NAA

HERITAGE STATEMENT

LAND AT
WELLINGTON WAY
ELSHAM
NORTH LINCOLNSHIRE

prepared for
Robert Farrow Design Ltd
on behalf of
Mr Lewis Dodds

NAA 21/99
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Summary

Northern Archaeological Associates Ltd (NAA) was commissioned by Robert Farrow Design Ltd on behalf of Mr Lewis Dodds to undertake a heritage statement for land at Wellington Way, Elsham, North Lincolnshire (NGR: TA 04565 13784). The site is currently a single large arable field with a strip of rough grass and areas of hardstanding at its northern edge. The proposed development comprises construction of new industrial units and associated infrastructure to the north of the existing Elsham Wold Industrial Estate (planning application reference PA/2020/1135).

The report has collated data from separate sources, including the North Lincolnshire Council Historic Environment Record, published and unpublished documentary sources, historic mapping, LiDAR data and a site visit. It incorporates the results of site evaluation—a geophysical survey and trial trenching—to create a baseline dataset against which the potential impact of the development proposals on designated and non-designated heritage assets, including archaeological remains, within a 1km radius of the site has been assessed.

The only designated heritage asset within the study area is the Grade II threshing barn and cart shed at Elsham Top Farm, located c.0.5km to the south-east of the proposed development area (PDA).

A total of 53 non-designated heritage assets are recorded within the wider study area. These assets range in date from prehistoric lithic scatters to 20th-century military remains. Many of the recorded assets are artefact find-spots, mostly located at some distance to the west and south of the PDA. Several crop-mark sites and geophysical anomalies have been recorded, although none of these features appear to extend into the PDA. Other assets include High Street Roman road and a possible associated Roman building, both located at the eastern edge of the study area. Several farms have been recorded, although not all are extant, and most lie at distance from the PDA. A considerable number of structures associated with the RAF Elsham Second World War airfield have been recorded, although some are no longer extant and most of the remainder either lie well away from the PDA or are located within Elsham Wold Industrial Estate and are not inter-visible with the PDA. The proposed development will have no impact upon the great majority of these heritage assets.

Until the 1940s, the PDA lay within farmland. The site then became part of a military airfield. Most of the PDA remained as an open area, fringed to the north by a runway (part of which lies within the site), to the south and east by part of the airfield perimeter trackway still in use as farm tracks, and also contained an aircraft dispersal point. After the Second World War it reverted to agricultural use.

Two archaeological evaluations have been undertaken within the PDA as part of the current scheme. Geophysical survey did not identify any archaeological features, although a circular concentration of dipolar anomalies in the south of the site is possibly related to the former aircraft dispersal point. The results of the geophysical survey were tested by the excavation of 28 trial trenches. One trench—targeting the concentration of dipolar anomalies—contained a large shallow feature backfilled with industrial waste that probably represented part of the hardstanding for the aircraft dispersal point. Otherwise, no archaeological deposits were identified. Varying soil profiles across the PDA possibly indicated that the area had been landscaped either during construction or decommissioning of the airfield. Consequently, it can be postulated that there is no potential for buried features of archaeological significance to be present within the PDA that warrant archaeological mitigation works.

Two above-ground heritage assets are located close to, and are inter-visible with, the PDA. Immediately to the south-east is Dodds Farm—which contains two post-medieval farm outbuildings—and a well-preserved Second World War aircraft hangar is located on Wellington Way adjacent to the southern corner of the PDA.

It is considered that the proposed development will have a neutral impact upon the setting of identified heritage assets, and certainly not to a greater effect than that caused by the industrial estate located directly to the south of the PDA. The final design plan should, where possible, be sympathetic to the general character of the area and attempts be made to minimise impact on views between heritage assets and the rural lands the site lies within.

LAND AT WELLINGTON WAY, ELSHAM, NORTH LINCOLNSHIRE

HERITAGE STATEMENT

1.0 INTRODUCTION

1.1 Northern Archaeological Associates Ltd (NAA) was commissioned by Robert Farrow Design Ltd on behalf of Mr Lewis Dodds to undertake a Heritage Statement for land at Wellington Way, Elsham, North Lincolnshire (NGR: TA 04565 13784; Fig. 1). The proposed development comprises construction of new industrial units and associated infrastructure to the north of the existing Elsham Wold Industrial Estate (planning application reference PA/2020/1135).

1.2 The report describes the location of the proposed development area (hereafter PDA) and its environs and sets out the methodology and information sources used for the study. It follows a scheme of works set out in a Written Scheme of Investigation (detailed methodology) (NAA 2021a) and has been informed by a previous Archaeological Appraisal (NAA 2021b) and two stages of site evaluation comprising a geophysical survey (this report) and evaluation trenching (NAA 2021c). This heritage statement assesses the potential for the proposed development to cause any harm or loss to heritage assets or their setting and whether the proposals would comply with national and local planning policy as this relates to heritage.

2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

Location and land use

2.1 Elsham lies on the Lincolnshire Wolds c.7.5km to the south of Barton-on-Humber, within Elsham civil parish in the unitary authority of North Lincolnshire. The PDA lies 1.5km north-east of Elsham village, immediately east of the A15 and north of Elsham Wold Industrial Estate (Fig. 1).

2.2 The PDA is irregular in shape and encompasses c.9.2ha. It currently consists of a single large arable field (Plates 1 and 2) bordered by the A15 to the west, Wellington Way to the south-west, and agricultural land to the north. Within the northern edge of the PDA a strip of rough grass and areas of tarmac (Plates 3 and 4) represent the site of a former airfield runway, while a former airfield perimeter track survives along the south-eastern

and eastern sides of the PDA as farm access tracks (Plate 5). The field is crossed by several overhead powerlines (Plate 6 and depicted on Fig. 9).

Topography and geology

2.3 The land is relatively flat, sloping gently down from a height of 74–75m above Ordnance Datum (aOD) at its western edge down to c.68m aOD at its eastern corner.

2.4 The solid geology of the site is Cretaceous chalk of the Welton Chalk Formation. No superficial deposits have been recorded (BGS 2021).

3.0 PLANNING CONTEXT

Legislation and policy

3.1 The legislation, policy and guidance against which development would be considered are:

- Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Building and Conservation Areas) Act 1990;
- National Planning Policy Framework (NPPF) (MHCLG 2021);
- North Lincolnshire Council Local Development Framework Core Strategy (2011);
- Saved policies from The North Lincolnshire Local Plan (2003);
- The Hedgerows Regulations (MAFF 1997).

Ancient Monuments and Archaeological Areas Act 1979

3.2 Statutory protection for archaeological sites and historic structures of national importance is provided by the Ancient Monuments and Archaeological Areas Act 1979.

3.3 The Act states that any works affecting a scheduled monument require permission from the Secretary of State, in the form of Scheduled Monument Consent.

Planning (Listed Building and Conservation Areas) Act 1990

3.4 Statutory protection for built heritage is principally provided by the Planning (Listed Building and Conservation Areas) Act 1990.

3.5 In considering whether to grant planning permission for development that affects a listed building or its setting, Sections 16 and 66 of the Act require authorities to have special regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest that it possesses.

National Planning Policy Framework (NPPF) (2021)

3.6 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development (para. 11). There are three dimensions to sustainable development: economic, social and environmental (para. 8). The purpose of the planning system is to encourage sustainable development that makes a positive contribution to the quality of the built, natural and historic environment, and contributes to the overall quality of people's lives. To this end, economic, social and environmental gains should be sought jointly and simultaneously through the planning system.

3.7 Policy 12 addresses the importance of good design of new structures and features in relation to the existing environment. Paragraph 130 requires that any development is 'sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change'.

3.8 Policy 16: Conserving and enhancing the historic environment sets out the framework for local planning authorities to make informed decisions on developments that affect heritage assets. Paragraphs 189–208 set out the information requirements and policy principles in relation to heritage assets.

3.9 Paragraph 199 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.' The NPPF defines setting as 'the surroundings in which a heritage asset is experienced'. Any harm to an asset's significance and setting requires clear and convincing justification and must be weighed against the public benefits resulting from the proposal.

3.10 Details of other NPPF paragraphs relevant to this site are set out in Appendix A.

North Lincolshire Council Local Development Framework Core Strategy (2011)

3.11 The North Lincolnshire Council Core Strategy (2011) is the development plan document that this application will be considered against.

3.12 Paragraph 2.32 of the Core Strategy notes that "The need to reconcile the development needs of the area with the protection of heritage assets is an important issue for the Plan to address".

3.13 Policy CS6: Historic Environment states that:

> The council will promote the effective management of North Lincolnshire's historic assets through:
>
> - Safeguarding the nationally significant medieval landscapes of the Isle of Axholme (notably the open strip fields and turbaries) and supporting initiatives which seek to realise the potential of these areas as a tourist, educational and environmental resource;
>
> - Preserving and enhancing the rich archaeological heritage of North Lincolnshire;
>
> - Ensuring that development within Epworth (including schemes needed to exploit the economic potential of the Wesleys or manage visitors) safeguards and, where possible, improves the setting of buildings associated with its Methodist heritage;
>
> - Ensuring that development within North Lincolnshire's Market Towns safeguards their distinctive character and landscape setting, especially Barton upon Humber, Crowle and Epworth.
>
> The council will seek to protect, conserve and enhance North Lincolnshire's historic environment, as well as the character and setting of areas of acknowledged importance including historic buildings, conservation areas, listed buildings (both statutory and locally listed), registered parks and gardens, scheduled ancient monuments and archaeological remains.
>
> All new development must respect and enhance the local character and distinctiveness of the area in which it would be situated, particularly in areas with high heritage value.
>
> Development proposals should provide archaeological assessments where appropriate.

3.14 Paragraph 7.20 of the Core Plan states that "The aim of this policy is to ensure that North Lincolnshire's important sites and areas of historic and built heritage value are protected, conserved and enhanced in order that they continue to make an important contribution to the area's scene and the quality of life for local people".

3.15 Paragraph 7.21 goes on to say that "In determining proposals for development affecting sites and areas of historic and built heritage value, a key consideration will be the need to ensure that development does not affect their character and setting but respects and

enhances them. Development should also contribute to the local distinctiveness. Consideration should be given to any relevant saved policies of the North Lincolnshire Local Plan and Conservation Area Appraisals".

The North Lincolnshire Local Plan (2003)

3.16 Although replaced by the Local Development Framework, saved policies from the Local Plan include Policy HE9 – Archaeological Evaluation:

> Where development proposals affect sites of known or suspected archaeological importance, an archaeological assessment to be submitted prior to the determination of a planning application will be required. Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them.
>
> Sites of known archaeological importance will be protected. When development affecting such sites is acceptable in principle, mitigation of damage must be ensured and the preservation of the remains in situ is a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before and during development.

3.17 Paragraph 14.41 of the Local Plan states "Where development sites are shown to contain significant archaeological remains which would be adversely affected, the planning authority will need to be satisfied that adequate mitigation measures will be implemented. The preferred option for important archaeological remains is preservation in situ; this may be achieved by modification of proposals, where appropriate, for example changes in site layout or redesign of foundation construction".

3.18 Paragraph 14.42 of the Local Plan states "Where the preservation of the site in situ is not feasible, evidence will be required to demonstrate that the developer has made appropriate and satisfactory provision for the recording of the remains, in consultation with officers of the HER who will advise the planning authority. Preservation by record can take place either in advance of or during development and may involve full excavation followed by post-excavation analysis and publication of results. Planning conditions or legal agreements will be used to secure this work".

The Hedgerows Regulations 1997

3.19 The Hedgerows Regulations 1997 were made under section 97 of the Environment Act 1995. They introduced new arrangements for local planning authorities in England and

Wales to protect important hedgerows in the countryside by controlling their removal though a system of notification.

3.20 Hedgerows can comprise an important part of both the ecological and contemporary landscape character of an area, with many hedgerows archaeologically and historically significant, providing extensive evidence for previous land use. The loss of hedgerows can impact upon both the significance of the historic landscape character and the setting of local heritage assets, and as such the proposed removal of a hedgerow deemed *important* by the local planning authority may be of material consideration during the planning process.

3.21 Under the Hedgerows Regulations, a hedgerow is 'important' if it has existed for 30 years or more; and satisfies at least one of the criteria listed in Part II of Schedule 1: Archaeology and history criteria. Of relevance to the current application is Criterion 5(a), which is that the hedgerow is recorded in a document held at the relevant date at a Record Office as an integral part of a field system pre-dating the Inclosure Acts (1847).

3.22 Given that the PDA lies within an area cleared for construction of a Second World War airfield, none of the current boundaries within or bordering the site will be of sufficient age to meet any of these criteria.

4.0 ASSESSMENT METHODOLOGY

4.1 The study included a desk-based review of published and readily accessible documentary, cartographic and aerial photographic evidence.

4.2 The study area comprised a 1km radius around the PDA (Fig. 2).

Objectives

4.3 The principal objectives of the study were to:

- identify all recorded heritage assets within the study area;
- assess the potential for previously unrecorded assets of archaeological interest to be affected by the proposals and identify areas where mitigation may be required in order to properly define this interest and/or the effects of development on this; and
- propose mitigation measures that could be built into the development proposals to avoid, reduce or remedy any potential adverse effects identified.

Information sources

4.4 This report is based on a review of available information and desk-based studies. As part of this work, the following repositories were consulted:

- North Lincolnshire Council Historic Environment Record (HER);
- published and unpublished historical and archaeological reports;
- Historic England's National Heritage List for England (NHLE);
- Portable Antiquities Scheme online database;
- primary and secondary sources; and
- other online sources.

4.5 The heritage assessment has been prepared in accordance with the following guidance:

- MHCLG (2019) *NPPF Planning Practice Guidance: Conserving and Enhancing the Historic Environment* (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment);
- Historic England (2015a) *Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment;*
- Historic England (2017) *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets;*
- English Heritage (2008) *Conservation Principles, Policies and Guidance: for the Sustainable Management of the Historic Environment;*
- Chartered Institute for Archaeologists (CIfA) (2014a) *Standard and Guidance for Desk-Based Assessment;* and
- Highways England (2020) *Design Manual for Roads and Bridges, documents LA 104 (Environmental Assessment and Montoring), LA 106 (Cultural Heritage Assessment) and LA 116 (Cultural heritage Asset Management Plans.*

Assumptions and limitations

4.6 This assessment comprises a review of information derived from North Lincolnshire Council HER, Historic England and other published and unpublished sources. While assumed to be accurate, this information is not a complete record of the historic environment and does not preclude the potential for the presence of non-recorded heritage assets within the application boundary, including below-ground remains of archaeological interest.

4.7 There are no other apparent limitations, beyond the inherent uncertainty of the accuracy of archaeological records from older sources.

Additional sources

Previous archaeological investigation

4.8 Previous archaeological investigations within the PDA are listed in Table 1 and shown on Figure 2.

Table 1: Previous archaeological interventions

Event (ELS No.)	Date	Description	Grid Ref.
40	1992	Watching brief on Elsham to Killingholme effluent pipeline, by Humberside Archaeology Unit	TA 08829 15818 (centre)
54	1992	Geophysical survey at Paramount Packaging Plant, Elsham Wold Industrial Estate, by Geophysical Surveys of Bradford	TA 04593 13003
93	1993	Watching brief at Paramount Packaging Plant, Elsham Wold Industrial Estate, by Humberside Archaeology Unit	TA 0475 1293
197	1975	A15 Fieldwalking, by Humberside Joint Archaeological Committee	TA 036 156
905	1976	Aerial photographic sortie, National Monuments Record	TA 030 165 (centre)
925	1971	Aerial photography sortie, Ordnance Survey	SE 96 16 (centre)
1391	Unknown	Aerial photography sortie	TA 039 127
1404	2000	Watching brief on Elsham to Barnetby Water Mains, by Humber Archaeology Practice	TA 0414 1327
1740	2001	Geophysical survey, Elsham Wold Industrial Estate, by Pre-Construct Geophysics	TA 0500 1314
1741	2002	Trial trench evaluation, Elsham Wold Industrial Estate, by Northamptonshire Archaeology	TA 04778 13066
1829	2002	Watching brief on land at the Flarepath, Elsham Wold Industrial Estate, by Lindsey Archaeological Services	TA 0457 1319
2036	2003	Walkover survey, Elsham Wold, by PCAS Archaeology	TA 04 14
2150	2003	Geophysical survey, Elsham Wold Industrial Estate, by Pre-Construct Geophysics	TA 0482 1461
2202	2004	Watching brief along Elsham 11kV line rebuild, by Humber Archaeology Partnership	TA 02812 14897
2218	2003	Desk-based assessment for proposed wind farm, Elsham, by PCAS Archaeology	TA 04 14
2385	2005	Photographic survey, Elsham Wold Industrial Estate, by Allen Archaeological Associates	TA 04861 13618
2433	2006	Photographic record of air-raid shelter, Elsham Wold Industrial Estate, by North Lincolnshire SMR	TA 04834 13661

Event (ELS No.)	Date	Description	Grid Ref.
2588	2006	Building assessment, Chalk Barn, Elsham, by English Heritage (York)	TA 05021 13386
2757	1946	Aerial photography sortie, by RAF	TA 069 131 (centre)
2778	1998-9	Archaeological and historical survey of parts of the Brocklesby Estate (field reconnaissance), by Archaeological Project Services	TA 086 133
3306	2007	Fieldwalking community archaeology project, OS parcel 2600, by North Lincolnshire Museum	TA 0526 1300
3307	2007	Fieldwalking community archaeology project, OS parcel 3400, by North Lincolnshire Museum	TA 0413 1308
3521	2011	Watching brief during ground investigations at Elsham Water Treatment Works, by Mott MacDonald	TA 036 135
3677	2011	Aerial photography assessment and transcription, by North Lincolnshire Council	SE 9212 0734 (centre)
3875	2011	Archaeological monitoring at Elsham Water Treatment Works, by Oxford Archaeology East	TA 036 134
3876	2012	Evaluation at Elsham Sewage Treatment Works, Middlegate Lane, by Oxford Archaeology East	TA 037 133
4145	2014	Heritage assessment, Bonby Anaeoribic Digester, pipeline and compressor, by CgMs Consulting	TA 0298 1452
4206	1970	Aerial photography survey, by Fairey Surveys	TA 06 15

4.9 There have been no archaeological interventions in the PDA. Two aerial photographs—one was acquired in 1946 and the other is of unknown date—cover the PDA but did not identify any significant features.

4.10 The HER records several aerial photography sorties carried out across the area in 1946, 1970, 1971, during the hot summer of 1976 and undated (ELS905, ELS925, ELS1391, ELS2757 and ELS4206), and also a transcription project of features visible on GoogleEarth satellite coverage (ELS3677). Relevant discoveries from these sources are detailed in Section 5 below.

4.11 In 1975, fieldwalking prior to construction of the A15 to the west of the PDA (ELS197). This recovered small quantities of finds from numerous locations including prehistoric lithics and pottery ranging in date from Roman to post-medieval. Relevant material within the study area is described in Section 5. A desk-based assessment in 2014 for the Bonby Anaerobic Digestor in the south of the study area (ELS4145) concluded that the general vicinity had a high potential for archaeology of no more than local significance

due to nearby evidence for prehistoric lithic assemblages, late prehistoric or Romano-British settlement and a large Anglo-Saxon cemetery (discussed in Section 5).

4.12 A rapid walkover survey, geophysical survey and desk-based assessment (ELS2036, ELS2150 and ELS2218) in 2003 of c.140ha to the north-east of the PDA identified a probable section of the *agger* (road embankment) of High Street Roman road, possible marl pits and features relating to the former airfield but no other significant remains. Beyond this, at the eastern edge of the study area, an archaeological and historical field survey of parts of the Brocklesby Estate t in 1998–9 (ELS2278)identified part of High Street Roman road and a possible Roman building (see Section 5).

4.13 Two community archaeology fieldwalking projects were undertaken within the study area during 2007. In the south-east of the study area, a quantity of worked flints and a small number of sherds of medieval pottery were recovered (ELS3306). The second project (ELS3307) lay towards the south-western edge of the study area, and recorded worked flints and sherds of Iron Age, Roman, Anglo-Saxon, medieval and post-medieval pottery.

4.14 A building assessment of a Grade II listed 19th-century barn at Elsham Top Farm was carried out in 2006 (ELS2588).

4.15 There have been several archaeological investigations within Elsham Wold Industrial estate. Geophysical survey at the Paramount packaging plant in 1992 only identified features associated with the Second World War airfield (ELS54) and was confirmed by a subsequent watching brief that did not find any archaeological remains (ELS55). Geophysical survey across a large area at the southern edge of the industrial estate in 2001 (ELS1740) identified a series of anomalies possibly indicative of former field systems. A follow-up trial trench evaluation in 2002 (ELS1741) did not, however, identify significant archaeological remains. A watching brief on land at The Flarepath on the estate in 2002 (ELS1829) also failed to identify any archaeological features. Several former RAF buildings within the industrial estate were photographically recorded in 2005 and 2006 prior to their demolition (ELS2385 and ELS2433).

4.16 Several other monitoring projects in the study area have failed to identify archaeological remains (ELS40, ELS1404, ELS2202, ELS3521, ELS3875 and ELS3876).

LiDAR

4.17 Environment Agency LiDAR survey data from 2020 was obtained at 1m resolution (the PDA is not included in the available 2m coverage). While distinguishing between the arable field and the former runway within the PDA, no other features of interest are visible within the site. To the north of the PDA the data does, however, reveal the route of the former airfield perimeter track and other roadways.

Site inspection

4.18 A site inspection was carried out in May 2021. The objectives were to:

- understand the current context, character, land use and ground conditions of the proposed development site;
- understand its relationship to nearby previously recorded heritage assets;
- better understand the significance of any heritage asset which may be affected by the proposals;
- understand the setting of designated assets and historic landscape character; and
- identify additional unrecorded heritage assets or the potential for these.

4.19 Plates 1 to 9 show the PDA at the time of the site visit, as well as nearby heritage assets with inter-visibility with the site.

4.20 The site inspection did not identify any additional, previously unrecorded, heritage assets within or immediately adjacent to the PDA.

5.0 BASELINE HISTORIC ENVIRONMENT

5.1 Heritage assets recorded within the study area and described in this report are listed in Table 2 and their locations are shown on Figure 2. Heritage assets described in this report are identified by a unique reference number prefixed with MLS (e.g. MLS2311).

5.2 There are no recorded heritage assets within the PDA recorded by the HER, although 54 heritage assets or find-spots have been recorded within the 1km study area surrounding the PDA. They are briefly discussed in the following section to create a greater understanding of the historical setting of the PDA.

Table 2: Heritage assets recorded by the HER

HER No. (MLS)	Description	Date	OS Grid reference	Grade
2302	Find-spot, pottery and human bones, Elsham Quarry	Roman or Anglo-Saxon	TA 0374 1314	
2311	Find-spot, flint scatter and pottery	Prehistoric, Roman, medieval	TA 047 128	
2312	Find-spot, flints and pottery	Prehistoric, Roman, medieval	TA 045 130	
2313	Find-spot, flints, whetstone fragment and pottery	Prehistoric, Roman	TA 044 132	
2314	Find-spot, flints and pottery	Prehistoric, Roman	TA 043 146	
2315	Crop-mark, semi-circular feature, possible ring ditch	Unknown	TA 036 134	
2316	Crop-marks, rectilinear feature and field boundary	Unknown	TA 041 131 (164m by 160m)	
2319	Find-spot, medieval pottery	Medieval	TA 040 148	
2321	Find-spot, Romano-British pottery sherd	Roman	TA 044 136	
4748	Threshing barn, cart shed and granary, Elsham Top Farm	19th century	TA 0501 1338	LB II
9892	Crop-marks of trackway and ditches, possible long barrow or marl pits	Unknown	TA 034 143 (329m by 242m)	
11651	Aircraft hangar, Elsham Wolds Airfield	20th century	TA 042 135	
13067	Elsham Top farmstead	19th century	TA 050 133	
15493	`High Street' Roman road, South Ferriby to Horncastle	Roman	TA 0474 1275	
18484	"Court Close", NE of Elsham Village, pit	Unknown	TA 046 131	
20002	Middlegate Lane prehistoric trackway	Prehistoric and ?Roman	TA 027 146 (7699m by 12843m)	
20022	Bomb stores (site of)	20th century	TA 0480 1446 (472m by 787m)	
20023	Geophysical anomalies of enclosure, Elsham Wolds	?Prehistoric or Roman	TA 0463 1478	
20291	Romano-British building, east of High Street	Roman	TA 0566 1429	
20308	Former mess halls, Elsham Airfield, mess, air raid shelter and storehouse	20th century	TA 0486 1362	
20942	Linear crop-mark of ditch, south of Village Farm	Unknown	TA 0420 1384 (239m by 359m)	
20943	Linear crop-mark of ditch, Elsham Wolds	Unknown	TA 0439 1332 (229m by 348m)	
21259	Find-spot, lithic scatter (OS 2600)	Prehistoric	TA 0526 1303	

21260	Find-spot, lithic scatter (OS 3400)	Prehistoric	TA 0405 1324	
21261	Find-spot, scatter of Iron Age and Romano-British pottery (OS 3400)	Iron Age and Roman	TA 0404 1313	
21262	Find-spot, scatter of Anglo-Saxon, medieval and post-medieval pottery (OS 3400)	Anglo-Saxon, medieval and post-medieval	TA 0406 1316	
21694	War memorial, RAF stone of remembrance and garden	20th century	TA 0359 1349	
21946	Subrectangular enclosure represented by two features with entrance track, west of Elsham Industrial Estate	Unknown	TA 0565 1354 (101m by 82m)	
22020	Find-spot, worked flint, Romano-British and medieval pottery	Prehistoric, Roman, medieval	TA 044 128	
22691	Type J aircraft hangar, former Elsham Airfield	20th century	TA 0459 1352 (71m by 100m)	
22787	Dispersed Site No.2 (site of), RAF Elsham Wolds, officers' Quarters, air raid shelter, airmen's quarters, generator house	20th century	TA 0502 1289 (200m by 288m)	
22788	Former gas clothing store, RAF Elsham Wolds	20th century	TA 0496 1356 (83m by 135m)	
25407	Village Farm, farmstead, Elsham	19th century	TA 0409 1406	
25408	Manor Farm, farmstead, Elsham	19th century	TA 0390 1434	
25409	Site of unnamed outfarm, Elsham	19th century	TA 0449 1337	
25410	Dodd's Farm, farmstead, Elsham	19th century	TA 0490 1379	
25411	Unnamed farmstead, Elsham	19th century	TA 0502 1336	
25933	Dispersed Site No.3 (site of) RAF Elsham Wolds, officers' quarters, air raid shelter, airmen's quarters	20th century	TA 052 132 (207m by 140m)	
25978	Dispersed structures, RAF Elsham Wolds, air raid shelter	20th century	TA 0538 1361 (99m by 93m)	
26087	WW1 Airfield (site of), Elsham Wold. Stanton Shelter	20th century	TA 0554 1375 (1129m by 937m)	
26593	Anti-aircraft gun emplacement, light anti-aircraft battery, RAF Elsham Wolds	20th century	TA 0519 1316	
26610	Blast shelter, land at the Flarepath, Elsham Wold Industrial Estate	20th century	TA 0460 1330	
26611	Blast shelter east of the Type J aircraft hangar, former Elsham Airfield	20th century	TA 0464 1352	
26612	Blast shelter, Elsham Wold Industrial Estate	20th century	TA 0464 1339	
26613	Blast shelter, land at Elsham Wold Industrial Estate	20th century	TA 0471 1342	
26614	Blast shelter, Elsham Wold Industrial Estate	20th century	TA 0469 1348	

26615	Blast shelter, south of Pegasus House, Elsham Wold Industrial Estate	20th century	TA 0493 1343	
26616	Blast shelter, land at Pegasus House, Elsham Wold Industrial Estate	20th century	TA 0490 1348	
26617	Blast shelter, land at Pegasus House, Elsham Wold Industrial Estate	20th century	TA 0484 1346	
26618	Blast shelter, land at Elsham Wold Industrial Estate	20th century	TA 0479 1342	
26619	Blast shelter, land at Pegasus House, Elsham Wold Industrial Estate	20th century	TA 0481 1353	
26620	Blast shelter, land at Elsham Wold Industrial Estate	20th century	TA 0478 1360	
26621	Blast shelter, land at Elsham Wold Industrial Estate	20th century	TA 0481 1363	
26622	Blast shelter, land at Elsham Wold Industrial Estate	20th century	TA 0489 1360	

Designated heritage assets

5.3 There are no World Heritage Sites, Scheduled Monuments, Historic Parks and Gardens, Registered Battlefields or Conservation Areas within the study area.

5.4 The only designated heritage asset within the wider study area is the Grade II 19th-century threshing barn and cart shed at Elsham Top Farm (MLS4748; NHLE: 1103682), located c.0.5km to the south-east of the PDA.

Non-designated heritage assets

5.5 The following section sets out details of the archaeological sites that are recorded by the study. It then discusses the potential for unrecorded archaeological remains to be present within the PDA, based on the evidence available from the wider study area. The dates of the various periods referred to in the following text are defined in Table 3.

Table 3: period definitions.

Prehistoric	Palaeolithic	800,000 to 12,000 BC
	Mesolithic	12,000 to 4,000 BC
	Neolithic to Early Bronze Age	4,000 to 1,500 BC
	Middle Bronze Age to Iron Age	1,500 BC to AD 78

Roman	AD 78 to 410
Early medieval	AD 410 to 1066
Medieval	AD 1066 to 1536
Post-medieval	AD 1536 to 1900
Modern	AD 1900 to current

Prehistoric and Roman

5.6 No evidence of prehistoric or Roman activity has been recorded in the PDA.

5.7 Evidence for early prehistoric activity within the study area comprises surface scatters of worked flint of Mesolithic to Early Bronze Age date that were recovered during fieldwalking along the line of the A15 to the south-west and north of the PDA in 1975 (MLS2311, MLS2312, MLS2313, MLS2314 and MLS22020) (Loughlin and Miller 1979, 196). Additional flints were identified during a community fieldwalking project in 2007 in fields in the south of the study area (MLS21259) and c.0.6km to the south-west of the PDA (MLS21260). Just beyond the southern edge of the study area, two Early Bronze Age Beakers, one accompanying a burial, were found at Middlegate Lane (TA 04612 12525) during excavations for the A15 in 1975–6 (MLS2305; Loughlin and Millar 1979, 197).

5.8 Middlegate Lane prehistoric trackway, passing c.0.8km to the south-west of the PDA, is likely to have been of Iron Age date, continuing in use into the Roman period (MLS20002). 'High Street' Roman road (MLS15493)—which runs between South Ferriby and Horncastle—runs roughly parallel to Middlegate Lane in the north-east of the study area c.0.8km from the PDA.

5.9 Crop-marks associated with features of prehistoric or Roman date have been recorded from aerial photographs in several parts of the study area. Faint crop-marks of a possible semi-circular feature possibly representing a ring-ditch, have been recorded from aerial photographs at the western edge of the study area (MLS2315; Loughlin and Miller 1979, 197). More crop-marks of a rectilinear feature cut by a pre-20th-century field boundary have been recorded c.0.5km south-west of the PDA (MLS2316) (*ibid.*).

5.10 A trackway and ditches (possibly representing a long barrow or marl pits) were recorded in the north-west of the study area (MLS9892), and crop-marks of a possible trackway and small enclosures were recorded in the south-east of the study area (MLS21946).

5.11 Closer to the PDA, crop-marks of a trackway with a north–south orientation were recorded c.100m to the west of the PDA, on the opposite side of the A15 (MLS20942). At the north end of the trackway there are further crop-marks of two small elliptical enclosures, while at the south end a linear crop-mark runs to the south-west (MLS20943).

5.12 Remains of a probable Roman building, comprising stone building rubble, tile, greyware pottery, animal bones and a quern fragment, were found during fieldwalking adjacent to the Roman road in 1998–9 (MLS20291).

5.13 Fieldwalking associated with construction of the A15 in 1975 found small numbers of Romano-British pottery sherds and a fragment of whetstone in several fields to the south-west and north of the PDA (MLS2311, MLS2312, MLS2313, MLS2314 and MLS22020), with more found in an area to the north (MLS2314). One sherd was found close to the south-western boundary of the PDA (MLS2321; (Loughlin and Miller 1979, 196). Iron Age and Roman pottery and Roman tile has been found by fieldwalking in a field to the south-west of the A15 (MLS21262).

5.14 Geophysical survey in 2003 mapped anomalies c.0.8km north of the PDA suggested to represent small enclosures of prehistoric or Romano-British date (MLS20023; Masters 2003).

Early medieval

5.15 No evidence of early medieval activity has been recorded in the PDA.

5.16 Within the study area, pottery and human remains, thought to be either Roman or Anglo-Saxon in date, were found in Elsham Quarry in c.1958 (MLS2302; Loughlin and Miller 1979, 197; Buckberry 2004, 359). Three sherds of probable Anglo-Saxon pottery were found during fieldwalking in a field immediately north-east of the quarry (MLS21262).

5.17 To the south-west of the current study area, the HER records a possible Middle to Late Anglo-Saxon settlement directly north of Elsham village (MLS21748; TA 013 125),

which was identified from finds of metalwork and pottery including several objects of Viking origin. The quality of the items suggests a relatively high-status settlement.

5.18 Outside the study area, c.1.1km south of the PDA, a large Early Anglo-Saxon cemetery was excavated at Middlegate Lane in 1975–6 (MLS2305; TA 04612 12525). The work recorded over 600 cremation burials and a small number of inhumations (Loughlin and Millar 1979, 197).

Medieval

5.19 No evidence of medieval activity has been recorded in the PDA.

5.20 During the medieval period, the area in which the PDA lies was likely to have been agricultural land. Evidence within the study area is limited to small numbers of pottery sherds found during the A15 fieldwalking (MLS2311, MLS2312, MLS2319 and MLS22020; Loughlin and Miller 1979, 196–7). A separate community fieldwalking project recovered medieval sherds from a field between the A15 and the disused Elsham Quarry (MLS21262). The relatively small number of sherds identified at these locations is suggestive of medieval field manuring rather than settlement.

Post-medieval

5.21 No evidence of post-medieval activity has been recorded in the PDA.

5.22 The HER reveals that the post-medieval landscape surrounding the PDA was defined by a number of farmsteads. Elsham Top Farm (MLS13067, also MLS25411), located c.0.5km south-east of the PDA, dates from the 1840s. The associated threshing barn and cart shed are listed Grade II (MLS4748; NHLE 1103682). Other 19th-century farms noted by the HER within the study area are Village Farm, Elsham (MLS25407), Manor Farm, Elsham (MLS25408), Dodd's Farm, Elsham (MLS25410), and the site of an unnamed out-farm (MLS25409).

5.23 The 1886 Ordnance Survey map (Fig. 3) shows that the PDA lay within two large fields located to the north-west of Dodd's Farm. The former field boundary crossed the PDA from north-west to south-east.

5.24 During the First World War, a military airfield occupied land in the east of the study area (MLS26087), with associated buildings near Dodd's Farm. The base was in

operation between 1916 and 1918 and housed 33 Squadron Royal Flying Corps, mainly countering Zeppelin raids. The airfield buildings were demolished in 1919.

5.25 In the Second World War, the airfield reopened in 1941 to the west of the earlier site (MLS11651) and encompassed the area of the current PDA (Fig. 4). The airfield closed in 1947, although some of the buildings were retained for commercial purposes and formed the basis of Elsham Wold Industrial Estate.

5.26 The airfield, which was used by 103 and later 576 bomber squadrons, was provided with three concrete runways and a contemporary plan of the airfield shows that the northern runway lay along (and within) the northern edge of the PDA, with the peri-track (perimeter roadway) running along the eastern and southern edges of the PDA and an aircraft dispersal point located within the southern edge of the PDA. The main concentration of airfield buildings lay beyond the PDA to the south.

5.27 A number of elements of the airfield are separately recorded by the HER. Former bomb stores (MLS20022) were located to the north-east of the PDA, well away from the main airfield buildings. To the south-east of the PDA, a group of five buildings recorded in 2005–6 prior to their demolition and during subsequent site clearance included a blast shelter, mess facilities, a store and an underground air-raid shelter (MLS20308). The sites of other blast shelters have been recorded (MLS26610, MLS26611, MLS26612, MLS26613, MLS26614, MLS26615, MLS26616, MLS26617, MLS26618, MLS26619, MLS26620, MLS26621, MLS26622). A Type J aircraft hangar to the south of the PDA survives in good condition and is used a store on the Elsham Wolds Industrial Estate (MLS22691; Plates 7 and 8). Other extant buildings include a former gas clothing store (MLS22788).

5.28 The airfield included dispersed sites, away from the main building complex. Dispersed site No.2 was located at the southern edge of the study area (MLS22787) and some of the structures survive, including a generator building, air-raid shelter and blast shelter. Dispersed site No. 3 (MLS25933), located towards the south-eastern edge of the study area, is recorded as having included officers' and sergeants' quarters, barracks and air-raid shelters. Nothing of this site is now visible. Ruined buildings from another dispersed site (MLS25978) have been noted in a hedgerow c.0.7km east of the PDA.

5.29 Two pits for light anti-aircraft guns have been recorded near the southern edge of the study area, between dispersed sites No. 2 and No. 3 (MLS26593).

5.30 An RAF stone of remembrance for the dead of the Second World War is set in a garden at Elsham water treatment works (MLS21694).

5.31 Presumably on grounds of military secrecy, successive Ordnance Survey maps throughout the first half of the 20th century (e.g. OS 1950) continued to portray the 19th-century field layout across the area (as depicted on Fig. 3).

5.32 Following decommissioning of the airfield, most of the 'open' areas were returned to farmland. The main concentration of airfield buildings was taken over by the Elsham Wold Industrial Estate, where a number of the wartime structures still survive.

Undated sites

5.33 Crop-marks of a trackway and ditches have been recorded at the north-west edge of the study area (MLS9892). Suggested interpretations of the ditches include a long barrow or marl pits (PCA 2003).

5.34 At the south-east edge of the study area, crop-marks of a possible trackway and small enclosures have been recorded (MLS21946).

5.35 Closer to the PDA, crop-marks of a trackway running from north to south have been recorded c.100m from the western edge of the PDA, on the opposite side of the A15 (MLS20942). At the north end of the trackway are two small elliptical enclosures. To the south of the PDA, this was approached from the south-west by a linear crop-mark (MLS20943).

5.36 An Ordnance Survey surveyor's map of 1819 shows a square feature c.170m across, possibly an earthwork, located within a parcel of land then known as Court Close (MLS18484). This lay c.0.5km south of the PDA in the area now occupied by the industrial estate.

6.0 GEOPHYSICAL SURVEY

Aims and objectives

6.1 The geophysical survey was carried out in May 2021. The aim of the survey was to map and record potential buried features located within the site.

6.2 The objectives of the geophysical survey were to:

- undertake a survey across areas deemed suitable for data collection within the main areas of impact within the development footprint;

- attempt to identify, record and where possible characterise any subsurface remains within the survey boundary;

- assess the archaeological potential of identified anomalies; and

- identify possible concentrations of past activity in order to inform the requirement for any further archaeological investigation at the site.

Methodology

6.3 All survey work was completed to appropriate standards contained in current guidelines (CIfA 2014b; Schmidt *et al*. 2015). The survey employed a Bartington Grad601-2 dual magnetic gradiometer system with data logger. Readings were recorded at a resolution of 0.01nT and data was collected with a traverse interval of 1m and a sample interval of 0.25m. The survey data was collected with reference to a site survey grid comprising individual 30m x 30m squares (Fig. 5). The grid was established using Real Time Kinematic (RTK) differential GPS equipment and marked out using non-metallic survey markers. All grid nodes were set out with a positional accuracy of at least 0.1m and would be reproducible on the ground by a third party.

6.4 Data processing was undertaken using Geoplot 3.0 software and utilised standard processing procedures. Details of processing steps applied to collected data will be provided in associated reporting. Interpretation of identified anomalies was achieved through analysis of anomaly patterning and increases in magnetic response aided by examining supporting information.

6.5 On the greyscale plots, positive readings are shown as increasingly darker areas and negative readings are shown as increasingly lighter areas (Figs. 6 and 7).

6.6 Interpretation of identified anomalies is generally achieved through analysis of anomaly patterning and increases in magnetic response and is often aided by examining supporting information. The interpreted data uses colour coding to highlight specific readings in the survey area (Fig. 8). Appendix E details the terminology and characterisation of anomalies used for interpreting data.

6.7 To ensure a rapid progression of the works, preliminary data plots and interpretation were made available—alongside the results of the desk-based appraisal—to North Lincolnshire HER (NLHER) directly following data collection to inform the requirement and extent of the subsequent trial trench evaluation.

Surface conditions and other mitigating factors

6.8 Field boundaries comprised hedgerows and metal fencing; there were occasional areas of high vegetation along field edges. The north end of the site contained rough ground that could not be surveyed.

6.9 Attempts were made to avoid areas affected by above-ground features that were likely to have a high magnetic susceptibility, such as metal fencing, to minimise the potential for their magnetic responses to impinge on the survey results and mask potential buried features.

Results

6.10 The results of the geophysical survey are largely considered to relate to modern activity. There is a high level of magnetic disturbance across the site, which is likely to be caused by ferrous material in the topsoil or magnetic gravels. It is plausible that some of the dipolar anomalies are associated with the RAF base. A circular area of disturbance (**A**) was identified that corresponds with the location of an aircraft dispersal point.

6.11 There are several weak and diffuse linear trends. Generally, these fail to produce the necessary patterning or increases in magnetic response in order to be interpreted fully, and consequently their origin is unknown. Given the high level of magnetic disturbance within the PDA, identified trends are not considered to be of an archaeological origin, and are plausibly instead caused by modern or agricultural activity.

6.12 Several bipolar responses were identified. Linear bipolar anomalies (**B** and **C**) are likely to denote buried utilities. Two isolated bipolar anomalies (**D**) were identified that correspond with the location of pylons carrying overhead powerlines. It should be noted that the strength and size of bipolar anomalies reflect the highly magnetic responses of the ferrous material of the buried pipe rather than actual feature dimensions.

6.13 Concentrations of dipolar anomalies were identified that are likely to be caused by modern magnetic debris in the topsoil or near the surface; concentrations of bipolar

anomalies—predominately located along the edges of the survey area—relate to above-ground features external to the survey area, such as metal fencing, gates and electricity poles.

7.0 TRIAL TRENCH EVALUATION

7.1 A second stage of evaluation of the PDA comprised excavation of 28 trial trenches (Appendix F: NAA 2021c). The trenches were either 25m or 50m long by 2m wide (Fig. 9). Some of the trenches were located to target geophysical anomalies and features recorded on the wartime airfield plan, while the remainder were sited to test 'blank' areas.

Trial trenching aims and objectives

7.2 The objectives of the archaeological evaluation were to:

- confirm the presence/absence of buried archaeological features within the PDA;
- establish the nature, extent, preservation and significance of any archaeological remains within the trenches;
- provide a detailed record of any such archaeological remains;
- recover and assess any associated structural, artefactual and environmental evidence;
- evaluate the potential for further unrecorded significant archaeological remains to be present within the site;
- determine which areas within the footprint of the proposed scheme require archaeological mitigation in the form of preservation in situ, open area investigation in advance of construction, or monitoring of soil stripping during construction works;
- prepare an illustrated report on the results of the trial trenching to be deposited with NLHER;
- undertake a scheme of work that meets national and regional standards (NLHER n.d.; Knight *et al*. 2012; CIfA 2014 c–e; Historic England 2015b; South Yorkshire Archaeology Service 2018).

Methodology

7.3 All trenches were located within the National Grid using GPS, with all levels tied into Ordnance Datum.

7.4 The trenches were excavated under archaeological supervision using a back-acting mechanical excavator fitted with a toothless ditching bucket. Topsoil and subsoil were removed and stored separately along the trench edge and excavation continued until archaeological features or the natural geology were identified.

7.5 Where archaeological features were identified, excavation continued by hand according to guidelines outlined in the written scheme of investigation (NAA 2021a).

7.6 Digital photographs were taken of each trench, including an overall view from each end and a representative section showing the natural geology and overlying deposits. Archaeological features were photographed in plan and section. Photographs included appropriate graduated metric scales and a number board showing the trench number and, where applicable, context number.

7.7 A drawn record was created of all archaeological features. Sections were drawn at 1:10 or 1:20 as required, with plans also recorded at 1:20 scale. Trench plans were created where archaeology was present, drawn at either 1:50 or 1:100 scale. Written descriptions of all the trenches and archaeological features were recorded on pro-forma sheets.

7.8 No environmental samples were recovered. The finds that were recovered from the evaluation were of little archaeological value and were therefore photographed and discarded in agreement with the local Historic Environment Officer.

7.9 On completion of the evaluation, all the trenches were backfilled by machine under archaeological supervision, to ensure an appropriate standard of reinstatement was achieved. Subsoil was infilled first, followed by topsoil and the area compacted to a suitable level by machine.

Results

7.10 Of the total of 28 trenches, archaeological remains were only recorded in Trench 15. The remaining trenches were photographed and the deposit sequence recorded to create a deposit model for the area (Table 4).

7.11 The ploughsoil was dark greyish brown, soft and very loose. It was 0.2–0.7m thick and contained frequent natural flint inclusions. No finds were recovered.

7.12 The topsoil in most trenches overlay compacted, mid-reddish brown silty clay subsoil with frequent chalk inclusions, but little flint in comparison to the topsoil. No subsoil was present in Trenches 6, 7, 8, 12, 14, 15, 20, 23 and 28. Most of these were located towards the centre of the PDA and may indicate levelling of this area during construction of the airfield. Where the subsoil survived, it measured 0.10m–0.47m deep and was almost entirely sterile. A single fragment of a medieval or early post-medieval green-glazed jug handle was recovered from the subsoil in Trench 4 but is unlikely to indicate anything more than agricultural manuring during this period.

7.13 The natural geology was generally compact, mid-orange brown, sandy clay overlying outcrops of chalk and flint. The only instance where this differed was at the north-east end of Trench 24, where no chalk outcrops were present and it became increasingly sandy, presumably the result of an underlying glacial pocket.

Table 4: Deposit model from the trial trenches

Trench	Topsoil thickness	Subsoil thickness	Trench	Topsoil thickness	Subsoil thickness
1	0.45m	0.10m	15	0.30m	None
2	0.50m	0.20m	16	0.45m	0.15m
3	0.50m	0.10m	17	0.35m	0.20m
4	0.39m	0.22m	18	0.35m	0.20m
5	0.50m	0.15m	19	0.40m	0.20m
6	0.30m	None	20	0.45m	None
7	0.35m	None	21	0.35m	0.20m
8	0.35m	None	22	0.40m	0.20m
9	0.30m	0.10m	23	0.40m	None
10	0.20m	0.10m	24	Up to 0.70m	Up to 0.47m
11	0.30m	0.10m	25	0.40m	0.30m
12	0.40m	None	26	0.40m	0.25m
13	0.40m	0.20m	27	0.24m	0.19m
14	0.30m	None	28	0.40m	None

Trench 15

7.14 Trench 15 targeted a concentration of dipolar anomalies recorded by the geophysical survey (see section 6.10; Fig. 8: **A**) that correspond with the location of an aircraft dispersal point recorded on the 1940s airfield plan (Figs. 4). At the south-east end of the trench, beneath the topsoil there was a compacted deposit (**05**) of blocks of grey, porous material that appeared to be coke clinker or other industrial waste. This material had been set within a wide, shallow cut (**04**) arcing from east to west and 0.3m deep (Fig. 10 and Plate 10). The position of this feature corresponded to the area of hardstanding shown on the airfield plan. However, much of this feature appeared to have been truncated, since no traces of it were found to the south in adjacent Trenches 18 and 21.

8.0 ASSESSMENT OF SIGNIFICANCE AND IMPACT

8.1 This section discusses the significance of those heritage assets that could be affected by the development proposals in either the construction or operational phases of the development and the potential impact of the proposals on this significance.

8.2 The importance of the remains is assessed against the criteria set out in the Design Manual for Roads and Bridges document LA 104 (Highways England 2020). The criteria for understanding the significance of heritage values is provided in Appendix B. The criteria for assessing the value of the asset are given in Table B1, the magnitude of impact is set out in Table B2, and the criteria to assess the significance of effects of impact are provided in Table B3.

Development description

8.3 The archaeological assessment and evaluation works were commissioned by Robert Farrow Design Ltd on behalf of Mr Lewis Dodds in support of a planning application for a proposed development comprising the conversion of agricultural land to B8 storage and distribution use comprising four warehouses and associated parking and infrastructure. The PDA comprises a large arable field adjacent to Wellington Way, fringed to the north by a disused airfield runway mostly now covered by rough grass.

Construction activities

8.4 Groundworks would comprise site clearance, excavation of building foundations, construction of roadways and services, and landscaping work. It is unknown at this stage to what extent site stripping would occur in the PDA in preparation for groundworks, although it is likely to be extensive. If subsurface archaeological remains

are extant, they could be harmed through construction activities. The degree to which this may occur will depend on several factors, including presence of archaeological remains, depth of works and extent of any previous truncation.

Potential impacts

Assessment of impact on designated heritage assets

8.5 The only designated heritage asset within the study area is the Grade II listed threshing barn and cart shed at Elsham Top Farm (MLS4748; NHLE: 1103682). The barn and cart shed are located c.0.5km to the south-east of the PDA and the intervening area between them and the PDA is occupied by the large buildings comprising the Elsham Wold Industrial Estate. Consequently, there is no inter-visibility between the two sites.

8.6 The proposed development will therefore have no impact upon the setting of the designated asset MLS4748/NHLE 1103682.

Assessment of impact on non-designated heritage assets

8.7 There is no evidence for pre-modern activity in the PDA.

8.8 Although most of the site was an open grassed area, some elements of the Second World War airfield lie within the PDA. These include remains of a runway along the northern edge of the site and part of a perimeter trackway still in use at the southern and eastern edges of the area. The geophysical survey and trial trenching, in combination with a 1940s plan of the airfield, has identified heavily truncated remains of an aircraft dispersal point consisting of an area of hard-standing. Although these features belong to an important period of the area's history, in isolation they are considered to be of low local importance. While their removal would have a major adverse impact upon them, it is considered unlikely that further investigation would yield any significant information to add to the archaeological record of the RAF site.

Unrecorded archaeological remains

8.9 A total of 53 non-designated heritage assets have been recorded within the wider study area. Many of these are artefact find-spots, mostly located at some distance to the west and south of the PDA. Several crop-mark sites and geophysical anomalies have been recorded, although to judge from their transcription none of these features extend into the PDA. Other assets include High Street Roman road and a possible associated Roman building, both located at the east edge of the study area. Several post-medieval farms

have been recorded, although not all are extant, and most lie at some distance from the PDA. A considerable number of structures associated with the Second World War airfield have been recorded, although some are no longer extant and most of the remainder either lie well away from the PDA or are located within Elsham Wold Industrial Estate and are not inter-visible with the PDA.

8.10 A two-stage evaluation was undertaken within the PDA to assess the potential for unrecorded archaeological remains to be present. The evaluation works, together with similar previous investigations in neighbouring areas to the south and north-east, did not identify archaeological features other than remains of the former airfield. In addition, the results of the trial trenching indicated that some landscaping may have taken place during construction or decommissioning of the airfield. This suggests that the likelihood of earlier (prehistoric to early post-medieval) features surviving within the PDA is low. However, there remains a slight possibility for unrecorded heritage assets to be located within the PDA. These could date from any period from the early prehistoric through to the post-medieval period. The impact of the proposed development on any such remains cannot be accurately assessed at this stage, although if any are present it is likely to be moderate/substantial.

Operational impacts

8.11 Two above-ground heritage assets are located close to, and are inter-visible with, the PDA.

8.12 Dodds Farm (MLS25410; Plate 9) is located c.0.15km to the south-east of the PDA. The farmstead is largely composed of modern buildings, although certain outbuildings may be earlier, and—based on evidence from historic maps—plausibly date to the end of the 19th century or beginning of the 20th century. In the late19th century, the farmstead is depicted on Ordnance Survey maps within a rural landscape and is shown to have a courtyard form with wings on the north-west, north-east and south-east and outbuildings to the south-west. The 1907 25-inch Ordnance Survey map shows considerable growth to the farmstead. There is an addition of outbuilding(s) to the north-west, one of which is possibly still extant, and a second quadrant of buildings adjoining the main complex to the south-west. Mapping appears unaltered during much of the second half of the 20th century—presumably due to military secrecy associated with the RAF airfield—so it is not possible to map the modern evolution of the farmstead into its current layout. Likewise, although it is not possible to evidence the changing setting

of the farmstead during the 20th century, it can be presumed that the construction of the airfield drastically changed the rural setting of the farmstead into a busy military centre of operations. After the airfield fell out of use, some of the buildings remained in use and took on a commercial function, eventually being amalgamated into the Elsham Wold Industrial Estate. There is direct visibility between the PDA and Dodds Farm and the setting of the asset will change when being viewed from the north and west. It should be noted, however, that the original setting of the farmstead has already been significantly altered during changes to the use of land to the south, and that any operational impact of the development does not exceed that already caused by the presence of the Elsham Wold Industrial Estate. Consequently, as the farmstead is at best of local (low) significance and given the changes to setting that have already occurred, the proposed development is considered to have a neutral impact on the overall setting of the heritage asset.

8.13 The second heritage asset that the proposed development could have an operational impact upon is the Second World War Type J aircraft hangar (MLS22691; Plates 7 and 8) located on Wellington Way adjacent to the southern corner of the PDA. This structure is currently surrounded on three sides by recently constructed commercial buildings belonging to the Elsham Wold Industrial Estate. The north end of the structure faces across Wellington Way and has views of the rural land of the PDA. The original setting of the hangar would have included a mix of various other buildings and features associated with the airfield set within a largely rural landscape. Given it is one of the few surviving remnants of the former airfield, and that it has been successfully repurposed for use within an industrial estate, the original setting of the hangar has almost completely diminished. Consequently, the proposed development is considered to have a neutral impact upon the setting of the aircraft hangar, and certainly not to a greater extend than that already caused by nearby buildings erected for the industrial estate.

8.14 It is also worth noting that vestiges of the layout of the former airfield are preserved through the location of roads and shape of the field boundaries. The design plan of the proposed development shows it conforming to the outline of the field it is contained by., It is not, therefore considered to impact upon the general fabric of the area and is sympathetic to preserving the general 20th-century character of the locale that the PDA lies within.

9.0 MITIGATION

9.1 Mitigation measures can be incorporated at various stages during the design, construction and operation of the development and should be adopted in the following hierarchy:

- firstly, avoid adverse impacts as far as possible by use of preventative measures, including scheme design;
- secondly, minimise or reduce adverse impacts to 'as low as practicable' levels; and
- thirdly, remedy or compensate for adverse impacts that are unavoidable and cannot be reduced further.

9.2 Mitigation should consider the assessment of significance, assessment of impact and tolerance of the asset to change. There are two heritage assets recorded by the HER in the immediate vicinity of the PDA and some remains of the Second World War airfield within the PDA. In addition, the potential for the presence of unrecorded evidence cannot be discounted.

Consultation

9.3 In September 2019, North Lincolnshire Historic Environment Records (NLHER) Officer provided pre-application advice (ref: PRE/2019/114) to guide the scope of initial evaluation works required to assess the archaeological potential of the site, determine whether mitigation works would be required to safeguard any archaeological features, if extant, and inform the emerging design of the development.

9.4 The NLHER advice stated that the PDA lay within an area where there was a potential for archaeological remains to be present. A heritage statement was required prior to the determination of the planning application to identify if archaeological deposits were located within the PDA, and if so, to set out their archaeological significance. The heritage statement was required to:

- assess all heritage assets affected by the proposed development;
- present the findings of a geophysical survey that assessed the potential for buried archaeological remains to be present;
- detail the results of a trial trench evaluation aimed at confirming the results of the geophysical survey.

9.5 Following the completion of data collection for the desk-based research and geophysical survey an archaeological appraisal was submitted to NLHER that provided a preliminary summary of the results of the initial investigations (NAA 2021b). This appraisal formed the basis of consultation with NLHER regrading the scope of trial trench evaluation, which was agreed in April 2021 and executed in September 2021 following the removal of crops. The NLHER officer undertook a site visit on the 16th September 2021 and subsequently agreed that the fieldwork had been sufficient in demonstrating an absence of significant archaeological remains that required future investigation or warranted further archaeological mitigation works.

Further to my site visit last week, I'm pleased to confirm that all fieldwork was satisfactory and that from what I saw I am satisfied that the site contains no significant below-ground archaeological remains. As such, I will not be recommending any further archaeological works in these areas. (Williams, 2021)

Mitigation measures

9.6 The assessment has not identified any potential for archaeological deposits pre-dating the airfield to be present within the PDA. Geophysical survey was successful in locating the remains of a Second World War aircraft dispersal point. Trial trench evaluation supported the results of the geophysical survey and was able to characterise the composition of the feature. The aircraft dispersal point is of minor local importance and does not require further investigation.

9.7 Consequently, it can be surmised there are no heritage assets within the PDA that would be negatively impacted by construction activities associated with the proposed development, and there is nothing to warrant additional archaeological mitigation works. This is supported by communications with NLHER who have agreed that the works carried out as part of this investigation are sufficient in demonstrating that there is no archaeological potential for the site, and so, no further works are required.

9.8 Consideration should be given during design of the proposed development to operational impacts. Both the Type J aircraft hangar and Dodds Farm—which contains post medieval farm outbuildings—have inter-visibility with the PDA. Based on the current design plans, the proposed development is not considered to impact on the heritage setting of the identified assets, and certainly not to a greater extent than that already caused by the industrial estate located to the south of the PDA. It is recommended that, where possible, the position of new buildings should be considered

to minimise visual impairment and maintain some of the rural views that the heritage assets were originally set within.

10.0 CONCLUSIONS

10.1 This report has sought to identify any heritage assets within the PDA, the significance of which could potentially be affected by the development proposals for the site. The document has assessed the significance of the heritage assets and the potential impact on them from the proposed development. It has also assessed the potential for previously unrecorded heritage assets to be present within the PDA and the potential for them to be affected by the planning proposal.

10.2 This document has identified all the recorded heritage assets, and the potential for previously unrecorded assets, within a study area extending 1km in radius from the PDA that may be affected by the proposed development. It has assessed the significance of these assets and the potential impact upon them.

10.3 The archaeological assessment identified 54 heritage assets within the study area, although not all of these are still extant and many represent surface finds of artefacts. Most of the surviving heritage assets lie at a distance from the PDA and will be unaffected by any development. Remains of the Second World War airfield are located within the PDA, including part of a former runway, a perimeter trackway and an aircraft dispersal point. Two built heritage assets are located in the direct hinterland of the PDA. Dodds Farm (MLS25410), is located immediately to the south-east of the PDA and a Type J aircraft hangar (MLS22691) is located on Wellington Way adjacent to the southern corner of the PDA. The setting of these heritage assets has already been impacted upon by the construction and decommissioning of the former airfield and establishment of an industrial estate directly to the south of the PDA. The proposed development is therefore considered to have a neutral impact upon the setting of these assets. Where possible, though, the design should be sympathetic to the general character of the area and the position of buildings orientated to reduce visual impairment of the rural setting of the heritage assets.

10.4 Geophysical survey, supported by trial trench evaluation, has demonstrated an absence of archaeological remains pre-dating the mid-20th century within the PDA, and one minor auxiliary airfield feature of low local importance. Consequently, it is considered

unlikely for any heritage assets to be present within the PDA that warrant further archaeological investigation and that no further archaeological mitigation is required.

10.5 The extent and timing of any further archaeological works should be agreed with North Lincolnshire Historic Environment Record, archaeological advisors to North Lincolnshire Council (MHCLG 2021, Policies 4 and 16).

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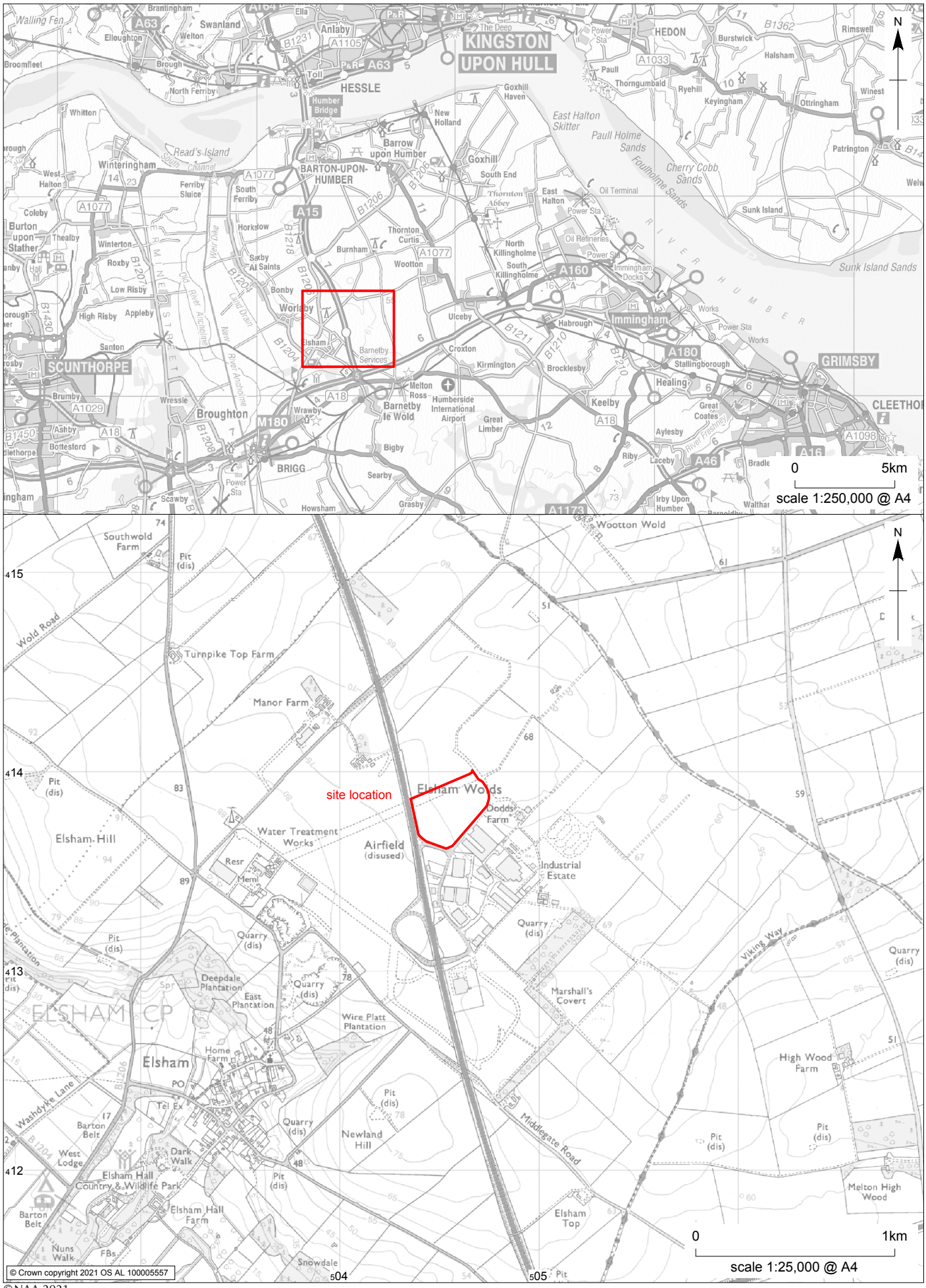
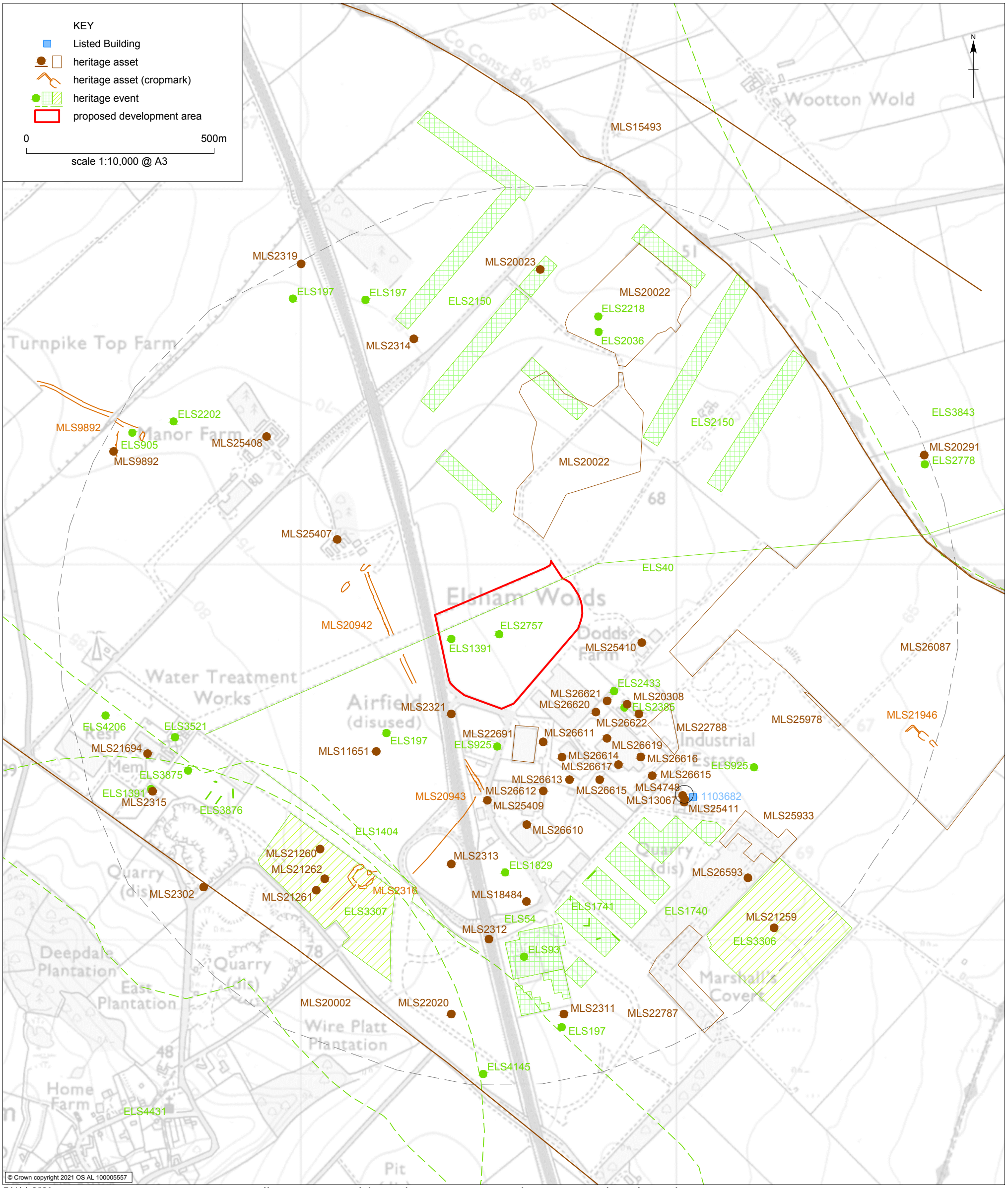
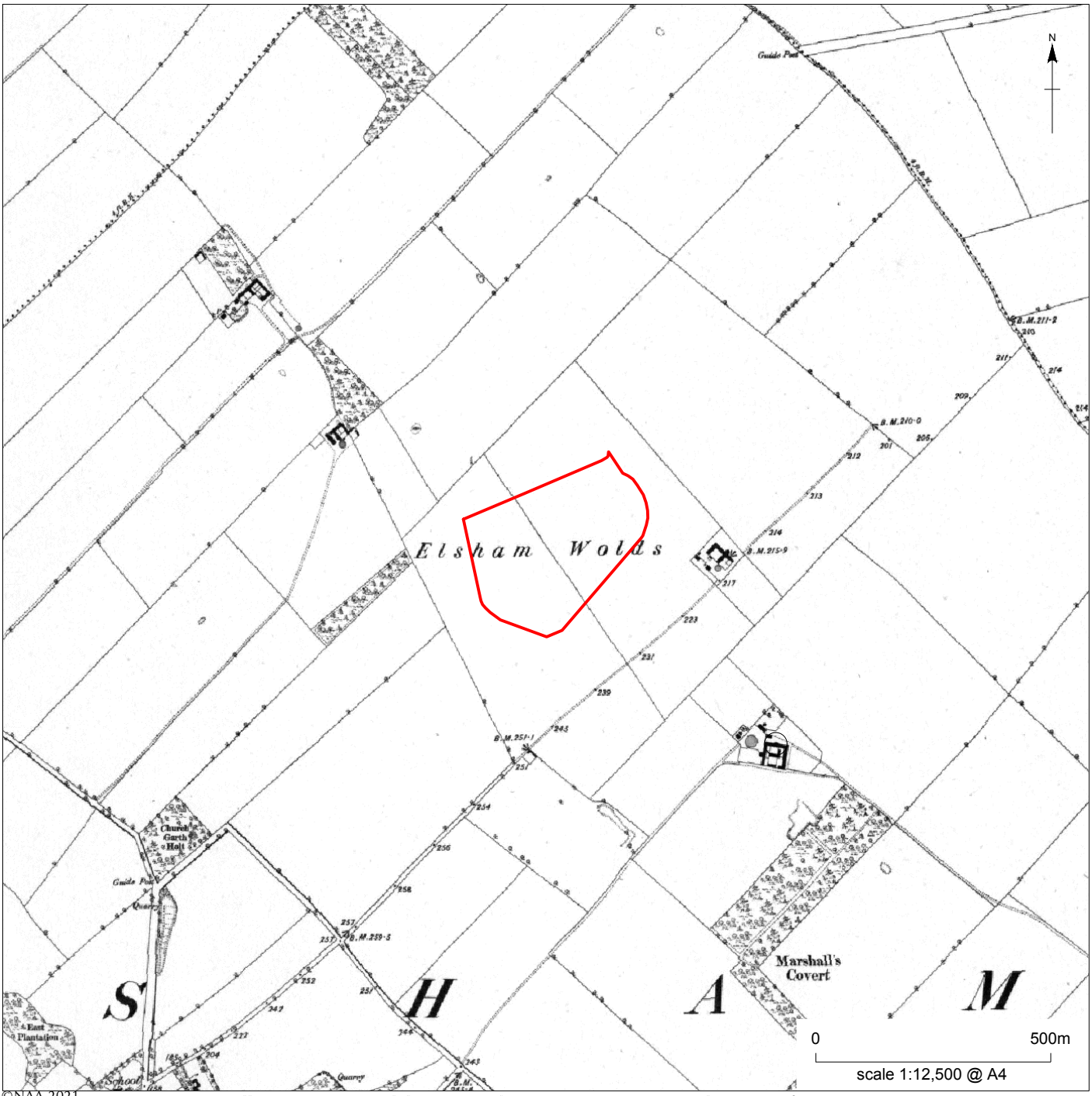


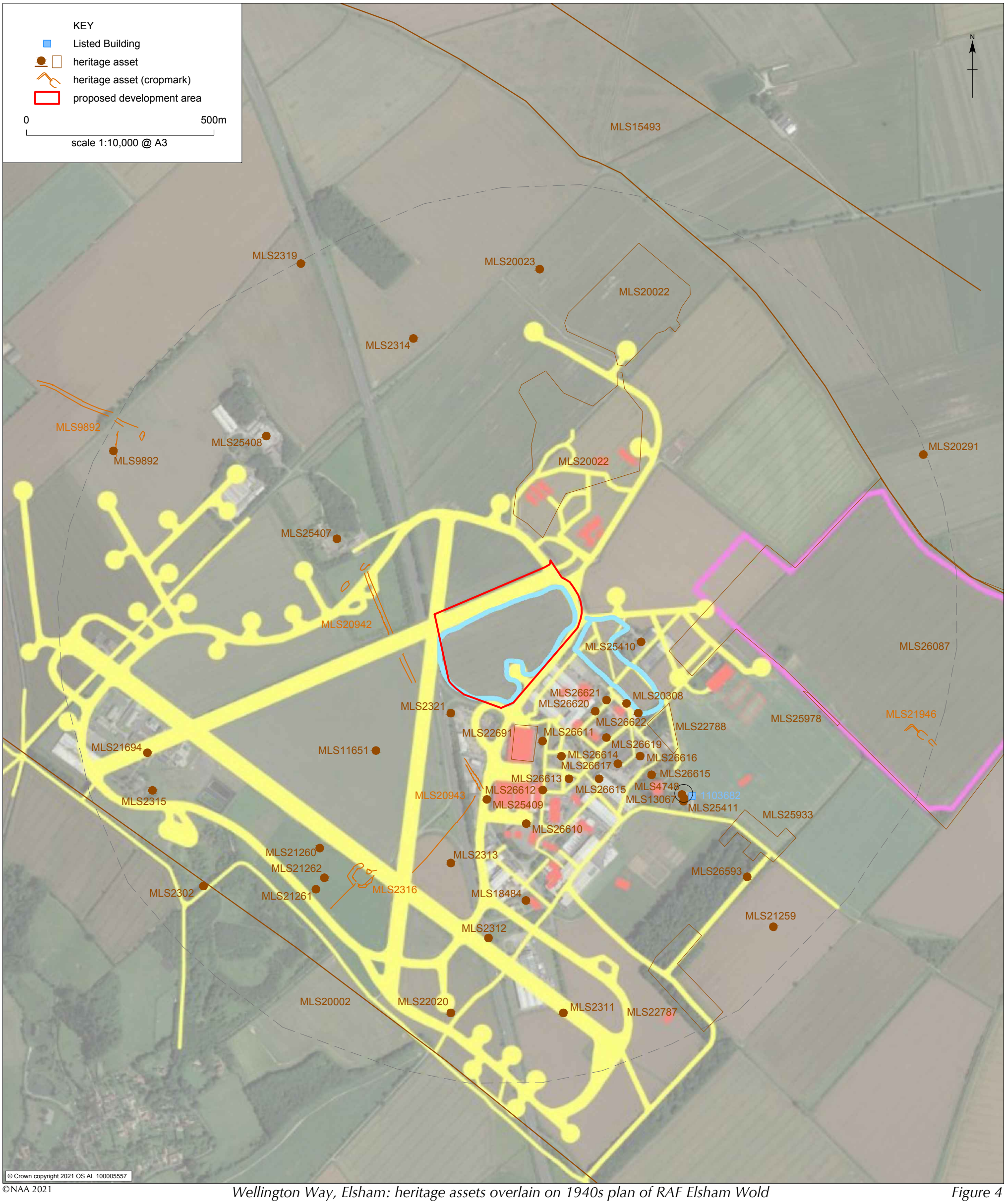
Wellington Way, Elsham: site location *Figure 1*



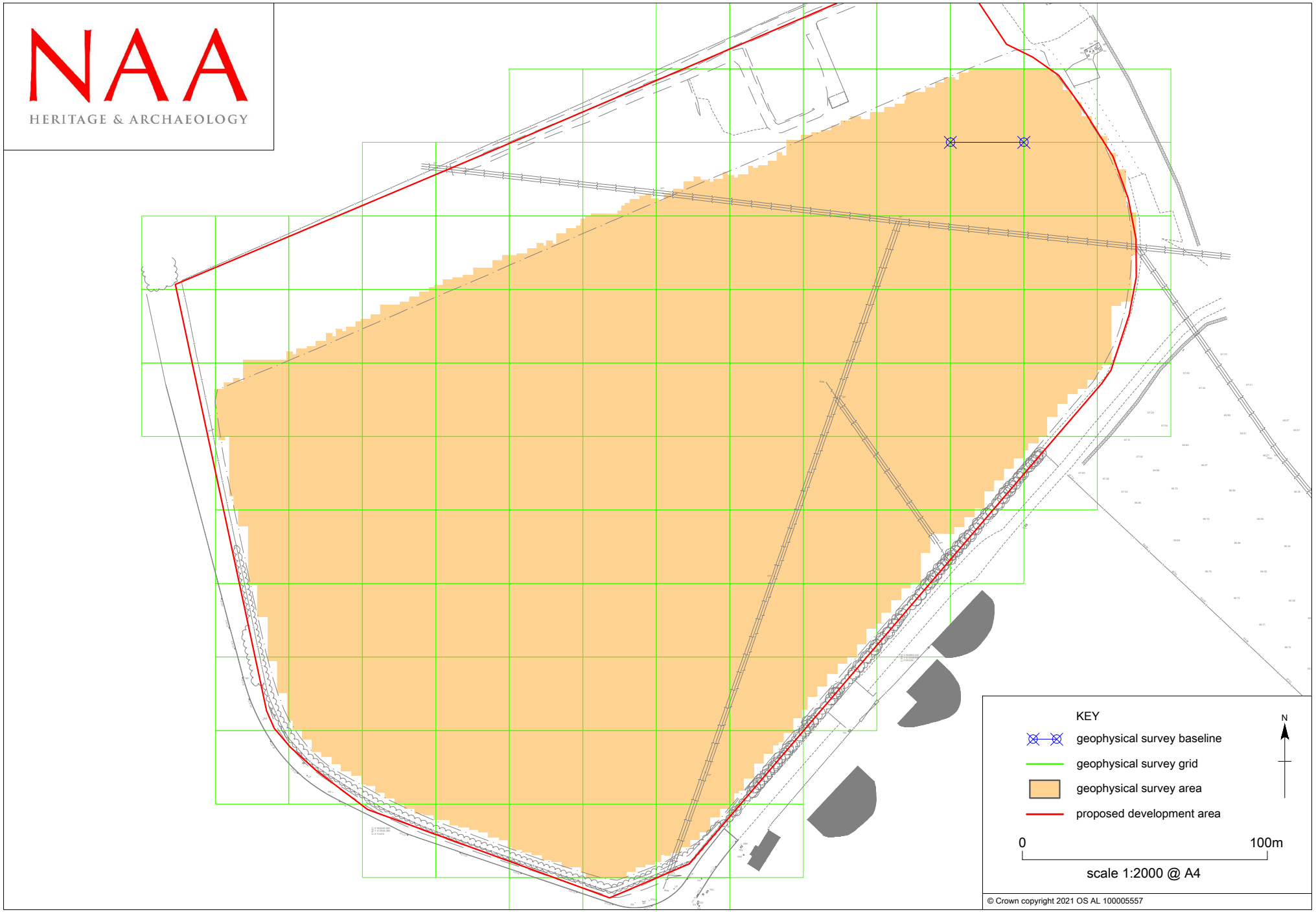
Wellington Way, Elsham: heritage assets and previous archaeological interventions *Figure 2*



Wellington Way, Elsham: Ordnance Survey six-inch map of 1886 *Figure 3*

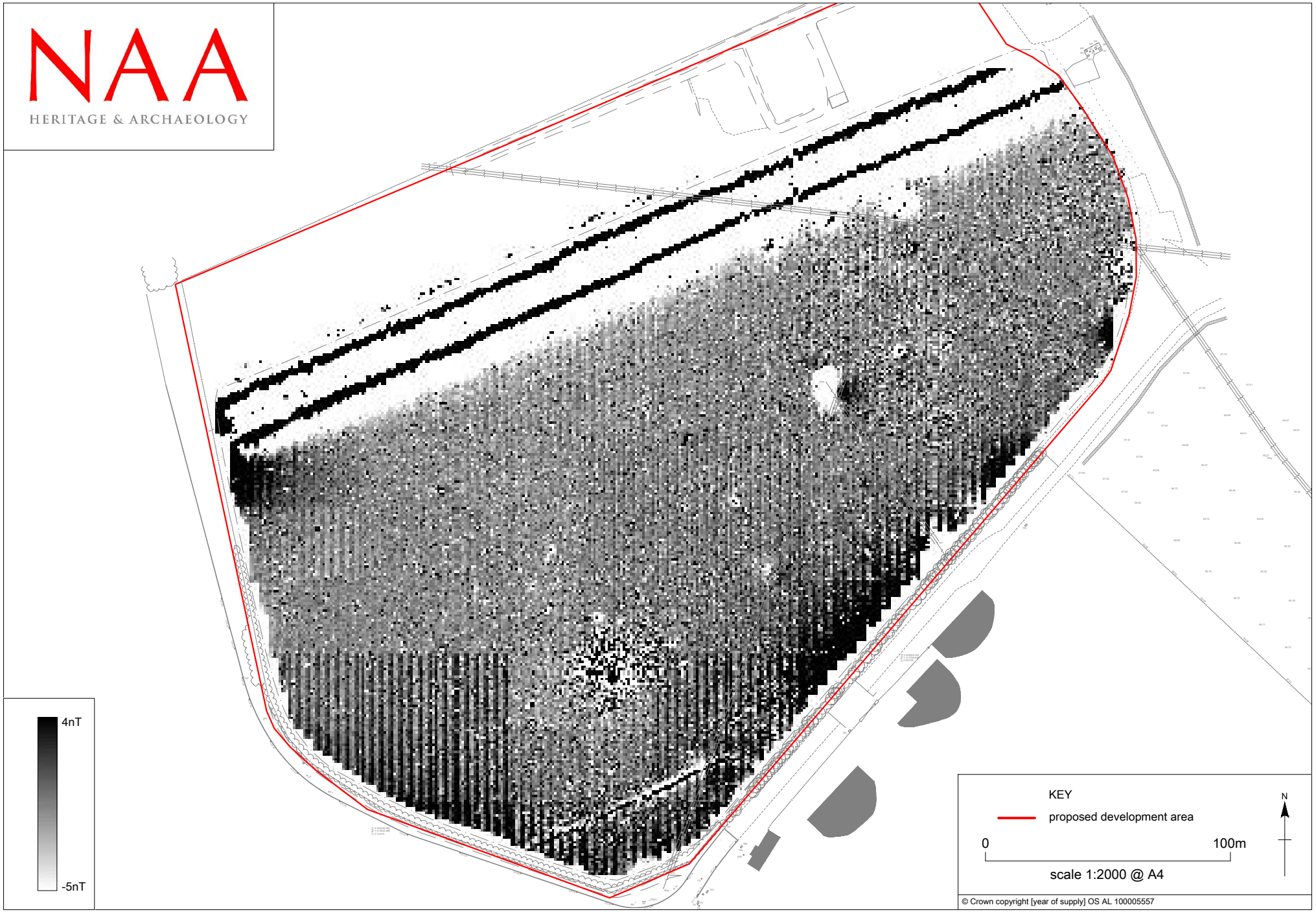


Wellington Way, Elsham: heritage assets overlain on 1940s plan of RAF Elsham Wold *Figure 4*



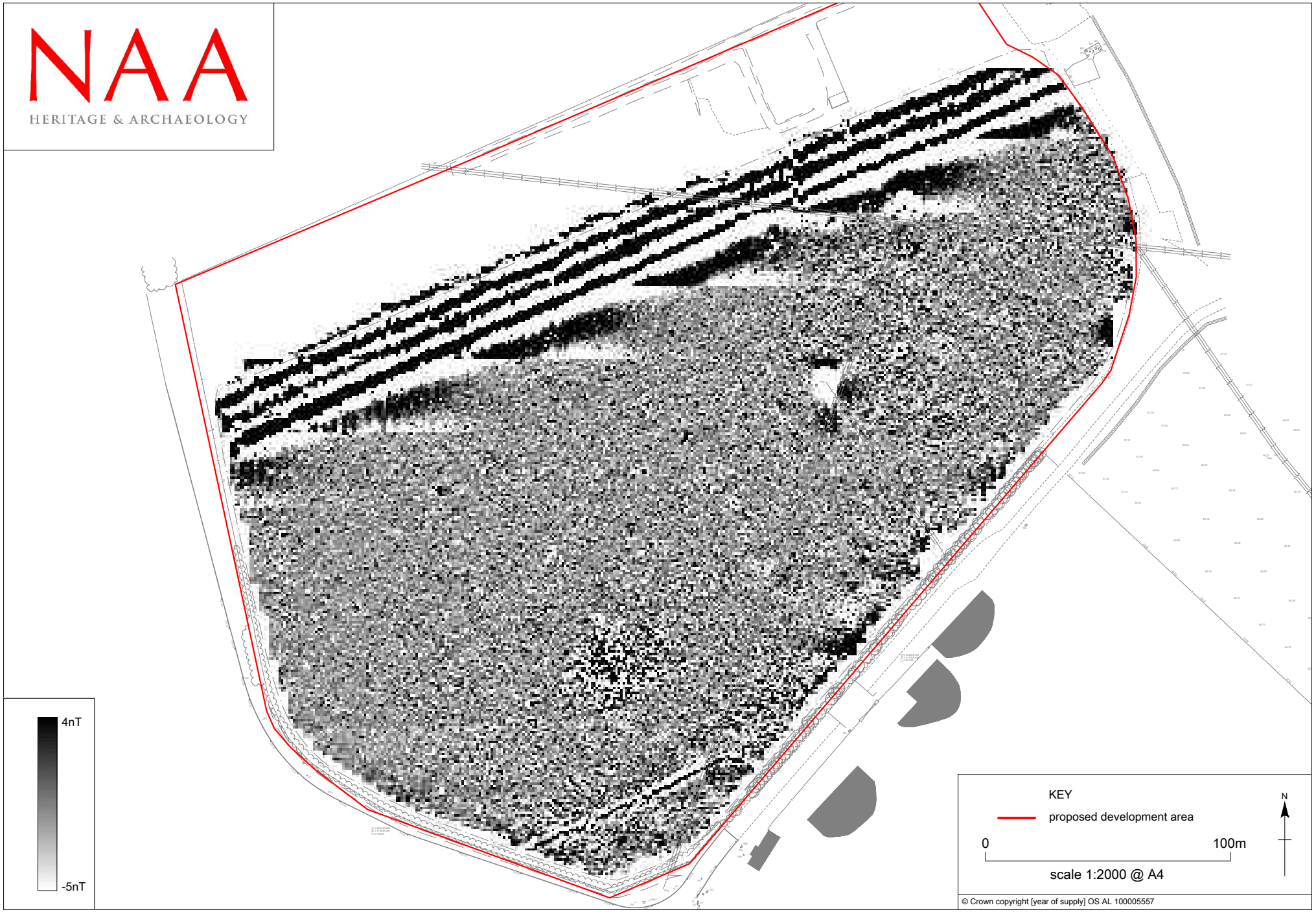
Wellington Way, Elsham: location of geophysical survey area

Figure 5



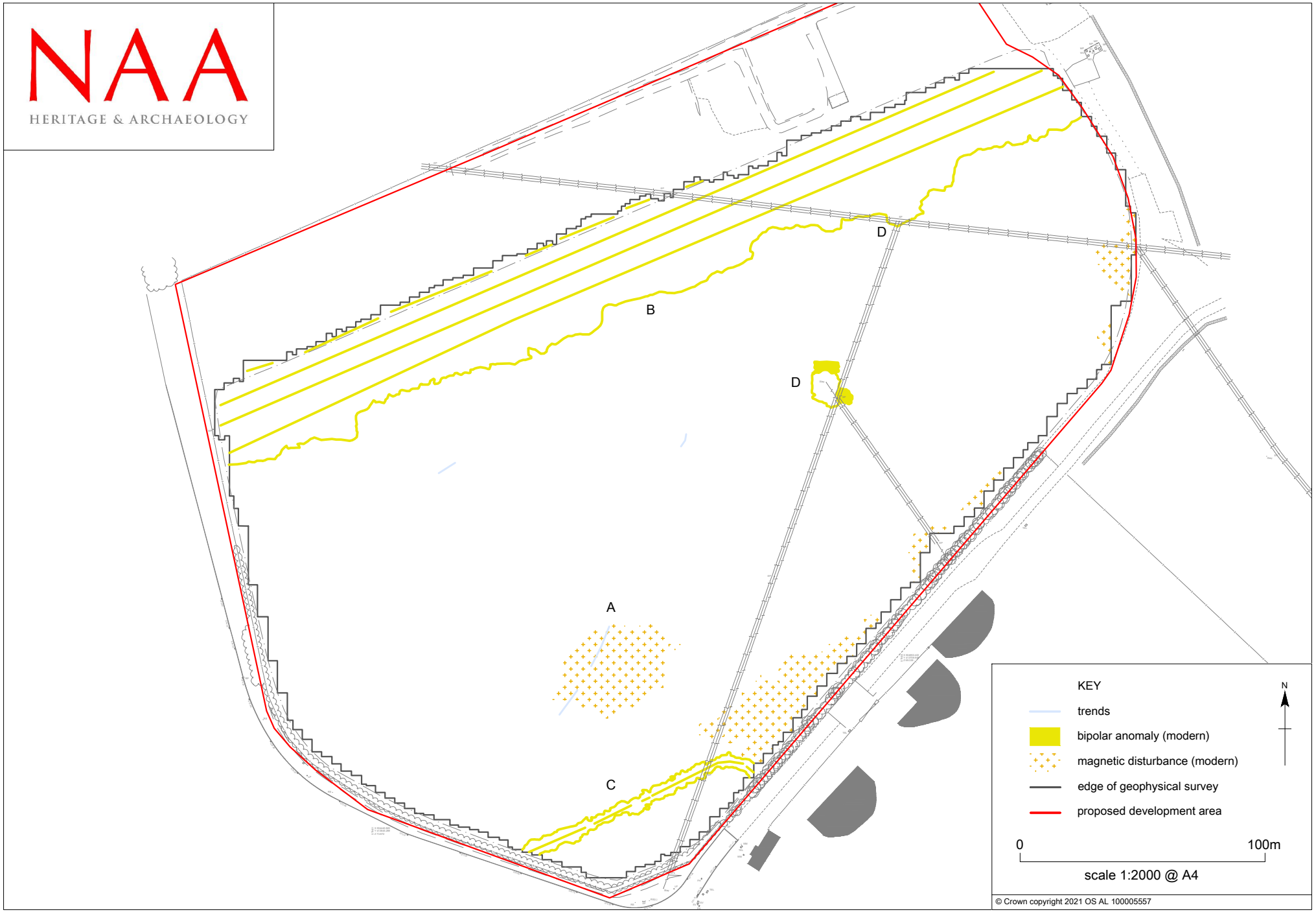
Wellington Way, Elsham: unprocessed greyscale plots of gradiometer survey results

Figure 6



Wellington Way, Elsham: processed greyscale plots of gradiometer survey results

Figure 7

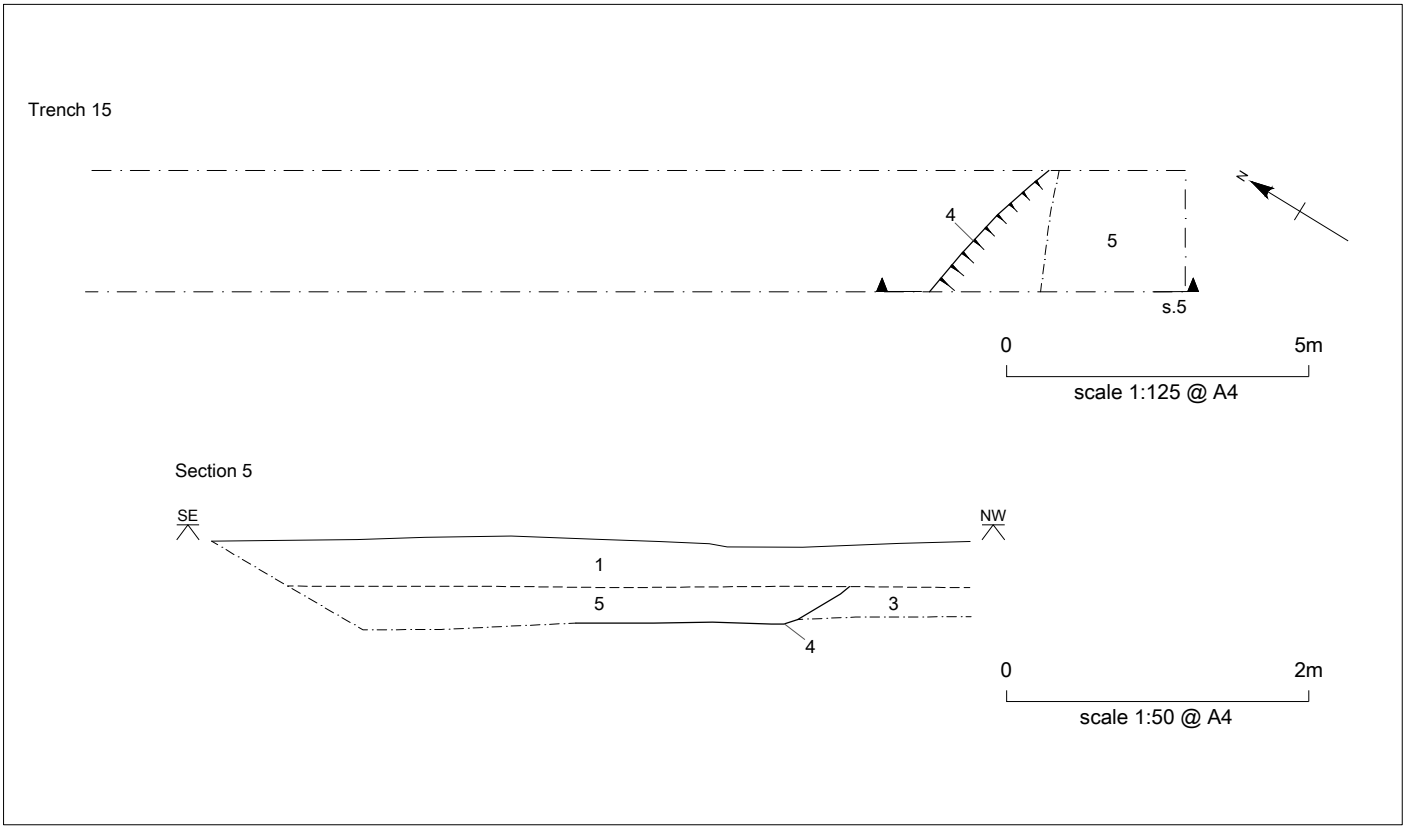


Wellington Way, Elsham: interpretation of gradiometer survey results

Figure 8

Wellington Way, Elsham: trial trench locations

Figure 9



Wellington Way, Elsham: Trial trench 15, plan and section *Figure 10*

Plate 1

View looking east across the PDA, with Elsham Wold Industrial Estate to the right

Plate 2

View looking south-west across the PDA, with Elsham Wold Industrial Estate beyond

Plate 3

View looking north-east along the northern edge of the PDA showing the grassed area over the former runway

Plate 4

Area of surviving runway surface at the north-east corner of the PDA, looking north-east

Plate 5

The south-east corner of the PDA showing the surviving perimeter trackway of the former airfield, looking south-west

Plate 6

View looking south-west across the PDA showing the overhead powerlines

Plate 7

The southern end of the Type J aircraft hangar (MLS22691), looking east

Plate 8

The southern corner of the PDA with the north end of the Type J aircraft hangar (MLS22691) beyond, looking south-east

Outbuildings belonging to Dodds Farm (MLS25410) looking east *Plate 9*

Plate 10

The south-east end of Trial Trench 15 showing foundation cut 04 infilled by hardcore deposit 05, looking north-west, scale 1m

APPENDIX A: RELEVANT NPPF POLICIES

National Planning Policy Framework (NPPF) (2021)	
Paragraph 194	In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation
Paragraph 195	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
Paragraph 196	Where there is evidence of deliberate neglect of, or damage to, a heritage asset, the deteriorated state of the heritage asset should not be taken into account in any decision
Paragraph 197	In determining planning applications local authorities should take account of: • the desirability of sustaining and enhancing heritage assets and putting them to a viable use consistent with their conservation • the positive contribution that preservation of heritage assets can make to sustainable communities including their economic vitality • the desirability of new development to making a positive contribution to local character and distinctiveness
Paragraph 199	When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance
Paragraph 200	Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of: a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional; b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional
Paragraph 201	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 loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: • the nature of the heritage asset prevents all reasonable uses of the site; and • no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and

	• conservation by grant funding or some form of charitable or public ownership is demonstrably not possible; and • the harm or loss is outweighed by the benefit of bringing the site back into use
Paragraph 202	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
Paragraph 203	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
Paragraph 204	Local planning authorities should not permit the loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred
Paragraph 205	Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted
Paragraph 206	Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably
Paragraph 207	Not all elements of a Conservation Area or World Heritage Site will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 195 or less than substantial harm under paragraph 196, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole
Paragraph 208	Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies but which would secure the future conservation of a heritage asset, outweigh the disbenefits of departing from those policies

NPPF GLOSSARY:

This glossary sets out the definitions for heritage and archaeological issues that should be treated as a material consideration in the planning process. Those definitions of relevance to the current application are:

Historic environment:

- All aspects of the environment resulting from the interaction between people and places through time (including all surviving physical remains of past human activity whether visible, buried or submerge), as well as landscaped areas and planted or managed flora.

Heritage assets:

- A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).

Archaeological interest:

- There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point.

Setting of a heritage asset:

- The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

Significance (for heritage policy):

- The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance.

Historic environment record:

- Information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use.

APPENDIX B: ASSESSMENT CRITERIA

Table B1: Criteria for establishing sensitivity and importance of archaeological remains (after Design Manual for Roads and Bridges (DMRB), 2020, Document LA 104, table 3.2N)

Very High	• World Heritage Sites (including nominated sites). • Assets of acknowledged international importance. • Assets that can contribute significantly to acknowledged international research objectives.
High	• World Heritage Sites (including nominated sites). • Assets of acknowledged international importance. • Assets that can contribute significantly to acknowledged international research objectives.
Medium	• Designated or undesignated assets that contribute to regional research objectives. • Remaining tier Archaeological Priority Areas, where used by the LPA.
Low	• Designated and undesignated assets of local importance. • Assets compromised by poor preservation and/or poor survival of contextual associations. • Assets of limited value, but with potential to contribute to local research objectives.
Negligible	• Assets with very little or no surviving archaeological interest.
Unknown	• The importance of the resource has not been ascertained.

Magnitude of impact

'Impact' refers to a predicted change to the baseline environment arising from either the construction or operation of the scheme. Impacts can be both negative or positive, and reversible or irreversible. Table B2 below sets out the criteria adopted for this assessment and is based on the criteria set out in the DMRB (2020).

Table B2: Factors in the assessment of the magnitude of impact on archaeological remains (after Design Manual for Roads and Bridges, 2020, Document LA 104, table 3.4N)

Major Change	Change to most or all key/fundamental archaeological materials, such that the resource is totally altered. Where adverse, this would equate to destroyed or left completely illegible. Comprehensive changes to setting.
Moderate	Changes to many key archaeological materials, such that the resource is clearly modified, if adverse, it would be substantial harm or loss of legibility. Considerable changes to setting that affect the character of the asset.
Minor	Changes to key archaeological materials, such that the asset is slightly altered. In terms of adverse impact. This would be minor or less than substantial harm or loss to the asset or slight loss of legibility. Slight changes to setting.
Negligible	Very minor changes to archaeological materials, or setting.
No Change	No change to fabric or setting of historic building.

Significance of effect of impact

The significance of the impact of the proposals on heritage assets is determined by the interaction of receptor value/sensitivity and impact magnitude. Impacts can be positive (i.e. enhance the heritage asset) or negative (i.e. detrimental to the resource). Table B3 below sets out the criteria adopted for this assessment and is based on the criteria set out in the DMRB.

Table B3: Archaeological remains — significance of effects matrix (after Design Manual for Roads and Bridges, 2020, Document LA 104, table 3.8.1)

VALUE SENSITIVITY	**Very High**	Neutral	Minor	Moderate/ Substantial	Substantial	Substantial
	High	Neutral	Minor	Moderate/ Minor	Moderate/ Substantial	Substantial
	Medium	Neutral	Negligible	Minor	Moderate	Moderate/ Substantial
	Low	Neutral	Negligible	Negligible	Minor	Minor/ Moderate
	Negligible	Neutral	Neutral	Negligible	Negligible	Minor
		No Change	**Negligible**	**Minor**	**Moderate**	**Major**
		MAGNITUDE OF IMPACT				

APPENDIX C:
TECHNICAL INFORMATION

GRADIOMETER SURVEY

Magnetic surveys measure distortions in the earth's magnetic field caused by small magnetic fields associated with buried features (Gaffney and Gater 2003, 36) that have either remanent or induced magnetic properties (Aspinal *et al*. 2008, 21–26). Human activity and inhabitation often alters the magnetic properties of materials (Aspinal *et al*. 2008, 21) resulting in the ability for numerous archaeological features to be detected through magnetic surveys. Intensive burning or heating can result in materials attaining a thermoremanent magnetisation; examples of which include kilns, ovens, heaths and brick structures (Gaffney and Gater 2003, 37; Aspinal *et al*. 2008, 27). When topsoil rich with iron oxides, fills a man-made depression in the subsoil, it creates an infilled feature, such as a pit or ditch, with a higher magnetic susceptibility compared to the surrounding soil (Gaffney and Gater 2003, 22–26; Aspinal *et al*. 2008, 37–41). Magnetic surveys can also detect features with a lower magnetically susceptibility than the surrounding soil, an example of which is a stone wall.

LIMITATIONS

Poor results can be due to several factors including short lived archaeological occupation/use or sites with minimal cut or built features. Results can also be limited in areas with soils naturally deficient in iron compounds or in areas with soils overlying naturally magnetic geology, which will produce strong responses masking archaeological features.

Overlying layers, such as demolition rubble or layers of made ground, can hide any earlier archaeological features. The presence of above ground structures and underground services containing ferrous material can distort or mask nearby features.

Particularly uneven or steep ground can increase the processing required, or distort results beyond the capabilities of processing. It is also possible in areas containing dramatic topographical changes that natural weathering, such as hillwash, often in combination with intensive modern ploughing, will reduced the topsoil on slopes and towards the peaks of hills and possibly destroy or truncate potential archaeological features. Conversely, features at the bottom of slopes may be covered by a greater layer of topsoil and so if buried features are present they appear faint within the results, if at all.

Over processing of data can also obscure or remove features, especially if there are on the same orientation as the direction of data collection. Consequently, where possible, attempts are made to ensure data is not collected on the same orientation as known potential features and that data quality is sufficient to minimise the required data processing.

INSTRUMENTATION

The data was collected using handheld Bartington Grad 601-2 fluxgate gradiometers. The Bartington 601-2 is a single axis, vertical component fluxgate gradiometer comprising a data logger battery cassette and two sensors. The sensors are Grad-01-1000L cylindrical gradiometer sensors mounted on a rigid carrying frame; each sensor contains two fluxgate magnetometers with 1m vertical separation.

The difference in the magnetic field between the two fluxgates in each sensor is measured in nanoTesla (nT). NAA gradiometer data is recorded with a range of ±100nT, which equates to a resolution of 0.01nT. It should be noted that the actual resolution is limited to 0.03nT as a consequence of internal instrumental noise (Bartington Instruments n.d., 23).

The gradiometer records two lines of data on each traverse, the grids are walked in a zig-zag pattern amounting to 15 traverses. The gradiometers are calibrated at the start of every day and recalibrated whenever necessary.

SURVEY DETAILS

Table A1: survey summary.

	Survey
Grid size	30m x 30m
Traverse interval	1m
Reading interval	0.25m
Direction of 1st traverse	N
Number of Grids	103
Area covered	7.5ha

Table A2: baseline co-ordinates (baseline is shown on Fig. 2)

Grid point (gp) A	Grid point (gp) B
NGR: 504672.9536 413922.3460	NGR: 504702.9460 413922.3464

Table A3: Site information and conditions

Item	Detail
Geology	Welton Chalk Formation
Superficial deposits	None
Topography	68m aOD to 75m aOD
Land use	Arable
Weather/conditions prior to and during survey	Overcast

APPENDIX D:

DATA PROCESSING INFORMATION

Gradiometer survey data is downloaded using the Bartington Grad 601 software and the processing was undertaken using Geoplot 3.0 software.

Table B1: commonly applied techniques.

Process	Effect
Zero mean traverse	Removes stripping which can occur as a consequence of using multi sensor arrays or a zig-zag data collection method by setting the mean reading for each traverse to zero.
Destagger	Removes stagger in the data introduced through inconsistence data collection pace and often exacerbated through the zig-zag methodology.
Clip	Clips data above or below a set value to potentially enhance potential weaker anomalies.
Despike	Removes random spikes or high readings to reduce the appearance of dominant readings, often created by modern ferrous objects that can distort the results.
Low pass filter	Removes low frequency waves or broad anomalies such as those caused by strong or large gradual variations in the soil's magnetic susceptibility often caused by geological or natural changes in the substrata.
Interpolation	Used to smooth or reduce the blocky appearance of data by improving the spatial density and balance the quantity of data points in the X and Y directions.

Table B2: processing steps.

Minimal processing	Increased processing
• Zero mean traverse +5/-5 • Destagger:	• Low Pass Filter • Interpolate Y, Expand – Linear

APPENDIX E:
DATA VISUALISATION INFORMATION

FIGURES

The data from the surveys were used to produce a series of images to represent the results. The terminology is detailed below:

- Greyscale/Colourscale Plot: this visualised the results as a shaded drawing with highest readings showing as black, running through to lowest shade showing as white.

- XY-trace Plot: this creates a line drawing showing the peaks and troughs of the readings as vertical offset from a centreline.

- Interpreted Plot: through detailed analysis, anomalies have been interpreted and possible features identified. Interpretation drawings are used to show potential features and, in particular, to reinforce and clarify the written interpretation of the data. Anomalies have been characterised using the terminology detailed in the following section, and have been assigned colour coding outlined in keys found on the relevant figures associated with this report.

MAGNETIC ANOMALIES AND TERMINOLOGY

Table C1: lexicon of terminology.

Terminology	Detail
Anomaly	Any outstanding high or low readings forming a particular shape or covering a specific area with the survey results.
Feature	A man-made or naturally created object or material that has been detected through investigation works and has sufficient characteristics or supporting evidence for positive identification.
Magnetic susceptibility	The ability of a buried feature to be magnetically induced when a magnetic field is applied.
Magnetic response	The strength of the changes in magnetic values caused by a buried feature with either a greater or lesser ability to be magnetised compared with the soil around it. Anomalies are considered to either have strong/weak or positive/negative responses. The strength of magnetic response (along with patterning) can be essential in determining the nature of an anomaly, but it should be noted that the size or strength of the magnetic response does not correlate with the size of the buried feature.
Patterning of an anomaly	The shape or form of an individual anomaly.

Different anomalies can represent different features created by human, agricultural or modern activity, or natural pedological or geological changes in the substrata.

Anomalies interpreted with a 'greater' categorisation are considered more likely to be of the interpreted characterisation; whereas a more tentative interpretation is applied to those with a 'lesser' categorisation as a consequence of weaker increases in magnetic response or the anomalies incomplete patterning or irregular form.

The strength and size of anomalies can vary depending on the magnetic properties of the feature, the magnetic susceptibility of the soil, the depth to which the feature is buried, and the state of preservation.

Table C2: characterisation of anomalies.

Characterisation	Detail
Unknown	
Trends	Weak and diffuse anomalies with an uncertain origin are denoted by trends. It is possible that these belong to archaeological features, but given their weak signatures or incomplete patterning it is equally plausible that they relate to agricultural features or natural soil formations.
Modern	
Bipolar response (modern)	Positive anomalies with associated negative 'halo' (bipolar) denote features with a strong magnetic response are likely to be of a modern origin. Isolated bipolar responses of a modern nature are likely to relate to buried ferrous material or objects, such as metallic agricultural debris. If a trend is noted in the alignment or spacing of isolated bipolar responses, it is possible that they are indicative of ferrous fittings or connectors used on buried non-magnetic buried utilities. Linear bipolar anomalies are likely to be indicative of modern services.
Dipolar anomaly	Dipolar anomalies relate to individual spike within the data and tend to be caused by ferrous objects. These responses have only been shown when located near to archaeological features. When the site is located in a mining landscape it is possible that identified dipolar anomalies relate to mining activity and are indicative of further pits or mine shafts.
Magnetic disturbance (modern)	Areas of increased magnetic response denote areas of disturbance containing a high concentration of dipolar and / or bipolar responses. These are generally considered to be caused by modern debris in the topsoil, although it is possible that the disturbance is in part also caused by isolated archaeological material or geological or pedological changes in the substrata. Areas of magnetic disturbance, often along the edges of survey areas are caused by standing metal structures such as fencing and buildings.

APPENDIX F:
TRIAL TRENCH EVALUATION REPORT

NAA

ARCHAEOLOGICAL EVALUATION REPORT

WELLINGTON WAY, ELSHAM, NORTH LINCOLNSHIRE

prepared for

Robert Farrow (Design) Ltd on behalf of J M Dodds Ltd

NAA 21/91
October 2021

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Planning Ref	PA/2020/1135
Grid Ref	TA 04854 13712
Dates of Fieldwork	2 September 2021 – 17 September 2021

WELLINGTON WAY, ELSHAM
ARCHAEOLOGICAL EVALUATION REPORT

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WELLINGTON WAY, ELSHAM
ARCHAEOLOGICAL EVALUATION REPORT

Summary

An archaeological evaluation comprising two sites and 46 evaluation trenches, was conducted by NAA within the bounds of the former Elsham Wolds Class A airfield in North Lincolnshire. Elements of the Second World War layout of the airfield can still be seen on the ground within what is now Elsham Wolds Industrial Estate, including the path of two main runways, a J-Type hangar and sections of perimeter track reused as farm access.

Just seven trenches contained archaeological remains, all of which could be attributed to 20th century activity and likely related to the Second World War airfield.

A single archaeological feature was recorded in Site 1 that comprised the north-eastern edge of a shallow cut, which had been packed with hardcore material made from fragments of coke/industrial waste. This feature corresponded with the location of a hardstand on a contemporary map of the airfield, in the south-western corner of Site 1.

Site 2 revealed a number of archaeological features, namely a 5m wide foundation for a section of perimeter track, aligned north-east to south-west, and flanked by electric cable trenches and drainage. A further (empty) cable trench was identified running north-west to south-east to the rear of Dodds Farm and was lined with wooden trunking along its base, interspersed with iron clamps. A single large, ovoid pit was also recorded to the north-west of the perimeter track. Its purpose was unclear, but fragments of notably 20th century refuse were recovered from the fill, which potentially also tie it to the 1940s airfield.

Although a scattering of archaeological features was encountered during the evaluation, that corresponded to the 1940s plan of the airfield, there were a greater number detailed on the plan that were targeted by trenches but notably absent. The features that were recorded had been subject to extensive truncation and it was evident that comprehensive efforts had been made to remove surface and sub-surface remains when the airfield was no longer in use and the land reverted to arable farming.

1.0 INTRODUCTION

1.1 This report presents the results of an archaeological evaluation undertaken on land adjacent to Dodds Farm, at the eastern extent of Wellington Way, Elsham, within the Elsham Wolds Industrial Estate (NGR TA 04854 13712; Fig. 1).

1.2 An initial proposal (North Lincolnshire Planning Reference: PA/2020/1135) was made for industrial development of c.9.2ha of land located to the north of Wellington Way (Site 1) and the site was subject to a geophysical survey in May 2021 in order to inform a Heritage Statement for the proposed scheme (NAA *forthcoming*).

1.3 An additional evaluation was subsequently agreed (Site 2), which encompassed 3.41ha of land to the west and south of Dodds Farm, south-east of Site 1. No planning proposal has yet been submitted for Site 2, however the work was agreed in consultation with the Historic Environment Officer for North Lincolnshire and may inform a future planning application for an as yet undefined development of Site 2.

1.4 The Proposed Development Area (PDA) lay within the bounds of a former First and Second World War airbase and therefore held significant potential for archaeological remains from this period to be encountered. A total of 28 evaluation trenches were excavated across Site 1, with only a single feature potentially relating to a hardstand off the perimeter airfield track. Site 2 comprised a further 18 trenches that revealed a potential foundation for a length of perimeter track along with a series of service trenches running along a parallel north-east to south-west alignment.

2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

Location

2.1 The nearest modern settlement to the PDA is the village of Elsham, which lies c.1.34km to the south-west. Immediately to the south-west of the PDA lies Elsham Wold Industrial Estate. Otherwise, the area has a largely rural character being composed of a patchwork of mixed-use fields centred on various farmsteads and intermittent pockets of woodland.

2.2 The Site 1 PDA comprises an oval-shaped field (totalling c.9.2ha) that is used for arable cultivation. It is located directly to the north of Elsham Wold Industrial Estate, which lies to the east of the A15 (TA 04565 13784; Fig. 1), and is bordered by Wellington Way to the south-west, an unnamed road to the east, the A15 to the west and agricultural land to the north.

2.3 The Site 2 PDA comprises two arable fields to the south of Site 1 and to the west and south-east of Dodds Farm (Fig.1). The site is bordered to the south-west by Elsham Wolds Industrial estate, to the north by the driveway to Dodds farm and the farm complex itself and to the north-east by an arable field. The site is divided by a north-east to south-west farm access track and hedge-line.

Geology and soils

2.4 The underlying solid geology of the area comprises Welton Chalk Formation formed during the Cretaceous Period when the local environment was dominated by warm chalk seas. No superficial deposits are recorded (BGS 2021).

Topography and land-use

2.5 The topography of the Site 1 PDA is relatively level at a height of c.67-68m above Ordnance Datum. Site 2 has a gentle upward gradient to the west: the west of the site forms the highest point and is recorded at 75m above Ordnance Datum (aOD), while the lowest point is in the east and recorded at 69m aOD. All fields within the PDA are currently utilised for arable cultivation.

3.0 SUMMARY ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 An archaeological appraisal of the PDA (NAA 2021c) was compiled prior to the current work and assessed the archaeological potential of Site 1 and Site 2, based on heritage assets recorded in the surrounding study area comprising a 1km radius around the PDA. The results of this appraisal are outlined below.

3.2 Although no heritage assets have been recorded within the PDA, there is a moderate potential for archaeological remains to be present, particularly for the prehistoric and Iron Age/Romano-British periods and for the 20th century military airfield.

3.3 Early prehistoric worked flints have been found as surface finds at various locations across a wide area to the south-west, west and north of the PDA. This distribution has been influenced by the location of previous fieldwalking/surface collection projects, which are the best way of identifying such material, and it is considered likely that similar material will be present across most parts of the study area, including the PDA. Such lithic scatters are often accompanied below-ground by other evidence such as pits and lightly constructed buildings which are unlikely to be identified by non-intrusive techniques such as geophysical survey.

3.4 For the later prehistoric (Iron Age) and Roman periods there is again widespread evidence in the study area. Apart from the known prehistoric trackway and Roman road passing to either side of the PDA, the (undated) cropmark evidence from the study area probably represents fragments of a more widespread organised agricultural landscape of this period. This is likely to have been interspersed with farmstead sites which may have been unenclosed and therefore difficult to identify from aerial photographs. Finds of Roman pottery during fieldwork across the western half of the study area include material identified adjacent to the PDA, and the distribution is likely to continue into the current site. There is therefore a moderate potential for evidence of this period to be present within the PDA.

3.5 The only evidence for Anglo-Saxon activity within the study area has been found to the west of the A15 nearer to Elsham village. The potential for evidence of this period to be present with the PDA is therefore considered to be low.

3.6 During the medieval and post-medieval periods the PDA was farmland. Medieval evidence is likely to be limited to scattered potsherds and possibly agricultural features such as field boundaries or furrow bases from ridge and furrow cultivation. Old mapping shows a post-medieval field boundary bisecting the PDA from north to south. This was presumably removed when the WWII airfield was constructed in 1941 although below-ground evidence may survive.

3.7 The PDA lies within what was the open airfield, to the north of the main group of buildings, but it is likely that some below-ground evidence for WWII activity survives. Although the concrete runways, perimeter track, taxi-ways and hardstands were removed after the war, flanking features such as drainage, telephone and electricity cabling may still be present. Minor features such as slit trenches and pits for light anti-aircraft weapons may also have been omitted from the available plan of the airfield. (NAA 2021c, p.8-9)

Geophysical survey

3.8 The results of a geophysical survey across the Site 1 PDA demonstrated magnetic disturbance (dipolar anomalies) across the area that could relate to a distribution of ferrous metal in the topsoil. A circular concentration of dipolar anomalies was identified to the south-west of the site, in proximity to a former aircraft hardstand recorded on a plan of the WWII airfield. Two isolated bipolar anomalies correspond with the location of pylons carrying an overhead powerline running diagonally north-west to south-east

across the site, and several linear bipolar anomalies caused by buried utilises are located in the north and south of the site (NAA 2021c).

4.0 AIMS AND OBJECTIVES

4.1 The objectives of the archaeological evaluation were outlined in each WSI for Site 1 and Site 2 (NAA 2021a and 2021b) and are as follows. The aim of the archaeological investigations was to:

- confirm the presence/absence of buried archaeological features within the PDA;
- establish the nature, extent, preservation and significance of any archaeological remains within the trenches;
- provide a detailed record of any such archaeological remains;
- recover and assess any associated structural, artefactual and environmental evidence;
- evaluate the potential for further unrecorded significant archaeological remains to be present within the site; and
- determine which areas within the footprint of the proposed scheme require archaeological mitigation in the form of preservation in situ, open area investigation in advance of construction, or monitoring of soil stripping during construction works;
- prepare an illustrated report on the results of the trial trenching to be deposited with the Historic Environment Record (HER) held by NLHER;
- and undertake a scheme of work that meets national and regional standards (NLHER n.d.; Knight et al. 2012; CIfA 2014 a-d; Historic England 2015a; South Yorkshire Archaeology Service 2018;).

5.0 METHODOLOGY

5.1 All trenches were located within the National Grid using GPS, with all levels tied into Ordnance Datum.

5.2 A number of trenches within Site 2 were either unsuitable for excavation or had to be amended due to restrictions not evident prior to the evaluation. Trench 29 was unsuitable due to its proximity to the field access in the north-western corner, Trench 32 due to proximity to overhead power lines and Trenches 33 and 46 were shortened to comply with the recommended 10m exclusion zone. Trench 31 was significantly

shortened owing to the path of a previously unrecorded active water pipe, which was encountered running across Site 2 in Trench 30.

5.3 Aside from the trenches listed above, the remainder were either 25 or 50 metres in length and two metres in width. They were excavated under archaeological supervision using a back-acting mechanical excavator fitted with a toothless ditching bucket. Topsoil and subsoil were removed and stored separately along the trench edge and excavation continued until archaeological features or the natural geology were encountered.

5.4 Where archaeological features were encountered, excavation continued by hand according to guidelines outlined in the WSI (NAA 2021a, 2021b). The excavation strategy was determined by the types of remains encountered and here comprised:

- up to a 50% sample of each individual domestic, industrial, or settlement related feature;
- at least 50% of discrete features such as postholes and pits;
- a sample of at least 10%, up to 20%, of the overall length of linear features, a minimum 1m-wide section within the trench.

5.5 The finds that were recovered during the evaluation were of little archaeological value and were therefore photographed and discarded in agreement with the local Historic Environment Officer.

5.6 Digital photography was utilised to record each trench and all archaeological features. Photographs of all excavated trenches were taken, comprising overview shots from each end and a representative section showing the natural geology and overlying deposits within each trench. Each archaeological feature was photographed in plan and section. Photographs included appropriate graduated metric scales and a number board showing the trench number and, where applicable, context number.

5.7 A drawn record was created of all archaeological features. Sections were drawn at 1:10 or 1:20 as required, with plans also recorded at 1:20 scale. Trench plans were created where archaeology was present, and these were drawn at 1:50 or 1:100 scale, depending on the level of accuracy required.

5.8 Archaeological remains within Site 2 were also planned and located within the National Grid using GPS.

5.9 Written descriptions of all the trenches and archaeological features were recorded on pro-forma trench sheets and context sheets.

5.10 No environmental samples were recovered.

5.11 On completion of the evaluation, all the trenches were backfilled by machine under archaeological supervision, to ensure an appropriate standard of reinstatement was met. Subsoil was infilled first, followed by topsoil and the area compacted to a suitable level by machine.

6.0 RESULTS

Site 1 (Figs. 1 and 2)

6.1 Site 1 was bounded to the north by the northern runway of the World War Two Class A airfield and to the south and east by a length of perimeter track, still utilised for farm access. As mentioned above (para 3.8) the geophysical survey of the site identified a number of anomalies that could relate to the use of the airfield, significantly the remains of a potential aircraft hardstand seen on contemporary mapping at the south-eastern corner of the site.

6.2 A total of 28 evaluation trenches were excavated across Site 1, with archaeological remains only recorded in Trench 15. These will be discussed in detail below. The 27 negative trenches were photographed and the deposits within recorded and included in a deposit model table in Appendix B.

6.3 The topsoil (**01**) across Site 1 was a dark greyish-brown, soft and very loose plough-soil (Plate 1), that measured 0.2-0.7m in depth and contained frequent natural flint inclusions, seemingly much greater than that represented within the natural geology. Finds were also conspicuously absent from what would have been actively manured farmland before usage as a military airfield.

6.4 The underlying subsoil (**02**) was a compacted, mid-reddish brown silty clay with frequent chalk inclusions, but little flint in comparison to the topsoil. An absence of a subsoil horizon was noted in Trenches 6, 7, 8, 12, 14, 15, 20, 23 and 28. The majority of these trenches were located in the central area of Site 1 and the absence of subsoil indicates that the area was significantly levelled as the airfield went out of use in the late 1940s and the land reverted to arable cultivation. Where the subsoil survived, it measured 0.10m – 0.47m in depth and was almost entirely sterile. A single fragment of

a green-glazed jug handle was recovered from the subsoil in Trench 4, but at the most relates to background activity from the medieval or early post-medieval periods.

6.5 The natural geology (**03**) was a compact, mid-orange brown, sandy clay overlying natural outcrops of chalk and flint. The only instance where this differed, was at the north-eastern end of Trench 24, where no chalk outcrops were present and it became increasingly sandy, presumably the result of an underlying glacial pocket.

Trench 15 (Figs. 2 and 3)

6.6 Trench 15 measured 50m by 2m and was orientated north-west to south-east targeting a concentration of dipolar anomalies highlighted by the geophysical survey (NAA 2021c). The source of this disturbance was encountered at the south-eastern end of the trench where removal of the topsoil revealed a compacted hardcore deposit (**05**) comprising medium-sized blocks of grey, porous material that appeared to be coke/industrial waste (Plate 2). Upon further cleaning by hand, this material appeared to have been set within a wide, shallow cut (**04**). The cut (**04)** arced from west to east at a distance of 4.2m from the south-eastern end of Trench 15 and was excavated to a depth of 0.3m. The profile of the cut (**04)** indicated that it belonged to the foundation of a large, circular feature, commensurate with a hardstand depicted on contemporary mapping of the 1940s airfield, in the south-western corner of Site 1. All further evidence of the feature had, however, been comprehensively removed, with no trace of any disturbance encountered in nearby Trench 18 and Trench 21 to the south.

Site 2 (Figs. 1 and 2)

6.7 Site 2 was located to the south-east of Site 1 and encompassed land belonging to two arable fields across which a further 18 evaluation trenches were sited. No geophysical survey had been conducted across Site 2 and therefore trenches were located to explore lengths of perimeter track and hardstanding outlined on a map of the 1940s airfield.

6.8 The largest of the two areas (containing Trenches 29–41) was bounded to the north by the farm access/former perimeter track, to the south-west by industrial units and to the north-west by a farm track and hedgerow. The second, smaller area (containing Trenches 42-46), was located to the north-east, to the rear of a grain store belonging to Dodds Farm and was bounded to the south-west by the farm track and to the south-east by a hedgerow. It formed part of a much larger field that extended to the north and east.

6.9 Six of the trenches excavated in Site 2 contained archaeology that likely related to the 1940s airfield and will be discussed in detail below. The remaining 10 negative trenches were photographed and their deposits are recorded in Appendix B. Trench 29 was not excavated due to its location at the field entrance and Trench 32 was not excavated due to being sited under an overhead power line.

6.10 The topsoil across Site 2 (**06**) was identical in composition to that recorded in the evaluation trenches of Site 1 (para 6.3) and measured 0.20m – 0.40m thick. A crop of sugar beet had been removed just a day prior to the opening of the first trenches and the topsoil was overlain by a layer of discarded vegetation (Plate 3). Despite being located directly adjacent to Dodds Farm, which was active and documented on Ordnance Survey mapping from the late 19th century, the topsoil across Site 2 was again notably sterile of finds, barring isolated fragments of heavily degraded ceramic building material (CBM).

6.11 Unlike Site 1, most trenches within Site 2 retained a subsoil horizon (**07**), barring Trenches 34 and 46. The subsoil was identical to that encountered in Site 1; a compacted, mid-reddish brown silty clay with frequent chalk inclusions and occasional natural flint, that measured between 0.17m and 0.2m in depth. It was also comparably sterile, with no finds or any evidence of human activity encountered.

6.12 The natural geology (**08**) was identical to that seen across Site 1, comprising chalk outcrops overlain by mid orange-brown sandy clay.

Trench 36 (Fig. 2)

6.13 Trench 36 measured 50m by 2m and was orientated north-west to south-east parallel to the south-western edge of Site 2.

6.14 Removal of the 0.3m thick topsoil (**06**) revealed a large, ovoid pit (**11**) cut into the subsoil and located centrally along the trench. Pit **11** was also seemingly orientated north-west to south-east and measured 2.1m in length by 1.1m visible width, its north-eastern edge extending beyond the edge of the trench (Plate 4). It was 0.5m deep with steeply-sloping sides and a shallow, rounded base and had been infilled by a loose, stony deposit of dark brown clay-sand with frequent chalk inclusions (**12**), as well as fragments of modern plastic, iron nails and pieces of burnt wood and CBM (Fig.3).

6.15 The function of pit **11** is unclear as it did not appear sufficiently full of refuse to identify as a rubbish pit, nor did it appear to belong to a structural grouping. The inclusion of

clear plastic does however place the dating of fill **12** firmly within the 20th century, although whether it belongs to the 1940s airfield or later farming activity remains uncertain.

Trench 37 (Fig. 2)

6.16 Trench 37 measured 25m by 2m and was orientated east to west centrally within Site 2.

6.17 Below the 0.25m thick topsoil, a linear cable trench was revealed (**26**) cutting through the subsoil and the natural chalk on a north-east to south-west alignment (Plate 5). A slot excavated into cut **26** revealed the original metal cable housing, measuring 0.07m in diameter, at a depth of 0.6m below the topsoil (Plate 6). The cut had then been backfilled with the chalk spoil removed during the initial excavation of the trench (**27**).

Trench 38 (Figs. 2 and 3)

6.18 Trench 38 measured 50m by 2m and was orientated north-west to south-east along the south-western boundary of Site 2. Beneath the topsoil (**06**) were a series of parallel linear features with a north-east to south-west alignment which appeared to correspond with a section of perimeter track documented on the plan of the 1940s airfield. These will be described in the order they were recorded in the trench, from north-west to south-east.

6.19 Approximately 13m from the north-western end of the trench was a span of the same cable trench (**26/29**) identified in Trench 37, with the cable housing still in situ at a depth of 0.55m below the topsoil.

6.20 Seven metres to the south-east of the above cable was a 0.7m wide cut (**20**) containing a salt-glazed ceramic pipe (**19**) 0.3m in diameter, presumably a drain, and which could also be traced running through Trench 38 to the north-east (**13**, Plate 7, para 6.27).

6.21 A further six metres south-east of pipe trench **20** was a steep-sided linear cut (**23**), 0.65m in width and 0.35m depth, which contained two fills (Plate 8). The lower fill (**24**) was a mid-greyish-brown silty clay, whereas the upper fill (**25**) was a contrasting mid-orange-brown silty clay, similar to the subsoil. As the other contemporary linear features across Site 2 all relate to underground services of various types, it can be assumed that this was the case for **23**, the contents of which were later removed resulting in contrasting upper fill **25**. This feature did not appear to continue as far as Trench 39.

6.22 Four metres to the south-east of linear feature **23** was a 5m-6m wide cut (**09**) with a flat base that had been infilled with a compacted deposit of chalk and greyish-brown silty clay (**10**) that included fragments of plastic and rubber as well as coke/industrial waste as seen in deposit **05** in Trench 15. This feature also continued to the north-east through Trench 38, where it was photographed and recorded in section (Plate 9, Fig. 3) and likely marks the foundation of a section of perimeter track depicted on the map of the 1940s airfield.

6.23 Five metres to the south-east of trackway foundation **09** were the remains of a concrete and brick inspection chamber (**17**) overlying the intersection of two ceramic drains, running north-east to south-west and north-west to south-east (Plate 10). Much of the superstructure overlying the drains had been removed, leaving only a partial slab of concrete 0.05m thick and up to 3 courses of brickwork visible in the south-western edge of the trench, which would presumably have supported a manhole.

6.24 To the south-west of inspection chamber **17** was "demolition deposit" **28**, that overlay the subsoil and extended to the edge of the trench and beyond into Trench 40 to the south-east (Plate 11). It measured 0.4m thick and was likely a deliberate attempt to level the underlying ground surface, which sloped downwards to the south-east of Trench 38. It contained numerous bricks, often several still bonded by mortar, and large fragments of ceramic pipe which likely corresponded to the same drainage system as **17** to the north-east, and which had been intentionally truncated by the levelling activity.

Trench 39 (Figs. 2 and 3)

6.25 Trench 39 measured 50m by 2m and was orientated north-west to south-east, parallel to Trench 38, some 15m to the south-west.

6.26 In addition to foundation cut **09** and ceramic drain **20** (here recorded as **13**), which continued through from Trench 38, an electrical service trench (**15**) was identified approximately 12m to the south-east of **09**. Cut **15** measured 0.3m wide and had been significantly truncated above, exposing the terracotta cable covers, beneath which the (now defunct) electric cable still lay in situ (Plate 12).

Trench 45

6.27 Trench 45 measured 50m by 2m and was located in the smaller area of Site 2, orientated north-east to south-west parallel to the rear of the grain store building of Dodds Farm.

6.28 This trench was the only one in this second, smaller area of Site 2 to contain archaeology. This comprised the remains of a single cable trench (**21**) that had been lined along its base with wooden trunking (Fig. 3, Plates 13 and 14). Iron fittings were interspersed along the length, and it is likely that these once anchored further wooden trunking above to fully enclose the cable, since removed.

6.29 Cable trench **21** appears to align with a north-west to south-east span of perimeter track outlined on the plan of the 1940s airfield and potentially held an electric cable that supplied power to lighting around the perimeter of the airfield.

7.0 DISCUSSION

7.1 Only seven evaluation trenches out of the forty-four excavated across Site 1 and Site 2 contained archaeological remains. All of the features encountered were of 20th century date and likely related to the former usage of the PDA as a military airfield.

7.2 A single sherd of medieval/early post-medieval pottery from the subsoil of Trench 4 provided the only hint of earlier background activity in the vicinity of Site 1, which has been explored further in an archaeological appraisal of the PDA (NAA 2021c). However, the sterility of the surviving subsoil, where recorded across both Site 1 and Site 2, suggests that the area was never subject to intensive activity and was likely purely agricultural in nature.

7.3 The fact that subsoil was entirely absent from a number of trenches is testament to the comprehensive removal of surface and subsurface structures and services belonging to the 1940s airfield, following its closure in 1947, and the subsequent reversion of the land to arable farming. This accounts for the only surviving remains being the footprints of a single hardstand (feature **04**) and a section of perimeter track (feature **09**), apart from those that continued to be utilised as convenient farm access tracks.

7.4 It appears attempts were also made to remove cables where possible, evinced by the empty trench lined with wooden trunking in Trench 45 (**21**) and the potential empty cable trench (**23**) in Trench 38. It is possible that pit **11** recorded in Trench 36 also housed an element of airfield machinery, since removed.

7.5 The services that did survive in Site 2 were all recorded running along the same north-east to south-west alignment, parallel to the foundation of perimeter trackway **09** and were likely contemporary, relating to airfield lighting and land drainage.

7.6 Following the removal of temporary structures, concrete trackway and hardstands and associated services, the area of the PDA was levelled, resulting in removal of subsoil in trenches across Site 1 and the infilling of areas of Site 2 with demolition debris (**28**, Trench 39 and 40). This levelling event likely also included the removal of the original topsoil, which was replaced from elsewhere, accounting for the greater concentration of natural flint inclusions than that witnessed in the underlying geology. This would also explain the sterility of the topsoil, originating from an area unsullied by rubbish originating from 19th century farming or intensive 20th century military activity, as would've been the case within the PDA.

7.7 The high concentration of chalk and flint inclusions within the topsoil also accounts for the scattering of dipolar anomalies recorded across Site 1 in the geophysical survey results (NAA 2021c). Prior to excavation, these readings were interpreted as a likely scattering of ferrous material, however the sterility of the topsoil across the 28 trenches has disproved this.

7.8 Aside from the single sherd of potential medieval pottery from Trench 4 and the small assemblage of 20th century rubbish from pit **11** in Trench 36, no further finds were recovered. It is likely that the recorded services and perimeter track foundation within Site 2 continue north-east across the remainder of the field, although the potential to uncover any new archaeological information from further intervention is low.

8.0 ARCHIVE DEPOSITION

8.1 The physical archive from the archaeological investigations is to be deposited with North Lincolnshire Museum and the digital archive will be deposited with the Archaeological Data Service (ADS). The finds recovered from the site were photographed but not retained.

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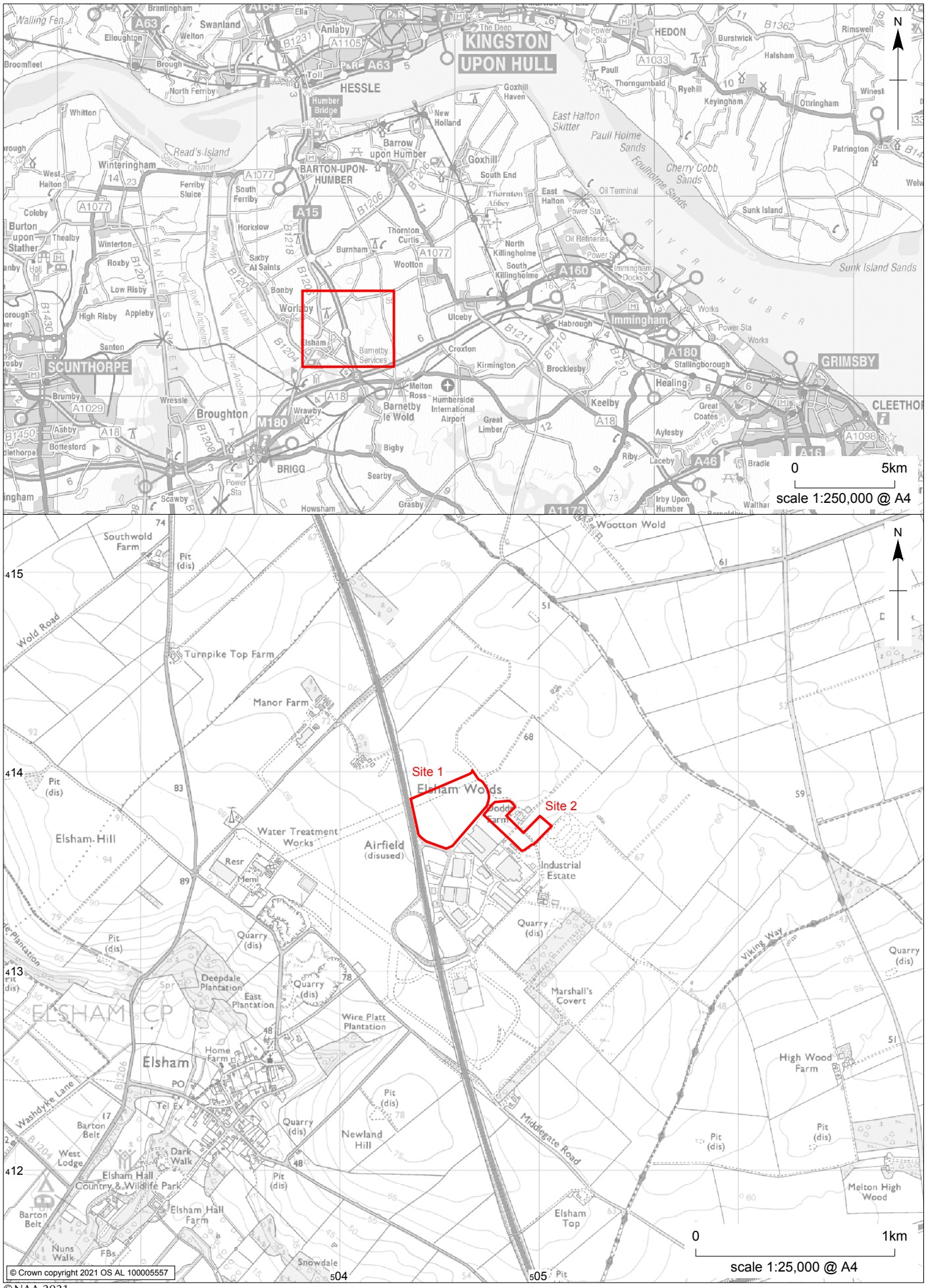
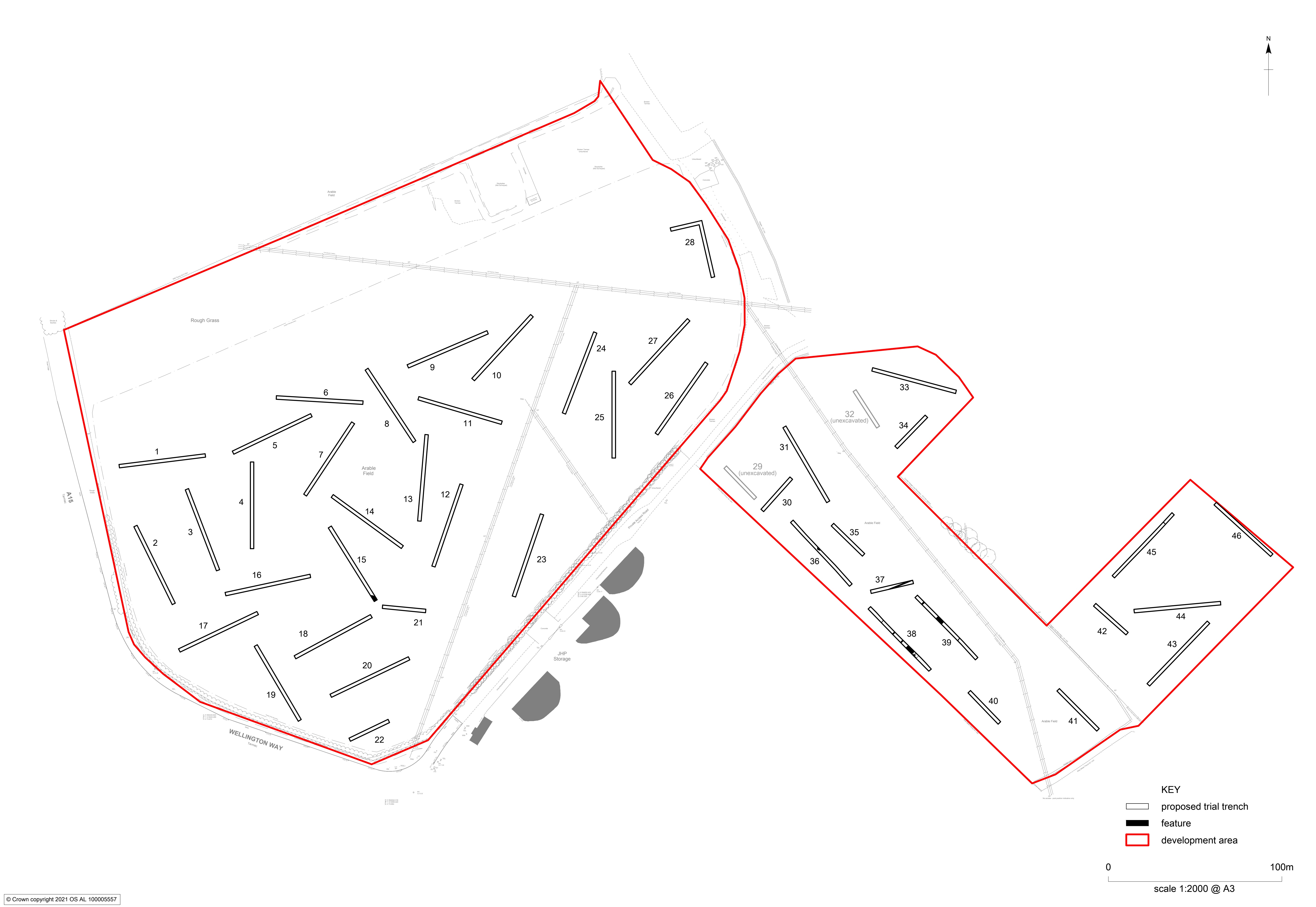


Wellington Way, Elsham: site location *Figure 1*

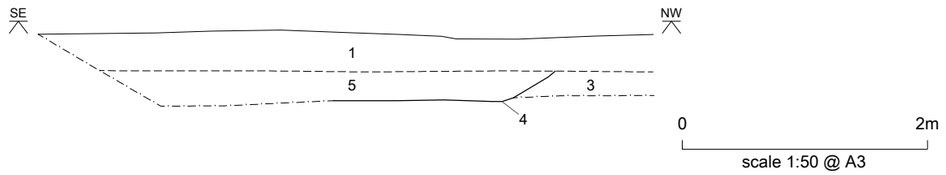


Wellington Way, Elsham: trial trench locations

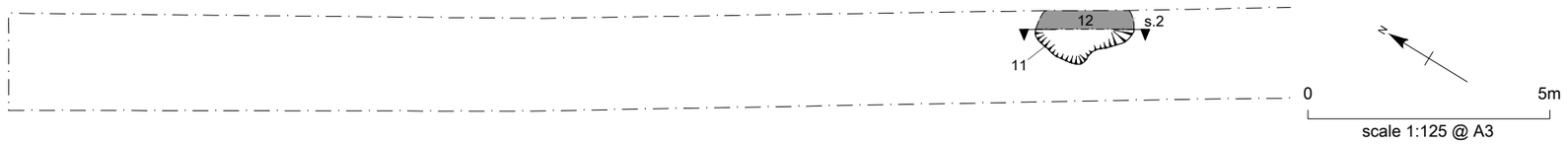
Figure 2

Trench 15

Section 5



Trench 36



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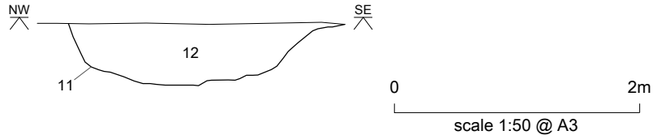

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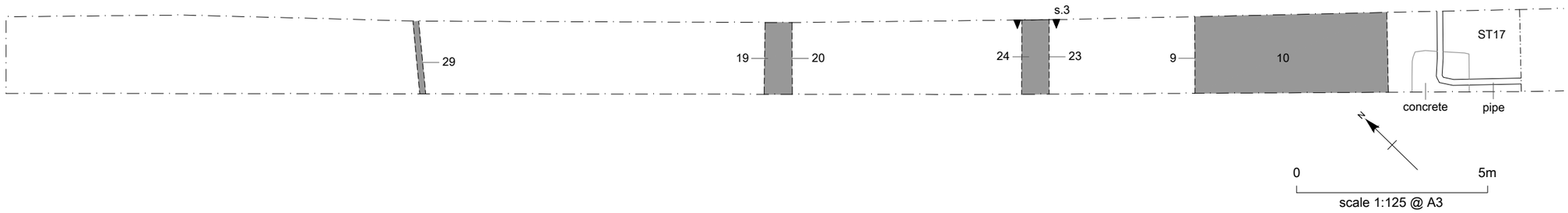

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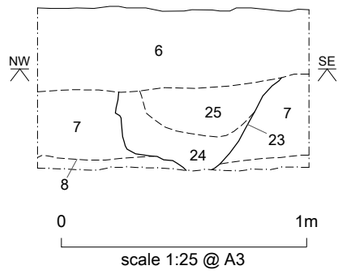

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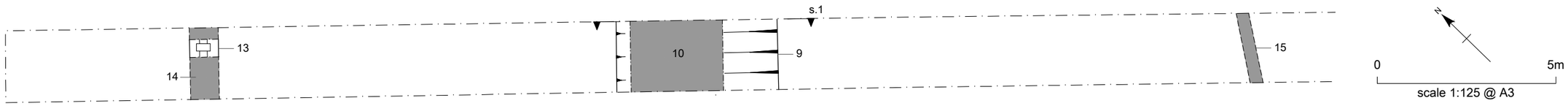

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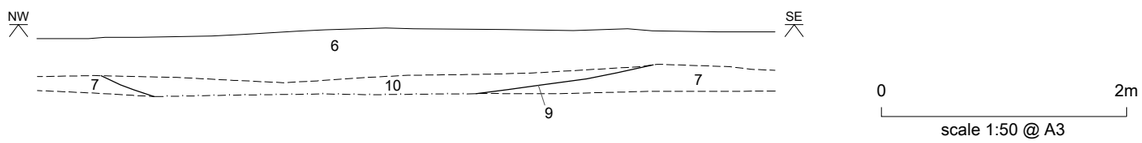

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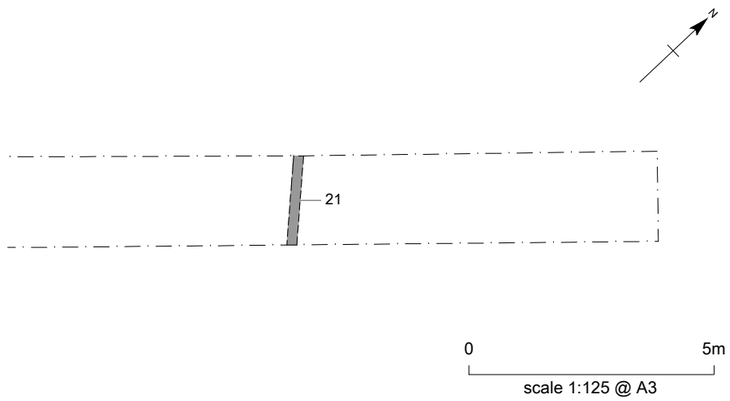

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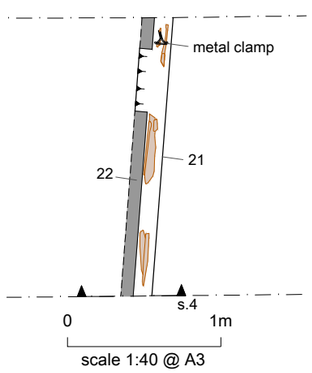

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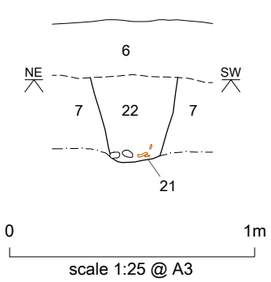

Wellington Way, Elsham: plans and sections

Figure 3

Plate 1: representative section of Trench 3, demonstrating the topsoil, (01) subsoil (02) and natural geology (03) recorded across Site 1.

*Plate 2: Trench 15, foundation cut **04** infilled by hardcore deposit of industrial waste **05**.*

Plate 3: negative Trench 35, looking north-west, showing natural chalk outcropping in the base of the trench and discarded vegetation across the field.

*Plate 4: Trench 36, south-west facing section of pit **11**.*

*Plate 5: Trench 37, cable trench **26**, pre-excavation, looking west.*

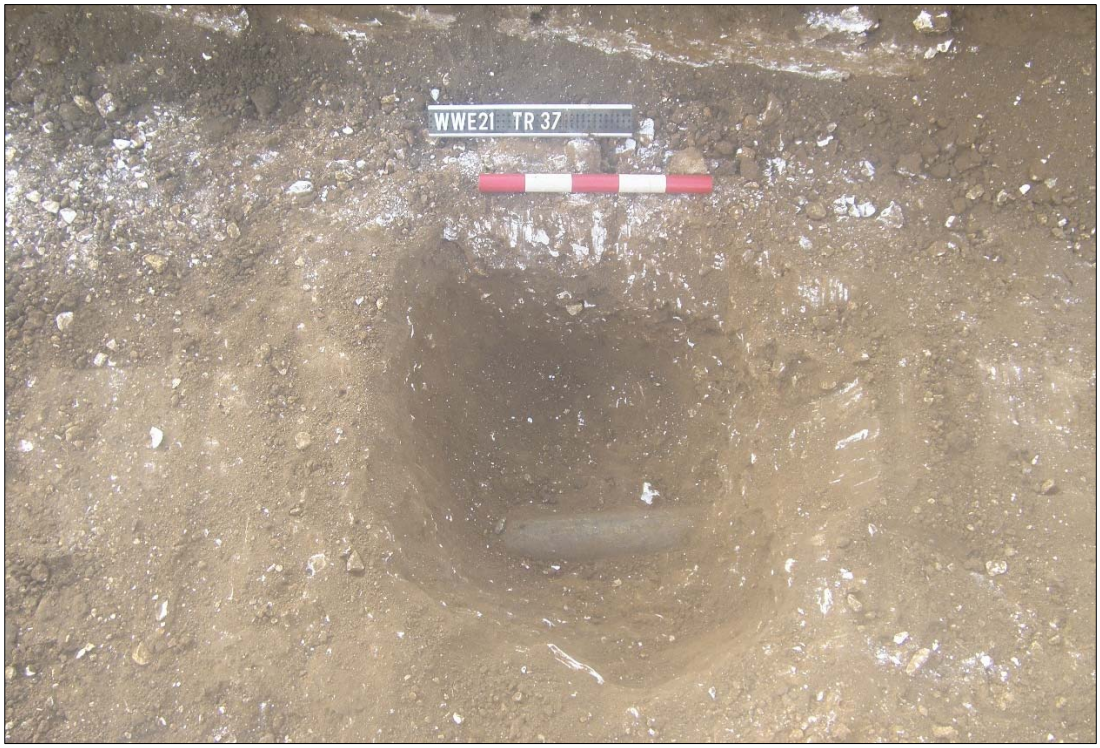

*Plate 6: Trench 37, slot excavated in cable trench **26** showing original metal cable-housing in situ.*

*Plate 7: Trench 39, ceramic drain **13/20** running through Trench 38 and 39.*

*Plate 8: Trench 38, south-west facing section of linear feature **23**.*

*Plate 9: Trench 39, south-west facing section of perimeter track foundation **09** also recorded in Trench 38.*

*Plate 10: Trench 38, overview of brick and concrete inspection chamber and ceramic drains (**17**).*

*Plate 11: Trench 38, south-west facing section showing "demolition" deposit **28**.*

*Plate 12: Trench 39, cable cover still in situ within cable trench **15**.*

*Plate 13: Trench 45, cable trench **21** lined with wooden trunking.*

*Plate 14: Trench 45, detail of iron fittings within cable trench **21**.*

APPENDIX A

CONTEXT REGISTER

Context Number	Interpretive Description	Trench	Same as (Context number)
1	Topsoil Site 1		
2	Subsoil Site 1		
3	Natural Site 1		
4	Cut of hardstand foundation	15	
5	Hardcore fill of 04	15	
6	Topsoil Site 2		
7	Subsoil Site 2		
8	Natural Site 2		
9	Foundation cut for perimeter track	38, 39	
10	Compacted chalk fill of 09	38, 39	
11	Cut of pit	36	
12	Fill of 11	36	
13	Cut of drain	38, 39	20
14	Fill of 13	38, 39	19
15	Cut of cable trench	39	
16	Fill of 15	39	
17	Base of inspection chamber	38	
18	Cut for 17	38	
19	Fill of 20	38, 39	14
20	Cut of drain	38, 39	13
21	Cut of cable trench	45	
22	Fill of 21, including wooden trunking	45	
23	Cut of linear feature	38	
24	Lower fill of 23	38	
25	Upper fill of 23	38	
26	Cut of cable trench	37	29
27	Fill of 26	37	30
28	Demolition/levelling deposit	38, 40	
29	Cut of cable trench	38	26
30	Fill of 29	38	27

APPENDIX B

DEPOSIT MODEL BY TRENCH

Table demonstrating the thicknesses of deposits within each evaluation trench and the context numbers of any archaeological features recorded.

SITE 1

Trench 1	
Topsoil	0.45m
Subsoil	0.10m
Trench 2	
Topsoil	0.50m
Subsoil	0.20m
Trench 3	
Topsoil	0.50m
Subsoil	0.10m
Trench 4	
Topsoil	0.39m
Subsoil	0.22m
Trench 5	
Topsoil	0.50m
Subsoil	0.15m
Trench 6	
Topsoil	0.3m
Subsoil	None
Trench 7	
Topsoil	0.35m
Subsoil	None
Trench 8	
Topsoil	0.35m
Subsoil	None
Trench 9	
Topsoil	0.30m
Subsoil	0.10m
Trench 10	
Topsoil	0.20m
Subsoil	0.10m
Trench 11	
Topsoil	0.30m
Subsoil	0.10m
Trench 12	
Topsoil	0.40m
Subsoil	None
Trench 13	
Topsoil	0.40m
Subsoil	0.20m
Trench 14	

Topsoil	0.30m
Subsoil	None
Trench 15	
Topsoil	0.30m
Subsoil	None
Features	[04] (05)
Trench 16	
Topsoil	0.45m
Subsoil	0.15m
Trench 17	
Topsoil	0.35m
Subsoil	0.20m
Trench 18	
Topsoil	0.35m
Subsoil	0.20m
Trench 19	
Topsoil	0.40m
Subsoil	0.20m
Trench 20	
Topsoil	0.45m
Subsoil	None
Trench 21	
Topsoil	0.35m
Subsoil	0.20m
Trench 22	
Topsoil	0.40m
Subsoil	0.20m
Trench 23	
Topsoil	0.40m
Subsoil	None
Trench 24	
Topsoil	< 0.70m
Subsoil	< 0.47m
Trench 25	
Topsoil	0.40m
Subsoil	0.30m
Trench 26	
Topsoil	0.40m
Subsoil	0.25m
Trench 27	
Topsoil	0.24m
Subsoil	0.19m
Trench 28	
Topsoil	0.40m
Subsoil	None

SITE 2

Trench 29	
Not Excavated	
Trench 30	
Topsoil	0.40m
Subsoil	0.20m
Trench 31	
Topsoil	0.40m
Subsoil	0.20m
Trench 32	
Not Excavated	
Trench 33	
Topsoil	0.40m
Subsoil	0.20m
Trench 34	
Topsoil	0.40m
Subsoil	None
Trench 35	
Topsoil	0.30m
Subsoil	0.20m
Trench 36	
Topsoil	0.30m
Subsoil	0.20m
Features	[11] (12)
Trench 37	
Topsoil	0.25m
Subsoil	0.17m
Features	[26] (27)
Trench 38	
Topsoil	0.30m
Subsoil	None
Deposit (28)	0.30m
Features	[09] (10), (17) [18], (19) [20], [23] (24) (25), [26] (27)
Trench 39	
Topsoil	0.39m
Subsoil	0.20m
Features	[09] (10), [13] (14), [15] (16)
Trench 40	
Topsoil	0.25m
Subsoil	None
Deposit (28)	0.40m
Trench 41	
Topsoil	0.25m
Subsoil	0.17m
Trench 42	
Topsoil	0.30m
Subsoil	0.20m

Trench 43	
Topsoil	0.35m
Subsoil	0.10m
Trench 44	
Topsoil	0.30m
Subsoil	0.15m
Trench 45	
Topsoil	0.30m
Subsoil	0.20m
Features	[21] (22)
Trench 46	
Topsoil	0.20m
Subsoil	None