

# **The Sizewell C Project**

## 6.10 Volume 9 Rail

Chapter 9 Terrestrial Historic Environment Appendices 9A - 9D

Revision:1.0Applicable Regulation:Regulation 5(2)(a)PINS Reference Number:EN010012

## May 2020

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009





Volume 9, Appendix 9A - Gazetteer of Heritage Assets

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Volume 9 Appendix 9A Gazetteer of Heritage Assets |



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None provided.

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None provided.

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## 1. Gazetteer of Heritage Assets

## Table 1.1 Listed buildings within 500m study area.

NHLE Ref.	Name	Grade	Easting	Northing
1215753	St Mary's Abbey.	1	644521	264174
1215754	Retreat House.	П	644468	264172
1216275	Fisher's Farmhouse.	П	643539	263680
1216380	Barn at Abbey Farm.	П	644442	264252
1227752	Wood Farmhouse	П	643691	263044
1268290	The Guesten Hall at Abbey Farm.	II	644412	264266
1287528	24, Westward House.	П	644008	262959
1287643	Hill Farmhouse.	Ш	644019	264414
1287646	Leiston House Farmhouse.	*	642829	262928

#### Table 1.2 Scheduled monuments within 500m study area.

NHLE Ref.	Name	Easting	Northing
1014520*	Leiston Abbey (second site) and moated site.	644457	264189

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#### Table 1.3 HER monument records within the red line boundary.

Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
ADB 226.	MSF35003	Aldeburgh branch railway line.	Aldeburgh to Saxmundham branch line.	642428	263254
LCS 011.	MSF11525	Abbey Road.	Scatter of red tile over most of field surface (S1).	644418	263814
LCS 012.	MSF11526	Abbey Lane.	Scatter of metalwork found by farmer, includes groat and cut halfpenny and 'many nuremberg tokens' (S1).	644251	263872
LCS 228.	MSF35810	Medieval ditches, Abbey View Lodges, Leiston.	Evaluation identified medieval ditches and a modern pit.	644387	263694
LCS Misc.	MSF14283	Findspot of a medieval silver groat of Heinrich V (medieval).	Silver groat of Heinrich V, Archbishop of Bremen 1463-1496.	644315	263865

(Details taken from Suffolk County Council Archaeological Service (SCCAS) HER entry.)

#### Table 1.4 HER monument records within study area.

Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 001.	MSF2340	Leiston Abbey, Abbey Farm.	iston Abbey, Abbey Farm. Founded 1182 on a site about two miles away nearer the sea (see LCS 002) as a Premonstratensian house, dedicated to the Blessed Virgin (by Ranulf de Glanville, Henry II's chief Justicier). Listed building scheduled.		264189
LCS 013.	MSF11527	Roman artefact scatter of two bronze sestertii coins.	Two bronze 1 <sup>st</sup> century sestertii found in area washed by storm water from drain pipes (S1).	644424	263610
LCS 014.	MSF12097	Medieval artefact scatter.	Finds scatter identified whilst farming, and subsequent random walking.	644878	263573



Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 018.	MSF14091	Church of St Margaret.	Church of St Margaret, original church pulled down (1853) except for 15 <sup>th</sup> century tower, which was preserved.	643877	262536
LCS 024.	MSF16190	Buckles Wood.	ckles Wood. Ancient woodland as defined in (S1). 6431		263447
LCS 025.	MSF16191	Large circular or sub-square enclosure of unknown date, visible as a cropmark.	unknown date, visible as a enclosure (?) circa 40m in diameter surrounding semi- mark. (possibly open to north) which in turn surrounds central circular dark patch circa 5m in diameter (S1).		263432
LCS 026.	MSF16192	Mound and trackway of unknown date, visible as cropmarks.	Pale, oval cropmark, circa 15m by 10m, surrounded by oval ditch (?) with over 100m long gulley/sunken way (?) leading off to change in field boundary line to west (S1).	643571	263549
LCS 027.	MSF16786	Abbey Farm.	Small ring ditch cropmark, circa 10m diameter.	644405	264301
LCS 028.	MSF16787	Part of a field system of unknown date, visible as cropmarks.	Cropmarks of part of field system (?) on different alignment to existing (S1).	644223	264399
LCS 083.	MSF26873	Milestone on the B1122.	Site of mile stone shown on Ordnance Survey (OS) maps up to 1968.	644410	263300
LCS 131.	I 31. MSF21298 Leiston Abbey Barn.		The footprint for a proposed extension to 'The Barn' at Leiston Abbey was stripped of its overburden with a view to revealing any archaeological deposits (part of scheduled monument).	644442	264268
LCS 135.	MSF22216	Findspot of a Bronze Age bronze sword hilt fragment (Bronze Age).	Metal detector find of bronze sword hilt fragment.	644253	263534
LCS 135.	MSF22681	Roman artefact scatter of pottery and coins (Romano British).	Pottery scatter and a few coins reported.	644200	263500



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Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 142.	MSF24065	91 Abbey road.	A watching brief visit to this site revealed a Roman kiln uncovered by the owner of the property. Other Roman artefacts have been recovered from the garden.	644342	263542
LCS 147.	MSF26809	Six medieval pennies.	Two silver Henry II pennies found 1994 and in 2006 a further hoard of six Henry II pennies (1163-1167) were found.	644885	263681
LCS 151.	MSF29479	Undated post medieval at Hall Farm.	Undated post medieval identified during monitoring at Hall Farm.	643735	262554
LCS 153.	MSF26812	Brick works.	Brick works, kilns, pug mill and drying sheds and extraction pit shown on 1880's map.	644454	263168
LCS 155.	MSF24870	EDF cable trench, Leiston Abbey.	Monitoring revealed a series of disturbed and re- deposited layers, a bonded flint and mortar wall, capped well and a cobbled surface associated with the farmhouse.	644469	264182
LCS 167.	MSF26807	Burnt flint mound.	Extensive scatter of heavily burnt flints adjacent to a small stream.	644940	263558
LCS 176.	MSF29488	Outline record: Leiston Abbey community excavation 2013 (DigVentures).	n/a	644340	264280
LCS 177.	MSF29489	Outline record: Leiston Abbey community excavation 2014 (DigVentures).	n/a	644380	264160
LCS 180.	MSF31543	Possible practice trench and undated ditches at Aldhurst Farm.	Possible practice trench and undated ditches identified during evaluation trenching at Aldhurst Farm.	645006	263482



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Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 197.	MSF33447	Site of vague cropmarks of unknown date and significance.	Vague and fragmentary cropmarks of unknown date and significance are visible on aerial photographs.	644980	263384
LCS 217.	MSF33023	Outline record: Leiston Abbey community excavation 2015 (DigVentures).	nmunity excavation 2015		264255
LCS 220.	MSF34586	Former field boundaries and marl pits, St Margaret's Crescent.			262872
LCS 221.	MSF34612	Below ground remains of Johnson's Farm.	Below ground remains of Johnson's Farm and other agricultural remains.	643346	262875
LCS 227.	MSF35753	Outline record: Leiston Abbey: Gueston Hall and thatched barn (SA) MON.	n/a	644440	264253
LCS Misc.	MSF11528	Findspot of a Roman 3 <sup>rd</sup> century coin (Romano British).	Roman 3 <sup>rd</sup> century coin found in soil in area disturbed by hedge cutting (with tractor mounted trimmer?).	644305	263485
THB 015.	MSF22764	Theberton airfield; Leiston airfield; Saxmundham airfield.	Former mainly military airfield, in use between 1934 and 1965.	642816	264346
THB 017.	MSF22766	Bushey Grove (1783); Bush Grove (1880's).	Site of former ancient (?) woodland shown and named on 1783 map.	643069	263983

(Details taken from SCCAS HER entry. Key: Neo - Neolithic; Rom - Romano British, Sax - Saxon, Med - Medieval PMed - PostMedieval; IPS - Ipswich; AP - Aerial Photography; C - century, ? - uncertainty )



#### Table 1.5 HER event records within red line boundary.

Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 228.	ESF25501		Archaeological evaluation in advance of residential development. Nine trenches were excavated.	644387	263694

(Details taken from SCCAS HER entry)

#### Table 1.6 HER event records within study area.

Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
	ESF21922	Monitoring of cable trench, Leiston Abbey, Leiston.	Monitoring of cable trench, failed to identified any features or finds.	644450	264170
LCS 217.	ESF23096	Excavation, Leiston Abbey community excavations (DigVentures), Leiston.	n/a	644395	264255
LCS 227.	ESF25418	Monitoring— Leiston Abbey: Gueston Hall & thatched barn, Leiston.	n/a	644440	264252
LCS 001.	ESF18145	Monitored excavation of two post holes for information board at Leiston Abbey.	Monitored excavation of two post holes for information board, excavated to 450mm west of monument. Finds— single sherd of medieval coarse ware.	644454	264182
LCS 001.	ESF18145	Monitored excavation of two post holes for information board at Leiston Abbey.	Monitored excavation of two post holes for information board, excavated to 450mm west of monument. Finds— single sherd of medieval coarse ware.	644448	264229



Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
LCS 142.	ESF19783	91 Abbey Road, Leiston.	A watching brief visit to this site revealed a Roman kiln uncovered by the owner of the property. Other Roman artefacts have been recovered from the garden.	644342	263542
LCS Misc.	ESF20499	Leiston Hall Farm, Leiston.	Aerial photographic and fieldwalking failed to reveal and archaeological finds or features.	643759	262549
LCS 155.	ESF20589	EDF cable trench, Leiston Abbey.	Archaeological monitoring of the excavation of a 0.4m deep trench for a new electricity cable revealed a series of disturbed and re-deposited layers. In the north-south trench running immediately east of the farmhouse, a bonded flint and mortar wall.	644470	264182
LCS 156.	ESF21279	Monitoring— 81 Abbey Road, Leiston.	Archaeological monitoring was carried out on the excavation of footings for a new extension to the existing property. The footings measured 0.6m wide and between circa 0.9m and 1.1m deep. No finds or features of archaeological interest were identified.	644482	263469
n/a	ESF21866	Evaluation, Abbey Farm Barn, Leiston.	An evaluation was undertaken on the footprint for an extension to the barn.	644440	264266
n/a	ESF21921	Evaluation report—Tutors Rooms, Leiston Abbey.	February 1996: Excavation took place, two trenches circa 6m long circa 1.5m wide opened south-west of Guesten Hall prior to building to depth circa 0.3–0.5m by JCB. No archaeological artefacts recovered from either trench.	644396	264250
n/a	ESF21921	Evaluation report— Tutors Rooms, Leiston Abbey.	February 1996: Excavation took place, two trenches circa 6m long circa 1.5m wide opened south-west of Guesten Hall prior to building to depth circa 0.3–0.5m by JCB. No archaeological artefacts recovered from either trench.	644399	264237
LCS Misc.	ESF21926	Monitoring, rear of 8-18 St Margaret's Crescent, Leiston.	Monitoring of groundworks revealed no archaeological features or finds.	643945	262689
LCS 151.	ESF21928	Monitoring— Hall Farm, Leiston.	Archaeological monitoring was carried out on a topsoil strip to the north and service trenches to the south. The topsoil was stripped to a maximum depth of	643749	262552

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Parish Reference.	Monument Number.	Name	HER Summary Description.	Easting	Northing
			0.3m. A single undated ditch was identified. The service trenches revealed no features.		
LCS 180.	ESF22569	Evaluation— Aldhurst Farm, Leiston.	An archaeological evaluation was carried out prior to a proposed development of an area of circa 9.8m. A total of seven trenches were excavated across the site. The trenches measured between 27m and 50m long by 1.8m.	645006	263482
LCS 220.	ESF23703	Geophysical Survey— Saint Margaret's Crescent, Leiston.	A detailed fluxgate gradiometer survey was undertaken on land outlined for a proposed housing development.	643829	262872
LCS 221.	ESF23769	Geophysical Survey— Johnson's Farm, Saxmundham.road, Leiston.	A fluxgate gradiometer survey of land proposed for development at Johnson's Farm, Saxmundham road, Leiston, Suffolk was undertaken in March 2016 based upon English Heritage guidelines.		262875
LCS 221.	ESF25249	Evaluation at Johnson's Farm, Leiston.	Archaeological evaluation following geophysical survey. 69 trenches were excavated, a simple deposit sequence comprising a 0.2–0.5m thickness of topsoil, in some instances overlying 0.05–0.45m of subsoil, was recorded in all trenches.	643346	262876
LCS 221.	ESF25845	Desk Based Assessment (DBA), Johnson's Farm, Saxmundham Road, Leiston.	DBA was carried out ahead of development. This was followed by Geophysical Survey and Evaluation (S1).	643346	262875

(Details taken from SCCAS HER entry)



Volume 9, Appendix 9B - Historic Environment Desk Based Assessment

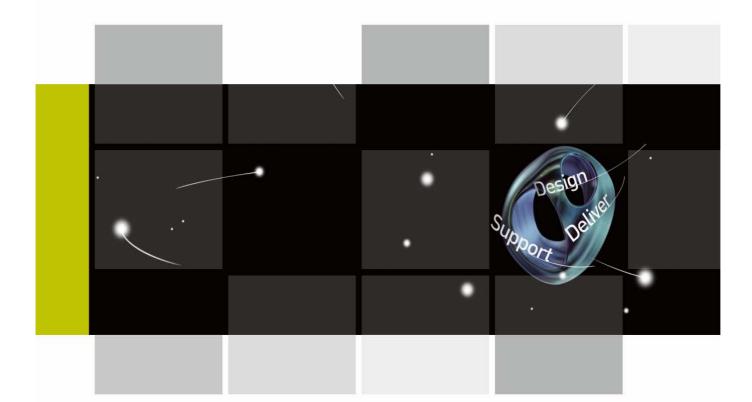
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Volume 9 Appendix 9B Historic Environment Desk Based Assessment |





UK EPR Sizewell C Main Site: Rail Route Options Historic Environment Desk-Based Assessment

34612-C-013 Issue 02 - Final September 2015

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Sizewell C Rail Route Options Historic Environment Desk-based Assessment

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Appendix BGazetteer of Heritage Assets and Archaeological records within the<br/>Study AreaB-1

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Figure 1 Proposed Rail Routes Archaeological Desk-Based Assessment

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Table 1	Results	of	previous	assessment
	-			

Table 2 Summary results of assessment

Sizewell C Rail Route Options Historic Environment Desk-based Assessment

## Abbreviations and Acronyms

AMIE	Archives Monuments Information England
BGS	British Geological Survey
DCO	Development Consent Order
GPA2	Historic England (2015) Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment
HER	Suffolk County Historic Environment Record
LiDAR	Light Detection And Ranging
MSF	Prefix for Suffolk County Historic Environment Record reference numbers
MXS	Prefix for Suffolk County Historic Environment Record reference numbers
NA	National Archives
NPPF	National Planning Policy Framework
NPS EN-1	National Planning Policy Statement EN-1: Overarching National Policy Statement for Energy
NPS EN-6	National Planning Policy Statement EN-6: National Policy Statement for Nuclear Power Generation
ORB	Operations Record Book
PAS	Portable Antiquities Scheme
RAF	Royal Air Force
SRO	Suffolk County Records Office
SZC	Proposed Sizewell C new nuclear power station
USAAF	United States Army Air Force

Sizewell C Rail Route Options Historic Environment Desk-based Assessment

## **Executive Summary**

This desk-based assessment considers the potential presence and significance of archaeological remains, as well as indirect effects on heritage assets, of the green and blue rail route options for the proposed Sizewell C development site. The Blue Route branches from the existing railway near Westhouse Farm, taking a northerly route across the former airfield and entering the main site south of Theberton House. The Green Route branches from the existing railway near Leiston House Farm, following a route to the south of Leiston Abbey and entering the main site at the junction of Lover's Lane and Abbey Road.

The effects of the rail route options within the main site and at the proposed Rail Head at land to the east of Eastlands Industrial Estate have previously been considered by the updated main site desk-based assessment.

A tentative characterisation of the remains present within the green and blue route options has been proposed:

- Evidence for prehistoric occupation is sparse. Some prehistoric artefactual material has been recovered but not in sufficient quantities to suggest any specific areas of interest on either route. However, this activity can be difficult to identify from the sources consulted for this report.
- Romano-British coins and metal artefacts have been recovered from the study area near Leiston, and while no coherent remains have yet been recorded, this needs to be tested further.
- Medieval archaeological remains are likely to be focused on the principal settlements of the study area, although outlying smaller settlements or industrial sites may be present within the study area, particularly close to Leiston Abbey.
- Post-medieval and modern remains are likely to comprise elements of the enclosure period agricultural landscape.
- Archaeological evidence of features associated with the former RAF Leiston is demonstrably present within the study area and is likely to extend along much of the Blue Route.

There is no evidence to suggest the presence of non-designated heritage assets of the highest significance. The majority of archaeological heritage assets present within the study area are likely to be of low to medium significance.

These conclusions may change if further surveys uncover buried archaeological remains of greater significance than currently anticipated.

A staged process of archaeological investigation, comprising geophysical survey and trial trenching, is proposed to determine the potential presence and significance of any archaeological remains within the study area. This will establish the need for, and form of, any further mitigation, which will in turn allow for informed planning decisions.

Sizewell C Rail Route Options Historic Environment Desk-based Assessment

## 1 Introduction

#### 1.1 **Project Background**

- 1.1.1 This desk-based assessment considers the potential presence and significance of archaeological remains within the proposed rail routes being considered to connect the main rail line to the proposed Sizewell C (SZC) development site. Two potential rail routes are addressed within this report the Blue Route and Green Route. Searches of designated assets were carried out using the National Heritage List for England, available online through Historic England (formerly English Heritage) and through a search of the Suffolk County Council Historic Environment Record.
- 1.1.2 The northern route (Blue Route) branches away from the existing rail line near Westhouse Farmhouse and curves to head north-east, through the area previously occupied by Leiston Airfield, then turning east to run to the north of Leiston Abbey, crossing the B1122 and connecting to the main SZC development site in a cutting south of the unregistered parkland at Theberton House.
- 1.1.3 The southern route (Green Route) branches away from the existing rail line to the west of Leiston, passing to the north of the town and to the south of Leiston Abbey. This route option connects to the main SZC development site close to the junction of Lover's Lane and the B1122.
- 1.1.4 This report presents data which has been collated from various information sources in order to understand the specific archaeological potential of the two route options. The areas the routes cross include a variety of different historic landscape and archaeological contexts. To enable a comparison of the routes, the relevant land areas have been divided into discrete parcels which correspond approximately with existing field boundaries. These land parcels are identified on Figure 1.
- 1.1.5 The route options including laydown areas and terminal infrastructure that are contained within the main SZC development site to the east of the B1122 have already been assessed as part of the updated *Sizewell C Main Site Desk-Based Assessment* (AMEC 2015). For completeness, these assessment results are summarised at Table 1 but are not considered further in this document.

Sizewell C Rail Route Options Historic Environment Desk-based Assessment

Infrastructure	Main site DBA Parcel	Potential	Significance
Rail Head	1	Medium	Low-Medium
Rail Head	2	Medium	Low-Medium
Rail Head	3	Medium	Low-Medium
Blue Route	11	High	Low-Medium
Blue Route	18	Low-Medium	Unknown
Blue Route	20	High	Low-Medium
Blue Route	22	Low-Medium	Unknown
Blue Route	24	Medium	Low
Green Route	31	Low-Medium	Unknown
Green Route	32	Low-Medium	Unknown

## Table 1Summary of rail route infrastructure assessment for land within the<br/>Sizewell C main construction site

## 1.2 Information Sources

1.2.1 Source material referenced in this report includes:

- Material held in the Suffolk County Historic Environment Record (HER);
- Material held in the Archives Monuments Information England (AMIE), formerly the NMR;
- Historic England spatial datasets of designated heritage assets (the National Heritage List);
- Archival and cartographic material held at Suffolk County Records Office (SRO); and
- Published secondary historical and archaeological information.
- 1.2.2 Other relevant previous archaeological work that has been reviewed for this report includes:
  - Sizewell C: Historic Environment Desk-Based Assessment (AMEC 2010);
  - Sizewell C: Historic Environment Detailed Documentary Study (AMEC 2011);
  - Archaeological Evaluation Report: Land near Upper Abbey Farm, Eastbridge Road, Leiston, Suffolk (Suffolk CC 2010);
  - Sizewell C: Historic Environment Designated Heritage Assets Baseline: Initial Setting Considerations (AMEC 2012); and
  - Sizewell C: UK EPR Sizewell C Main Site Updated Historic Environment Desk-Based Assessment (AMEC 2015).

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- 1.2.3 Significant work has been carried out on the wider archaeological background, historic landscape and historic seascape character of the area, and reference has been made to the following studies:
  - The Archaeology of the Suffolk Coast (Suffolk County Council 2007);
  - England's Historic Seascapes Pilot Study: Southwold to Clacton Final Project Report (Oxford Archaeology 2007); and
  - The Suffolk Historic Landscape Characterisation Map (HLC, Suffolk CC 2008b).
- 1.2.4 Reference has been made to the published East of England Archaeological Resource Assessment (Glazebrook 1997) and Research Agenda (Brown and Glazebrook 2000). The resource assessment has provided useful context, but the time that has elapsed since publication means that a number of its conclusions, particularly those regarding early prehistory have been significantly modified by subsequent discoveries and reassessments of existing material. Similarly, the Research Agenda has been used as a starting point for considering the informative potential of archaeological remains as subsequent work would allow the stated research agenda to be refined and new avenues of research proposed. In addition, the present state of knowledge of the archaeological potential of the area through which the rail route options pass is such that it is more appropriate to consider research and informative potential in very broad terms, with more fully developed research aims forming a key element of any mitigation design.
- 1.2.5 The Suffolk HER supplied data from the Portable Antiquities Scheme as part of the search. It was, however, requested that information received through this scheme be treated as confidential and reported only in very general terms. Accordingly, the presence of this material has been noted where appropriate and only discussed in as much detail as is necessary to support the conclusions of this study. Similarly, the findspots of such material are not illustrated and no reference is made to any catalogue or reference numbers.

#### 1.3 **Methodology**

- 1.3.1 For the purposes of this report, and to achieve a more finely-grained understanding of the archaeological potential of the study area across a variety of historic landscape contexts, the study area has been divided into parcels, broadly corresponding to individual fields, enclosures or blocks of woodland. Parcels 1-9 cover the Green Route whilst parcels 10-18 cover the Blue Route.
- 1.3.2 A search of the Suffolk HER and Historic England Spatial Datasets was undertaken for all designated and previously recorded assets within a study area agreed with Suffolk County Council (Figure 1). Each of the identified heritage assets was given a unique AMEC ID Number (shown in **bold** in the text) and is included within the Heritage Asset Gazetteer (Appendix B).
- 1.3.3 A review of available cartographic sources (historic mapping), previous archaeological investigations and aerial photographs was also undertaken.
- 1.3.4 Relevant historic mapping and archival material held by the Suffolk Record Office was consulted; this primarily comprised tithe and enclosure mapping. Given the presence of the former Royal Air Force (RAF) base at Leiston, a search was made of the National Archives (NA) to identify any relevant material

Sizewell C Rail Route Options Historic Environment Desk-based Assessment

held which might be relevant. The only available record was the Operations Record Book (ORB) of the training unit which was stationed at Leiston after World War II, although these records only relate to this unit's previous presence at Redcar (NA AIR 29/505). No further records were noted, and this lack of records reflects the use of the station by the United States Army Air Force (USAAF) rather than British forces.

1.3.5 Professional judgement has been used to assign a level of potential for each parcel to contain below-ground archaeological remains as described according to the system described below.

**High** - Archaeological features and finds can be demonstrated to be represented within the parcel or are likely to be present.

**Medium** - Archaeological features and finds may be represented within the parcel.

**Low** - Archaeological features and finds are unlikely to be represented within the parcel. Although small quantities of 'residual' finds may be present.

1.3.6 Where the potential for the presence of heritage assets is rated as medium or high, an assessment of the significance of these assets has been undertaken. This assessment takes into account the potential heritage interests of the assets in addition to their likely preservation and distribution. Significance is rated on the scale below. This assessment of significance is based on professional judgement as informed by guidance contained within National Planning Statement EN-1 (NPS EN-1), National Planning Policy Framework (NPPF), Historic England (2015) *Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment* and English Heritage (2008) *Conservation Principles*.

**High** – Asset has significance for an outstanding level of archaeological, architectural, historic and/or artistic interest.

**Medium** – Asset has significance for a high level of archaeological, architectural, historic and/or artistic interest.

**Low** – Asset has significance for elements of archaeological, architectural, historic or artistic interest.

**Negligible** – Asset is worthy of note but either has minimal significance or no longer survives in any meaningful manner.

- 1.3.7 Where a general potential for the presence of archaeological features is identified, but there is insufficient information available to make an informed judgement on the likely significance of any features which may be present, a rating of **Unknown** has been used.
- 1.3.8 The results of the assessment are presented at Section 4. More detailed discussion of the archaeological context and conditions of each land parcel for the two route options is presented at Appendix A.

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## 2 Legislation, Policy and Guidance

#### 2.1 Legislation

- 2.1.1 The importance of the historic environment is recognised in legislation and heritage assets that are deemed to be of particular importance are given legal protection.
- 2.1.2 Under the Ancient Monuments and Archaeological Areas Act 1979, as subsequently amended by the National Heritage Acts 1983 and 2002, sites assessed to be of national importance are required to be compiled in a Schedule of Monuments. These sites are accorded statutory protection and Scheduled Monument Consent is required before any works are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a scheduled monument, although the act does not consider the settings of scheduled monuments. The Infrastructure Planning (Decisions) Regulations 2010 extend this protection into DCO applications and require decision-makers (as defined in the Planning Act 2008) to have regard to the desirability of preserving the scheduled monument or its setting.
- 2.1.3 The Secretary of State (at present for Communities and Local Government) is required to compile a list of buildings of special architectural or historical interest under the Planning (Listed Buildings and Conservation Areas) Act 1990. The buildings included in this list are classified as Grades I, II\* and II, and are accorded statutory protection. In the determination of DCO applications, the Infrastructure Planning (Decisions) Regulations 2010 require decision-makers to have regard for the desirability of preserving listed buildings, any features which contribute to their special interest and their settings, superseding the equivalent provision for Town and Country Planning under section 66 of the Planning Act 1990.
- 2.1.4 Under the 1990 Act, areas of special architectural or historic interest can be designated as conservation areas, the character or appearance of which it is desirable to preserve or enhance. In the determination of DCO applications, the Infrastructure Planning (Decisions) Regulations 2010 require decision-makers to have regard for the desirability of preserving the character and appearance of conservation areas, superseding the equivalent provision for Town and Country Planning under section 72 of the Planning Act 1990.
- 2.1.5 The Hedgerow Regulations 1997 set out criteria for identifying important hedgerows and for a process of gaining consent for their removal. These criteria include a number of heritage-based considerations. Removal of an important hedgerow is deemed as permitted where a DCO which would require removal of a hedgerow has been granted.

#### 2.2 National Planning Policy

2.2.1 National Planning Policy Statements set out the policy context for nationally important infrastructure applications. NPS EN-1 sets out the overarching policy for energy and NPS EN-6 sets out policies for nuclear generation.

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- 2.2.2 NPS EN-6 Volume I does not set out any specific policies or provisions for consideration of the historic environment. NPS EN-6 Volume II sets out a high-level understanding of the historic environment baseline for the SZC project as part of the wider sustainability appraisal.
- 2.2.3 NPS EN-1 discusses the generic impacts on the historic environment associated with the construction, operation and decommissioning of energy infrastructure. The NPS sets out the need to consider the impacts on both designated and non-designated heritage assets. Where non-designated heritage assets are considered to be of equivalent significance to designated heritage assets, they should be subject to the same policy considerations as those that apply to designated heritage assets (NPS EN-1, para 5.8.5). Non-designated heritage assets of lesser significance should also be considered within any decision making (NPS EN-1, para 5.8.6).
- 2.2.4 In considering the impact of a proposed development on any heritage assets, the decision maker will need to take into account the particular nature of the significance of the heritage assets and the value that they hold for this and future generations (NPS EN-1, para 5.8.12). It is important that any application contains sufficient information to allow that significance to be understood (NPS EN-1, para 5.8.10). Consequently, further field survey may be required to inform any assessment of significance (NPS EN-1, para 5.8.9).
- 2.2.5 Development which gives rise to substantial harm to designated heritage assets (or non-designated heritage assets of equivalent significance) should be exceptional, or for heritage assets of the highest significance (i.e. scheduled monuments, grade I and II\* listed buildings, historic battlefields and grade I and II\* designated parks and gardens) should be wholly exceptional (NPS EN-1, para 5.8.14). Harm of less than substantial magnitude should be weighed against the benefits of the proposal (NPS EN-1, para 5.8.14). Development giving rise to substantial harm to a designated heritage asset should only be permitted where necessary to deliver significant public benefits which outweigh the harm occasioned (NPS EN-1, para 5.8.15).
- 2.2.6 Provisions for the recording of at-risk heritage assets to mitigate against the loss of evidential interest are set out at NPS EN-1, paras 5.8.19 5.8.22.
- 2.2.7 NPPF Section 12 sets out broadly similar provisions to NPS-EN1 on the consideration of the historic environment in the planning system, particularly with regards to provisions for establishing the significance of heritage assets which may be affected by development and with regards to the acceptability of harm to the significance of designated heritage assets or non-designated assets of equivalent significance.

#### 2.3 Local Planning Policy

- 2.3.1 The Suffolk Coastal District Local Plan consists of Core Strategy and Development Management Policies, which set out the strategic objective (Objective 11) 'To conserve and enhance the quality of the distinctive natural, historic and built environments'.
- 2.3.2 Saved policies within the Suffolk Coastal *Local Plan* will be retained until these are superseded by adopted development plan documents. The only saved policy which may become relevant to this study is AP4 *Parks and Gardens of Historic or Landscape Interest*. Policy AP7 *Development of archaeological sites* was

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deleted in 2014 having been superseded by the provisions set out in Section 12 of NPPF.

2.3.3 The Core Strategy sets out that '...Section 12 of the NPPF supports this aim [Objective 11, above] and will be applied rigorously. More generally, decisions on development proposals affecting heritage assets will be informed as appropriate by Conservation Area Appraisals, information from the Historic Environment Record and Archaeological Assessments...'.

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## 3 Archaeological and Historical Background

- 3.1.1 The desk-based assessment reports (AMEC 2010; 2015) provide detailed period-based discussions of the archaeological and historic development of main SZC development site and the Suffolk coast more generally. Where appropriate, these findings are incorporated into a discussion of the overall archaeological understanding of the route options.
- 3.1.2 For the purposes of understanding the potential effects of the rail routes on the historic environment, a study area was defined in consultation with Suffolk County Council Archaeology Service (Figure 1). This study area was bounded to the east by the B1122 Abbey Road, to the north by the unclassified Moat Road, to the west by the unclassified Hawthorn Road and to the south by Saxmundham Road and Waterloo Avenue, Leiston.
- 3.1.3 Elements of the rail routes within the SZC main development site and the rail head in land to the east of Eastlands Industrial Estate have been considered within the updated main site desk-based assessment (AMEC 2015).

#### 3.2 Geology

3.2.1 The solid bedrock geology of both route options consists of the Crag Group sand sedimentary bedrock. This solid geology is predominantly overlain by Diamicton with some areas of more concentrated sand and gravel belonging to the Lowestoft Formation occurring closer to the SZC main development site (BGS Geology of Britain Viewer, 1:50,000 scale).

#### 3.3 **Prehistoric Period – to c. AD50**

- 3.3.1 There are presently no observations of archaeological material dating from the Palaeolithic period within the study area, although the area is thought likely to have been exploited by hominids and humans during this period. Activity dating from the Mesolithic period within the study area is represented by finds of lithics, although the coastal margins are thought likely to have offered favourable conditions for human occupation. The distribution of known sites of these dates from the wider area suggests that the focus of activity is likely to have been on the well-drained Sandlings or the wetland margins in the coastal marshes, to the east of the study area considered in this assessment (Glazebrook, 1997). Consequently, the potential for remains of these periods to be present within the study area is considered to be reduced. The types of settlement and activity associated with earlier prehistory in this area tend not to be readily apparent on aerial photography or geophysical survey, however, and this reduced potential may be more apparent rather than real.
- 3.3.2 Confirmed evidence for Bronze-Age activity is similarly restricted and comprises funerary activity, primarily within the sandy soils of the Sandlings, although extending into the Claylands. A possible round barrow is recorded at the southern end of the parkland around Theberton House, though the height of this feature suggests that it is more likely to represent a folly or prospect mound associated with the parkland (AMIE 962899).

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- 3.3.3 A possible pit alignment visible as a cropmark on aerial photography (**80**) southeast of Peak Hill Cottages may date from this period and there is a PAS record of a chance find of a bronze sword hilt in the study area.
- 3.3.4 There is no confirmed evidence of Iron-Age settlement or occupation within the study area, although there is a PAS record of an Iron-Age coin from within the study area, suggesting that the lack of evidence for more permanent settlement reflects the relative absence of previous investigation.

#### 3.4 Romano-British Period – c. AD50 to c. 400

3.4.1 Evidence for activity from this period within the study area comprises finds of artefactual material recorded in the HER and the PAS north-east of Leiston. Despite the absence of other evidence of activity of this date, these finds are strongly suggestive of the presence of a substantial Roman settlement or activity centre within the south-eastern part of the study area, possibly related to the suspected villa site at Knodishall.

#### 3.5 Early Medieval and Medieval Period – c. 400 to c. 1540

- 3.5.1 There is relatively little evidence for activity dating from the early-medieval period within the study area, with the exception of a small number of chance finds dating to this period within the vicinity. Leiston and Theberton are both recorded in the Domesday survey of 1086, which records manorial holdings at the time of the Conquest in 1066. It is clear that a settled manorial geography, which is likely to have provided the basis for the medieval settlement pattern, was established during the early medieval period.
- 3.5.2 Close to the proposed Green rail route there is evidence of medieval activity, primarily agricultural in nature. However, the second site of Leiston Abbey is located between the two routes, and there is a record of a shrunken medieval settlement at Knodishall Green (52) and a possible cropmark of a moated site (81) 600m west of Hill Farm. The villages of Leiston and Theberton also have a medieval origin, but it is unlikely that these sites extend into the study area, although their inhabitants may well have made use of the land for agricultural purposes.
- 3.5.3 The land holdings of Leiston Abbey are unclear; records of monastic ownership, such as the Leiston Cartulary (Mortimer 1979), are insufficiently detailed to allow for precise reconstruction. The extent of these holdings is, however, hinted at by the extent of tithe-exempt land shown (or rather excluded) from the tithe maps of Leiston and Theberton land in the ownership of the Praemonstratensian Order was exempt from Tithes, and this transferred to secular owners after the Dissolution as a customary exemption.

#### 3.6 **Post Medieval Period – c. 1540 to c. 1850**

3.6.1 The basic settlement geography established in the medieval period remained through the Post-medieval period, with the former monastic site at Leiston becoming a secular manorial centre. The principal change in this period was in terms of the use and demarcation of land, with the steady enclosure and 'improvement' of lands. Heritage assets within the study area dating from this period primarily comprise agricultural features and buildings, including features such as marl or gravel pits and enclosure period field boundaries.

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#### 3.7 Modern Period – c. 1850 to c. 2000

- 3.7.1 The majority of the modern period saw a general continuity of land use from the Post-medieval period, with no major changes to the established patterns of settlement or land use.
- 3.7.2 Change to the agricultural landscape is best evidenced by a long-established trend of hedgerow loss and the amalgamation of smaller fields into larger units better suited for mechanised cultivation. Wade Martins and Williamson (1999), looking at general trends within Suffolk, dated the majority of these changes to the later 19<sup>th</sup>-century. In this case, the rather patchy coverage of the Leiston tithe mapping makes it difficult to assess or determine specific changes within the study area. Where the tithe mapping and the first and second edition Ordnance Survey mapping can be compared, however, the pattern of rationalisation and amalgamation of earlier field systems seems to be consistent with Wade Martins and Williamson's model.
- 3.7.3 There are some observed features of modern date, primarily those associated with the military airfield at RAF Leiston. Work commenced at his airfield in 1942 and it was occupied by the USAAF 357<sup>th</sup> and 358<sup>th</sup> Fighter Groups of the Eighth Air Force, flying offensive missions over occupied Europe. Following the cessation of hostilities, RAF Leiston reverted to use as an RAF technical training centre, before it was closed in 1953.
- 3.7.4 There is no evidence for the presence of anti-invasion defences within the study area. It is likely that this area immediately behind the coastal 'crust' (the heavily fortified defensive line along the coast), was never as heavily fortified as the coastal strip and that any defensive military features present would be associated with RAF Leiston.

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## 4 Results

#### 4.1 **Overview**

- 4.1.1 A total of 18 discrete land parcels were considered, nine along each route. Of these 18 parcels, ten were identified as having a **High** potential for the presence of archaeological remains (five Blue Route, five Green Route), three were identified as of **Medium** potential (one Blue Route, two Green Route) and five as of **Low** potential (three Blue Route, two Green Route).
- 4.1.2 Of the thirteen parcels rated as of **High** or **Medium** potential, the likely significance of heritage assets thought to be present was rated as **Low** in four cases (three Blue Route, one Green Route), **Low** to **Medium** in three cases (one Blue Route, two Green Route), **Medium** in four cases (one Blue Route, three Green Route) and **High** in two cases (one Blue Route, one Green Route).
- 4.1.3 This reflects the potential nature of the archaeological resource in each area. The Blue route passes through the former RAF Leiston and, while elements of the airfield demonstrably survive in some form, these remains are likely to be of restricted heritage significance as a result of prior disturbance. Heritage assets on the Green Route represent features of potentially greater significance, but which are generally poorly understood and difficult to characterise in terms of survival and heritage significance.
- 4.1.4 The five parcels rated as **Low** potential reflected the absence of sufficient information to assess the potential for the presence or likely significance of any archaeological features present. There is no evidence to suggest the presence of any specific archaeological features, and it is likely that the absence of existing records of any archaeological features in these parcels reflects a genuine absence of archaeological material. However, it is not possible to entirely rule out the presence of archaeological remains at this stage. Consequently, the likely significance of any remains in these parcels is rated as **Unknown**.
- 4.1.5 In general, the areas of highest potential for the survival of archaeological remains can be summarised as follows:
  - Artefact scatters from a range of periods are located in the south-east of the study area, and indicate an increased potential for the presence of medieval and Romano-British remains in the area and the potential for further, as yet unknown, remains which are likely to be of Medium significance.
  - Military remains relating to the former RAF Leiston, which are likely to have been substantially disturbed but retain a degree of archaeological and historic interest and are best considered as of **Low** significance.
  - Elements of pre-modern field systems; best evidenced along the Green route where relict field boundaries are better preserved than those through which the Blue Route passes and where there has been less prior disturbance. These are best considered as of **Low** significance, but may contribute to the setting of designated heritage assets such as Leiston Abbey and the listed farmhouses at Hill Farm and Fisher's Farm.

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- There are hints of prehistoric material in the study area which, coupled with the historic under-representation of such remains on the Claylands, suggests that such remains may be present.
- 4.1.6 The significant change to the pre-existing agricultural landscape within the former RAF airfield at Leiston and the complexity of the potential archaeological remains here means that field boundaries shown on the tithe mapping or on aerial photography of the airfield have not been digitised as part of this study.

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#### 4.2 Results

#### Table 2 Summary results of assessment

Parcel	Archaeological Interest	Potential	Significance
Blue Ro	ute	•	
1	No records within this parcel. The Grade II listed Westhouse Farmhouse (12) is located adjacent to this parcel on its north-western extent.	Low	Unknown
2	No records within this parcel.	Low	Unknown
3	No records within this parcel.	Low	Unknown
4	Northern half of the area is within the former RAF Leiston ( <b>60</b> ). The HLC records it as a post-1950 agricultural landscape. No other records contained.	Medium	Low
5	Largely within the former RAF Leiston ( <b>60</b> ). The HLC records it as a post-1950 agricultural landscape.	High	Low
6	Within the former RAF Leiston ( <b>60</b> ), this parcel contains the only surviving section of runway. The HLC records it as a post-1950 agricultural landscape.	High	Low
7	This parcel predominantly covers the area of the former RAF Leiston (60). The HLC records it as a post-1950 agricultural landscape.	High	Medium
8	This parcel contains a no longer extant field system ( <b>56</b> ) and is bordered to the south by a number of high-grade assets including Leiston Abbey ( <b>20</b> ). The HLC records this parcel as 18 <sup>th</sup> -century and later enclosure with former land use being common arable or heathland. The southern half of the parcel is recorded as pre-18 <sup>th</sup> -century enclosure of irregular co-axial fields.	High	Low-Medium
9	This parcel comprises the non-designated park and garden surrounding the Grade II* listed Theberton House ( <b>19</b> ) and associated Grade II listed structures.	High	High

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Parcel	Archaeological Interest	Potential	Significance
10	Possible prehistoric material observed within the vicinity of this parcel; HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	Medium	Low-Medium
11	No archaeological features recorded; HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	Low	unknown
12	No archaeological features recorded; HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	Low	unknown
13	Pale oval cropmark of unknown date; The Grade II Fishers Farmhouse lies in the northern half of the parcel. HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	High	High
14	No records within the vicinity of this parcel, HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	High	Low
15	Number of finds of varying dates (Bronze age to Post-medieval but primarily Romano- British) found within the vicinity. Enclosure of unknown date. HLC records the area as post-1950 agriculture.	High	Low-Medium
16	Medieval artefact scatter to the eastern part of the parcel; HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	Medium	Medium
17	Scattered findspots, including medieval artefacts. HLC records area as fields of pre-18 <sup>th</sup> century enclosure.	High	Medium
18	Scattered findspots. HLC records area as fields of pre-18th century enclosure.	High	Medium

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#### 4.3 **Discussion**

- 4.3.1 The studies which have been carried out to date have provided a broad understanding of past activity within the study area and a characterisation of which areas are more or less archaeologically significant.
- 4.3.2 However, there are still important areas of uncertainty where the potential significance of archaeological heritage assets cannot presently be fully understood. In addition, it is possible that archaeological heritage assets which cannot be predicted on the basis of desk-based assessment or the surveys carried out to date may be present within the study area.

#### 4.4 Characterisation of Archaeological Potential

- 4.4.1 The results of the desk-based assessment suggest four principal areas of archaeological interest within the study area:
  - remains deriving from Romano-British period occupation of the south-east part of the study area;
  - remains associated with medieval agricultural exploitation of the hinterland of known settlements at Leiston and Theberton;
  - elements of Leiston Abbey and associated features; and
  - remains associated with RAF Leiston constructed during the Second World War.

#### 4.5 **Romano-British Remains**

- 4.5.1 The presence of such remains can only be inferred from the substantial assemblage of artefactual material recovered from the south-east of the study area. There are, however, no records of any discrete archaeological features or potential cropmarks from this area. In addition to a number of coins, which could represent a scattered hoard, there are also artefacts such as bowl fragments which are consistent with domestic occupation and there is a potential for associated structural remains of this date to be present.
- 4.5.2 The significance of these remains is uncertain, and will depend largely on the preservation and nature of assets present. However, the assemblage of surface finds may be suggestive of highly significant archaeological remains in this area.

#### 4.6 Medieval Agricultural Activity

- 4.6.1 The two route options lie within a coherent agricultural landscape. While the principal known foci of settlement in this period within the study area (Leiston, Theberton, Knodishall Green and Leiston Abbey) are not intersected by either proposed route, it is clear that these routes pass through a coherent agricultural landscape which formed the basis for the modern agricultural landscape and of which some traces remain discernible.
- 4.6.2 Any assessment of significance will depend on the nature, preservation and extent of such features and these cannot be confidently ascertained without further field survey. The evidence considered within this assessment, however, suggests features likely to be observed would be of low to medium significance

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in terms of their archaeological interest and contribution to the historic landscape of the study area.

#### 4.7 Elements of Leiston Abbey

- 4.7.1 The proposed routes pass through land which appears likely to have been part of the endowment of Leiston Abbey. This is most clearly shown in the tithe mapping, which shows significant areas of tithe-exempt land. While land could be exempted from tithes by private agreement, the most common reason for exemption was a historical legacy of former monastic land, particularly of Praemonstraensian houses, which had passed into lay ownership at the Dissolution.
- 4.7.2 The management of a monastic house required a number of ancillary features, such as fishponds and workshops, and it is possible that such remains could be located close to the known abbey site. Surviving remains of such features could be of medium or high significance.
- 4.7.3 The suggestion that land was in the ownership of Leiston Abbey is, however, not necessarily an indication that associated remains may be present the majority of the monastic landholding would have been used for agricultural cultivation. Previous archaeological work (e.g. Dig Ventures 2013) has focused on the area immediately round the designated abbey site, and analysis of the historic mapping combined with comparison with similar Praemonstratensian houses (AMEC 2014b) suggests that associated structures are unlikely to have extended as far as the proposed rail routes.

#### 4.8 **Second World War Military Remains**

- 4.8.1 The Blue Route passes through the former airfield at RAF Leiston, following the line of the main runway for much of the route.
- 4.8.2 It is likely that the construction and subsequent demolition of the runway, which is recorded as asphalt over concrete (Freeman 1978), would have caused significant disturbance or complete removal of pre-existing archaeological features.
- 4.8.3 The majority of the airfield has been cleared of standing remains and hard surfaces and returned to agricultural use, including most of the former runways and perimeter track. Many of the standing buildings would have been relatively ephemeral and it would be expected that foundations would have largely been grubbed up to allow for cultivation. Some standing structures remain, having been converted to agricultural use there is a distinct group of abandoned huts on Harrow Lane, south-west of Hill Farm. It is likely that below-ground elements of the airfield have been at least significantly disturbed and that elements surviving in any coherent form would comprise deeper features such as latrine or defensive/shelter trenches or elements of more substantial foundations and semi-sunken structures. Consequently, it is likely that any archaeological material within this area would be of low significance for archaeological interest.

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## 5 **Conclusions and Recommendations**

#### 5.1 **Conclusions**

- 5.1.1 The desk-based and survey work carried out to date suggests the potential presence of archaeological remains of a number of periods on or close to the proposed routes. A tentative characterisation of these remains can be proposed, although this has not been confirmed by intrusive archaeological investigation.
- 5.1.2 Evidence for prehistoric occupation of the study area is almost entirely absent, although the nature of such activity is such that coherent archaeological evidence is not always readily discernible through desk-based survey, with the underlying subsoil not being conducive to the formation of clear cropmarks and material evidence often being difficult to identify outside formal studies. Elsewhere in East Anglia, it has been established (Glazebrook, 1997) that the Claylands, which were once considered unsuited for occupation at this date, were actually occupied and actively exploited at this time. Consequently, the potential for the presence of prehistoric material cannot be ruled out. This is more likely to survive in coherent form along the Green Route, which has been subject to less previous disturbance than the Blue Route.
- 5.1.3 There is no direct evidence for Romano-British activity within the study area, other than the suspected villa site near Knodishall Green. A substantial quantity of artefactual material has been recovered from the study area near Leiston, however. While it is possible that this material represents an isolated hoard with no necessary associated settlement, it is strongly suggestive of occupation of the wider area and demonstrates that the potential for significant archaeological remains of this date to be present along the Green Route.
- 5.1.4 The Domesday survey of 1086 indicates that the principal settlements formed part of a settled and organised tenurial landscape but there is no archaeological evidence for early-medieval activity other than some possible surface finds near Leiston.
- 5.1.5 There is a potential for remains associated with Leiston Abbey to be present. Most of these are likely to reflect agricultural use and to be of low significance. More significant features are likely to be clustered around the designated abbey site and are consequently unlikely to be affected, although this inference should be confirmed through further survey. Other medieval archaeological remains appear likely to be focused on the principal known settlement sites at Theberton, Knodishall Green and Leiston of the study area, although outlying smaller settlements or industrial sites may be present along either route. Such remains (if present) on the Blue Route are likely to have been significantly disturbed by the construction and demolition of RAF Leiston.
- 5.1.6 Post-medieval remains are likely to comprise elements of the enclosure period agricultural landscape which are of at most of low significance; within the former RAF Leiston these elements have been almost completely removed.
- 5.1.7 Archaeological remains of the Second World War airfield are demonstrably present on the Blue Route, and while the majority of these remains are likely to be of no more than low significance as a result of prior disturbance and demolition, some more significant remains may be present in localised areas.

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- 5.1.8 With regards to the potential significance of heritage assets, there is not at present any evidence which suggests the presence of non-designated heritage assets of the highest significance, and the majority of archaeological heritage assets present within the study area appear likely to be of low to medium significance.
- 5.1.9 There is, however, a potential that archaeological heritage assets which cannot be predicted on the basis of desk-based assessment or the survey work carried out to date may be present within the study area. As noted at para. 5.1.2, this is most pertinent to the prehistoric period, although the suggestion that significant Roman or medieval remains may be present should also be tested. It is also possible that these heritage assets – if present - may be of greater significance that anticipated at present.

#### 5.2 **Recommendations**

- 5.2.1 Further archaeological investigation is required to fully understand the potential presence and significance of any archaeological remains that may be affected by the rail route and to establish the requirement for, and form of, any mitigation.
- 5.2.2 A staged process of investigation is proposed to evaluate near-surface archaeological remains.
- 5.2.3 This would comprise geophysical survey followed by evaluation trenching targeted on areas of specific potential highlighted by desk-based or survey work.

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## 6 References and Related Documents

#### 1) Published Sources and Reports

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Ordnance Survey 6" - 1 mile mapping 1903 sheets L. SE and LI. SW

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Ordnance Survey 6" – 1 mile mapping 1938 sheets L. SE and LI. SW

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Saxton, C. 1579 Suffolk

Speed, J. 1610 Suffolk

Kirby, J. 1736 Suffolk

Hodskinson, J. 1783 Map of Suffolk

SRO HD 306/1/1 1786 Estate lying in Leiston in Suffolk, in the occupation of Geo. Doughty, gent., and belonging to Wm. Tatnall, esq., by Isaac Johnson of Woodbridge.

SRO FL595/3/33b Tithe Map for Leiston and Theberton 1842

SRO EF 5/1/2/1 1810-1824 Leiston and Theberton Enclosure Award with map 29 Oct. 1824

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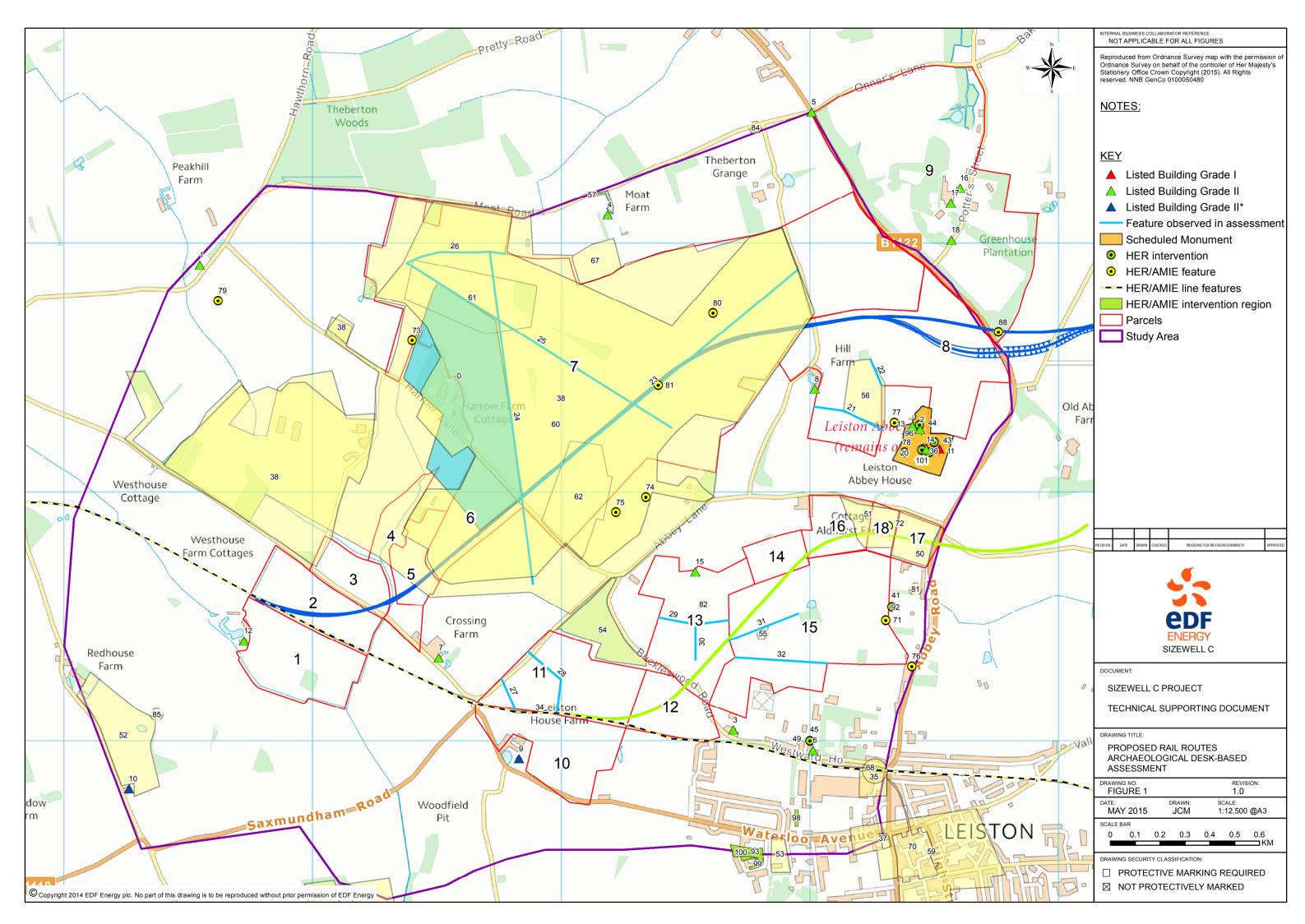
SRO HD 78:2671 Leiston Old Abbey Estate (contains miscellaneous papers and drawings and estate map of 1909)

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### Figure

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### Appendix A Archaeological Potential

### A.1 Blue Route

### A.1.1 Parcel 1

- A.1.2 This parcel is assessed as being of **Low** archaeological potential.
- A.1.3 This parcel is presently used as agricultural land with a small copse within the southern half. No known assets or previous archaeological events have been recorded within this area. The Grade II listed Westhouse Farmhouse (**12**) is located just beyond the western edge of this parcel.
- A.1.4 This area is not shown on the Leiston Tithe map, as the map is damaged. The first edition OS (1884) shows this parcel as six smaller arable fields with tracks leading from the 'West House' running through the southern extent of the parcel. The railway line exists by this time, bounding the north of the area and a sand pit is depicted within the southwest of the area. The copse is first seen on OS mapping of 1927 and no further changes are noted until mapping of 1971 which illustrate the amalgamation of the fields to the north of the tracks into one area.
- A.1.5 Arial photography demonstrates that the area of the sand pit within the southwest was still visible through a further copse up until 2000 although the tracks shown on earlier mapping have disappeared by this time.
- A.1.6 This parcel has undergone localised disturbance due to the extraction of sand in the southwest, and it is likely that further disturbance along the northern edge would have occurred during the construction of the railway. The lack of historic environment records within the immediate surroundings of this parcel, including records of any spot finds suggests that there has not been any notable occupation of this land. Notwithstanding this, the parcel is greenfield land and the significance of subsurface archaeological remains which may be present remains **Unknown**.

### A.1.7 Parcel 2

- A.1.8 This parcel is assessed as being of **Low** potential.
- A.1.9 This parcel is presently used as agricultural land and the building at Westhouse Crossing is contained within the western corner. No known assets or previous archaeological events have been recorded within this area. The railway bounds the parcel to the southwest and the Blue Route curves through this parcel from the west to the east.
- A.1.10 This area is not shown on the Leiston Tithe map, as the map is damaged. The first edition OS (1884) shows this parcel as two smaller arable fields and the railway line exists by this time and no changes are noted until mapping of 1971 which illustrate the amalgamation of the two fields into one area.
- A.1.11 Arial photography from 2007 suggests that this parcel contains an extensive system of field drains, more so within the eastern half of the area.
- A.1.12 This parcel is likely to have been subject to localised disturbance through the use of field drains and during the construction of the railway. The lack of historic environment records within the immediate surroundings of this parcel, including records of any spot finds suggests that there has not been any notable occupation of this land. Notwithstanding this, the parcel is greenfield land and

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the significance of subsurface archaeological remains which may be present remains **Unknown**.

#### A.1.13 Parcel 3

- A.1.14 This parcel is assessed as being of **Low** potential.
- A.1.15 This parcel is presently used as agricultural land. No known assets or previous archaeological events have been recorded within this area. The Blue Route cuts across the south-eastern corner of this parcel.
- A.1.16 This area is not shown on the Leiston Tithe map, as the map is damaged. The first edition OS (1884) shows this parcel as two smaller arable fields and no changes are noted over the intervening decades. The fields would have been amalgamated post 1977.
- A.1.17 Arial photography from 2007 suggests that this parcel contains an extensive system of field drains.
- A.1.18 This parcel is likely to have been subject to localised disturbance through the use of field drains. The lack of historic environment records within the immediate surroundings, including records of any spot finds suggests that there has not been any notable occupation of this land. However, the parcel is greenfield land and the significance of subsurface archaeological remains which may be present remains **Unknown**.

### A.1.19 Parcel 4

- A.1.20 This parcel is assessed as being of **Medium** potential.
- A.1.21 This area is not shown on the Leiston Tithe map. While the map is damaged, it appears that this area was not depicted. This parcel occupies an irregular parcel of land which is presently open scrubland containing a pond and a small watercourse together with some woodland borders. A further smaller pond may also be present within a thicket to the southwest of the main pond. The Grade II listed Crosswing Farmhouse (7) is located *c*. 75m to the east of the southern tip of the parcel and the northern half of the area is within the site of RAF Leiston (60). The Blue Route crosses this parcel from east to west at its thinnest point. No further known assets or previous archaeological events have been recorded within this area.
- A.1.22 The first edition OS (1884) shows this parcel as three smaller areas with one plot at the southern extent and the upper section being split along the line of the watercourse. The area of the pond is shown within this mapping as is the smaller pond to the southwest. A track is depicted running on a broadly north-south alignment through the bottom section of this parcel, although this is not present within mapping of 1904. No further changes are noted until 1957-58 where upon this parcel is seen bounding, but not included within the area of RAF Leiston (60). No further changes are visible on subsequent mapping and it appears that this parcel was never part of the airfield.
- A.1.23 No further information could be gleaned through aerial photography.
- A.1.24 It is possible that ancillary features relating to of RAF Leiston (**60**) could be present within this parcel, although cartographic and aerial photographic evidence do not identify any such features. Any features that may survive would likely consist of small isolated features of limited significance. The evidence suggests that should any archaeological remains be present within the area, they are likely to be of **Low** significance.

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### A.1.25 Parcel 5

- A.1.26 This parcel is assessed as being of **High** archaeological potential.
- A.1.27 This parcel is shown by the HER data as being largely contained within the area of RAF Leiston (**60**). The area is presently under arable cultivation and the Blue Route would run on a southwest to northeast alignment across the southern half of the parcel. No further known assets or previous archaeological events have been recorded within this area. It is shown by the Suffolk HLC as being in an area of post-1950s agricultural intensification.
- A.1.28 This area is not shown on the Leiston Tithe map. While the map is damaged, it appears that this area was not depicted. This parcel appears as two smaller areas on first edition OS mapping (1884), with a boundary splitting the northern and southern halves. By mapping of 1957-58 the area is incorporated into RAF Leiston (60), however the southern boundaries of this parcel are clearly illustrated again on the 1971 mapping.
- A.1.29 Aerial photography of 1946 shows the southern half of this parcel still as a separate field with the central boundary clearly visible. The northern half of the area appears to contain outlying features connected to the airfield at this time including the perimeter track and dispersal pens. The field boundaries present at the time of the 1946 and the 1957-8 mapping photography can still be seen as cropmarks in photography dating from 2011, and it is clear that loss of these boundaries post-dates the abandonment of RAF Leiston.
- A.1.30 It is possible that features relating to RAF Leiston (**60**) may be present within the northern half of this parcel. Any features that may survive would likely consist of elements of dispersals and the perimeter track which have subsequently been reused as hard standings or substantially disturbed remains of these features where they have been demolished. It is possible that associated features such as slit trenches or former services may be present. The evidence suggests that should any archaeological remains be present within the area, they are likely to be of **Low** significance.

### A.1.31 Parcel 6

- A.1.32 This parcel is assessed as being of **High** archaeological potential.
- A.1.33 This parcel is shown by the HER data as contained within RAF Leiston (**60**). The area is presently predominantly under arable cultivation although a section of the main runway still survives along the south-eastern edge of this parcel. The Blue Route would follow the line of the runway through this parcel. No further known assets or previous archaeological events have been recorded within this area. It is shown by the Suffolk HLC as being in an area of post-1950s agricultural intensification.
- A.1.34 This area is not shown on the Leiston Tithe map. While the map is damaged, it appears that this area was not depicted. This parcel is in an area of large sub-rectangular open fields on first edition OS mapping (1884), and remains that way until mapping of 1957-58 where it is incorporated into RAF Leiston (**60**). The area as it is seen today can be seen on the 1971 mapping.
- A.1.35 Aerial photography of 1946 shows the runway following the south-eastern boundary and there are further smaller features comprising the perimeter track, dispersals and associated buildings including a hangar visible along the western edge of the parcel.

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A.1.36 Features relating to RAF Leiston (**60**) are present within this parcel, although any standing structures have since been demolished and most of the hard standing areas have been grubbed out. It is likely that some foundation elements will survive, although these would be of restricted informative potential and would represent minimal survival of much larger features. Any features that survive, with the exception of the main runway, would likely consist of small outlying features or substantially disturbed elements of modern structures, although there is a small potential that more significant elements associated with this use survive in localised areas. These assets are all likely to be of a **Low** level of significance.

#### A.1.37 Parcel 7

- A.1.38 This parcel is assessed as being of **High** archaeological potential.
- A.1.39 This parcel comprises the majority of the area of RAF Leiston (**60**). A possible cropmark of an undated sub-square enclosure at Harrow Farm (**73**) is recorded within the western extent of this area together with possible cropmarks of a pit alignment (**80**). Two areas of former ancient woodland which were partly cleared before or during the construction of the airfield are recorded at Buxlow Forest and Bush Grove (**61** and **62**). The area is presently predominantly under arable cultivation although a section of the main runway still survives along the southeastern edge. The Blue Route would follow the line of the runway through this area. Other than a Post-medieval coin recorded by the PAS, no further known assets or previous archaeological events have been recorded within this area. It is shown by the Suffolk HLC as being in an area of post-1950s agricultural intensification.
- A.1.40 This parcel is shown on the Theberton tithe map as comprising a large number of rectilinear fields, possibly reflecting a degree of rationalisation of earlier field systems at enclosure. The land was predominantly in the ownership of Lord Joshua Huntingfield and was principally farmed by William Wainwright. No field names are recorded and the use was a mixture of arable and pasture. The first edition OS mapping (1884) shows a limited degree of amalgamation of these smaller fields, and the basic field system remained until mapping of 1957-58 where it is shown as having been incorporated into the area of Theberton Airfield, formerly RAF Leiston (**60**). The area as it is seen today can be seen on the 1971 mapping.
- A.1.41 Aerial photography of 1946 shows the runway with possible dispersal points located along the south-eastern boundary. The principal buildings of the airfield appear to have been concentrated around Hill Farm and Harrow Lane, in the west and north-west of this parcel, with fewer standing structures visible further to the east and north-east.
- A.1.42 Features relating to RAF Leiston (**60**) are present within this parcel, although any standing structures have since been demolished and most of the hard standing areas have been grubbed out. It is likely that some foundation elements will survive, although these would be of restricted informative potential and would represent minimal survival of much larger features. Any features that survive, with the exception of the main runway, would likely consist of small outlying features or substantially disturbed elements of modern structures, although there is a small potential that more significant elements associated with this use survive in localised areas.

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- A.1.43 There is a suggestion from aerial photography that heritage assets which predate the military use of the area may be present. These records have no supporting information and it is very difficult to make any meaningful assessment of their reliability or the potential survival of these features. Consequently, they serve as a reminder that earlier features may survive although it is likely that such features would have been substantially disturbed during the construction and demolition of the airfield and would survive in localised areas which were less intensively utilised.
- A.1.44 These assets are all likely to be of a **Low** level of significance, although surviving elements of earlier features could, depending on their nature and preservation, be of **Medium** significance.

#### A.1.45 Parcel 8

- A.1.46 This parcel is assessed as being of **High** archaeological potential.
- A.1.47 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of irregular co-axial fields.
- A.1.48 The only recorded heritage asset within this parcel is a former field system recorded as a cropmark on aerial photography (56), although the parcel is adjacent to the site of Leiston Abbey Scheduled Monument (20) and associated Listed Buildings (2, 11, 13, and 14) and is adjacent to the listed Hill Farm house (8). The PAS record a late-medieval or Post-medieval object from this parcel.
- A.1.49 The first edition OS (1883) shows this parcel as a number of smaller fields, comprising irregular enclosures, some of which appear to have been amalgamated. A number of small ponds are shown, and it is likely that these represent abandoned sand or marl pits. Subsequent editions of the ordnance survey mapping show the gradual loss of hedgerows in this area, although the former field boundaries remain discernible.
- A.1.50 There is no clear evidence to suggest the presence of archaeological features within this parcel other than pre-modern agricultural activity, although the proximity of this parcel to Leiston Abbey suggests a potential for medieval remains associated with the abbey to be present. Remains of past agricultural activity is likely to be of **Low** significance with structural remains associated with Leiston Abbey taking on a higher significance.

### A.1.51 Parcel 9

- A.1.52 This parcel is assessed as being of **High** archaeological potential.
- A.1.53 This parcel comprises the non-designated designed landscape around Theberton House. Theberton House (19) is listed at Grade II\* and there are further Grade II listed buildings (16, 17, 18) within the parkland. The Suffolk HLC records a wide variety of historic landscape character types in this parcel, primarily comprising parkland woods, informal park and irregular fields.
- A.1.54 Further recorded heritage assets within the parcel are limited to a possible barrow or prospect mound in the extreme southern tip of the designed landscape (88). This parcel has not been subject to any formal archaeological investigation.
- A.1.55 The Theberton tithe map and first edition OS (1883) shows this parcel in a very similar condition to the present, with subsequent editions showing only minor changes.

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A.1.56 The parkland landscape associated should be seen as a heritage asset of **high** significance, with individual assets within that landscape having lesser or equivalent significance.

### A.2 Green Route

### A.2.1 Parcel 10

- A.2.2 This parcel is assessed as being of **Medium** archaeological potential.
- A.2.3 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre 18<sup>th</sup>-century enclosure.
- A.2.4 There have been occasional chance finds of unknown date within the vicinity, but there has been no formal archaeological investigation of this parcel.
- A.2.5 The first edition OS (1883) shows this parcel as a number of smaller fields, which are also shown on the Leiston tithe map, comprising both rectilinear enclosures in the north and smaller, less regular enclosures in the west. The tithe map identifies a variety of owners and tenants along with field names, although none are suggestive of the presence of pre-modern activity. There is very little change to the organisation within the parcel although the field became amalgamated in the late 20<sup>th</sup> century, and is currently one large field.
- A.2.6 Aerial Photography revealed no further information.
- A.2.7 There is no clear evidence to suggest the presence of archaeological features within this parcel, although possible cropmarks of pre-modern features in adjacent fields and a chance find of Romano-British material in this parcel suggest that this absence of evidence may not reflect a genuine absence of archaeological remains which are likely to be of **Low** to **Medium** significance.

### A.2.8 Parcel 11

- A.2.9 This parcel is assessed as being of **Low** archaeological potential.
- A.2.10 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre 18<sup>th</sup>-century enclosure.
- A.2.11 There are no archaeological features recorded within the parcel, and no archaeological investigation has taken place.
- A.2.12 The first edition OS (1883) shows this parcel as a number of smaller fields, comprising both regular fields to the east, and larger, less regular enclosures in the west, which are also shown on the Leiston tithe map. The tithe map identifies a variety of owners and tenants along with field names, although none are suggestive of the presence of pre-modern activity. The first edition map also records the presence of a small pond in the western part of the parcel. The pond is visible up to the 1949 OS mapping, but is visible only as cropmarks on aerial photography
- A.2.13 There is no clear evidence to suggest the presence of archaeological features within this parcel, although possible cropmarks of pre-modern features in nearby fields and a chance find of Romano-British material in this parcel suggest that this absence of evidence may not reflect a genuine absence of archaeological remains.

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### A.2.14 Parcel 12

- A.2.15 This parcel is assessed as being of **Low** archaeological potential.
- A.2.16 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre 18<sup>th</sup>-century enclosure.
- A.2.17 There are no archaeological features recorded within the parcel, and no archaeological investigation has taken place.
- A.2.18 The first edition OS (1883) shows this parcel as a number of smaller fields, comprising regular fields to the south, and slightly larger fields to the north. The map also records the presence of four small ponds within the parcel. The field divisions seen on the first edition mapping as well as the ponds are visible up to the 1949 OS mapping. At some point after this, the fields were amalgamated and the ponds filled in.
- A.2.19 Aerial photography revealed no further information.
- A.2.20 There is no clear evidence to suggest the presence of archaeological features within this parcel.

### A.2.21 Parcel 13

- A.2.22 This parcel is assessed as being of **High** archaeological potential.
- A.2.23 This parcel is presently under arable cultivation. The Grade II Fishers Farmhouse (15) lies in the northern half of the parcel. The parcel is identified by the Suffolk HLC as within an area of pre 18<sup>th</sup>-century enclosure.
- A.2.24 The Suffolk HER records a mound of unknown date towards the centre of the parcel (83). The mound is visible on aerial photography, but is not present on historical mapping. It is not possible to tell discern whether this mound is of archaeological origin.
- A.2.25 The first edition OS (1883) shows this parcel as comprising a number of irregular larger fields. The division of fields is still present on the 1950 OS mapping.
- A.2.26 Aerial photography reveals no further evidence, although the previous field boundaries are evident as cropmarks.
- A.2.27 It is very difficult to assess the potential for archaeological features within this parcel. Fisher's Farmhouse is of **High** significance, and the possible mound could be of **Medium** significance but there are no recorded archaeological features. Chance finds of Roman material from adjacent fields suggest that this absence of evidence may not reflect a genuine absence of archaeological remains. Remains of former field boundaries recorded on OS mapping are likely to be of **Low** significance.

### A.2.28 Parcel 14

- A.2.29 This parcel is assessed as being of **High** archaeological potential.
- A.2.30 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre 18<sup>th</sup>-century enclosure. The green route runs south west to north east across the south-eastern portion of the parcel.
- A.2.31 There are no archaeological features recorded within the parcel, and no archaeological investigation has taken place.
- A.2.32 The first edition OS (1883) shows this parcel as comprising two rectangular fields, with an old sand pit to the northern part of the parcel. The division of fields

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is still present on the 1950 OS mapping, and they would have been amalgamated after this date.

- A.2.33 Aerial photography reveals no further evidence.
- A.2.34 There is no clear evidence to suggest the presence of archaeological features within this parcel other than the sandpit which is of **Low** significance.

#### A.2.35 Parcel 15

- A.2.36 This parcel is assessed as being of **High** archaeological potential.
- A.2.37 This parcel is presently under arable cultivation, with two small areas of woodland towards the centre and southeast. A footpath runs north south across the centre of the parcel. The parcel is identified by the Suffolk HLC as within an area of 1950s agriculture. The green route runs south west to north east across the western portion of the parcel.
- A.2.38 A cropmark of a circular enclosure of unknown date is recorded towards the centre of the parcel (55). Additionally, a number of chance finds dating from the Bronze Age to the Post-medieval periods have been found within the vicinity of the parcel (e.g. 71).
- A.2.39 The first edition OS (1883) shows this parcel as comprising a number of smaller rectangular fields. The mapping also shows two ponds towards the centre of the southern part of the parcel, one of which lies within a small area of trees. The division of fields is still present on the 1950 OS mapping, although the pond is no longer present.
- A.2.40 Aerial photography reveals no further evidence, but the cropmark made by the circular enclosure is visible as are the old field boundaries.
- A.2.41 The existing archaeological evidence of several spot finds from the Bronze Age to the Post-medieval period within the parcel suggests activity in the area over a long period of time and that there is a potential for further, as yet unknown archaeological remains in the vicinity. Any remains are likely to be of **Low** to **Medium** significance depending on their nature.

#### A.2.42 Parcel 16

- A.2.43 This parcel is assessed as being of **Medium** archaeological potential.
- A.2.44 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre-18<sup>th</sup> century enclosure. The green route runs south west to east across the middle of the parcel.
- A.2.45 The Suffolk HER records a scatter of medieval artefacts in the eastern half of the parcel (**51**) towards Leiston Abbey (**20**).
- A.2.46 The first edition OS (1883) shows this parcel as comprising three smaller fields and part of a fourth to the east, two larger fields to the centre and a smaller rectilinear field to the west. A footpath is marked as running through the centre of the parcel north to south. The division of fields is still present on the 1950 OS mapping, and they would have been amalgamated after this period.
- A.2.47 Aerial photography reveals no further evidence.
- A.2.48 The presence of medieval artefacts to the eastern part of the parcel, medieval and Post-medieval chance finds in adjacent parcels as well as its proximity to Leiston Abbey suggests activity in the area during these periods and the potential for, as yet unknown, archaeological remains to be present. Any remains

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are likely to be medieval or Post-medieval in date and of **Medium** significance, while elements of former field boundaries and similar landscape features would be of **Low** significance.

#### A.2.49 Parcel 17

- A.2.50 This parcel is assessed as being of **High** archaeological potential.
- A.2.51 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre-18<sup>th</sup> century enclosure. The green route runs west to east across the middle of the parcel.
- A.2.52 The Suffolk HER records a scatter of medieval artefacts (51) across the parcel.
- A.2.53 The first edition OS (1883) shows this parcel as part of one large field. Historic mapping and aerial photography reveal little change to the parcel over time.
- A.2.54 The presence of the scatter of medieval artefacts across the parcel, medieval and Post-medieval chance finds in adjacent parcels as well as its proximity to Leiston Abbey (20) suggests activity in the area during these periods and indicates a potential for as yet unknown archaeological remains to be present. Any remains are likely to be medieval or Post-medieval in date and would probably be of **Medium** significance.

#### A.2.55 Parcel 18

- A.2.56 This parcel is assessed as being of **High** archaeological potential.
- A.2.57 This parcel is presently under arable cultivation and is identified by the Suffolk HLC as within an area of pre-18<sup>th</sup> century enclosure. The green route runs west to east across the northern half of the parcel.
- A.2.58 The Suffolk HER records a scatter of medieval artefacts (**50**) across the parcel.
- A.2.59 The first edition OS (1883) shows this parcel as part of one large field. Historic mapping and aerial photography reveal little change to the parcel over time.
- A.2.60 The presence of the scatter of medieval artefacts across the parcel, medieval and Post-medieval chance finds in adjacent parcels as well as its proximity to Leiston Abbey (**20**) suggests activity in the area during these periods and indicates a potential for as yet unknown archaeological remains to be present. Any remains are likely to be medieval or Post-medieval in date and would probably be of **Medium** significance.

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### Appendix B Gazetteer of Heritage Assets and Archaeological Records within the Study Area

Table B-2         Designated Heritage Assets				
Ref.	List ID	Asset Type	Description	Location
1	1199175	LB II	Peakhill Cottages	TM 41545 64913
2	1216380	LB II	Barn at Abbey Farm	TM 44442 64252
3	1227752	LB II	Wood Farmhouse	TM 43691 63044
4	1228246	LB II	Moat Farmhouse	TM 43186 65115
5	1287303	LB II	Gate and Gate Piers at Junction of Leiston Road and Onner's Lane	TM 44006 65528
6	1287528	LB II	24, Westward Ho	TM 44012 62962
7	1287532	LB II	Crosswing Farmhouse	TM 42506 63335
8	1287643	LB II	Hill Farmhouse	TM 44019 64414
9	1287646	LB II*	Leiston House Farmhouse	TM 42829 62928
10	1215749	LB II*	Buxlow Manor	TM 41260 62807
11	1215753	LB I	St Mary's Abbey TM 44521 6417	
12	1227893	LB II	Westhouse Farmhouse TM 41723 6340	
13	1268290	LB II	The Guesten Hall at Abbey Farm TM 44412 6426	
14	1215754	LB II	Retreat House	TM 44468 64172
15	1216275	LB II	Fisher's Farmhouse	TM 43539 63680
16	1228266	LB II	Bob's Cottage	TM 44603 65222
17	1228268	LB II	Theberton House Stables	TM 44566 65162
18	1287237	LB II	Gate and gate piers 105 metres south east of main entrance to Theberton House	TM 44568 65013
19	1228378	LB II*	Theberton House	TM 4452465111
20	1014520	SM	Leiston Abbey (second site) and moated site	TM 44454 64215

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Ref	Description
21	Field boundary
22	Field Boundary
23	Runway
24	Runway
25	Runway
26	perimeter track
27	Field boundary
28	Field Boundary
29	Field Boundary
30	Field Boundary
31	Field Boundary
32	Field Boundary
33	Airfield Buildings, including hangars and accommodation

### Table B-3 Features Noted in Assessment

Table B-4 F	Features Recorded b	y AMIE
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Ref	ID	Description
34	34 1368257 Leiston Branch Railway	
35	503003	Leiston Station
36	392033	Leiston Abbey
37	1495882	Friends Meeting House
38	1401968	Leiston Airfield

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Ref	ID	Description	
40	660692	Leiston Abbey Guesten Hall	Excavation
41	1404975	Land at 91 Abbey Road	Watching brief
42	646871	Leiston Abbey Guesten Hall	Excavation
43	1051428	Leiston Abbey	Geophysical survey
44	1478552	Leiston Abbey Barn	Archaeological survey
45	1317914	Leiston Hall Farm, Waterloo Avenue	Evaluation
46	646870	Leiston Abbey	Excavation
47	646872	Leiston Abbey	Excavation
48	1066960	Leiston Abbey	Geophysical survey
49	1311582	Leiston Hall Farm, Waterloo Avenue	Desk-based assessment

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### Table B-6 Features recorded by Suffolk County HER

Ref	ID		Description	Location
50	MSF11525	Undated	artefact scatter	TM 444 638
51	MSF11526	Medieval	artefact scatter	TM 4425 6385
52	MSF1262	Medieval	earthwork, deserted settlement, village green	TM 413 631
53	MSF14091	Medieval	church, churchyard, minster	TM 4388 6254
54	MSF16190	Unknown	wood, earthwork	TM 431 634
55	MSF16191	Unknown	circular enclosure	TM 4379 6342
56	MSF16787	Unknown	field system	TM 442 644
57	MSF2058	Medieval	moat	TM 431 651
58	MSF21298	Medieval	wall, building	TM 44442 64267
59	MSF22245	Medieval to Post Medieval	town	
60	MSF22764	20th century to Cold War	airfield, aircraft hangar (type T2), barracks, blister aircraft hangar, fuel store, military airfield	TM 43111 64342
61	MSF22765	Medieval to Post Medieval	wood	TM 42665 64795
62	MSF22766	Post Medieval	wood	TM 43071 64081
63	MSF2326	Roman	villa, building	TM 420 623

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Ref	ID		Description	Location
64	MSF2340	Medieval	abbey, moat	TM 444 642
65	MSF24065	Roman	pottery kiln	TM 4434 6354
66	MSF24870	Medieval	wall, feature, well	TM 4447 6418
67	MSF25178	Unknown	fishpond	TM 4314 6492
68	MSF26875	19th century to 20th century	railway station	TM 4424 6289
69	MSF26877	19th century to Modern	Friends Meeting House, Friends Burial Ground	TM 4430 6259
70	MSF26878	18th century to Modern	engineering works, iron works, railway, water tower, engine house, museum	TM 4442 6254
71	MSF11528	Roman		TM 4430 6348
72	MSF14283	Medieval		TM 4431 6386
73	MSF22680	Unknown	Harrow Farm, Harrow Lane	TM 4240 6461
74	MSF25959	Second World War		TM 4334 6398
75	MSF25960	Second World War	aircraft dispersal pen, Theberton airfield	TM 4322 6392
76	MSF26873	Post Medieval to Cold War	Abbey Road	TM 4441 6330
77	MSF29488	Undated	outline record: Leiston Abbey community excavation 2013 (Digventures)	TM 443 642
78	MSF29489	Undated	outline record: Leiston Abbey community excavation 2014 (Digventures)	TM 443 641
79	MSF30764	Undated	outline record: mile stone	TM 416 647
80	MSF30769	Undated	outline record: cropmarks - pit alignment	TM 436 647
81	MSF30770	Undated	outline record: cropmarks - moat?	TM 433 644
82	MSF11527	Roman	artefact scatter	TM 4441 6360
83	MSF16192	Unknown	mound, trackway	TM 4356 6355
84	MSF16786	Unknown	ring ditch	TM 4439 6430
85	MSF2059	Medieval	findspot	TM 4377 6546
86	MSF2323	Medieval	church, churchyard	TM 4137 6311

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Ref	ID	Description		Location
87	MSF2326	Roman	villa, building	TM 420 623
88	MSF 2061	Unknown	prospect mound or barrow	TM 447 646

### Table B-7 Archaeological Interventions recorded by Suffolk County HER

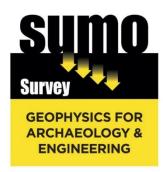
Ref	ID	Description	Location
91	ESF18145	Monitored excavation of two post holes for information board at Leiston Abbey	TM 4445 6420
92	ESF19783	91 Abbey Rd, Leiston	TM 44342 63542
93	ESF20499	Leiston Hall Farm, Leiston	TM 4376 6254
94	ESF20589	EDF Cable Trench, Leiston Abbey	TM 4447 6418
95	ESF21866	Evaluation, Abbey Farm Barn, Leiston	TM 4444 6426
96	ESF21921	Evaluation Report, Tutors Rooms, Leiston Abbey	TM 4439 6424
97	ESF21921	Evaluation Report, Tutors Rooms, Leiston Abbey	TM 4439 6424
98	ESF21926	Monitoring, Rear of 8-18 St Margaret's Crescent, Leiston	TM 4394 6269
99	ESF21928	Monitoring, Hall Farm, Leiston	TM 4374 6253
100	ESF21928	Monitoring, Hall Farm, Leiston	TM 4374 6253
101	ESF21922	Monitoring of cable trench, Leiston Abbey, Leiston	TM 4445 6417



Volume 9, Appendix 9C - Geophysical Survey Report

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Volume 9 Appendix 9C Geophysical Survey Report |



### **GEOPHYSICAL SURVEY REPORT**

## Green Rail Route, Sizewell, Suffolk

Client

### **Cotswold Archaeology**

For

**EDF Energy** 

Survey Report

### 14282C

Date

March 2020



### Survey Report 14282C: Green Rail Route, Sizewell, Suffolk

Survey dates	12 - 15 January 2016 4 - 7 February 2019 1 May 2019
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Field Team	Amy Dunn BA James Lorimer BA Nicole Burton BA MSc Jack Larner Steven Chetwynd Bsc
Report Date	02 March 2020
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- Appendix C OASIS Data Collection Form

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		Interpretation
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### 2. SURVEY TECHNIQUE

Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site.

Bartington Grad 601-2Traverse Interval 1.0mSample Interval 0.25mBartington Cart SystemTraverse Interval 1.0mSample Interval 0.125m

#### 3 SUMMARY OF RESULTS

3.1 A magnetometer survey of the Green Rail Route, Sizewell has detected no anomalies of probable archaeological origin. Several ditch-like and pit-like responses have been recorded in Area 3 and have been interpreted as possible archaeology, though they appear to be connected to a former field boundary. A number of uncertain responses, three field boundaries and numerous land drains have been detected. The locations of two service pipes have also been marked.

#### 4 INTRODUCTION

- 4.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for railway development. This survey forms part of an archaeological investigation being undertaken by **Cotswold Archaeology** on behalf of **EDF Energy**.
- 4.2 Site details

NGR / Postcode	TM 441 639, TM 448 636 / IP16 4TB, IP16 4TA		
Location	The site is located 3km west of Sizewell, 5.5km east of Saxmundham and is on the northern and western outskirts of Leiston.		
HER	Suffolk		
HER Code	LCS 279, LCS 280		
OASIS Ref.	<mark>sumog</mark>	<mark>eop1-339765</mark>	
District	East S	uffolk	
Parish	Leistor	า	
Topography	Areas 1 to 6 are flat; Areas 7 to 9 generally slope from the north down to the south.		
Current Land Use	Farmland		
Geology (BGS 2020)	Bedrock: Crag group - sand. Superficial: Lowestoft formation – diamicton / Lowestoft formation - sand and gravel.		
Soils (CU 2020)	Soilsca Soilsca	ape 10: Freely	Iraining slightly acid but base-rich soils. draining slightly acid sandy soils. permeable seasonally wet slightly acid but base- y soils.
Archaeology (AMEC 2015)	Within Areas 8 and 9 lie numerous find spots:		
(HG 2020)	49	MSF11525	Scatter of red tile over most of field surface (S1) (TM 444 638).
	82	MSF26807	Extensive scatter of heavily burnt flints adjacent to a small stream (TM 449 635).
	83	MSF26809	Two silver Henry II pennies found in 1994 and in 2006 a further hoard of six Henry II pennies (1163-1167) were found (TM 449 636).
	150	MSF11523	`Masses' of dark pottery (possibly medieval), much of it heavily burnt (TM 453 635).
	151	MSF11524	Scatter of medieval and Romano-British pottery found on field surface by farmer (S1) (S2) (TM 449 636).
	153	MSF12096	Finds scatter of medieval and Romano-British pottery found by farmer during ploughing and subsequent walking (TM 449 636).
	154	MSF12097	Finds scatter identified whilst farming, and subsequent random walking (TM 448 635).

N/AMSF16191Unclear cropmark of large circular/sub square<br/>enclosure (TM 4379 6342).Survey MethodsMagnetometer survey (fluxgate gradiometer)Study Area34 ha

#### 4.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

#### 5 RESULTS

The survey has been divided into nine survey areas (Areas 1-9).

#### 5.1 **Probable Archaeology**

5.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

#### 5.2 Possible Archaeology

5.2.1 Several well-defined linear and pit-like responses have been detected in the south of Area 3. The linear anomalies appear to form an enclosure with an internal division and another linear extending westward beyond the limits of the survey area. The western side of the possible enclosure butts up against a former field boundary that is recorded on 1884 OS mapping; although it is possible that the enclosure is contemporaneous with the field boundary, it could be earlier or later. The responses have been classified as *Possible Archaeology*.

#### 5.3 Uncertain Origin

- 5.3.1 Two parallel linear responses and a circular anomaly have been detected in Area 3; they are in close proximity to the possible archaeological anomalies (see 5.2.1) but are magnetically much weaker. The responses could be due to natural or modern processes but given the proximity to the potential enclosure an archaeological origin should not be entirely dismissed.
- 5.3.2 A couple of linear trends and discrete responses have been identified in Area 6, they are isolated and form no obvious patterns that would suggest an archaeological origin; they are probably agricultural, natural or modern in origin.
- 5.3.3 Several fragmented ditch lengths / pit-like anomalies visible in the south-west of Area 8 have been classified as *Uncertain Origin*. The isolated nature and limited extent of the anomalies prevents any firm interpretation.
- 5.3.4 A well-defined "L-shaped" anomaly has been detected in the north of Area 8. It appears to extend beyond the limits of the survey and there are a few linear trends nearby; while an archaeological interpretation is possible, the response could be an old drainage channel.
- 5.3.5 A few pit-like anomalies and a trend are recorded in the centre of Area 8 and the north-west of Area 9. They lack the defined morphology of anomalies that would normally be interpreted as of archaeological provenance; they are isolated and form no discernible pattern. These

anomalies probably reflect variations in pedology or underlying geology but may be due to agricultural causes.

5.3.6 At the south-east end of Area 9 are a few curious ditch and pit-like anomalies which may be of archaeological interest as it is close to a find spot (150). There are hints of an enclosure, but magnetic background levels are quite "noisy" hampering a clear interpretation. In addition, there is an area of hard standing directly adjacent to the feature and the results could be due to old drainage channels.

#### 5.4 Former Field Boundary

5.4.1 Two indistinct curvilinear/linear responses in Area 6 (incorporating many ferrous elements) correspond to the lines of former boundaries shown on 1844 OS mapping. Only small sections of these features are represented in the magnetic data. Linear responses detected in Areas1, 3 and 4 also correlate to the locations of former field boundaries recorded on historic mapping.

#### 5.5 Agricultural – Ploughing / Land Drains

- 5.5.1 Numerous closely spaced, parallel magnetic responses have been detected in Areas 6 and 7 and are evidence of relatively modern ploughing.
- 5.5.2 The locations of several land drains have been detected in Areas 1, 3, 5 and 6.

#### 5.6 Natural / Geological / Pedological

5.6.1 A couple of broad and sinuous anomalies have been recorded in Area 6 and are relatively weak; therefore, they are likely to be natural in origin.

#### 5.7 Pipes / Services

5.7.1 Strong dipolar responses have been recorded in Areas 1, 6 and 7 which mark the locations of service pipes.

#### 5.8 Ferrous / Magnetic Disturbance / Pond

- 5.8.1 A rectangular area of increased response in the east of Area 9 coincides with a former pond which can be seen on BGS mapping and an area of magnetic disturbance immediately west of this is also likely to be associated with the pond.
- 5.8.2 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

### 6 DATA APPRAISAL & CONFIDENCE ASSESSMENT

6.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is poor. The results from this survey indicate the presence of ditch-like features; as a consequence, the survey is deemed to have worked well.

#### 7 CONCLUSION

7.1 The magnetometer survey has detected no anomalies that could be interpreted as being of a probable archaeological origin; however, a number of ditch-like responses have been recorded in Area 3 and have been interpreted as possible archaeology. Several uncertain anomalies and trends have been detected throughout the dataset. Six former field boundaries are visible in the magnetic data in Areas 1, 3, 4 and 6. Numerous land drains and evidence of relatively modern ploughing have been recorded throughout the survey areas. Anomalies that are likely to be natural in origin have been detected and two areas of magnetic disturbance have also been recorded. A broad rectangular response in Area 9 is likely to be due to a former pond. The locations of two service pipes have also been marked.

#### 8 REFERENCES

AMEC 2015	<i>UK EPR Sizewell C - Main Site</i> . Historic Environment Desk-Based Assessment. Doc ref: SZC-KR1008-U0-000-REP.
BGS 2020	British Geological Survey, Geology of Britain viewer [accessed 02/03/2020] <i>website</i> : ( <u>http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps</u> )
ClfA 2014	Standard and Guidance for Archaeological Geophysical Survey. Amended 2016. ClfA Guidance note. Chartered Institute for Archaeologists, Reading <u>http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics 2.pdf</u>
CU 2020	The Soils Guide. Available: www.landis.org.uk. Cranfield University, UK. [accessed 02/03/2020] website: <u>http://mapapps2.bgs.ac.uk/ukso/home.html</u>
EAC 2016	EAC Guidelines for the Use of Geophysics in Archaeology, European Archaeological Council, Guidelines 2.
EH 2008	Geophysical Survey in Archaeological Field Evaluation. English Heritage, Swindon https://content.historicengland.org.uk/images-books/publications/geophysical- survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/
HG 2020	HeritageGateway[accessed02/03/2020]website:https://www.heritagegateway.org.uk/Gateway/

Appendix A - Technical Information: Magnetometer Survey Method, Processing and Presentation

#### Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

#### **Grid Positioning**

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station rebroadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

#### Instrumentation: Bartington Grad 601-2

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m. The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

Data Processing Zero Mean Traverse Step Correction (De-stagger)	This process sets the background mean of each traverse within each grid to zero. The operation removes striping effects and edge discontinuities over the whole of the data set. When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.
<b>Display</b> Greyscale/ Colourscale Plot	This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.

#### Presentation of results and interpretation

The presentation of the results includes a 'minimally processed data' and a 'processed data' greyscale plot. Magnetic anomalies are identified, interpreted and plotted onto the 'Interpretation' drawings.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: Abbey Wall or Roman Road. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: Probable, or Possible Archaeology. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification Possible.

#### **Interpretation Categories**

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall,* etc.) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

Archaeology / Probable Archaeology	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
Possible Archaeology	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
Industrial / Burnt-Fired	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
Former Field Boundary (probable & possible)	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
Ridge & Furrow	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
Agriculture (ploughing)	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
Land Drain	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
Natural	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
Magnetic Disturbance	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
Service	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
Ferrous	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
Uncertain Origin	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of <i>Possible Archaeology / Natural</i> or (in the case of linear responses) <i>Possible Archaeology / Agriculture</i> ; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

#### Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

# **OASIS DATA COLLECTION FORM: England**

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#### **Printable version**

### OASIS ID: sumogeop1-339765

#### **Project details**

-	
Project name	Sizewell C
Short description of the project	Geophysical (magnetometer) survey
Project dates	Start: 14-01-2019 End: 15-02-2019
Previous/future work	Not known / Not known
Any associated project reference codes	14282 - Contracting Unit No.
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	NONE None
Monument type	NONE None
Significant Finds	NONE None
Significant Finds	NONE None
Methods & techniques	"Geophysical Survey"
Development type	Not recorded
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded
Solid geology	CAMBRIAN
Solid geology (other)	Crag Group sand, Chillesford Church Sand Member
Drift geology (other)	Lowestoft Formation sand and gravel; peat; Diamicton
Techniques	Magnetometry

#### **Project location**

Country	England
Site location	SUFFOLK SUFFOLK COASTAL LEISTON Sizewell C
Postcode	IP164RH
Study area	72.9 Hectares
Site coordinates	TM 47 65 52.227096080424 1.617227187207 52 13 37 N 001 37 02 E Point
Site coordinates	TM 45 63 52.210048758979 1.586552405854 52 12 36 N 001 35 11 E Point
Site coordinates	TM 39 68 52.257574264664 1.502432494564 52 15 27 N 001 30 08 E Point

12/07/2019	OASIS FORM - Print view
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Site coordinates	TM 45 62 52.201075150762 1.585829018313 52 12 03 N 001 35 08 E Point
Site coordinates	TM 40 60 52.185341524777 1.51138288496 52 11 07 N 001 30 40 E Point
Site coordinates	TM 42 62 52.202409742143 1.542012269371 52 12 08 N 001 32 31 E Point
Site coordinates	TM 46 62 52.200626597374 1.60043384569 52 12 02 N 001 36 01 E Point
Site coordinates	TM 44 63 52.210495613125 1.571944268582 52 12 37 N 001 34 19 E Point
Site coordinates	TM 45 65 52.227995912477 1.588000319552 52 13 40 N 001 35 16 E Point

#### **Project creators**

Name of Organisation	Sumo Geophysics
Project brief originator	Cotswold Archaeology
Project design originator	Sumo Geophysics
Project director/manager	Sumo Geophysics
Project supervisor	Sumo Geophysics
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Not known

#### **Project archives**

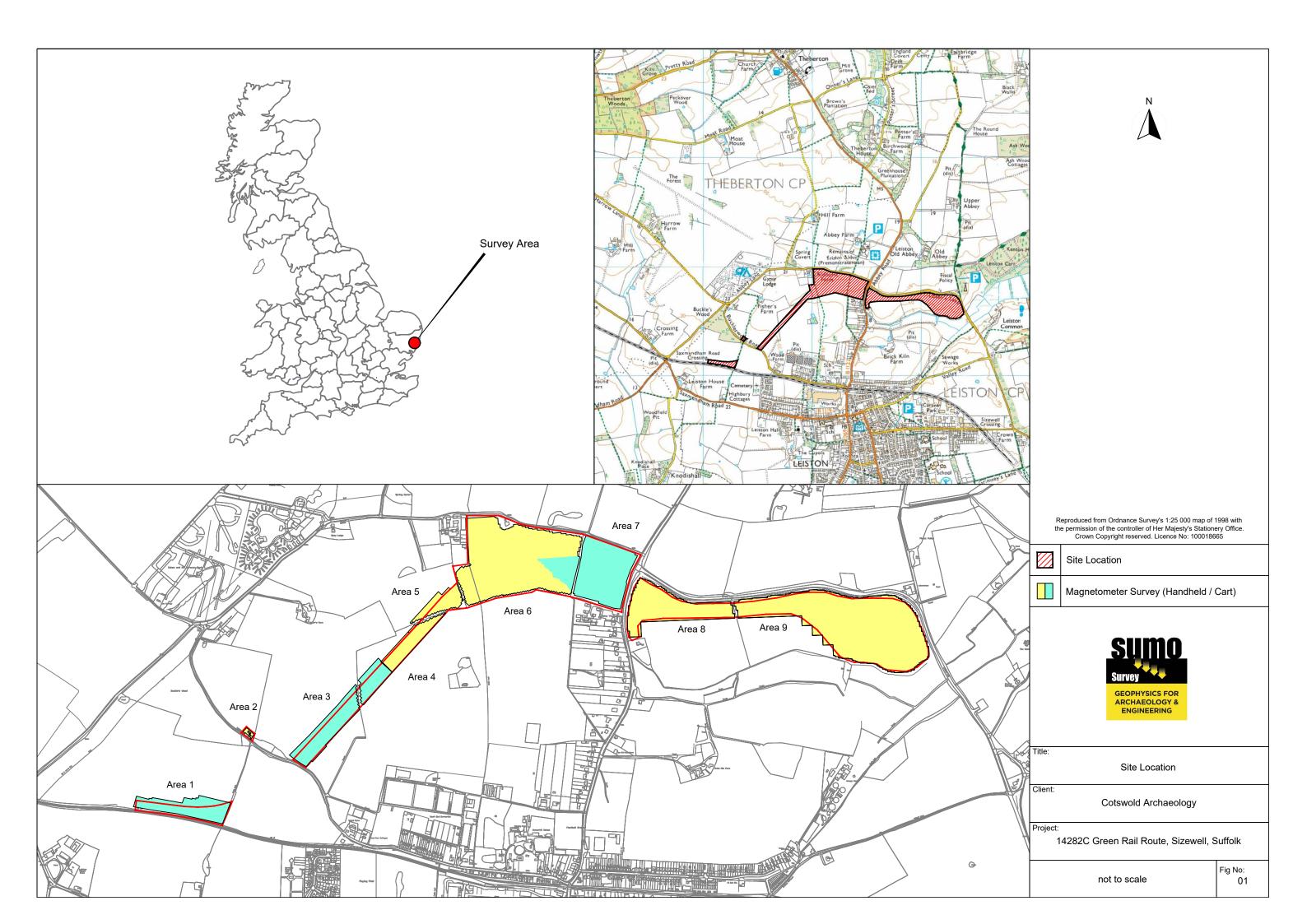
Physical Archive Exists?	No
Digital Archive recipient	Suffolk HER
Digital Contents	"Survey"
Digital Media available	"Geophysics"
Paper Archive recipient	Suffolk HER
Paper Contents	"Survey"
Paper Media available	"Drawing","Report","Survey "
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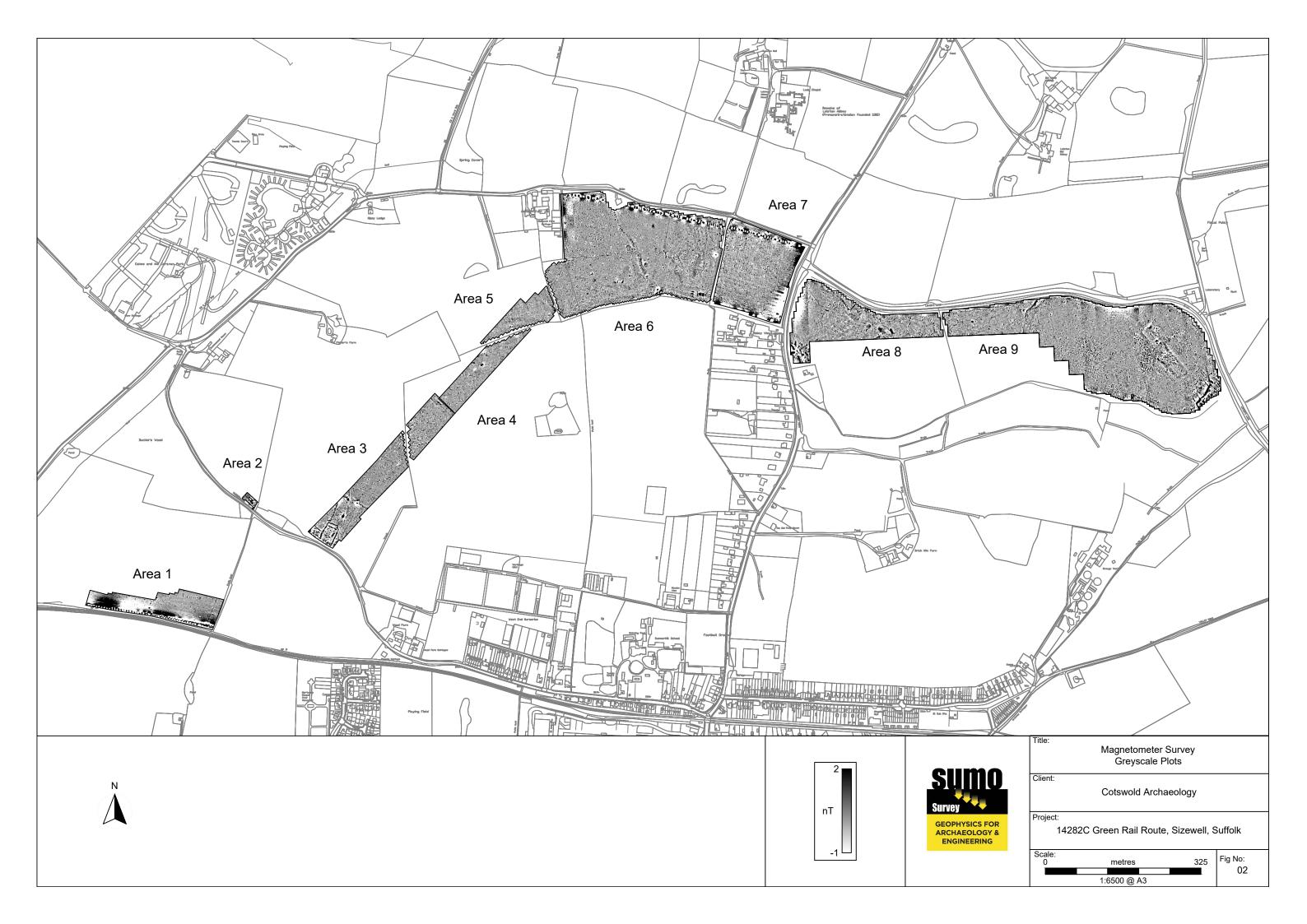
Entered by Entered on Sumo Services Ltd (Bradford) (info@gsbsumo.com) 12 July 2019

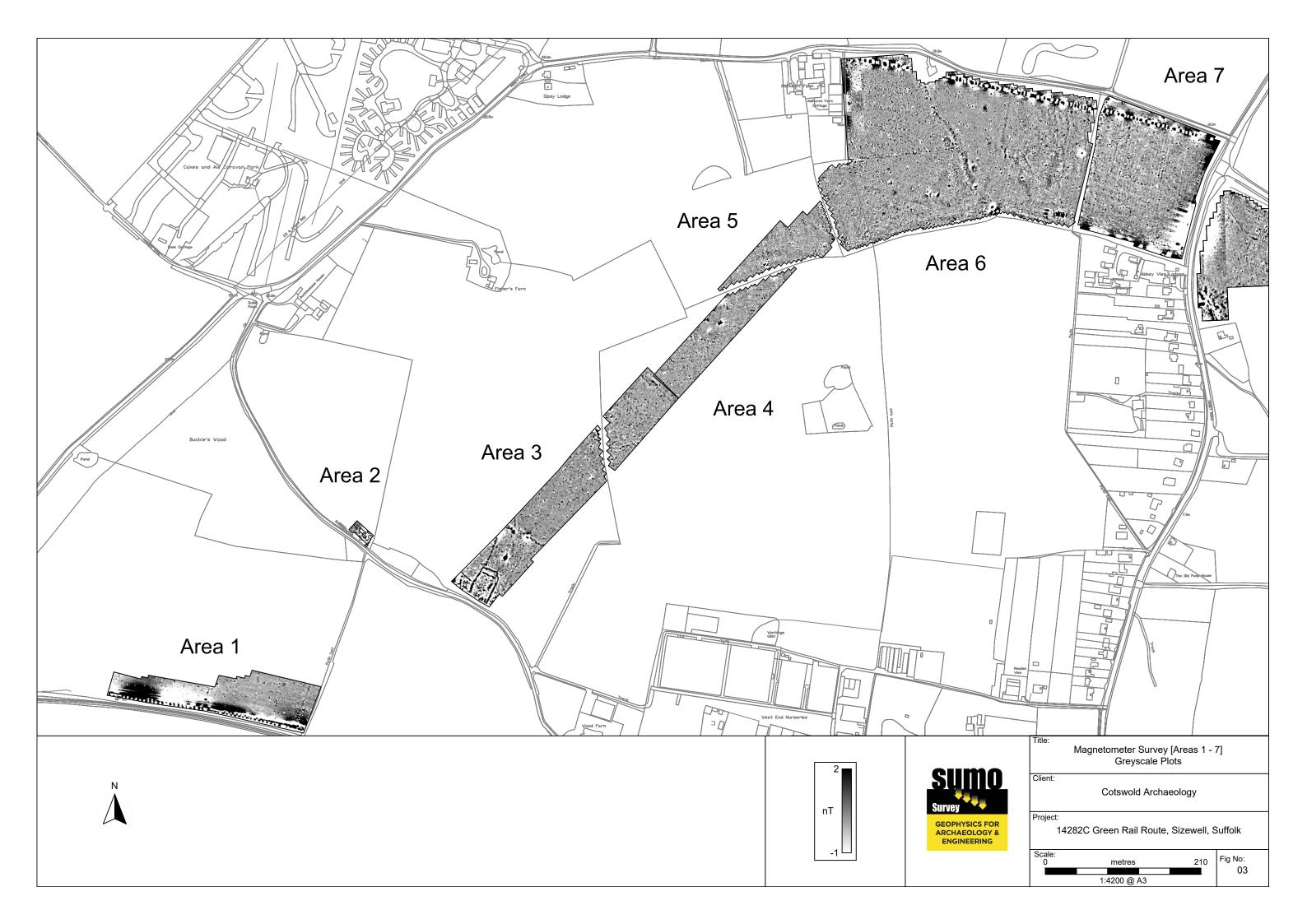
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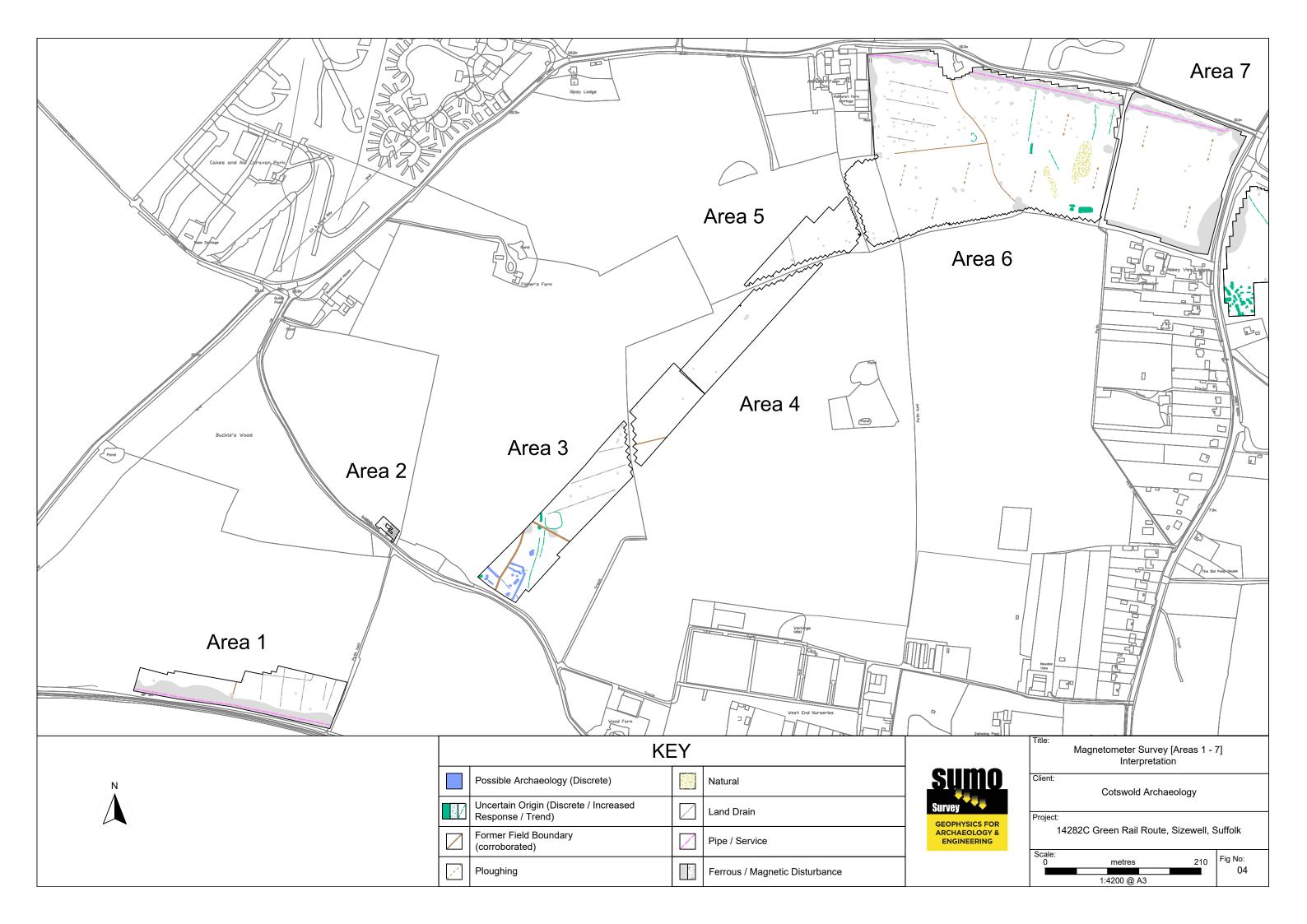
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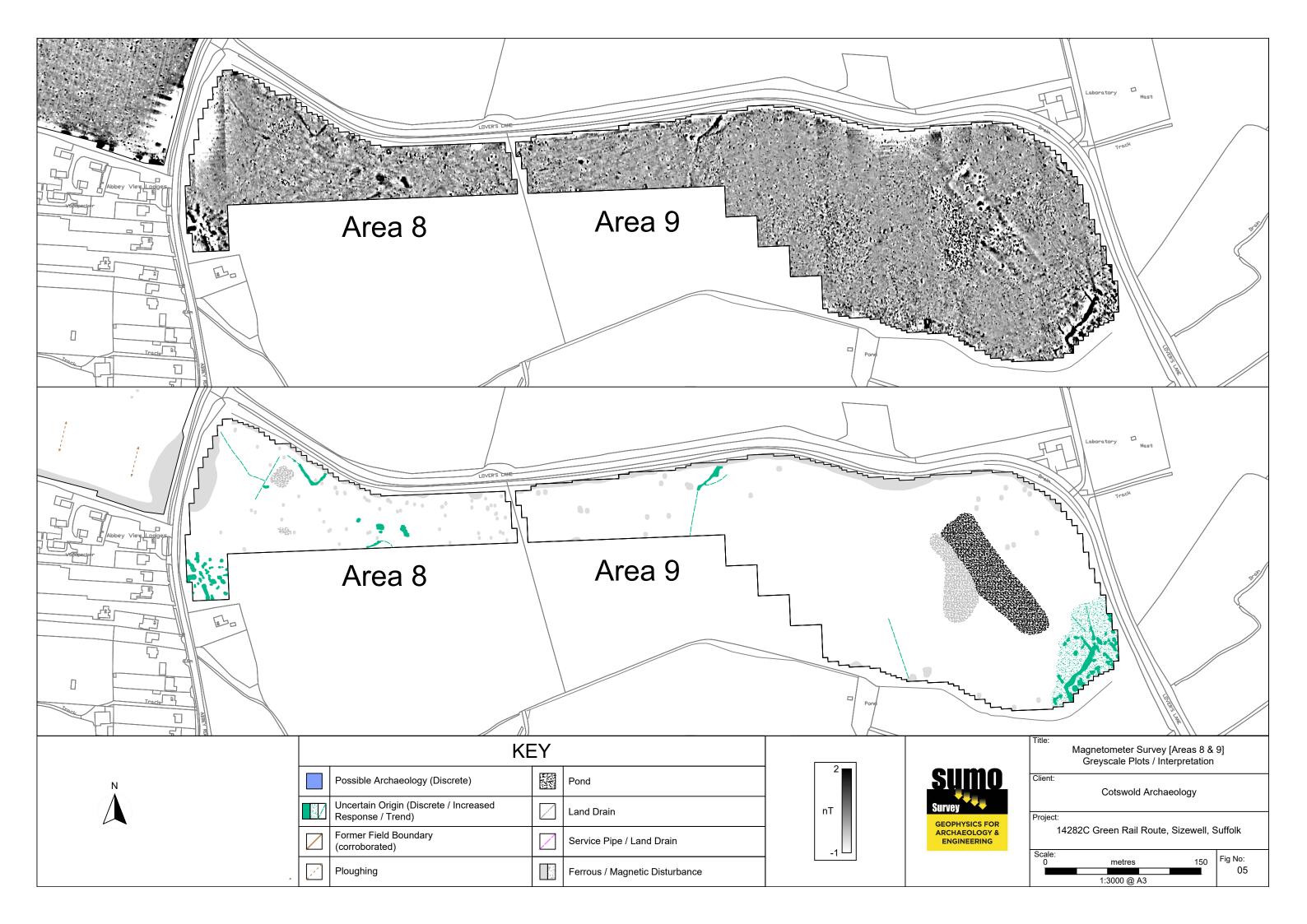
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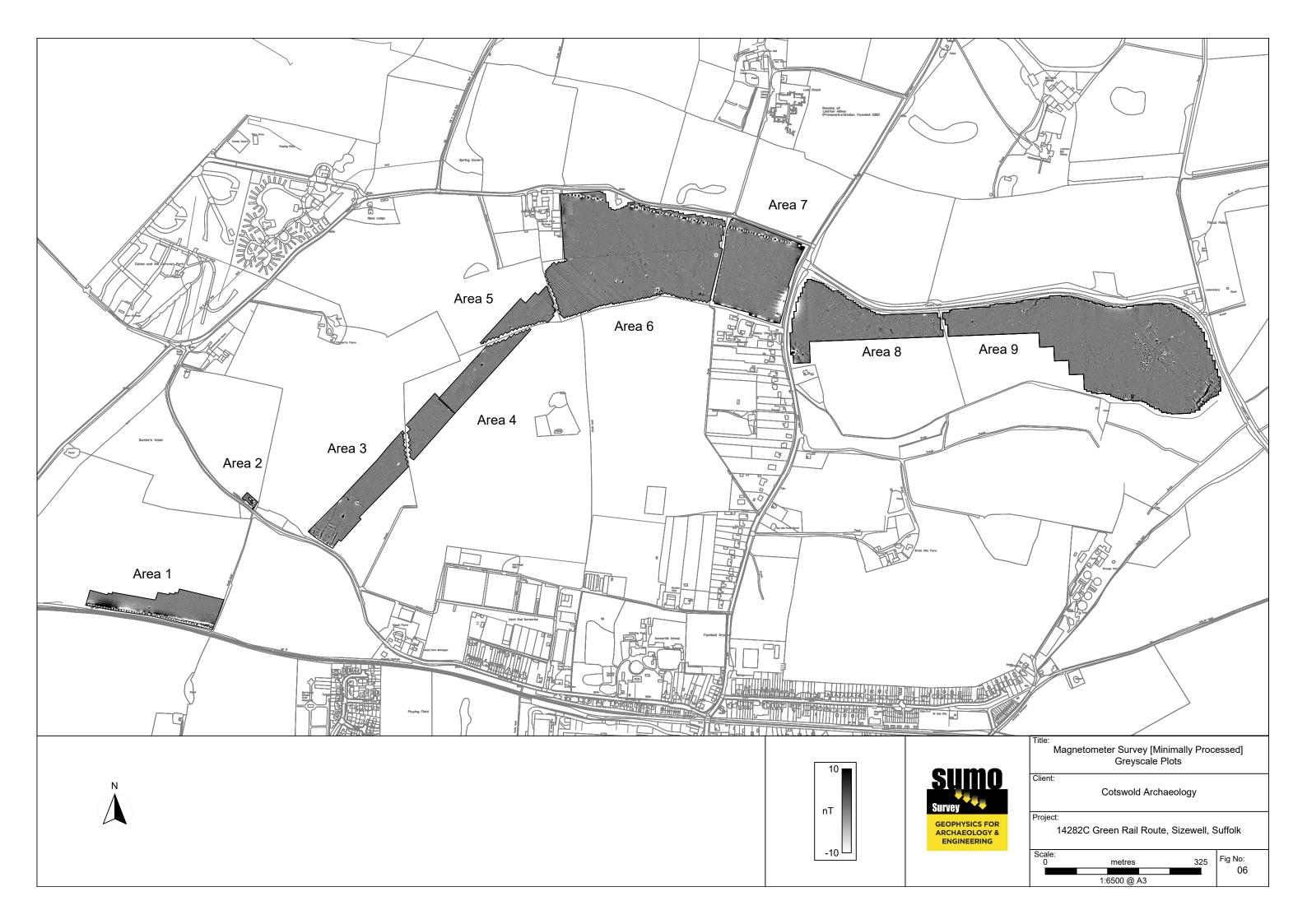


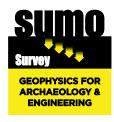












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Volume 9 Appendix 9D Interim Fieldwork Summary |





# Green Rail Route Sizewell C Suffolk Interim Fieldwork Summary



for

EDF Energy

CA Project: SU0043 Site Code: LCS 278 and LCS 279

December 2019





# Green Rail Route Sizewell C Suffolk

# Interim fieldwork Summary

CA Project: SU0043



Document Control Grid							
Revision	Date	Author	Checked by	Status	Reasons for revision	Approved by	
v2	13/12/19	S. Cass	RG	Draft	Internal review		
v3	17/12/19	S. Cass	RVG	Issued	Final Approval	RVG	
V4	29/01/20	S. Cass	RVG	Issued	Final Corrections	RVG	

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## SUMMARY

Site Name:	Green Rail Route					
Location:	Leiston, Sizewell C, Suffolk					
NGR:	640677 270295					
Туре:	Evaluation					
Date:	12 August 2019– 29 November 2019					
Location of archive:	To be deposited with Suffolk County Council Archaeological					
	Service (SCCAS)					
Site Code:	LCS 278 and LCS 279					

An archaeological evaluation was undertaken by Cotswold Archaeology between August and December 2019 on land north-west of Leiston as part of pre-planning investigation works for Sizewell C, Suffolk. One hundred and fifty-seven trenches were excavated. The evaluation revealed activity on site dating to the Prehistoric, Roman and medieval periods as well as modern field boundaries.

A cluster of pits and postholes (of prehistoric date – generally Late Bronze Age-Early Iron Age) were identified around Trenches 132, 141-146 and 155-152 near the northern edge of the site on the edge of a ridgeline in the landscape overlooking the shallow river valley passing east-west just to the south of this area. This may be indicative of an area of habitation and as such is likely to require further excavation to understand.

Extensive medieval deposits were encountered in Trench 43, possibly relating to internal deposits and footings within a small structure. Only surface finds were collected from these features as it was thought better to preserve this area for future excavation.

An area of brick waste in Trench 137 suggests that three tear-drop shaped signals identified on the geophysics between Trenches 136 and 137 are most likely to be brick kilns with rakeout holes. The brick fragments recovered in Trench 137 are of post-medieval date and are similar in character to those visible in the walls of Leiston Abbey House and it is possible that this site may have been used to provide material for construction and/or repairs to the Abbey properties. Further excavation will be required to ascertain the actual dating of these features and to see if they are contemporary with any known work in the Abbey. A possible trackway was noted potentially linking the ford/river crossing at Abbey Road on the northern edge of Leiston to the current Aldhurst Farm – flanking ditches/gullies and a metalled surface were noted in one trench, aligning with a possible anomaly noted on the geophysical survey.

#### INTRODUCTION

This summary report presents the preliminary results of an archaeological evaluation at Leiston, Sizewell C, Suffolk (centred at NGR: 643684 263457).

#### The site

The proposed development area is approximately 22ha comprising parts of 7 arable fields just to the north east of the town of Leiston. The site is bounded by the railway line to the south, crosses Buckleswood Road and then heads northeast towards Abbey Lane and Abbey Road. The site lies between 20m-15m AOD, with a shallow valley forming the southern boundary of the north-eastern end of the site at a height of *c*.10m AOD.

The underlying bedrock geology of the area is mapped as Crag Group – Sand of the Quaternary and Neogene Periods with overlying superficial deposits of Lowestoft Formation – Diamicton, changing to Lowestoft Sands and Gravels towards the north-eastern corner of the site near Abbey Road (BGS 2019). Clay substrate, with occasional patches of gravel and sand, was revealed in all the trenches.

#### Archaeological background

Evidence for occupation and utilisation of the landscape surrounding Sizewell from the prehistoric through to World War Two, derives from sources such as findspots, aerial photography and built heritage assets. The following section is a summary of the known archaeological background for the Sizewell C Main Site: Rail Route options; a more detailed review of known assets for the complete Sizewell C development area can be found in the WSI (AMEC 2015a) and a Desk-Based Assessment (AMEC 2015b).

The settlement at Leiston, 1km south-west of the site, is recorded in the Domesday Book as *Leistuna*. Leiston Abbey was constructed on the coast *c*.3.5km to the northeast of the site in the late 12th century, before moving to its present site approximately 0.2km north of the site in the 14th century, where it continued to be occupied until the Dissolution. Sizewell, to the east of the site also had a burgeoning 13th-century settlement and was granted a market in

1237. Sizewell appears to have been of a relatively similar size to Leiston throughout the medieval period, before declining in the post-medieval period, possibly due to coastal erosion. It is therefore likely that the site formed part of the agricultural hinterland surrounding Leiston throughout the medieval period, possibly forming part of lands owned by the Abbey.

HER records include the reporting of a scatter of metalwork found by the farmer, including both groat and cut halfpenny coinage and `many Nuremberg tokens' on land at the northern end of the evaluation area (LCS 012, in the area around Trenches 116-143) as well as a scatter of red tile fragments across the eastern end of the site (around Trenches 145-161). An undated large sub-square cropmark enclosure is noted near the middle of the site, around Trenches 73-84 (LCS 025)

Geophysical surveys of the site have indicated the presence of potential field boundaries and some large discrete features (possible quarrying pits or natural hollows) and areas of disturbance. A number of other possible anomalies are visible, these are probably related to post-medieval field boundaries, agricultural activity or are of geological origin (SUMO 2015).

## RESULTS

The following section constitutes a brief summary of the results of the evaluation as defined at excavation. Sample processing, additional finds identification and dating are still ongoing.

Archaeological features were present across the evaluated area. The results of the evaluation correlated well with the greyscale output derived from the geophysical survey. A small number of ditches were present in the evaluation that were not anticipated from the geophysics, mostly in the areas where the natural substrate was more clayey, or where they were masked by a high density of archaeological features with strong responses.

Trenches 85-88 were not excavated due to access constraints at this time, SCCAS have reserved the option to ask for these trenches to be opened at a later date when access is easier.

## Prehistoric

A wide area of prehistoric features and artefacts were uncovered across the northern end of the site, mainly Late Bronze Age to Early Iron Age but with some Neolithic and Late Iron Age artefacts as well. These features were identified in Trenches 91, 92, 113, 114, 119-120, 123, 132, 141-144 and 147 and include a variety of ditches, pits and postholes. Undated features within Trenches 146 and 152 probably also belong to this period. No functions were inferred for these features at this time, although further analysis may indicate if domestic occupation is present on the site.

Two trenches (Trenches 15 and 19) in the southern half of the site (Area 2) contained very small quantities of Iron Age pottery, recovered from sealed deposits.

A possible trackway/metalled surface was identified in Trench 119, consisting of two flanking ditches/gullies with a cobbled surface between them. This may be connected to a potential return from the magnetometer survey, passing between the present Aldhurst Farm and the stream crossing to the south-east at the top edge of Leiston (also potentially passing by the possible aforementioned brick kilns). Dateable material was recovered from one of the flanking gullies as well as from within the cobbled surface, all suggesting a prehistoric date for this feature.



Trench 119, Possible trackway facing south

#### Roman

A single pit in Trench 35 (Area 2) contained a sherd of probable Roman pottery, two smaller ditches/gullies in this trench were not positively dated and a large modern rubbish pit was also identified. In the northern half of the site (Areas 4 and 5) a pit in Trench 107, a quarry pit in Trench 108 and a ditch in Trench 110 all contained very small fragments of pottery. A fragment of Roman brick or tile was identified alongside a sherd of pottery, these were residual finds within a medieval deposit in Trench 138. Roman pottery was also recovered from a ditch in Trench 129 elsewhere dated as medieval.

### Saxon

A single sherd of Saxon pottery was recovered from a colluvial layer in Trench 149.

## Medieval

A significant collection of medieval deposits were identified in Trench 43, in Area 2. These deposits were assessed as being potentially structural and/or part of internal floor layers within a structure extending beyond the edge of the trench. As such they were cleaned and planned only, with surface finds recovered and recorded, with a view to preserving the deposits for future excavation. Additional features were located surrounding this area in Trenches 27-28, 42, 44-45, 50 and 60. A possible small enclosure or land parcel which contained medieval pottery was identified in Trenches 62-63 (Area 3). A hollow noted in the northern end of Trench 84 also contained sherds of medieval pottery.



Trench 43, showing possible Roman structural deposits including wall footings and/or floor layers (1m scale)

### Post-medieval and modern

A brick waste dump was identified in Trench 137, towards the north-eastern end of the site. The geophysical survey data has since been reinterpreted, identifying three possible kiln and associated rake-out features present as three teardrop shaped anomalies. The brick waste present in Trench 137 is most likely associated with these features. Initial dating of the brick fragments recovered suggest a post-medieval date, furthermore, the bricks were visibly similar to those used in Abbey House to the north. The possibility exists that this was a small-scale brick production site for use in the Abbey grounds, with easy access to the clay

deposits to the north and west, and sited adjacent to the small stream immediately to the south.

## SUMMARY

Prehistoric activity was noted mainly towards the northern end of the site (Areas 4 and 5), particularly clustered around Trenches 144-146. Further activity appears to be present along the river valley where colluvial deposits have protected the archaeological horizon from plough damage, and in the centre of Areas 4 and 5 (Trenches 91, 92, 113, 114, 119-120, 123, 132, 141-144 and 147).

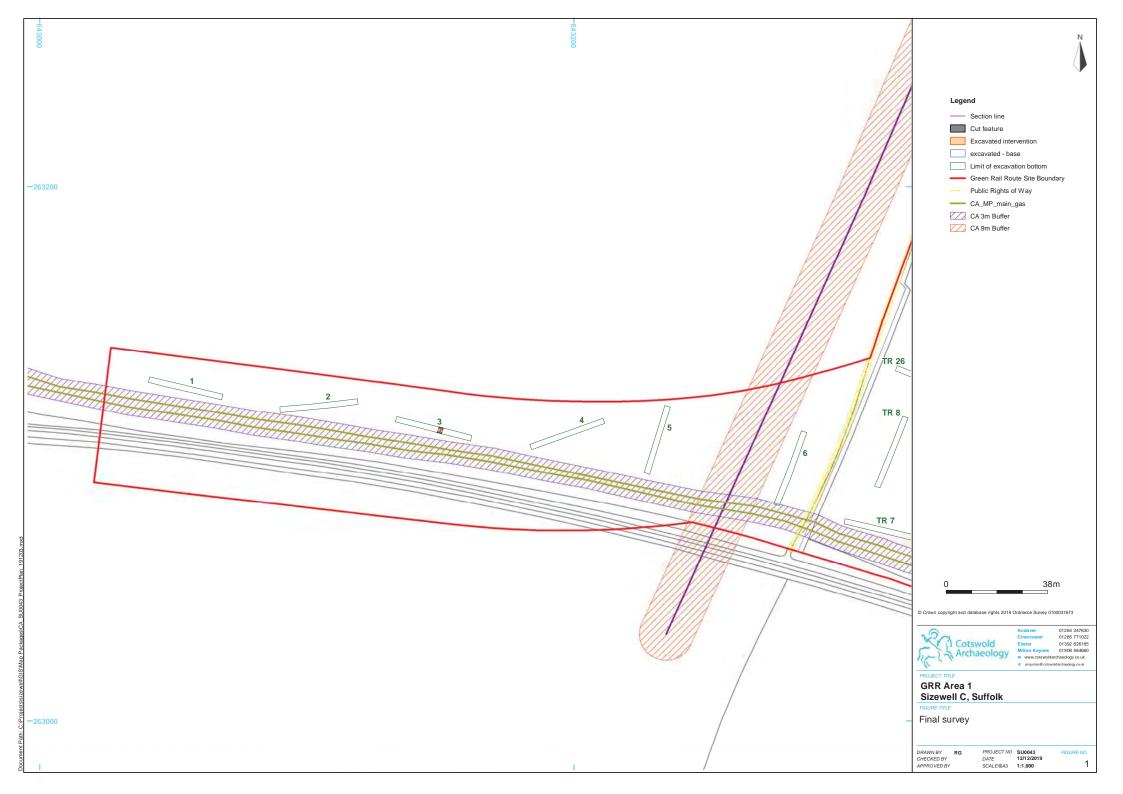
Medieval activity appears to be broadly focussed in the south in the western half of Area 2 (Trenches 27-28, 42, 44-45, 50 and 60) and the southern end of Area 3 (Trenches 62-63), though the potential brick kilns in Area 5 may suggest further activity in this area of a similar date that has not been identified within the prevailing prehistoric features.

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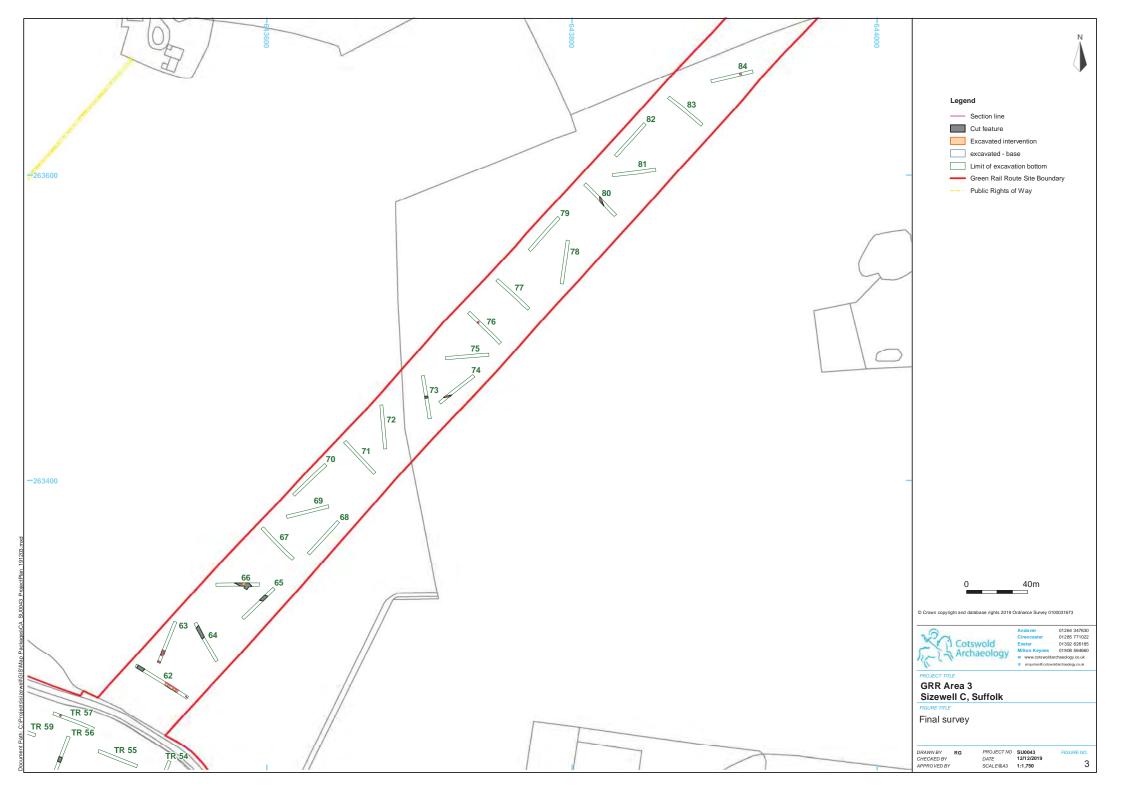
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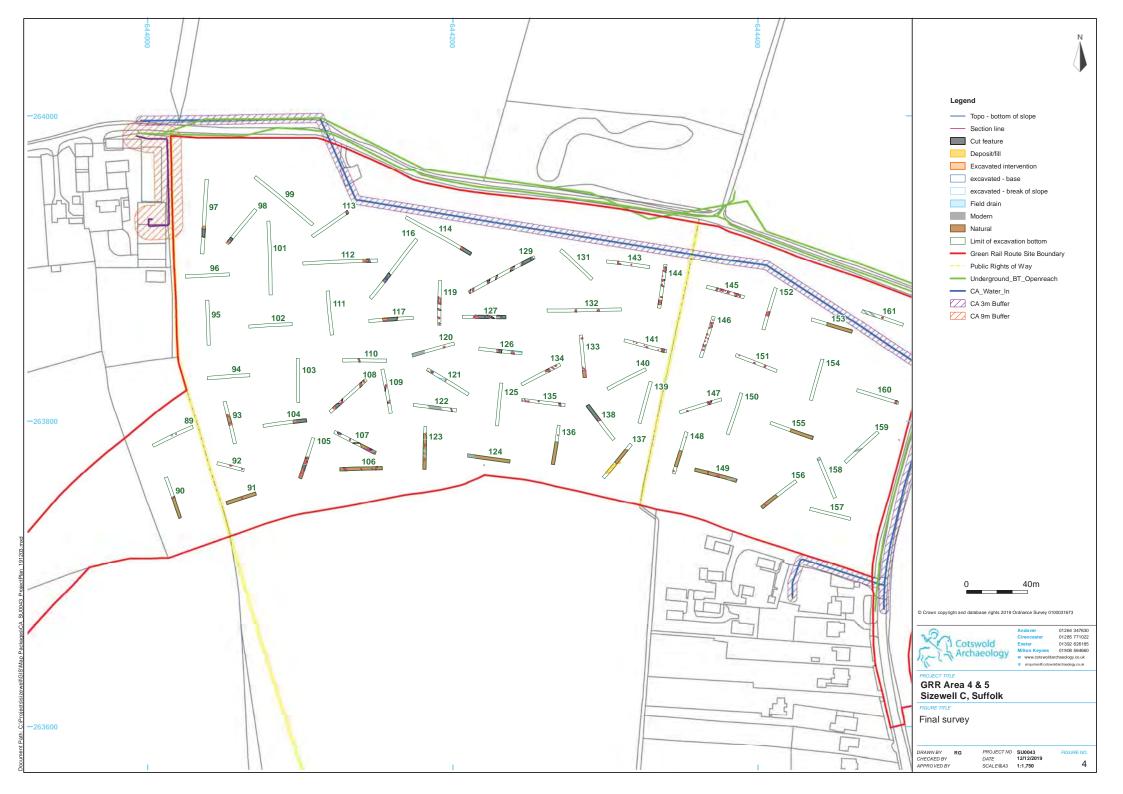
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