East Anglia TWO Offshore Windfarm

Archaeology and Cultural Heritage

Outline Written Scheme of Investigation (Onshore Archaeology)

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Applicable to

East Anglia TWO

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Appendix 2	Method Statement for Onshore Geophysical Survey
Appendix 3	Written Scheme of Investigation for a Programme of Targeted Archaeological Trial Trenching.
Appendix 4	Written Scheme of Investigation for Metal Detector Survey.
Appendix 5	Written Scheme of Investigation for an Archaeological Earthwork Identification Survey.

Glossary of Acronyms

AAA	Areas of Archaeological Activity
ADBA	Archaeological and Cultural Heritage Desk Based Assessment
BGS	British Geological Survey
CCS	Construction Consolidation Sites
CoCP	Code of Construction Practice
CIfA	Chartered Institute for Archaeologists
DBA	Desk Based Assessment
DCO	Development Consent Order
EAA	East Anglian Archaeology
EIA	Environmental Impact Assessment
ES	Environmental Statement
GI	Ground Investigation
HDD	Horizontal Directional Drilling
HE	Historic England
HER	Historic Environment Record
ISA	Inner Study Area
LiDAR	Light Detection and Ranging
MLWS	Mean Low Water Springs
MoRPHE	Management of Research Projects in the Historic Environment
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NRHE	National Record for the Historic Environment
NSIP	Nationally Significant Infrastructure Project
ORPAD	Offshore Renewables Protocol for Archaeological Discoveries
OSA	Outer Study Area
OWSI	Outline Written Scheme of Investigation
PAD	Protocol for Archaeological Discoveries
PAS	Portable Antiquities Scheme
PEIR	Preliminary Environmental Information Report
RAMS	Risk Assessment Method Statement
SCC	Suffolk County Council
SCCAS	Suffolk County Council Archaeological Service
SMS	Strip, Map and Sample (excavation)
SPE	Set-Piece Excavation
SPR	ScottishPower Renewables
UPD	Updated Project Design
WSI	Written Scheme of Investigation
WWII	Second World War

Glossary of Terminology

Applicant	East Anglia TWO Limited.
Cable sealing end compound	A compound which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Cable sealing end (with circuit breaker) compound	A compound (which includes a circuit breaker) which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Construction consolidation sites	Compounds associated with the onshore works which may include elements such as hard standings, lay down and storage areas for construction materials and equipment, areas for vehicular parking, welfare facilities, wheel washing facilities, workshop facilities and temporary fencing or other means of enclosure.
Development area	The area comprising the onshore development area and the offshore development area (described as the 'order limits' within the Development Consent Order).
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
HDD temporary working area	Temporary compounds which will contain laydown, storage and work areas for HDD drilling works.
Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers within the onshore cable route housing electrical earthing links.
Mitigation areas	Areas captured within the onshore development area specifically for mitigating expected or anticipated impacts.
National electricity grid	The high voltage electricity transmission network in England and Wales owned and maintained by National Grid Electricity Transmission
National Grid infrastructure	A National Grid substation, cable sealing end compounds, cable sealing end (with circuit breaker) compound, underground cabling and National Grid overhead line realignment works to facilitate connection to the national electricity grid, all of which will be consented as part of the proposed East

	Anglia TWO project Development Consent Order but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines (including cable sealing end compounds and cable sealing end (with circuit breaker) compound) to transport electricity from the National Grid substation to the national electricity grid.
National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables (which may be laid directly within a trench, or laid in cable ducts or protective covers), up to two fibre optic cables and up to two distributed temperature sensing cables.
Onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, landscaping and ecological mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid.
Onshore preparation works	Activities to be undertaken prior to formal commencement of onshore construction such as pre–planting of landscaping works, archaeological investigations, environmental and engineering surveys, diversion and laying of services, and highway alterations.
Onshore substation	The East Anglia TWO substation and all of the electrical equipment within the onshore substation and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO project.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

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Outline WSI (Onshore Archaeology)

1 Introduction

1.1 Background

1. This Outline Written Scheme of Investigation WSI (OWSI) is relevant to onshore archaeology and cultural heritage and relates to the onshore elements of the proposed East Anglia TWO project and associated infrastructure.

2. The OWSI forms part of a set of documents that supports the Environmental Statement (ES) (document reference 6.1) submitted by the Applicant as part of the Development Consent Order (DCO) application.

3. Further detailed Written Schemes of Investigation (WSIs), including survey-specific, pre-construction and construction related mitigation WSIs, will be produced at the relevant junctures post-consent, prior to relevant site preparation works and construction of the proposed East Anglia TWO project and these will be produced in line with this OWSI, as secured by the requirements of the ***draft DCO*** (an updated version has been submitted at Deadline 3, document reference 3.1) (REP3-011)**.**

4. As per the Outline Pre-Commencement Archaeology Execution Plan (OPCAEP), onshore preparation works requiring archaeological mitigation may include:

   - Site clearance;
   - Demolition work;
   - Pre-planting/landscaping;
   - Ecological mitigation (where excavation is required);
   - Geotechnical Investigations (excluding borehole samples);
   - Remedial work in respect of any contamination or other adverse ground conditions;
   - Diversion and laying of services;
   - Creation of site accesses;
   - Footpath creation (where excavation is required);

- Highway alterations (where alterations are beyond the highway boundary); and
- Erection of welfare facilities (where excavation is required).

5. The further detailed WSIs will provide the key mechanism, enforceable via the DCO, through which the relevant regulatory authorities can be assured of the proposed approaches and commitments to archaeological survey and investigation to be undertaken post-consent. SCCASSuffolk County Council Archaeological Service (SCCAS) will provide briefs for the archaeological works and/or liaise the Applicant's archaeologist to specify these WSIs. Ongoing and early engagement with SCCAS in the post-consent stages will be undertaken.

6. This OWSI reinforces commitments made in the ES (document reference 6.1) and specifically within ***Chapter 24 Onshore Archaeology and Cultural Heritage***. (APP-072).

1.2 Structure of the OWSI

7. The OWSI sets out the broad proposed approaches and commitments to archaeological survey and investigation to be undertaken post-consent. This includes both initial informative survey stages of mitigation work and subsequent additional mitigation requirements, where required. This forms part of an overarching mitigation strategy to be undertaken within the onshore development area. A separate OWSI for offshore archaeology and cultural heritage has also been produced and submitted as part of the DCO application (document reference 8.6).

8. The OWSI conforms with current good practice and has been prepared in line with relevant legislation, policy and guidance. The relevant legislation and planning policy, as well as reference to guidance and best practice documents, is included within ***section 3*** of this OWSI.

9. Each post-consent initial informative stage of mitigation work (survey specific stage) will be subject to a separate survey-specific WSI to be agreed following consultation with Suffolk County Council Archaeological Service (SCCAS)SCCAS (and Historic England (HE), as required), (see ***sections 7*** and ***9***), which will provide further survey-specific details in line with this broad OWSI.

1.3 Purpose and Scope of the OWSI

10. In the early post-consent stages, the Applicant will develop more detailed constraint style mapping, both prior to and following the initial informative stages of mitigation. The Applicant has also committed to expediting certain pre-construction archaeological surveys (specifically further trial trenching), which is

anticipated to commence in 2021, the scope of which is currently under ongoing discussion with SCCAS. Other figures (plans) associated with targeted archaeological fieldwalking and further archaeological metal detecting requirements will also be produced, all of which will be agreed with East Suffolk Council (ESC), and developed in consultation with SCCAS (and HE, as required), in the early post-consent stages. Further detailed WSIs, including survey-specific, and pre-construction and construction related mitigation WSIs, will be produced in an iterative way.

11. The pre-construction and construction related mitigation WSIs will provide key mechanisms, enforceable via the DCO, through which the relevant regulatory authority (ESC and their advisors) can be assured that any archaeological and cultural heritage impacts associated with site preparation works and the construction of the onshore infrastructure will be formally addressed, controlled and mitigated. The various WSIs will provide this control through agreed approaches, practices and mitigation related to onshore archaeology and cultural heritage, as outlined in this document.

12. The results of the assessment, survey and evaluation undertaken to inform the ES, alongside initial targeted surveys and investigations (see ***section 6*** – programmed and partly undertaken during summer/autumn 2019), combined with further post-consent initial informative stages of mitigation will further inform the final mitigation strategy to ensure that all potential impacts upon the onshore archaeology and cultural heritage resource arising from the proposed East Anglia TWO project are fully identified and appropriately and proportionately mitigated, wherever possible.

13. As part of the wider onshore archaeological mitigation strategy, as noted above, there will also be a requirement for both pre-construction and construction related WSIs, detailing the subsequent additional mitigation measures, as required, to be undertaken within the onshore development area. These WSIs will build upon the information within this OWSI. Specific approaches to mitigation works required and the associated specifications, with respect to (e.g. Set-Piece Excavation (SPE)); Strip, Map and Sample (SMS); archaeological monitoring / watching brief scenarios; and options for preservation in-situ will be included and agreed within the various WSIs to be progressed and finalised within the post-consent stages of the proposed East Anglia TWO project.

14. This OWSI sets out the general principles, strategies and methodologies by which the appointed Archaeological Contractor(s) will implement the required post-consent archaeological works.

15. In terms of the basic principles of timing (e.g. for the sequencing of works), these are to be agreed during the early post-consent stages of the East Anglia TWO project. The guiding principle, as per the OPCAEP, is that surveys will be planned to ensure they are delivered in an efficient manner in line with best practice and guidance (see OPCAEP, ***Section 5*** Survey Planning). A map of the process of archaeological mitigation, from evaluation, through pre-construction and construction phase assessment, to post excavation and archiving is provided in ***Plate 1:1*** below. This provides an overview of the survey requirements discussed in ***sections 9*** and ***10*** of this document.

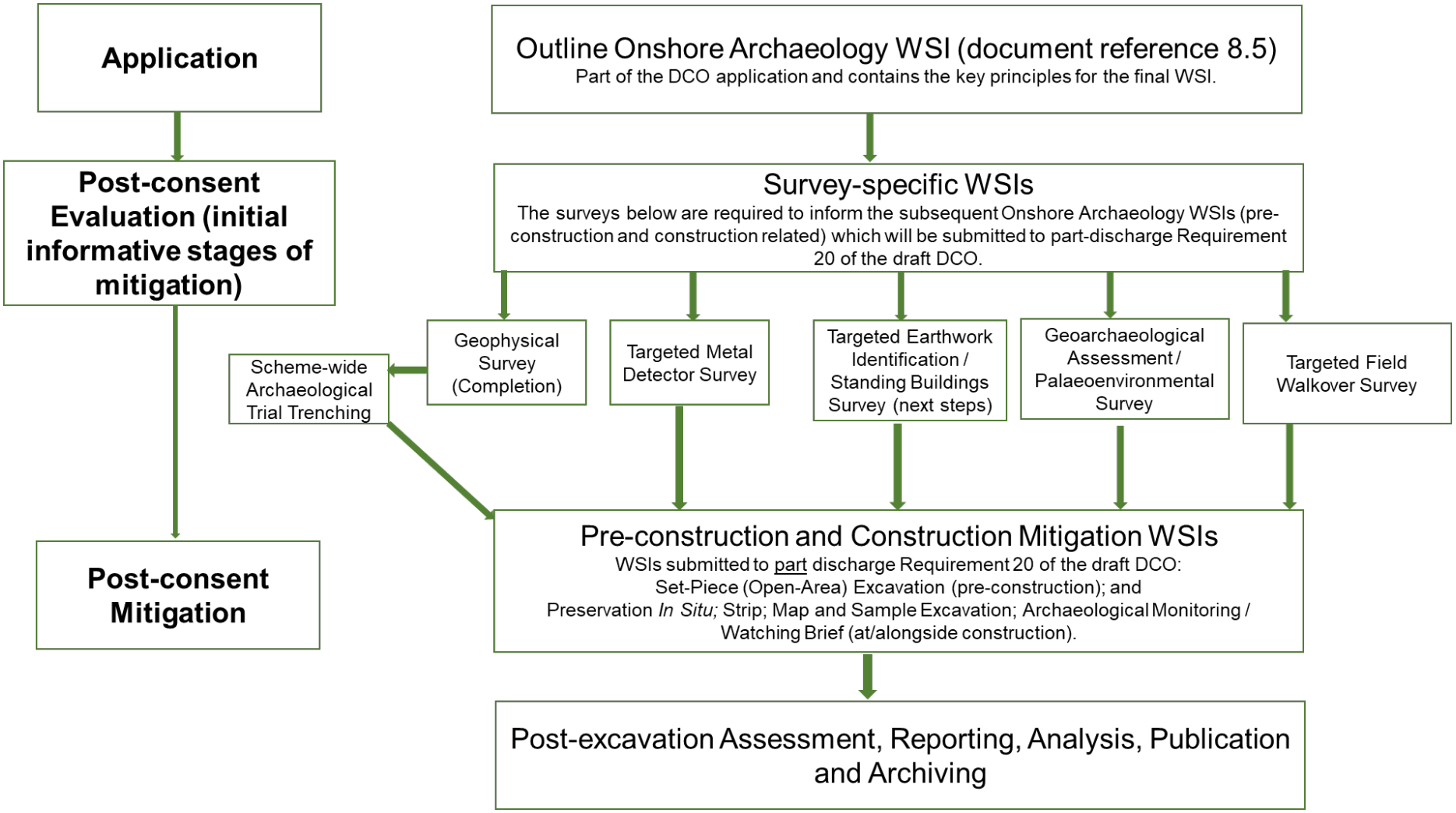

Plate 1:1 East Anglia TWO WSI Process Map

2 The Onshore Development Area (including Geology and Soils)

16. The onshore development area has been identified by a detailed site selection process as outlined in ***Chapter 4 Site Selection and Assessment of Alternatives*** (APP-052) of the ES. The onshore development area includes land between Sizewell and Thorpeness at the landfall and extends inland approximately 9km terminating at the onshore substation location just to the north of Friston, encompassing the parishes of Aldringham-cum-Thorpe, Leiston, Knodishall and Friston. This area is in multiple landownership and the land use is a mixture of arable and market garden agriculture with areas of heath, scrub, woodland and sand dunes to the far east along the coastal edge.

17. Two study areas were established for assessment undertaken within the Archaeology and Cultural Heritage Desk Based Assessment (ADBA) and subsequently within ***Chapter 24 Onshore Archaeology and Cultural Heritage*** (APP-072) of the ES:

- The Inner Study Area (ISA): a 500m buffer extending from the limits of the onshore development area to gather baseline information on the known designated / non-designated heritage assets that may be affected by temporary changes in their settings (or direct physical change in the case of non-designated assets), as a result of the proposed East Anglia TWO project. The ISA was also established to inform the assessment of archaeological potential within the onshore development area for currently unrecorded heritage assets; and
- The Outer Study Area (OSA): a 1km buffer extending from the limits of the East Anglia TWO onshore substation location and the National Grid infrastructure location to identify designated and non-designated heritage assets that may experience changes to their setting (potentially impacting heritage significance in certain instances), as a result of the proposed East Anglia TWO project.

18. The OSA encompasses the ISA within the vicinity of the onshore substation and National Grid substation. For clarity, and to avoid duplication, any heritage assets that are recorded or have been identified within both the ISA and OSA are summarised and referred to in relation to the OSA alone. Reference to heritage assets within the ISA thereby excludes any assets which fall within the OSA parameters. Where referred to collectively, the term ‘study areas’ is used.

19. The underlying bedrock geology comprises Crag Group Sand. This is overlain across most of the onshore development area with superficial deposits of Lowestoft Formation Diamicton, Sand and Gravel and Clay and Silt. A small band of Alluvium is recorded adjacent to the Hundred River and there are also small areas where there are no recorded superficial deposits (British Geological Survey 2019). The soils are classified in the Soilscape 10 and Soilscape 7 associations which are characterised as freely draining slightly acid sandy soils and freely draining slightly acid but base rich soils respectively (Cranfield University 2019).

3 Legislation, Policy and Guidance

3.1 Legislation and Planning Policy

20. The proposed East Anglia TWO project is a Nationally Significant Infrastructure Project (NSIP), and as such the primary legislation relating to the consent regime for the proposed East Anglia TWO project is provided by the Planning Act 2008. The Act designates a series of National Planning Statements (NPSs) setting out national policy in relation to NSIPs.

21. Those NPSs of specific relevance to the proposed East Anglia TWO project comprises the EN-1 Overarching Energy NPS, EN-3 Renewable Energy Infrastructure and EN-5 Electricity Networks Infrastructure. Also, of relevance is the National Planning Policy Framework (NPPF) Section 16: Conserving and enhancing the historic environment; this sets out the principal national policy on the importance, management and safeguarding of heritage assets within the planning process.

22. NPPF provides a framework which:

- Recognises that heritage assets are an irreplaceable resource;
- Requires applicants to provide proportionate information on the significance of heritage assets affected by the proposed project and an impact assessment on that significance;
- Takes into account the desirability of sustaining and enhancing the significance of heritage assets and their setting;
- Places weight on the conservation of designated heritage assets; and
- Requires developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and impact, and to make this evidence (and any archive generated) publicly accessible.

3.2 Standards, Guidance and Good Practice

23. Relevant standards, guidance and good practice, include:

- The Chartered Institute for Archaeologist (CIfA) Code of Conduct (CIfA, 2014a, Revised October 2019);
- CIfA Standard and guidance for geophysical survey (CIfA, 2014b, Updated October 2020);
- CIfA Standard and guidance for archaeological field evaluation (CIfA, 2014c, Updated October 2020);

- CIfA Standard and guidance for the archaeological investigation and recording of standing buildings or structures (CIfA, 2014d, Updated October 2020);
- CIfA Standard and guidance for an archaeological watching brief (CIfA, 2014e, Updated October 2020);
- CIfA Standard and guidance for archaeological excavation (CIfA, 2014f, Updated October 2020);
- CIfA Standard and guidance for the collection, documentation, conservation and research of archaeological materials (CIfA, 2014g, Updated October 2020); and
- CIfA Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA, 2014h, October 2020).
- Standards for Field Archaeology in the East of England. East Anglian Archaeology (EAA), Occasional Paper 14 (Gurney, 2003);
- Research and Archaeology: a Framework for the Eastern Counties 1. resource assessment. EAA, Occasional Paper 3 (Glazebrook, 1997);
- Research and Archaeology: a Framework for the Eastern Counties 2. research agenda and strategy. EAA, Occasional Paper 8 (Brown and Glazebrook eds, 2000); and
- Research and Archaeology Revisited: a revised framework for the East of England. EAA, Occasional Paper 24 (Medlycott, 2011).

24. Suffolk County Council (SCC) also has a series of general documents (briefs) that provide the County's expected standard requirements for different types of archaeological survey. These include:

- Requirements for a Geophysical Survey (SCC, updated September 2020);
- Additional Requirements for a Palaeoenvironmental Assessment (SCC, updated October 2018);
- Requirements for a Trenched Archaeological Evaluation (SCC, updated October 2020);
- Requirements for Archaeological Excavation (SCC, updated September 2020); and
- Archaeological Archives in Suffolk. Guidelines for Preparation and Deposition (SCC, last updated May 2019).

25. Of further relevance is the following non-exhaustive list of publications from HE (formerly English Heritage). Other survey and investigation specific guidelines will also apply in addition to those listed below:

- Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (2nd Edition) (English Heritage, now HE, 2011);
- Management of Research Projects in the Historic Environment (MoRPHE: HE, 2015a);
- Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (HE, 2015b);
- Preserving Archaeological Remains: Decision-taking for Sites under Development (HE, 2016);
- Guidelines for the Use of Geophysics in Archaeology. Questions to Ask and Points to Consider (EAC Guideline 2) (European Archaeologiae Consilium - EAC, 2016); and
- Understanding the Archaeology of Landscapes (HE, 2017).

4 Archaeological and Historical Background

4.1 Introduction

26. The period descriptions below in this sub-section have been extracted and summarised from the ADBA with reference to the ADBA study areas, which is included in full as ***Appendix 24.3*** (APP-514) to ***Chapter 24 Onshore Archaeology and Cultural Heritage*** of the ES. The text included is summarised from the findings of Suffolk Historic Environment Record (HER) and National Record for Historic Environment (NRHE) searches. Further summary findings from other project-specific assessment, survey and evaluation, which informed the ES, is also included in this section.

Table 4.1 Archaeological and Historical Periods

Period	Date Range
Palaeolithic	960,000 BP – 8,500 BC
Mesolithic	8,500 – 4,000 BC
Neolithic	4,000 – 2,200 BC
Bronze Age	2,200 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – 410
Early medieval (Saxon)	AD 410 – 1066
Medieval	AD 1066 – 1499
Post-medieval	AD 1500 – 1799
19th Century	AD 1800 – 1899
Modern	AD 1900 – present day

4.2 Prehistoric (Palaeolithic, Mesolithic, Neolithic, Bronze Age, Iron Age)

27. Palaeolithic and Neolithic artefacts are well represented in Suffolk – especially in the northwest of the county – despite the absence of megalithic monuments (Page 1975: 235). The coastal areas have also revealed Palaeolithic (Good et al 2017: 8) and further north near Happisburgh in Norfolk an important discovery of hominin footprints was recorded within intertidal deposits (Ashton et al 2014).

28. Within the ISA a possible Lower Palaeolithic chalk ring feature 2m in diameter was excavated west of Elm Tree Farm (ARG 020), evidence of Lower Palaeolithic activity was also found along the northern edge of Sizewell Common (LCS 148). A Mesolithic macehead was found at West Farm, Leiston and is recorded by the NRHE (870163, outside both ADBA study areas), this is the only evidence of Mesolithic activity in the vicinity of the ADBA study areas. However, across East Anglia there are a number of important lithic scatters of Mesolithic date and the river valleys and estuaries including the Orwell and the Stour have revealed evidence of Mesolithic activity, as well as preserving important palaeoenvironmental sequences (Good et al. 2017: 8). Neolithic scrapers and flakes were reportedly found at Friston (Page 1975: 258), and at Leiston (ibid: 260), and findspots of this date are recorded in the HER and NRHE datasets for the ADBA study areas, including a scatter of worked flints of possible late Neolithic or early Bronze Age date near Knodishall (KND 013) indicative of a focus of activity in this period. A multiperiod site south of Red House in Leiston (LCS 175) included evidence of Neolithic activity in the form of clusters of pits. The ISA and the OSA both include a number of prehistoric monuments, most of those that survive as earthwork features have been scheduled (1011376, 1011378, 1011440), but there are also some non-designated earthwork examples such as KND 003. Other similar sites in the wider area visible as cropmarks or identified through excavation include a group of Early Bronze Age barrows at Carr Road near Leiston (392044, outside the ADBA study areas), there have also been isolated finds of Bronze Age artefacts (391974).

29. An area of Middle Bronze Age to Early Iron Age settlement activity in the form of field boundaries, possible roundhouses, pits and a cremation burial was identified on land south of Red House Lane, Leiston (LCS 218). Many of the undated cropmark features may also be prehistoric sites, and include possible ring ditches, and field systems.

4.3 Iron Age and Romano-British

30. Three Roman coins were reported to the Portable Antiquities Scheme (PAS) from locations in Friston Parish in 2006. Details of precise locations is kept confidential. A further coin, a piece of armour and an un-named object of Roman date have also been reported to the PAS to the south of the ADBA study areas and are recorded in the HER (exact locations cannot be given, although none are recorded within the ADBA study areas).

31. The NRHE and HER also record stray finds of Roman date within the ADBA study areas, including a brooch (392042), pottery, tile and quernstone fragments (392043), an isolated pottery sherd (LCS 049), pottery and tile fragments (LCS 051) and seven copper alloy coins (KND 023).

32. A possible Iron Age or Romano-British settlement site is recorded in the HER north of Sizewell Common (LCS 059), which comprises cropmarks of probable field boundaries and enclosures of more than one phase of activity. The site of a villa is also recorded near Knodishall (KND 004) where roofing and flue tiles have been found on the field surface along with tesserae. Roman features were also discovered during onshore works relating to the Galloper Offshore Windfarm (LCS 148).

4.4 Saxon and Medieval

33. Thorpe, Aldringham, Leiston, and Knodishall are all recorded in the Domesday Survey, but Friston, Thorpeness and Sizewell are not (www.opendomesday.org).

34. Thorpe was recorded as a small manor with only seven householders (three smallholders and four freemen) with land for only one plough team. Aldringham was slightly larger with nine households (seven villagers and one small holder). Leiston, however, was a very large manor with 117 households (comprised of 27 villagers, 27 smallholders, seven slaves and 56 free men). There was land for over 20 plough teams, as well as six acres of meadow, woodland for 200 pigs, a mill, three churches and some church land.

35. Three manors are recorded at Knodishall, one comprising only a single free man, a second of four households and the largest comprising 23 households, with land for eight plough teams, nine acres of meadow, and two churches.

36. The abbey of Leiston was founded for the white canons of the Premonstratensian Order, in the year 1182, by Ranulph de Glanville. The abbey was granted the manor of Leiston and the advowsons (or patronage) of the churches of St Margaret, Leiston, and St Andrew, Aldringham. The churches of St Mary, Middleton and St Botolph, Culpho were granted later. In 1363 the abbey was re-founded (the original buildings having become too small) and new, larger buildings were constructed about a mile eastward, in a better and somewhat higher position. This new abbey was almost completely destroyed by fire, but it was rebuilt on the same site on a finer scale in 1308-9. The old abbey near the sea was never quite abandoned but was treated as a small cell. The abbey was suppressed in 1536, and the abbey and its possessions formed a part of the vast monastic grant.

37. Some of the earliest surviving buildings within the ADBA study areas are the medieval churches, which are protected as listed buildings, including the 12th century Church of St Lawrence in Knodishall (1215745), the Church of St Mary in Friston (1287864), which has some 11th century fabric, and St Andrew's Church in Aldringham (1287886).

38. St Margaret's Church in Leiston incorporates a 15th century tower. The remains of a medieval chapel including a cemetery were discovered south of Thorpeness Common when later almshouses on the site were demolished (391944), late medieval ditches were also found adjacent to this during an archaeological evaluation (ARG 058). The remains of another chapel are located within the garden of a cottage in Knodishall parish (1211672).

39. There have also been finds of medieval pottery within the ADBA study areas, including at Moor Farm / High House Farm (FRS 003), and within Aldringham parish (ARG 019) and Leiston parish (LCS 049, LCS 051, LCS 054, LCS 058, LCS 060, LCS 066, LCS 073, LCS Misc), and a medieval coin was found in Knodishall parish (KND 023).

40. There is evidence of a deserted medieval village (DMV) known as Buxlow or Buxton to the west of Knodishall Green (KND 006), where earthworks survive. The church for this settlement is shown on Bowen's map of 1753 in ruins to the north of Friston Church and is recorded in the HER (KND 009) and the earthwork remains of the parsonage, which occupied a moated site (KND 011) are recorded at Little Moor Farm on the southern edge of Friston Moor. A small enclosure with a scatter of medieval pottery sherds is also recorded here (KND014). Friston Moor itself is an area of former medieval common land (FRS 013). Similarly, Aldringham Green (ARG 064) is a remnant of medieval landscape and evidence of medieval activity around the edges of the green have been recorded from evaluation and archaeological monitoring (ARG 020).

41. The likely extent of the medieval settlements of Leiston, Aldringham (ARG 057), Knodishall Coldfair Green (KND 018) and Thorpeness (ARG 063) are recorded in the HER.

42. The manor of Friston was the property of Snape Priory and there is likely to have been an earlier manor house somewhere on the manor (FRS 048), although the current Friston Hall dates from the 17th century with later alterations. Sizewell had a market from 1237 indicating a medieval township was located here (LCS 170). Fragments of medieval pottery and evidence of medieval industrial activity was identified during monitoring of test pits at the Sizewell power station (LCS 150 and 160). An extensive grain processing site was also discovered during works in advance of the Greater Gabbard Wind Farm onshore works (LCS 148). Although a settlement is known to have existed at Thorpeness in the medieval period no features of this date were found during an evaluation adjacent to Dormy House and only unstratified pottery was recovered (ARG 055). Cropmarks representing possible medieval settlement are recorded north of St Andrew's Church, Aldringham-cum-Thorpe (ARGF 073).

43. Several mills are known or thought to have existed within the ADBA study areas in the medieval period. The cropmark of a probable post-mill of medieval date is recorded in the ADBA study areas near Knodishall (KND 017), a mound of a former windmill is recorded near Leiston (LCS Misc5).

4.5 Post-Medieval and Modern

44. The majority of HER records within the ADBA study areas relate to post-medieval buildings, in particular at Thorpeness and in Leiston, the two main settlements.

45. Thorpeness developed as a holiday resort with multiple new buildings being constructed in the early to mid-20th century. A country club was also created west of Thorpeness in 1912 on the north edge of The Meare and several buildings associated with this are recorded in the NRHE. The complex includes a golf course to the northwest.

46. The strategic importance of the east coast of England during the two World Wars is also reflected in the archaeological record for the ADBA study areas, with over thirty sites of land and air defences recorded between Leiston and the coast within the ADBA study areas. These include a large site on Aldringham Common, which included aircraft obstructions and practice trenches (ARG 017). Four areas of aircraft obstructions surviving as ditches and earthworks are recorded in the east of the ADBA study areas, several Second World War (WWII) “Diver Station” defences are also recorded, as are areas of early radar defences (LCS 206). Beach defences in the form of pillboxes, barbed wire obstructions, tank traps, slit trenches and coastal batteries were also recorded by the Rapid Coastal Zone Assessment project.

47. In the post-war period, the first nuclear power station at Sizewell was constructed, although not considered a heritage asset, the power station complex has led to widespread changes in the landscape of the ADBA study areas.

5 Assessment, Survey and Evaluation Informing the ES

5.1 Desk-Based Assessment (DBA) (AP, Light Detection and Ranging (LiDAR), Historic Map Analysis and Walkover)

48. A 'point in time' ADBA (***Appendix 24.3*** (APP-514) to ***Chapter 24 Onshore Archaeology and Cultural Heritage*** of the ES) was undertaken and produced by Headland Archaeology in 2018 to inform the Preliminary Environmental Information Report (PEIR) and subsequent ES, which included analysis of aerial photographs, ~~LIDAR~~LiDAR data and historic maps, as well as a walkover survey.

49. The ADBA highlighted the potential for extensive WWII remains along the coast, and the potential for currently unrecorded heritage assets with archaeological interest, including possible remains of prehistoric, Roman and medieval date.

50. Many of the previously recorded assets relate to WWII activity, mostly on or near to the coast. Other assets relate to extant features in the landscape (e.g. quarry pits).

51. Very few of the newly identified assets relate to previously unidentified cropmarks, with the majority due to features likely to be associated with post medieval or modern activity such as depressions probably relating to small scale quarrying or possible bomb craters, as well as relict field boundaries, post-medieval buildings and WWII infrastructure. These were all primarily identified from analysis of ~~LIDAR~~LiDAR data or historic mapping.

52. The ADBA stated that: '*the LiDAR assessment is considered likely to have identified all substantial upstanding heritage assets within the ADBA study areas, although smaller discrete features may have been missed due to the limited coverage at resolutions greater than 2m*'. In relation to the below ground archaeological remains '*the map regression will have identified any features still present in the 19th century, but will not have identified earlier features, which may not have survived above ground to this date*', and '*the aerial photography analysis is likely to have detected a majority of cropmark features*'. The report concluded that: '*there remains the potential that further below ground archaeological remains are present, either as smaller features not readily detected in aerial photography or due to the ground conditions at the time the photos were taken not being conducive to cropmark formation*'.

53. It was therefore concluded that '*on the basis of the known archaeological and historical background of the ADBA study areas … there is considered to be a*

moderate to high likelihood that further prehistoric remains survive within the ADBA study areas'. These may include possible assemblages of flint artefacts, especially along the gravel terraces of the Hundred River.

54. It was also considered that there is '*a moderate likelihood of further Iron Age and Romano-British remains in the form of possible settlements and associated field systems*.' Although it was recognised that Iron Age and Roman sites (likely to comprise traces of ditches and earthworks) were more conducive to identification through geophysical survey.

55. Additionally, it was also considered that there was '*a medium to high potential for evidence of Anglo-Saxon and medieval agricultural land use within the ADBA Study Area*'. The area around the possible church of Buxlow (KND 009 and HA6) was considered to have considerable potential for burials.

5.1.1.1 Non-designated Heritage Assets Within the Onshore Development Area

56. Refining down from the ADBA study areas to the specifics of the onshore development area, as described in ***Chapter 24 Onshore Archaeology and Cultural Heritage***, there are 80 non-designated heritage assets within the onshore development area (see ***Appendix 24.6*** to ***Chapter 24 Onshore Archaeology and Cultural Heritage***), comprising 34 heritage assets recorded by the HER and / or NRHE and 46 previously unrecorded potential heritage assets (as indicated by analysis of LiDAR, AP and historic mapping data) (see ES ***Figure 24.3*** to ***Chapter 24 Onshore Archaeology and Cultural Heritage***).

5.1.2 Archaeological Geophysical Survey

57. The extensive programme of onshore archaeological geophysical survey (detailed magnetometry), undertaken in compliance with the Method Statement for Onshore Geophysical Survey (Appendix 2) (as agreed in advance with SCCAS on 02/07/2018) had at the time of the DCO application been conducted across 59% of the total land within onshore development area. However, this relates to approximately 56% of the landfall location, 88% of the onshore cable corridor, 89% of the onshore substation and National Grid substation location (with the remaining areas not surveyed at the time of the DCO application predominantly comprising those areas of land that are either not accessible and/or conducive for survey such as areas of woodland and areas beneath the overhead line realignment area).

58. The geophysical survey undertaken to date has clearly demonstrated that the prevailing geological and pedological conditions within the onshore development area are favourable for the detection of sub-surface archaeological remains and consequently it has been assessed that the results provide a reliable indication of the extent of the majority of the significant areas of sub-surface archaeological

remains within the onshore development area, subject to the limitations of the technique. It is recognised that other types of archaeological activity, including unenclosed settlement or funerary activity, may be difficult to detect (by the surveys carried out to date), but which could also be found to be of importance.

59. Anomalies indicative of probable or possible archaeological features and activity have been identified throughout the onshore development area, the majority of which were previously unknown, thus adding significantly to the archaeological understanding of the landscape across which the onshore cable route will traverse. Although the suspected archaeological remains extend throughout the onshore development area there are still large areas where no anomalies of archaeological potential have been identified from the geophysical survey.

60. There are 11 broad (preliminary) areas comprising both concentrations of anomalies or single clearly defined features identified as areas of archaeological activity (**AAA's**) – however some of these areas / anomalies are outside the onshore development area. Most of the linear anomalies are interpreted as locating soil filled ditches forming an extensive and complex network of field systems and enclosures, most likely for animals, which extends across pockets of the onshore development area. These field systems and potential stock enclosures are of uncertain date but probably date to the later prehistoric or early Roman periods and possibly post-medieval. Smaller, sub-divided, enclosures with numerous discrete anomalies are interpreted as more likely to have been the sites of human occupation. Several of these settlement sites are identified, particularly in the western half of the onshore development area, again varying dates are likely to include medieval. As well as the enclosures and possible settlement sites, circular anomalies, interpreted as locating round barrows of possible Bronze Age date and/or a windmill of likely post-medieval date, are also highlighted.

61. On the basis of the geophysical survey carried out to support the DCO application the archaeological potential of the onshore development area is considered to be potentially higher than asserted in the concluding assessments of potential given in the ADBA. The survey has clearly identified numerous anomalies indicative of multi-period activity, including prehistoric funerary activity (ring ditches) and medieval settlement (road frontage occupation) - (see ***Chapter 24 Onshore Archaeology and Cultural Heritage: Section 24.5.3.2.1 Sub-surface Archaeological Remains; Table 24.11 Summary of AAAs Identified to date within the Geophysical Survey Area***; and ***Table 24.13 Summary of AAAs archaeological importance***).

5.2 Outline Schedule of Archaeological Requirements

62. This OWSI should be read with reference to the Outline Schedule of Archaeological Requirements tables (***Appendix 1***) which presents a summary of the currently known and potential remains within the onshore development area at the time of the DCO application.

63. The tables within ***Appendix 1*** will be subject to regular updates and refinements throughout the post-consent stages, as more information comes to light, and at key milestones as part of the post-consent archaeological works (for example, following each initial informative stage of mitigation, see ***section 9***), prior to additional mitigation measures being established and formalised within subsequent pre-construction and construction related mitigation WSIs (see ***section 10***).

64. A post-consent commitment will be to develop further constraint style mapping in consultation with SCCAS (and HE, where required), with the next major set of figures likely to be those associated with positioning and agreement of project-wide trial trench location plans. The Applicant has committed to expediting certain pre-construction archaeological surveys (specifically the further trial trenching), which is anticipated to commence in 2021, the scope of which is currently under ongoing discussion with SCCAS.

65. Potential impacts, as identified up to submission of the ES as part of the DCO application, are outlined and assessed within ***Chapter 24 Onshore Archaeology and Cultural Heritage***, see specifically ***Section 24.6***, ***Tables 24.15*** – ***24.20***, ***Section 24.7***, ***Table 24.22*** and ***Table 24.28***.

6 Initial Targeted Surveys

66. The following initial targeted surveys were planned, programmed and in part completed post-harvest (i.e. late summer / autumn) 2019. Land access permissions reduced the scope of these. However, the results of these survey works will, at the earliest opportunity, further inform the post-consent mitigation strategies in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately this OWSI. These survey reports were submitted to Examination at Deadline 1.

6.1 Geophysical Survey (See Method Statement - Appendix 2)

67. By July 2019 Headland Archaeology (UK) Ltd had carried out geophysical (magnetometer) survey, covering approximately 455ha, incorporating the boundary comprising the onshore development area, as presented for the ES. Independent from the DCO application, geophysical surveys were undertaken from August 2019 until December 2019 where access and ground conditions permitted. As a result, an additional 30ha was surveyed at the north-western end of the onshore development area, north-east of the onshore substation location since the submission of the original geophysical report in July 2019.

68. The aim of the geophysical survey undertaken to date has been to provide further information about the archaeological potential within the onshore development area and to help determine (where possible within the confines of other environmental and engineering constraints) the onshore cable route and location of other infrastructure (where flexibility in siting is possible), and in informing an appropriate mitigation strategy to be formally agreed in the early post-consent stages of the proposed East Anglia TWO project. Broad AAAs have been identified within the onshore development area and have been included and described within the ES (see ***Chapter 24 Onshore Archaeology and Cultural Heritage***, ***Section 24.5.3.2.1 Sub-surface Archaeological Remains***; ***Table 24.11 Summary of AAAs Identified to date within the Geophysical Survey Area***; and ***Table 24.13 Summary of AAAs archaeological importance***). The further geophysical survey is to be reported separately to the existing geophysical survey report (see **Appendix 24.4** *of* ***Chapter 24 Onshore Archaeology and Cultural Heritage***).

6.2 Programme of Targeted Archaeological Trial Trenching (See Survey-Specific WSI in Appendix 3)

69. Based upon the results of the earlier phases of archaeological work (e.g. ADBA and geophysical survey) it is clear that the onshore cable route passes through a landscape of some archaeological interest. An initial targeted programme of

archaeological trial trenching has been undertaken in order to further establish the extent, character and significance of the archaeological remains at certain key locations (identified as pinch points) and inform future mitigation.

70. The initial scheme of targeted trenching was primarily based on targeting magnetic anomalies (identified by the geophysical survey) as well as cropmarks and other features identified during research for the ADBA. It should be noted that certain trenches were also positioned in order to evaluate apparently 'blank' areas, as well as those of obvious archaeological interest or potential in order to ground truth the results of the survey and assess the presence / absence of feature types or periods which are not readily identified by magnetic survey. To aid further in this, initial targeted metal detector survey was also to be carried out at a further key location. This phase of work was scoped in a separate survey-specific WSI (see ***section 6.3*** below). However, landowner access permission was not received for this area (Area 2 – Grove Road Crossing).

71. The results of the initial targeted trial trenching (as well as further phase of trial trenching anticipated to commence in 2021, the scope of which is currently under ongoing discussion with SCCAS) and the targeted metal detecting survey (once access permission has been granted), together with the geophysical survey results and targeted earthwork condition survey (again subject to a separate survey-specific WSI, see ***section 6.4*** below), will be used to further establish an appropriate mitigation strategy to be formally agreed in the early post-consent stages of the proposed East Anglia TWO project. The mitigation work will also be the subject of separate mitigation related WSIs.

72. The general aims of the initial phase of targeted trial trenching were to establish (at a high-level only) the nature, extent, degree of preservation and likely importance of archaeological features and deposits within four key areas and also to evaluate (via intrusive means) the potential for previously unrecorded remains within those same areas. The areas are located at points within the onshore development area where there is considered to be more limited flexibility to alter/amend or microsite the location of the onshore infrastructure or at more constrained locations in terms of the possible / likely land take ('pinch points') along the onshore cable route.

73. The four areas identified were:

- **Area 1** – Onshore substation location and immediate surrounds;
- **Area 2** – Grove Road Crossing (albeit no access permission was granted at this location);
- **Area 3** – Aldringham Road; and
- **Area 4** – Hundred River Crossing.

74. The specific objectives of the initial targeted programme of trial trenching were to:

- Validate the results of the geophysical surveys;
- Establish the nature, extent, degree of preservation and likely significance of the anomalies interpreted as being of possible or probable archaeological origin;
- Establish the extent of any (currently unknown) archaeological features and carry out appropriate investigation and recording;
- Enable the progression of an appropriate mitigation strategy to be defined, including identifying any features worthy of preservation in situ which may require design micrositing considerations (within the confines of other environmental and engineering constraints) to ensure avoidance, where possible;
- Produce a report on the results of the work for deposition with the Suffolk HER; and
- Undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

75. The initial targeted programme of priority trial trenching was planned to comprise the excavation and recording of 91 trenches across the four areas (land access dependent). The trenches were ultimately undertaken in three discrete areas: Area 1 (Substation), Area 3 (Aldringham Road) and Area 4 (Hundred River Crossing). Access to Area 2 (Grove Road Crossing) was withdrawn. In total 67 of the proposed 91 trenches were completed.

76. Each trench was positioned to evaluate possible archaeological features, as well as a small proportion of related and apparently 'blank' areas (as indicated by the geophysical survey) to give an even (albeit more limited) sample across each defined area. Each trench measured 25m by 2m, except in the onshore substation location where they measured 30m by 2m. The position or extent of trenches were subject to minor variation based upon local ground conditions or logistical constraints – for example the trenches in Area 1 (the onshore substation location) are positioned to avoid a known system of field drains and to accommodate ecological constraints.

77. The initial targeted programme of trenching has demonstrated that the geophysical survey has been a generally reliable indicator of the location and extent of archaeological activity within the onshore development area at these

locations. It has also provided important information on the date, type and extent of the archaeological resource at these three key locations.

78. In Area 1 only one of the 39 trenches located over the footprint of the substation contained an archaeological feature, an undated fire pit in Trench 27.

79. In Area 3 the evaluation found infilled ditches correlating well to the geophysical survey forming a pattern of enclosure and land division. There were indications of low levels of prehistoric and middle Saxon activity, but most of the finds assemblage indicated activity during the 11th – 14th centuries AD.

80. In Area 4 the investigations recovered a small amount of prehistoric and Romano-British pottery, again likely to be residual. A densely intercutting network of linear ditches, more complex than the geophysical survey suggested, contained evidence of activity from the middle and late Saxon periods and the 11th – 14th centuries. There was also good survival of charred plant material in several features.

6.3 Targeted Metal Detector Survey (See Survey-Specific WSI in Appendix 4)

81. The purpose of the initial targeted programme was to undertake a metal detector survey within a defined area of the onshore development area to further establish archaeological potential and identify any potential areas to target through trial trenching.

82. The objective of the metal detector survey was therefore to provide further evidence of the archaeological resource within this area of the onshore development area, including its likely extent, importance and potential. This could potentially contribute to refining further mitigation areas. Specifically, this technique may assist, if present, in the identification of Anglo-Saxon (early-medieval) or later medieval cemetery sites.

83. More specific aims of the metal detector survey include:

- To identify any concentrations of archaeological material which may inform the location of subsequent trial trenches and any subsequent mitigation;
- To establish the presence or absence of any evidence relating to a possible ruined church; or chapel shown on Bowens 1753 map of Suffolk and recorded as KND 009, including burials;
- Produce a report on the results of the work for deposition with the Suffolk HER; and

- Undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

84. The results of the targeted metal detecting will, at the earliest opportunity, further inform the post-consent mitigation strategies in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately this OWSI.

85. Note that no landowner access permission has been granted to date in order to undertake the proposed targeted metal detecting survey.

6.4 Targeted Earthwork Identification Survey (See Survey-Specific WSI in Appendix 5)

86. This scheme of initial targeted earthwork identification (and ground truthing) survey was primarily based on targeting features identified during research for the ADBA, and also evaluating areas for which there was no access at the time of the walkover or where visibility was obscured by crop or vegetation. The results of the earthwork identification survey will at the earliest opportunity, further inform the post-consent mitigation strategies in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately this OWSI.

87. The general aims of the targeted earthwork identification survey were to determine the survival, extent, form, date, condition and importance of any surviving visible above ground heritage assets (including archaeological earthworks) within the general area shown on Illustrations as presented within ***Appendix 5***.

88. The survey attempted to target (and ground truth) all potential features identified in the ADBA within the area shown on Illus 1 (***Appendix 5***), as well as seeking to identify any previously unknown features in this area.

89. The specific objectives of the survey were to:

- Ground-truth the features identified in the ADBA; record their extent, photograph them and describe their form, possible date, condition and importance; this may require further consultation of the HER, historic maps, aerial photography and LiDAR data on a case-by-case basis;
- Identify any other visible (above ground) features of potential archaeological significance;

- Produce a report on the results of the work for deposition with the Suffolk HER; and
- Undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

90. The walkover survey route was pre-mapped to 50m transects wherever possible. The surveyors were to follow these routes using a handheld GPS and measured survey, identifying any potential heritage assets. Any such features were located by GPS, photographed and described in compliance with a Level 2 survey (as defined by HE in Understanding the Archaeology of Landscapes 2017).

91. The targeted mapping sought to visit all potentially relevant features identified in the ADBA, except where these have been previously visited and proven to be no longer extant in which case previous walkover notes and findings will be included in the stand-alone report.

92. At each location, the following recording was proposed to be undertaken:

- A Level 2 survey (as defined by HE in Understanding the Archaeology of Landscapes, second edition, 2017);
- The location, description, analysis and sketch plotting on Ordnance Survey maps at scale of 1:10,000 of all visible heritage assets (including archaeological earthworks);
- Digital photography of heritage assets identified; and
- The location of heritage assets using a combination of a GPS and measured survey.

93. Headland Archaeology has now conducted the targeted archaeological earthwork identification survey at identified key locations within the onshore development area. The specific objectives were modified to ground-truth and record 35 possible features identified in an earlier ~~desk-based assessment~~DBA and identify any other previously unidentified features of potential archaeological significance. Three previously identified heritage assets were located and recorded. Nine were not visited due to ongoing agricultural activity (harvesting) or constraints on surface visibility (protective plastic covering, overgrown vegetation). The remainder were visited but could not be positively identified. Ten previously unidentified Heritage Assets were also located and recorded, most noteworthy being a probable World War 2 anti-aircraft position.

94. The areas surveyed retained very little evidence of archaeology in relation to previously identified Heritage Assets. This is likely to be due to a combination of factors:

- Heritage Assets which were identified from crop marks through aerial photography in fields which have since been ploughed, may now be lost on the surface.
- LiDAR survey can distinguish variation in topography to 2cm, a variation which would not necessarily be evident to the naked eye from ground level.
- Variation in crop cover or other plant growth could have obscured some remains.

95. The three previously identified heritage assets that were confirmed by this survey (HA57, HA64 and HA67) were all buried features and would require geophysical or intrusive investigation to ascertain a more detailed understanding of their form and function. This is true also for the newly identified assets HA74, HA75, HA76, HA77, HA78 and HA79, although in some of these cases a reasonable guess of their function has been made.

96. The potential for any of these to significantly progress the understanding of human activity in this area is likely to be limited.

97. The upstanding or tumbled remains of assets HA73, HA80, HA81 and HA82 relate to WWII activity and are likely to form part of HER entities ARG032 or ARG052. There is some potential for these assets to inform understanding of WWII activity in this area with further investigation. This could take the form of vegetation removal and detailed historic building recording or possibly targeted excavation. Further archival research may also provide detailed information concerning these structures, potentially minimising the need for intrusive work.

98. It is acknowledged that completion of the earthwork survey to cover areas identified as inaccessible or only part surveyed is required and is currently under consideration by the Applicant in terms of optimum timeframe and access.

7 Further Survey-Specific WSIs (Method Statements) Post-consent

~~97.~~99. In addition to the initial targeted surveys (see ***section 6*** above), all post-consent initial informative stage of mitigation work (ultimately informing subsequently required mitigation approaches) will be subject to a bespoke survey-specific WSI (Method Statement) to be approved by ESC in consultation with SCCAS (and HE, as required). Any variations to this OWSI and the subsequent survey-specific WSIs will also be agreed with ESC in consultation with SCCAS (and HE, as required). SCCAS will provide briefs for all future archaeological works and/or liaise with the Applicant's archaeologist to specify WSIs.

~~98.~~100. The post-consent initial informative stages of mitigation work will include:

- Any additional Onshore Archaeological Geophysical Survey, not previously completed due to, for example, landowner access permissions and other constraints associated with field conditions (Note: the survey-specific Method Statement for Onshore Geophysical Survey, undertaken to inform the ES and DCO application, is included as ***Appendix 2***);
- A scheme-wide programme of Archaeological Trial Trenching (Note: the survey-specific WSI for the initial targeted programme of Archaeological Trial Trenching, completed in part post-harvest (late summer / autumn) 2019, is included as ***Appendix 3***);
- Additional Targeted Archaeological Metal Detecting Survey, as required (Note: the survey-specific WSI for the initial targeted programme of Metal Detector Survey, planned and programmed for post-harvest (late summer / autumn 2019), although not completed due to land access permissions not being granted, is included as ***Appendix 4***);
- Targeted Archaeological Field Walking Survey, as/where required;
- Detailed Recording of Standing Buildings or Structures / Detailed Earthwork Recording (both - as required), following on from the Archaeological Earthwork Identification Survey (see ***Appendix 5***), ~~completed post-harvest (late summer / autumn 2019);~~undertaken post-harvest (late summer / autumn 2019). The completion of the earthwork identification survey to cover areas identified as inaccessible or only part surveyed is still required. This is currently under consideration by the Applicant in terms of optimum timeframe and access; and
- Geoarchaeological Assessment / Palaeoenvironmental Survey. To include monitoring of any ground investigation (GI) / site investigation boreholes and

trial pits, if proposed and undertaken in the post-consent stages of the proposed East Anglia TWO project.

7.1 Aims and Objectives

~~99.~~101. The general aims and objectives of the initial informative stages of mitigation (post-consent) are to:

- Further examine the archaeological and cultural heritage resource within the onshore development area, including clarifying the presence / absence, significance and extent of buried archaeological remains;
- Identify, within the constraints of the works, the date, character, significance and condition of any surviving remains within the onshore development area;
- Assess the degree of existing impacts to sub-surface horizons and to document the extent of archaeological survival of buried deposits;
- Analyse and interpret the results; and
- Produce reports which will present the results of the works in sufficient detail, including information to allow informed decisions to be made concerning ongoing, further and additional mitigation strategies.

7.2 Monitoring

~~100.~~102. Having agreed the survey-specific WSIs (noting that SCCAS will provide briefs for the archaeological works and/or liaise to specify WSIs), the appointed project archaeologist (archaeological coordinator / consultant) and/or archaeological contractor(s) (as appointed by the Applicant) will inform SCCAS (and HE, as required) of the proposed commencement dates of fieldwork for each survey / investigation type, and then provide regular updates on the progress of the surveys. Reasonable and regular access to site will be arranged for representatives of SCCAS and HE, as appropriate, for inspection and monitoring visits. These will be accompanied by the project archaeologist and/or archaeological contractor(s).

8 Health and Safety

~~101.~~103. The CIfA Standard guidance for archaeological excavation states that: "*Health and Safety regulations and requirements cannot be ignored no matter how imperative the need to record archaeological information; hence Health and Safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must do so under a defined Health and Safety Policy. Archaeologists undertaking fieldwork must observe safe working practices; the Health and Safety arrangements must be agreed and understood by all relevant parties before work commences. Risk assessments must be carried out and documented for every field project, in accordance with Management of Health and Safety at Work Regulations*…." (CIfA, 2014f, updated October 2020).

104. Although health and safety is of paramount importance, the archaeological aims, objectives and methods of the project will, however, as per industry and regional specific archaeological guidance, be met through well planned and programmed archaeological work, which is informed by health and safety at all times. Bespoke archaeological approaches and working practices may need to be developed and implemented on a case-by-case basis in this regard. This may involve, for example, stepping and shoring and may involve solutions to be developed to safely investigate archaeological remains in order to fulfil the survey-specific and mitigation related WSI(s), which are proportionate to the significance of those remains identified. Where any conflict between health and safety and progressing, the archaeological project is identified, every effort will be made by the Applicant, in discussion with the archaeological contractor(s) and SCCAS, to identify safe ways of completing the archaeological investigations to appropriate standards.

~~102.~~105. All work will be carried out in accordance with the Health and Safety at Work Act 1974 and the Management of Health and Safety Regulations 1992, as well as all other relevant Health and Safety legislation, regulations and codes of practice in force at the time.

~~103.~~106. The Archaeological Contractor(s) will supply a copy of their Health and Safety Policy and a site and task specific health and safety focused Risk Assessment Method Statement (RAMS) document to the Applicant (and the Archaeological Coordinator) before the commencement of any fieldwork. The Risk Assessment will have been read and understood by all staff attending site before any survey and investigation works commence.

~~104.~~107. The appropriate landowner agreements will need to be in place and any environmental constraints will be highlighted, considered and managed both prior

to any archaeological works commencing and during the survey and investigation works themselves.

~~105.~~108. In addition to health and safety considerations, in terms of site security, where appropriate, archaeological sites should be adequately fenced.

9 Methodologies (Initial Informative Stages of Mitigation)

~~106.~~109. Initial informative stages of mitigation work will be employed and undertaken post-consent, and in the event that non-designated heritage assets cannot be avoided these will be followed by subsequent mitigation requirements, as and where required (see ***section 10***).

9.1 Archaeological Geophysical Survey (Completion)

~~107.~~110. Any further post-consent geophysical survey, in combination with the results from the programmes already undertaken (***Appendix 2***), will further establish additional areas of archaeological potential. The geophysical survey will aim to identify any further anomalies representing archaeological sites and features across the remainder of the onshore development area, as applicable.

~~108.~~111. Data collected from any further programme of geophysical survey will then be analysed alongside the existing data, information and reporting, and will contribute directly to informing further archaeological trial trench locations and positioning, and the production of associated trench location plans for approval by ESC in consultation with SCCAS (and HE, as required).

9.2 Archaeological Trial Trenching (Project-Wide)

~~109.~~112. Following the part completion of the initial targeted programme of archaeological trial trenching (***Appendix 3***), undertaken late summer / autumn 2019, a comprehensive East Anglia TWO project-wide programme of archaeological trial trenching is anticipated to commence in 2021 (the scope of which is currently under ongoing discussion with SCCAS). Additional trial trenching is required across the onshore development area as a whole. A full and systematic survey will be required to ground-truth the existing data and cover any shortfalls in the geophysical survey technique.

~~110.~~113. Some of the basic principles of the archaeological trial trenching will include:

- The number and location of trial trenches will be proportionate and sufficient to determine the requirement for preservation in situ, or else the requirement for advance / ‘Set-piece’ archaeological excavation or archaeological ‘Strip, Map and Sample’.
- Prioritising and expediting the trial trenching programme to guide and ensure maximum time in the programme for preservation by record (archaeological excavation) of identified complex or dense archaeological remains.

- A further survey-specific WSI for project-wide trial trenching is in development by Headland Archaeology Ltd. (under the instruction of the Project Archaeologist at SLR Consulting Ltd. from the post-consent compliance team). This survey-specific WSI will include trial trench location plans which are based on previous non-intrusive and intrusive evaluation results and have been developed in discussion with SCCAS. The survey-specific WSI will include complete details on aims, objectives, methods, sampling strategies etc. in line with the SCC standard requirements for archaeological trenched evaluation (SCC, 2020).
- Trial trench machining will be undertaken under the supervision of a suitably qualified archaeologist.
- Trenches will be mechanically excavated using a tracked machine wherever possible, fitted with a toothless ditching bucket. Upon reaching the archaeological horizon or the natural horizon, whichever is encountered first trenches will be investigated by hand.
- ~~Any~~All archaeological features encountered during trenched evaluation will be sample excavated by hand and recorded~~. Archaeological features will generally only be sampled sufficiently~~ in order to characterise and date them~~,~~ and ~~also to~~ gain an understanding of their significance, unless otherwise agreed with SCCAS.
- Sample sections will be cleaned, photographed and drawn to scale. A 'post excavation' plan will be drawn to scale. Plans of any archaeological features on the site will be drawn at 1:20 or 1:50, depending on the complexity of the data to be recorded. Sections will be drawn at 1:10 or 1:20 again depending on the complexity to be recorded. All levels should relate to Ordnance Datum.
- Provision for metal detecting (by a suitably experienced metal detectorist) to be undertaken as part of the trial trenched evaluation will be made.
- Trenches will not be backfilled until these have been viewed and signed off by SCCAS.
- Further detailed methodologies regarding recording techniques, small-finds policy, human remains and treasure will be included and agreed as part of the survey-specific WSI.
- With respect to human remains, in the event of discovery of any human remains (articulated or disarticulated, cremated or unburnt), they will be left in situ, covered and protected in the first instance. Following discussions with SCCAS, the appropriateness of their full excavation/removal or sampling as part of the works will be determined. Where deemed appropriate human remains will be fully recorded, excavated and removed subject to compliance with the relevant Ministry of Justice licence, which will be obtained by the archaeological contractor(s). Provision of tents (or similar), to provide

protection of burials during excavation from weather conditions and public view will be made. All excavation and post-excavation of human remains will be in accordance with the archaeological contractor(s) protocols, current guidance documents (e.g. McKinley 2013) and in line with the standards set out by the CIfA (McKinley and Roberts 1993). Appropriate specialist guidance/site visits will be undertaken as required. The final placing of human remains, following analysis, will be subject to the requirements of the Ministry of Justice licence.

- A report will be produced, and this will include as a minimum: non-technical summary; introductory statements; aims and purpose of the evaluation; methodology; results and conclusions; plans / plots and index to and location of the digital archive; and references.

~~111.~~114. The data and findings from the trial trenching will then further inform the approaches to subsequent mitigation requirements (both pre-construction and at / during construction) on a case by case basis.

~~112.~~115. This may include for example, set-piece (open-area) excavations (often undertaken within the pre-construction programme as part of an early works programme); strip, map and sample excavations (often undertaken immediately in advance of the construction programme where practicable) and archaeological monitoring (watching briefs) often undertaken during construction topsoil stripping, and sometimes also on the excavation of the onshore cable trench(es), and any subsequent / associated open cut trenching and ground intrusive works (e.g. at crossing locations) jointing pits, compound and mobilisation areas etc. See ***section 10*** below.

9.3 Additional Archaeological Metal Detecting

~~113.~~116. The initial targeted programme of Metal Detector Survey (***Appendix 4***), planned and programmed for post-harvest (late summer / autumn 2019), is still to be completed due to land access permission constraints. Any required additional metal detecting survey post-consent would also aim to ascertain the presence / absence, character and extent of any surviving archaeological remains through the recovery of associated metallic artefacts and will build upon previous desk-based and HER information, where applicable, as well as the initial targeted programme of surveys.

9.4 Targeted Archaeological Field Walking

114.117. Any required archaeological fieldwalking surveys post-consent would involve the methodical and systematic walking of targeted areas of the onshore development area to recover and map archaeological material on the field surface, and to identify potential archaeological sites below or within the modern plough zone, which may require archaeological trial trenching and subsequent mitigation approaches. Any required approaches and strategies in this regard would be discussed further and agreed with ESC, in consultation with SCCAS (and HE, as required).

9.5 Detailed Recording (Standing Buildings or Structures / Earthworks)

115.118. Following completion of the archaeological earthwork identification survey (see ***Appendix 5***), undertaken post-harvest (late summer / autumn 2019), detailed recording of any identified standing buildings or structure and/or detailed earthwork recording may be required, where avoidance is not possible within the confines of other engineering and environmental constraints. Any required approaches and strategies in this regard would be discussed further and agreed with ESC, in consultation with SCCAS (and HE, as required). It is acknowledged that completion of the earthwork identification survey to cover areas identified as inaccessible or only part surveyed is required, and this is currently under consideration by the Applicant in terms of optimum timeframe and access.

9.6 Geoarchaeological Assessment / Palaeoenvironmental Survey

116.119. Geoarchaeological assessment / palaeoenvironmental survey is largely designed to identify deposits that often lie outside the main areas of traditional archaeological interest along a linear scheme, and that have a high potential for yielding information that would permit the reconstruction of the past environmental, vegetational and land use history of the areas within the onshore development area. Where required and justified, such a survey often facilitates the recognition of localised palaeochannel sediments, small bogs or lake deposits, valley floodplain sediments and dry valley fills, as well as buried soils from which the palaeoenvironmental history of an area may be reconstructed through the analysis of a series of identified features. For example; any identified areas of peat-rich soils, with the potential for organic preservation. A post-consent project-wide approach to geoarchaeology and the palaeoenvironment will be formulated for approval by ESC, in consultation with SCCAS (and HE, as required), and subsequently implemented. As a minimum:

- Any initial engineering-led site / ground investigationGI works will be monitored;
- A targeted programme of geoarchaeological survey will also be devised;

- Appropriate provision will be made for scientific dating; and
- An appropriately detailed report will be produced.

10 Methodologies (Subsequent Mitigation Requirements)

~~117.~~120. Non-intrusive and intrusive archaeological surveys and investigations (initial informative stages of mitigation) such as the completion of geophysical survey, project-wide trial-trenching, metal detecting and fieldwalking will generally take place post-consent, but pre-construction. The exception is where further archaeological trial trenching is anticipated to commence in 2021 (the scope of which is currently under ongoing discussion and agreement with SCCAS).

~~118.~~121. The initial informative stages of mitigation have the potential to indicate the presence of previously unknown buried archaeological remains (and further verify previously known / anticipated above ground and buried archaeological remains). This will enable the archaeological and cultural heritage resource associated with and impacted by the proposed East Anglia TWO project to either be safe-guarded and / or better understood by means of subsequent additional mitigation measures in a manner that is both appropriate and proportionate to the significance of the remains present. This will be formally agreed with ESC as part of separate pre-construction and construction related WSIs, in consultation with SCCAS (and HE, as required).

~~119.~~122. Subsequent mitigation requirements are expected to comprise a combination of the following recognised standard approaches both in advance of and / or during construction:

- ~~Set-Piece (Open-Area) Excavation (SPE);~~
- ~~Strip, Map and Sample Excavation (SMS);~~
- SPE;
- SMS;
- Archaeological Monitoring / Watching Brief;
- Preservation *in situ*;
- Sensitive and Precautionary Approaches to Construction Works;
- Temporary Suspension of Works in the Event of an Archaeological Discovery; and
- Reinstatement of Field Boundaries and Hedgerows.

10.1 Set-Piece (Open-Area) Excavation (SPE)

~~120.~~123. SPE is an intrusive form of fieldwork, which systematically identifies, examines and records archaeological deposits, features and structures, and recovers artefacts, ecofacts and other remains within a specified area.

~~121.~~124. This type of mitigation will often be recommended where the presence of a known site of archaeological importance (often complex and significant remains) has been highlighted by previous initial targeted surveys and confirmed by further initial informative stages of mitigation (e.g. trial trenching), and where micrositing of the onshore cable route is not appropriate or feasible, and therefore the preservation *in situ* of known archaeological remains / deposits is not possible. These are best undertaken as far in advance of the construction programme as possible.

125. If for any reason an SPE needs to be undertaken in conjunction with mobilisation for construction, construction activities will hold off until the archaeological works are completed at the specific area.

~~122.~~126. SPE (SMS – ***section 10.2*** and Monitoring / Watching Brief – ***section 10.3***) will all lead to a programme of post-excavation assessment, analysis and publication.

~~123.~~127. A WSI, including Method Statement for Archaeological Excavation would be produced. Specific research aims / objectives and sampling strategies would be included, determined on a site by site basis. If repetitive archaeological features are encountered, feature-specific research aims and sampling strategies may also be appended to the method statement.

~~124.~~128. Archaeological excavation initially requires the removal of overburden in areas of impact scheduled in the construction programme, down to the first archaeological horizon, or the natural substrata, whichever is encountered first. The topsoil and depth of subsoil removed, therefore, would be under the direction of a suitably qualified archaeologist(s). A toothless ditching bucket must be used.

~~125.~~129. The site would be excavated and recorded according to accepted professional standards, by a qualified team of professionals, and in accordance with the site specific WSI / method statement and relevant SCCAS guidance.

~~126.~~130. Features would be recorded and excavated stratigraphically, and all relationships would be investigated. Sufficient percentages of any archaeological features or deposits would be hand excavated in order to provide the information required~~:~~. The sampling strategy should be sufficient to understand the site, and significant and complex features such as structural remains, burials and kilns will require full excavation as per the SCC standard requirements for archaeological excavation document (SCC 2020):

- A minimum of 50% of the fills of the general features would be excavated. In some instances, 100% may be requested, depending on the nature of the feature / deposit.
- 10% of the fills of substantial linear features (ditches, etc) are to be excavated (as a minimum). The samples must be representative of the available length of the feature and must take into account any variations in the shape or fill of the feature and any concentrations of artefacts. For linear features, 1m wide slots (as a minimum) should be excavated across their width.

- Slots would be placed to best allow understanding of the relationships between features and deposits (including appropriate relationship sections).
- For discrete features, such as pits, 50% of their fills would be sampled (in some instances 100% may be requested).
- Large or deep features may be excavated in quadrants in the first instance, or in other such grid or systematic excavation as may be appropriate to research questions.
- All features should be investigated and recorded unless agreed with SCCAS, features which may be geological should also be sampled until confidence can be established.

131. Detailed parameters for archaeological excavations on sandy soils will be further developed and agreed, in the post-consent stages, with SCCAS in subsequent site-specific mitigation WSIs/method statements. As a general rule sites should not be left open too long, and large areas should not be stripped in one go. However, it is important to balance a requirement for works not being too piecemeal.

132. The movement of excavation plant over stripped areas should be restricted and controlled.

~~127.~~133. Metal detector searches would take place throughout excavations by an experienced metal detectorist provided by the archaeological contractor(s). Metal detecting would be undertaken across mitigation areas prior to, during and after stripping, with spoil also scanned.

~~128.~~134. Excavation record keeping would be consistent with relevant SCC guidance and be compatible with the HER archive. All methods would be specified in the WSI / Method Statement for Archaeological Excavation.

~~129.~~135. Plans of any archaeological features on the site are to be drawn at 1:20 or 1:50, depending on the complexity of the data to be recorded. Sections should

be drawn at 1:10 or 1:20 again depending on the complexity to be recorded. All levels should relate to Ordnance Datum.

~~130.~~136. A photographic record of the work would be made, consisting of high resolution digital images (the image format and resolution should be specified in the WSI / Method Statement for Archaeological Excavation), and documented in a photographic archive.

~~131.~~137. On-site monitoring would be maintained by SCCAS. Defined (i.e. fenced off) archaeological sites would not be given over to construction related activities (e.g. haul road construction / cable trenching) until a site and records inspection has been carried out and the archaeological excavations formally signed-off.

138. Further detailed methodologies regarding recording techniques, finds, small finds policy, human remains, and treasure will need to be included in any site-specific mitigation WSIs/method statements.

139. As above, with respect to human remains, these are to be treated at all stages with care and respect and are to be dealt with in accordance with the law. They must be recorded in situ and subsequently lifted, packed and marked to standards compatible with those described in current guidance from CIfA and Historic England, Advisory Panel on the Archaeology of Burials in England, and the British Association of Biological Anthropology and Osteoarchaeology. Proposals for the final disposition of remains following study and analysis will be required in any site-specific mitigation WSIs/method statements.

~~132.~~140. Following completion of SPE~~, SMS and monitoring/watching brief~~ fieldwork, a post-excavation assessment would be carried out in accordance with HE guidance MoRPHE. This would result in the preparation of an Updated Project Design (UPD), which would include proposals and a timetable for further analysis (including scientific dating, if appropriate), publication of the results (including a synopsis for publication) in an appropriate academic journal or monograph series, and preparation of the archive (including all paper records, reports and finds assemblages) for deposition in an appropriate museum or archive facility. SCCAS would be consulted on the proposals included in the UPD prior to issue.

10.2 Strip, Map and Sample Excavation (SMS)

~~133.~~141. SMS is often appropriate where archaeological remains are thought or known to be present, but their specific type(s) or exact extent are unknown or remain uncertain following initial targeted surveys and initial informative stages of mitigation~~,~~ or are not believed to necessarily warrant full in-advance SPE. In advance of or during construction, the topsoil and subsoil is removed ('stripped') under direct archaeological control and supervision, and the archaeology is then

planned and excavated ('mapped' and 'sampled'). This type of mitigation is anticipated to dovetail, so it can be undertaken, where practicable, immediately prior to the main construction phase; utilising ground works construction (principal contractor) plant and drivers.

~~134.~~142. Once all of the topsoil and subsoil has been 'stripped', the surface is cleaned back manually by the archaeologists and archaeological features are 'mapped'. The features are drawn and compiled onto a site plan so that all the remains can be looked at in relation to one another. Decisions are then made as to which features to excavate and how much (% and location). A 'sample' of the archaeological features are then hand-excavated, enough to allow the clear identification of phases of human occupation on the site, where possible.

~~135.~~143. Advantages of this method include:

- Soil stripping for archaeological purposes can be undertaken within the construction programme, avoiding the need to strip, backfill / reinstate, and then strip the site again;
- Principal contractor's plant can be used, and the work built into the construction programme; and
- Sampling strategies required for dealing with the archaeology can be targeted at the most significant remains.

~~136.~~144. It may be appropriate for a generic recording and sampling strategy to be agreed with ESC in consultation with SCCAS (and reflected in the Construction Related WSI), which would then be refined, as required, once the soil strip had been undertaken in areas specified as requiring a SMS approach. Any refinement to the associated WSI should be discussed with SCCAS.

145. Although the exact excavation sampling strategy for SMS areas will be determined following the initial strip, all recording methodologies, as required for SPE, will still apply in the first instance.

146. Therefore, as per SPE, features would be recorded and excavated stratigraphically, and all relationships would be investigated. Sufficient percentages of any archaeological features or deposits would be hand excavated in order to provide the information required. The sampling strategy should be sufficient to understand the site, whilst significant and complex features such as structural remains, burials and kilns will require full excavation as per the SCC standard requirements for archaeological excavation document (SCC 2020):

- A minimum of 50% of the fills of the general features would be excavated. In some instances, 100% may be requested, depending on the nature of the feature / deposit.
- 10% of the fills of substantial linear features (ditches, etc) are to be excavated (as a minimum). The samples must be representative of the available length of the feature and must take into account any variations in the shape or fill of the feature and any concentrations of artefacts. For linear features, 1m wide slots (as a minimum) should be excavated across their width.
- Slots would be placed to best allow understanding of the relationships between features and deposits (including appropriate relationship sections).
- For discrete features, such as pits, 50% of their fills would be sampled (in some instances 100% may be requested).
- Large or deep features may be excavated in quadrants in the first instance, or in other such grid or systematic excavation as may be appropriate to research questions.

147. All features should be investigated and recorded unless agreed with SCCAS, features which may be geological should also be sampled until confidence can be established.

~~137.~~148. All stripping of overburden within an area designated for Archaeological 'Strip, Map and Sample' would be carried out by 360° excavator equipped with a toothless ditching bucket, and under constant archaeological control and supervision.

~~138.~~149. The topsoil strip continues to the depth of potential archaeological survival (i.e. all topsoil and subsoil is removed to the first archaeological horizon or natural horizon, whichever is encountered first).

~~139.~~150. Topsoil is removed and stored in a way that allows for clear identification of archaeological horizons or features. This is determined on site by the monitoring archaeologist(s).

~~140.~~151. Where archaeological remains are identified and preservation by record (archaeological excavation) is determined the preferred mitigation approach (i.e. preservation in-situ is not desirable, feasible and/or achievable) they will be fenced off and equipped with adequate signage. These areas will be considered 'locked-out' to construction. Plant or vehicle access will not be permitted within 'locked-out' areas until approved as complete by SCCAS in correspondence and collaboration with ~~SPR~~the Applicant, with input from the Project Archaeologist.

~~141.~~152. Construction related activities (e.g. haul road construction and cable trenching) will not be implemented within 'locked-out' areas until the

archaeological remains are fully investigated and recorded to professionally accepted standards.

~~142.~~153. Contractor vehicles may move safely in between fenced-off areas, once declared archaeologically sterile.

~~143.~~154. Where present, features will be archaeologically excavated and recorded and areas monitored and signed off by SCCAS in the order required by the construction programme for the onshore cable route (e.g. firstly the haul road will be investigated and recorded in order to allow vehicular access along the working width, and secondly, the cable centre-line will be cleared to allow excavation of the cable trench).

~~144.~~155. On-site monitoring would be maintained by SCCAS. Defined (i.e. fenced off) archaeological sites would not be given over to construction related activities e.g. haul road construction / cable trenching until a site and records inspection has been carried out and the archaeological excavations formally signed-off.

~~145.~~156. Following identification of archaeological remains, the case-by-case methodology for SMS excavation would be subject to an agreed Method Statement for Archaeological Excavation.

157. Metal detector searches would take place throughout excavations by an experienced metal detectorist provided by the archaeological contractor(s). Metal detecting would be undertaken across mitigation areas prior to, during and after stripping, with spoil also scanned.

158. Further detailed methodologies regarding recording techniques, finds, small finds policy, human remains, and treasure will need to be included in any site-specific mitigation WSIs/method statements.

159. As above, with respect to human remains, these are to be treated at all stages with care and respect and are to be dealt with in accordance with the law. They must be recorded in situ and subsequently lifted, packed and marked to standards compatible with those described in current guidance from CIfA and Historic England, Advisory Panel on the Archaeology of Burials in England, and the British Association of Biological Anthropology and Osteoarchaeology. Proposals for the final disposition of remains following study and analysis will be required in in any site-specific mitigation WSIs/method statements.

160. Following completion of SMS fieldwork, a post-excavation assessment would be carried out in accordance with HE guidance - MoRPHE. This would result in the preparation of an Updated Project Design (UPD), which would include proposals and a timetable for further analysis (including scientific dating, if appropriate),

publication of the results (including a synopsis for publication) in an appropriate academic journal or monograph series, and preparation of the archive (including all paper records, reports and finds assemblages) for deposition in an appropriate museum or archive facility. SCCAS would be consulted on the proposals included in the UPD prior to issue.

10.3 Archaeological Monitoring / Watching Brief

~~146.~~161. Archaeological monitoring / watching brief involves archaeological observation and any subsequent required investigation conducted during certain groundworks (e.g. areas of both top-soil stripping and excavation of the onshore cable trench, if required and where possible) associated with the construction phase.

~~147.~~162. Where appropriate (in locations identified in advance), machine excavation would proceed under archaeological observation, but would not be controlled directly by the nominated on-site archaeologist(s). A contingency in the programme for undertaking watching briefs would be included in the works programme to allow investigation and recording of archaeological remains that might be identified, disturbed or destroyed. Watching Briefs (archaeological monitoring) normally take place where there is considered to be a lower potential of encountering archaeological remains, as part of construction-led ground intrusive works.

~~148.~~163. An agreed mechanism would be established to allow archaeological investigation during the Watching Brief, where appropriate. However, it is not usually anticipated that substantial archaeological remains (which would generally be highlighted for SPE or SMS approaches where known about) will be found in areas that have been identified for Watching Brief, although the possibility remains.

~~149.~~164. The programme of Watching Brief would also result in the preparation of a report and ordered archive. Where archaeological remains are investigated and recorded a further programme of post-excavation assessment, analysis and publication would be required, as appropriate, as outlined above under the SPE description. This is also the case for any remains investigated and recorded via the SMS approach, also outlined above.

~~150.~~165. Activities that may be subject to archaeological monitoring / watching brief include, but are not limited to:

- Areas of topsoil stripping;
- Any significant drainage excavations, particularly within archaeologically sensitive areas;

- Benching;
- Cable trench excavation;
- Excavation of launch and reception pits for non-open cut crossings or HDD;
- Works to historic landscape features within the working width, such as former field boundaries, ponds, quarries etc.; and
- Reinstatement of archaeologically or historically sensitive areas.

~~151.~~166. During a watching brief the monitoring archaeologist(s) would not define the depth of excavation, but only observe works being carried out.

167. Whilst excavation depths will be determined by the specifics of development works in these watching brief (monitoring) areas and not by archaeological levels, the monitoring archaeologist will need to be present during all groundworks taking place within agreed archaeological watching brief (monitoring) areas and the watching brief archaeologist must have the ability to pause works as required in order to allow archaeological investigation and recording, as appropriate, including sufficient time allowed to enable the archaeological work to be completed.

~~152.~~168. The Project Archaeologist would be notified of the groundworks programme in advance of the works, who in turn would notify the archaeological contractor(s).

~~153.~~169. Archaeological remains that cannot be preserved in situ would be archaeologically excavated and recorded.

170. Although the exact excavation sampling strategy for watching brief areas will be determined following identification, all recording methodologies as required for SPE and SMS will still apply in the first instance.

171. Therefore, as per SPE and SMS, features would be recorded and excavated stratigraphically, and all relationships would be investigated. Sufficient percentages of any archaeological features or deposits would be hand excavated in order to provide the information required. The sampling strategy should be sufficient to understand the site, and significant and complex features such as structural remains, burials and kilns will require full excavation as per the SCC standard requirements for archaeological excavation document (SCC 2020):

- A minimum of 50% of the fills of the general features would be excavated. In some instances, 100% may be requested, depending on the nature of the feature / deposit.
- 10% of the fills of substantial linear features (ditches, etc) are to be excavated (as a minimum). The samples must be representative of the available length

of the feature and must take into account any variations in the shape or fill of the feature and any concentrations of artefacts. For linear features, 1m wide slots (as a minimum) should be excavated across their width.

- Slots would be placed to best allow understanding of the relationships between features and deposits (including appropriate relationship sections).
- For discrete features, such as pits, 50% of their fills would be sampled (in some instances 100% may be requested).
- Large or deep features may be excavated in quadrants in the first instance, or in other such grid or systematic excavation as may be appropriate to research questions.

172. All features should be investigated and recorded unless agreed with SCCAS, features which may be geological should also be sampled until confidence can be established.

173. Further detailed methodologies regarding recording techniques, finds, small finds policy, human remains, and treasure will need to be included in the construction-specific WSI and/or any relevant site-specific mitigation WSIs/method statements.

~~154.~~174. The watching brief will be undertaken by appropriately qualified professional archaeologists. All teams would include at least one member of staff of supervisor level or above. Team numbers would be commensurate to the number of work fronts. Should multiple machines be excavating on one front it may require more than one watching brief archaeologist to monitor progress.

~~155.~~175. If exposed archaeological features cannot be recorded by the monitoring archaeologists alongside the construction programme, the area would be fenced off, and groundworks within the fenced area would be suspended until a strategy has been agreed.

~~156.~~176. Archaeological recording of important, or any other (subsurface and extant) field boundaries exposed or broken-through by the onshore construction works would be undertaken by monitoring archaeologists during the construction-phase watching brief. The specific aims of the monitoring archaeologists are to observe and record any historic re-defining of field boundaries (earlier walls overlain and obscured by hedges, or re-cut ditches for example), buried land surfaces, and the collection of dating evidence from ditches.

~~157.~~177. A record of each field boundary would be maintained. Sketched profiles would include dimensions and notes would be taken on both the below and above ground components of all boundaries. A photographic record would also be maintained.

~~158.~~178. Suitable analysis of the body of data generated would be proposed by the Project Archaeologist and/or archaeological contractor(s) in consultation with SCCAS during the project post-excavation assessment stage, with the aim to categorise each boundary form in order to provide an interpretation of its relative importance and, if possible, date.

179. Following completion of watching brief related fieldwork, a post-excavation assessment would be carried out in accordance with HE guidance - MoRPHE. This may result in the preparation of an UPD, which would include proposals and a timetable for further analysis (including scientific dating, if appropriate), publication of the results (including a synopsis for publication) in an appropriate academic journal or monograph series, and preparation of the archive (including all paper records, reports and finds assemblages) for deposition in an appropriate museum or archive facility. SCCAS would be consulted on the proposals included in the UPD prior to issue.

10.4 Preservation *In Situ*

~~159.~~180. Where well-preserved and / or significant archaeological remains survive within or along a development site, the local planning authority, through their archaeological advisers, in this case SCCAS, may state a preference for preservation *'in situ'* of certain remains.

~~160.~~181. Where opportunities remain for preserving sites (including important features) / certain areas or elements of sites / certain areas of significantly important archaeological remains *in situ* through the pre-construction and construction stages, these will be considered on a case by case, site by site and area by area basis in further discussion and agreement with ESC, in consultation with SCCAS / HE (as required).

~~161.~~182. As part of the post-consent detailed design phase, further consideration will be given, where possible, to micrositing (within the confines of the onshore development area) which will seek to minimise impact upon those areas of highest sub-surface archaeological potential, within the confines of engineering and other environmental constraints.

~~162.~~183. Techniques associated with preservation in-situ considerations may include e.g. reduction in the cable corridor width at certain locations and additional techniques, where appropriate and feasible from an engineering perspective. Other techniques may include protective provisions through the use of e.g. appropriate matting, fencing, demarcation, notices, signage and other direct communication through e.g. tool-box talks.

10.5 Finds and Environmental Policies

10.5.1 Outline Small Finds Policy

~~163.~~184. The finds recovery policy would be addressed in future WSIs / Method Statements covering archaeological excavation activities, in line with the following basic principles:

- All finds will be collected and processed, unless variations in this principle are agreed with SCCAS during the course of excavations (including stages of Archaeological 'Strip, Map and Sample' and archaeological monitoring / watching brief).
- All artefacts would be retained from excavated contexts.
- Metal detector searches would take place throughout excavations by an experienced metal detectorist provided by the archaeological contractor(s).
- Sieving of occupation levels and building fills would be expected.
- All ceramic finds should be processed concurrently with the excavation to allow immediate assessment and input into decision making.
- In the case of twentieth century intrusions, sufficient artefacts would be retained to elucidate the date and function of the feature or deposit. If the site archaeologists are unsure as to the date of the context, all artefacts would be retained for further assessment.

185. In the event of discovery of artefacts covered or potentially covered by the Treasure Act 1996, their excavation and removal will be undertaken following notification of the Project Archaeologist, the Applicant, the Principal Contractor and SCCAS. All discoveries covered by the Act, where thought or once known to be treasure, will be notified to HM Coroner within 14 days.

10.5.2 Outline Environmental Policy

~~164.~~186. Future WSIs / Method Statements covering archaeological excavation activities would provide details of a comprehensive sampling strategy for flotation, assessment and analysis of biological remains by an appropriate environmental specialist (for palaeoenvironmental and palaeoeconomic investigations and also for absolute dating), and samples of sediments and/or soils (for micromorphological and other pedological / sedimentological analyses).

~~165.~~187. Samples would be retained until their potential has been assessed and until a retention strategy has been agreed. Where necessary, advice on the appropriateness of the proposed strategies would be sought from the appropriate Historic England Science Advisor.

~~166.~~188. According to relevant SCC guidance, the number and range of environmental samples collected would represent the range of feature types encountered; 40 litre bulk samples minimum (or 100% of smaller features) in order to address the following matters:

- Range of preservation types (charred, mineral-replaced, waterlogged), and their quality;
- Concentrations of macro-remains, to inform the size of bulk samples on any future excavation;
- Are there differences in remains from undated and dated features – thus the degree of likely association / disassociation; and
- Variation between different feature types and areas of site.

~~167.~~189. According to relevant SCC guidance, waterlogged 'organic' features would be sampled as it may be possible to date them by C14, regardless of artefactual content. The possibility of taking monolith samples would be considered, and if encountered a specialist would be invited to site to assess the options available. Smaller column samples would be taken from sections where there are sound sequences with palaeoenvironmental potential.

10.6 Post-excavation Assessment, Reporting and Archiving

~~168.~~190. In advance of each stage of fieldwork, an accession / event number would be obtained from SCC by the archaeological contractor(s), and a methodology for processing, sampling and the analysis of all artefacts and ecofacts recovered would be determined, commensurate to the complexity and character of the data recorded.

~~169.~~191. In addition, every effort would be made to obtain the agreement of the landowner for the deposition of the full site archive, and transfer of title, with the County Archaeological Service before the fieldwork commences.

~~170.~~192. Following the fieldwork phases, in the event that complex archaeological remains are found, a post-excavation assessment would be prepared providing a summary of the fieldwork results and an assessment of the potential for analysis, publication and dissemination. This would also provide a programme (timetable) and methodology for undertaking the analysis.

~~171.~~193. An updated project design would be prepared on completion of the specialist post-excavation assessment, providing a scope and programme for the analysis, reporting and publication of the findings.

~~172.~~194. In terms of grey literature, a stand-alone report would be produced for each stage of fieldwork. Each report would include a clear statement of the archaeological importance of the results, and their significance in the context of the Regional Research Frameworks.

~~173.~~195. On completion of the post-excavation assessment, the results would be related to the relevant known archaeological information held in the HER. As far as possible, a digital trench plan would be included with the report, which would be compatible with MapInfo GIS software, for integration in the SCC HER.

196. As well as site specific reporting, an UPD for the whole project would be prepared upon completion of the individual Post-Excavation Assessments, providing a scope and programme for the analysis, reporting, publication and dissemination of the findings. This should bring together the results of all stages of the archaeological project and provide a framework for further investigation of the material recovered and results from all parts of the scheme, in order to facilitate a project wide analysis, reporting and publication strategy to be developed.

~~174.~~197. In terms of public engagement, promotion and dissemination, a summary report would be prepared, in an established format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the Proceedings of the Suffolk Institute of Archaeology and History.

~~175.~~198. If merited by the findings, further articles would be published in a range of journals and publications, suitable to the significance of the finding, and according to recommendations made in the post-excavation assessment, analysis and reporting.

~~176.~~199. A popular, non-technical summary report would also be prepared and disseminated more widely.

~~177.~~200. The archive of all records and finds would be consistent with the principles of MoRPHE. It would also be adequate to perform the function of a final archive for deposition in the County Archaeological Service Store.

~~178.~~201. The intended depository would be consulted before the archive is prepared regarding the specific requirements for the archive deposition and curation, and regarding any specific cost implications of deposition.

~~179.~~202. In addition to the deposition of project reports and archive with the relevant curators, an electronic record of the project details would be created through OASIS (http://oasis.ac.uk). The project record would include technical details for each technique used in the project. Subject to any contractual requirements on confidentiality, copies of the OASIS record would be integrated into the relevant

local, regional and national records and published through the Archaeology Data Service ArchSearch catalogue.

10.7 Outreach and Community

~~180.~~203. Where there is the opportunity to observe archaeological excavations, in accordance with onsite health and safety requirements and limitations, and site-specific risk assessments, it may be possible to allow site visits to members of the public and interested local and regional societies.

~~181.~~204. Site visits could be arranged for communities located in particular proximity to the onshore development area. Equally, site visits could focus on the particular period interests of local and regional societies.

~~182.~~205. Site visits would be led by the Project Archaeologist and/or the archaeological contractor(s).

~~183.~~206. If merited by findings, suitable Suffolk museums would be contacted to enquire whether the loan or donation of any artefacts would be appropriate and of interest to the museum curator(s) for display. Funding for displays, beneficiaries, specific artefacts, and time periods are to be agreed between SCCAS and ~~SPR~~the Applicant following completion of post-excavation assessments, analysis, and reporting.

~~184.~~207. ~~SPR~~The Applicant would be responsible for disseminating findings through public engagement, likely to consist of presentations at and potentially materials for local schools, universities and/or local societies with a vested interest in one or any of the areas affected by the project.

~~185.~~208. Presentations would be carried out by the Project Archaeologist and/or the archaeological contractor(s). Social media options and activities would also be considered.

209. Newsletters and articles in popular publications would also be considered as part of the outreach strategy for the project.

10.8 Sensitive and Precautionary Approaches to Construction Works

~~186.~~210. Certain areas within the onshore development area may require additional, sensitive and precautionary approaches to construction works.

~~187.~~211. The onshore cable route is more constrained at certain locations and construction works will need to be conducted in a sensitive and controlled

manner, with associated signage and temporary barriers to ensure that no accidental damage or physical interactions occur, in certain instances.

188.212. Specific constrained areas will be further identified in the post-consent detailed design stage. The above measures of precautionary working will likely need to be adopted, and will be further detailed in the final Code of Construction Practice (CoCP), produced to discharge the requirements of the draft DCO (document reference 8.1).

189.213. A Pollution Prevention Response Plan, developed post-consent and included in the final CoCP, will give consideration to the potential impact that any bentonite drilling fluid, used in for example horizontal directional drilling works, may have on buried archaeological remains.

10.9 Temporary Suspension of Works in the Event of an Archaeological Discovery

190.214. Should previously unknown buried archaeological remains of a significant nature be encountered during construction works, the proposed East Anglia TWO project will commit to the temporary suspension of intrusive groundworks, upon agreement with ESC, in consultation with SCCAS, (and HE, as required).

191.215. The provision for the temporary suspension of works in the event of a significant archaeological discovery will be achieved through the implementation of an industry standard archaeological reporting protocol, at times when intrusive groundworks are being carried out where an archaeologist is not present. This will be achieved through the application of the protocol, procedures and processes as outlined in the Offshore Windfarms Archaeological Protocol document (the PAD) (SPR 2015), which is based upon the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) (The Crown Estate 2014).

10.10 Reinstatement of Field Boundaries and Hedgerows

192.216. Impact to the Historic Landscape Character (HLC) of the onshore development area has been minimised in part through careful site selection and will be further off-set by returning field boundaries / hedgerows to their pre-construction condition and character post-construction, wherever possible, as part of a sensitive programme of backfilling and reinstatement / landscaping. Certain hedgerows and field boundaries (e.g. county and parish boundaries) may require archaeological recording prior to and / or during the construction process and further enhanced provisions made and implemented during backfilling and reinstatement. This is detailed further in the ***Outline Landscape and Ecological***

Management Scheme (OLEMS) (an updated version has been submitted at Deadline 3, document reference 8.7) (REP3-030).

11 Protocol for Archaeological Discoveries (PAD)

~~193.~~217. For all intrusive groundworks carried out onshore above Mean Low Water Springs (MLWS) where an archaeologist is not present, the Applicant and the appointed Principal Contractor(s) will implement the PAD (SPR 2015), which is based upon the ORPAD (The Crown Estate 2014) and applies to all contractors and sub-contractors working on an offshore project for ScottishPower Renewables (SPR) and is applicable to UK projects only.

~~194.~~218. Section 1.2.9 of the ORPAD states that although "*It is recognised that this Protocol refers primarily to offshore schemes of development. However, with offshore renewable schemes it is usual to have associated infrastructure (such as export cables) that impact not only the offshore historic environment, but also inshore, inter-tidal, and in fully terrestrial localities. Therefore, this Protocol has been designed to operate in all of these environments, where an archaeologist is not present*." (The Crown Estate 2014).

~~195.~~219. The PAD adopts the same approach, and although it refers primarily to offshore schemes of development, it also applies to onshore elements of the work for which there is no specific watching brief (SPR 2015).

~~196.~~220. The main objective of the PAD will be to reduce / offset direct impacts from occurring on currently unrecorded heritage assets by enabling people working on the proposed East Anglia TWO project to report unexpected archaeological discoveries in a manner that is conducive to their everyday work and that allows for efficient reporting so that archaeological advice can be provided in a timely manner. Should a significant archaeological discovery be reported (as assessed on a case-by-case basis in consultation with the Archaeological Contractor(s), Project Archaeologist, SCCAS and HE, as applicable), groundworks would continue elsewhere until the remains have been subject to appropriate archaeological investigation and any further requirements from an archaeological perspective ascertained and undertaken. In the event of such a discovery, archaeological requirements and necessary 'next steps' will be agreed in consultation with SCCAS and HE, as applicable.

~~197.~~221. Groundwork activities during which previously unidentified sites or unexpected discoveries of material may be encountered include:

- The removal of topsoil anywhere across the onshore development area;
- The excavation of transition bays at the landfall;

- Open cut trenching as part of the onshore cable installation works;
- The excavation of jointing bays along the onshore cable route;
- Groundworks associated with the onshore cable route, Construction Consolidation Sites (CCS) across the onshore development area, and associated access tracks; and
- Groundworks associated with onshore infrastructure (e.g. the onshore substation and the National Grid infrastructure).

~~198.~~222. Training of construction staff, site crews and work teams with regard to the practical application of the protocol in their day to day work will be provided by a sufficiently experienced and qualified Archaeological Contractor. Hard copies of the PAD document will be made available for use at each CCS.

~~199.~~223. Each worksite team (comprised of construction staff) will have a Site Champion, a single person who is responsible for reporting discoveries to a Nominated Contact within the Developer's core team.

~~200.~~224. The Nominated Contact will be a suitable person from the Applicant. Individual Site Champions for specific activities will be specified in method statements. The identity of the Site Champion will be clearly communicated to work teams, via pre-commencement briefings for example.

~~201.~~225. Provision will be made by the Applicant, in accordance with the PAD, for the prompt reporting / recording to SCCAS and HE (as required) of archaeological remains encountered or suspected during works.

~~202.~~226. Following completion of the onshore construction works, a report will be produced by the Archaeological Contractor(s) presenting the results of the PAD implementation during relevant activities and submitted to SCCAS and HE (as required). In the event that no discoveries are made, a 'nil discoveries' report should be compiled in order to demonstrate adherence to the measures as will be further set out in the construction-related mitigation WSI, to be produced in the post-consent / pre-construction stages of the proposed East Anglia TWO project.

~~203.~~227. As per the Outline Code of Construction Practice, if, during construction, human remains are found unexpectedly on a site not known to be a burial ground (or an area of known archaeological interest), they will not be removed. In such circumstances, the local environmental health officer and the proposed East Anglia TWO project archaeologist will be consulted to assess the remains and the police will be consulted. If the police conclude that the remains are of no investigative significance and it is necessary to exhume the remains, then an

application for a licence will be made to the Ministry of Justice. Should any animal remains be discovered during the construction phase that indicate a potential burial site, the main works contractor would cease all work in the vicinity and immediately advise the Animal Health Regional Office accordingly.

12 Nomination of the Archaeological Contractor(s)

204.228. In the early post-consent stages of the proposed East Anglia TWO project, the Applicant will appoint an Archaeological Coordinator / Consultant (the Project Archaeologist) and an Archaeological Contractor(s) to plan, programme and undertake the initial informative stages of mitigation and subsequent mitigation requirements to high professional standards. All required archaeological works will be discussed and agreed with ESC, in consultation and agreement with SCCAS / HE (as required). SCCAS will provide briefs for the archaeological works and/or will liaise with the Applicant's archaeologist to specify WSIs. Roles and responsibilities will be clearly defined and planning (and the establishment of programme) will commence at the earliest possible opportunity in-line with other related key-milestones for the proposed East Anglia TWO project, in order that the post-consent archaeological works can be delivered effectively and in-line with expectations.

205.229. Appropriate and effective lines of communication and collaborative working will be established with the Principal Contractor(s), once appointed, in order to further ensure well planned and programmed archaeological works are undertaken to the satisfaction of all parties.

206.230. Appropriately experienced specialists will also be put forward and agreed with SCCAS, providing relevant on-site and post excavation support. Artefacts will be analysed and reported by specialists with appropriate, proven, local experience. Where deposits with significant ecofactual, industrial or agricultural processing potential are encountered, sampling will be directed by an appropriate specialist.

207.231. The Project Archaeologist and Archaeological Contractor(s) will collaborate with local, regional, and national experts with particular research interests in the region in order to provide the opportunity to inspect archaeological results on-site, and communicate the results of any collaboration to SCCAS and HE (as required).

13 Summary

208.232. This OWSI has been produced to set out (at a high-level only) the proposed broad approaches to further archaeological survey and investigation to be undertaken primarily in the post-consent stages of the proposed East Anglia TWO project. This includes both initial informative survey stages of mitigation and a range of subsequent mitigation requirements, as and where subsequently identified as being required.

209.233. This document also represents an initial overarching archaeological mitigation strategy to be applied to the onshore development area, again primarily in the post-consent stages. The outstanding survey-specific WSIs and other pre-construction and construction related mitigation WSIs will be produced by the Applicant and their appointed representatives/contractors, discussed and ultimately approved by ESC in consultation with SCCAS (and HE, as required) in the post-consent stages of the proposed East Anglia TWO project.

210.234. All documents will be produced in-line with relevant legislation, planning policy, guidance and good practice (***section 3***).

14 References

Ashton N., Lewis SG., De Groote I., Duffy SM., Bates M., Bates R., et al. (2014) Hominin Footprints from Early Pleistocene Deposits at Happisburgh, UK

British Geological Survey (2018). http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Brown, N. and Glazebrook, J. (eds.) (2000). Research and Archaeology: A Framework for the Eastern Counties: 2. Research Agenda and Strategy. East Anglian Archaeology Occasional Paper No.8

Cranfield University (2019). Cranfield Soil and Agrifood Institute Soilscapes

Department of Energy and Climate Change (2011a). National Policy Statement for energy infrastructure, including the Overarching NPS for Energy (EN-1)

Department of Energy and Climate Change (2011b). National Policy Statement for Renewable Energy Infrastructure (EN-3)

English Heritage (now Historic England), (2011). Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation (second edition), Centre for Archaeology Guidelines

European Archaeologiae Consilium (2016). Guidelines for the Use of Geophysics in Archaeology. Questions to Ask and Points to Consider (EAC Guideline 2)

Glazebrook, J. (ed.) (1997). Research and Archaeology: A Framework for the Eastern Counties: 1. Resource Assessment. East Anglian Archaeology, Occasional Paper 3

Good, C. and Plouviez, J. (2007). The Archaeology of the Suffolk Coast, Suffolk County Council Archaeological Service Report, Ipswich

Gurney, D. In East Anglian Archaeology (2003). Standards for Field Archaeology in the East of England, Occasional Papers 14

Historic England (2015a). Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide

Historic England (2015b). Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record

Historic England (2016). Preserving Archaeological Remains: Decision-taking for Sites under Development

Historic England (2017). Understanding the Archaeology of Landscapes

Medlycott, M. (ed.) (2011). Research and Archaeology Revisited: A Revised Framework for the East of England. East Anglian Archaeology Occasional Paper No. 24

McKinley, J.I. 2013, 'Cremation: Excavation, Analysis, and Interpretation of Material from Cremation Related Contexts' in S. Tarlow and l. Nilsson Stutz (eds.) The Oxford Handbook of the Archaeology of Death and Burial, Oxford University Press 147-171

McKinley, J.I. and Roberts C., 1993, IfA Technical Paper no 13 Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains

Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework

Ministry of Housing, Communities and Local Government (2018). Planning Practice Guidance: Conserving and enhancing the historic environment

Page, W. (ed.) (1975). A History of the County of Suffolk

SCCAS Requirements for a Geophysical Survey (updated September 2020)

SCCAS Additional Requirements for a Palaeoenvironmental Assessment (updated October 2018)

SCCAS Requirements for a Trenched Archaeological Evaluation (updated October 2020)

SCCAS Requirements for Archaeological Excavation (updated September 2020)

SCCAS Archaeological Archives in Suffolk, Guidelines for Preparation and Deposition (2017, last updated May 2019)

ScottishPower Renewables (2015) Environmental Management Procedure: Offshore Windfarms Archaeological Protocol. Unpublished document, ref UKRE-GPE-ENV013

The Chartered Institute for Archaeologists (2014a, updated October 2019). Code of Conduct, CIfA, Reading

The Chartered Institute for Archaeologists (2014b, updated October 2020). Standard and guidance for archaeological geophysical survey, CIfA, Reading

The Chartered Institute for Archaeologists (2014c, updated October 2020). Standard and guidance for archaeological field evaluation, CIfA, Reading

The Chartered Institute for Archaeologists (2014d, updated October 2020). Standard and guidance for the archaeological investigation and recording of standing buildings or structures, CIfA, Reading

The Chartered Institute for Archaeologists, (2014e, updated October 2020), Standard and guidance for an archaeological watching brief, CIfA, Reading

The Chartered Institute for Archaeologists (2014f, updated October 2020). Standard and guidance for archaeological field excavation, CIfA, Reading

The Chartered Institute for Archaeologists, (2014g, updated October 2020), Standard and guidance for the collection, documentation, conservation and research of archaeological materials, CIfA, Reading

The Chartered Institute for Archaeologists, (2014h, updated October 2020), Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives, CIfA, Reading

The Crown Estate (2014). Protocol for Archaeological Discoveries: Offshore Renewables Projects. Published by Wessex Archaeology, Salisbury

Appendix 1: Outline Schedule of Archaeological Requirements

Outline Schedule of Archaeological Requirements for Sub-Surface Remains

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
NRHE	1478561	Diver strip diver battery S15.	Site of a Second World War heavy anti-aircraft (Diver) battery in the Diver Strip southeast of Prettyman's Whin. It was armed with four 3.7-inch Mark IIc guns equipped with Predictor BTL, and Radar AA No.3 Mark V when it was deployed here on 24th November.	Second World War	647000	262000	Onshore Cable Corridor (Onshore Development Area).	Low	Within cable corridor (asset represented by single point, therefore extent unknown).	Within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
NRHE	1478677	Diver strip light anti-aircraft (diver) battery SA.	Site of a Second World War light anti-aircraft (Diver) battery in the Diver Strip north at Sizewell Common. It was manned by 450 Battery of 135 Anti-Aircraft Artillery Regiment on 10th October 1944. The armament is not stated.	Second World War	647009	262001	Onshore Cable Corridor (Onshore Development Area).	Low	Within cable corridor (asset represented by single point, therefore extent unknown).	Within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
NRHE	1478701	Diver strip light anti-aircraft (diver) battery SD.	Site of a Second World War light anti-aircraft (Diver) battery in the Diver Strip at Thorpe Ness. It was manned by 305 Battery of 98 Anti-Aircraft Artillery Regiment on 10th October 1944. The armament is not stated.	Second World War	647500	260900	Landfall (Onshore Development Area).	Low	Within landfall location (asset represented by single point, therefore extent unknown).	Within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 016	Post Medieval bridge.	Site of bridge as shown on Hodskinson's map of 1783, crossing the Hundred River.	18th century to 19th century	644694	260594	Onshore Cable Corridor (Onshore Development Area).	Low	Southern-most extent is within the cable corridor – minimal interaction.	Largely covered by geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 017	Second World War anti-glider ditches and military training activity on The Walks, Aldringham Common.	An extensive network of Second World War anti-glider ditches is visible as earthworks on aerial photographs of The Walks, Aldringham Common. Traces of Second World War (and perhaps earlier) military training activity is also visible.	Modern	646468	261621	Onshore Cable Corridor (Onshore Development Area).	Low	Northern-most extent is within the cable corridor – potential notable interaction.	Area of asset that interacts within the cable corridor is largely covered by geophysical survey. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 028	Slit trench.	A slit trench of World War Two date in Aldringham cum Thorpe parish.	Second World War	647404	261328	Onshore Cable Corridor (Onshore Development Area).	Low	Largely within cable corridor – potential notable interaction.	Within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	ARG 031	Diver strip diver battery S2.	A World War Two strongpoint and anti-aircraft battery, Aldringham cum Thorpe.	Second World War	647210	260954	Landfall / Onshore Cable Corridor (Onshore Development Area).	Low	Largely within the cable corridor (potential notable interaction) – minimal interaction within the landfall location.	Area partially covered by geophysical survey. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 032	Two World War Two strongpoints on Thorpeness Common. (Mod).	Two World War Two strongpoints on Thorpeness Common, Aldringham cum Thorpe.	Second World War	647570	260703	Landfall (Onshore Development Area)	Low	Wholly within landfall location.	Northernmost-extent covered by geophysical survey. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 033	A World War Two chain home extra low station K164.	Chain Home Extra Low Station K164, at Thorpeness, Aldringham cum Thorpe.	Second World War to Cold War	647509	260165	Landfall (Onshore Development Area).	Low	North-eastern extent within landfall location – potential moderate interaction	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 034	Diver strip diver battery S3.	A World War Two Diver Battery site on Thorpeness Common, Aldringham cum Thorpe.	Second World War	647480	260372	Landfall (Onshore Development Area).	Low	Largely within the landfall location – potential notable interaction.	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 052	World War Two coastal defences to the North of Thorpeness.	World War Two coastal defences to the North of Thorpeness, Aldringham cum Thorpe.	Second World War	647688	260842	Landfall (Onshore Development Area).	Low	Wholly within landfall location.	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 057	Aldringham historic settlement core (Med).	Indicative area of the historic settlement core of Aldringham.	Medieval to Post Medieval	644629	261009	Onshore cable corridor (Onshore Development Area).	Low to Medium	Marginally intersects access route – minimal interaction.	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	KND 007	Half of a ring ditch or circular enclosure of unknown date, visible as a cropmark.	Semi-circular cropmark, possibly surviving half of ring ditch or small circular enclosure, diameter approximately 50m.	Unknown	641779	260784	Onshore cable corridor (Onshore Development Area).	Low to Medium	Southern-most extent intersects cable corridor – potential moderate interaction.	Covered by geophysical survey. Potentially to be subject to initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	KND 009	Buxlow/Buxton.	1753: Symbol for 'church or chapel in ruins' on Bowen's map of Suffolk at `Buxton', north of Friston church. Structure may actually be represented by cropmark HA6.	Medieval	641366	260643	NG and onshore substation (Onshore Development Area).	Medium	Largely within the wider substation area – potential notable interaction.	Predominantly covered by geophysical survey. Programmed for targeted metal detector survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	KND 011	Little Moor farm; Buxlow parsonage.	Rectangular moated site of former Buxlow parsonage on the south edge of the former Friston Moor (common).	Medieval to Post Medieval	641180	261650	NG and onshore substation (Onshore Development Area).	Medium	Marginally intersects OHL area – very minimal interaction.	Programmed for geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	KND 015	Littlemoor Farm, Fristonmoor; Buxlow.	An enclosed area formerly (on C19 maps) containing 4 dwellings, now demolished.	Post Medieval	641255	261733	NG and onshore substation (Onshore Development Area).	Low	Marginally intersects OHL area – very minimal interaction.	Programmed for geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	KND 016	Old Kiln Field; Kiln Field; Buxlow.	Field names and brick debris suggesting brickworks.	Post Medieval	641563	261792	NG and onshore substation (Onshore Development Area).	Low	Southern extent interacts with OHL area – potential moderate interaction.	Programmed for geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 063	Site of Second World War Diver anti-aircraft battery.	A Second World War Diver anti-aircraft battery is visible as structures on aerial photographs. The site is now arable and there is no evidence that any elements survive; an evaluation in the area of the site noted large amounts of modern building material.	Post Medieval to Second World War	646186	262545	Onshore cable corridor (Onshore Development Area).	Low	Very minimal interaction, if any.	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 113	World War Two anti-tank ditch.	A World War Two anti-tank ditch in Leiston and Aldringham cum Thorpe parish.	Second World War	647301	261915	Onshore cable corridor (Onshore Development Area).	Low	Intersects (crosses) cable corridor – minimal interaction.	Area where asset intersects cable corridor has been subject to geophysical survey. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 117	Quarry pit of unknown date.	A quarry pit of unknown date, Leiston.	Unknown	646927	262393	Onshore cable corridor (Onshore Development Area).	Low	South-eastern extent slightly intersects the cable corridor – minor interaction.	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	LCS 119	Extensive World War Two beach scaffolding.	Extensive World War Two beach scaffolding, running southwards for circa 7km from Leiston parish.	Second World War	647521	262718	Landfall (Onshore Development Area).	Low	Intersects landfall area – potential notable interaction.	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 202	Site of two probable First World War pillboxes.	Two probable First World War pillboxes are visible as extant buildings (since levelled) on aerial photographs.	First World War	645849	262507	Onshore cable corridor (Onshore Development Area).	Low	Intersects access route – minimal interaction.	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 203	Second World War training area and/or strong point.	A Second World War training area and/or strong point is visible as earthworks and structures on 1940s aerial photographs. Recent photographs indicate that while much of the site was dismantled before the end of the war, some earthworks probably still survive.	Second World War	646561	262342	Onshore cable corridor (Onshore Development Area).	Low	Intersects cable corridor at southern extent –minor to moderate interaction only.	South-eastern extent within geophysical survey area. Potentially to be subject to Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 206	Site of Leiston Very High Frequency (VHF) Fixer Station.	A World War Two direction finding (D/F) station (or a similar type of communications/navigation site), which remained in use into the Cold War period under the Rotor programme, is visible as a group of structures, connected by pathways, on aerial photographs.	Second World War to Cold War	645830	261771	Onshore cable corridor (Onshore Development Area).	Low	Largely within cable corridor.	Within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 210	Site of fragmentary cropmarks of unknown date and significance.	Fragmentary cropmarks, of uncertain date and archaeological significance, are visible on aerial photographs. They could represent former field boundaries.	Unknown	646065	262292	Onshore cable corridor (Onshore Development Area).	Low	Intersects access route – potential moderate interaction.	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 213	Diver strip diver battery S1.	A Second World War Diver anti-aircraft battery is visible as structures and earthworks on aerial photographs. The site was dismantled at the end of the war, but parts of the trackways still survive, as may some of the hard standings.	Second World War	646286	262231	Onshore cable corridor (Onshore Development Area).	Low	Central extent intersects cable corridor – potential for moderate interaction.	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 214	Site of double-ditched enclosure and probably associated boundary ditches and trackways of unknown date.	A double-ditched enclosure and probably associated boundary ditches and trackways, all of unknown date, are visible as cropmarks on aerial photographs.	Early Bronze Age to Roman	646969	261918	Onshore cable corridor (Onshore Development Area).	Low	Eastern extent intersects cable corridor – potential moderate interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	LCS 215	Site of possible Bronze Age round barrow or medieval to post medieval mill mound, The Walks.	The site of a possible Bronze Age round barrow or medieval to post medieval mill mound is visible as a soil and cropmark on aerial photographs.	Early Bronze Age to Post Medieval	646599	262313	Onshore cable corridor (Onshore Development Area).	Low to Medium	Wholly within cable corridor.	Within geophysical survey area.	Likely to be subject to avoidance. To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA1	Previously Unrecorded heritage asset.	Identified from LiDAR images - depression alongside field boundary evident during walkover. (Pond?).	Unknown	640972	261166	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation wider area.	Partially covered by geophysical survey data.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA2	Previously Unrecorded heritage asset.	Identified from LiDAR not evident during walkover as under crop.	Unknown	641027	261345	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation wider area.	Programmed for geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA3	Previously Unrecorded heritage asset.	The remains of an orchard, and several linear & curvilinear features visible in APs and on LiDAR images. An extant ditch evident during the walkover may represent a lost field boundary (LF2).	Unknown	641516	261372	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation and wider area.	Partially covered by geophysical survey data. Programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA4	Previously Unrecorded heritage asset.	A number of possible small buildings evident in AP.	Unknown	641330	260660	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation wider area.	Partly within geophysical survey area. n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA5	Previously Unrecorded heritage asset.	Depression underlying field boundary, evident during walkover.	Unknown	641434	260773	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation wider area.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA6	Previously Unrecorded heritage asset.	Possible chapel evident in AP. May represent remains of Buxlow/Buxton Chapel recorded as KND009 (see above).	Unknown (Medieval?)	641611	260765	Onshore Cable Corridor (Onshore Development Area).	Medium	Largely within cable corridor – potential notable interaction.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA8	Previously Unrecorded heritage asset.	Linear features identified from LiDAR. Visible as ditch within Grove Wood, leads into rectangular enclosure ditch at its SE corner. Possibly visible in the southern field as a slight depression in the north of the field.	Unknown	641692	260728	Onshore Cable Corridor (Onshore Development Area).	Low	Intersects cable corridor – potential moderate interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA9	Previously Unrecorded heritage asset.	Sub-circular feature identified from LiDAR and evident as a depression during walkover.	Unknown	641813	260711	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA13	Previously Unrecorded heritage asset.	Sub-circular feature identified from LiDAR and evident as a depression during walkover.	Unknown	642176	261461	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / substation wider area.	Programmed for geophysical survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA14	Previously Unrecorded heritage asset.	Band of possible features or geology identified in APs.	Unknown	642295	261421	NG and onshore substation (Onshore Development Area).	Low	Largely within OHL / NG / substation wider area.	Partially covered by geophysical survey data.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA15	Previously Unrecorded heritage asset.	Sub-circular features identified on LiDAR, evident as depressions during walkover, and linear feature identified on APs.	Unknown	642267	260807	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor.	Partially within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA16	Previously Unrecorded heritage asset.	Linear features identified from LIDAR. Sub-rectangular features were evident as depressions during walkover, but lost field boundary was not evident.	Unknown	642279	260664	Onshore Cable Corridor (Onshore Development Area).	Low	Intersects access area – very minimal interaction.	Partially (minimally) within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA22	Previously Unrecorded heritage asset.	Lost field boundary not visible in crop during walkover. No cropmarks evident.	Unknown	642813	260521	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – minimal interaction.	Predominantly Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA25	Previously Unrecorded heritage asset.	Linear features identified from LIDAR and structures identified from APs. Linear field boundary not visible during walkover. A tree may mark the original location of the eastern extent of the now lost feature. Structures evident as modern farm buildings.	Unknown	643598	260327	Onshore Cable Corridor (Onshore Development Area).	Low	Partially (minimally) intersects cable corridor – minimal interaction.	Partially within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA26	Previously Unrecorded heritage asset.	Linear features identified from APs.	Unknown	643689	260454	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA27	Previously Unrecorded heritage asset.	LiDAR feature visible as a sub-rectangular depression during walkover - approximately 3.5m deep.	Unknown	643873	260406	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA31	Previously Unrecorded heritage asset.	Semi-circular features identified in APs.	Unknown	643990	260259	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Wholly within cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA32	Previously Unrecorded heritage asset.	Several curvilinear features, and a group of several pits aligned in a square.	Unknown	644104	260154	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Northern-most extent intersects cable corridor – very minimal interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA33	Previously Unrecorded heritage asset.	LiDAR features visible as sub-rectangular depressions in field - one was waterlogged.	Unknown	644313	260254	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching (see AAA4).	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA34	Previously Unrecorded heritage asset.	LiDAR feature - not accessible during walkover. Sandbanks visible from the road might be associated with the feature.	Unknown	644819	260557	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching (see AAA3).	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA35	Previously Unrecorded heritage asset.	LiDAR feature - not accessible or evident during walkover.	Unknown	645034	260695	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching (see AAA3).	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA36	Previously Unrecorded heritage asset.	Circular feature identified in APs.	Unknown	645232	260716	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Wholly within cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA37	Previously Unrecorded heritage asset.	LiDAR feature - not accessible or evident during walkover.	Unknown	645161	260942	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA39	Previously Unrecorded heritage asset.	LiDAR feature not accessible during walkover.	Unknown	645181	261161	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – very minor interaction.	Area where asset intersects onshore development area is within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA41	Previously Unrecorded heritage asset.	LiDAR feature - not accessible or evident during walkover.	Unknown	645089	261362	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Area where asset intersects onshore development area is within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA42	Previously Unrecorded heritage asset.	LiDAR feature - visible as depression in field and crop marked in wheat.	Unknown	645367	261501	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Area where asset intersects onshore development area is within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA46	Previously Unrecorded heritage asset.	LiDAR feature not accessible during walkover, but some depressions visible in field.	Unknown	645703	261661	Onshore Cable Corridor (Onshore Development Area).	Negligible-Low	Partially intersects cable corridor – potential moderate interaction.	Area where asset intersects onshore development area is largely within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA47	Previously Unrecorded heritage asset.	Area around LCS 206 - AP and LIDAR features not evident during walkover.	Unknown	645800	261875	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Area where asset intersects onshore development area is largely within geophysical survey area. Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA48	Previously Unrecorded heritage asset.	Possible group of small circular features maybe related to agricultural activity.	Unknown	645968	261853	Onshore Cable Corridor (Onshore Development Area).	Negligible to Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA49	Previously Unrecorded heritage asset.	Circular feature.	Unknown	645623	261829	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Wholly within cable corridor.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA50	Previously Unrecorded heritage asset.	Area around ARG 017 - AP features not evident during walkover.	Unknown	645999	261510	Onshore Cable Corridor (Onshore Development Area).	Low	Very slightly intersects cable corridor – very minimal interaction.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA51	Previously Unrecorded heritage asset.	Lost field boundary now obscured by trackway.	Unknown	646278	261820	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Area where asset intersects onshore development area is within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA53	Previously Unrecorded heritage asset.	LiDAR and AP feature evident during the walkover as a depression alongside the field boundary. Dense overgrowth present.	Unknown	646632	262224	Onshore Cable Corridor (Onshore Development Area).	Negligible to Low	Largely intersects cable corridor – potential notable interaction.	Partially within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA55	Previously Unrecorded heritage asset.	Row of pits?	Unknown	647015	262176	Onshore Cable Corridor (Onshore Development Area).	Low	Largely intersects cable corridor – potential notable interaction.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA58	Previously Unrecorded heritage asset.	AP features evident during walkover as overgrown quarry pits.	Unknown	647115	261585	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA59	Previously Unrecorded heritage asset.	Field boundary.	Unknown	647326	261438	Onshore Cable Corridor (Onshore Development Area).	Low	Partially intersects cable corridor – potential moderate interaction.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA60	Previously Unrecorded heritage asset.	LiDAR feature - not accessible during walkover, but evident as a depression in the field.	Unknown	647350	260942	Landfall / Onshore Cable Corridor (Onshore Development Area).	Negligible to Low	Largely intersects landfall location and cable corridor – potential notable interaction.	Partially within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA61	Previously Unrecorded heritage asset.	Triangular feature - possible field drain.	Unknown	647612	260913	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA62	Previously Unrecorded heritage asset.	LiDAR features - not evident during walkover.	Unknown	647514	260737	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA63	Previously Unrecorded heritage asset.	LiDAR features - not evident during walkover.	Unknown	647313	260638	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA64	Previously Unrecorded heritage asset.	LiDAR features - not evident during walkover.	Unknown	647206	260648	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA66	Previously Unrecorded heritage asset.	Ruins and traces of two structures.	Unknown	647260	260517	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA67	Previously Unrecorded heritage asset.	LiDAR and AP features visible as depressions during walkover.	Unknown	646873	260476	Landfall (Onshore Development Area).	Negligible to Low	Partially intersects landfall location – potential moderate interaction.	Within geophysical survey area. Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA68	Previously Unrecorded heritage asset.	Structure recorded on the 1st Edition OS map.	Unknown (Post-Medieval?)	647498	260556	Landfall (Onshore Development Area).	Negligible to Low	Wholly within landfall location.	Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

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Headland Heritage Asset	HA69	Previously Unrecorded heritage asset.	Enclosure, field boundaries and structures.	Unknown	647503	260362	Landfall (Onshore Development Area).	Low to Medium	Largely within landfall location – potential notable interaction.	Within Archaeological earthwork identification survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Heritage Asset	HA72	Previously Unrecorded heritage asset.	Possible building identified on LiDAR images.	Unknown	642484	261440	NG and onshore substation (Onshore Development Area).	Low	Wholly within OHL / NG / wider substation area.	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA1	Geophysical anomalies of archaeological interest.	Former system of land division.	Unknown	-	-	Landfall and Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Moderate interaction with landfall and Onshore Cable Corridor locations.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA2	Geophysical anomalies of archaeological interest.	Possible ploughed down remains of a Bronze Age barrow.	Bronze Age?	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Moderate to notable interaction with cable corridor.	Within geophysical survey area.	Potential for avoidance. To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Discrete anomalies including possible kilns.	Unknown	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Moderate interaction with cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA3	Geophysical anomalies of archaeological interest.	Former fields/enclosures of likely post-medieval date.	Post-medieval?	-	-	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Small to moderate interaction with cable corridor.	Within geophysical survey area. Partially programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Possible trackway and series of enclosures.	Unknown	-	-	Onshore Cable Corridor (Onshore Development Area).	Low to High	Moderate to notable interaction with cable corridor.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
Area of Archaeological Interest	AAA4	Geophysical anomalies of archaeological interest.	Ladder-like series of enclosures.	Unknown	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium to High	Moderate interaction with cable corridor.	Within geophysical survey area. Partially programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Trackway, system of land division and small circular feature (possible ploughed-out barrow feature).	Bronze age?	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium to High	Moderate interaction with cable corridor.	Within geophysical survey area. Partially programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Former field division (wider field system).	Unknown	-	-	Onshore Cable Corridor (Onshore Development Area).	Low to Medium	Minimal / moderate interaction with onshore cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA5	Geophysical anomalies of archaeological interest.	Possible roadside enclosure.	Unknown	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Minimal interaction with onshore cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA6	Geophysical anomalies of archaeological interest.	Partial remains of probable barrow.	Bronze age?	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Notable interaction with onshore cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Cluster of sub-rectangular enclosures possibly dated to Middle Bronze Age through to the early Roman period (although prehistoric date is likely).	Prehistoric to Roman?	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Minimal to moderate interaction with onshore cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest	AAA8	Geophysical anomalies of archaeological interest.	Enclosures of uncertain date (could date from Iron Age to post-medieval).	Iron Age to post-medieval?	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Minimal interaction with onshore cable corridor.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction with Project	Surveys Undertaken to Date / Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
Area of Archaeological Interest	AAA9	Geophysical anomalies of archaeological interest.	Possible roadside settlement of medieval date bordering Grove Wood.	Medieval	-	-	Onshore Cable Corridor (Onshore Development Area).	Medium	Moderate-notable interaction with onshore cable corridor.	Within geophysical survey area. Programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
			Former system of field division of uncertain date.	Unknown	-	-	Onshore Cable Corridor / NG and onshore substation wider area (Onshore Development Area).	Medium	Moderate interaction with onshore project area.	Within geophysical survey area. Partially programmed for initial targeted archaeological trial trenching.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest.	AAA10	Geophysical anomalies of archaeological interest.	Cluster of enclosures possibly dating from later prehistoric to early post-Roman periods.	Later prehistoric to early post-Roman periods?	-	-	NG and onshore substation wider area (Onshore Development Area).	Medium	Minimal interaction with NG and onshore substation wider area.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Area of Archaeological Interest.	AAA11	Geophysical anomalies of archaeological interest.	L-shaped arrangement of enclosures.	Unknown	-	-	NG and onshore substation wider area (Onshore Development Area).	Medium to High	Minimal interaction with NG and onshore substation wider area.	Within geophysical survey area.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Outline Schedule of Archaeological Requirements for Above Ground Remains (including Historic Landscape features)

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction	Magnitude of Impact	Significance of Effect (pre-mitigation)	Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	ADB 226	Aldeburgh branch railway line.	Course of former Aldeburgh to Saxmundham branch line, track bed visible in places.	19th century to Modern	642577	260504	Onshore Cable Corridor (Onshore Development Area).	Low	Transects cable corridor.	Medium	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction	Magnitude of Impact	Significance of Effect (pre-mitigation)	Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	ARG 031	Diver strip diver battery S2.	A World War Two strongpoint and anti-aircraft battery, Aldringham cum Thorpe.	Second World War	647210	260954	Landfall / Onshore Cable Corridor (Onshore Development Area).	Low	Largely within the cable corridor (potential notable interaction) – minimal interaction within the landfall location.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 032	Two World War Two strongpoints on Thorpeness Common. (Mod).	Two World War Two strongpoints on Thorpeness Common, Aldringham cum Thorpe.	Second World War	647570	260703	Landfall (Onshore Development Area).	Low	Wholly within landfall location.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 033	A World War Two chain home extra low station K164.	Chain Home Extra Low Station K164, at Thorpeness, Aldringham cum Thorpe.	Second World War to Cold War	647509	260165	Landfall (Onshore Development Area).	Low	North-eastern extent within landfall location – potential moderate interaction.	Low	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 034	Diver strip diver battery S3.	A World War Two Diver Battery site on Thorpeness Common, Aldringham cum Thorpe.	Second World War	647480	260372	Landfall (Onshore Development Area).	Low	Largely within the landfall location – potential notable interaction.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 052	World War Two coastal defences to the North of Thorpeness.	World War Two coastal defences to the North of Thorpeness, Aldringham cum Thorpe.	Second World War	647688	260842	Landfall (Onshore Development Area).	Low	Wholly within landfall location.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction	Magnitude of Impact	Significance of Effect (pre-mitigation)	Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
HER	ARG 070	Earthworks of World War Two anti-glider ditches north of Thorpeness Golf Course.	Earthworks of World War Two anti-glider ditches are visible on aerial photographs on land to the north of Thorpeness Golf Course, Aldringham cum Thorpe.	Second World War	646739	260187	Landfall (Onshore Development Area).	Low	Very small interaction – adjacent to access route.	Negligible	Negligible	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	FRS 013	Friston Moor.	Friston Moor, a former common.	Medieval	640570	261518	NG and onshore substation wider area (Onshore Development Area).	The loss of any margins associated with the former common would be considered as representing a change to the HLC. (South-western extent intersects area north of OHL modification area – minimal interaction.)				n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 203	Second World War training area and/or strong point.	A Second World War training area and/or strong point is visible as earthworks and structures on 1940s aerial photographs. Recent photographs indicate that while much of the site was dismantled before the end of the war, some earthworks probably still survive.	Second World War	646561	262342	Onshore cable corridor (Onshore Development Area).	Low	Intersects cable corridor at southern extent – minor to moderate interaction only.	Low	Minor	Potentially to be subject to Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 213	Diver strip diver battery S1.	A Second World War Diver anti-aircraft battery is visible as structures and earthworks on aerial photographs. The site was dismantled at the end of the war, but parts of the trackways still survive, as may some of the hard standings.	Second World War	646286	262231	Onshore cable corridor (Onshore Development Area).	Low	Central extent intersects cable corridor – potential for moderate interaction.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	LCS 216	Earthworks of linear and rectilinear boundaries of unknown date, The Walks, Aldringham Common.	Linear and rectilinear boundaries of unknown date are visible as earthworks on aerial photographs of The Walks, Aldringham Common.	Unknown	646462	262264	Onshore cable corridor (Onshore Development Area).	Low	Eastern-most extent is within the cable corridor – potential minimal to moderate interaction.	Medium	Minor	Programmed for Archaeological earthwork identification survey.	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction	Magnitude of Impact	Significance of Effect (pre-mitigation)	Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
Headland Mapped Parish Boundary	PB1	Eastern edge of Friston and western edge of Knodishall.	North/south between Clouting's Farm, then Little Moor Farm and Friston village.	Unknown	-	-	NG and onshore substation (Onshore Development Area).	Medium	Transects NG substation footprint and OHL area.	Medium	Moderate	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Mapped Parish Boundary	PB2	Western edge of Friston and eastern edge of Knodishall.	Southwest from Knodishall Common, along Snape Road to Drane's Lane Cottages.	Unknown	-	-	Onshore cable corridor (Onshore Development Area).	Medium	Transects cable corridor.	Low	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Mapped Parish Boundary	PB3	Friston and Hazelwood boundary.	North from Billeaford Hall, along Sloe Lane to junction with Snape Road.	Unknown	-	-	Onshore cable corridor (Onshore Development Area).	Medium	Transects cable corridor.	Low	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Mapped Parish Boundary	PB4	Hazelwood and Aldringham with Thorpe boundary.	Follows the course of the Hundred River northeast of Gipsy Lane, runs north to cross the B1122 north of Aldringham Court.	Unknown	-	-	Onshore cable corridor (Onshore Development Area).	Medium	Transects cable corridor.	Low	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
Headland Mapped Parish Boundary	PB5	Aldringham with Thorpe and Leiston (western).	Runs east/west between the dismantled railway track and Aldeburgh Road, across The Walks just south of Forty Acre Belt.	Unknown	-	-	Onshore cable corridor (Onshore Development Area).	Medium	Transects cable corridor.	Low	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location (study area)	Heritage Importance	Interaction	Magnitude of Impact	Significance of Effect (pre-mitigation)	Programmed Initial Targeted Surveys	Post-Consent Initial Informative Stages of Mitigation
Headland Mapped Parish Boundary	PB6	Aldringham with Thorpe and Leiston (eastern).	Runs east/west across a field between Square Covert and Dower House.	Unknown	-	-	Onshore cable corridor (Onshore Development Area).	Medium	Transects cable corridor.	Low	Minor	n/a	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Outline Schedule of Archaeological Requirements for Recorded Findspots and Artefact Scatters

Dataset	Ref	Name/Type	Brief Description	Approximate Date	Easting	Northing	Location	Post-consent Initial Informative Stages of Mitigation (e.g. Fieldwalking / Metal Detecting Survey)
NRHE	962914	-	A Neolithic flaked flint axe was found in a garden "several years ago".	Neolithic	647500	260500	Onshore development area (Landfall Location).	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).
HER	ARG 099	Post medieval boat fragment, Thorpeness Point beach.	Large, circa 40 feet long, clinker-built boat fragment washed up on beach at Thorpeness Point - with ribs and planking, dowelled together. Formerly recorded as ARG MISC.	Post Medieval	647722	260513	Onshore development area (Landfall Location).	To be agreed in the post-consent stages with East Suffolk Council in consultation with SCCAS (and HE, as required).

Appendix 2: Method Statement for Onshore Geophysical Survey

EAON18

East Anglia ONE North and East Anglia TWO

Method Statement for Onshore Geophysical Survey

Client: Scottish Power Renewables

v.02

Headland Archaeology (UK) Ltd
Unit 16 Hillside
Beeston Road
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LS11 8ND
June 2018

HEADLAND ARCHAEOLOGY Ltd

1 Introduction

1.1 This Method Statement has been prepared by Headland Archaeology to describe the proposed method for undertaking geophysical (predominantly but not exclusively magnetometer) survey in advance of groundworks for Scottish Power Renewables (SPR) East Anglia ONE North and East Anglia TWO projects. At this stage of project development SPR have taken the decision to survey the entire Indicative Onshore Development Area (IODA) which comprises the Landfall Refined Area, Onshore Cable Corridor Refined Area and Substation Refined Area. The survey has been expanded to allow for micro-siting where feasible within the larger land take area and comprises the IODA as shown on Illus 1.

1.2 The geophysical survey will be recorded with Suffolk County Council Archaeology Service (SCCAS) before the survey commences (the process is in train) and a Suffolk Historic Environment Record (SHER) parish code will be obtained. All material (including paper and digital archive) that is submitted to the HER or deposited in the Suffolk County Council Archaeological Archive will be marked with this code.

1.3 The scheme of work will be undertaken in accordance with the requirements of the National Planning Policy Framework (DCLG 2012) and with SCCAS Standard Requirements for Geophysical Survey (SCCAS 2017).

1.4 The Method Statement has been produced to the standards laid down in Historic England's guideline publication Geophysical Survey in Archaeological Field Evaluation (English Heritage 2008) and the Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Archaeological Geophysical Survey (CIfA 2014).

2 Objectives

2.1 The principal objectives of the programme of geophysical survey are to gather information to establish the presence/absence, character and extent of any archaeological remains within the IODA, and to inform further strategies should they be necessary.

2.2 The aims of the survey are:

- to provide information about the nature and possible interpretation of any magnetic anomalies identified;
- to therefore determine the likely presence/absence and extent of any buried archaeological features; and
- to produce a comprehensive site archive and report.

3 Project team

3.1 The project will be managed for Headland Archaeology by Alistair Webb (Senior Archaeological Geophysicist). Curricula vitae of key personnel who may be employed on the project are contained within Appendix 1. Each field team will comprise of at least one supervisor.

3.2 The project team will familiarise themselves with the background to the site and will be aware of the project's aims and methodologies.

3.3 Headland Archaeology (UK) Ltd is a Registered Archaeological Organisation and abides by the Codes of Conduct and Approved Practice and Standards of the Chartered Institute for Archaeologists. The company has all the necessary technical and personnel resources for the satisfactory completion of the survey.

4 Insurance & copyright

4.1 Headland Archaeology (UK) Ltd is fully indemnified and all necessary insurances can be presented on request.

4.2 Copyright will be retained by Headland Archaeology (UK) Ltd. Headland will licence the client and other bodies as necessary for use in matters relating to the project and for use of the project archive by the relevant museum. This licence will also extend to non-commercial use.

5 Health & safety

5.1 All of Headland's work is undertaken in accordance with current H&S legislation. A risk assessment and method statement will be prepared prior to the commencement of fieldwork. All staff will wear appropriate PPE.

6 Method

6.1 A geophysical (magnetometer - gradiometer) survey will be carried out across all of the IODA as identified on Illus 1 except where access is not available or the ground conditions mitigate against survey. Where survey cannot be undertaken SCCAS will be informed and reasons provided as to why the magnetometer survey could not be carried out.

6.2 It is likely that due to crop conditions the survey may be delayed/ the survey is not possible in particular land parcels. If access is delayed, and further refinement of the Indicative Development Area has occurred in the intervening time, SPR reserve the right to not undertake, or amend the survey, over land that will not therefore be required for development purposes.

6.3 The survey will be undertaken using four Bartington Grad601 sensors mounted at 1m intervals (allowing for a 1m traverse interval) onto a rigid carrying frame. The system will be programmed to take readings at a frequency of 10Hz (allowing for a 10-15cm sample interval) on roaming traverses spaced 4m apart. These readings will be stored on an external weatherproof laptop and later downloaded for processing and interpretation. MLGrad601 and MultiGrad601 (Geomar Software Inc.) software will be used to collect and export the data. Terrasurveyor V3.0.32.4 (DWConsulting) software will be used to process and present the data.

6.4 The magnetometer system will be linked to a Trimble R8s and R2 Real Time Kinetic (RTK) differential Global Positioning System (dGPS) outputting in NMEA mode to ensure a high positional accuracy of each data point.

6.5 A series of temporary sight markers will be established within each survey area using a Trimble dGPS system. The markers will guide the operator and ensure full coverage with the magnetometer system.

6.6 At the start of each day the magnetometer will be left idle whilst switched on for approximately 30 minutes to allow the instrument to acclimatise to the site conditions. The instrument will thereafter be balanced when necessary and at least twice during the day.

6.7 To assess the consistency of the data a single repeat track will be undertaken at the start/end of each day. These will be displayed in the report.

6.8 The geophysical survey will comply with guidelines outlined by Historic England (English Heritage 2008) and by the Chartered Institute for Archaeologists (CIfA 2014).

6.9 Consideration will always be given to the use of alternative survey techniques where in the opinion of the consultant or contractor different methodologies might help identify specific target features or mitigate specific ground conditions. Such techniques might include resistivity, ground penetrating radar or electromagnetic techniques. Any change in technique should be discussed with and approved by SCCAS prior to any change in methodology.

7 Reporting and Archive

7.1 On completion of the survey, a report will be produced containing all relevant information including:

- site code/project number; dates for fieldwork visits; grid references; location plan, and a plan showing the limits of the survey area;
- a non-technical summary of the reason for, aims and main results of the survey;
- an introduction to outline the circumstances leading to the commission of the project and any restrictions encountered;
- the aims and objectives of the survey;
- the methodology used;
- a summary and synthesis of the archaeological results in relation to the methods used. This shall be supported by a survey location plans and plots of minimally processed (X-Y traceplot) and fully processed (greyscale) data at a minimum scale of 1:2500 with larger scale (1:1000) plots of all areas of archaeological significance. Each plan/plot will have a bar scale and accurately oriented north sign; and
- references to all primary and secondary sources consulted.

7.2 Data will be presented in both raw (X-Y traceplot) and processed (greyscale) formats at an appropriate range. The interpretation of the data will be made following analysis of and taking account of HER data, cropmarks, historic mapping, topographic and man-made features and any other factor that might have an effect on the data. All these factors will be discussed in the final report and the results assessed both on a site by site basis but also in the wider landscape.

7.3 All figures will be reproduced from Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

7.4 A draft report will be produced for comment to both the client and SCCAS. Following amendment/approval of the draft a final report will be completed and submitted to the client, to SCCAS and the Local Planning Authority and/or Conservation Officer. A digital copy will also be supplied to SCCAS and digital geo-referenced of the data plots and interpretation graphics also supplied to Suffolk HER. Georeferenced vector data will also be supplied to SCCAS and SHER.

7.5 The project will be archived in-house in accordance with recent good practice guidelines (http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_3). The data will be stored in an indexed archive and migrated to new formats when necessary.

7.6 In addition, Headland Archaeology will make their work accessible to the wider research community by submitting digital data and copies of the report on line to OASIS – an OASIS summary sheet will be included as an appendix to the report as will be a copy of the approved WSI.

8 Monitoring

8.1 A standard working day will involve driving to site, condition surveys of the survey area, survey area setting out and detailed geophysical survey. Data will be sent back to the office on a regular basis and progress reports provided to the client.

Key Contacts

Alistair Webb, Regional Manager	0113 387 6430
Sam Harrison, Manager	0113 387 6431
Eddie Bailey, Health and Safety Coordinator	0131 467 7748
Survey team leader: Ross Bishop	[redacted]

9 Bibliography

Chartered Institute for Archaeologists (CIfA) 2014 Standard and guidance for archaeological geophysical survey (Reading)
http://www.archaeologists.net/sites/default/files/CIfAS&Geophysics_1.pdf accessed 5 April 2018

Department of Communities and Local Government (DCLG) 2012 National Planning Policy Framework
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf accessed 5 April 2018

English Heritage 2008 Geophysical Survey in Archaeological Field Evaluation: Research and Professional Services Guidelines (2nd edn)
http://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf accessed 5 April 2018

10 APPENDIX 1: Curricula Vitae of key personnel

Summary Curriculum Vitae for the key personnel to be employed on the proposed project are detailed below together with their proposed role in the scheme.

Senior Manager:	Alistair Webb BA MCIfA
Project Manager:	Sam Harrison BSc MSc MCIfA
Senior Archaeologist:	David Harrison BA MSc MCIfA
Supervisor (Geophysics):	Ross Bishop BA
Supervisor (Geophysics):	Mark Evans BSc
Supervisor (Geophysics):	Olivier Vansassenbrouk BA MA MSc
Archaeological Geophysicist:	Krasimir Dyulgerski BA MRes
Archaeological Geophysicist:	Richard McGregor Edwards BA MA

Name:- Alistair Webb BA MCIfA

Current Position:- Regional Manager, Headland North

Proposed Role:- Senior Archaeological Geophysicist

Alistair is the Senior Manager responsible for overall management of the geophysical survey teams, as well as other developer funded archaeological field projects. He was employed by Archaeological Services WYAS for more than 25 years working at all levels within the organisation from Site Assistant to Senior Manager, being involved in geophysical surveys almost exclusively for 15 years, as well as managing other large fieldwork projects. During his career at ASWYAS he wrote in excess of 350 grey literature reports, the majority being on geophysical surveys, for clients in all sectors of the heritage industry including national bodies such as English Heritage and Historic Scotland, as well as for other archaeological contracting companies, heritage consultants and commercial companies. He has recently co-authored a publication on the medieval and post-medieval archaeology of Bradford.

Alistair joined Headland in April 2015 as Regional Manager to set up and run the Headland North office in Leeds which specialises in archaeological geophysical surveys throughout the United Kingdom.

Alistair gained his BA in Environmental Studies in 1984 and in 1995 successfully completed modules on Magnetic and Electromagnetic Methods of Survey, part of the MSc in Archaeological Prospection run by Bradford University. Alistair is a Member of the Chartered Institute for Archaeologists (MCIfA), a member of the CIfA

geophysics Special Interest Group (GeoSIG) and the International Society for Archaeological Prospection (ISAP). He has successfully completed IOSH Managing Safely training.

Name:- Sam Harrison BSc MSc MCIfA

Current Position:- Project Manager

Proposed Role:- Project Manager

Sam graduated in 2002 from Bradford University with an Honours degree in Archaeological Sciences. He subsequently refined his interest in remote sensing techniques gaining an MSc in Archaeological Prospection in 2005.

He joined Headland in May 2015 following 11 years with Archaeological Services WYAS where he managed over 200 geophysical survey projects from small scale Heritage Lottery funded community schemes to large-scale linear infrastructure projects up to 700 hectares in size. He has substantial experience in managing, organising and undertaking shallow sub-surface archaeological prospection techniques including magnetometry, earth resistance, ground penetrating radar, ERT and electro-magnetic methods. Sam is highly experienced in specialist geophysics software programs, such as Geoplot and Terrasurveyor, as well as AutoCAD Map, Illustrator, MapInfo and ArcGIS.

Sam is a Member of the Chartered Institute for Archaeologists (MCIfA) and has completed the ILM Leadership and Management Course (Level 3). He is also CSCS certified.

Name:- David Harrison BA MSc MCIfA

Current Position:- Senior Archaeologist

Proposed Role:- Senior Geophysical Supervisor

David has more than 12 years' experience of organising, undertaking and reporting on commercial geophysical surveys across the UK and Ireland. In his current position, David is responsible for managing small to medium sized projects, managing large amounts of geophysical data on a daily basis, quality control and reporting. In recent years, he has specialised in large-scale multi-sensor magnetometer surveys using both Sensys and Bartington systems. Since joining Headland in 2015 David has been integral in the development and design of Headland's own unique hand-carried multi sensor magnetometer, complete with on board GPS and wireless technology.

David has a BA (Hons) in Archaeology awarded in by 1999 by King Alfred's College, Winchester and an MSc in Archaeology awarded by the University of Liverpool in 2002. David is CSCS certified and First Aid at Work trained. He is a Member of the Chartered Institute for Archaeologists (MCIfA) and has successfully completed IOSH Managing Safely training.

Name:- Ross Bishop BA

Current Position:- Project Supervisor (Geophysics)

Proposed Role:- Supervisor

Ross graduated from York University in 2013 with a BA in Archaeology and has subsequently accrued more than 4 years' experience in commercial archaeology, the vast majority in geophysical survey. He joined Headland in 2015 as a geophysical survey supervisor and has supervised on several large housing development projects as well as regional linear infrastructure schemes.

Ross is experienced in undertaking both conventional gridded magnetometer surveys as well as large scale multi sensor GPS based surveys. In addition, he has experience in earth resistance, electromagnetic, ERT, ground penetrating radar and topographical survey. He is SSSTS and CSCS certified.

Name:- Mark Evans BSc

Current Position:- Project Supervisor (Geophysics)

Proposed Role:- Supervisor

Mark graduated from the University of Sheffield in 2005 with a BSc in Archaeological Sciences. He has since undertaken modules as part of the MA Landscape Archaeology course (University of Sheffield) and the University of Oxford Continuing Education Landscape Survey course (2014).

He joined Headland Archaeology in 2017 having supervised geophysical field surveys throughout the UK for the previous three years. He has extensive experience in surveying on linear schemes, wind farms, photo-voltaic schemes, housing developments, and on several nuclear facilities. Mark has substantial experience in GPS topographic survey, GPS-based magnetometer cart survey, hand-held gradiometer survey, earth resistance and electromagnetic (EM) survey. He is CSCS and SSSTS certified.

Name:- Olivier Vansassenbrouck BA MA MSc

Current Position:- Project Supervisor (Geophysics)

Proposed Role:- Supervisor

Olivier completed his BA and MA in Art History and Archaeology at the University of Brussels (VUB) in 2014 where he carried out his first geophysical survey as part of his dissertation on Viking defence fortresses in Flanders (Belgium). He subsequently completed an MSc in Archaeological Prospection at the University of Bradford in 2016, where his dissertation researched the effectiveness of several different geophysical survey methods in the detection of graves.

Olivier was employed at Stratascan from November 2016 until August 2017 as a Survey Assistant, participating in over 100 surveys. He has experience with magnetometer (both hand-held and cart-based), earth resistance and ground-penetrating radar surveys. Olivier joined Headland Archaeology in September 2017.

Name:- Krasimir Dyulgerski BA MRes

Current Position:- Project Assistant (Geophysics)

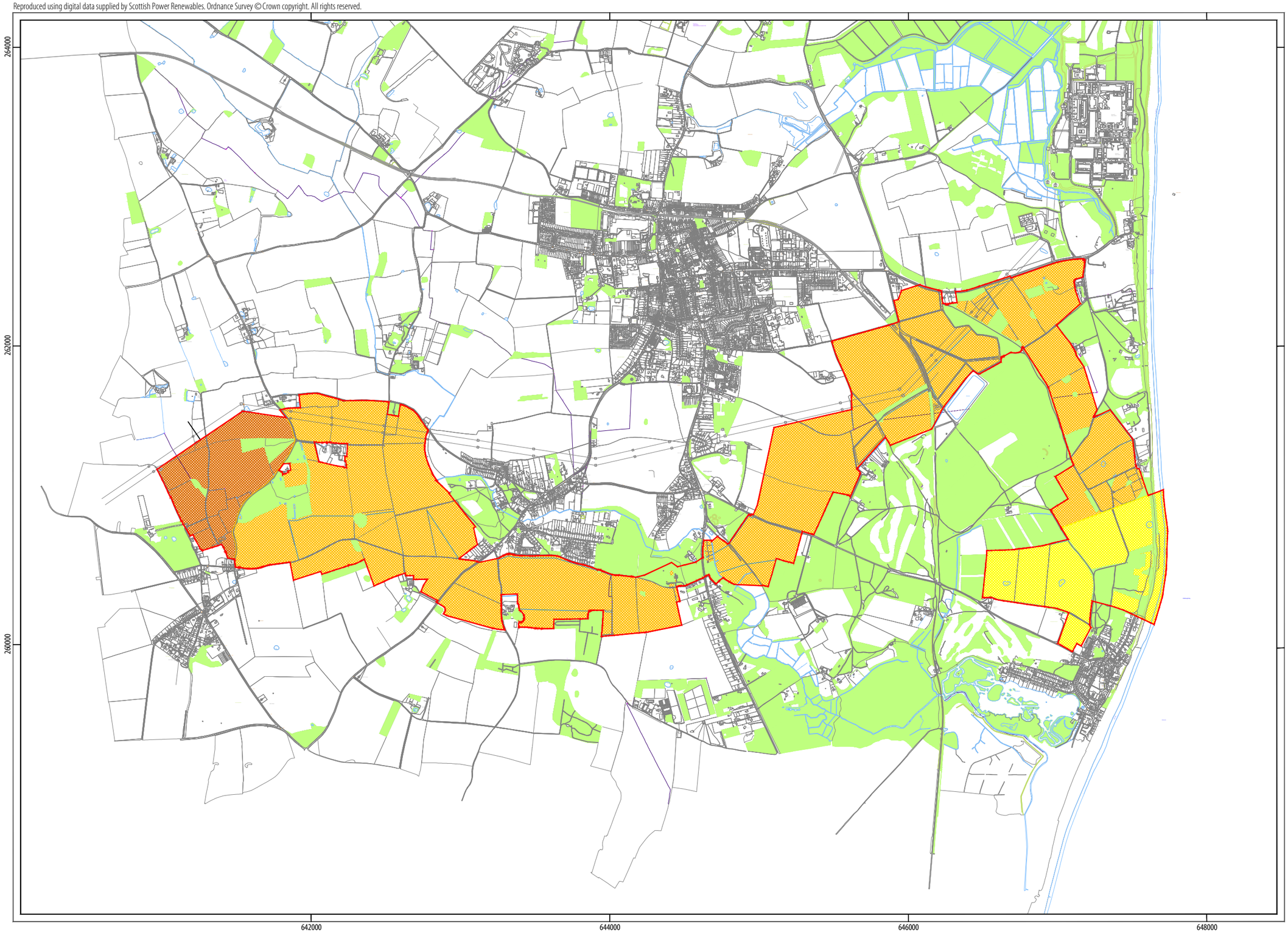
Proposed Role:- Survey Assistant

Krasimir joined Headland in October 2017. He graduated from University of Liverpool with a BA (Hons) in July 2016 and MRes in Archaeology in December of 2017. As part of his degree, he undertook two geophysical surveys in Olynthus, Greece where he gained experience in various geophysical methods such as electrical resistivity, ground penetrating radar and magnetometry (hand-held and cart-based). Since joining Headland Archaeology, Krasimir has undertaken a number of hand-carried multi-sensor magnetometer surveys in advance of housing developments, major infrastructure projects and road construction.

Name:- Richard McGregor Edwards BA MA

Current Position:- Site Assistant (Geophysics)

Richard completed a BA in Archaeology & Prehistory at the University of Sheffield in 2006. After several years conducting fieldwork on a range of sites in the UK and the Isle of Man, he returned to Sheffield and completed the MA in Landscape Archaeology in 2011. He has experience of magnetometer survey, earth resistance survey, magnetic susceptibility survey and GPS-based topographic survey. He joined Headland Archaeology in January 2018.



- geophysical survey area / IODA
- Landfall Refined Area (LRA)
- Onshore Cable Corridor Refined Area (OCCRA)
- Substation Refined Area (SRA)

0 500m
1:25,000 @ A3

PROJECT EAON18
East Anglia One North/Two Offshore Wind Farm
Suffolk

CLIENT Scottish Power Renewables

HEADLAND ARCHAEOLOGY
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ILLUS 1 Proposed area of geophysical survey / Indicative Onshore Development Area (IODA)

Appendix 3: Written Scheme of Investigation for a Programme of Targeted Archaeological Trial Trenching

EAON18

East Anglia TWO and East Anglia ONE NORTH Offshore Windfarms, Onshore Cable Corridor and Substation Sites, Suffolk

Written Scheme of Investigation for a Programme of Targeted Archaeological Trial Trenching

Client: ScottishPower Renewables

v.09

Headland Archaeology (UK) Ltd

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August 2019

HEADLAND ARCHAEOLOGY Ltd

1 CONTEXT

1.1 This survey-specific WSI has been produced by Headland Archaeology, in consultation with SCCAS (archaeological adviser to East Suffolk Council). The document has also been reviewed by SCCAS in July 2019 during the pre-application stages of the East Anglia TWO and ONE North projects prior to the initial targeted survey work (as detailed in the document) commencing post-harvest, i.e. summer/autumn 2019. The three survey-specific WSIs produced at this time will form appendices 3, 4 and 5 to the Outline WSI. These survey-specific WSIs will not be subject to further edits/amendments closer to the application deadlines, but will remain valid and relevant 'point in time' documents produced to facilitate the targeted surveys commencing prior to or overlapping with the DCO application submissions.

2 INTRODUCTION AND PLANNING BACKGROUND

2.1 The proposed East Anglia ONE North and East Anglia TWO projects are Nationally Significant Infrastructure Projects (NSIP) that are being developed respectively by East Anglia ONE North Limited and East Anglia TWO Limited (the Applicants) both of whom are wholly owned subsidiaries of Scottish Power Renewables (SPR). Both projects have the potential to make a substantial contribution to UK 2030 energy targets by meeting nearly 10% (5% for each project) of the UK offshore wind cumulative deployment target for 2030. The East Anglia ONE North offshore windfarm site is located in the southern North Sea, approximately 36km from its nearest point to the port of Lowestoft and 42km from Southwold whilst the East Anglia TWO offshore windfarm site is approximately 31km from its nearest point to Lowestoft and 32km from Southwold, also being located in the southern North Sea. The proposed East Anglia ONE North project will have an operational capacity of up to 800MW, which is enough to power approximately 659,000 UK households whilst the proposed East Anglia TWO project will have an operational capacity of up to 900MW, which is enough to power approximately 742,413 UK households. Both projects would be principally comprised of offshore wind turbines, offshore electrical and construction, operation and maintenance platforms, offshore export cables, onshore cables, an onshore substation, a National Grid substation and National Grid overhead line realignment works.

2.2 Both projects are in the pre-application stage and their application programmes run in parallel, however they will be submitted as separate DCO applications. The onshore development area, which includes landfall location, onshore cable route, onshore substation location and National Grid infrastructure, has been developed to allow for the construction of both the proposed projects. At this stage it is not known whether both projects would be constructed simultaneously or sequentially.

2.3 This document presents a survey-specific Written Scheme of Investigation (WSI) for undertaking an initial programme of targeted archaeological trial trenching in relation to specific locations within the onshore development area for both the East Anglia TWO and ONE North projects. The WSI has been prepared by Headland Archaeology following instruction by Philip Rew-Williamson of Royal HaskoningDHV (the Consultant) on behalf of the Applicants. The scope of works has been proposed

following consultations between the Applicants, Consultant (Royal HaskoningDHV), Headland Archaeology and Suffolk County Council Archaeological Service (SCCAS), who provide archaeological advice to East Suffolk Council (ESC).

2.4 The initial programme of targeted trenching is required in order to provide further information on the archaeological potential (and associated risk) at key locations within the onshore development area. The results of this initial programme of targeted trenching will not alter the conclusions of the ES chapter but will, at the earliest opportunity, further inform the post-consent mitigation strategies, in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately the Outline WSI (OWSI), which is to be submitted as part of the DCO application, within which this survey-specific WSI is **Appendix 3**.

2.5 It is recognised and acknowledged that the scope of trenching currently proposed represents a lower-level first phase of evaluation only targeting specific anomalies, as well as a small proportion of related and apparently 'blank' areas. Further survey-specific WSI's will be produced (in-line with the Outline WSI DCO document included with the DCO application) for a complete project-wide programme of subsequent trenching and mitigation works across the full extent of the onshore development area in the post-consent stages.

3 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

3.1 The onshore development area has been identified by a detailed site selection process as outlined in **Chapter 4 Site Selection and Consideration of Alternatives** of the East Anglia TWO and East Anglia ONE North Environment Statements (to be submitted with the DCO application). It includes land between Sizewell and Thorpeness at the landfall and extends inland approximately 9km terminating at the onshore substation location just to the north of Friston, encompassing the parishes of Aldringham-cum-Thorpe, Leiston, Knodishall and Friston. This area is in multiple landownership and the land use is a mixture of arable and market garden agriculture with areas of heath, scrub, woodland and sand dunes to the far east along the coastal edge.

3.2 Since archaeological fieldwork (e.g. geophysical survey) for the projects commenced, the limits of the proposed onshore development area have undergone substantial revision and refinement. The proposed onshore development area (as presented at PEIR) has now been superseded by the onshore development area, as presented for the DCO application purposes. This latter boundary is shown on Illus 1 (red outline).

3.3 The underlying bedrock geology comprises Crag Group Sand. This is overlain across most of the Site with superficial deposits of Lowestoft Formation Diamicton, Sand and Gravel and Clay and Silt. A small band of Alluvium is recorded adjacent to the Hundred River and there are also small areas where there are no recorded superficial deposits (British Geological Survey 2019). The soils are classified in the Soilscape 10 and Soilscape 7 associations which are characterised as freely

draining slightly acid sandy soils and freely draining slightly acid but base rich soils respectively (Cranfield University 2019).

4 ARCHAEOLOGICAL BACKGROUND

The Desk-Based Assessment

4.1 A 'point in time' archaeological desk-based assessment (***Appendix 24.3*** to ***Chapter 24 Onshore Archaeology and Cultural Heritage*** of the ES) was undertaken and produced by Headland Archaeology in 2018 to inform the PEIR and subsequent ES, which included analysis of aerial photographs, LIDAR data and historic maps, as well as a walkover survey.

4.2 The ADBA highlighted the potential for extensive WWII remains along the coast, and the potential for currently unrecorded heritage assets with archaeological interest, including possible remains of prehistoric, Roman and medieval date.

4.3 Many of the previously recorded assets relate to WWII activity, mostly on or near to the coast. Other assets relate to extant features in the landscape, e.g. quarry pits.

4.4 Very few of the newly identified assets relate to previously unidentified cropmarks, with the majority due to features likely associated with post medieval or modern activity such as depressions probably relating to small scale quarrying or possible bomb craters, as well as relict field boundaries, post-medieval buildings and WWII infrastructure. These were all primarily identified from analysis of LIDAR data or historic mapping.

4.5 The DBA stated that: '*the LiDAR assessment is considered likely to have identified all substantial upstanding heritage assets within the ADBA study areas, although smaller discrete features may have been missed due to the limited coverage at resolutions greater than 2m*'. In relation to the below ground archaeological remains '*the map regression will have identified any features still present in the 19th century, but will not have identified earlier features, which may not have survived above ground to this date*', and '*the aerial photography analysis is likely to have detected a majority of cropmark features'. The report concluded that: 'there remains the potential that further below ground archaeological remains are present, either as smaller features not readily detected in aerial photography or due to the ground conditions at the time the photos were taken not being conducive to cropmark formation*'.

4.6 It was therefore concluded that '*on the basis of the known archaeological and historical background of the ADBA study areas … there is considered to be a moderate to high likelihood that further prehistoric remains survive within the ADBA study areas*'. These may include possible assemblages of flint artefacts, especially along the gravel terraces of the Hundred River.

4.7 It was also considered that there is 'a moderate likelihood of further Iron Age and Romano-British remains in the form of possible settlements and associated field systems.' Although it was recognised that Iron Age and Roman sites (likely to

comprise traces of ditches and earthworks) were more conducive to identification through geophysical survey.

4.8 Additionally, it was also considered that there was 'a medium to high potential for evidence of Anglo-Saxon and medieval agricultural land use within the ADBA Study Area'. The area around the possible church of Buxlow (KND 009 and HA6) was considered to have considerable potential for burials.

The Geophysical Survey

4.9 The geophysical survey undertaken to date has clearly demonstrated that the prevailing geological and pedological conditions within the onshore development area are favourable for the detection of sub-surface archaeological remains and consequently it has been assessed that the results provide a reliable indication of the extent of the majority of the significant areas of sub-surface archaeological remains within the onshore development area, subject to the limitations of the technique. It is recognised that other types of archaeological activity, including unenclosed settlement or funerary activity, may be difficult to detect (by the surveys carried out to date), but which could also be found to be of importance.

4.10 Anomalies indicative of probable or possible archaeological features and activity have been identified throughout the onshore development area, the majority of which were previously unknown, thus adding significantly to the archaeological understanding of the landscape across which the onshore cable route will traverse. Although the suspected archaeological remains extend throughout the onshore development area there are still large areas where no anomalies of archaeological potential have been identified from the geophysical survey. However, the low magnitude exhibited by some of the anomalies and the partial and discontinuous nature of others suggests that, in certain instances, the archaeological remains may be more extensive than revealed by the survey to date, either due to partial truncation by modern agricultural techniques and/or a lack of magnetic contrast on a variable geological substrate.

4.11 Nevertheless, **11 broad areas** comprising both concentrations of anomalies or single clearly defined features are identified as areas of archaeological activity (**AAA's**) – it should be noted however, that some of these areas/anomalies are outside the onshore development area. Most of the linear anomalies are interpreted as locating soil filled ditches forming an extensive and complex network of field systems and enclosures, most likely for animals, which extends across pockets of the onshore development area. These field systems and potential stock enclosures are of uncertain date but probably date to the later prehistoric or early Roman periods and possibly post-medieval. Smaller, sub-divided, enclosures with numerous discrete anomalies are interpreted as more likely to have been the sites of human occupation. Several of these settlement sites are identified, particularly in the western half of the onshore development area, again varying dates are likely including medieval. As well as the enclosures and possible settlement sites, circular anomalies, interpreted as locating round barrows of possible Bronze Age date and/or a windmill of likely post-medieval date, are also highlighted.

4.12 On the basis of the geophysical survey carried out to date the archaeological potential of the onshore development area is considered to be potentially higher than asserted in the concluding assessments of potential given in the ADBA. The survey has clearly identified numerous anomalies indicative of multi-period activity, including prehistoric funerary activity (ring ditches) and medieval settlement (road frontage occupation).

5 AIMS / OBJECTIVES

5.1 The East Anglia TWO and ONE North projects will potentially impact upon known, recently identified and currently unknown archaeological remains of uncertain date or significance. Based upon the results of the earlier phases of archaeological work (e.g. DBA and geophysical survey) it is clear that the onshore cable route passes through a landscape of some archaeological interest. Further clarification of predicted potential by means of an initial targeted programme of archaeological trial trenching has been programmed in order to more clearly establish the extent, character and significance of the archaeological remains at certain key locations (identified as pinch points).

5.2 The initial scheme of targeted trenching is primarily based on targeting magnetic anomalies (identified by the geophysical survey) as well as cropmarks and other features identified during research for the ADBA. It should be noted that trenches have also been positioned in order to evaluate apparently 'blank' areas, as well as those of obvious archaeological interest or potential in order to ground truth the results of the survey and assess the presence/absence of feature types or periods which are not readily identified by magnetic survey. To aid in this, initial targeted metal detector survey will be carried out at a further key location. This phase of work has been scoped in a separate survey-specific WSI.

5.3 The results of both the initial targeted trial trenching and the targeted metal detecting survey, together with the geophysical survey results and targeted earthwork condition survey (again subject to a separate survey-specific WSI), will be used to determine and further establish an appropriate mitigation strategy to be formally agreed in the early post-consent stages of the proposed East Anglia TWO project. The post consent mitigation work will also be the subject of separate mitigation-related WSI(s).

5.4 The general aims of this initial phase of targeted trial trenching are to establish (at a high-level only) the nature, extent, degree of preservation and likely significance of archaeological features and deposits within four key areas and also to evaluate (via intrusive means) the potential for previously unrecorded remains within those same areas. These areas are located at points within the onshore development area where there is considered to be more limited flexibility to alter/amend or microsite the location of the onshore infrastructure or at more constrained locations in terms of the possible/likely land take ('pinch points') along the onshore cable route. The results of this initial programme of targeted trenching will not alter the conclusions of the ES chapter but will, at the earliest opportunity, further inform the post-consent mitigation strategies, in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO.

5.5 The four areas are:

Area 1 – Onshore substation location and immediate surrounds – see Illus 2.

Area 2 – Grove Road Crossing – see Illus 3.

Area 3 – Aldringham Road – see Illus 4.

Area 4 – Hundred River Crossing – see Illus 5.

5.6 The specific objectives of the initial targeted programme of trial trenching are to:

- validate the results of the geophysical surveys;
- establish the nature of the anomalies interpreted as being of possible or probable archaeological origin;
- establish the extent of any (currently unknown) archaeological features and carry out appropriate investigation and recording;
- enable the progression of an appropriate mitigation strategy to be defined, including identifying any features worthy of preservation in situ which may require design micrositing considerations (within the confines of other environmental and engineering constraints) to ensure avoidance, where possible.
- produce a report on the results of the work for deposition with the Suffolk HER; and
- undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

5.7 General guidance relating to evaluation, recording, report preparation and archiving include that prepared by Historic England (2015a) and the Chartered Institute for Archaeologists (2014a–c). More specific guidance is referenced in the relevant sections below.

5.8 More regionally specific guidance is provided in 'Standards for Field Archaeology in the East of England', East Anglian Archaeology Occasional Papers 14 (Gurney 2003) and in SCCAS Requirements for a Trenched Archaeological Evaluation (updated March 2017).

6 TRENCHING METHODOLOGY

6.1 The initial targeted programme of priority trial trenching will comprise the excavation and recording of 91 **trenches** (access dependent) at four specific locations (see Section 4.5 above). Each trench will be positioned to evaluate possible archaeological features, as well as a small proportion of related and apparently

'blank' areas (as indicated by the geophysical survey) to give an even (albeit more limited) sample across each defined area. Each trench will measure 25m by 2m, except in the substation area where they measure 30m by 2m. The position or extent of trenches may be subject to minor variation based upon local ground conditions or logistical constraints – for example the trenches in Area 1 (the onshore substation location) are positioned to avoid a known system of field drains and to accommodate localised badger activity. The total area of the trial trenches amounts to 5010m2. It is not anticipated that trenches shall be left open more than 3 days in advance of digging commencing.

6.2 Prior to topsoil stripping each trench will be 'scanned' by a cable avoidance tool (CAT scanner) in order to check for buried services. A metal detector will also be used prior to soil stripping to recover any artefacts in the topsoil. The spoil will also be scanned by metal detector in order to collect any artefacts which might have been missed prior to stripping (SCCAS 2017, Section 1.8). Metal detecting will continue throughout all excavation. This will include prior to the commencement of sampling of features. Metal finds will be recorded by GPS. The experienced detectorist(s) will be named once the timetable of works is confirmed. SCCAS will be provided with details of the named detectorist(s) at this juncture.

6.3 The trenches will be stripped of topsoil/subsoil using a tracked mechanical excavator with a wide (minimum 1.8m), toothless bucket, which will operate under archaeological supervision at all times (SCCAS 2017, Section 1.1). Topsoil will be removed to the edge of (1m away from) each trench and kept separate from subsoil (SCCAS 2107, Section 1.13). The ends of each trench shall be battered to effect safe entry and exit and to allow any animals (e.g. badgers) to escape from the trenches. Provision will be made for stepping the trench in order to safely record the full archaeological sequence. The trenches will be backfilled upon the conclusion of the work, unless otherwise specified, and upon approval of the monitoring archaeologist at SCCAS (SCCAS 2017, Section 1.14). Trenches will not be opened more than 7 days in advance of digging commencing in order to minimise any risk of night hawking and will be backfilled as soon as possible after sign-off from SCCAS.

6.4 The machine will remove overburden down to a level at which any significant archaeological deposits are first identified or down to natural deposits, whichever is first. All subsequent excavation will be carried out by hand unless agreed otherwise (SCCAS 2017, Section 1.3).

6.5 Archaeological investigation will be carried out over the full area of the trench and all surfaces will be cleaned sufficiently by hand to establish the presence or absence of archaeological deposits. Features shall then be planned and photographed (SCCAS 2017, Section 1.7, 1.11 and 1.12).

6.6 All features will be sample excavated, unless deemed of sufficient importance to require total preservation in situ, sufficient to achieve the specific project aims. Hand excavation will be undertaken to evaluate depth, dimension and preservation of archaeology, and to ensure recovery of sufficient artefactual and environmental evidence, including palaeoenvironmental remains, to enable dating and assessment of the archaeology to be achieved (SCCAS 2017, Section 1.5 and 1.6). All finds will

be processed (unless variations in this principle are agreed with SCCAS during the course of the evaluation) (SCCAS 2017, Section 1.9).

6.7 Human remains will be left in situ unless damage or desecration may be anticipated, and except where removal or analysis would aid a satisfactory evaluation of the site. Any reburial of human skeletal remains (HSR) will be done utilising a protective geotextile mesh. All relevant legislation and guidance shall be observed (SCCAS 2017, Section 1.10).

6.8 It would be anticipated that excavated sample sections would constitute 50% of discrete features (in some instances 100% may be required) and 20% of linear or curvilinear features, walls or similar features (to a minimum of 1m in width) and a sufficient sample sectioned to establish whether they had been re-cut. All terminals will be excavated. Pits, postholes and stakeholes less than 0.5m in diameter will normally be excavated in full. Features between 0.5m and 1.5m will be half-sectioned and a minimum 25% of any discrete features or deposits greater than 1.5m in diameter will be excavated (SCCAS 2017, Section 1.4).

6.9 Sample sections will ideally be located at the junction of features where these are encountered in order that their stratigraphic relationships are established, or where evidence of localised refuse dumping or industrial residues are present. Sections will also be positioned, wherever possible, away from intersections in order to avoid cross contamination of finds.

6.10 A period of time or contingency will be allowed within each area to cover both the extension of any specific trenches in order to establish the nature and extent of any significant archaeological features, or for time lost to bad weather. This will be up to a maximum of 10% of the dimensions of each individual trench area (5-6m2). No contingency trenching will be undertaken without the agreement of the Applicants, Consultant and SCCAS.

6.11 Any variations to the excavation methodology arising from the presence of significant or complex archaeological structures, remains or deposits not anticipated would be subject to consultation between SCCAS, the Applicants and/or their Consultant, and put into effect as soon as possible with the written agreement of the parties involved.

7 ARCHAEOLOGICAL RECORDING

7.1 The location of all areas investigated will be electronically surveyed, to an accuracy of +/- 8mm in the vertical and +/- 15mm in the horizontal), in order that these (and all archaeological features and deposits within them) can both be relocated in relation to existing landscape features and located within the Ordnance Survey National Grid. Archaeological deposits will be explicitly related both to depths below existing surface levels and actual heights in relation to Ordnance Datum.

7.2 All archaeological features will be photographed and recorded at an appropriate scale. Sections will normally be drawn at a scale of 1:10, identifying individual contexts and the underlying natural subsoil. Representative sections of trenches largely devoid of archaeological features will also be drawn to record soil profiles and

depths. Archaeological plans will normally be drawn at a scale of 1:20 although areas largely devoid of archaeological features would be recorded at a scale of 1:50. More detailed plans will be drawn as appropriate.

7.3 A written description of features will be recorded on pro-forma sheets using an appropriate context recording system.

7.4 High resolution digital photography will be used for general photographic purposes. For archive purposes the photographic record of the site and investigated contexts and deposits will be taken using monochrome prints at a minimum format of 35mm. All such photographs will include a graduated metric scale. A register of all photographs taken will be kept.

7.5 Forty- to sixty-litre bulk palaeoenvironmental samples will be taken from appropriate representative deposits (such as occupation and midden deposits or ditch and pit fills) and submitted for assessment. Particular attention will be paid to the recovery of samples from any waterlogged deposits present, including at Aldringham Road crossing, if appropriate. Recovery and sampling of environmental remains would be in accordance with guidelines prepared by English Heritage (now Historic England) (2011) and the sampling strategy provided by the specialist and agreed with SCCAS and the Historic England Regional Science Advisor, as required. Samples will also be taken for pollen analysis from appropriate deposits in order to establish preservation and identify the past use of the area. Any waterlogged wood would be recorded and recovered in accordance with English Heritage (now Historic England) (2010) guidance, as appropriate. Smaller samples may also be collected from discrete contexts and monoliths, where appropriate. It is not proposed that sieving of material will be undertaken.

7.6 Secure contexts will be sampled for dating purposes as appropriate (whether on site or as sub-samples of processed bulk samples). This will include C-14 dating, archaeomagnetic dating and dendrochronological dating. Any concentrations of charcoal or other carbonised material recovered on site will usually be retained. Samples for archaeomagnetic dates will be taken on site by the relevant specialist (English Heritage, now Historic England, 2006a). Samples for dendrochronological dates would be taken either on site or from recovered timbers by the relevant specialist in accordance with published guidelines (English Heritage, now Historic England, 1998). Samples would be processed subsequent to initial post-excavation assessment.

7.7 Any buried soils or sediment sequences will be inspected and recorded on site, and samples for laboratory assessment collected where appropriate either by, or following advice, from a recognised geoarchaeologist. The guidance of Historic England (2015b) will be followed.

7.8 All scientific investigations both on site and as part of the subsequent report preparation will be undertaken in a manner consistent with the English Heritage (now Historic England) (2015b) best-practice guidelines.

7.9 Any human remains (inhumations) encountered during the trial trenching will be exposed, recorded and lifted in line with current guidance (Historic England 2108).

Any remains (including specifically cremations) that are lifted will be recorded, recovered and processed also in accordance with HE and IFA (now CIfA) (Brickley and McKinley 2004) guidelines. A Licence for the Removal of Human Remains will be obtained from the Ministry of Justice, in compliance with the provisions of Section 25 of the Burial Act 1857.

7.10 Pottery and animal bone will normally be collected by hand during excavation although smaller artefacts may be required during the processing of environmental samples. Significant artefacts will be three-dimensionally recorded prior to processing. Finds will be recorded, processed and submitted to specialists for post-excavation assessment in a manner consistent with good professional practice (Watkinson and Neal 1998). If necessary, appropriate conservation of artefacts will be undertaken.

7.11 All finds recovered will be washed, marked (if appropriate), appropriately packaged and stored under optimum conditions. Finds recovery and storage strategies will be in accordance with published guidelines (CIfA, 2014); Watkinson and Neal 1998; CIfA 2014b). Provision will be made for site visits from both specialists and a conservator as necessary.

7.12 In accordance with Historic England guidance (2015a), all iron objects, a selection of non-ferrous artefacts (including all coins) and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment in accordance with the guidance provided by English Heritage (now Historic England) (2006b). Where there is evidence for industrial activity, large technological residues would be collected by hand, with separate samples collected for micro-slags. In these instances, the guidance of Historic England (2015c) would be followed.

7.13 Any artefacts recovered during the trial trenching which are considered to be treasure will be dealt with in accordance with the Treasure Act 1996 Code of Practice (updated 2007, published 2008, 2nd Edition) and be reported to the Suffolk FLO, who will in turn advise the coroner within the 14 day statutory period.

Note: There was a Public Consultation (February 2019) 'Revising the definition of treasure in the Treasure Act 1996 and revising the related codes of practice'. The outcomes of which are not yet confirmed, or updates published.

8 MONITORING

8.1 In addition to any monitoring for or on behalf of the Applicants, access will be made available at all reasonable times to the representatives of SCCAS and Historic England for the purposes of monitoring the initial targeted programme of archaeological trial trenching, and a site meeting(s) held to review the results of the trenching, as requested. Should any significant or unexpected results be identified during the course of the trial trenching then the Applicants and the above organisations would be notified immediately. No trenches will be backfilled without SCCAS sign-off.

8.2 Access to the site will be arranged through Headland Archaeology on the basis of prior notification and subject to any necessary health and safety requirements.

9 POST-EXCAVATION ASSESSMENT, REPORTING AND ARCHIVE

9.1 Upon completion of the trenching, an evaluation report will be produced sufficient for SCCAS to make informed decisions in discussion with SPR (and their representatives) on the scope of further archaeological (evaluation and mitigation) works to be undertaken in the post-consent stages of the project (if consent is achieved). The evaluation report will be submitted within an agreed period following completion on site. An Interim Report will initially be prepared for discussion, which may include spot dates to aid in the dating of key features. Full analysis of all finds and environmental samples recovered during the trenching would then be undertaken at the earliest possible time thereafter.

9.2 The Interim Report will comprise a brief description of the results, a draft or sketch plan of each trench and a quantification of the primary archive including contexts, finds and samples and will be prepared and submitted to SCCAS (and Historic England, as appropriate) within an agreed period.

9.3 The subsequent full draft report will include:

- a cover page, title page, or introduction containing the site name, the site code, the planning application number, the dates that fieldwork was undertaken, museum accession number, an Ordnance Survey grid reference, the name of the originating body and the report date.
- a list of contents, figures and tables.
- a non-technical summary.
- an introduction.
- a description of the site and its location.
- topography and geology.
- the planning background.
- the archaeological and historical background.
- the methodology.
- a summary of the project's results.
- interpretation of the archaeological features and their wider setting.
- artefact and ecofact reports by suitable specialists.

- a statement of the significance of the results in their local, regional and national context cross referenced to the regional research frameworks and agendas, as appropriate.
- a conclusion / discussion.
- references.
- a site plan showing trial trench locations.
- plans and sections of all archaeological features at a recognised scale.
- general photographs of the evaluation in progress and selected photographs of archaeological features investigated.
- a catalogue of finds.
- a catalogue/index and location of the site archive and project archive.
- appendices to include the approved survey-specific WSI.
- an OASIS reference and accession number.

9.4 In addition the following requirements and guidance will be adhered to:

- The Headland Archaeology project manager will consult the Suffolk HER Officer to obtain a parish code for the work before commencement. These numbers will be unique for each project or site and will be clearly marked on all documentation relating to the work.
- An archive of all records and finds will be prepared, consistent with the principles of Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2015a) and compliant with SCCAS archaeological archive guidelines (2017). It will be adequate to perform the function of a final archive for deposition in the Archaeological Service's Store or in a suitable museum in Suffolk (see Archaeological Archives Forum: a guide to best practice 2007).

  Note – it is not anticipated that the archive (paper or finds) will be deposited before the end of any subsequent evaluation and mitigation works undertaken post-consent, following this initial programme of targeted evaluation (subject to consent being granted).
- Finds will be appropriately conserved and stored in accordance with guidelines from The Institute of Conservation (ICON).
- Headland Archaeology will ensure every effort is made to get the agreement of the landowners to the deposition of the full site archive, and transfer of title, with the Archaeological Service or designated Suffolk museum. If this is not achievable for all or parts of the finds archive then

provision will be made for additional recording (e.g. photography, illustration, scientific analysis), as appropriate.

- The Headland Archaeology project manager will consult the intended archive depository before the archive is prepared regarding the specific requirements for the archive deposition and curation, and regarding any specific cost implications of deposition. It is intended that the depository will be prepared to accept the entire archive resulting from the project (both finds and written archive) in order to create a complete record of the project.

- For deposition with the County Archaeological Store, the archive will comply with SCCAS Archive Guidelines. If the Archaeological Service's Store is not the intended depository, the Headland Archaeology project manager will ensure that a duplicate copy of the written archive is deposited with the Suffolk HER.

- It is proposed that the digital archive relating to this project will be lodged with the Archaeology Data Service (ADS 2013), or similar digital archive repository.

- The report on the fieldwork and archive, consistent with the principles of MoRPHE, will be provided. Its conclusions will include a clear statement of the archaeological value of the results, and their significance in the context of the Regional Research Framework (East Anglian Archaeology, Occasional Papers 3, 8 and 24, 1997, 2000 and 2011).

- The results will be related to the relevant known archaeological information held in the Suffolk HER. It will include examination of all readily available cartographic sources (e.g. those in the County Records Office) to record evidence for historic or archaeological sites and history of previous land uses. Where permitted, photographs, photocopies or traced copies will be presented in the report. It will also incorporate an assessment of the potential for documentary research that would contribute to the archaeological investigation of the site.

- A copy of the survey-specific WSI will be included as an appendix to the report.

- An unbound hardcopy of the full report, clearly marked DRAFT, will be presented to SCCAS for approval within six months of the completion of fieldwork, unless other arrangements are negotiated. Following acceptance, a single copy of the report will be presented to the Suffolk HER as well as a digital copy of the approved report.

- Where appropriate, a digital vector trench plan will be included with the report, which must be compatible with MapInfo GIS software, for integration in the Suffolk HER.

- SCCAS support the OASIS project, to provide an online index to archaeological reports. At the start of work (immediately before fieldwork

commences) an OASIS online record http://ads.ahds.ac.uk/project/oasis/ will be initiated by the Headland Archaeology project manager and key fields completed on Details, Location and Creators forms. When the archaeological project is completed, all parts of the OASIS online form will be completed (again by the Headland Archaeology project manager) and a copy included in the final report and also with the site archive. A .pdf version of the entire report will ultimately be uploaded to the OASIS website by Headland Archaeology.

- If positive results are drawn from the project, a summary report will be prepared, in the established format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the Proceedings of the Suffolk Institute of Archaeology and History. It would be included in the project report, or submitted to SCCAS, by the end of the calendar year in which the work takes place, whichever is the sooner. Note: Separate negotiations, as applicable, may be made with SCCAS on this front, in light of further archaeological works to be undertaken in the post-consent stages of the project. Agreements in this regard would be made between SPR, Headland Archaeology and SCCAS.

- Where appropriate, a copy of the approved report will be sent to the local archaeological museum.

9.5 The programme of works which is described here represents targeted evaluation with respect to ascertaining the nature and extent of the archaeological resource that may be impacted at certain key locations (identified as pinch points).

10 COMPANY PROFILE, STAFFING AND PROGRAMME

10.1 Headland Archaeology was established in 1996 and was one of the first wholly commercial archaeological contractors in the United Kingdom. From the original base in Edinburgh, the company grew rapidly adding a number of offices in Ireland during the national road building programme during the 2000s. Headland opened their first office in England in Hereford in 2010 and have since added offices in Luton and more recently in Leeds in 2015. The company has come to specialise in large infrastructure projects especially road, rail and renewables and has been Principal Contractor on many such schemes. Headland is also a Registered Organisation with CIfA and a member of FAME and employ c 100 staff with a turnover c £5M - £6M per year. Headland are ISO 9001 certificated and CHAS accredited.

10.2 Headland has established a leading reputation for successfully delivering archaeological services on large, fast-track infrastructure projects; examples include the 58km Aberdeen Western Peripheral Route (AWPR), Forth Replacement Crossing, M74 Completion Project, Edinburgh Trams Project, A1, A2 and A4/A5 Road Improvement Schemes (Northern Ireland), Clyde Wind Farm and Clyde Extension, Staffordshire Rail Alliance, Blackburn Link Road and A14 Huntingdon to Cambridge. For all of the many infrastructure schemes, Headland was the Principal

Contractor. The works involved many different types of surveys, both non-intrusive and intrusive, as well as major earthworks which were sub-contracted, managed and supervised on-site by Headland.

10.3 The initial programme of targeted archaeological trial trenching will be managed by Alistair Webb and run from the Headland North office in Leeds. A list of specialist sub-contractors who will be used, subject to availability, to assess the artefact assemblages is supplied below.

10.4 The initial targeted programme of trial trenching is programmed to commence post-harvest in summer / early autumn 2019, dependent on cropping windows and land access being permitted by relevant landowners. SCCAS will be informed as soon as a provisional timetable is agreed.

11 CONFIDENTIALITY, COPYRIGHT AND PUBLICITY

11.1 The results of the work will remain confidential – initially being distributed only to the Applicants, their agents/consultant, SCCAS and Historic England – and will remain so until such time as it is deemed to have entered the public domain.

11.2 The copyright of any written, graphic or photographic records will rest with Headland Archaeology. The report will be the property of SPR. Aspects of copyright may however transfer to the relevant journal or museum upon publication and deposition respectively, as required.

11.3 No publicity will be entered into with respect to the initial targeted programme of trial trenching without the consent of the Applicants or their agents. Any such publicity would acknowledge the co-operation of SCCAS and Historic England, as applicable.

12 HEALTH AND SAFETY

12.1 It is the responsibility of the archaeological contractor (Headland Archaeology) to ensure that health and safety requirements are fulfilled, and the organisation must therefore comply with the 1974 Health and Safety Act and its subsequent amendments in all its operations. In this respect the FAME (formerly SCAUM) manual on archaeological health and safety will be followed for site works, and as normal practice, first aid boxes, an accident book and mobile telephones will be provided on site. Full PPE will be worn in compliance with the approved RAMS document (see Section 11.2 below.

12.2 A Risk Assessment Method Statement (RAMS) document will be produced by Headland Archaeology to a high level of Health Safety and Environment (HSE) standards and requirements in advance of undertaking the site works and will be subject to review by SPR prior to any site works commencing.

12.3 Information on known service locations will be provided by SPR to Headland Archaeology prior to the commencement of any excavation works (and service detection checks will be undertaken by Headland Archaeology). A full HSE plan will

be produced, prior to any site works commencing, for sign off by SPR in order to ensure that high standards are achieved on site.

13 NAMED SPECIALISTS

Prehistoric pot	Sarah Percival
Roman pot & CBM	Alice Lyons/Sara Machin
Post-Roman pot & CBM	Paul Blinkhorn
Lithics	Rebecca Devaney
Coarse Stone	Ruth Shaffrey / Julie Franklin
Metalwork & misc finds	Julie Franklin
Clay Pipe	Julie Franklin
PH/Roman glass	Hilary Cool
Post-Roman glass	Julie Franklin
Industrial Waste	Rod Mackenzie
Leather	Quita Mould
Textile	Penelope Rogers
Conservation	Will Murray, Scottish Conservation Studio

14 REFERENCES

Advisory Panel on the Archaeology of Burials in England 2017: Guidance for Best Practice for the treatment of Human Remains Excavated from Christian Burial Grounds in England.

Archaeology Data Service and Digital Antiquity 2013: Caring for Digital Data in Archaeology – A Guide to Good Practice.

Brickley M and McKinley J I 2004: Guidelines to the Standards for Recording Human Remains Institute of Field Archaeologists Paper No. 7.

Chartered Institute for Archaeologists 2014a: Standard and Guidance for Archaeological Field Evaluation.

Chartered Institute for Archaeologists 2014b: Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.

Chartered Institute for Archaeologists 2014c: Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives.

Cranfield University 2019: Cranfield Soil and Agrifood Institute Soilscapes

Department for Culture, Media and Sport 2002: Treasure Act 1996 Code of Practice (Revised) England and Wales (updated 2007, published 2008, 2nd Edition).

East Anglian Archaeology 1997, 2000 and 2011: Occasional Papers 3, 8 and 24.

English Heritage (now Historic England) 1998: Dendrochronology – Guidelines on Producing and Interpreting Dendrochronological Dates.

English Heritage (now Historic England) 2003: Archaeological Science at PPG16 Interventions: Best Practice Guidance for Curators and Commissioning Archaeologists.

English Heritage (now Historic England) 2006a: Archaeomagnetic Dating: Guidelines on Producing and Interpreting Archaeomagnetic Dates.

English Heritage (now Historic England) 2006b: Guidelines on the X-radiography of Archaeological Metalwork.

English Heritage (now Historic England) 2008: Investigative Conservation: Guidelines on How the Detailed Examination of Artefacts from Archaeological Sites Can Shed Light on Their Manufacture and Use.

English Heritage (now Historic England) 2010: Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood.

English Heritage (now Historic England) 2011: Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation (second edition).

Gurney, 2003: Standards for Field Archaeology in the East of England, East Anglian Archaeology Occasional Papers 14.

Headland 2018: East Anglia TWO and East Anglia ONE NORTH Offshore Windfarms Onshore Archaeology and Cultural Heritage Desk Based Assessment.

Historic England 2015a: Management of Research Projects in the Historic Environment – The MoRPHE Project Managers' Guide.

Historic England 2015b: Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record.

Historic England 2015c: Archaeometallurgy Guidelines for Best Practice.

Historic England 2018: The Role of Human Osteologists in an Archaeological Fieldwork project

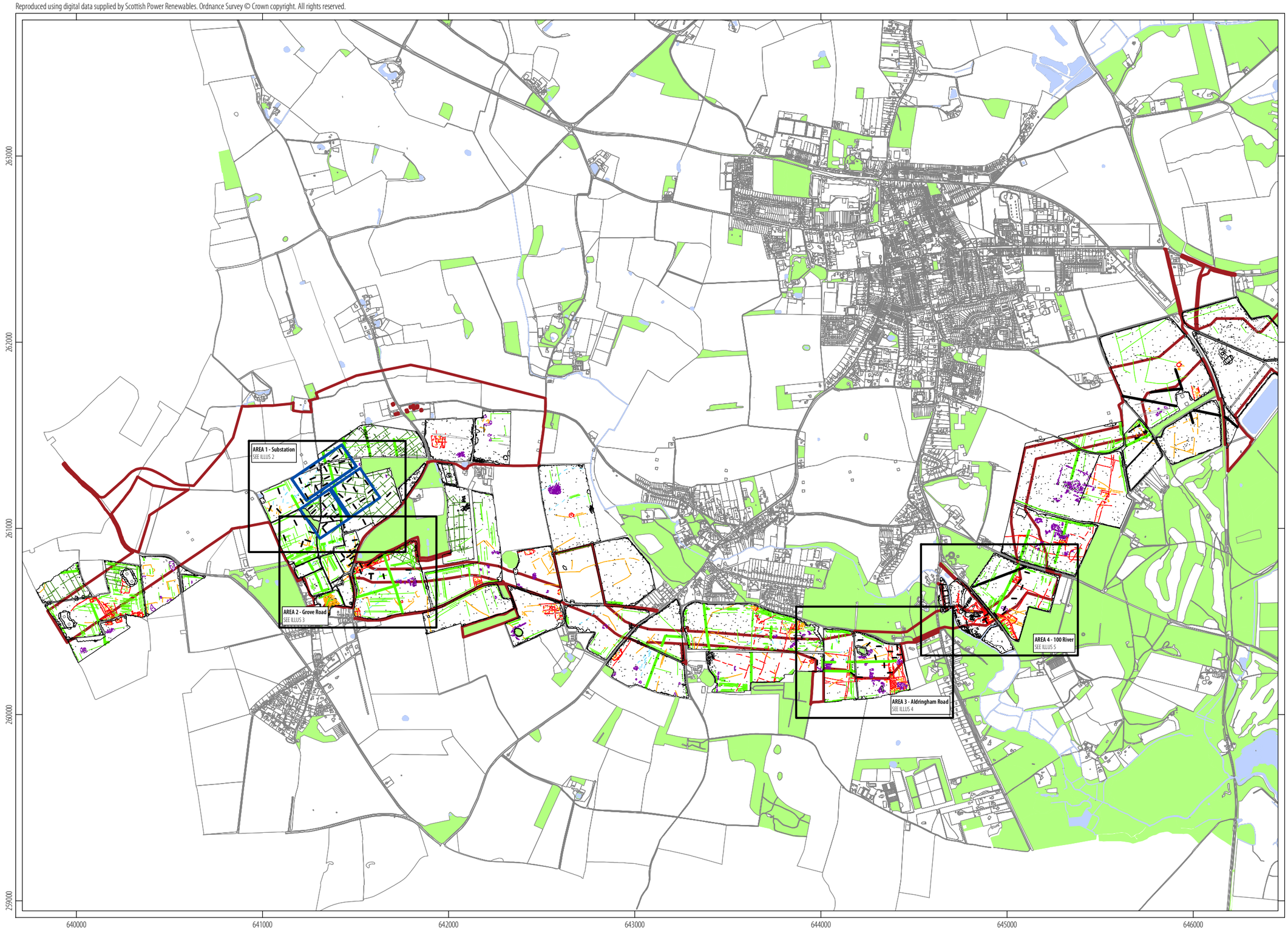
The Institute for Conservation 2018.

Natural Environment Research Council (NERC) 2019: British Geological Survey.

SCCAS Requirements for a Trenched Archaeological Evaluation (updated March 2017).

SCCAS Archaeological Archives in Suffolk, Guidelines for Preparation and Deposition (2017, last updated May 2019)

Watkinson and Neal 1998: First Aid for Finds (3rd edition) RESCUE and the Archaeological Section of the United Kingdom Institute for Conservation.



East Anglia ONE North and East Anglia TWO Onshore Development area

substation location

trial trench locations

TYPE OF ANOMALY		INTERPRETATION
dipolar isolated	-	ferrous material
dipolar linear	-	service pipe
linear trend	-	agricultural
linear trend	-	former field boundary
linear trend	-	former field boundary?
linear trend	-	field drain
linear trend	-	geological variation
magnetic disturbance	-	ferrous material
magnetic disturbance	-	quarrying
magnetic enhancement	-	archaeology
magnetic enhancement	-	archaeology?
null value	-	overhead cables

0 500m

1:20,000 @ A3

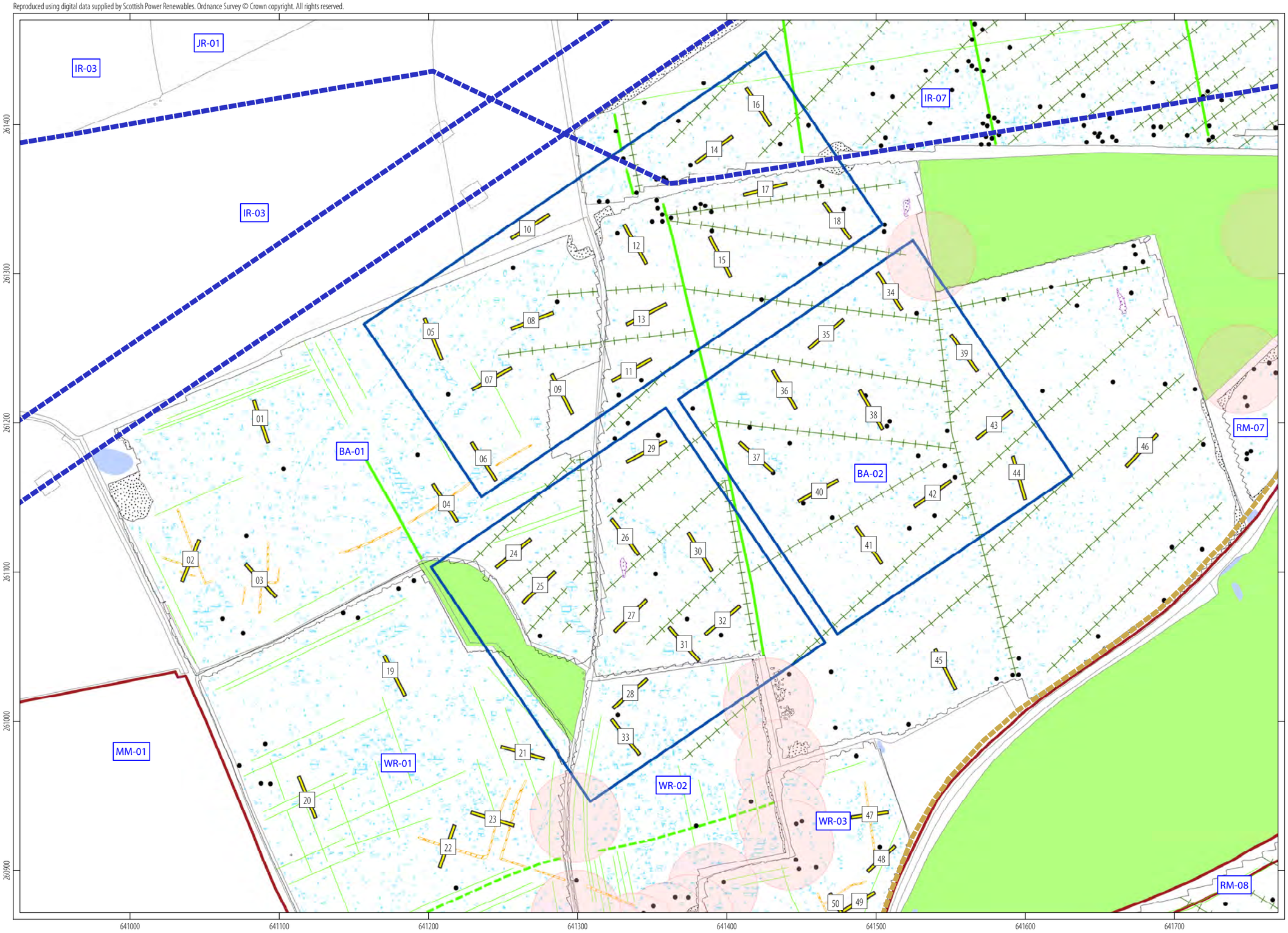
PROJECT **EAON18**
East Anglia One North/Two Offshore Wind Farm
Suffolk

CLIENT Scottish Power Renewables

HEADLAND ARCHAEOLOGY

NORTH Unit 16, Hillside, Beeston Road
Leeds, LS11 8ND
0113 387 6430
www.headlandarchaeology.com

ILLUS 1 Location of proposed trial trenches, showing geophysical survey results



East Anglia ONE North and East Anglia TWO Onshore Development area
substation location
trial trench locations
badger activity

TYPE OF ANOMALY	- INTERPRETATION
dipolar isolated	- ferrous material
linear trend	- agricultural
linear trend	- former field boundary
linear trend	- former field boundary?
linear trend	- field drain
linear trend	- geological variation
magnetic disturbance	- ferrous material
magnetic disturbance	- quarrying
magnetic enhancement	- archaeology?
magnetic enhancement	- geology

UTILITY LOCATIONS
electricity - high voltage - overhead
water - potable

0 50m
1:2,500 @ A3

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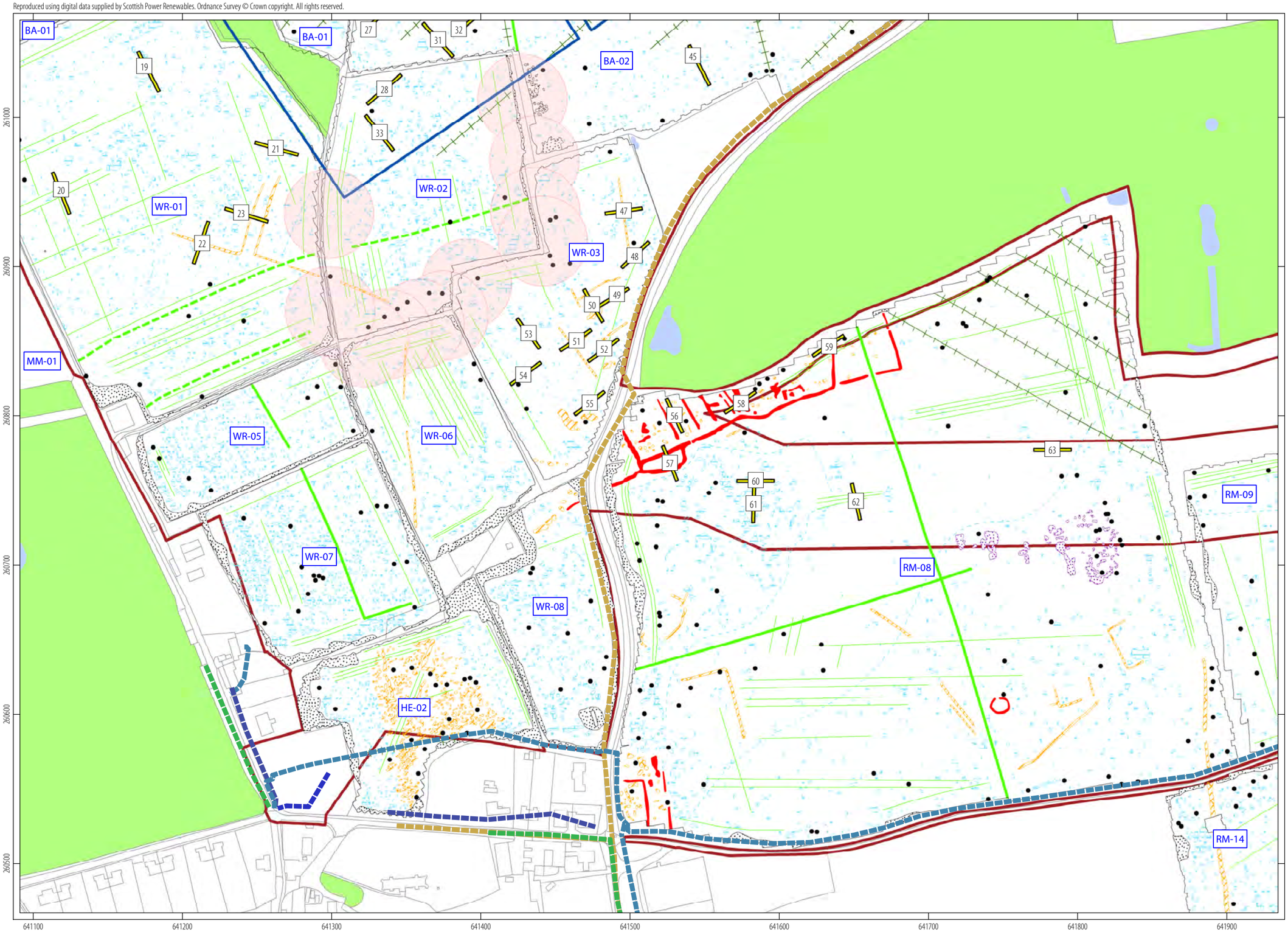
ILLUS 2 Location of proposed trial trenches (Area 1 - Substation)



East Anglia ONE North and East Anglia TWO Onshore Development area
substation location
trial trench locations
badger activity

TYPE OF ANOMALY	- INTERPRETATION
dipolar isolated	- ferrous material
linear trend	- agricultural
linear trend	- former field boundary
linear trend	- former field boundary?
linear trend	- field drain
linear trend	- geological variation
magnetic disturbance	- ferrous material
magnetic disturbance	- quarrying
magnetic enhancement	- archaeology
magnetic enhancement	- archaeology?
magnetic enhancement	- geology

UTILITY LOCATIONS

- drainage - foul
- electricity - high voltage - underground
- electricity - high voltage - overhead
- telecoms - bt
- water - potable

0 50m

1:2,500 @ A3

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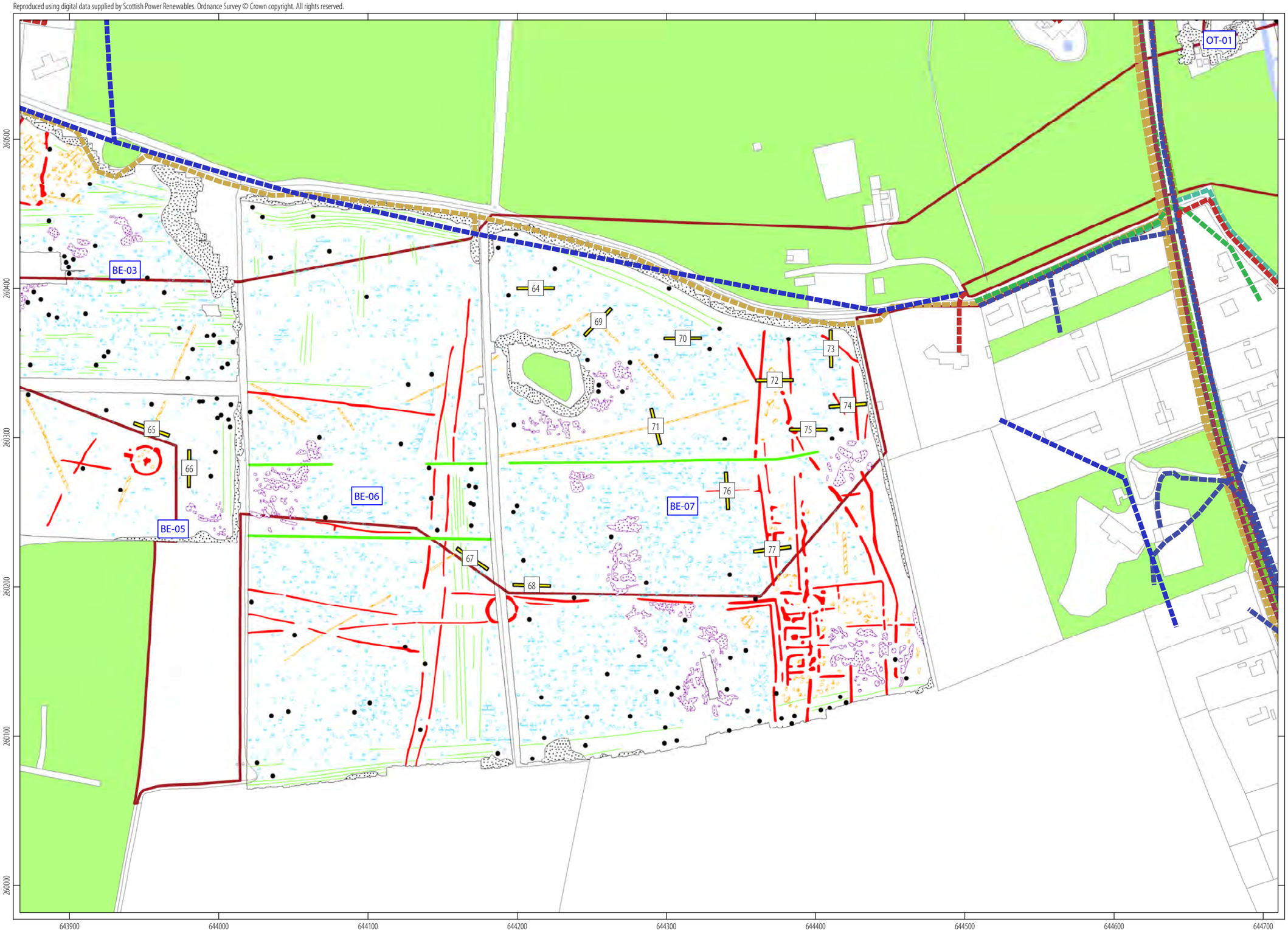
ILLUS 3 Location of proposed trial trenches (Area 2 - Grove Road Crossing)



East Anglia ONE North and East Anglia TWO Onshore Development area

trial trench locations

TYPE OF ANOMALY	- INTERPRETATION
dipolar isolated	- ferrous material
linear trend	- agricultural
linear trend	- former field boundary
linear trend	- geological variation
magnetic disturbance	- ferrous material
magnetic disturbance	- quarrying
magnetic enhancement	- archaeology
magnetic enhancement	- archaeology?
magnetic enhancement	- geology

UTILITY LOCATIONS

- drainage - foul
- drainage - foul - rising main
- electricity - high voltage - overhead
- electricity - low voltage - underground
- gas - low pressure
- telecoms - bt
- telecoms - virgin catv
- telecoms - vodafone
- water - potable

0 50m

1:2,500 @ A3

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Suffolk

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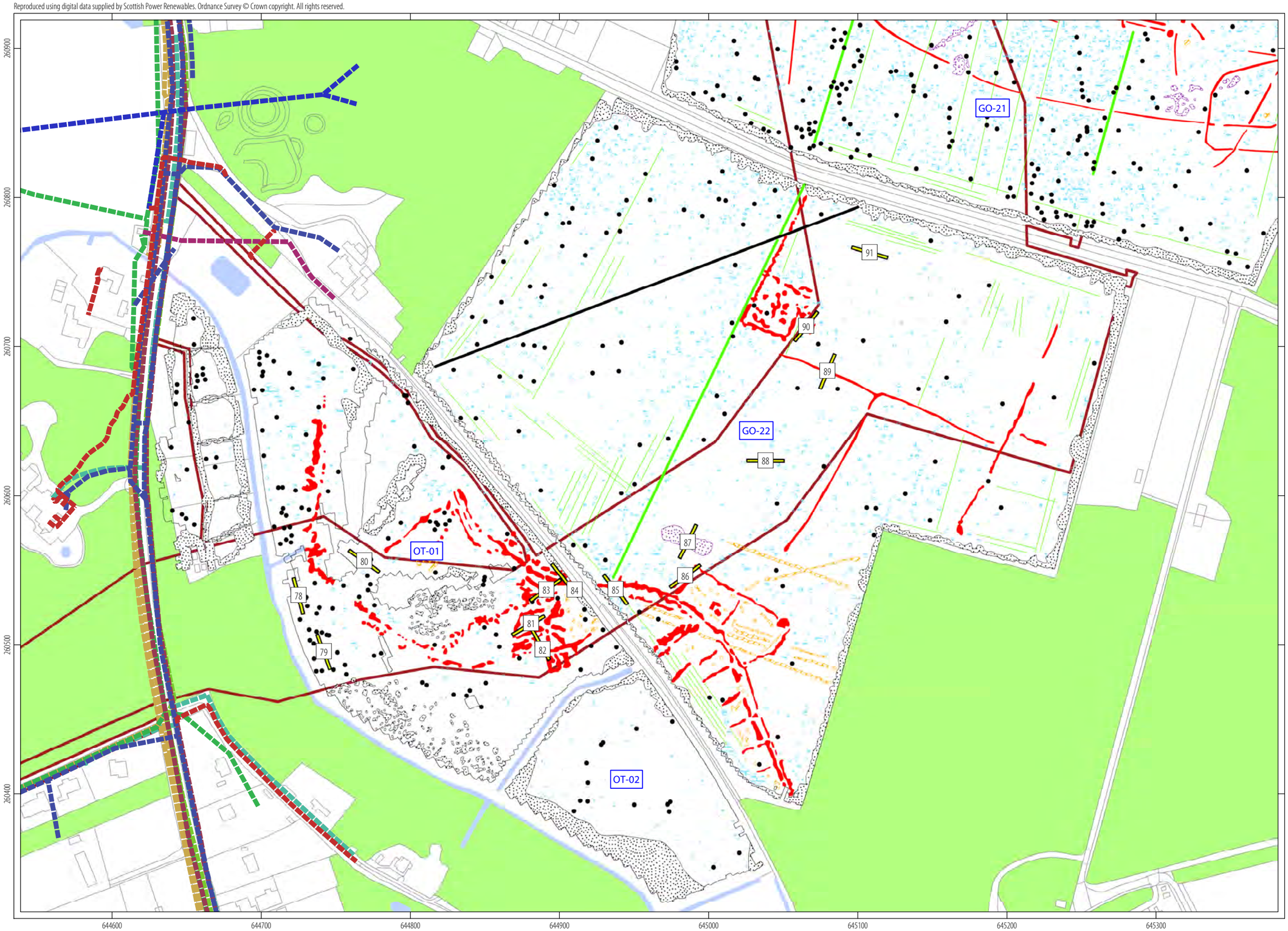
ILLUS 4 Location of proposed trial trenches (Area 3 - Aldringham Road)



East Anglia ONE North and East Anglia TWO Onshore Development area

trial trench locations

TYPE OF ANOMALY	- INTERPRETATION
dipolar isolated	- ferrous material
dipolar linear	- service pipe
linear trend	- agricultural
linear trend	- former field boundary
magnetic disturbance	- ferrous material
magnetic disturbance	- quarrying
magnetic enhancement	- archaeology
magnetic enhancement	- archaeology?
magnetic enhancement	- geology

UTILITY LOCATIONS

- drainage - foul
- drainage - foul - rising main
- electricity - high voltage - overhead
- electricity - low voltage - underground
- gas - low pressure
- telecoms - bt
- telecoms - virgin catv
- telecoms - vodafone
- water - potable

0 50m

1:2,500 @ A3

PROJECT **EAON18**
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ILLUS 5 Location of proposed trial trenches (Area 4 - 100 River)

Appendix 4: Written Scheme of Investigation for Metal Detecting Survey

EAON18

East Anglia TWO and East Anglia ONE North Offshore Windfarms, Onshore Cable Corridor and Substation Sites, Suffolk

Written Scheme of Investigation for Targeted Metal Detector Survey

Client: ScottishPower Renewables

v.07

Headland Archaeology (UK) Ltd

Unit 16 Hillside

Beeston Road

Leeds

LS11 8ND

August 2019

HEADLAND ARCHAEOLOGY Ltd

1 CONTEXT

1.1 This survey-specific WSI has been produced by Headland Archaeology, in consultation with SCCAS (archaeological adviser to East Suffolk Council). The document has also been reviewed by SCCAS in July 2019 during the pre-application stages of the East Anglia TWO and ONE North projects prior to the initial targeted survey work (as detailed in the document) commencing post-harvest, i.e. summer/autumn 2019. The three survey-specific WSIs produced at this time will form appendices 3, 4 and 5 to the Outline WSI. These survey-specific WSIs will not be subject to further edits/amendments closer to the application deadlines, but will remain valid and relevant 'point in time' documents produced to facilitate the targeted surveys commencing prior to or overlapping with the DCO application submissions.

2 INTRODUCTION

2.1 The proposed East Anglia ONE North and East Anglia TWO projects are Nationally Significant Infrastructure Projects (NSIP) that are being developed respectively by East Anglia ONE North Limited and East Anglia TWO Limited (the Applicants) both of whom are wholly owned subsidiaries of Scottish Power Renewables (SPR). Both projects have the potential to make a substantial contribution to UK 2030 energy targets by meeting nearly 10% (5% for each project) of the UK offshore wind cumulative deployment target for 2030. The East Anglia ONE North offshore windfarm site is located in the southern North Sea, approximately 36km from its nearest point to the port of Lowestoft and 42km from Southwold whilst the East Anglia TWO offshore windfarm site is approximately 31km from its nearest point to Lowestoft and 32km from Southwold, also being located in the southern North Sea. The proposed East Anglia ONE North project will have an operational capacity of up to 800MW, which is enough to power approximately 659,000 UK households whilst the proposed East Anglia TWO project will have an operational capacity of up to 900MW, which is enough to power approximately 742,413 UK households. Both projects would be principally comprised of offshore wind turbines, offshore electrical and construction, operation and maintenance platforms, offshore export cables, onshore cables, an onshore substation, a National Grid substation and National Grid overhead line realignment works.

2.2 Both projects are in the pre-application stage and their application programmes run in parallel, however they will be submitted as separate DCO applications. The onshore development area, which includes landfall location, onshore cable route, onshore substation location and National Grid infrastructure, has been developed to allow for the construction of both the proposed projects. At this stage it is not known whether both projects would be constructed simultaneously or sequentially.

2.3 This document presents a survey-specific Written Scheme of Investigation (WSI) for undertaking a programme of targeted archaeological metal detecting in relation to a single specific location within the onshore development area for the proposed East Anglia TWO and ONE North Offshore projects.

2.4 The WSI has been prepared by Headland Archaeology following instruction by Philip Rew-Williamson of Royal HaskoningDHV (the Consultant) on behalf of the Applicants. The scope of works has been proposed following consultations between

the Applicants, Consultant (Royal HaskoningDHV), Headland Archaeology and Suffolk County Council Archaeological Service (SCCAS), who provide archaeological advice to East Suffolk Council.

2.5 The metal detecting takes into account relevant standards and guidance provided by the Chartered Institute for Archaeology (CIfA) (2014), the British Archaeological Jobs Resource (BAJR) (2008) and Historic England (2018) and incorporates the specific requirements of SCCAS.

2.6 The focus of the survey is centred upon a 3ha parcel of land to the north of Friston, Saxmundham, Suffolk (Illus 1) located at NGR TM 41410 60629 (the survey area), which is included within the onshore development area.

2.7 The purpose of the initial targeted programme is to undertake a metal detector survey within a defined area of the onshore development area to further establish archaeological potential and identify any potential areas to target through trial trenching. There is potential to identify certain site types such as Anglo-Saxon (early-medieval) or later medieval cemeteries. The results of this programme of targeted metal detector survey will not alter the conclusions of the ES chapter but will, at the earliest opportunity, further inform the post-consent mitigation strategies, in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately the Outline WSI (OWSI), which is to be submitted as part of the DCO application, within which this survey-specific WSI is ***Appendix 4***.

3 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

3.1 The onshore development areas has been identified by a detailed site selection process as outlined in **Chapter 4 Site Selection and Consideration of Alternatives** of the East Anglia TWO and East Anglia ONE North Environment Statements (to be submitted with the DCO application). It includes land between Sizewell and Thorpeness at the landfall and extends inland approximately 9km terminating at the onshore substation location just to the north of Friston, encompassing the parishes of Aldringham-cum-Thorpe, Leiston, Knodishall and Friston. This area is in multiple landownership and the land use is a mixture of arable and market garden agriculture with areas of heath, scrub, woodland and sand dunes to the far east along the coastal edge.

3.2 Since archaeological fieldwork (e.g. geophysical survey) for the projects commenced, the limits of the proposed onshore development area have undergone substantial revision and refinement. The proposed onshore development area as presented at PEIR has now been superseded by the onshore development area, as for presented for the DCO application purposes.

3.3 The specific area under investigation is located at NGR TM 41410 60629, on land to the north of Church Road, Friston, Saxmundham, Suffolk and comprises two fields. The field to the west (HE-02) is currently (July 2019) under pasture and the field to the east (WR-08) is planted with a cereal crop. A small area (possible allotment) to

the south-western corner of HE-02 is also included within the area for targeted metal detector survey. In total the whole area is approximately 3 hectares in extent. It is bound by Church Road to the south, Grove Road to the east, a farm access track to the west and further agricultural land to the north (see Illus 1).

3.4 The underlying bedrock geology comprises Crag Group Sand. This is predominantly overlain with superficial deposits of Lowestoft Formation Diamicton, Sand and Gravel and Clay and Silt. A small band of Alluvium is recorded adjacent to the Hundred River and there are also small areas where there are no recorded superficial deposits (NERC 2019). The soils are classified in the Soilscape 10 and Soilscape 7 associations which are characterised as freely draining slightly acid sandy soils and freely draining slightly acid but base rich soils respectively (Cranfield University 2019). Within the specific area under investigation superficial deposits of diamicton overlay Crag Group Sand.

4 ARCHAEOLOGICAL BACKGROUND

Desk-Based Assessment

4.1 A 'point in time' archaeological desk-based assessment (***Appendix 24.3 to Chapter 24 Onshore Archaeology and Cultural Heritage*** of the ES) was undertaken and produced by Headland Archaeology in 2018 to inform the PEIR and subsequent ES, which included analysis of aerial photographs, LIDAR data and historic maps, as well as a walkover survey.. An overview of heritage assets specific to the site (targeted location) to be investigated by targeted metal detector survey is outlined below.

4.2 Searches of archaeological records held by the Suffolk HER reveal the presence of a former church or chapel located in fields north of St Marys Church, Friston and recorded as reference KND 009. This record is based upon Bowens 1753 map of Suffolk, which contains the symbol for 'church or chapel in ruins' at Buxton. This possible former church or chapel was also evident in aerial photographs, Ref: HA6, albeit there is some discrepancy in location.

4.3 The Church of St Mary the Virgin (NHLE 1287864) lies on land opposite the site, directly adjacent to the south side of Church Road. This is a Grade II* listed building dating to the 11th century with further alterations carried out throughout its history. The churchyard also contains a Grade II listed World War I and II memorial (NHLE 1435814).

Geophysical survey

4.4 Two possible locations of the site of the former parish church of Buxlow/Buxton are noted in the DBA and both have been covered by the geophysical survey, although one field (HE-02) was only partly surveyed due to the presence of allotments. On the HER the site of the church is recorded as KND 009 (641417, 260629) in field HE-02/WR-08. No anomalies of clear or obvious archaeological potential have been identified here although there is a distinct area of disturbed readings in the centre of the field (641362, 260609) which might not be inconsistent with a spread of material resulting from the destruction of a building. However, variation in the superficial

deposits and soils might also account for the recorded response. Part of this field was also unsuitable for survey (allotments) and therefore remains currently unevaluated. An alternative location is slightly further to the north-east in RM-08 where a rectilinear cropmark has been identified (HA6 – 641613, 260763). This cropmark again corresponds with an area of very variable magnetic responses although a geological origin is preferred at this stage.

5 AIMS / OBJECTIVES

5.1 Based upon the results of the earlier phases of archaeological work (DBA and geophysical survey) it is clear that the area targeted for metal detector survey is located within a landscape that may contain assets of archaeological interest. The objective of the metal detector survey is therefore to provide further evidence for more confident prediction of the archaeological resource within this area of the onshore development area, including its likely extent, significance and potential. This could potentially contribute to refining further evaluation and mitigation areas. Specifically, this technique may assist, if present, in the identification of Anglo-Saxon (early-medieval) or later medieval cemetery sites.

5.2 More specific aims of the metal detector survey include:

- To identify any concentrations of archaeological material which may inform the location of subsequent trial trenches and any subsequent mitigation;
- To establish the presence or absence of any evidence relating to a possible ruined church or chapel shown on Bowens 1753 map of Suffolk and recorded as KND 009, including burials;
- Produce a report on the results of the work for deposition with the Suffolk HER; and
- Undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

5.3 The results of the targeted metal detecting will, at the earliest opportunity, further inform the post-consent mitigation strategies in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO.4.

6 SCHEDULE

6.1 The programme of targeted metal detector survey is to be conducted alongside archaeological trial trenching being carried out elsewhere across targeted areas of the onshore development area. The start date will be confirmed following acceptance of the survey WSI but is anticipated to be in August 2019 or immediately after harvest, whichever is soonest. A report of the results of the metal detector survey

will be submitted to the Applicants within 4 weeks of completion of the fieldwork, after which it will be made available to SCCAS.

7 PROJECT TEAM

7.1 Headland Archaeology (UK) Ltd is a Registered Organisation and abides by the Codes of Conduct and Approved Practice and Standards of the Chartered Institute for Archaeologists (CIfA). The company has all the necessary technical and personnel resources for the satisfactory completion of the investigation.

7.2 The fieldwork will be carried out by Stephen Clarkson working under constant archaeological supervision by a suitably qualified and experienced archaeologist (with substantial experience of metal detecting) provided by Headland. CVs of key personnel will be supplied to SCCAS prior to the survey commencing. The reporting will be undertaken by Headland Archaeology (UK) Ltd. The work will be managed for Headland Archaeology by Alistair Webb (Project Manager). The project team will familiarise themselves with the background to the site and will be fully aware of the project's aims and methodologies.

8 METHODOLOGY

8.1 The metal detector survey will comply with guidance supplied by SCCAS with a more detailed description of the general guidance points given below.

8.2 Each field within the area of investigation will be given a unique number code for reference. A 20m grid system will be set out orientated east/west using a Trimble dGPS and demarcated with canes. Each grid will be given an individual and unique number code and divided further into 2m transects orientated north/south in order to provide 100% coverage. Transects will be measured out using tapes, and their positions recorded using dGPS. Each transect will also be given a unique number code.

8.3 The survey will be carried out using Garrett EuroACE metal detectors (or similar) equipped with a Double-D search coil and operating at a frequency of 8.25kHz. The detectors will be set to find 'all metal' as more prosaic finds can be of great value archaeologically.

8.4 Each signal encountered will be hand-excavated by the detectorist to a maximum depth of 0.25m or to the base of the subsoil, whichever is deeper, and the object placed in a bag and left on the ground where it was found. All artefacts will be collected, with the exception of those of later 20th century date, such as shot gun cartridges, which will not be plotted or recorded and will be reburied and left where found on site, wherever safe to do so. Each hand excavated hole will be backfilled and the field surface left as near as possible to how it was prior to excavation.

8.5 The Headland supervisor will number the bag and record its position using dGPS. The information recorded on the bag itself will include an individual bag number, the field number, grid number and transect number i.e.: 'Bag 1, Field 1, Grid 1, Transect 1'; 'Bag 2, Field 1, Grid 1, Transect 1' and so on. The survey data will be entered

onto an Access database and details of the finds added, in terms of material, identification, description and where appropriate, dimensions.

8.6 Any artefacts retrieved during the targeted metal detector survey will be cleaned using appropriate techniques and packaged and stored in accordance with *First Aid for Finds* (Watkinson & Neal 1998). It is acknowledged that some remains, such as organic residues adhering to metal objects, will require different processing. All artefacts recovered during the survey will be cleaned/stabilised, marked and catalogued.

8.7 The Treasure Act 1996 will be followed with regards to any finds which might fall within its scope. Any finds will be removed to a safe place and reported to the local coroner as required by the procedures laid down in the Portable Antiquities Scheme Code of Practice (2017). Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft. All finds which may fall under the scope of the Treasure Act will also be reported to the Portable Antiquities Scheme Finds Liaison Officer for Suffolk (Anna Booth; Anna.Booth@suffolk.gov.uk).

9 RECORDING AND QUALITY

9.1 All recording will follow CIfA Standards and Guidance (2014a, b and c) and relevant guidance from the British Archaeological Jobs Resource (BAJR) (2008) and Historic England (2018). All finds will be given unique numbers and locations logged via dGPS and all recording completed on pro forma record cards (see above).

10 REPORTING AND ARCHIVE

10.1 Within 4 weeks of completion of the targeted programme of archaeological metal detector survey works on site, Headland will produce a report, subject to specialist availability. SCCAS will be sent a draft copy for comment prior to finalisation of the report. As a minimum the report will include distribution plots by find type and all relevant specialist assessments of recovered material.

10.2 The report's contents and format will be in line with CIfA standards and guidance for archaeological field evaluation (2014a). A summary report will be prepared for submission to SCCAS and the online OASIS database. Copies of the report will be sent to the Applicants or their consultant for onward transmission to the local planning authority.

10.3 The project archive will be compiled in accordance with the guidelines published by the Chartered Institute for Archaeologists on behalf of the Archaeological Archives Forum (2011).

10.4 In addition:

- The Headland Archaeology project manager will consult the Suffolk HER Officer to obtain a parish code for the work before commencement. These numbers will be unique to the survey and location and will be clearly marked on all documentation relating to the work.

- An archive of all records and finds will be prepared, consistent with the principles of Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2015). It will be adequate to perform the function of a final archive for deposition in the Archaeological Service's Store or in a suitable museum in Suffolk (see Archaeological Archives Forum: a guide to best practice 2007).

  Note – it is not anticipated that the archive (paper or finds) will be deposited before the end of any subsequent evaluation and mitigation works undertaken post-consent, following this initial targeted metal detecting survey (subject to consent being granted).

- Finds will be appropriately conserved and stored in accordance with guidelines from The Institute of Conservation (ICON).

- Headland Archaeology will ensure every effort is made to get the agreement of the landowners to the deposition of the full site archive, and transfer of title, with the Archaeological Service or designated Suffolk museum. If this is not achievable for all or parts of the finds archive then provision will be made for additional recording (e.g. photography, illustration, scientific analysis) as appropriate.

- The Headland Archaeology project manager will consult the intended archive depository before the archive is prepared regarding the specific requirements for the archive deposition and curation, and regarding any specific cost implications of deposition. It is intended that the depository will be prepared to accept the entire archive resulting from the project (both finds and written archive) in order to create a complete record of the project.

- For deposition on the County Archaeological Store, the archive will comply with SCCAS Archive Guidelines. If the Archaeological Service's Store is not the intended depository, the Headland Archaeology project manager will ensure that a duplicate copy of the written archive is deposited with the Suffolk HER.

- It is proposed that the digital archive relating to this project will be lodged with the Archaeology Data Service (ADS 2013), or similar digital archive repository.

- The report on the fieldwork and archive, consistent with the principles of MoRPHE, will be provided. Its conclusions will include a clear statement of the archaeological value of the results, and their significance in the context of the Regional Research Framework (East Anglian Archaeology, Occasional Papers 3, 8 and 24, 1997, 2000 and 2011 and Gurney 2003).

- The results will be related to the relevant known archaeological information held in the Suffolk HER. It will include examination of all readily available cartographic sources (e.g. those in the County Records Office) to record evidence for historic or archaeological sites and history of previous land uses. Where permitted, photographs, photocopies or traced copies will be presented in the report. It will also incorporate an assessment of the potential for

documentary research that would contribute to the archaeological investigation of the site.

- A copy of the survey-specific WSI will be included as an appendix to the report.

- An unbound hardcopy of the report, clearly marked DRAFT, will be presented to SCCAS for approval within six months of the completion of fieldwork, unless other arrangements are negotiated. Following acceptance, a single copy of the report will be presented to the Suffolk HER as well as a digital copy of the approved report.

- Where appropriate, a digital vector plan will be included with the report, which must be compatible with MapInfo GIS software, for integration in the Suffolk HER.

- SCCAS support the OASIS project, to provide an online index to archaeological reports. At the start of work (immediately before fieldwork commences) an OASIS online record http://ads.ahds.ac.uk/project/oasis/ will be initiated by the Headland Archaeology project manager and key fields completed on Details, Location and Creators forms. When the archaeological project is completed, all parts of the OASIS online form will be completed (again by the Headland Archaeology project manager) and a copy included in the final report and also with the site archive. A .pdf version of the entire report will ultimately be uploaded to the OASIS website by Headland Archaeology.

- If positive results are drawn from the project, a summary report must be prepared, in the established format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the Proceedings of the Suffolk Institute of Archaeology and History. It would be included in the project report, or submitted to SCCAS, by the end of the calendar year in which the work takes place, whichever is the sooner. Note: Separate negotiations, as applicable, may be made with SCCAS on this front, in light of further archaeological works to be undertaken in the post-consent stages of the project. Agreements in this regard would be made between SPR, Headland Archaeology and SCCAS.

- Where appropriate, a copy of the approved report will be sent to the local archaeological museum.

11 HEALTH & SAFETY

11.1 All of Headland's work is undertaken in accordance with current Health and Safety legislation. A Risk Assessment Method Statement (RAMS) document will be produced by Headland Archaeology to a high level of Health Safety and Environment (HSE) standards and requirements in advance of undertaking the site works and will be subject to review by SPR prior to any site works commencing.

11.2 This survey-specific WSI is submitted on the understanding that there will be access to all relevant areas of the onshore development area. A plan of any services within

the onshore development area will be provided by SPR, where appropriate. Service detection checks will be undertaken by Headland Archaeology.

12 INSURANCE & COPYRIGHT

12.1 Headland Archaeology (UK) Ltd is fully indemnified and all necessary insurances will be presented on request.

12.2 The results of the targeted metal detector survey will remain confidential – initially being distributed only to the Applicants, their agents/consultant, SCCAS and Historic England (as appropriate) – and will remain so until such time as it is deemed to have entered the public domain.

12.3 The copyright of any written, graphic or photographic records will rest with Headland Archaeology. The report will be the property of SPR.

12.4 No publicity will be entered into with respect to metal detecting without the consent of the Applicants or their agents.

13 REFERENCES

Archaeological Archives Forum (AAF) 2011: Archaeological Archives A guide to best practice in creation, compilation, transfer and curation (2nd edn) (CIfA: Reading).

British Archaeological Jobs Resource (BAJR) 2008: Guide 15 Field Survey, Field Walking and Detecting Survey.

Chartered Institute for Archaeologists 2014: Code of Conduct (Reading).

Chartered Institute for Archaeologists 2014a: Standards and Guidance for Archaeological Field Evaluations.

Chartered Institute for Archaeologists 2014b: Standard and guidance for the collection, documentation, conservation and research of archaeological materials.

Chartered Institute for Archaeologists 2014c: Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives.

Cranfield University 2019: Cranfield Soil and Agrifood Institute Soilscapes.

East Anglian Archaeology 1997, 2000 and 2011: Occasional Papers 3, 8 and 24.

Gurney, 2003: Standards for Field Archaeology in the East of England', East Anglian Archaeology Occasional Papers 14.

Headland Archaeology 2018: East Anglia Two and East Anglia One North Offshore Windfarms Onshore Archaeology and Cultural Heritage Desk Based Assessment.

Historic England 2018: Our Portable Past Swindon Historic England.

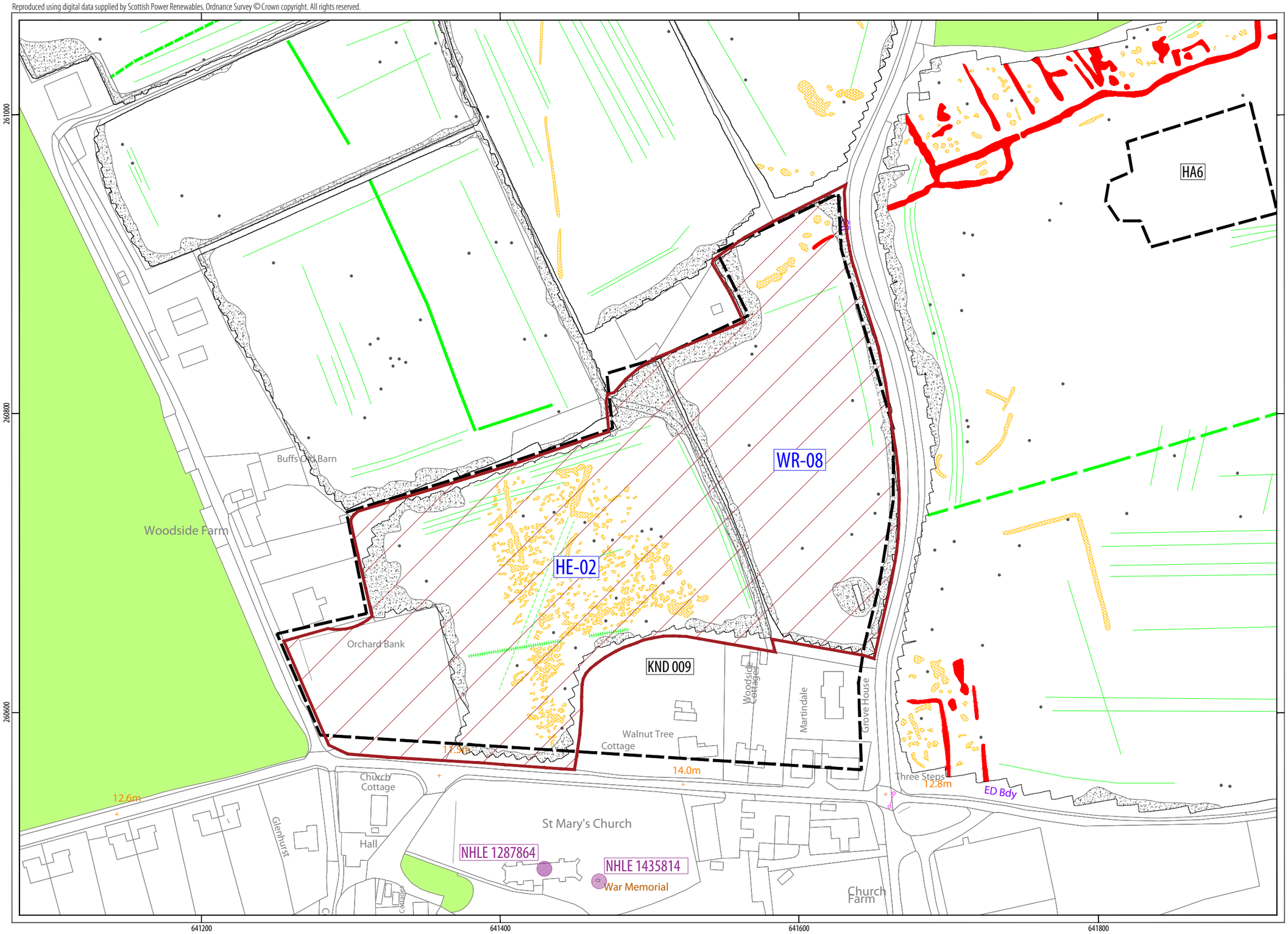
Historic England 2015a: Management of Research Projects in the Historic Environment – The MoRPHE Project Managers' Guide.

The Institute for Conservation: 2018.

Natural Environment Research Centre (NERC): 2019 British Geological Survey.

Portable Antiquities Scheme 2017: Code of Practice for Responsible Metal Detecting in England and Wales.

Watkinson and Neal 1998: First Aid for Finds (3rd edition) RESCUE and the Archaeological Section of the United Kingdom Institute for Conservation.



metal detecting survey area

TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
linear trend	agricultural
linear trend	field drain
linear	former field boundary
linear	former field boundary?
magnetic enhancement	archaeology?
magnetic enhancement	archaeology

0 50m
1:1,500 @ A3

PROJECT EAON18
East Anglia One North/Two Offshore Wind Farm
Suffolk

CLIENT Scottish Power Renewables

HEADLAND ARCHAEOLOGY
NORTH Unit 16, Hillside, Beeston Road
Leeds LS11 8ND
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ILLUS 1 Area of metal detecting survey

Appendix 5: Written Scheme of Investigation for an Archaeological Earthwork Identification Survey

EAON18

East Anglia TWO and East Anglia ONE North Offshore Windfarms, Onshore Cable Corridor and Substation Sites, Suffolk

Written Scheme of Investigation for an Archaeological Earthwork Identification Survey

Client: ScottishPower Renewables

v.07

Headland Archaeology (UK) Ltd

Unit 16 Hillside

Beeston Road

Leeds

LS11 8ND

August 2019

HEADLAND ARCHAEOLOGY Ltd

1 CONTEXT

1.1 This survey-specific WSI has been produced by Headland Archaeology in consultation with SCCAS (archaeological adviser to East Suffolk Council). The document has also been reviewed by SCCAS in July 2019 during the pre-application stages of the East Anglia TWO and ONE North projects prior to the initial targeted survey work (as detailed in the document) commencing post-harvest, i.e. summer/autumn 2019. The three survey-specific WSIs produced at this time will form appendices 3, 4 and 5 to the Outline WSI. These survey-specific WSIs will not be subject to further edits/amendments closer to the application deadlines, but will remain valid and relevant 'point in time' documents produced to facilitate the targeted surveys commencing prior to or overlapping with the DCO application submissions.

2 INTRODUCTION AND PLANNING BACKGROUND

2.1 The proposed East Anglia ONE North and East Anglia TWO projects are Nationally Significant Infrastructure Projects (NSIP) that are being developed respectively by East Anglia ONE North Limited and East Anglia TWO Limited (the Applicants) both of whom are wholly owned subsidiaries of Scottish Power Renewables (SPR). Both projects have the potential to make a substantial contribution to UK 2030 energy targets by meeting nearly 10% (5% for each project) of the UK offshore wind cumulative deployment target for 2030. The East Anglia ONE North offshore windfarm site is located in the southern North Sea, approximately 36km from its nearest point to the port of Lowestoft and 42km from Southwold whilst the East Anglia TWO offshore windfarm site is approximately 31km from its nearest point to Lowestoft and 32km from Southwold, also being located in the southern North Sea. The proposed East Anglia ONE North project will have an operational capacity of up to 800MW, which is enough to power approximately 659,000 UK households whilst the proposed East Anglia TWO project will have an operational capacity of up to 900MW, which is enough to power approximately 742,413 UK households. Both projects would be principally comprised of offshore wind turbines, offshore electrical and construction, operation and maintenance platforms, offshore export cables, onshore cables, an onshore substation, a National Grid substation and National Grid overhead line realignment works.

2.2 Both projects are in the pre-application stage and their application programmes run in parallel, however they will be submitted as separate DCO applications. The onshore development area, which includes landfall location, onshore cable route, onshore substation location and National Grid infrastructure, has been developed to allow for the construction of both the proposed projects. At this stage it is not known whether both projects would be constructed simultaneously or sequentially.

2.3 This document presents a survey-specific Written Scheme of Investigation (WSI) for undertaking a programme of targeted archaeological earthwork identification survey in relation to specific locations within the onshore development area for both the East Anglia TWO and ONE North projects. The WSI has been prepared by Headland Archaeology following instruction by Philip-Rew Williamson of Royal HaskoningDHV (the Consultant) on behalf of the Applicants. The scope of works has been proposed

following consultations between the Applicants, Consultant (Royal HaskoningDHV), Headland Archaeology and Suffolk County Council Archaeological Service (SCCAS), who provide archaeological advice to East Suffolk Council.

2.4 The targeted earthwork identification survey is required in order to provide further information on the potential for surviving earthworks at identified key locations within the onshore development area. The archaeological earthwork identification survey is primarily targeted on the stretch of the onshore development area between landfall (north of Thorpeness) and Hawsell's Farm but will also include recently identified earthworks adjacent to Aldringham Court and potential features within Grove Wood as well as surviving structural features, including hardstanding areas, trackways and beach scaffolding. Other features identified by SCCAS will also be recorded. The results of this programme of targeted earthwork identification survey will not alter the conclusions of the ES chapter but will, at the earliest opportunity, further inform the post-consent mitigation strategies, in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately the Outline WSI (OWSI), which is to be submitted as part of the DCO application, within which this survey-specific WSI is ***Appendix 5***.

3 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

3.1 The onshore development area has been identified by a detailed site selection process as outlined in ***Chapter 4 Site Selection and Consideration of Alternatives*** of the East Anglia TWO and East Anglia ONE North Environment Statements (forthcoming). It includes land between Sizewell and Thorpeness at the landfall and extends inland approximately 9km terminating at the onshore substation location just to the north of Friston encompassing the parishes of Aldringham-cum-Thorpe, Leiston, Knodishall and Friston. This area is in multiple landownership and the land use is a mixture of arable and market garden agriculture with areas of heath, scrub, woodland and sand dunes to the far east along the coastal edge.

3.2 Since archaeological fieldwork (e.g. geophysical survey) for the projects commenced, the limits of the proposed onshore development area have undergone substantial revision and refinement. The proposed onshore development area as presented at PEIR has now been superseded by the onshore development area, as presented for the DCO application purposes. The earthwork identification survey will cover the areas and individual features identified on Illus 1 and tabulated below.

3.3 The underlying bedrock geology comprises Crag Group Sand. This is overlain across most of the survey area with superficial deposits of Lowestoft Formation Diamicton (sand, gravel, clay and silt) (NERC 2019). The soils are classified in the Soilscape 10 and Soilscape 7 associations which are characterised as freely draining slightly acid sandy soils and freely draining slightly acid but base rich soils respectively (Cranfield University 2018).

4 ARCHAEOLOGICAL BACKGROUND

The Desk-Based Assessment

4.1 A 'point in time' archaeological desk-based assessment (***Appendix 24.3 to Chapter 24 Onshore Archaeology and Cultural Heritage of the ES***) was undertaken and produced by Headland Archaeology in 2018 to inform the PEIR and subsequent ES, which included analysis of aerial photographs, LIDAR data and historic maps, as well as a walkover survey.

4.2 As part of the ADBA, walkover surveys were carried out, although these only covered areas for which access was available at the time. The coastal and near coastal stretch was only assessed from existing rights of way and thick vegetation and unharvested crops also hindered visibility in this part of the ADBA study area at the time.

4.3 Many of the previously recorded assets along the coastal and near coastal stretch relate to Second World War activity, mostly on or near to the coast. However, the ADBA reports that most Second World War features were no longer visible as above ground remains with the exception of the remains of the coastal defences (ARG 052) and some of the anti-aircraft batteries (1478701 and ARG 034). Other assets relate to extant features in the landscape, e.g. quarry pits or post-medieval features.

4.4 The majority of the newly identified potential heritage assets from the ADBA are likely due to features associated with post-medieval or modern activity such as depressions probably relating to small scale quarrying or possible bomb craters, as well as relict field boundaries, post-medieval buildings and some additional Second World War infrastructure. These were all primarily identified from analysis of LIDAR data or historic mapping.

4.5 The ADBA stated that: '*the LiDAR assessment is considered likely to have identified all substantial upstanding heritage assets within the ADBA study areas, although smaller discrete features may have been missed due to the limited coverage at resolutions greater than 2m*'.

5 AIMS / OBJECTIVES

5.1 The proposed East Anglia TWO and ONE North projects will potentially impact upon known, recently identified and currently unknown archaeological remains of uncertain date or significance. Based upon the results of the earlier phases of archaeological work (e.g. ADBA and geophysical survey), it is clear that the onshore cable route passes through a landscape of some archaeological interest.

5.2 The survey will seek to identify previously unknown features as well as ground truthing previously identified features) and is primarily based on targeting features identified during research for the ADBA, and also evaluating areas for which there was no access at the time of the walkover or where visibility was obscured by crop or vegetation. The results of the earthwork identification survey together with the geophysical survey results, trial trenching results and metal detecting results (all

under separate survey-specific WSIs) will at the earliest opportunity, further inform the post-consent mitigation strategies in relation to the onshore archaeological and cultural heritage resource, as secured through the requirement of the draft DCO and ultimately this OWSI. The mitigation work will also be the subject of separate mitigation-related WSIs.

5.3 The general aims of the targeted earthwork identification survey are to determine the survival, extent, form, date, condition and significance of any surviving visible, above ground heritage assets (including archaeological earthworks) within the general area shown on Illus 1 and at the other specific sites identified by SCCAS.

5.4 The survey will target (and ground truth) all potential features identified in the ADBA within the area shown on Illus 1, as well as seeking to identify any previously unknown features in this area.

5.5 The specific objectives of the survey are to:

- Ground-truth the features identified in the ADBA; record their extent, photograph them and describe their form, possible date, condition and significance; this may require further consultation of the HER, historic maps, aerial photography and LiDAR data on a case-by-case basis;

- Identify any other visible (above ground) features of potential archaeological significance;

- Produce a report on the results of the work for deposition with the Suffolk HER; and

- Undertake a scheme of works that meets with the professional standards and guidance for archaeological work both nationally and within the area of the Suffolk HER.

5.6 General guidance relating to the targeted earthwork identification survey, recording, report preparation and archiving include that prepared by Historic England 2017 and the Chartered Institute for Archaeologists (2014a and b). More specific regional guidance (Gurney 2003) and the generic brief for an 'Archaeological Earthwork Identification Survey' provided by SCCAS (SCCAS 2019) will also be adhered to.

6 SURVEY METHODOLOGY

6.1 Prior to commencement the Suffolk HER will be contacted in order to obtain a new event number for the survey. The fieldwork will comprise an archaeological earthwork identification survey (including targeted ground truthing) of the three areas shown in Illus 1. This will include mapping both features identified in the ADBA or previously identified by SCCAS, specifically including the World War II features, as well as any other so far unidentified features. The survey will determine the extent, form, date, condition and significance of the surviving visible heritage assets (including archaeological earthworks).

6.2 The walkover survey route will be pre-mapped to 50m transects wherever possible. The surveyors will follow these routes using a handheld GPS and measured survey, identifying any potential heritage assets. Any such features will be located by GPS, photographed and described in compliance with a Level 2 survey (as defined by Historic England in Understanding the Archaeology of Landscapes 2017).

6.3 If unexpected remains are encountered SCCAS will be informed. Amendments to this survey-specific WSI may be required to ensure adequate provision for archaeological recording. If any changes are made to the proposed method and form of works in the relevant areas, then SCCAS will be consulted.

6.4 The targeted mapping will visit all the potential features identified in the ADBA within the three identified areas. These include those previously identified (Illus 1 - ARG17, 25, 27, 28, 29, 31, 32, 33, 34, 70 and 74, LCS113, 203, 206, 213, 216 and No 1478677/1478561), as well as those recently identified by SCCAS in the woodland south of Aldringham House and any that may survive within Grove Wood. The exception will be where features have, except where these have been previously visited and proven to be no longer extant in which case previous walkover notes and findings will be included in the stand-alone report.

6.5 At each location, the following recording will be undertaken:

- A Level 2 survey (as defined by Historic England in Understanding the Archaeology of Landscapes, second edition, 2017);
- The location, description, analysis and sketch plotting on Ordnance Survey maps at scale of 1:10,000 of all visible heritage assets (including archaeological earthworks);
- Digital photography of heritage assets identified; and
- The location of heritage assets using a combination of a GPS and measured survey.

6.6 Any variations to the survey methodology arising from the presence of significant or complex archaeological structures, remains or deposits not anticipated by this survey-specific WSI would be subject to consultation between SCCAS and the Applicants or their Consultant, and put into effect as soon as possible with the written agreement of all the parties involved.

7 ARCHAEOLOGICAL RECORDING

7.1 The location of all features will be surveyed in order that these can be located within the Ordnance Survey National Grid. All heights will be recorded in relation to Ordnance Datum. The transect surveys will be undertaken using a handheld GPS ('Navigation' Grade GPS – Garmin Etrex 10 ±3-5m) and the targeted mapping will use a survey-grade GPS (Trimble R6 ±15mm in practice) with mobile corrections. This will allow for more detailed recording of the extents of each feature. Where relevant, the surveyed extents will be referenced to the WWII heritage project

database (https://heritage.suffolk.gov.uk/second-world-war-guidebooks), which has detailed plans of WWII-related structures and features in this area. Basic elevation/height information may also be required.

7.2 All archaeological features will be photographed using a digital bridge or SLR camera. These images will aim to capture the condition and nature of any remains, as well as placing them in their broader context. A register of all photographs taken will be kept.

7.3 A written description of features will be recorded, including their form, condition and extent, as well as any indication of function.

8 MONITORING

8.1 In addition to any monitoring for or on behalf of the Applicants, access will be made available at all reasonable times to the representatives of SCCAS and Historic England for the purposes of monitoring the archaeological earthwork identification survey, if requested. Should any significant or unexpected results be identified during the course of the survey then the Applicants and the above organisations would be notified immediately.

8.2 Access to the site will be arranged through Headland Archaeology on the basis of prior notification and subject to any necessary health and safety requirements.

9 REPORTING AND ARCHIVING

9.1 Prior to commencement the Headland Archaeology project manager will consult the Suffolk HER Officer to obtain an event number for the earthwork identification survey. This number will be unique for this phase/type of survey work and will be clearly marked on any documentation relating to the work. An OASIS online record (http://ads.ahds.ac.uk/project/oasis/) will also be initiated (again by the Headland Archaeology project manager) and key fields completed on Details, Location and Creators forms. On completion all parts of the OASIS online form will be completed and a copy included in the final report and also with the site archive. A .pdf version of the entire report will be uploaded where positive results have been obtained.

9.2 Upon completion of the survey, a stand-alone report will be produced sufficient for SCCAS to make informed decisions in discussion with SPR (and their representatives) on the scope for any further archaeological (evaluation and mitigation) works to be undertaken in the post-consent stages of the project (if consent is achieved). The report will be submitted within an agreed period following completion on site.

9.3 The report will include:

- a cover page, title page, or introduction containing the site name, the site code, the planning application/reference number, the dates that fieldwork was undertaken,

museum accession number, an Ordnance Survey grid reference, the name of the originating body and the report date.

- a list of contents, figures and tables.
- a non-technical summary.
- an introduction.
- a description of the site and its location.
- topography and geology.
- the planning background.
- the archaeological and historical background.
- the methodology.
- a summary of the project's results.
- interpretation of the archaeological features and their wider setting.
- a conclusion / discussion.
- references.
- a site plan showing the location of features.
- general photographs of the survey in progress and selected photographs of archaeological features investigated.
- a catalogue/index and location of the site archive and project archive.
- appendices to include the approved survey-specific WSI.
- an OASIS reference and accession number.

9.4 The report on the targeted earthwork identification survey and archive will be consistent with the principles of Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2015a) and with SCCAS archive guidelines (2017). Its conclusions will include a clear statement of the archaeological value of the results, and their significance in the context of the Regional Research Framework (East Anglian Archaeology, Occasional Papers 3 & 8, 1997 and 2000).

9.5 An unbound hardcopy of the report, clearly marked DRAFT, will be presented to SCCAS for approval within six months of the completion of fieldwork unless other arrangements are negotiated. Following acceptance, a single hard copy and also a .pdf digital copy should be presented to the Suffolk HER.

9.6 Where appropriate, a digital vector plan will be included with the report, which will be compatible with MapInfo GIS software, for integration in the Suffolk HER.

9.7 If positive results are drawn from a project, a summary report will be prepared, in the established format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the *Proceedings of the Suffolk Institute of Archaeology and History*. It will be included in the project report, or submitted to SCCAS, by the end of the calendar year in which the work takes place, whichever is the sooner. Note: Separate negotiations, as applicable, may be made with SCCAS on this front, in light of further archaeological works to be undertaken in the post-consent stages of the project. Agreements in this regard would be made between SPR, Headland Archaeology and SCCAS.

9.8 An archive of all records and findings will be prepared and will be adequate to perform the function of a final archive for deposition in the Archaeological Service's Store or in a suitable museum in Suffolk.

9.9 The digital archive will be deposited with the Archaeological Data Service (ADS).

10 COMPANY PROFILE, STAFFING AND PROGRAMME

10.1 Headland Archaeology was established in 1996 and was one of the first wholly commercial archaeological contractors in the United Kingdom. From the original base in Edinburgh, the company grew rapidly adding a number of offices in Ireland during the national road building programme during the 2000s. Headland opened their first office in England in Hereford in 2010 and have since added offices in Luton and more recently in Leeds in 2015. The company has come to specialise in large infrastructure projects especially road, rail and renewables and has been Principal Contractor on many such schemes. Headland is also a Registered Organisation with CIfA and a member of FAME and employ c 100 staff with a turnover c £5M - £6M per year. Headland are ISO 9001 certificated and CHAS accredited.

10.2 Headland has established a leading reputation for successfully delivering archaeological services on large, fast-track infrastructure projects; examples include the 58km Aberdeen Western Peripheral Route (AWPR), Forth Replacement Crossing, M74 Completion Project, Edinburgh Trams Project, A1, A2 and A4/A5 Road Improvement Schemes (Northern Ireland), Clyde Wind Farm and Clyde Extension, Staffordshire Rail Alliance, Blackburn Link Road and A14 Huntingdon to Cambridge. For all of the many infrastructure schemes, Headland was the Principal Contractor. The works involved many different types of surveys, both non-intrusive and intrusive, as well as major earthworks which were sub-contracted, managed and supervised on-site by Headland.

10.3 The targeted earthwork identifications survey will be managed by Alistair Webb and run from the Headland North office in Leeds. Details of the staff undertaking the survey will be provided once a timetable is agreed. All staff utilised will have appropriate experience in carrying out archaeological earthwork survey.

10.4 The targeted earthwork identification survey is programmed to commence post-harvest in summer / autumn 2019, dependent on cropping windows and access being permitted by relevant landowners. SCCAS will be informed as soon as a provisional timetable is agreed.

11 CONFIDENTIALITY, COPYRIGHT AND PUBLICITY

11.1 The results of the work will remain confidential – initially being distributed only to the Applicants, their agents/consultants, SCCAS and Historic England – and will remain so until such time as it is deemed to have entered the public domain.

11.2 The copyright of any written, graphic or photographic records will rest with Headland Archaeology. The report will be the property of SPR. Aspects of copyright may however transfer to the relevant journal or museum upon publication and deposition respectively, as required.

11.3 No publicity will be entered into with respect to the targeted earthwork identification survey without the consent of the Applicants or their agents. Any such publicity would acknowledge the co-operation of SCCAS and Historic England, as applicable.

12 HEALTH AND SAFETY

12.1 It is the responsibility of the archaeological contractor (Headland Archaeology) to ensure that health and safety requirements are fulfilled, and the organisation must therefore comply with the 1974 Health and Safety Act and its subsequent amendments in all its operations. In this respect the FAME (formerly SCAUM) manual on archaeological health and safety will be followed for site works, and as normal practice, first aid boxes, an accident book and mobile telephones will be provided on site.

12.2 A Risk Assessment Method Statement (RAMS) document will be produced by Headland Archaeology to a high level of Health Safety and Environment (HSE) standards and requirements in advance of undertaking the site works and will be subject to review by SPR prior to any site works commencing.

13 REFERENCES

Chartered Institute for Archaeologists 2014a: Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.

Chartered Institute for Archaeologists 2014b: Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives.

Cranfield University 2019: Cranfield Soil and Agrifood Institute Soilscapes.

East Anglian Archaeology 1997, 2000 and 2011: Occasional Papers 3, 8 and 24.

Headland 2018: East Anglia TWO and East Anglia ONE North Offshore Windfarms Onshore Archaeology and Cultural Heritage Desk Based Assessment.

Historic England 2017: Understanding the Archaeology of Landscapes.

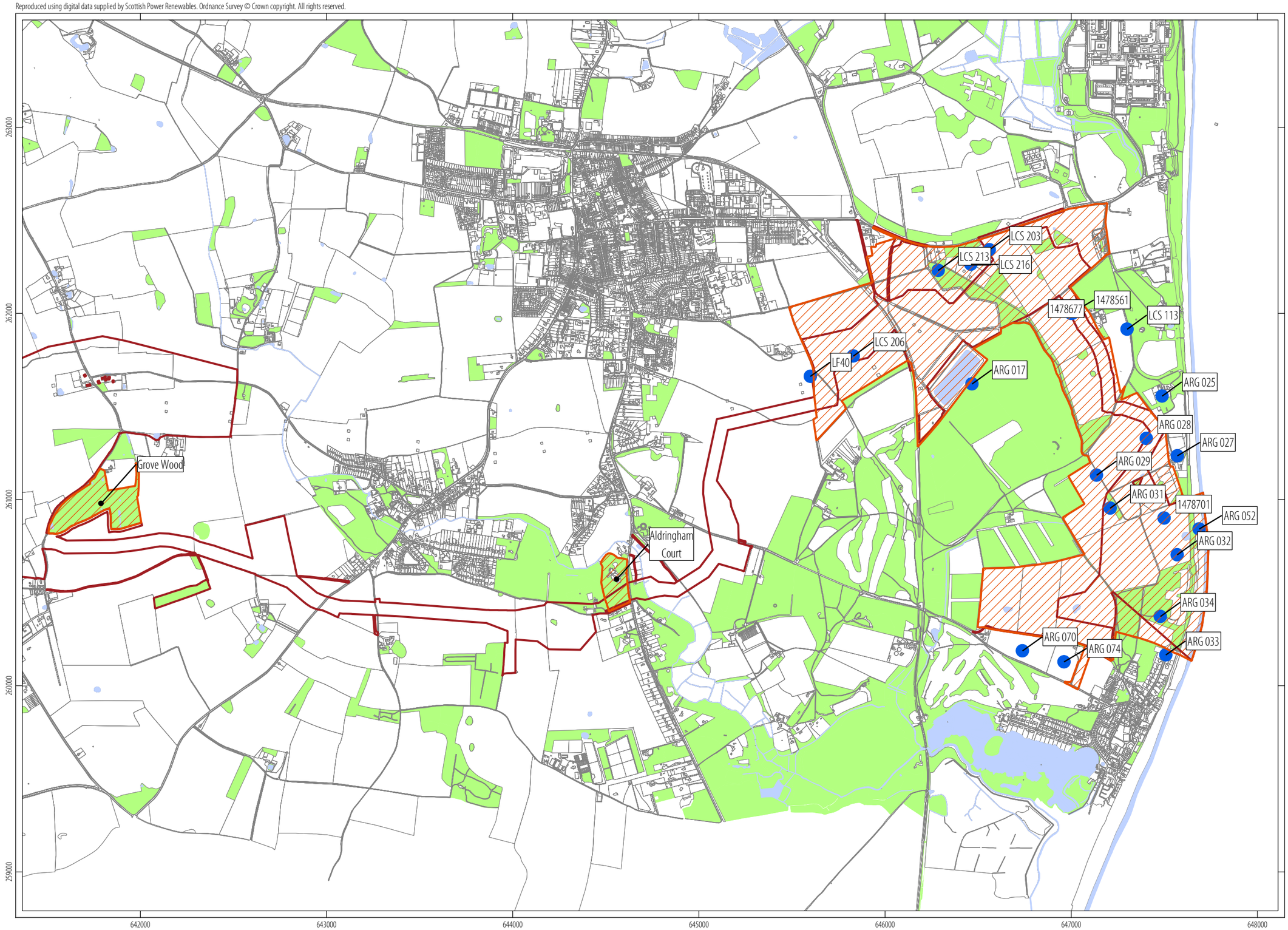
Historic England 2015: Management of Research Projects in the Historic Environment – The MoRPHE Project Managers' Guide.

Gurney, 2003: Standards for Field Archaeology in the East of England, East Anglian Archaeology Occasional Papers 14.

Natural Environment Research Council (NERC) 2019: British Geological Survey.

Suffolk County Council Archaeological Service (2019): Generic Brief for an Archaeological Earthwork Identification Survey.

Suffolk County Council Archaeological Service (2017): Archive Guidance.



East Anglia ONE North and East Anglia TWO Onshore Development area

earthwork survey area

WW2 features identified in ADBA

0 500m

1:20,000 @ A3

PROJECT **EAON18**
East Anglia One North/Two Offshore Wind Farm
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ILLUS 1 Location of earthwork survey showing WW2 features identified in ADBA