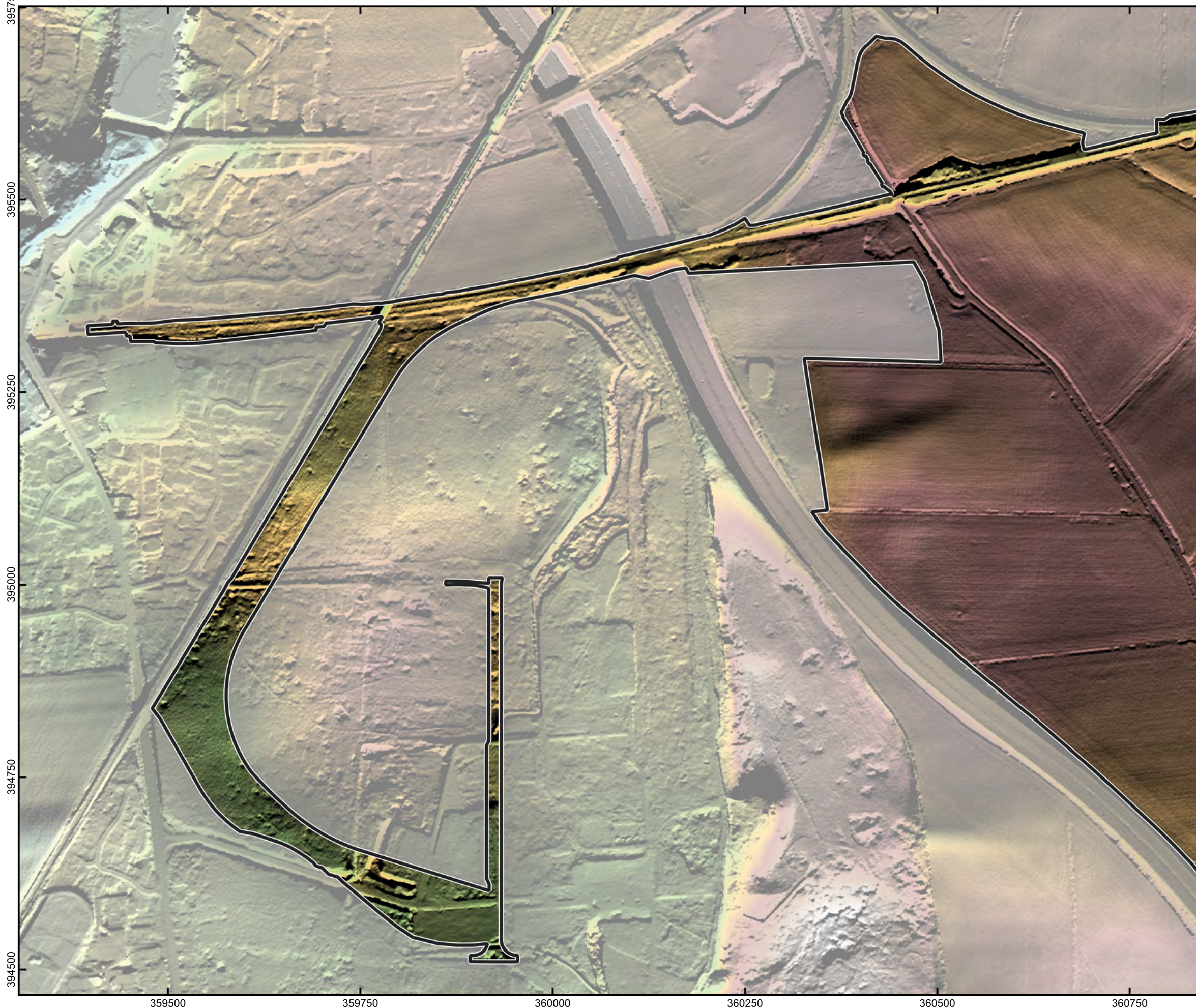
5. Conclusions

The lidar and aerial photography archaeological landscape assessment of the Intermodal Logistics Park North site at Newton-Le-Willows, Merseyside, UK has revealed features of archaeological interest. These include a possible ring ditch, probable remains of extractive industries, some small areas of apparent ridge-and-furrow, and remains of former field systems.

6. References

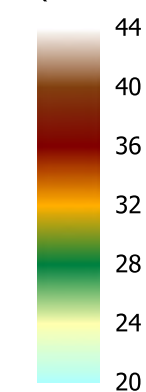
BGS 2025

British Geological Survey - Geology of Britain Viewer
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
(Accessed 16/07/2025)

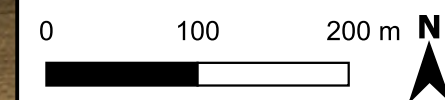


LICHENSTONE
Geoscience, GIS, Archaeology

Elevation
(Metres OD)

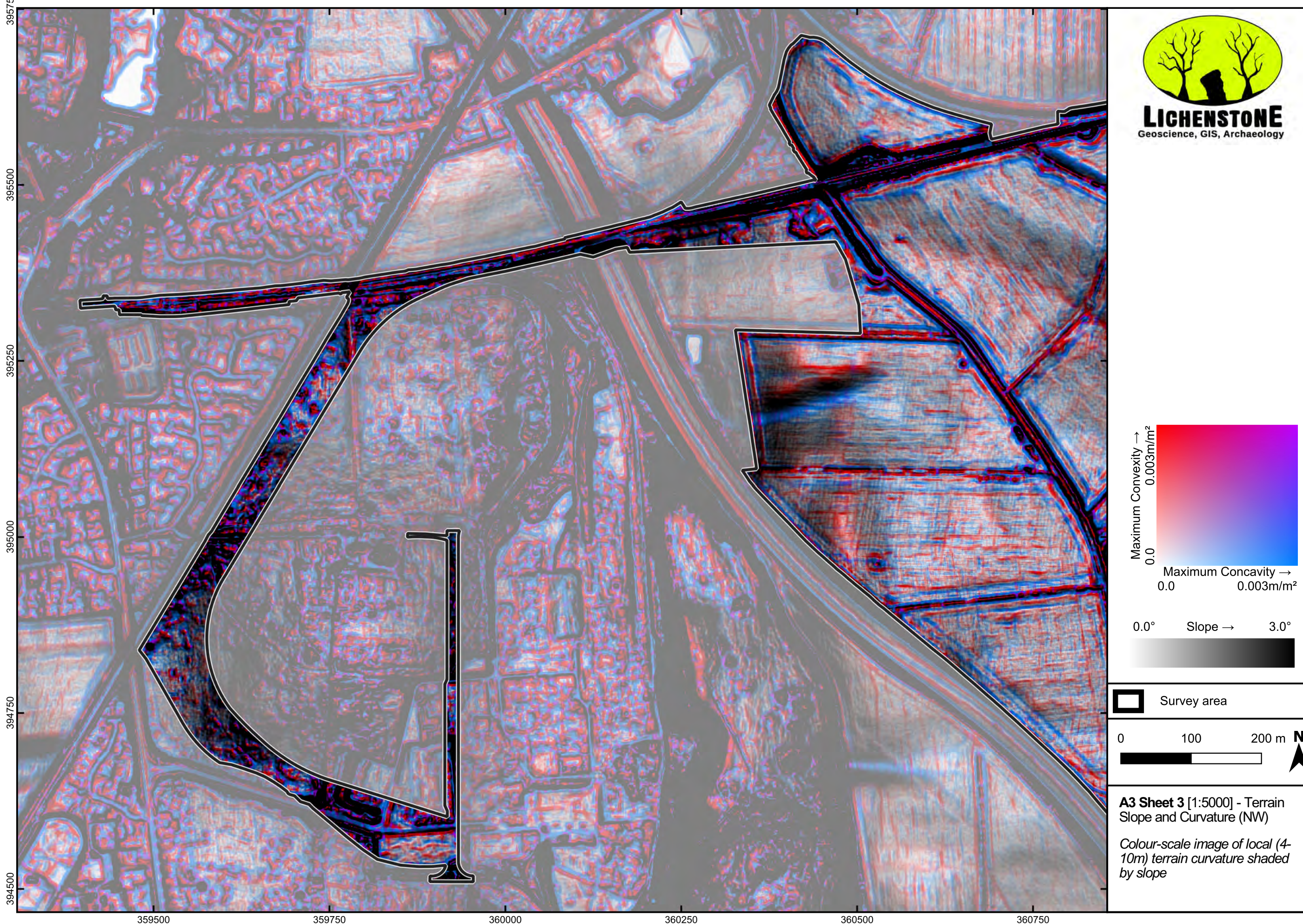


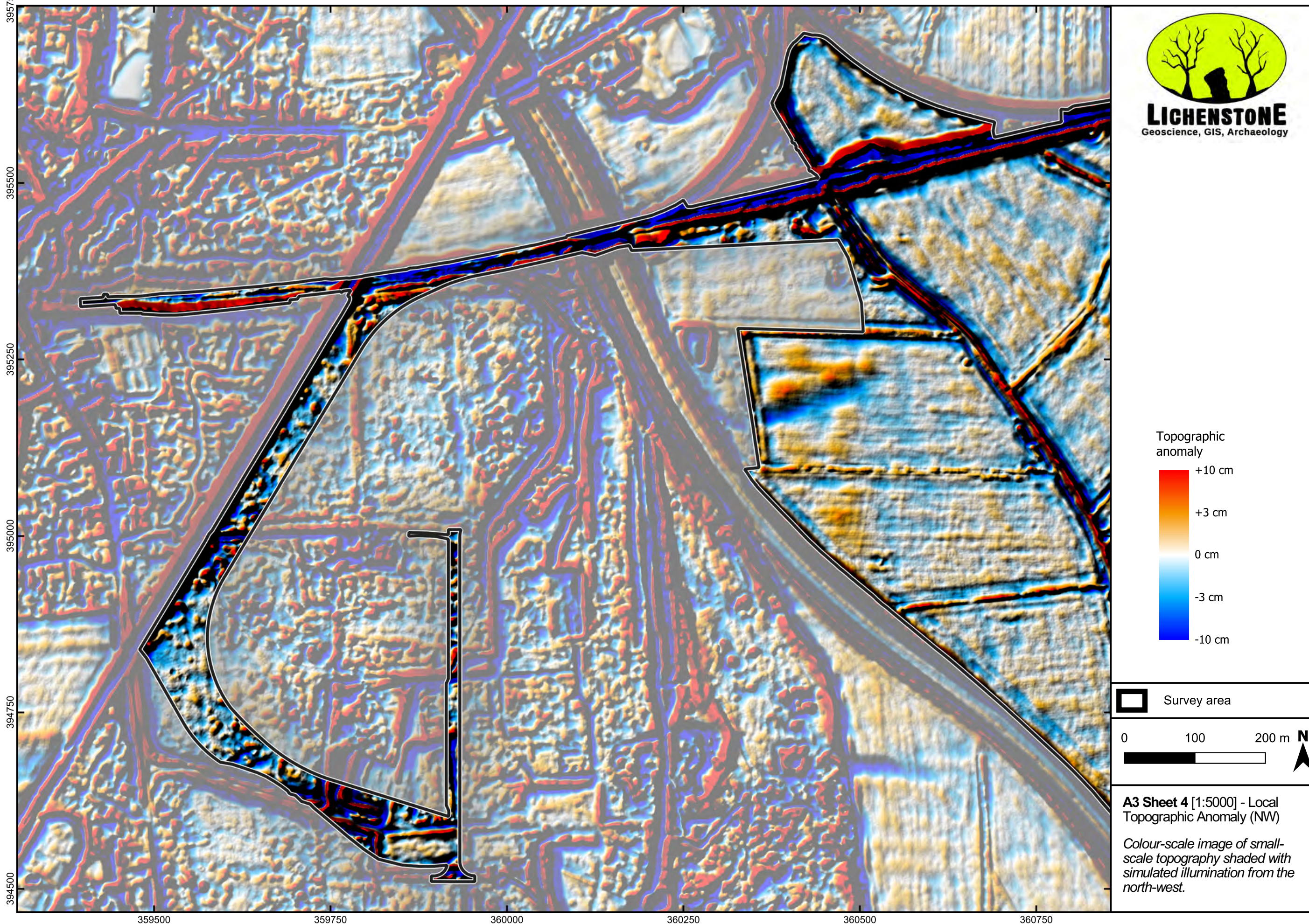
 Survey area

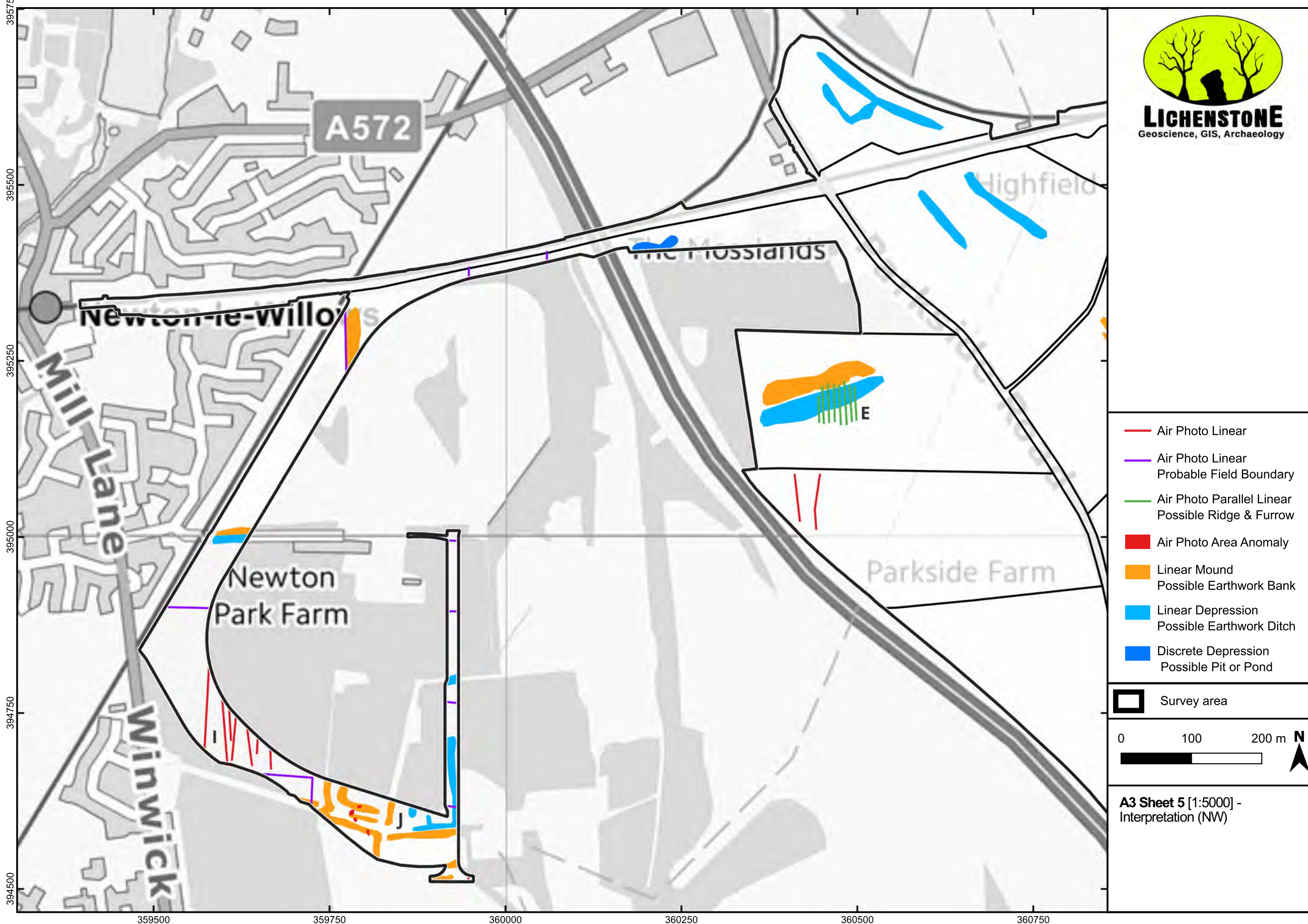


**A3 Sheet 2 [1:5000] - Digital
Elevation Model (NW)**

*Colour-scale image of terrain
heights with simulated ambient
illumination.*



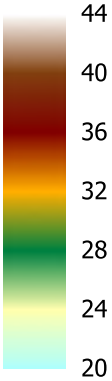




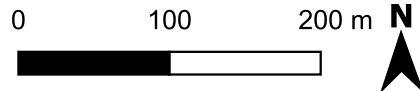


LICHENSTONE
Geoscience, GIS, Archaeology

Elevation
(Metres OD)

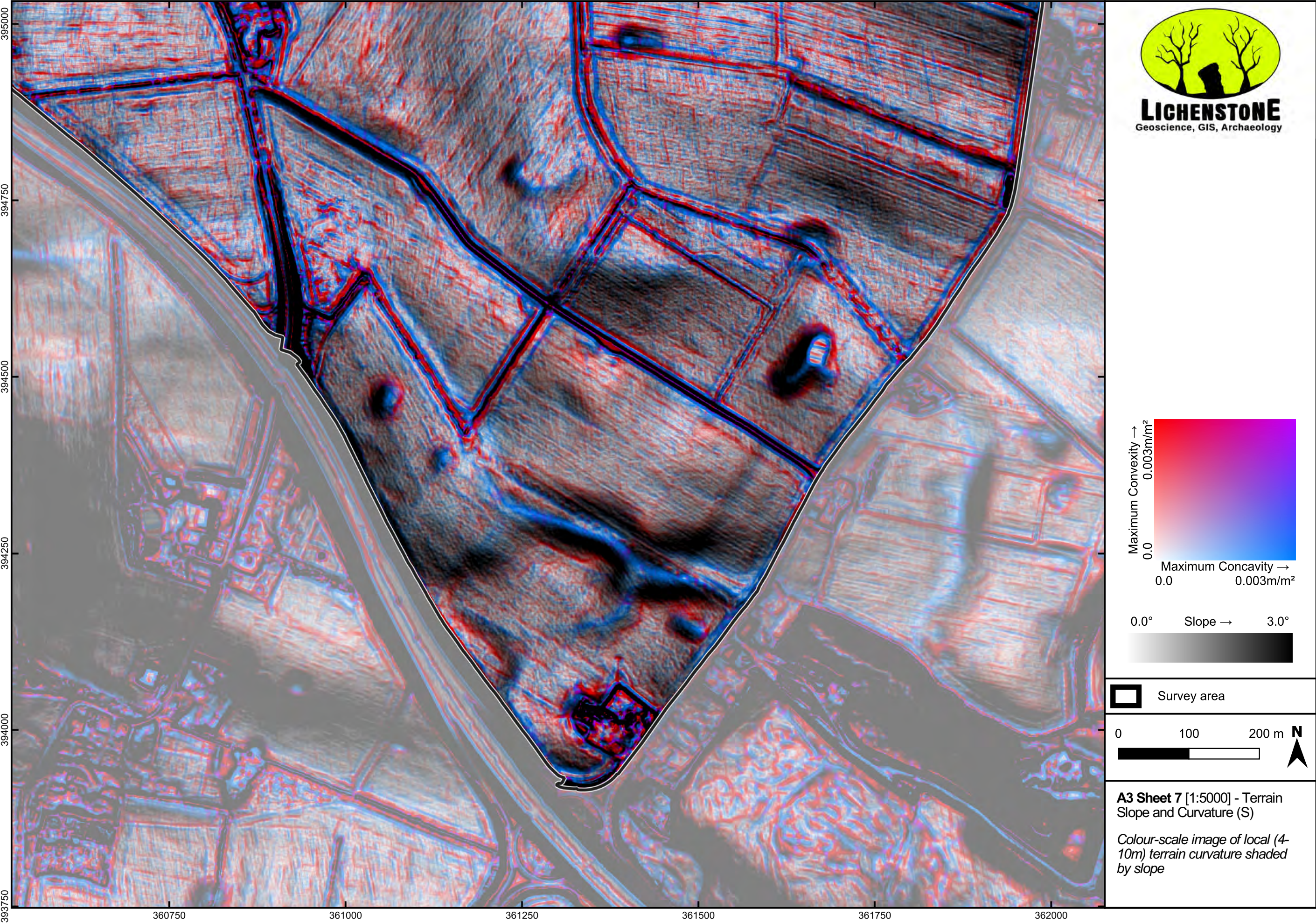


Survey area



A3 Sheet 6 [1:5000] - Digital
Elevation Model (S)

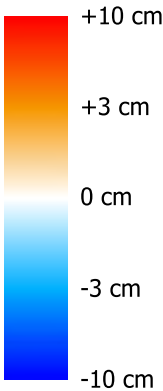
*Colour-scale image of terrain
heights with simulated ambient
illumination.*



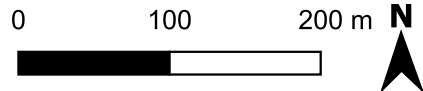


LICHENSTONE
Geoscience, GIS, Archaeology

Topographic anomaly

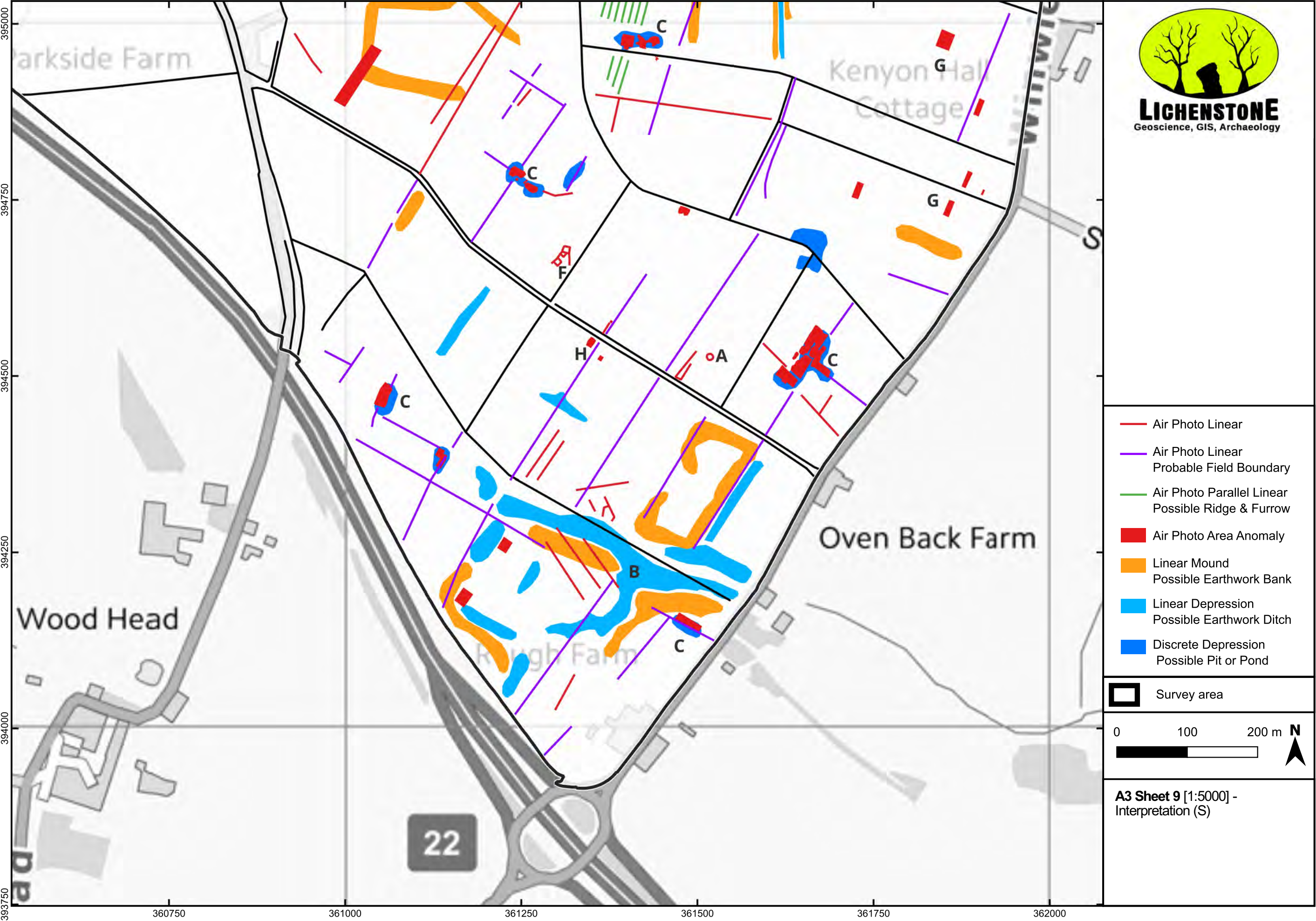


Survey area

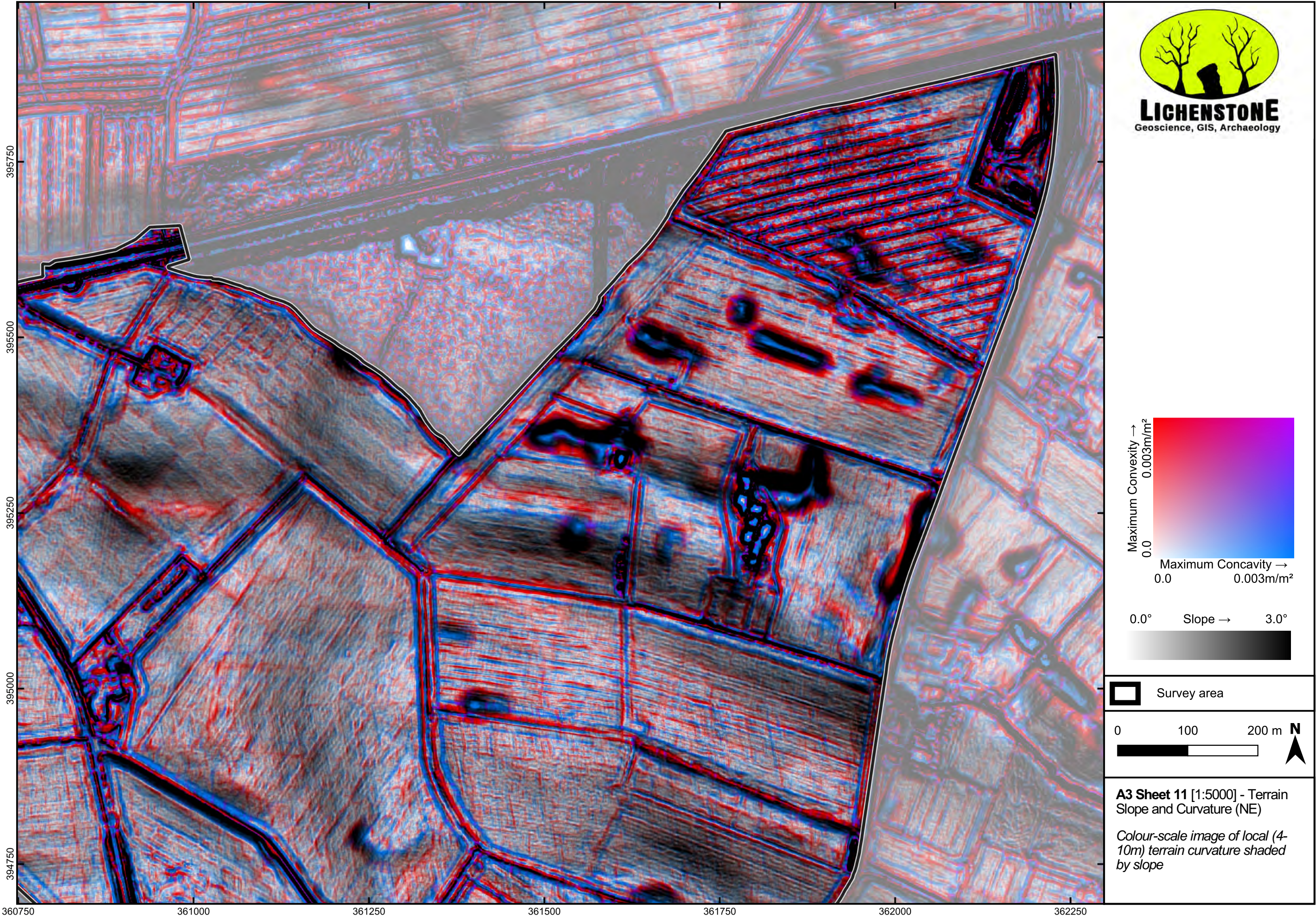


A3 Sheet 8 [1:5000] - Local Topographic Anomaly (S)

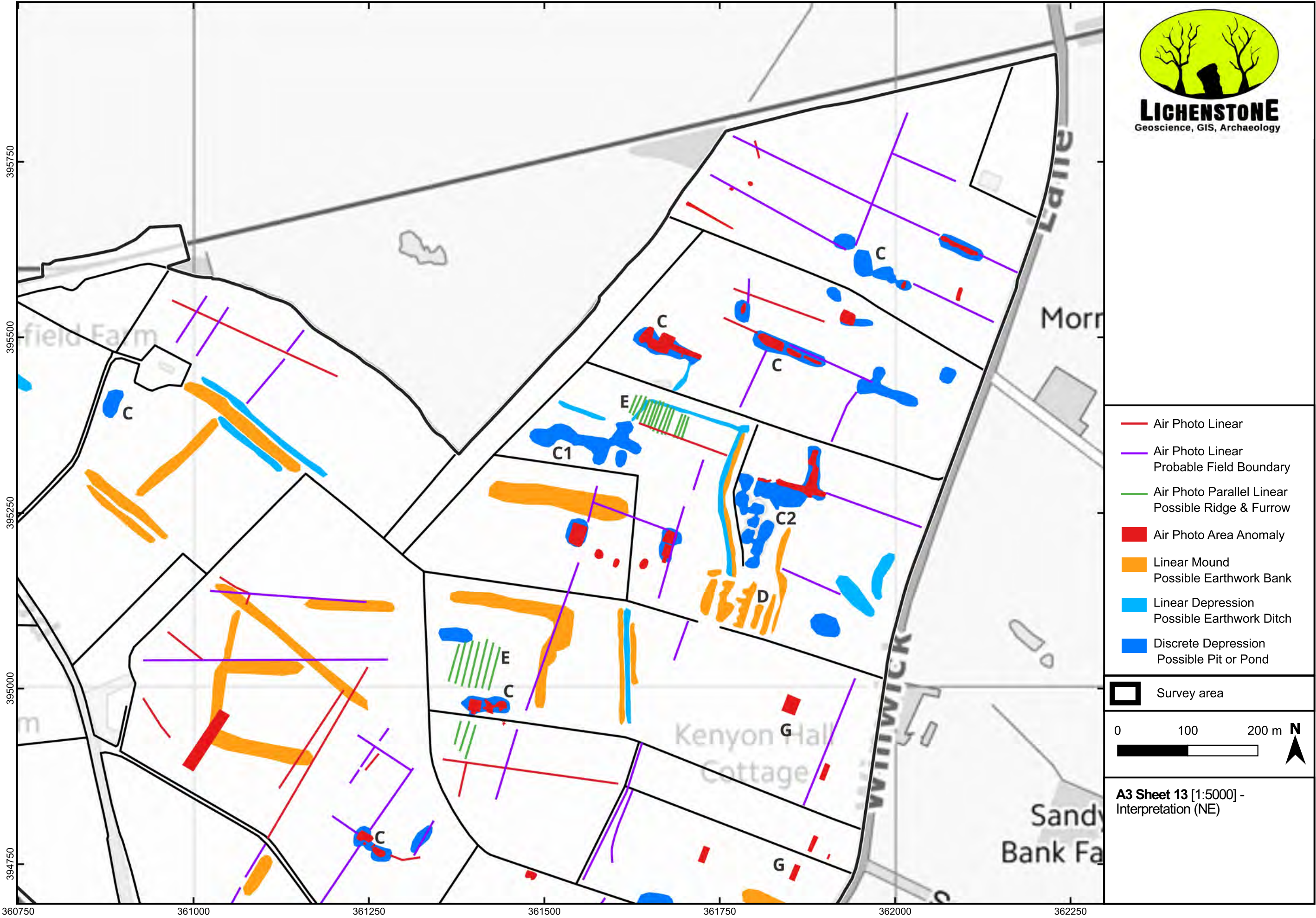
Colour-scale image of small-scale topography shaded with simulated illumination from the north-west.



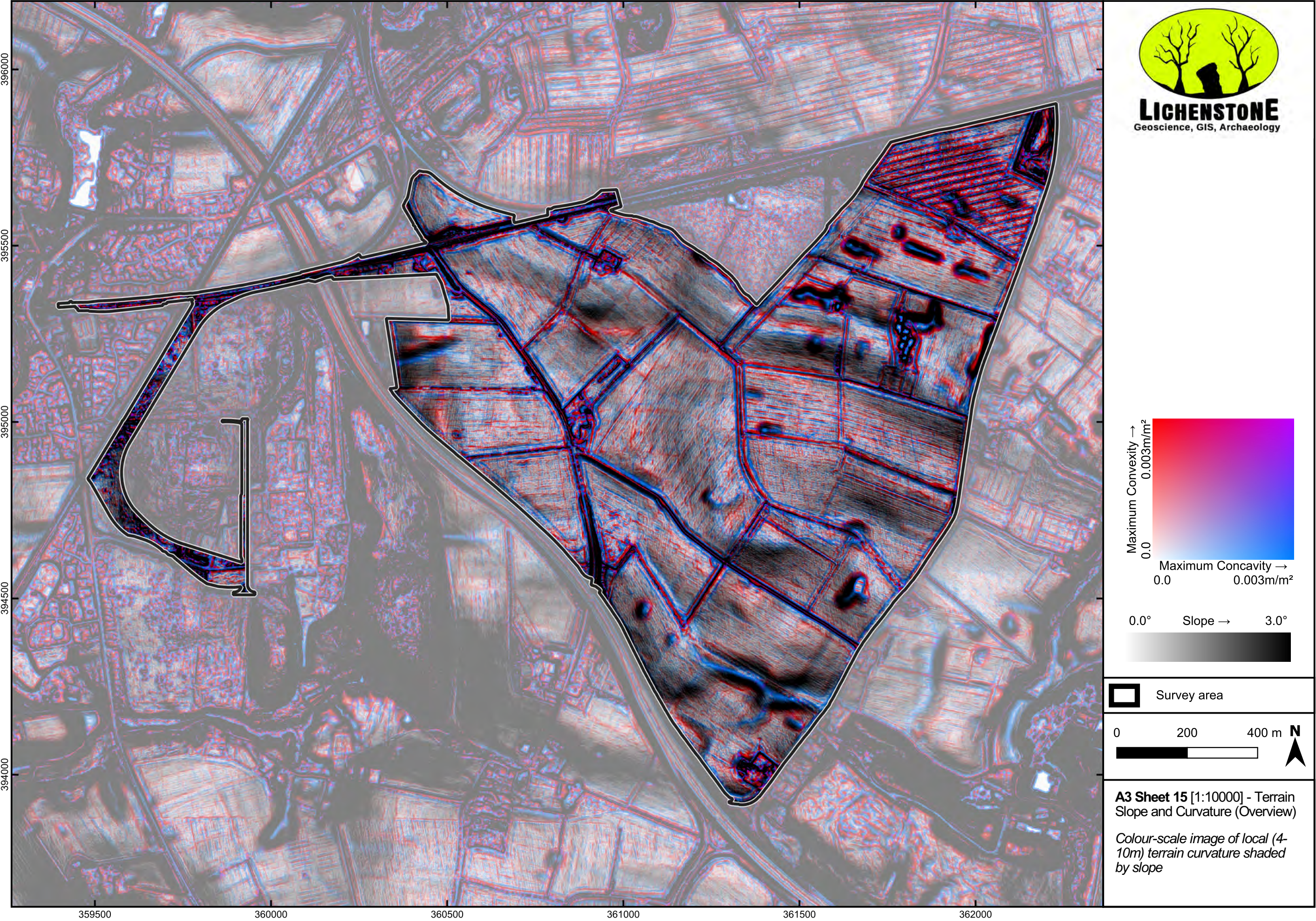


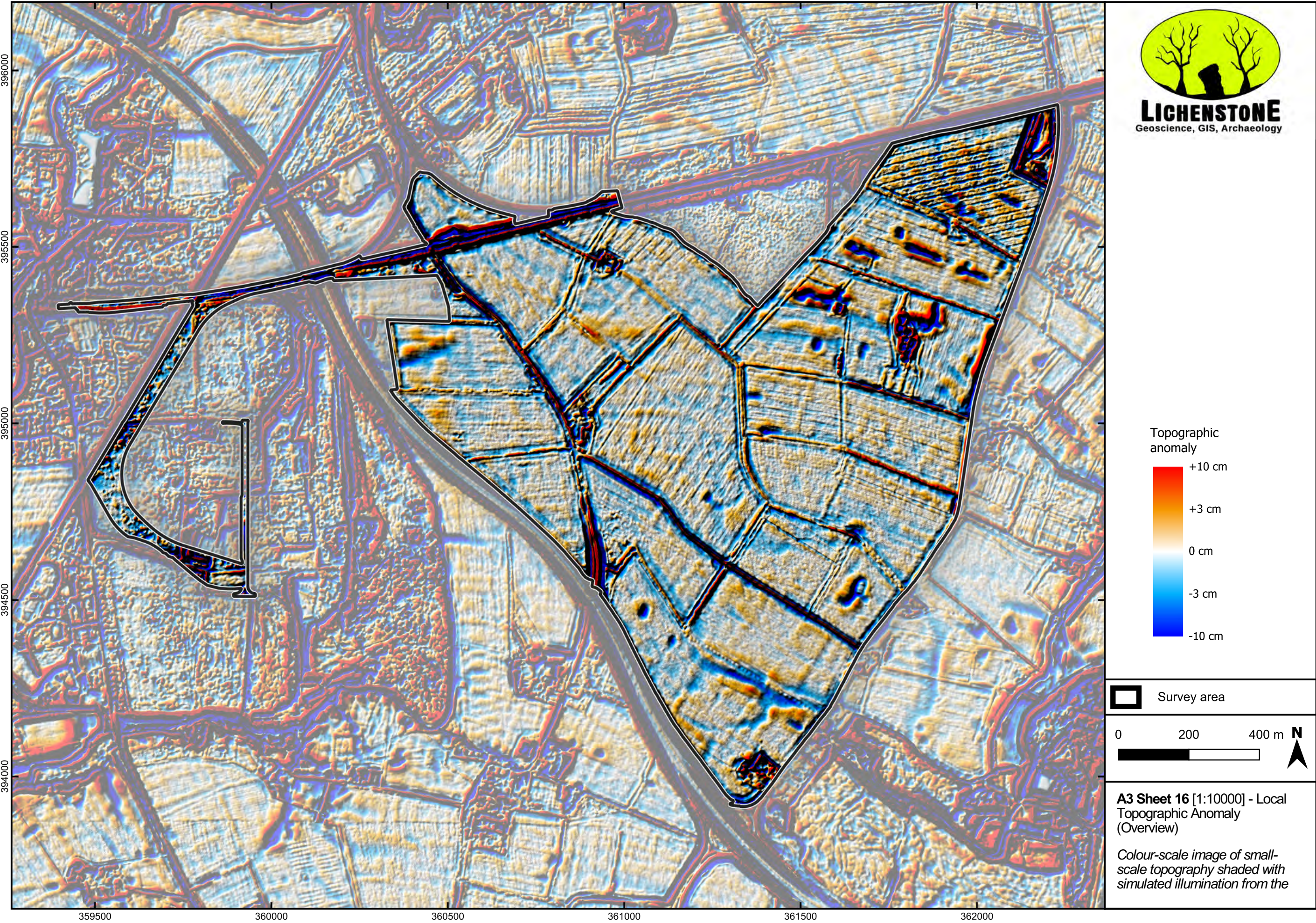


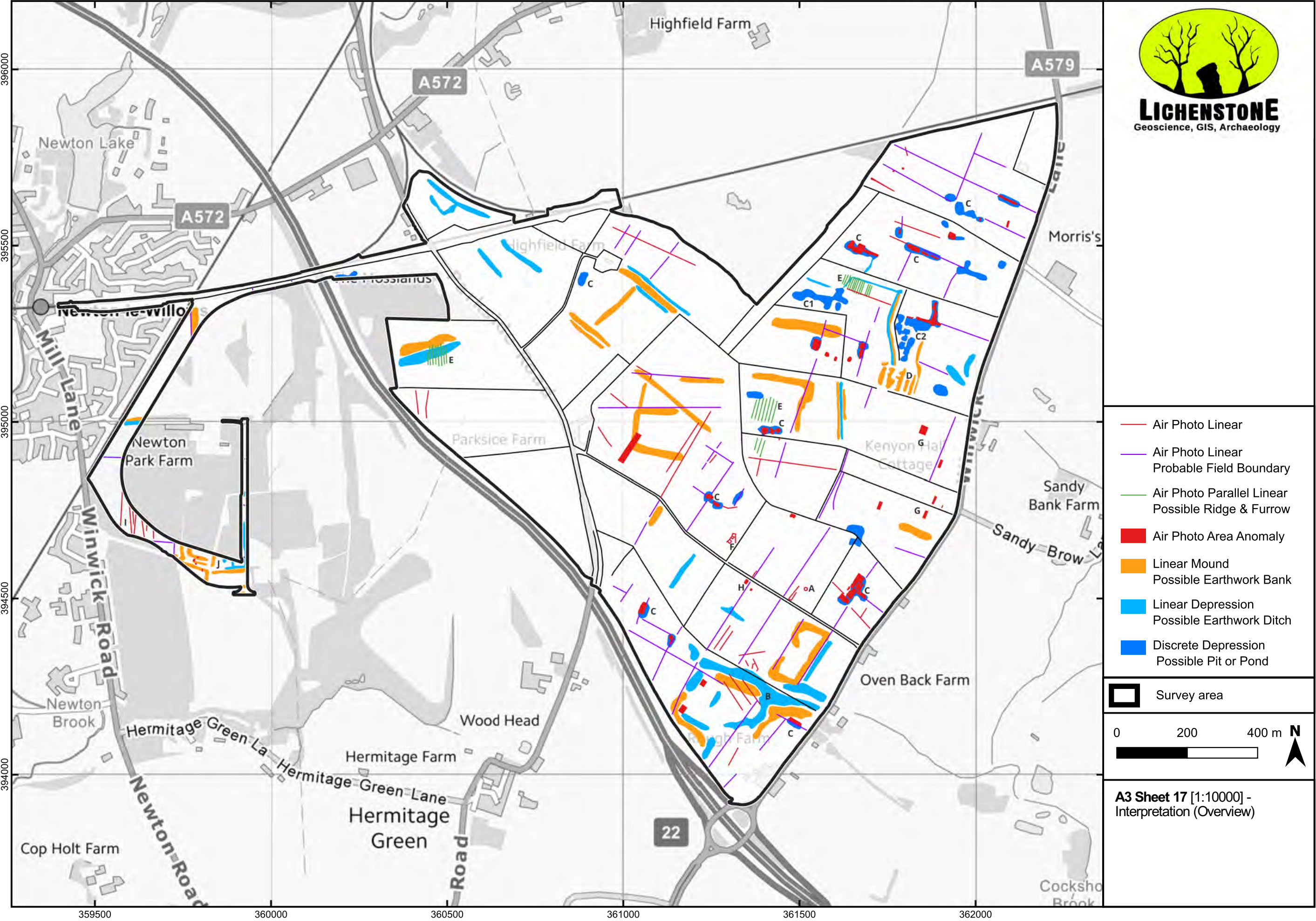












Appendix F



**Geophysical Survey Report
of
Intermodal Logistics Park North Rail Freight
Interchange (ILPN RFI)**

**For
York Archaeology**

**On behalf of
Intermodal Logistics Park North Ltd**

Magnitude Surveys Ref: MSSJ2090

August 2025



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Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of c. 86ha of land at Newton-le-Willows, Merseyside. A fluxgate gradiometer survey was successfully completed across the survey area. Ferrous debris, or green waste is extensive in the northeast and west of the survey area which could obscure weaker anomalies. The survey identified anomalies of agricultural, natural, extraction and undetermined origins. Agricultural activity has been detected throughout the survey area, with anomalies related to former field boundaries, agricultural drains and modern ploughing trends identified. Magnetically enhanced spreads of anomalies relating to historical extraction pits which have been infilled with magnetically enhanced material were detected. Naturally enhanced zones correlating with variations in subsurface superficial deposits were identified. Aside from the 'green waste', magnetic interference was mostly limited to field boundaries, and around buried services.

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1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by York Archaeology on behalf of Intermodal Logistics Park North Ltd to undertake a geophysical survey over a c. 86ha area of agricultural land near Newton-le-Willows, Warrington, Merseyside (SJ 61612 95280). The current order limits extend beyond the commissioned geophysical survey, and sample areas within adjacent fields were subject to a geophysical survey in 2007. The extents of the most recent survey, the area subject to sample survey in 2007, and the order limits are all displayed on Figure 1 (Smalley, 2007).
- 1.2. The geophysical survey comprised quad-towed, cart-mounted and hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David *et al.*, 2008).
- 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, 2020) and the European Archaeological Council (Schmidt *et al.*, 2015).
- 1.4. It was conducted in line with a Written Scheme of Investigation (WSI) produced by MS (Paine 2025).
- 1.5. The survey commenced on 19th of June 2025 and was completed on the 10th of July 2025.

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 for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and was the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CIfA, has been a member of the ISAP Management Committee since 2015, and is currently the Chair of the Archaeological Prospection Community of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

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

4. Geographic Background

4.1. The survey area was located c. 2.2km south of Lowton (Figure 1). Gradiometer survey was undertaken across 15 fields under arable cultivation. The survey area was bordered by farmland to the west and south, with a railway line to the north, separating the northwestern Area 8 from the rest of the site. The A579 was east of the eastern boundary (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Flat arable field	The survey area was bordered by hedges to the south and east with the A579 beyond the eastern boundary. The northern boundary was formed by a grass verge. There was no physical boundary to the west of the survey area.
2	Flat arable field	The survey area was bordered by a grass verge to the south, with no physical boundary to the west. The north and east were bordered by hedgerows, with the A579 to the east of the survey area.
3	Flat pasture field	The survey area was bordered by hedges to the south, with no physical boundary to the north, east and west. A building was present to the west of the southern boundary.
4	Flat arable field	The survey area was bordered by hedges to the south and west, metal fencing to the east and a farm track to the north. The A579 backed the eastern border.
5	Flat arable field	The survey area was bordered by hedges to the south and west, a mud track to the north and there was no physical boundary to the east.
6	Flat arable field	The survey area was bordered by a mud track to the south, with no physical boundary to the north, east and west. A pile of burnt wood was present in the southeastern corner.
7	Flat arable field, with flat grassland along southern edge	The survey area was bordered by a farm track to the north, overgrown vegetation to the east and there was no physical boundary to the west and the south. Two shipping containers were present to the north along the western border. An area of copse was unable to be surveyed in the centre of the field.
8	Flat arable field	The survey area was bordered by a metal fence on all sides.
9	Flat grassland as an operational airstrip (NE-SW)	The survey area was bordered by overgrown vegetation to the northwest and had no physical boundary in all other directions. Numerous metallic objects including shipping containers were present within the southeast of the survey area.

10	Flat arable field.	The field was bordered by overgrown vegetation to the north, east and the east of the southern boundary. Metal fencing was present on the west and there was no physical boundary on the western section of the southern boundary. Overhead cables passed over the western corner of the survey area
11	Flat overgrown pasture field.	The survey area was bordered by hedgerows to the north and west, haybales were stacked along the eastern border and a compound littered with farmyard objects made up the southern border.
12	Flat arable field.	The survey area was bordered by hedges to the south and east and by metal fencing to the north and west. A service marker was present in the northwestern corner.
13	Flat arable field.	The field was bordered by hedgerows to the north, east and south and there was no physical boundary to the east. A metal cabin was present along the boundary in the northeastern corner.

4.3. The underlying geology comprises Triassic sandstone from the Chester Formation across the entire survey area. Superficial Deposits of Diamicton Till of the Devensian period are present in all survey areas including the entirety of Areas 3, 4, 7, and 9; and over the majority of Areas 6, 10, 12 and 13. Within Area 10, no superficial deposits are recorded within a small section in the south, while sand and gravel glaciofluvial ice contact deposits from the Devensian period are present over a large area in the north and a small region of peat deposits are present along the eastern border. Two small areas in the northeast and northwest of Area 12 contain sand and gravel glaciofluvial ice contact deposits from the Devensian period and a channel of clay and silt lacustrine deposits passes through the east of the field on a north-south orientation. This channel of clay and silt lacustrine deposits continues into Area 13 only extending halfway across the field. Sand and gravel glaciofluvial ice contact deposits from the Devensian period are present over most of Area 11 two small areas with deposits of Diamicton Till located to the west and north of this survey area. There are no deposits over most of Area 1, 2 and 5 deposits of Diamicton Till of the Devensian period are present to the north of Area 2, the south of Areas 1 and 5 and the northwestern corner of Area 5 (British Geological Survey, 2025).

4.4. The soils consist of slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils in the south, east and north, with freely draining slightly acid sandy soils in the northwest of the survey area, across Area 8 and the north of Area 10 (Soilscapes, 2025).

5. Archaeological Background

5.1. The following is a summary of an Archaeological Desk Based Assessment, produced by Icen Project (Rossi *et al*, 2025); and a geophysical survey of adjacent areas which was completed in 2007, produced by Stratascan Ltd and publicly available as a grey literature report (Smalley, 2007).

- 5.2. The geophysical survey completed in 2007 within an adjacent area (Figure 1) in 2007 consisted of coarsely spaced magnetic susceptibility over its full area, followed by detailed magnetometry and detailed resistivity in targeted areas. The results of the 2007 magnetometry survey suggest the presence of possible archaeology in the form of linear, curvilinear and amorphous anomalies. These anomalies appear sporadically across the majority of the areas surveyed at the time, with a greater concentration present in areas within the east of the area. However, the utility of this information for interpretation of the current survey is of fairly low value given the time that has elapsed since the survey and that only targeted areas were covered.
- 5.3. No evidence of prehistoric activity within the survey area has been found. In the wider environs, a neolithic tree throw with flint and charred hazelnuts has been recorded c. 470m south of Area 5 (MME15544). An excavation c. 1.2km southwest of Area 8 recovered two Mesolithic flints. Worked and natural flints were recovered during fieldwalking and metal detecting events conducted c. 1km (MME15009) and c. 1.3km (MME15010) northwest of Area 8.
- 5.4. Bronze Age activity is evident within and around the survey area. Castle Hill, c. 950m northeast of Area 8, is thought to be a prehistoric bowl barrow, later repurposed as a motte and bailey castle (MME9294). Excavations in 1843 revealed a chamber within the barrow, including a reported body impression on the chamber's roof. Near the junction of the M6 and Winwick Lane, c. 850m south of Area 5, is a field named 'Barrow Field' on the 1839 Tithe map, indicating a possible barrow location (MME9338). Another round barrow west of Highfield Lane, c. 1.5km south of Area 5 was excavated in 1859, uncovering burnt bones and pottery fragments (MCH8687). At the same location, a barrow was levelled in 1859 by farm labourers who discovered a large urn containing human bones, a stone axe hammer, and a bronze spearhead (ECH2424). Subsequent re-excavation found only small pits and fragments of Bronze Age pottery (MCH8664). Excavations at the Kenyon Hall tumulus, situated adjacent to the southeast corner of Area 2, uncovered a destroyed barrow containing fragments of at least three cinerary urns, cremation remains, a bronze pin, and the tongue of a bronze brooch (MCH8557; MGM21359). Another possible Bronze Age barrow was recorded c. 1.8km south-southwest of Area 1 but no longer survives (MCH8663). Further finds in this area include a palstave and broad flat bronze ring (MCH8513), and a decorated bronze axe (MCH8516). Excavations c. 900m south of Area 1 revealed a round barrow containing nine cremations, including an off-centre un-urned cremation and another cremation in the ditch (MCH8905). Finally, a notable prehistoric flint dagger was found in a potato field, c. 210m southeast of Area 1 (MCH8782).
- 5.5. A number of stray finds have been recovered from the Winwick area, indicating sporadic activity. These include a Roman brooch of the Polden Hill type c. 120m south of Area 5 (MCH13141), and a lead figurine of Mars c. 1.6km southwest of Area 5 (MCH16095). An excavation c. 550m southeast of Area 1 uncovered a Romano-British farmstead and related enclosures (MCH8833). Features within the enclosures, including pits, postholes, and curvilinear features, were heavily truncated by ploughing.

- 5.6. Extensive Medieval activity has been recorded in the town of Newton-le-Willows. Several churches and chapels date from the early 17th century, with the one standing upon the site of the late 13th-century Chapel of Rokeden (MME22309). A former 14th-century manor house was located c. 1.2km west southwest of Area 8 and was later buried beneath a rail embankment (MME9145). Newton Park, c. 1.1km west of Area 5, was originally a medieval park. It is first recorded in the early 14th century and would have been an enclosed area used by the local lord for hunting (MME9311). Excavations behind Nos. 76–88 High Street, Newton-Le-Willows, c. 1.4km west of Area 8 uncovered Medieval and post-Medieval ditches, pits, and a post-built structure, reflecting settlement activity (EME2151; EME2211). Medieval pottery was found during a watching brief at No. 8 Church Street, c. 1.1km west of Area 8 (EME 1652; MME15008). A mill documented from 1200-1204 was excavated c. 1.2km southwest of Area 8 (EME2449).
- 5.7. Medieval activity has also been recorded beyond Newton-le-Willows. Agricultural practices are indicated by ridge and furrow identified around Newton Lake, c. 850m west of Area 8 (MME9272; MME9263), while traces of Medieval wind and watermills have been identified in the southeastern corner of Area 2 (MCH8559).
- 5.8. Post-Medieval activity has been evidenced within the vicinity of the survey area through the development of farmsteads and field systems. A former house (MME9312) and stables (MME9317) noted on the Legh Estate plan in 1745 were located c. 380m southwest of Area 10 at the current Parkside Farm and along the western border of Area 10 at the current Highfield Farm. Grade II listed walls, gates and gate piers of Kenyon Hall (HER12018.1.0) are located c. 30m west of Area 2. Grade II listed Holly House (HER12019.1.0) and the site of the former Lowton House (HER3154.1.0) are located c. 550m northeast of Area 8.
- 5.9. The survey area has predominantly remained agricultural, with modern activity evident in the wider environs as the construction of the railway line which forms part of the northern boundary and separates Area 8 from the remainder of the site, the site of the former Parkside Colliery located within Newton Park c. 880m southwest of Area 8, and the construction of the M6 motorway located c. 450m southwest of Area 5.

6. Methodology

6.1.Data Collection

- 6.1.1. Magnetometer surveys are generally the most cost effective and suitable geophysical technique for the detection of archaeology in England. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

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 quad-towed, cart-mounted and hand-carried GNSS-positioned system.

6.1.3.1. MS' cart and hand-carried 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 the EAC and Historic England guidelines for 'minimally enhanced data' (see Section 3.8 in Schmidt *et al.*, 2015: 33 and Section IV.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

This report presents the gradient of the sensors' total field data as greyscale images (Figures 12, 15, 18, 21, 24, 27, 30 & 33), as well as the total field data from lower sensors (Figures 3, 6 & 9). 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 of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 14, 17, 20, 23, 26, 29, 32 & 35). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

- 6.3.1. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2025) was also consulted, to compare the results with recent land use.
- 6.3.2. 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 from further work, in order to constantly improve our knowledge and service.

7.2.Discussion

- 7.2.1. The geophysical results are presented in combination with satellite imagery and historical mapping (Figures 4, 7 & 10).
- 7.2.2. A fluxgate gradiometer was successfully completed across c. 86ha of land at Newton-le-Willows, Merseyside. The survey has generally responded well to the environment of the survey area. Magnetic disturbance was mostly limited to field boundaries and around buried services. Parts of the survey area displayed an enhanced magnetic background characterised by a spread of discrete dipolar anomalies likely related to green waste within the fields. These spreads were more prominent in Areas 10 and 11 and may have the potential to obscure any weaker anomalies present. The survey detected anomalies of agricultural, industrial, natural and undetermined origins. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Some anomalies identified within zones of strongly enhanced magnetic background may not be visible on the greyscale images presented in the figures.
- 7.2.3. Agricultural anomalies were detected in all surveyed areas besides Area 11. Linear anomalies of variable magnetic enhancement were detected, relating to the locations of former field boundaries depicted on historical mapping (Figures 4, 7 & 10). Weakly enhanced linear anomalies aligning with modern ploughing regimes were identified as well as further weakly enhanced linear anomalies representing the location of agricultural drainage features.
- 7.2.4. Spreads of magnetically enhanced anomalies were detected in Areas 4, 5, 7, 12 and 13. These anomalies correspond with the location of former extraction sites which have since been infilled with magnetically enhanced material. Many of these anomalies correlate to historically mapped extraction zones 'Mains Pits' and 'Moss Pits'. An additional anomaly in Area 4 shows a magnetic signature typical of extraction activity, despite its difference from the other extraction anomalies in the survey area. The difference in signature and lack of depiction on historical mapping may indicate the area was utilised during a different period, and/or have been backfilled with a different process.
- 7.2.5. Natural anomalies were present in Areas 1, 2, and 5, related to variations in subsurface superficial deposits.
- 7.2.6. Weakly enhanced linear and curvilinear anomalies that did not display any notable characteristics or correspond to any features on historical mapping were interpreted as undetermined in origin.

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. **Data Artefact** – Data artefacts usually occur in conjunction with anomalies with strong magnetic signals due to the way in which the sensors respond to very strong point sources. They are usually visible as minor ‘streaking’ following the line of data collection. While these artefacts can be reduced in post-processing through data filtering, this would risk removing ‘real’ anomalies. These artefacts are therefore indicated as necessary in order to preserve the data as ‘minimally processed’.
- 7.3.1.3. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.4. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.
- 7.3.1.5. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as ‘Magnetic Disturbance’. These magnetic ‘haloes’ will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.
- 7.3.1.6. **Undetermined** – Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify 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 distinct from those caused by ferrous sources.

7.3.2. Magnetic Results - Specific Anomalies

- 7.3.2.1. **Agricultural (Strong, Weak & Spread)** – Linear anomalies corresponding to former field boundaries depicted on historical mapping have been detected within all survey areas excepting Area 11 (Figures 4, 7 & 10). Where these anomalies are more diffuse, agricultural activity subsequent to the removal of the boundary may have spread out fills of former ditches.
- 7.3.2.2. **Agricultural (Trends)** – Weakly enhanced parallel linear anomalies present in all surveyed areas barring Area 11 have been interpreted as agricultural trends relating to modern ploughing regimes. These trends matched the current regimes in the areas when survey was undertaken, the enhanced background of the site would cause such features to become more prominent within the data.

- 7.3.2.3. **Natural (Spread)** – A magnetically enhanced amorphous region interpreted as a natural spread has been detected across Areas 1, 2 and 5 (Figures 31 and 34). This region coincides with the absence of any superficial geology.
- 7.3.2.4. **Extraction Pits** – In the northeast of Area 4 is an amorphous anomaly with stronger enhancement towards the edges, giving it a clearly defined border (Figure 28). This anomaly is typical of extraction and infilling; however, it does not match the morphology nor the magnetic signature of the mapped extraction sites within the area and is itself unmapped.
- 7.3.2.5. **Extraction Pits** – Groups of strongly enhanced anomalies identified in the west of Area 4, the centre of Area 7 and along the boundary of Areas 12 and 13 relate to the former extraction sites 'Mains Pits' and 'Moss Pits', depicted on historical mapping (Figure 7). Further anomalies, caused by the infilling of unnamed pits also depicted on historical mapping were identified in Areas 5, 7 & 13.
- 7.3.2.6. **Extraction Pits (Spread)** – Amorphous spreads of magnetically enhanced material have been detected across the survey area, frequently in close proximity to the aforementioned extraction pits. These anomalies extend beyond the bounds of the extraction pit, possibly due to either dumping of excess infill material in the nearby area, or the disturbance of the infill through agricultural activity.
- 7.3.2.7. **Drainage Feature (Trend)** – Multiple parallel linear anomalies displaying variable magnetic strengths have been detected throughout much of the survey area. These represent the location of agricultural drains.
- 7.3.2.8. **Undetermined (Weak)** – Several weakly enhanced linear and curvilinear anomalies have been detected. These anomalies do not correlate to any features on historical mapping and do not display any characteristics necessary to definitively categorise them.

8. Conclusions

- 8.1. A fluxgate gradiometer survey has been successfully completed across c. 86ha at Newton-le-Willows, Merseyside. The survey has detected anomalies of agricultural, industrial, natural and undetermined origins. No anomalies indicative of archaeological activity were detected. Modern disturbance was recorded in the form of magnetic disturbance, typically at field boundaries and around buried services, and significant spreads of green waste. These could have obscured weaker anomalies should they be present.
- 8.2. Agricultural activity has been identified in the form of former field boundaries recorded in historical mapping, significant systems of drainage features, and modern agricultural trends.
- 8.3. Magnetically enhanced zones relating to historical extraction pits which have since been infilled with magnetically enhanced material were detected in Areas 4, 5, 7, 12 and 13. One isolated extraction pit was also identified.

- 8.4. Natural spreads were detected, likely related to depositional patterns in the underlying bedrock geology in areas where the superficial geology was not present.
- 8.5. The survey uncovered a similar magnetic background and agricultural activity compared to the 2007 survey, though green-waste present in some survey areas may have obscured any archaeological anomalies present. However, significantly fewer anomalies of potential archaeological significance were identified within the recent survey areas. This may indicate either the destruction or obfuscation of said anomalies during the intervening period, or that the archaeological activity present in the area covered by the 2007 survey did not extend into the current survey areas.

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 any dictated time embargoes.

10. Copyright

- 10.1. Copyright and intellectual property pertaining to all reports, figures and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

11. References

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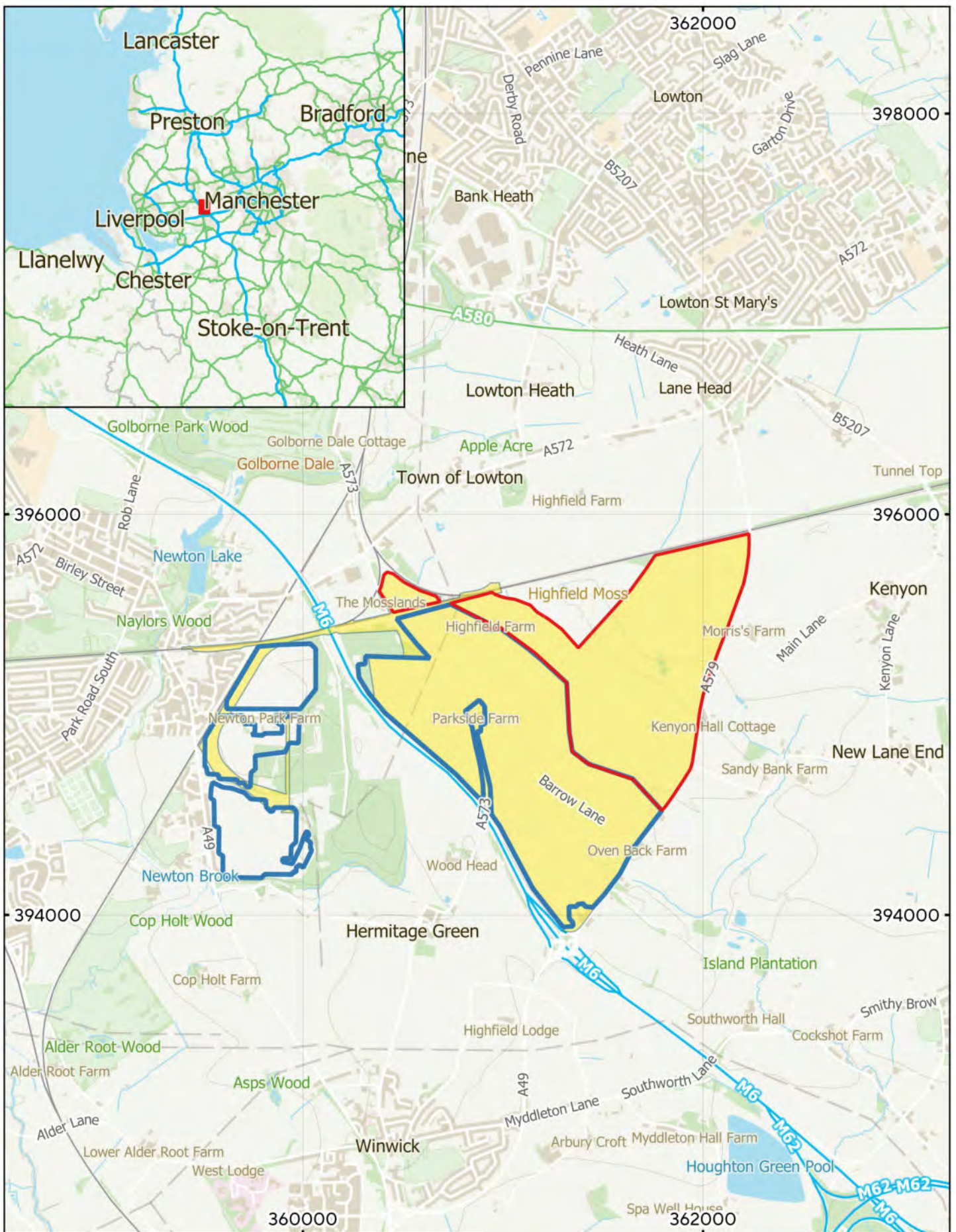
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12. Project Metadata

MS Job Code	MSSJ2090
Project Name	Newton-le-Willows, Merseyside
Client	York Archaeology on behalf of Intermodal Logistics Park North Ltd
Grid Reference	SJ 61612 95280
Survey Techniques	Magnetometry
Survey Size (ha)	86ha (Magnetometry)
Survey Dates	19.06.2025 – 10.07.2025
Project Lead	Leigh A. Garst BFA MSc MCIfA
Project Officer	Becky Paine BSc (Hons) MGeophys
HER Event No	TBC
OASIS No	TBC
S42 Licence No	N/A
Report Version	1.0

13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Review	HS	BP	21 July 2025
0.2	Updated draft for POD check	DB / DN	BP	23 July 2025
0.3	Director review	BP	PJ	24 July 2025
0.4	Signoff	BP	PJ	25 July 2025
0.5	Client Corrections / additional archaeological background	DN	PJ	1 August 2025
1.0	Final Issue		BP	1 August 2025



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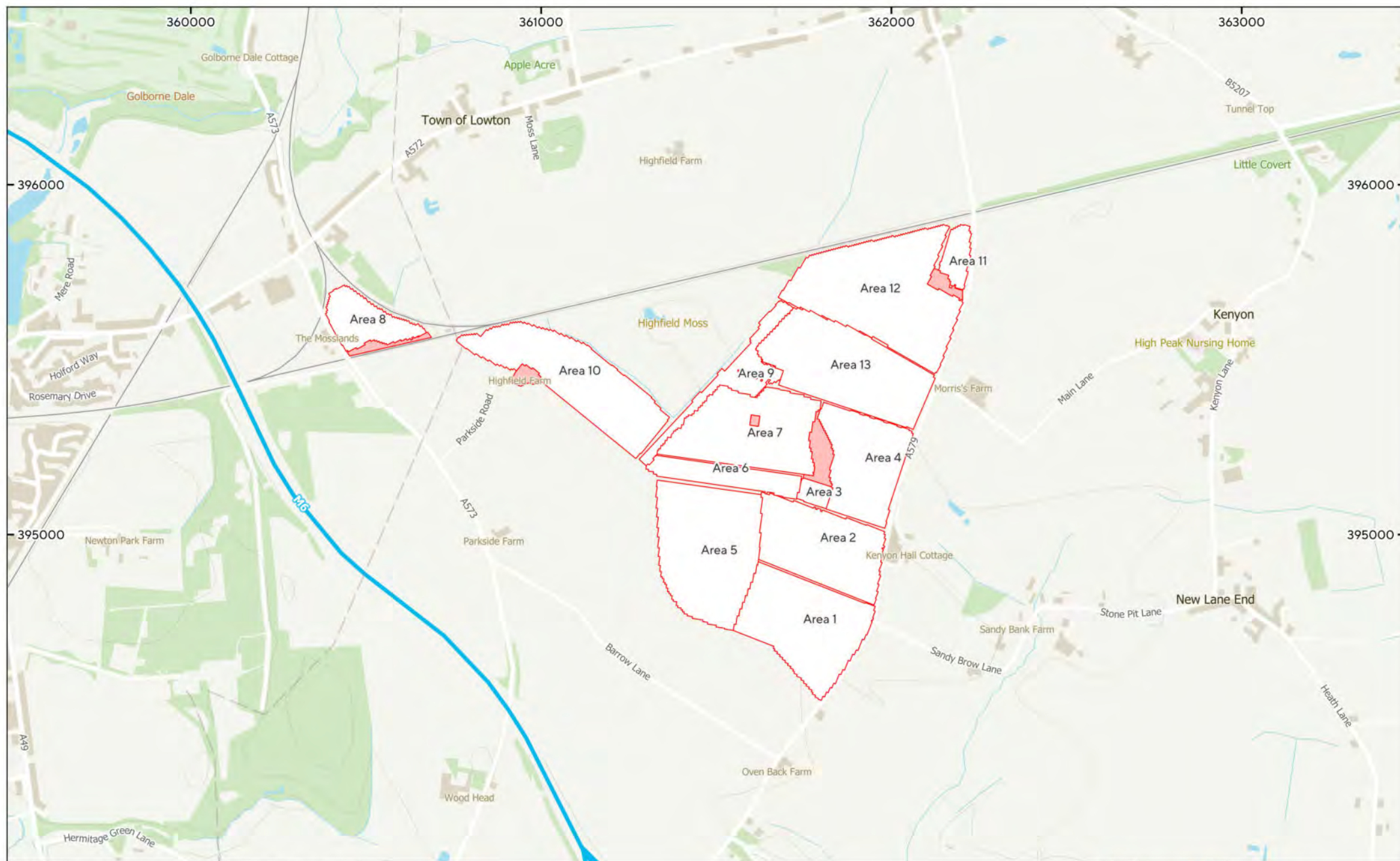
Figure 1 - Geophysical Survey Location 1:25,000 @ A4

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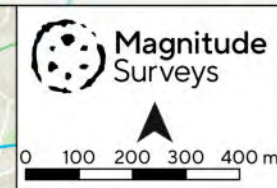
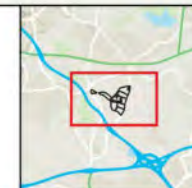
Geophysical Survey Location
 2007 Survey Location
 Order Limit 03.2025

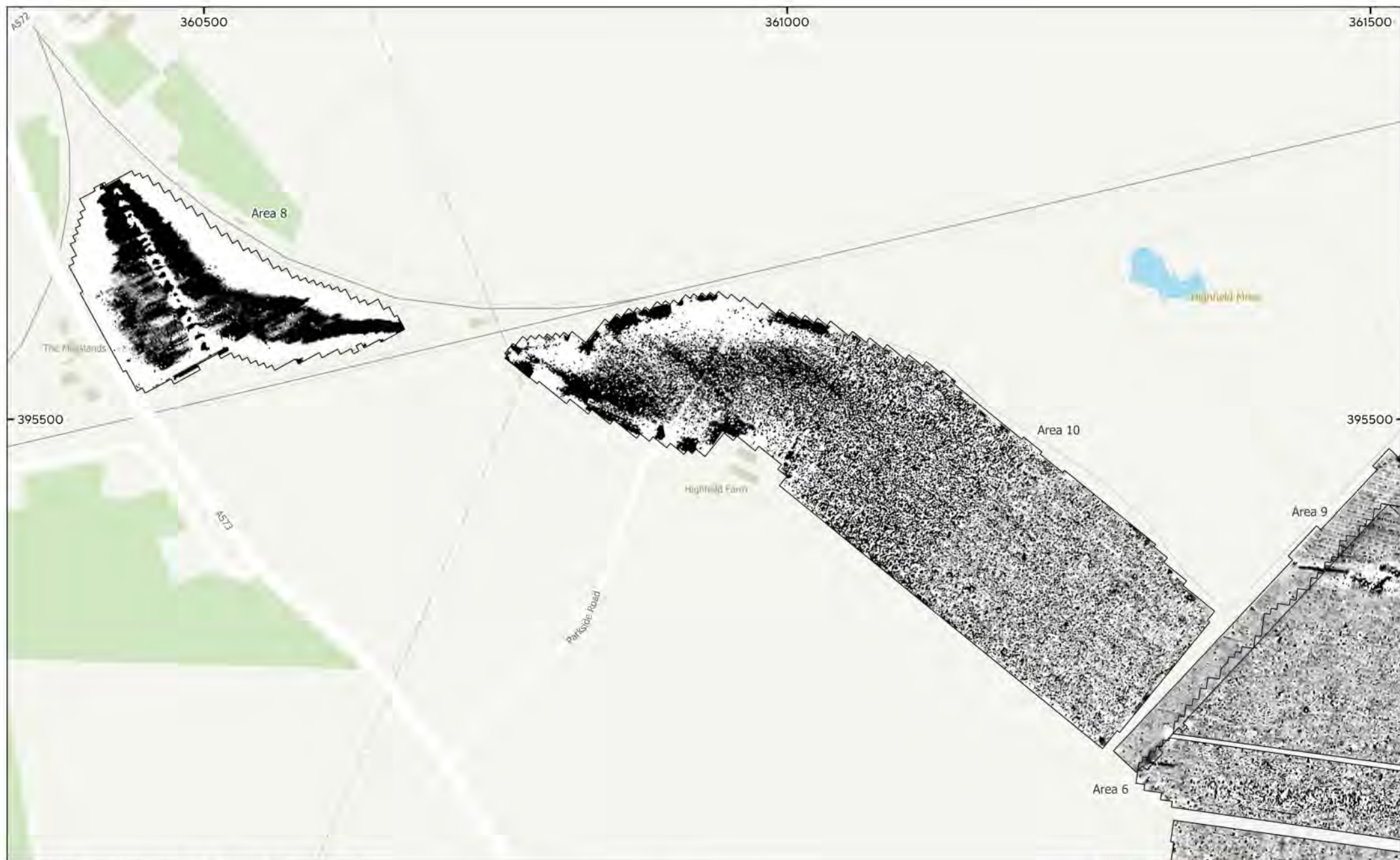




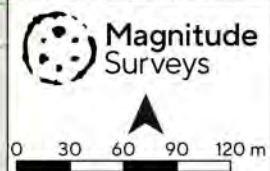
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 Figure 2 - Survey Area
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- Survey Area
- Unsurveyable





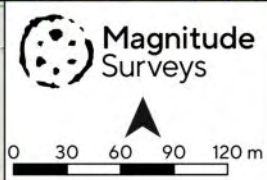
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 3 - Magnetic Total Field (Lower Sensor) (Northwest)
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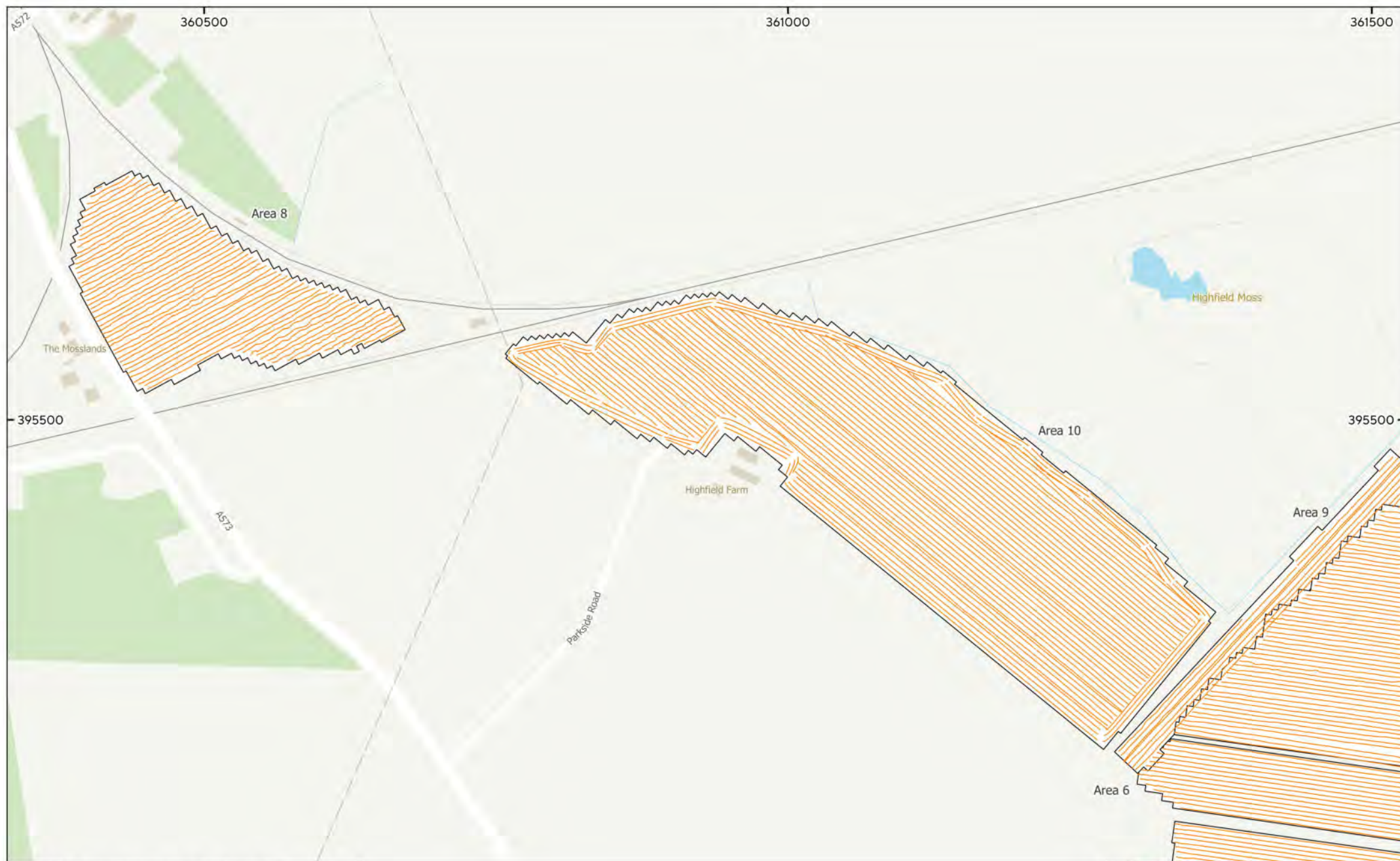




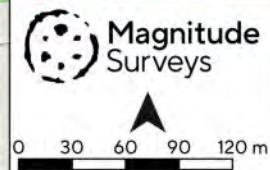
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 4 - Magnetic Interpretation Over Historical Mapping and Satellite Imagery (Northwest) 1:3,000 @ A3
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 Contains historical mapping © CLS Data 2025: Ordnance Survey, 6" 2nd edition c. 1860
 Contains satellite imagery © Bing Satellite 2025

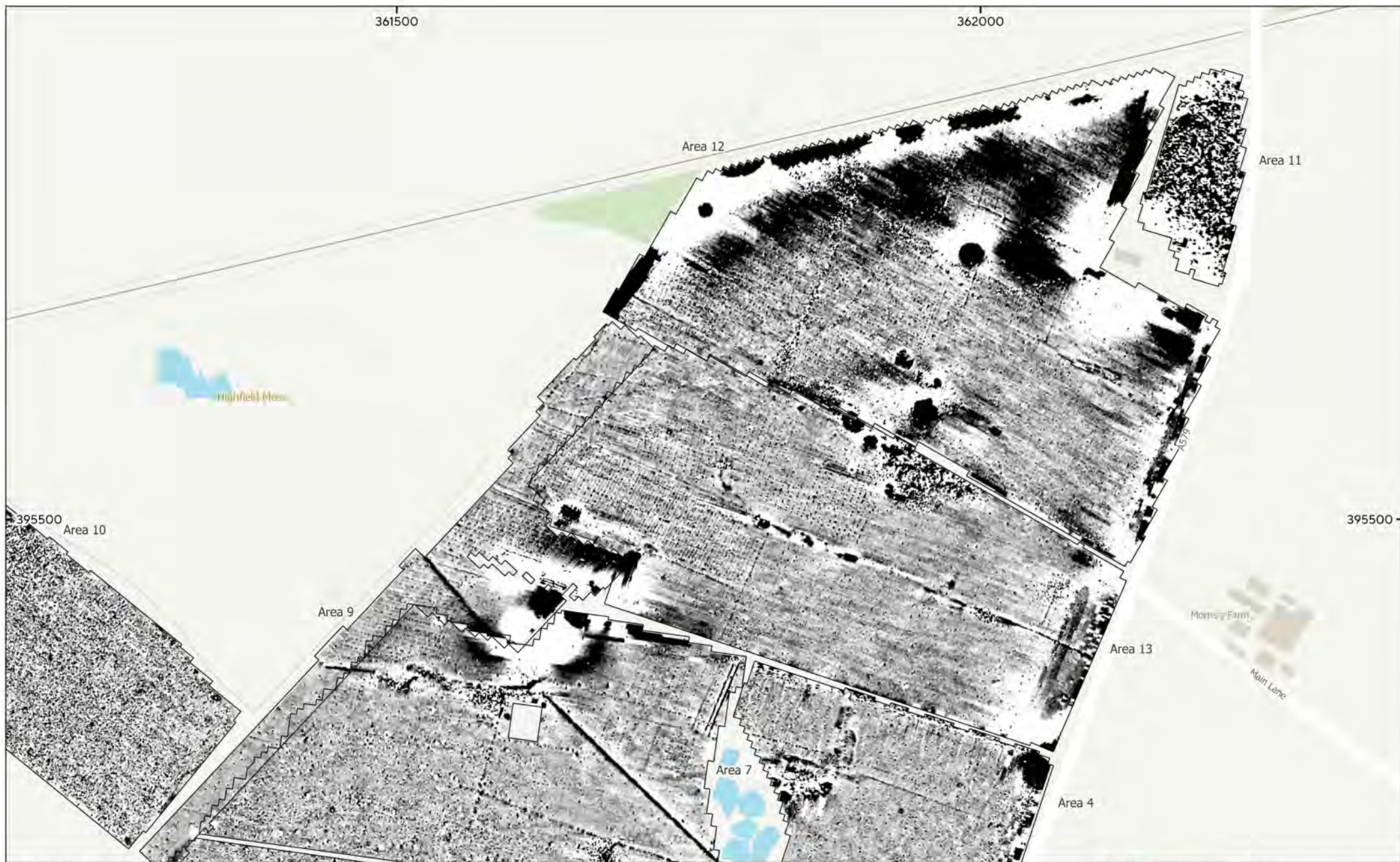
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| ■ Agricultural (Weak) | ■ Natural (Spread) | ■ Extraction Pits (Spread) | --- Ridge and Furrow (Trend) |
| ■ Magnetic Disturbance | ■ Undetermined (Strong) | --- Agricultural (Trend) | --- Drainage Feature |
| ■ Ferrous/Debris (Spread) | ■ Undetermined (Weak) | --- Service | • Ferrous (Spike) |



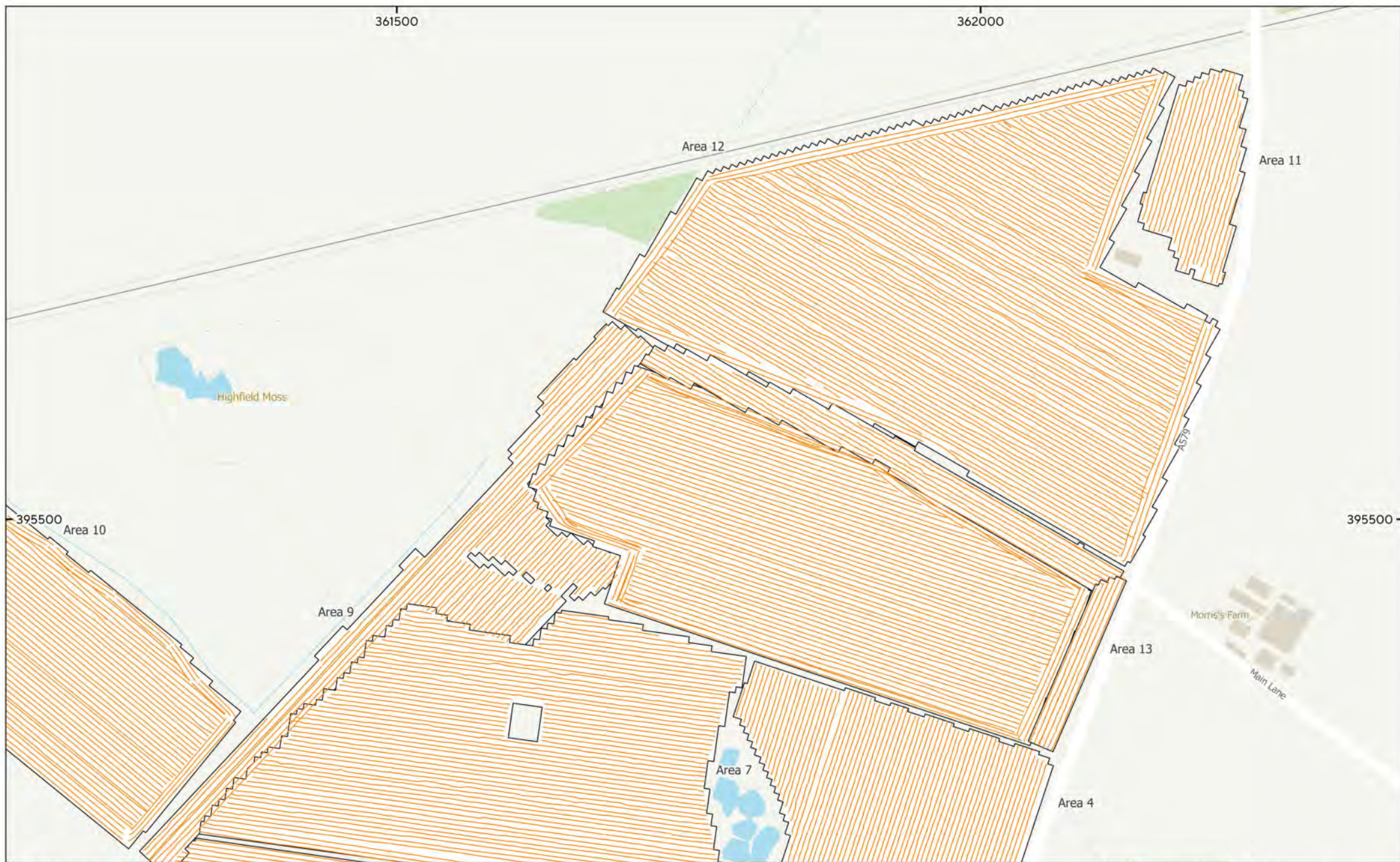


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Figure 5 - GNSS Plot (Northwest)
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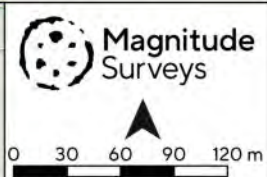




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 Figure 6 - Magnetic Total Field (Lower Sensor) (Northeast)
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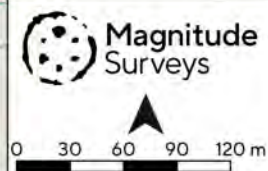


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Figure 8 - GNSS Plot (Northeast)
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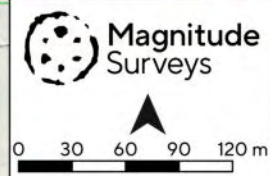
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 Figure 9 - Magnetic Total Field (Lower Sensor) (South)
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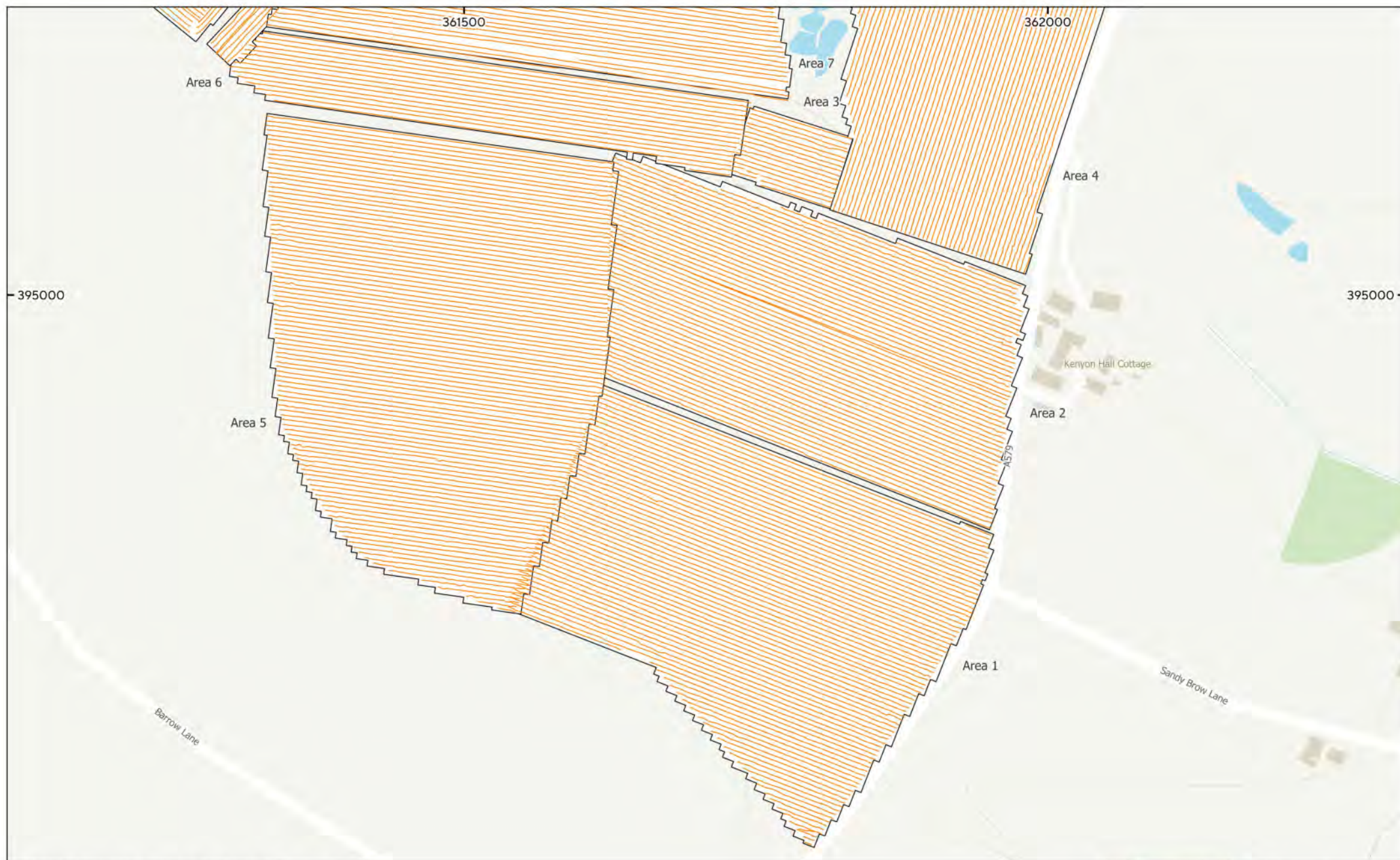




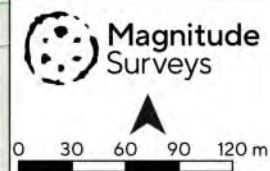
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 Figure 10 - Magnetic Interpretation Over Historical Mapping and Satellite Imagery (South) 1:3,000 @ A3
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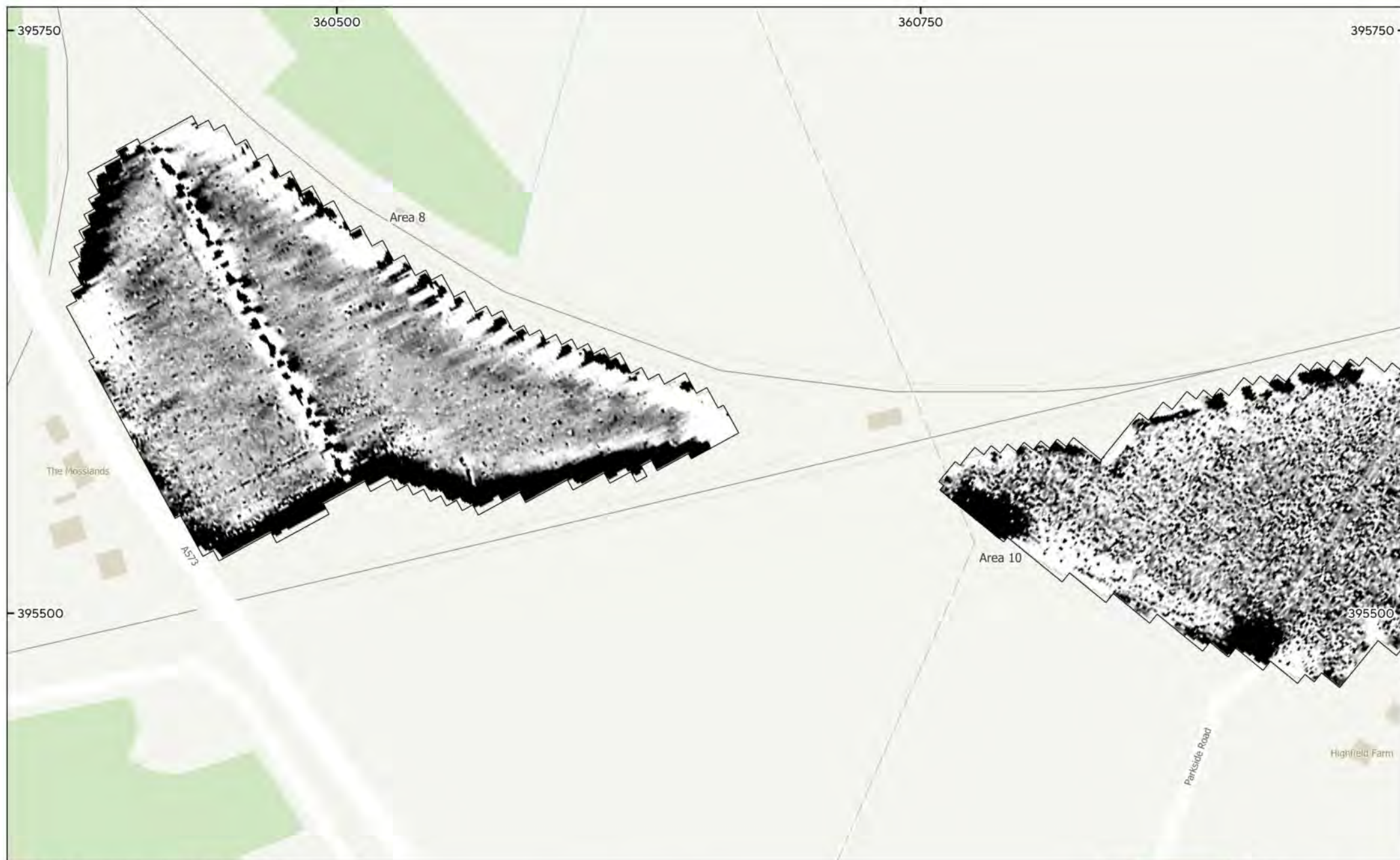
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| Agricultural (Spread) | Ferrous/Debris (Spread) | Extraction Pits | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Agricultural (Trend) | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Weak) | Service | |
| Magnetic Disturbance | Extraction Pits (Spread) | | |



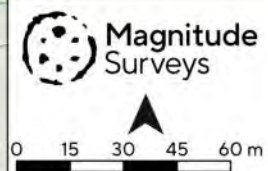
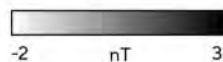


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 Figure 11 - GNSS Plot (South)
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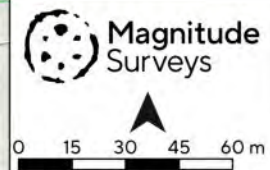
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 Figure 12 - Magnetic Gradient (Areas 8 & 10)
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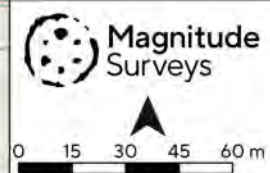
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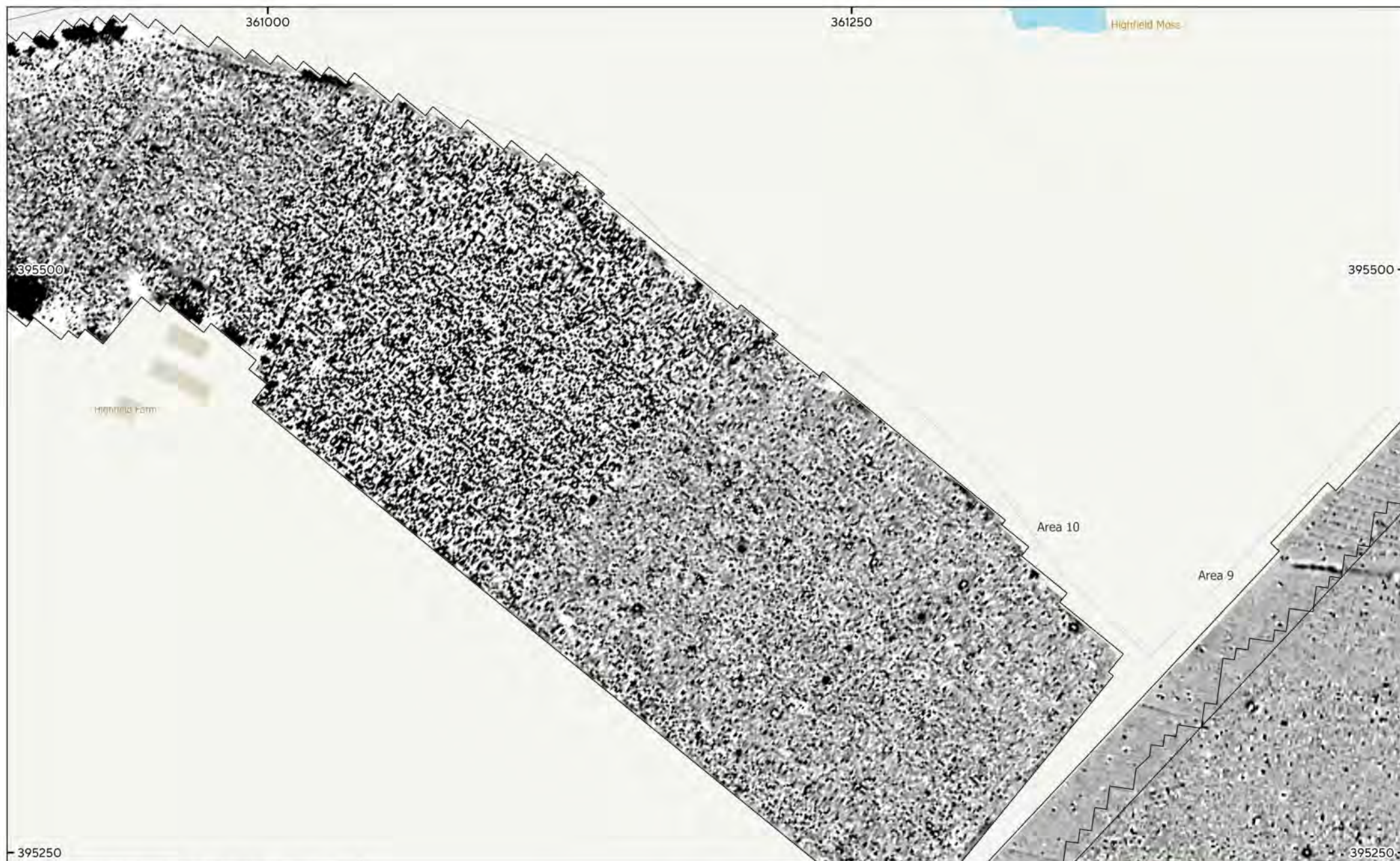
Agricultural (Weak) Undetermined (Weak) --- Service Ferrous (Spike)
 Magnetic Disturbance Agricultural (Trend) — Drainage Feature



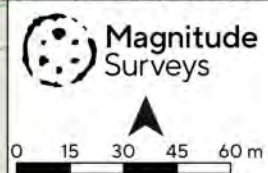
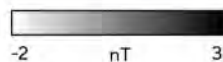


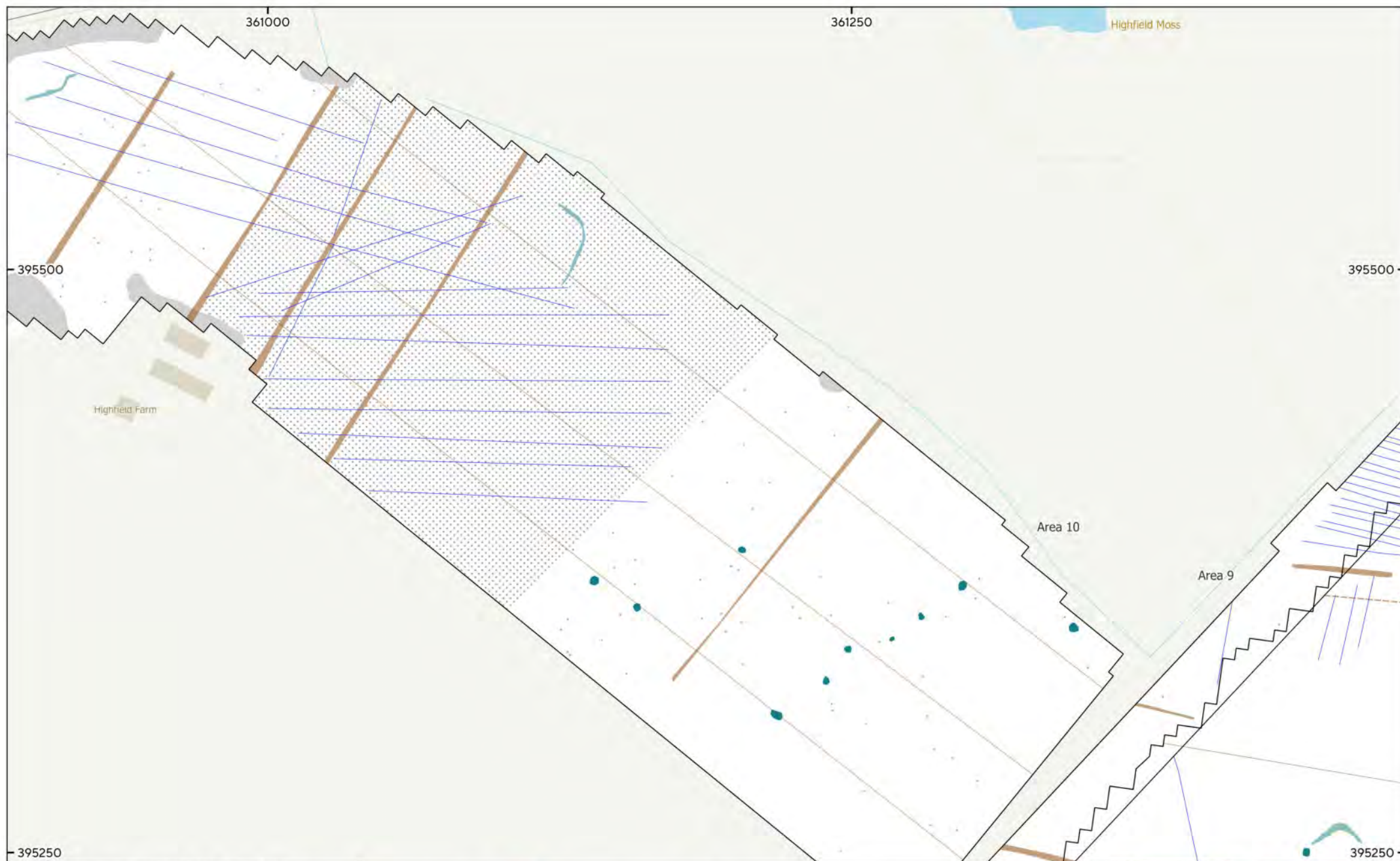
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Figure 14 - XY Trace Plot (Areas 8 & 10)
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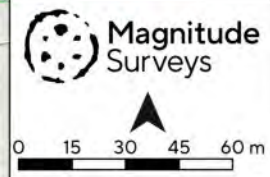
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 15 - Magnetic Gradient (Areas 7, 9 & 10)
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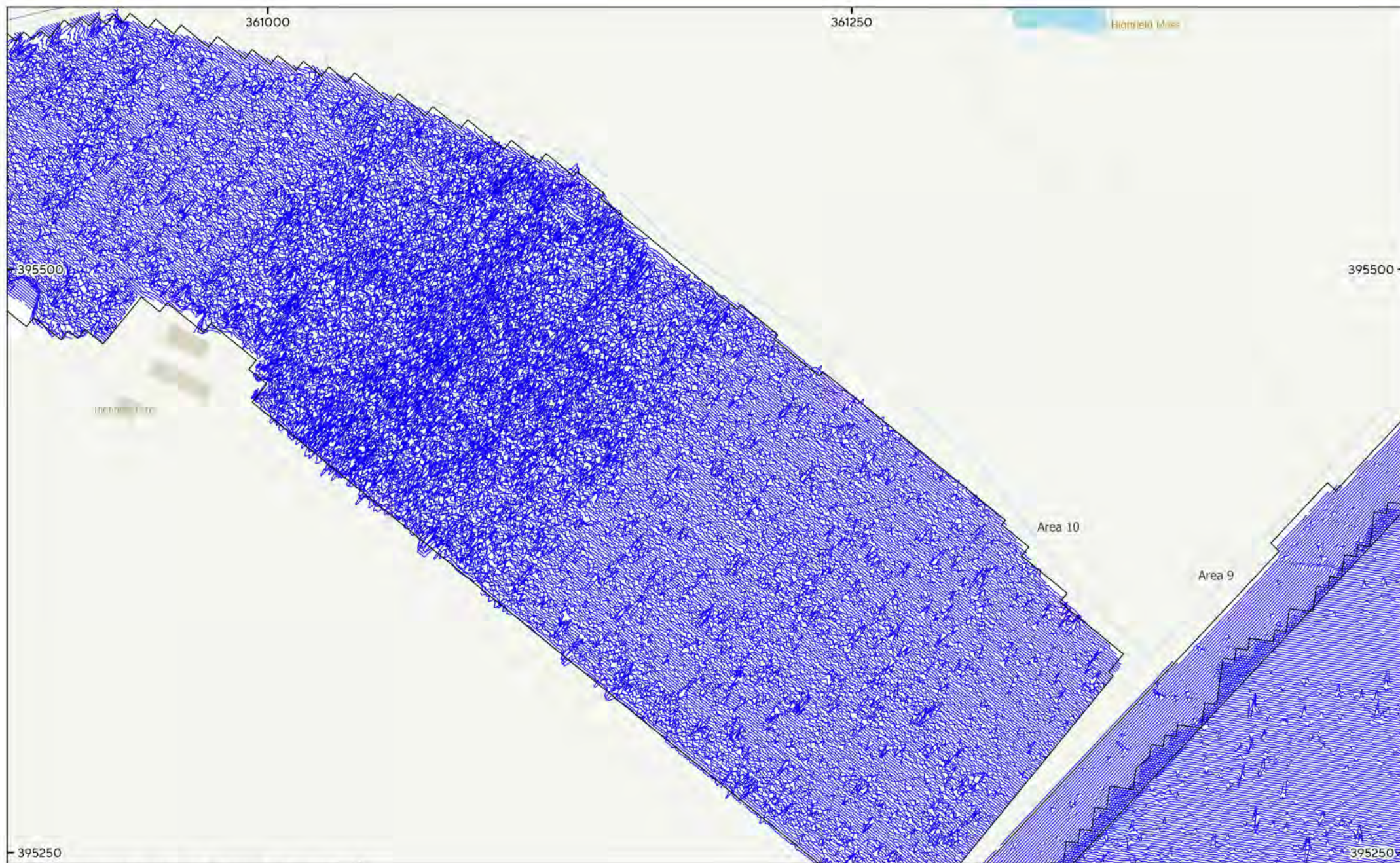




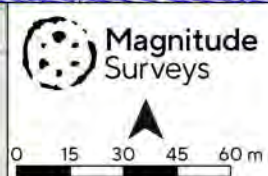
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 Figure 16 - Magnetic Interpretation (Areas 7, 9 & 10)
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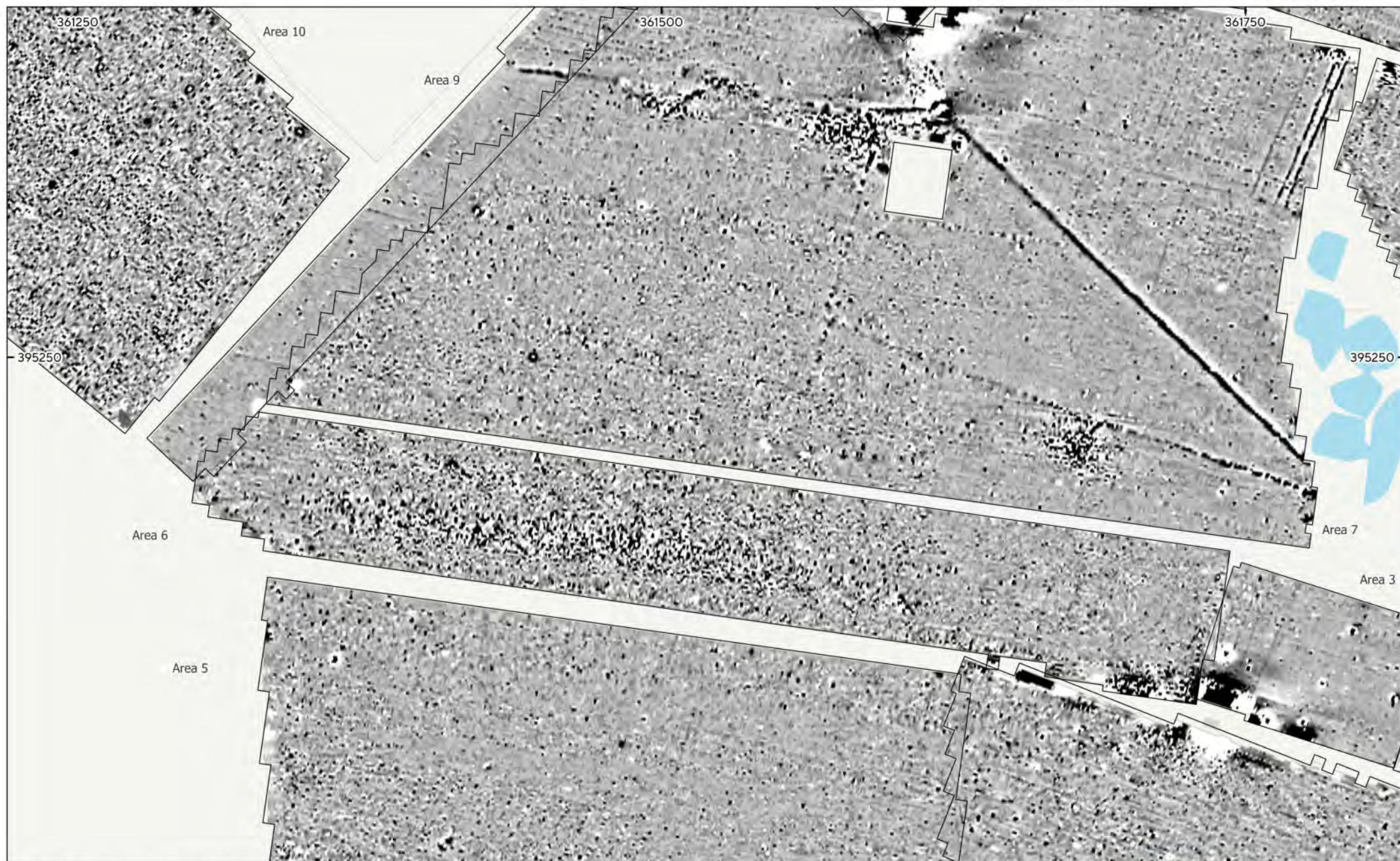
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| Agricultural (Weak) | Undetermined (Strong) | Agricultural (Trend) | Ferrous (Spike) |
| Magnetic Disturbance | Undetermined (Weak) | Ridge and Furrow (Trend) | |
| Ferrous/Debris (Spread) | Extraction Pits (Spread) | Drainage Feature | |



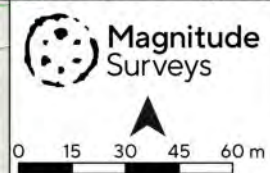
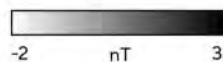


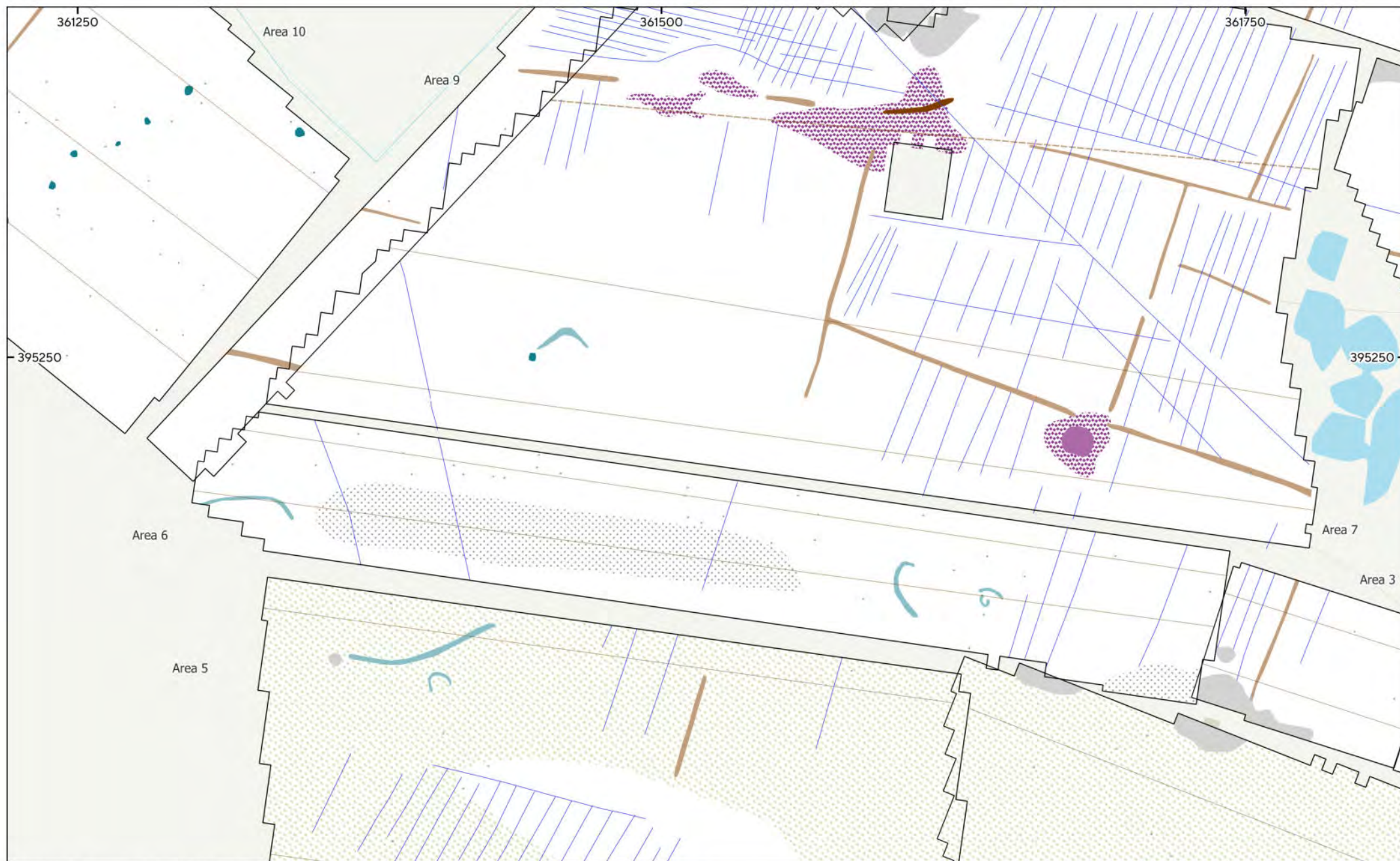
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 Figure 17 - XY Trace Plot (Areas 7, 9 & 10)
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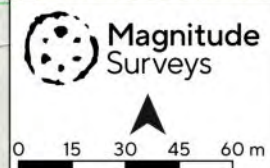
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 Figure 18 - Magnetic Gradient (Areas 2, 3, 4, 5, 6, 7, 9 & 10)
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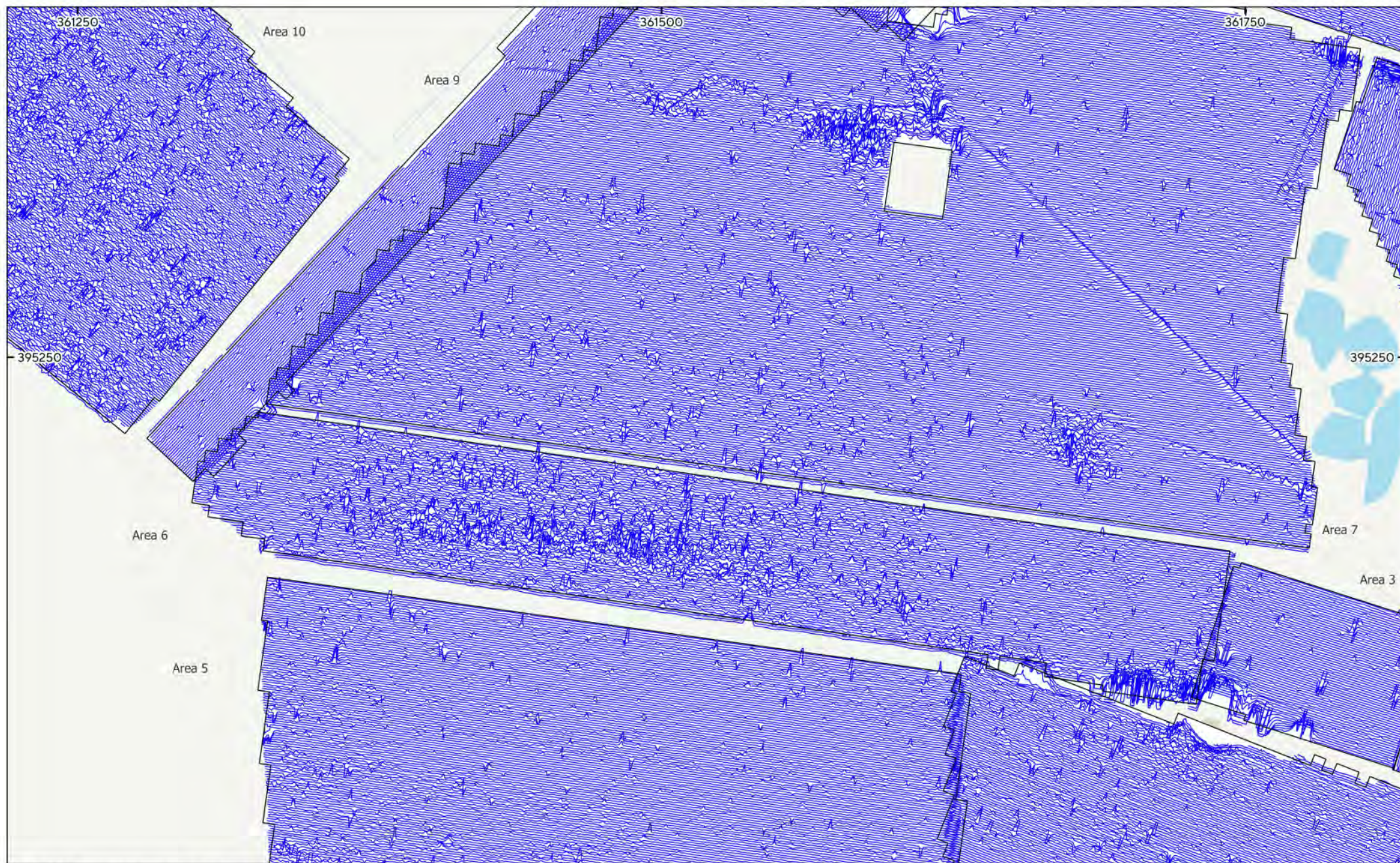




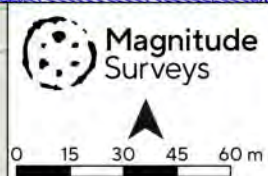
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 19 - Magnetic Interpretation (Areas 2, 3, 4, 5, 6, 7, 9 & 10)
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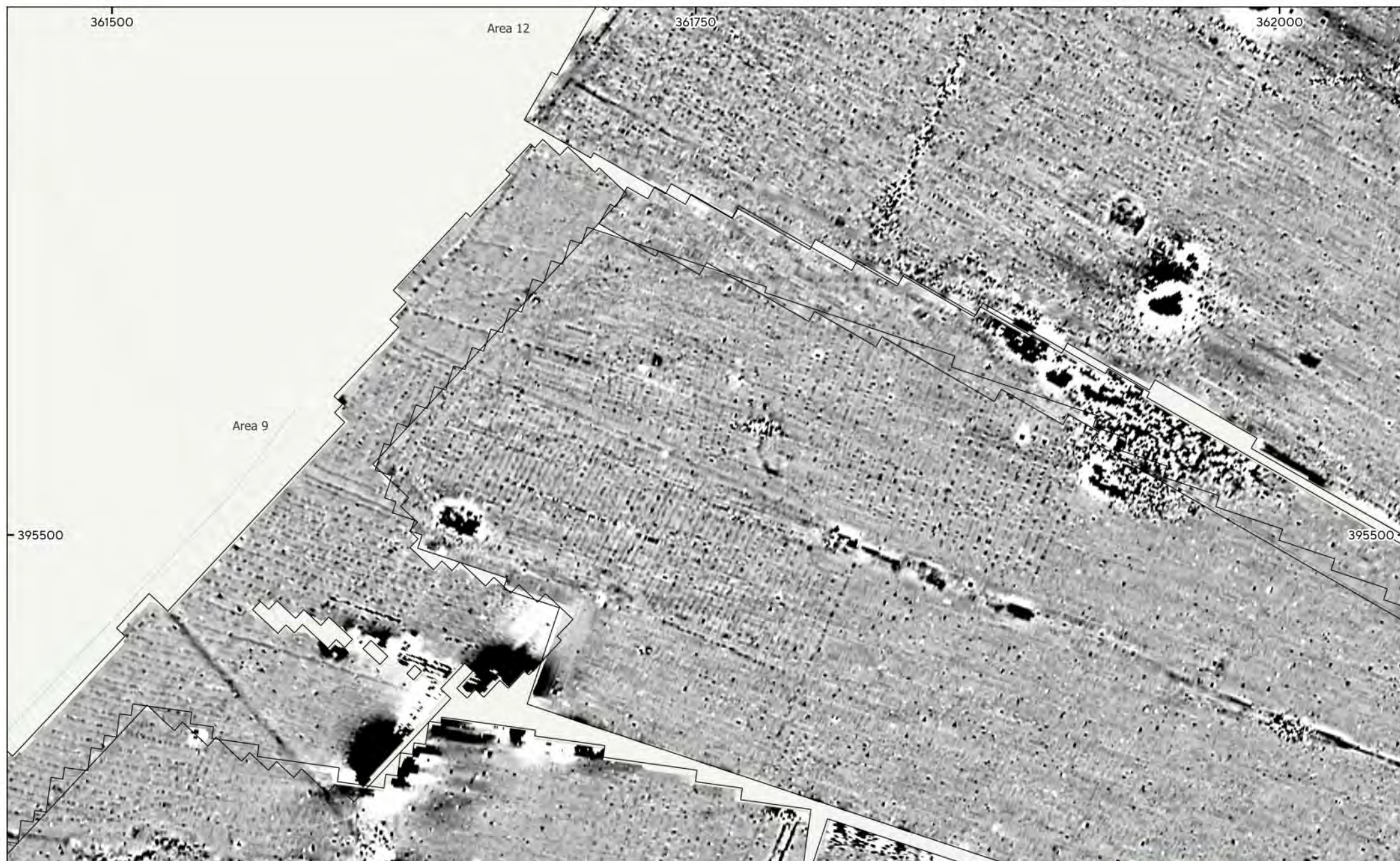
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|-------------------------|--------------------------|--------------------------|------------------|
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| Agricultural (Weak) | Undetermined (Strong) | Agricultural (Trend) | Ferrous (Spike) |
| Magnetic Disturbance | Undetermined (Weak) | Ridge and Furrow (Trend) | |
| Ferrous/Debris (Spread) | Extraction Pits (Spread) | | |



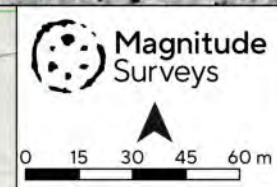


MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 20 - XY Trace Plot (Areas 2, 3, 4, 5, 6, 7, 9 & 10)
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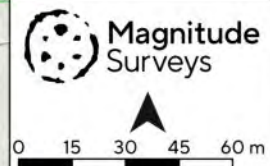
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 21 - Magnetic Gradient (Areas 7, 9, 12 & 13)
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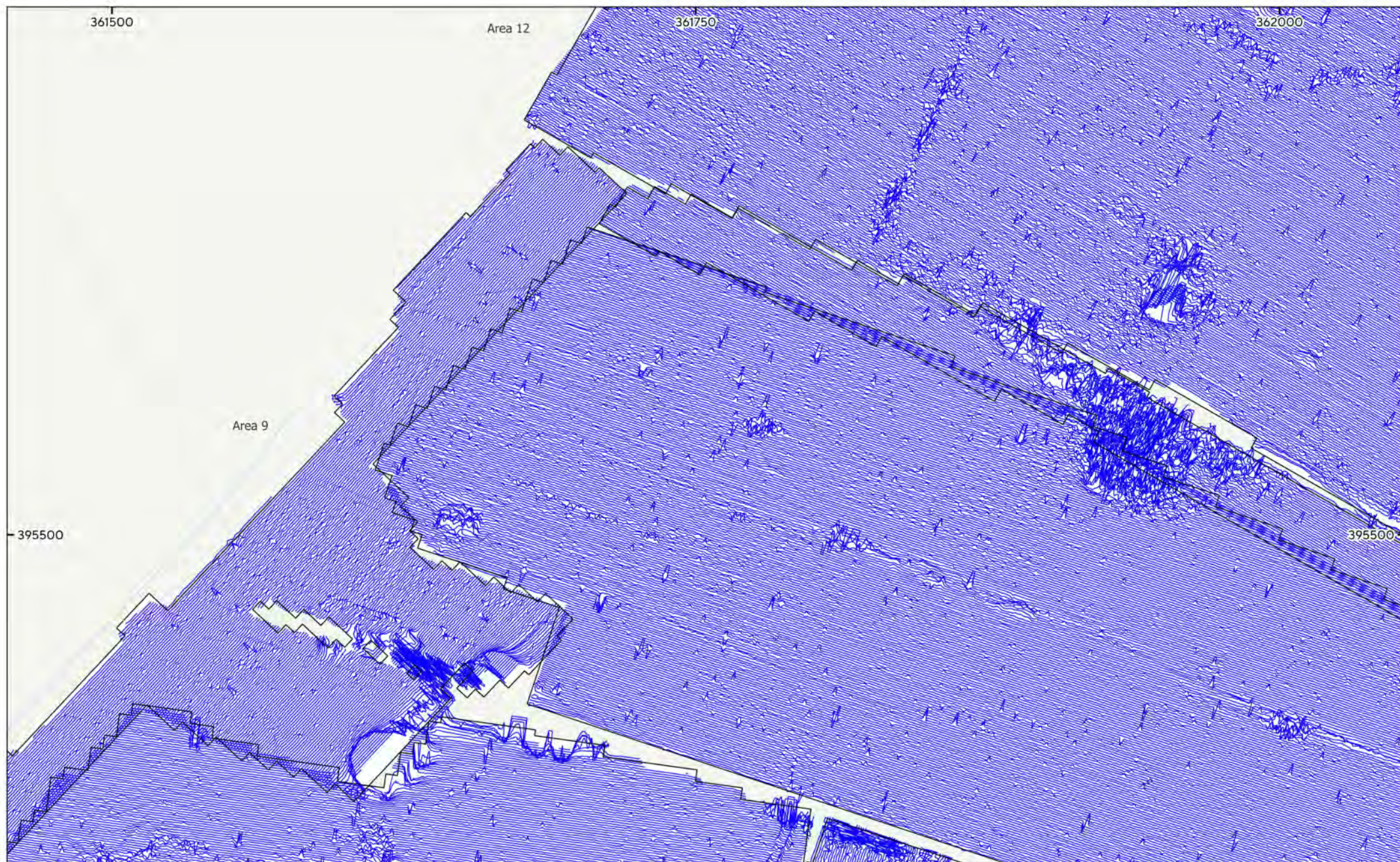




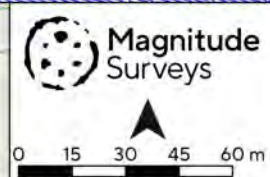
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 22 - Magnetic Interpretation (Areas 7, 9, 12 & 13)
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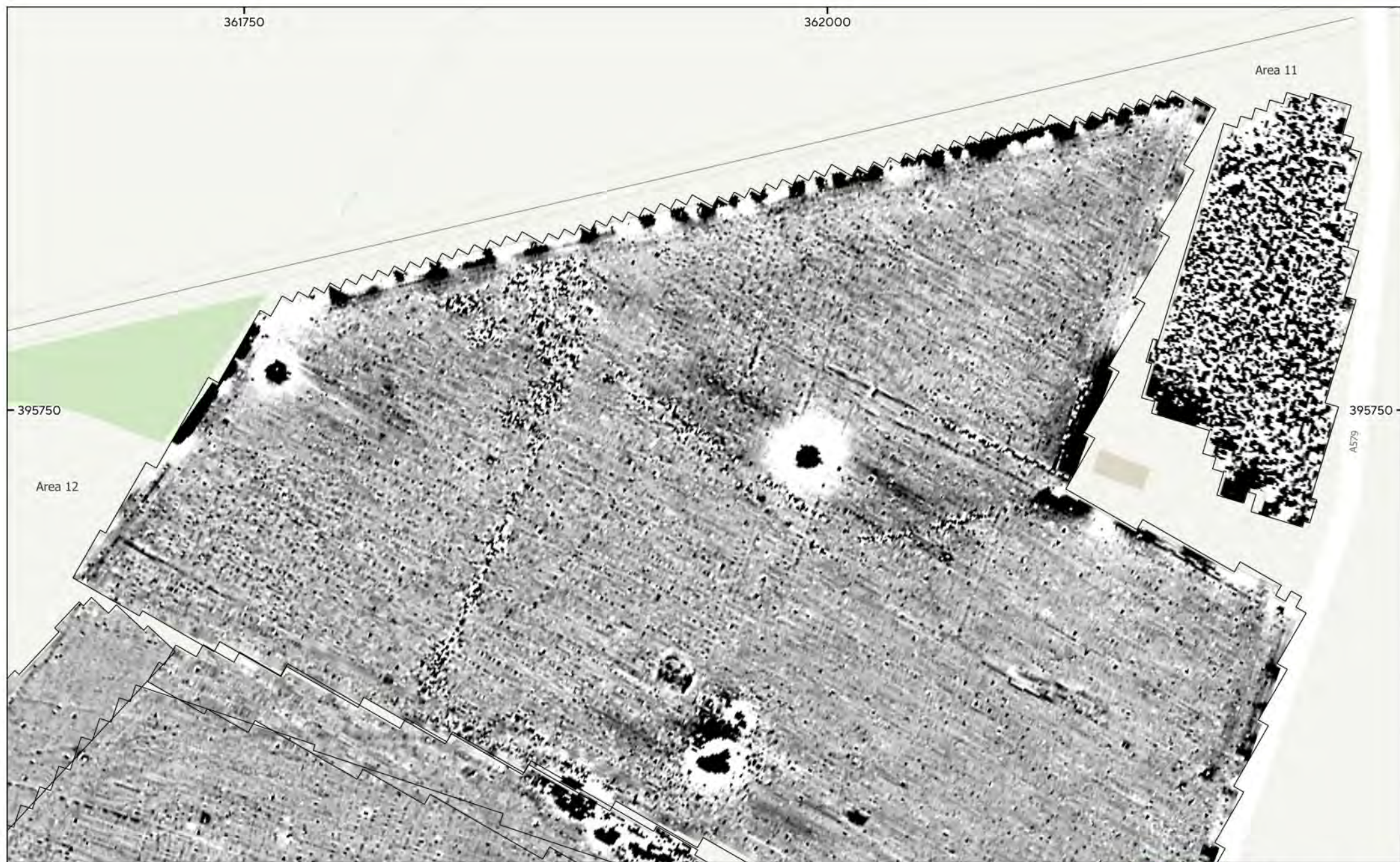
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| Agricultural (Spread) | Magnetic Disturbance | Extraction Pits (Spread) | Ridge and Furrow (Trend) |
| Agricultural (Strong) | Ferrous/Debris (Spread) | Extraction Pits | Drainage Feature |
| Agricultural (Weak) | Undetermined (Weak) | Agricultural (Trend) | Ferrous (Spike) |



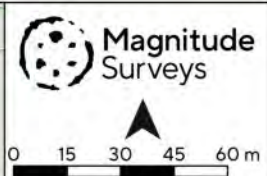
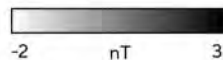


MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 23 - XY Trace Plot (Areas 7, 9, 12 & 13)
90nT/cm at 1:1,500 @ A3
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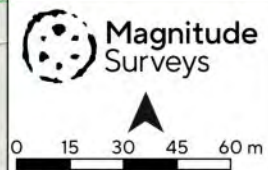
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 24 - Magnetic Gradient (Areas 9, 11, 12 & 13)
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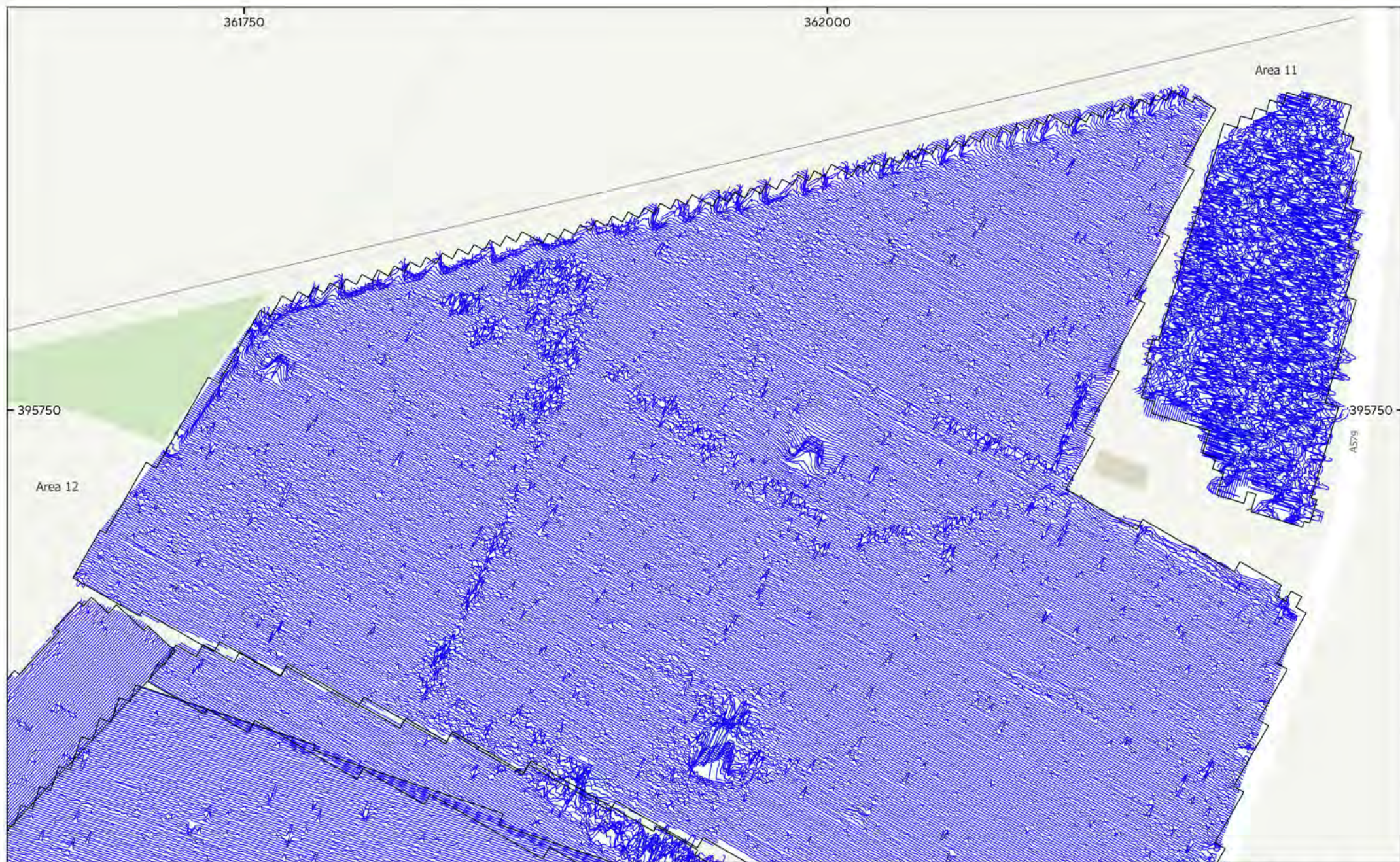




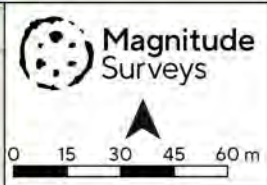
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 25 - Magnetic Interpretation (Areas 9, 11, 12 & 13)
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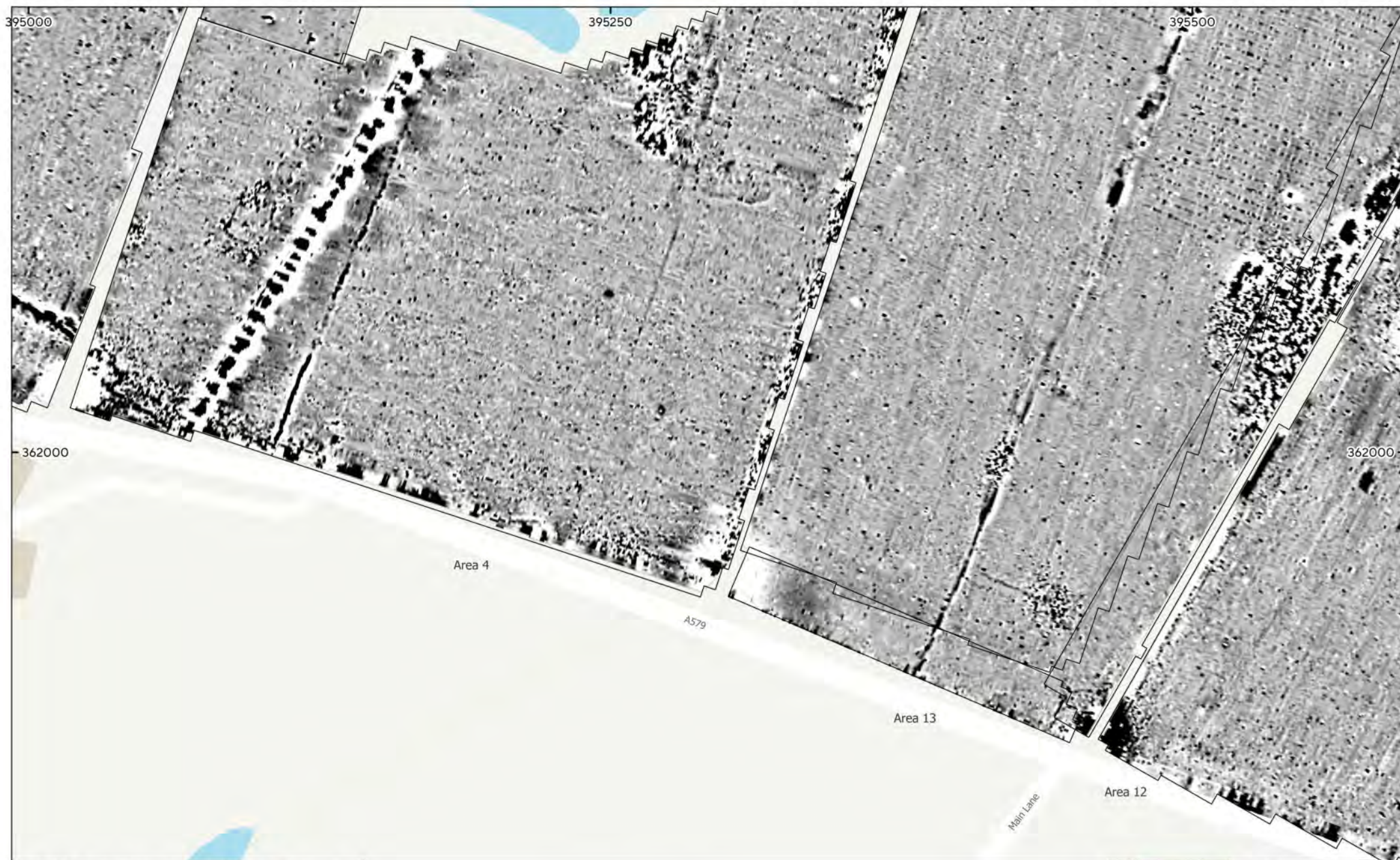
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- Ferrous/Debris (Spread)
- Extraction Pits
- Ferrous (Spike)
- Agricultural (Weak)
- Undetermined (Weak)
- Agricultural (Trend)
- Magnetic Disturbance
- Extraction Pits (Spread)
- Drainage Feature



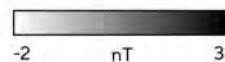


MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 26 - XY Trace Plot (Areas 9, 11, 12 & 13)
90nT/cm at 1:1,500 @ A3
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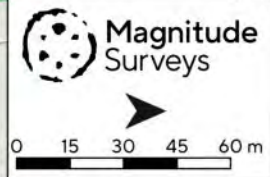
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 27 - Magnetic Gradient (Areas 2, 3, 4, 12 & 13)
 1:1,500 @ A3
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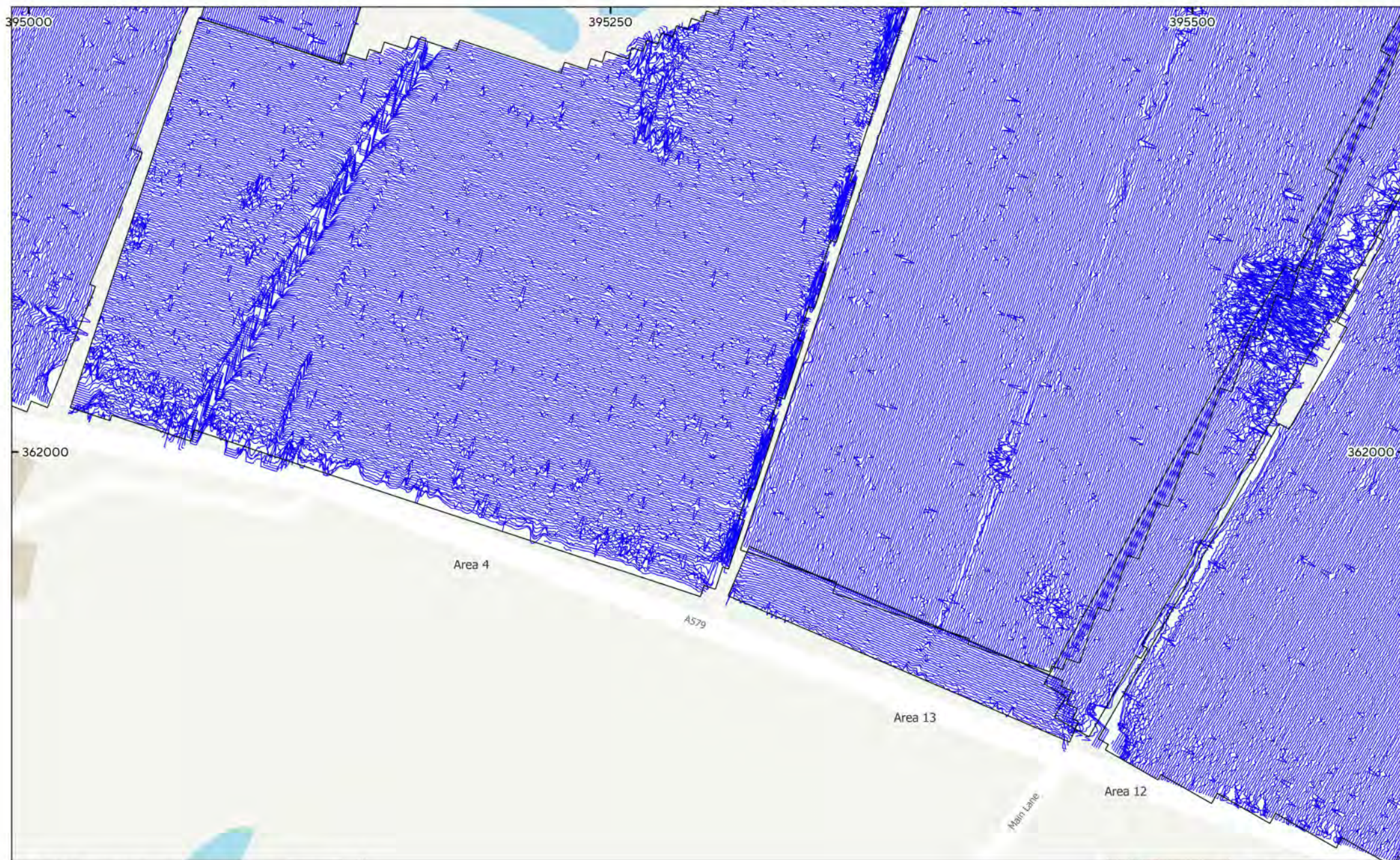




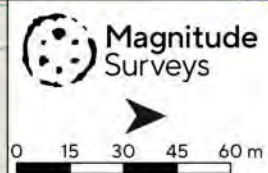
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 28 - Magnetic Interpretation (Areas 2, 3, 4, 12 & 13)
 1:1,500 @ A3
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- | | | | |
|-----------------------|--------------------------|----------------------|------------------|
| Agricultural (Spread) | Ferrous/Debris (Spread) | Extraction Pits | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Agricultural (Trend) | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Weak) | Service | |
| Magnetic Disturbance | Extraction Pits (Spread) | | |



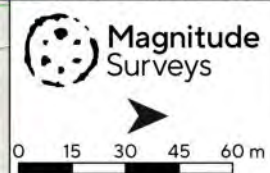
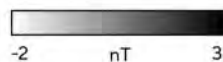


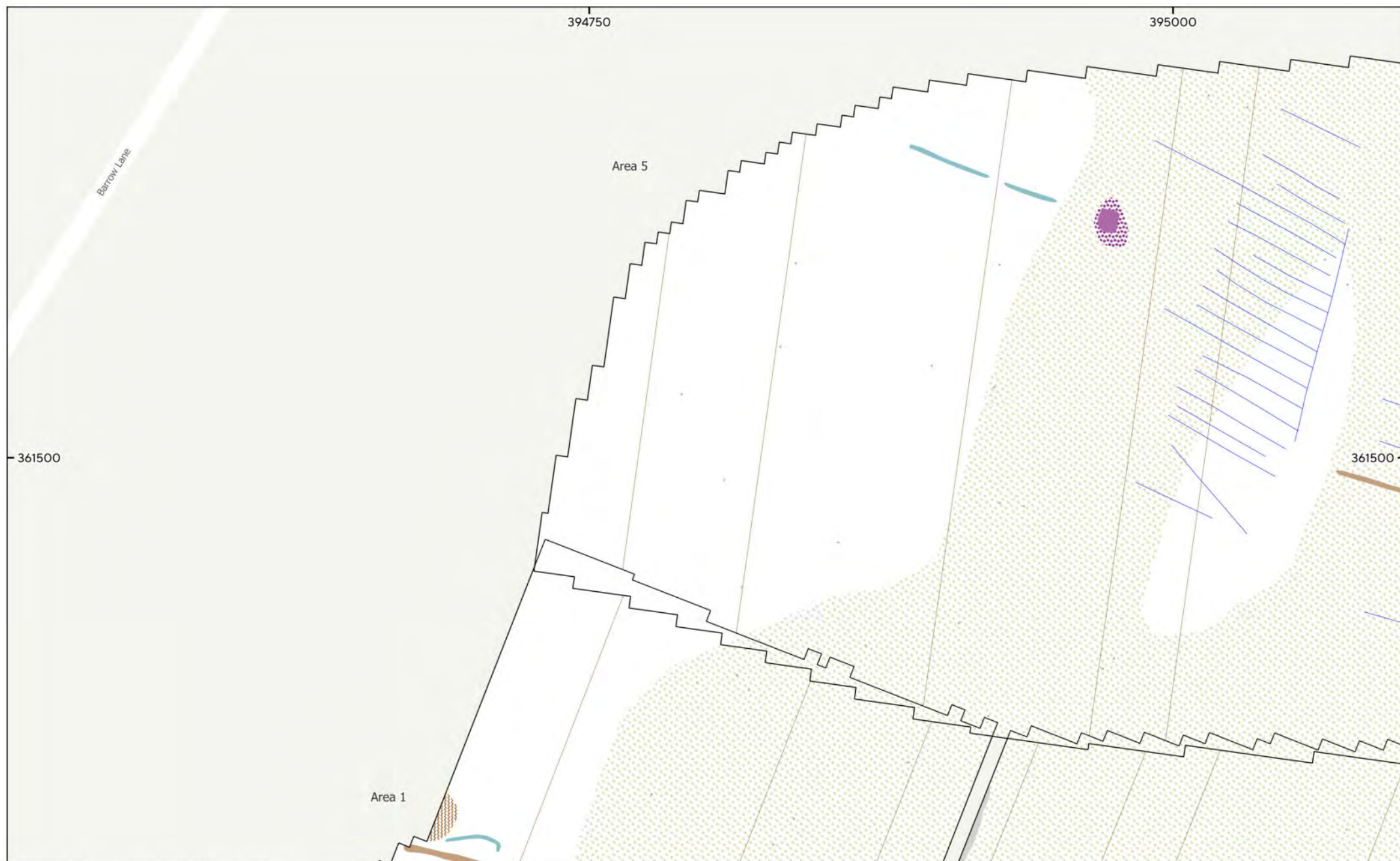
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 29 - XY Trace Plot (Areas 2, 3, 4, 12 & 13)
90nT/cm at 1:1,500 @ A3
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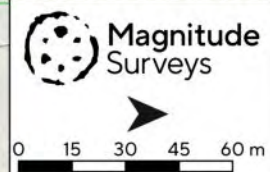
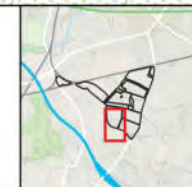
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 30 - Magnetic Gradient (Areas 1, 2 & 5)
1:1,500 @ A3
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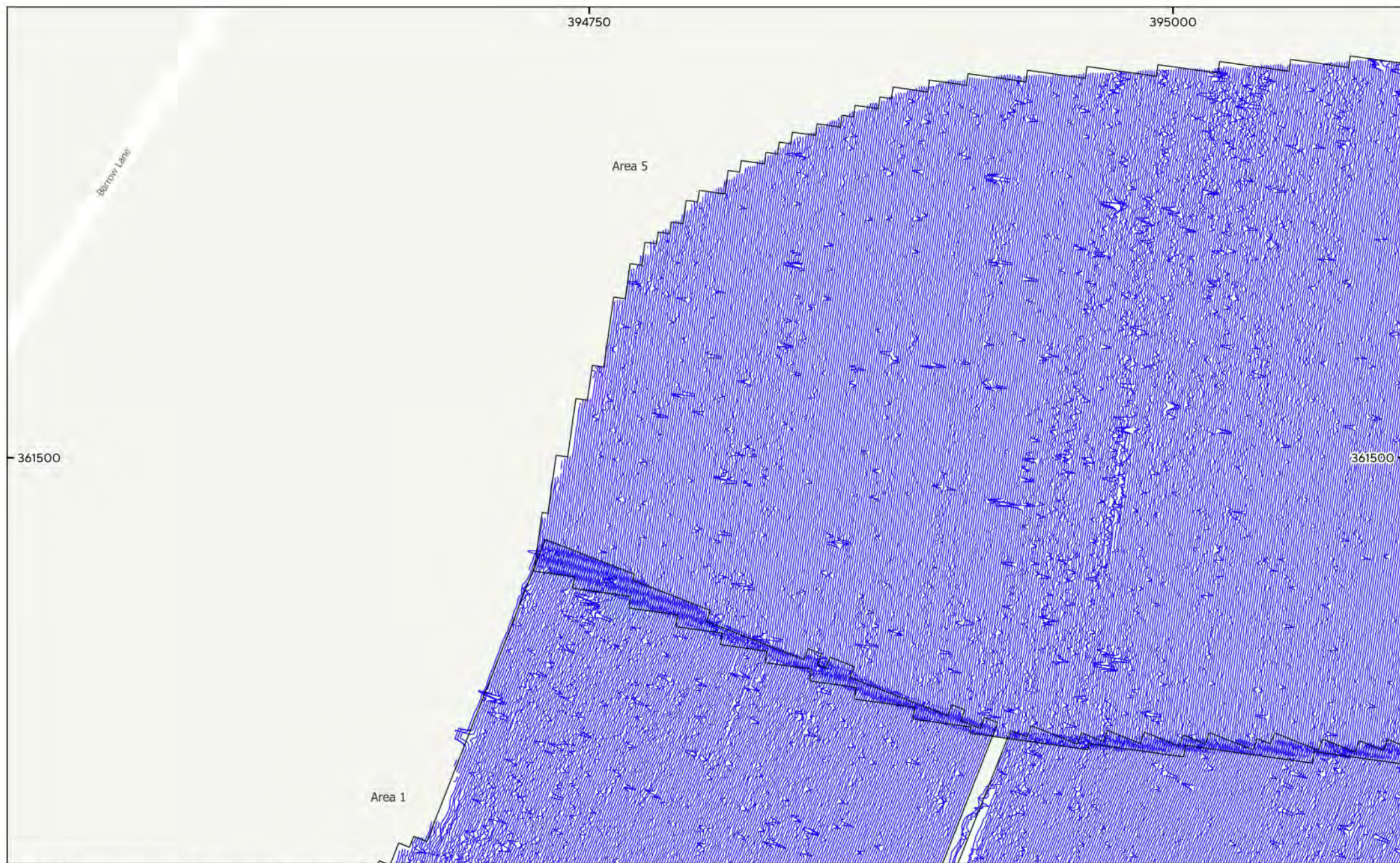




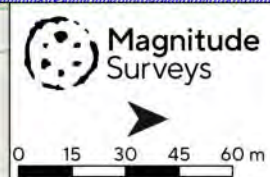
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 31 - Magnetic Interpretation (Areas 1, 2 & 5)
 1:1,500 @ A3
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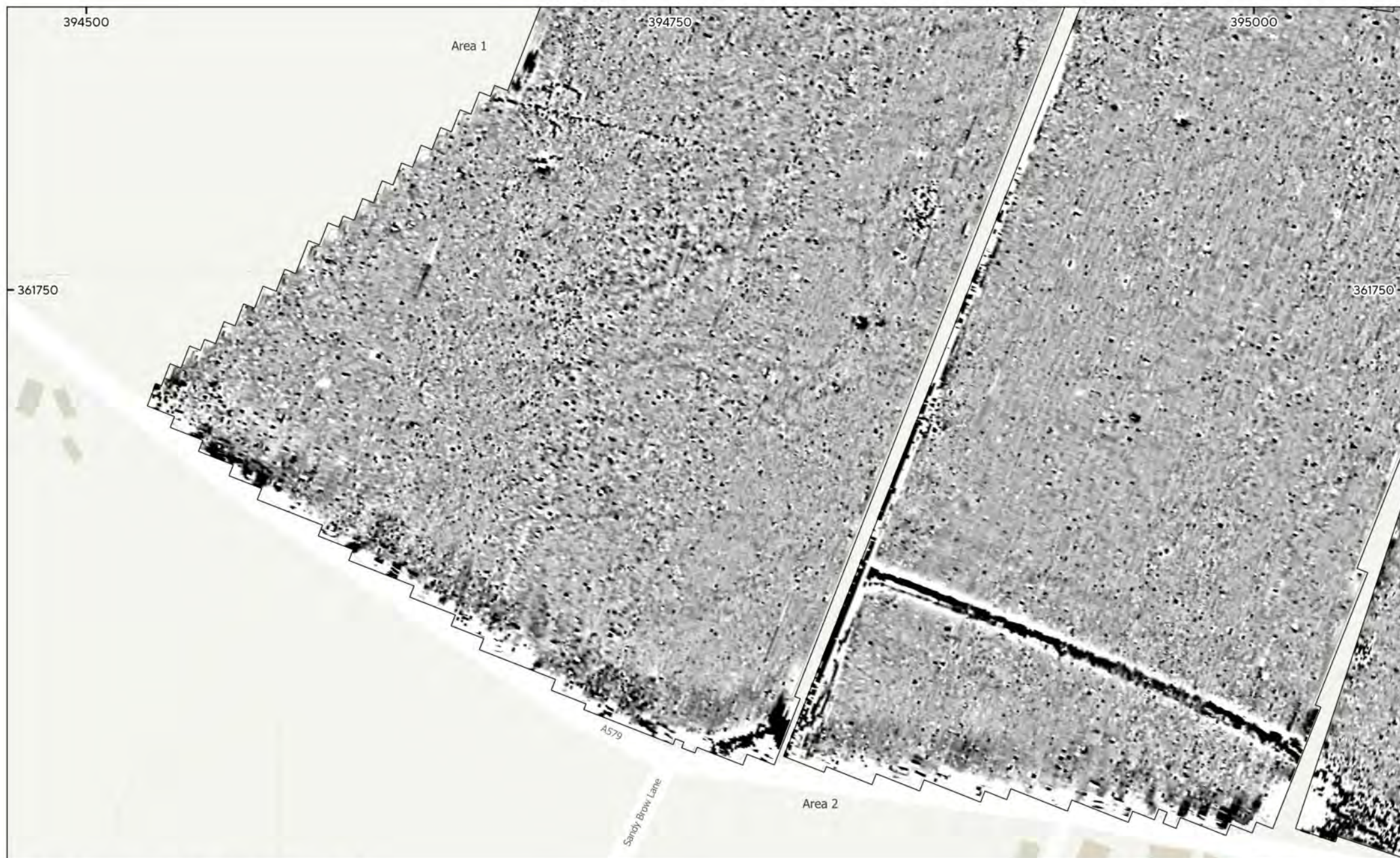
- | | | | |
|-----------------------|--------------------------|----------------------|-----------------|
| Agricultural (Spread) | Natural (Spread) | Extraction Pits | Ferrous (Spike) |
| Agricultural (Weak) | Undetermined (Weak) | Agricultural (Trend) | |
| Magnetic Disturbance | Extraction Pits (Spread) | Drainage Feature | |



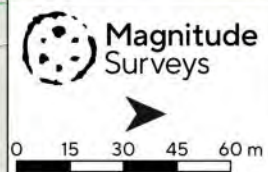
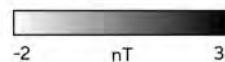


MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 32 - XY Trace Plot (Areas 1, 2 & 5)
90nT/cm at 1:1,500 @ A3
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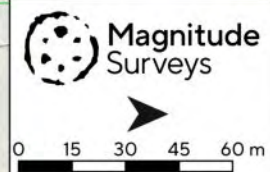
MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 33 - Magnetic Gradient (Areas 1 & 2)
 1:1,500 @ A3
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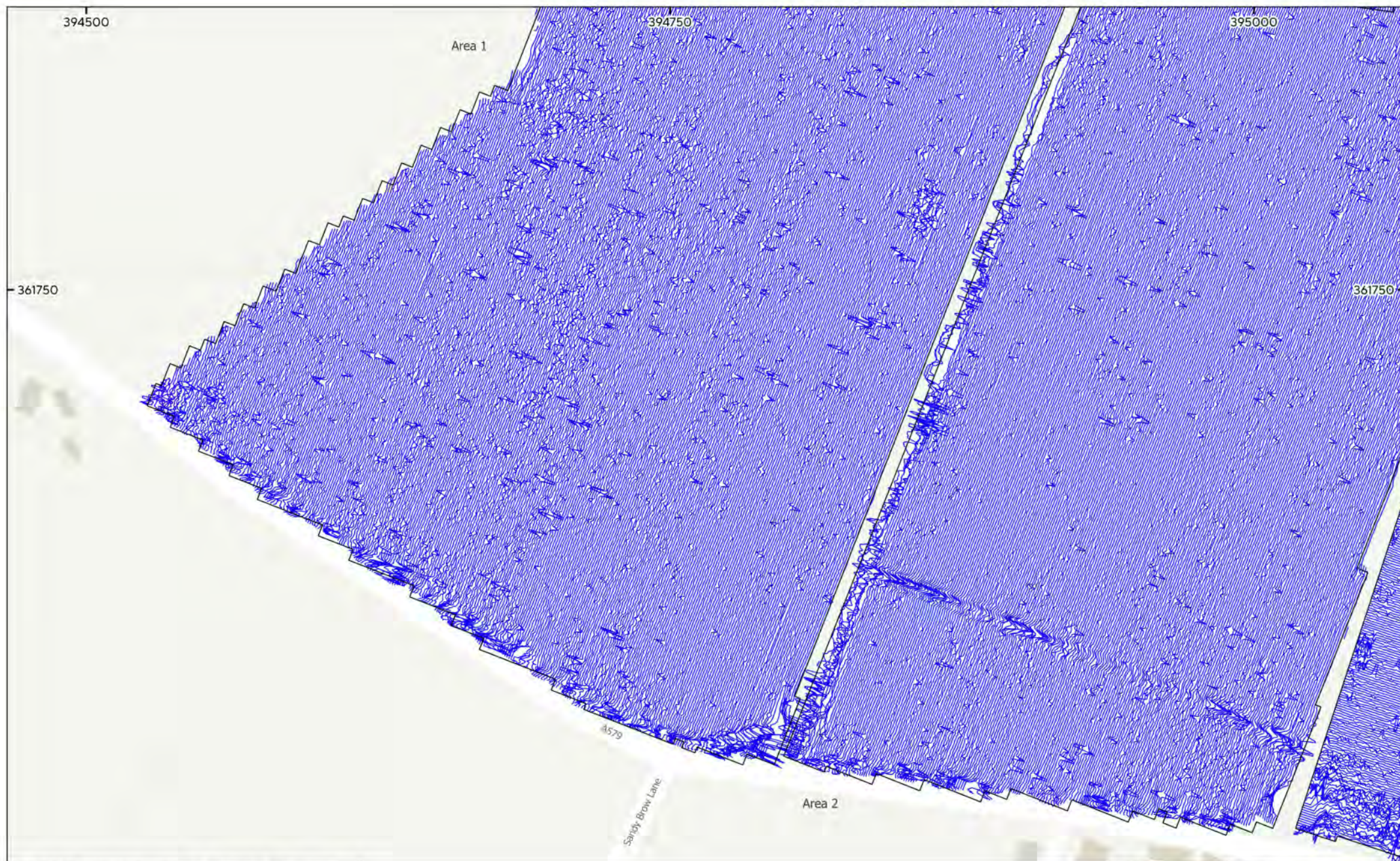




MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
 Figure 34 - Magnetic Interpretation (Areas 1 & 2)
 1:1,500 @ A3
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- | | | | |
|-----------------------|-------------------------|----------------------|-----------------|
| Agricultural (Spread) | Magnetic Disturbance | Undetermined (Weak) | Ferrous (Spike) |
| Agricultural (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) | |
| Agricultural (Weak) | Natural (Spread) | | |





MSSJ2090 - Intermodal Logistics Park North Rail Freight Interchange (ILPN RFI)
Figure 35 - XY Trace Plot (Areas 1 & 2)
90nT/cm at 1:1,500 @ A3
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