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Onshore Converter Station

Site-Specific Written Scheme of Investigation

DCO Requirement 20 (1)

(Applicable to Work Numbers 62 to 69)

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FIGURES

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1. INTRODUCTION AND SCOPE

1.1. Project Overview

East Anglia Three Limited (EATL) was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Business, Energy & Industrial Strategy (DBEIS) on 7 August 2017 for the East Anglia THREE Offshore Windfarm (EA THREE). The DCO granted consent for the development of a 1,200MW offshore windfarm and associated infrastructure and is live until 28 August 2022.

- 2. The DCO has now been subject to three non-material variations:
 - In March 2019 EATL submitted a non-material change application to DBEIS to amend the consent to increase the maximum generating capacity from 1,200MW to 1,400MW and to limit the maximum number of gravity base foundations to 100. In June 2019 DBEIS authorised the proposed change application and issued an Amendments Order.
 - In July 2020 EATL submitted a second non-material change application to DBEIS to amend the parameters of its offshore substations (reducing the number of these to one) and wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). On 15 April 2021 DBEIS authorised this proposed change application and issued an Amendments Order.
 - In August 2021 EATL submitted a third non-material change application to DBEIS to amend the consent to remove the maximum generating capacity of 1,400MW and to amend the parameters of its wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). The application is currently in the consultation phase.
- The onshore construction works associated with EA THREE will have a capacity of 1,400MW and transmission connection of 1,320MW. The construction works will be spread across a 37km corridor between the Suffolk coast at Bawdsey and the converter station at Bramford, passing the northern side of Ipswich (Figure 1). As a result of the strategic approach taken, the cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE Offshore Windfarm (EA ONE), thereby substantially reducing the impacts of connecting to the National Grid (NG) at the same location. The infrastructure to be installed for EA THREE, therefore, comprises:
 - The landfall site with one associated transition bay location with two transition bays containing the connection between the offshore and onshore cables;
 - Two onshore electrical cables (single core);
 - Up to 62 jointing bay locations each with up to two jointing bays;
 - One onshore converter station, adjacent to the EA ONE Substation;
 - Three cables to link the converter station to the National Grid Bramford Substation;
 - Up to three onshore fibre optic cables; and
 - Landscaping and tree planting around the onshore converter station location.
- 4. Since the granting of the DCO, the decision has been made that the electrical connection for EA THREE will comprise a high voltage direct current (HVDC) cable rather than a high voltage alternating current cable and, therefore, the type of substation that will be required is a HVDC converter station. The substation will be referred to here as a 'Converter Station' and this amended terminology has been agreed with the relevant authorities on 15 October 2020. It has also been determined that only one Converter Station will be constructed rather than two and that the Converter Station will be installed in a single construction phase.

1.2. Purpose and Scope

5. This Site-Specific Written Scheme of Investigation (WSI) sets out the standards and procedures for undertaking the archaeological investigations required for the construction works for the East Anglia THREE onshore Converter Station Stage (Figure 2). This document has been produced to discharge DCO Requirement 20 (1) which states:

Archaeology

20.

(1) No stage of the connection works may commence until for that stage a written scheme of archaeological investigation (which accords with the outline written scheme of investigation (onshore)) has, after consultation with Historic England and Suffolk County Council, been submitted to and approved by the relevant planning authority.

(2) In the event that site investigation is required, the scheme must include details of the following—

- (a) an assessment of significance and research questions; and
- (b) the programme and methodology of site investigation and recording;

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(c) the programme for post investigation assessment;

- (d) provision to be made for analysis of the site investigation and recording;
- (e) provision to be made for publication and dissemination of the analysis and records of the site investigation;
- (f) provision to be made for archive deposition of the analysis and records of the site investigation; and
- (g) nomination of a competent person or persons/organisation to undertake the works set out within the written scheme of investigation.
- (3) Any archaeological works or watching brief must be carried out in accordance with the approved scheme.
 (4) In the event that site investigation is required, the site investigation and post investigation assessment must be completed for that stage in accordance with the programme set out in the written scheme of archaeological investigation and provision made for analysis, publication and dissemination of results and archive deposition secured for that stage.
- The scope of this Site-Specific WSI relates to the construction of the Converter Station Stage. Works in this stage comprise Work No.s 62 to 69 in the DCO (referred to herein as the Converter Station Stage Site) (Figure 2), located to the north of the existing NG substation and adjacent to the EA ONE Substation. WSIs have been produced for each stage of the onshore construction works and are provided under separate cover.
- 7. Construction works at the Converter Station will be some of the first onshore connection works to commence. The access track and temporary laydown will be constructed in Summer 2022 with the remaining works being undertaken from Q2 2023.
- As per DCO condition 20 (1), the scope of works presented within this document draws upon that presented within the Outline Written Scheme of Investigation (Onshore) (OWSI) produced as part of the original Environmental Statement (Document 8.4; RoyalHaskoningDHV 2016). It has also been informed by the 'East Anglia THREE: Desk Based Archaeological Risk Assessment and Mitigation Strategy' (RSK 2020).

1.3. Legislation and Planning Policy

- East Anglia THREE is a Nationally Significant Infrastructure Project (NSIP), and as such the primary legislation relating to the consent regime for the 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.
- Those NPS of specific relevance to the project comprises the EN-1 Overarching Energy NPS and EN-3 Renewable Energy Infrastructure both designated in July 2011. Also of relevance is NPPF Section 12: Conserving and enhancing the historic environment; this sets out the principal national guidance on the importance, management and safeguarding of heritage assets within the planning process.
- 11. This national guidance 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.

1.4. Guidance and Best Practice

- Detailed standard and guidance documents for archaeological fieldwork are produced by the Chartered Institute for Archaeologists (CIfA), those relevant to the current works include:
 - Standard and Guidance for Archaeological Excavation (CIfA 2020a)
 - Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (CIfA 2020h)
 - Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives (CIfA 2020c)

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Suffolk County Council also has a series of documents that provide the County's expected standards for undertaking archaeological fieldwork. Pertinent to this scope of work is:

- Requirements for Archaeological Excavation (updated January 2021);
- Additional Requirements for a Palaeoenvironmental Assessment (updated 2018); and
- Archaeological Archives in Suffolk. Guidelines for Preparation and Deposition (Updated 2019).
- Guidance set out in 'Standards for Field Archaeology in the East of England' (Gurney, 2003) should also be followed, alongside the 'Good Practice Advice' notes by Historic England and the Association of Local Government Archaeological Officers (ALGAO).
- The archaeological works set out within this WSI, and all associated post-excavation work and reporting, will be undertaken in accordance with this WSI by a competent, professional archaeological contractor (the Archaeological Contractor).

2. ABBREVIATIONS

AAF	Archaeological Archives Forum
ADS	Archaeology Data Service
ALGAO	Association of Local Government Archaeological Officers
DBARAMS	Desk-Based Archaeological Risk Assessment and Mitigation Strategy
DBEIS	Department of Business, Energy and Industrial Strategy
DCO	Development Consent Order
ccs	Construction Consolidation Site
CDM	Construction (Design and Management)
CIfA	Chartered Institute for Archaeologists
cscs	Construction Skills Certification Scheme
DGPS	Differential Global Positioning System
EA ONE	East Anglia ONE Offshore Windfarm
EA THREE	East Anglia THREE Offshore Windfarm
EATL	East Anglia THREE Limited
HER	Historic Environment Record
HVDC	High Voltage Direct Current
MORPHE	Management of Research Projects in the Historic Environment
MW	Megawatt
NG	National Grid
NPS	National Planning Statement
NSIP	Nationally Significant Infrastructure Project
OASIS	Online Access to the Index of Archaeological Investigations
owsi	East Anglia Three Outline Written Scheme of Investigation (onshore)
PPE	Personal Protective Equipment
RO	Registered Organisation (CIfA)
RSA	Regional Science Advisor
SCCAS	Suffolk County Council Archaeology Service
SME	Strip, map and excavate

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SMS	Strip Map Sample	
SPE	Set piece excavations	
SuDS	Sustainable Drainage System	
UKIC	United Kingdom Institute for Conservation of Historic & Artistic Works	
WSI Written Scheme of Investigation		

3. CONSTRUCTION DETAILS

3.1. Enabling Works

- The onshore construction works will commence with the enabling works, which comprises the establishment of the temporary laydown area (Work No 65) and the access to this from the existing EA ONE access road. The temporary laydown area will be directly northeast of the converter station and will include temporary offices, welfare, car parking, materials and equipment storage. At the start of the works the onshore converter station compound and temporary laydown area will be temporarily fenced in accordance with the Fencing and Enclosures Plan (EA3-GRD-CON-PLN-IBR-000106) and a security cabin will be installed at the main access gate.
- Following any necessary ecological mitigation, topsoil will be stripped from the access road and temporary laydown area and stored at specific storage locations as to avoid cross contamination with other materials. Topsoil storage and management will be compliant with the recommendations and requirements set out in the Onshore Converter Station Landscape Management Plan (EA3- EA3-GRD-CON-PLN-IBR-000103). Topsoil will be stored to one side of the working area, in such a way that it is not mixed with any subsoil. Typically this would be stored as an earth bund of a maximum height of two metres, to avoid compaction from the weight of the soil. Storage time will be kept to a minimum, to prevent the soil deteriorating in quality and the topsoil bunds seeded to prevent windblow. Topsoil stripped from different fields will be stored separately, as would soil from specific hedgerow banks or woodland strips.
- The construction of an access road typically involves the placement of suitable graded imported stone material onto a suitable subgrade, potentially with a reinforcing geogrid and/or a geotextile, however other methods such as soil stabilisation may be used if considered appropriate. Following the initial topsoil stripping, the on-site access road will be installed for a width of 6m.
- The enabling works will also include installation of surface water drainage for the access road and temporary laydown area, in accordance with the Surface Water and Drainage Management Plan (EA3-GRD-CON-PLN-IBR-000107). Foul water drainage during this initial period will be via portable welfare facilities, with a tank that will be emptied on a weekly or bi-weekly basis.

3.2. Construction

- The EA THREE onshore converter station will be located within a fenced compound (maximum 157m by 186m) (Work No. 67), immediately to the east of the East Anglia ONE Substation and to the north of the existing NG Bramford Substation. The converter station will contain electrical equipment including power transformers, switchgear, reactive compensation equipment, harmonic filters, cables, lightning protection masts, control buildings, communications masts, backup generators, access, fencing and other associated equipment, structures or buildings. The converter station will have a compact layout, with the majority of the equipment contained in buildings not incongruous to their setting.
- The construction of the converter station will comprise a number of key stages, including: platform upfill to finished level (approx. 54m AOD) foundations and building construction and equipment installation and commissioning.
- The main site access has already been constructed as part of the EA ONE works, however, an internal service road from this will require installation.
- The enabling works will include grading and earthworks to remove any unsuitable materials from the converter station area and to build up with suitable fill material to establish a formation level for the converter station construction. The materials excavated will be reused on site as engineering fill or landscaping depending on material properties.
- Following the completion of the site grading, works will commence with the excavations for ducting and the foundations for the buildings and external plant. The building will largely comprise steel, concrete or masonry and cladding materials. The structural

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steelwork will be fabricated and prepared off site and delivered to site for erection activities using cranes. The composite or cassette cladding panels (e.g. Kingspan) will be delivered to site ready to erect and be fixed to the steelwork.

The civil works will be followed by the installation and commissioning of the electrical equipment. The large transformers will be filled on site. The smaller electrical components will be constructed on site using small mobile plant and lifting apparatus.

3.3. Cable Installation

- 26. Works No.s 63 and 66 will comprise the installation in open trenches of cables to connect the Converter Station to the nearby National Grid Bramford Substation. Construction activities for the installation of the cable in open trenches will be undertaken within a temporarily fenced strip of land, referred to as the working width.
- The cable route into the Converter Station from Work No. 64 through Work No 63 was not known at the time of the preparation of the Environmental Statement and it was considered at that time that this may also be installed using open trenches. The ducts have now, however, been installed during the construction works for EA ONE to end within Work No. 67 (the converter station site). There will, therefore, be no requirement, as originally anticipated, to open trench these through Work no. 63 to the Converter Station.
- ²⁸. Works in Work No. 62 will also include the installation of haul road to reach a jointing bay in the adjacent Work No. 58 (not part of this stage) to the east. This will follow the route of the EA ONE haul road as shown in Figure 2.
- In addition, all ducts to be used for EA THREE, which were installed during the EA ONE construction works, will require to be 'proved' to ensure that they are intact and free of debris. This will generally be undertaken by the use of foam pigs driven under pressure from jointing bay to jointing bay. Each stretch of duct that was installed using HDD will, however, require duct-proving excavations at each end to allow the use of different diameter foam pigs, due to a difference in the diameter of these compared to the ducting installed using open trench techniques.

3.4. Work Activities Conducted for EA ONE

30. Several areas of the Converter Station Stage have been impacted by the construction works relating to the EA ONE project. These are discussed with reference to EA THREE Work No.s in the following text. Section 4.2 sets out the specific archaeological activities that have been undertaken at the Converter Station Stage Site. These areas and the proposed works within them are shown on Figure 2.

3.4.1. Work No. 62

The area of Work No. 62 was bisected by the EA ONE haul road and the cable route, both running on an east-west orientation across the area. Additionally, the haul road branched to the south to connect with the construction consolidation site (CCS) at Bullen Lane. To the west of this branch is the permanent EA ONE Substation access road which connects the substation to Bullen Lane and a SuDS pond. This access road will be used to access the EA THREE Converter Station site during both construction and operation. A EA ONE haul road was located on the western edge of Work No. 62, connecting the main east-west oriented haul road to the access road.

3.4.2. Work No.s 63 & 64

The EA ONE haul road and cable route crossed Work Nos. 64 and 63, turning north to route around the proposed EA THREE Converter Station location (Work No. 67). To the south of the EA ONE Substation an access road was constructed within the area of Work No. 63. This access road runs to the southwest into Work No. 68.

3.4.3. Work No.s 65 & 69

Work Nos. 65 & 69 lie outside the EA ONE development boundary but have been identified (as Land Parcel 89) within the Desk-Based Archaeological Risk Assessment and Mitigation Strategy (DBARAMS) document (RSK 2020) as being of low archaeological potential and requiring no archaeological mitigation measures.

3.4.4. Work No. 66

Whilst the development boundary for EA ONE partially encompassed Work No. 66, limited EA ONE works were undertaken within Work No. 66. The works comprised the installation of cable ducts, partially connecting to the NG Substation, as shown on Figure 2. One section of the area, identified in the DBARAMS as Land Parcel 84, has been noted to be of low archaeological potential and requiring no archaeological mitigation.

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3.4.5. Work No. 67

Work No. 67, the proposed Converter Station location, was used during EA ONE construction works as a temporary laydown compound for the substation works. Significant areas were topsoil stripped to accommodate this and a temporary SuDS pond for drainage was constructed in the north of the area.

3.4.6. Work No. 68

The area of Work No. 68 was primarily used during EA ONE for the construction of a large SuDS pond and an access track (the continuation of the track from Work No. 63) and has now been developed into an area of landscaping. These works were subject to archaeological mitigation (Site 43, see Section 4.2).

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1. Archaeological and Historic Context

- The earliest evidence of archaeological activity around the Converter Station Stage Site and wider area, dates to the Pleistocene (about 500,000 years BC), and settlement sites are recorded from the Palaeolithic, Mesolithic, and through to the Neolithic. Most activity is recorded along areas of lighter soils such as The Breakland and The Sandlings, as well as major rivers, but activity is found throughout the area. Neolithic (4000-2200 BCE) trade routes are evident between northwest Suffolk and the Lake District, and southwest Suffolk and Cornwall, and while causewayed enclosures and cursus monuments are known, long barrows and henges are largely absent. A total of 825 Bronze Age (2200-700BCE) barrows are recorded in Suffolk, of which 114 are still visible as earthworks, along with 'flat' cremation cemeteries, but little Bronze Age settlement activity has otherwise been recorded. Settlement and growth continued through the Iron Age (700BCE-43AD) uninterrupted, with most settlements remaining undefended, though some fortified settlements were established during the Later Iron Age.
- Romano-British (43-410AD) activity in East Anglia was centred around Caistor St Edmunds in Norfolk & Colchester in Essex, and a steady population growth corresponds with land clearance and management and the creation of several major towns and road systems. Early-medieval (410-1066AD) colonisation is first recorded at the head of the Deben Estuary, and the 8th-9th centuries marked a dramatic increase in population. The area was under Danish rule from AD 870-902, with Danish influence and acculturation still evident in regional placenames today. Following the Norman Conquest of AD 1066, castles and other fortifications were rapidly established, a practice that continued later into the Medieval period (1066-1499AD), with 850 moated sites known throughout Suffolk, the earliest being of early-12th century origin.
- There are many post-Medieval (1500-1799AD) and 19th Century features recorded in Suffolk, including listed buildings and registered parks and gardens, along with many undesignated features such as bridges, dovecotes and tramways etc.
- Significant remains from the modern period (1900AD-Present Day) in East Anglia, are largely associated with World War 1 and World War 2, mostly comprising coastal defences, including pillboxes, trenches, artillery emplacements, and other concrete constructions. In addition, the remains of a Cold War radar station and the Bloodhound Missile Site are located at RAF Bawdsey.
- There are multiple Historic Environment Records within the vicinity of the Onshore Converter Station Stage Site (Figure 5). The majority of the features relate to the historic landscape. Three ancient woodlands were recorded to the south, and northwest of the site (BRF 052, BRF 058). Multiple medieval greens and parks are also identified, including Bullen Green (BRF 179), Bulling Green (BRF 081), and Bramford Park (BRF 180). Both excavation areas, Sites EA3-1 and EA3-2, are located at least partially in the footprint of Bullen Green (BRF 179) and this raises the possibility of associated buried archaeological remains in these locations.
- 42. Bullen Farm (BRF 164) and Bullenhall Farm (BRF 163) are post-medieval farmsteads, located to the east of the site. Bullenhall Farmhouse is a Grade II listed building (LB279245). Additional historic environment records within the vicinity of the site include an undated oval cropmark (BRF 019), post-medieval boundary ditches (BRF 122), and a scatter of Roman pottery (BRF 025) consisting of 3rd or 4th Century pottery, tile fragments, two iron knives, a brooch, and a coin dating to the reign of Severus Alexander (AD 222-235).

4.2. Archaeological Investigations at the Onshore Converter Station Stage Site for EA ONE

The Converter Station Stage Site has been subject to significant archaeological investigation during the development of the EA ONE project. This investigation has included geophysical survey, subsequent trial-trenching evaluations, and a metal detecting survey. Further mitigation in 2018 included targeted set piece excavations (SPE), strip, map and excavate (SME), and watching briefs (Wardell Armstrong 2018). Due to the overlapping development areas, several archaeological sites identified during EA ONE sit within the

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Converter Station Stage Site. These comprise: Site 1, Site 2, Site 45, Site 43 and Site 44 (Figure 3). Detailed drawings depicting Sites 1, 2 & 44 extracted from the EA1 Updated Project Design¹ are located in Appendix 1.

In addition to the archaeological mitigation sites, two evaluation trial trenches were excavated in locations that have the potential to be impacted by construction works as part of the EA THREE Onshore Converter Station Stage. Trench 22 is located over the proposed open cut cable linking the converter station to the National Grid station and contained evidence of a post-medieval ditch. Trench 25 was located north of Site 1 over the current location of the proposed EA THREE SuDS pond but contained no archaeology.

4.2.1. Site 1

45. Site 1 was located c. 50 m to the east of the Converter Station site (Work No. 67), and spanned across EA THREE Work Nos. 62, 63, & 64. The archaeological works carried out here included geophysical and metal detecting surveys, followed by trial trenching and SPE. Geophysical survey revealed small enclosures in the east which were partially truncated by modern services, while the metal detecting survey uncovered a few artefacts of Roman and medieval date. Medieval pottery was also recovered during fieldwalking survey. Evaluation trench 26 contained a ditch and pit, the fills of which both contained Middle to Late Iron Age pottery. Trenches 31 and 32 revealed ditches correlating to anomalies identified by the geophysical survey, though no dating evidence was recovered. Excavation of the whole site revealed further ditches that had been identified by the geophysical survey as well as one large steeply cut pit. These features were interpreted as potential enclosures associated with occupation at Site 3 (Wardell Armstrong 2018). Pottery recovered from these features was dated to the 12th-14th centuries AD.

4.2.2. Site 2

46. Site 2 was located c. 700 m to the east-northeast of Work No. 67 and focused on a ditch-defined enclosure, currently thought to date to the 12th century AD (post-excavation works are ongoing), as well as a small number of later prehistoric features. The bulk of Site 2 was in Work No. 68, aside from a small section located in Work No. 62. All recorded features, except for two ditches, were located outside the EA THREE Converter Station Site (Work Nos. 62 to 69), but it is important to note the proximity of significant archaeological activity close to the proposed EA THREE construction works and the high potential for features to extend into previously un-excavated sections of Work No. 62.

4.2.3. Site 45

Site 45 was located 500m to the east of the proposed Converter Station site (Work No. 67), in Work No. 62. The archaeological works carried out within Site 45 included geophysical and metal detecting surveys, followed by a watching brief. The geophysical survey revealed two straight north-south oriented linear features whilst the metal detecting survey uncovered a selection of mainly post-medieval finds, but no diagnostic pattern of spatial distribution. To the immediate north of Site 45 was trial trench 41, which contained an undated ditch. No features were identified during the EA ONE watching brief.

4.2.4. Site 43

48. Site 43 comprised two distinct areas, the first of which (100 m southwest of the Converter Station boundary (Work No. 67), in Work No. 68) lay partially within the footprint of the now-constructed EA ONE substation. The second area, c. 40 m to the south of the first, was focused on an area that was excavated to form an EA ONE SuDS pond. The archaeological works carried out within Site 43 included a metal detecting survey, followed by trial trenching and a watching brief. All metal detecting artefacts recovered were post-Medieval or Modern with no defined spatial pattern. Evaluation trenches 5 and 6 produced evidence of a possible boundary ditch and two pits considered to be possible tree holes. All were undated. No features were identified during the watching brief.

4.2.5. Site 44

49. Site 44 lay partially within the southern edge of the proposed Converter Station site (Work No. 67), extending south and east across Work No. 63 and into Work No.62. Site investigations included metal detecting survey and trial trench evaluation. The metal detecting survey revealed a selection of mainly post-medieval finds, but no diagnostic pattern of spatial distribution. Evaluation trenches revealed features assumed to be Modern and post-medieval boundaries. The area of Site 44 was then initially mitigated via watching brief, but the discovery of significant features led to excavation work being required. This excavation uncovered small pits with undiagnostic fragments of late-Prehistoric pottery, and a post-medieval ditch containing 19th-century pottery. The ditch runs north-

¹ Wardell Armstrong (on behalf of Scottish Power) (2019) East Anglia One Offshore Windfarm Archaeological Mitigation Works Updated Project Design

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south and there is a high potential that it will be encountered in a Strip Map Sample (SMS) area (Site EA3-2, see section 6) defined for EA THREE.

4.3. Archaeological Investigations at the Onshore Converter Station Stage Site for EA THREE

Wessex Archaeology (2014) were commissioned to conduct a limited trial trenching campaign on the footprint of the EA THREE converter station in order to inform the Environmental Impact Assessment. A total of 19 trenches were excavated to provide a 5% sample of the target area. The results of the evaluation were three ditches revealed across nine of the trenches, a late medieval/post-medieval field boundary a modern field boundary and a modern drainage ditch, all running on a similar northwest-southeast alignment. No evidence for activity pre-dating the medieval period was uncovered. The report concluded that there was unlikely to be medieval settlement activity in the immediate vicinity of the site and that the findings did not have the potential to significant enhance regional research objectives for the medieval or post-medieval periods. This area was subsequently used as a construction compound as part of the construction of the EA ONE Substation.

5. OBJECTIVES AND ADMINISTRATION

5.1. General Objectives

- The general objectives of the programme of archaeological works are to:
 - examine the archaeological resource within the Converter Station Stage Site, including clarifying the presence/absence and extent of any buried archaeological remains;
 - identify, within the constraints of the works, the date, character and condition of any surviving remains within the Converter Station Stage Site;
 - 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 where necessary the information to allow an informed decision to be made concerning further mitigation strategies.

5.2. Specific Objectives

- The specific objectives of the programme of archaeological mitigation works are to:
 - contribute towards the discharge of DCO Requirement 20 (1);
 - record the depth, extent, character and date of any archaeological remains revealed;
 - · recover and record a proportionate sample of any artefacts and palaeo-environmental remains revealed;
 - undertake a proportionate programme of post-excavation analysis;
 - compile a suitably detailed report presenting the results of the programme of archaeological mitigation works;
 - compile a material and documentary archive, and deposit that archive with a suitable repository;
 - if appropriate, publish the results of the programme of archaeological mitigation works in an appropriate peer-reviewed academic journal, or equivalent medium; and
 - if appropriate, and as per the OWSI, contribute to local and regional research strategies as outlined in Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011), and the subsequent East of England Regional Research Framework (2021).
- 53. The areas and activities to be subject to archaeological mitigation are discussed in Section 3 and depicted on Figure 4.

5.3. Roles and Responsibilities

5.3.1. Archaeological Regulator

The Archaeological Regulator responsible for regulating the works undertaken, on behalf of the Local Planning Authority, Mid-Suffolk District Council, is:

Suffolk County Council Archaeology Service (SCCAS)

Bury Resource Centre

Hallow Road, Bury St Edmunds, Suffolk, IP32 7AY

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5.3.1.1. Monitoring

- The Archaeological Contractor will inform the Archaeological Regulator of the commencement of fieldwork and the progress of the investigations on the Converter Station Stage Site. Reasonable access to the Site will be arranged for representatives of SCCAS and Historic England as appropriate for inspection and monitoring visits.
- Variations to this WSI will be agreed in advance with EATL, the Archaeological Consultant to EATL, Historic England and the Archaeological Regulator.

5.3.2. Archaeological Consultant

57. The Archaeological Consultant responsible for project oversight and archaeological strategy is:

Alastair Becket

Associate Archaeologist

+440 131 335 6830

abecket@slrconsulting.com

SLR Consulting Limited

Floor 2, 4/5 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH

5.3.3. Archaeological Contractor

- The Archaeological Contractor will be appointed following confirmation of the construction programme and project phasing, consistent with the provisions set out in this WSI. The appointed Archaeological Contractor will provide:
 - a suitable risk assessment;
 - a team of suitably qualified archaeologists; and
 - progress reports (verbally or by email) to the Archaeological Regulator upon request.
 - a contractor's method statement confirming the implementation of the archaeological works in compliance with the methods set out in this WSI

5.3.4. Principal Contractor

The appointed Principal Contractor comprises Siemens Energy. The Principal Contractor will provide a detailed methodology for the construction groundworks; this methodology will be supplied to the Archaeological Consultant and the Archaeological Contractor.

6. FIELDWORK METHODOLOGY

6.1. Scope of Archaeological Mitigation

- Where possible, construction activity has been limited to the footprint of the previously disturbed area for EA ONE. Where areas of additional disturbance for the construction works associated with the Converter Station Stage have been identified, beyond those already investigated as part of the EA ONE project, and considering the work previously undertaken (Section 4.2, above) SMS will provide the most suitable form of archaeological mitigation, allowing any exposed remains to be recorded. It is recommended that this requirement apply to select ground-disturbing works, as agreed with SCCAS, in areas which were not previously disturbed by EA ONE (Figure 3).
- Two areas of disturbance have been identified as requiring archaeological mitigation (Figure 4), the installation of a SuDS pond in Work No. 63 (hereafter Site EA3-1) and a short section of permanent access road to the south of the Converter Station and open cut cable trenching in Work No. 63 (hereafter Site EA3-2). No mitigation will be required for the additional permanent and temporary access to the Converter Station in Work Nos. 62 and 63, or the Converter Station itself. The temporary haul road in Work Nos. 62, 63 and 64 has been mitigated through design and is now located entirely within the footprint of the previously disturbed area, and will require no further archaeological mitigation.

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6.2. Strip, Map and Sample Excavation

- 52. SMS Excavation will be required at Sites EA3-1 and EA3-2, as shown on Figure 4, before commencement of construction works at these locations. A programme of works will be agreed with SCCAS and the appointed contractor, and reasonable time will be allowed for the excavation of archaeological remains. SMS Excavation is a technique that is often appropriate where archaeological remains are thought or even known to be present, but their specific type(s) and densities are unknown.
- Prior to the commencement of mitigation works, a Parish Code is required to be obtained from the Suffolk HER. This constitutes a Site code for the archaeological works. All finds and Site Archive will be marked with this number, and it will appear on the front cover of any Reports and used as Site Code in the OASIS Record.
- Overburden will be removed using 360° tracked mechanical excavators fitted with toothless ditching buckets, working under the continuous direct supervision of a suitably experienced archaeologist. A methodology for mechanical excavation will be as follows:
 - overburden² will be removed in spits of no more than 200mm down to the level of the upper archaeological horizon or the natural geology whichever is reached first;
 - spoil will be stockpiled at designated locations. Topsoil and subsoil will be stockpiled separately. All spoil will be compacted and managed to avoid excessive saturation by water. Spoil will be stored at least 10m from any watercourse to avoid run-off of silt. If subsoil is to be stored on previously undisturbed land than geotextile membrane must be used as a barrier between the existing topsoil and the subsoil bund. Topsoil will not be stripped in such locations to facilitate subsoil storage;
 - each mechanical excavator will work backwards from a starting point to avoid tracking over cleared areas. No vehicles will track across stripped areas; and
 - for every plant team, there will be a ratio of one supervising archaeologist per machine.
- Upon completion of stripping, archaeological features and deposits will be identified and defined. These will be mapped using a survey quality GPS device and the resultant working plans (supplied by the appointed contractor in pdf and geo-referenced shapefile formats) will be supplied to and used in discussion with SCCAS to ensure that the excavation strategy is appropriate for the exposed archaeological features (an indicative methodology is provided in Section 6.4.1). A 'sample' of the archaeological features will then be hand-excavated, enough to allow the clear identification of phases of human occupation on the site, where possible, and a full definition of archaeologically sensitive areas within the area to be used. SMS areas will be fully backfilled by the appointed contractor following sign-off from SCCAS and EATL.
- After mechanical excavation, and subject to agreement with EATL and SCCAS, the appointed contractor will aim to start archaeological fieldwork within one week to prevent deterioration of archaeological material. Any delays will require possible mitigation, and SCCAS/Historic England retain the power to pause stripping of archaeological areas if the stripping is more than two weeks ahead of the excavation.
- Following the completion of archaeological mitigation in a site and following sign off from SCCAS, the excavation area will be backfilled under the supervision of the appointed contractor and to the satisfaction of EATL. All equipment will be removed, spoil will be backfilled in the reverse order it was removed, and then compacted. A photographic record will be maintained of the excavation areas prior to, and following, backfilling to document the condition of the land.

6.3. Preservation of Undisturbed areas

- Where construction activity related to EA THREE has been planned to take place within the previously disturbed footprint, it is critical that activity does not stray beyond the planned activity and into areas with archaeological potential that have not been disturbed. EATL will be responsible for the clear demarcation of these areas on the ground, as well as informing all teams undertaking construction activity as to the necessity of these boundaries.
- 69. Within the Onshore Converter Station Stage this will be applied for the temporary Haul Road to Jointing Bay 1 that runs along the footprint of the previously disturbed area from EA ONE. Before construction of the Haul Road, the boundary between the disturbed and undisturbed area must be clearly demarcated for the duration of construction works.

² Overburden is defined as topsoil; including plough soil and subsoil including colluvium and alluvium where they occur only above archaeological deposits.

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6.4. Fieldwork Techniques

6.4.1. Sample Hand Excavation

- 70. Any archaeological remains revealed will be cleaned and excavated by hand. This will be undertaken in accordance with standards and guidance set out by ClfA (2014a) and SCCAS (SCC 2021), as well as with all due industry and professional standards.
- 71. The following samples will be excavated:
 - 100% excavation of each sampled stake hole;
 - 100% excavation of each sampled post hole;
 - 100% excavation of all features relating to structural remains, cremations, and ritual deposits;
 - 50% excavation of each pit (if >0.4m diameter) up to 1.5m diameter;
 - a minimum 25% excavation of each sampled pit above 1.5m diameter, to include one complete cross section to obtain the feature's profile;
 - a minimum of 20% excavation of sampled linear features up to 5m in length; and
 - the sampling of longer features will be agreed with the SCCAS once their full extent within the excavation area has been established.
- Percentages referred to are based upon the surface areas of those parts of any archaeological features that lie within the archaeological monitoring and recording area, and not upon the entire known extent of any such features. In any specific instance, should the above percentage excavation(s) not yield sufficient information to enable the form and function of archaeological remains to be determined to an extent proportionate to their significance, further excavation of such remains may be required.

6.4.2. Metal Detecting

- All areas requiring archaeological mitigation will be subject to a metal detecting survey ahead of topsoil/subsoil stripping in line with SCCAS guidance (SCC 2021). The Contractor will be responsible for supplying metal detectors and suitably qualified personnel.
- Only finds from the surface/topsoil will be recovered. All significant artefacts will be recovered, and their locations mapped using a survey quality GPS, and will be supplied by the Contractor in pdf and geo-referenced shapefile formats.
- Cut features will be detected before excavations, and spoil heaps shall be scanned regularly. If necessary, stratified layer deposits (e.g., dark earth) will be subject to metal detecting whilst hand excavation takes place.

6.4.3. Significant Remains

- Where significant remains are revealed, additional detailed recording, specialist environmental sampling, and / or scientific dating may be required. The scope of and methodology for any such detailed recording would be agreed in advance between the client, the client's Archaeological Consultant and the Archaeological Regulator. A sample strategy for significant remains, informed by English Heritage (now Historic England) (2011) could consist of:
 - Large samples (20lts) from waterlogged/anoxic deposits for the purpose of recovering plant and invertebrate remains, as well
 as small vertebrates and marine molluscs;
 - Monolith/Kubiena samples for the analysis of pollen, spores, diatoms and foraminifera;
 - Core samples to be taken where monolith and section samples are not possible, for the recovery of microfossils; and
 - Small samples taken from individual contexts, 10-50g for ostracod and geoarchaeological analysis, and 10-20mm² for pollen and spore analysis.

6.4.4. Non-archaeological Remains

Where features are found to derive from naturally occurring events e.g., tree throws, plant holes, animal burrows, solution holes etc., a sample sufficient only to confirm that interpretation will be hand-excavated.

6.4.5. Variations to Strategy

78. Any variations to the above sampling strategy would be approved in advance by the Archaeological Regulator, following on-site discussion.

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6.5. Archaeological Recording

- 9. Archaeological site recording will include the following:
 - a pro-forma context record for each stratigraphic unit revealed³;
 - a record of any areas identified as being devoid of archaeological remains and of any features investigated and confirmed to be
 of natural origin;
 - a 'Harris Matrix' diagram to elucidate any complex stratigraphic sequences;
 - site plans, either DGPS-recorded, or hand-drawn at a scale of 1:100, and depicting:
 - the extent of the mitigation area, tied into the Ordnance Survey National Grid and located on a 1:2,500 scale plan;
 - the extent of all stratigraphic units revealed;
 - appropriate detail identified within stratigraphic units;
 - plans of stratigraphic units at a minimum scale of 1:20, unless specific circumstances dictate an optimal scale;
 - sections of stratigraphic units at an appropriate scale. Unless specific circumstances dictate an optimal scale, then this should be a minimum of 1:20. For areas of detailed, significant or complex stratigraphy the scale used should be a minimum of 1:104;
 - a photographic record comprising recognised industry-quality digital SLR photographs⁵; numerical indices of all context records, drawings, photographs, samples and small finds, checked and cross-referenced as necessary; and
 - a diary record of the progress of the archaeological work, including details of liaison and monitoring meetings, site visits, and a record of staff on site.
- 80. All of the above records will form part of the eventual project archive, to be deposited with the SCCAS Conservation Team.
- All archaeological recording will be undertaken in accordance with industry best practice, including standards and guidance set out by CIFA (2014a) and SCCAS (SCC 2021).

6.6. Artefact Recovery

- Archaeological artefacts will be collected, stored and processed in accordance with accepted national and regional methodologies, guidelines and standards.
- 'Bulk finds' will be collected and recorded by context. 'Small finds' will be recorded three-dimensionally using DGPS or equivalent survey equipment. Each artefact within any identified artefact scatters will also be recorded three-dimensionally.
- All artefacts (apart from modern finds) will be collected and retained, unless otherwise agreed in advance with the Archaeological Regulator.
- Where required, artefacts will be stabilised, conserved and stored in accordance with the guidance of the United Kingdom Institute of Conservators (UKIC). If necessary, a conservator will visit the site to undertake 'first aid' conservation treatment of finds prior to their removal from site.

6.7. Environmental Sampling

- The sampling strategy will be agreed with SCCAS and the Historic England Regional Science Advisor, as required. Particular attention will be paid to the recovery of samples from any waterlogged deposits present. Where appropriate, samples will be taken for floatation for the purpose of recovering material including charred plant remains, charcoal, and small mammal and fish bones. Samples for floatation will consist of 40-60 litres, or 100% of smaller features. Recovery and sampling of environmental remains will be in accordance with guidelines prepared by English Heritage (now Historic England) (2011) and SCCAS (SCC 2018):
 - samples will be recovered from cleaned surfaces, using clean tools and placed in clean containers;
 - · samples will be appropriately recorded and labelled, and a register of all samples recovered will be maintained; and

³ Typically, this would relate to any individual 'context' identified within a single archaeological intervention. However, there may be occasions where a context evidently recurs within multiple interventions, most commonly in relation to linear features. In such instances, it may optimise the intelligibility of the information derived, and aid in its interpretation, for a single context record to be compiled.

 $^{^4}$ All scale drawings will include spot heights relative to the Ordnance Datum in metres, correct to two decimal places.

⁵ Alongside individual archaeological contexts / stratigraphic units, general site shots will also be taken to give an overview of the site and progress of the archaeological works programme.

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the samples will be stored safely in a sufficiently secure location prior to their delivery to the appropriate specialist.

The sample strategy adopted will consider information obtained during the EA ONE archaeological works that might inform as to the preservation/condition of any environmental remains and their potential to address specific archaeological questions. For the Converter Station area samples taken from Sites 44 and 1 are relevant. 4 bulk samples were taken from Site 44 but it was considered that the palaeoenvironmental potential of the samples was too limited to justify further analysis, with material recovered insufficient to offer potential for radiocarbon dating. Environmental sampling from Site 1 was more promising, with 30 samples taken. Sample <8> has been recommended for further processing to increase the archaeobotanical assemblage and provide material for radiocarbon dating, due to its significance to inform on the wider medieval environmental and economy. The limited potential of samples in Site 44 and the more significant potential for medieval features shown in Site 1 give an insight into the possible condition

of samples in the SMS areas.

Secure contexts will be sampled for dating purposes as appropriate (whether on site or as sub-samples of processed bulk samples). This will include C14 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, 2006). 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 after initial post-excavation assessment.

Should any palaeo-environmental deposits of particular interest be revealed, the Historic England Regional Science Advisor (RSA) will be contacted, and their advice sought in respect of an appropriate further sampling strategy. The RSA for East Anglia is:

Zoe Outram Historic England (Cambridge Office)

Tel: 01223 582 707

Email: zoe.outram@HistoricEngland.org.uk

Any sampling would be undertaken in accordance with Historic England's 'Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record' (2015a). Geoarchaeological survey strategies will be agreed with SCCAS and the Historic England Regional Science Advisor and could consist of sampling of layers of geoarchaeological significance such as colluviums and alluviums through the employment of specialist techniques such as hand-augering or borehole survey.

6.8. **Human Remains**

- Should human remains be encountered, they will initially be left in situ, suitably covered and secured, in compliance with industry best practice. The Archaeological Contractor will notify the Archaeological Consultant, who will then inform both EATL and the Archaeological Regulator.
- Following this initial consultation, the removal of human remains will only take place in accordance with a Ministry of Justice exhumation license, the appropriate Environmental Health regulations and the Burial Act 1857.
- The Archaeological Contractor will be responsible for applying for an exhumation license from the Ministry of Justice, and, once in receipt, for ensuring that the provisions of that license are complied with.
- If exhumation is to occur it will be undertaken in compliance with Historic England's 'The Role of the Human Osteologist in an Archaeological Fieldwork Project' (2018). The document states:

"Recovery strategies should ensure adequate retrieval of small bones, calcified fragments (for example, arterial plaques, bladder stones etc) and small artifacts. This will normally require wet-sieving and sorting of soil retrieved from the base of the grave after lifting the skeleton. Detailed strategy will depend upon the specific nature of the soil and buried remains at the site in question, but recovering basal grave soil in three sub-samples, corresponding to the head, torso and leg /foot area, helps preserve information as to the approximate location in the grave of recovered material. Infant remains may be block lifted." (p11)

6.9. **Treasure Act**

Should any treasure be discovered, it will be removed, if possible, to a secure location. Where removal is not practical on the same working day as the discovery, suitable security measures will be put in place to protect the find from damage, loss and theft.

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96. Upon discovery of any treasure, the Archaeological Contractor will immediately inform the Archaeological Consultant, the local coroner, and the Portable Antiquities Finds Liaison Officer for Suffolk.

97. In accordance with the provisions of the Treasure Act 1996 Code of Practice (2nd Rev.), the local coroner for Suffolk is:

Mr Nigel Parsley Senior Coroner The Coroners Court and offices Beacon House, Whitehouse Road Ipswich, IP1 5PB

Tel: 0345 607 2040

Email: admin.coroners@suffolk.gov.uk

98. The Portable Antiquities Finds Liaison Officers for Suffolk are:

Anna Booth
Finds Liaison Officer for Suffolk
Anna.Booth@Suffolk.gov.uk

Phil Hughes Finds Liaison Officer for Suffolk Phil.hughes@suffolk.gov.uk

Portable Antiquities Scheme (SUFFOLK), Suffolk County Council Archaeological Service, Bury Resource Centre, Hollow Road, Bury St Edmunds, IP32 7AY

99. The Archaeological Contractor will ensure that the Treasure Act regulations are complied with and that all relevant parties are kept informed. A list of finds which have been collected and which fall under the Treasure Act will be included within the fieldwork report.

7. POST-EXCAVATION AND REPORTING

7.1. General

- The post-excavation and reporting programme will be agreed with the Archaeological Regulator and undertaken in accordance with the procedures set out in Historic England's 'Management of Research Projects in the Historic Environment' (MORPHE 2015b) guidelines. The following sequence of post-excavation tasks will be undertaken:
 - preparation of the site archive;
 - preparation of a post-excavation assessment;
 - post-excavation analysis consistent with the assessment;
 - preparation of a grey-literature report;
 - preparation of a publication; and
 - · deposition of finds and archive in an appropriate museum.

7.2. Timescales

- 101. The following timescales will apply, unless otherwise agreed to in writing by the Archaeological Regulator:
 - · delivery of an interim report to the County Historic Environment Record (HER) within one month;
 - delivery of a post-excavation assessment, covering all phases of the archaeological mitigation works, to the Archaeological Regulator within six months; and
 - post-excavation analysis to be complete and a draft publication report compiled within one year, as required.

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7.3. Finds Processing and Material Archive

- All finds will be processed promptly following completion of the fieldwork. Retained finds will be washed (where appropriate, see below), marked, bagged and recorded within a database (e.g., MS Access or GIS DBASE), and will include the location from which they were recovered in National Grid and Ordnance Datum, accurate to two decimal places. Finds that have the potential for preserved residues should not be washed, as recommended in Historic England's 'Organic Residue Analysis and Archaeology: Guidance for Good Practice' (2017).
- The finds assemblage will be treated, labelled and stored in accordance with the appropriate Historic England guidance documentation, all relevant local authority guidelines and the United Kingdom Institute for Conservation of Historic & Artistic Works (UKIC) guidelines.
- 104. In accordance with English Heritage guidance (Historic England) (2011, pg. 7), environmental samples will be:

"Processed as part of the data collection and recovery stage of a project, so that the specialist can clearly see the full range of material and judge its potential to meet project aims and objectives."

- Samples will be stored in a cool dark environment, and processed as soon as possible after being taken, in order to limit the risk of decay to organic remains.
- 106. The Archaeological Contractor will ensure that the processing of all assemblages recovered is also undertaken in accordance with the requirements of the agreed repository.
- Where appropriate, each category of find, or each material type, will be examined by a suitably qualified archaeologist or specialist, with the results of that analysis incorporated into the fieldwork report.

7.4. Paper Archive

108. Upon completion of the archaeological fieldwork, the archive of written, drawn and photographic records generated on site will be reviewed by a suitably experienced archaeologist. The archive will be ordered and checked to ensure that it is complete, and that the information recovered is of the required standard and is suitably intelligible ahead of its analysis.

7.5. Reporting

- 109. The full (grey literature) technical report will include the following:
 - a non-technical summary;
 - a site location plan;
 - archaeological and historical background;
 - aims and objectives;
 - methodology;
 - results (including full description, assessment of condition, quality and significance of all archaeological features, as relevant);
 - interpretation of the results within a wider context;
 - · conclusions on the significance of the remains identified and a statement of their potential provided;
 - · publication proposals, if warranted;
 - summary of archive, storage and curation;
 - general and detailed plans illustrating the location(s) of the investigations, accurately plotted onto an OS base map to an appropriate scale;
 - detailed scaled plans and sections of features/deposits as appropriate, including OD heights;
 - a complete matrix (either site-wide, or for each area of activity identified);
 - summary data tables;
 - a cross-referenced index of the project archive; and
 - specialist assessment and/or analysis reports.

7.6. Report dissemination

110. A draft of the report will be submitted to the Archaeological Consultant and EATL for review ahead of finalisation.

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One bound and one digital version of the report (complete with illustrations) will be produced by the Archaeological Contractor within one week of the receipt of any comments issued on the draft. Digital text will be in Microsoft Word format, and illustrations will be in PDF format.

On finalisation of the report, a digital copy in PDF/A format will be provided to the Archaeological Regulator and SCCAS (HER). EATL and the SCCAS HER will also be provided with any relevant geo-referencing data, including final excavation plans, showing the location of features and sections, in .shp format (for SCCAS), and according to agreed data standards (for EATL). Digital data and reports will be managed in accordance with guidance set out in the Dig Digital project (DigVentures 2019).

The Archaeological Contractor will complete an Online Access to the Index of Archaeological Investigations (OASIS) form in relation to the report, to include a digital version of the report itself. The full report will include the OASIS ID number.

7.7. Publication

If the results of the programme of archaeological mitigation are considered sufficiently significant as to warrant wider public dissemination, then a suitable format and forum will be identified in liaison with the Archaeological Regulator. As a minimum, this might include a short article in a local peer-reviewed journal.

8. ARCHIVING

8.1. Composition

115. The compilation of an integrated and ordered project archive will be undertaken by the Archaeological Contractor in accordance with the provisions of the following:

- Historic England's MoRPHE guidance;
- SCCAS Archaeological Archive Standards (SCC 2019);
- the requirements of the local repository; and
- this WSI.
- 116. The archive will include:
 - all recovered artefacts and significant samples (material archive);
 - · all written, drawn, photographic and other records generated during the fieldwork (site archive); and
 - all digital data, including that which is digital in origin⁶, and any digital copies made of the primary site records⁷, including images.
- 17. Once prepared, the Archaeological Contractor will store the archive in a suitable and secure location prior to its deposition.

8.2. Discard Policy

The guidelines set out in Selection, Retention and Dispersal (Society of Museum Archaeologists 1993) will be followed, which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. Any discard of artefacts will be fully documented in the project archive. The Discard Policy will be agreed in writing with the SCCAS Archive in advance of action being taken.

The discard of environmental remains and samples will follow nationally recommended guidelines (SMA 1993; 1995; English Heritage 2011).

 $^{^{6}}$ Including email correspondence, images, survey data and other site data collected through digital/electronic means.

⁷ Including relevant drawn and written data created during fieldwork (context sheets, sample sheets, finds records, drawings/plans/sections/sketches, all indices, earthworks surveys, and any notes that contribute to the interpretation and understanding of the site and its recording) and relevant records/data produced as part of the post-excavation assessment or analysis etc.

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8.3. Security Copy

In line with current best practice (e.g. AAF 2011), on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

8.4. Deposition

21. The hardcopy archive will be deposited for long-term curation with the SCCAS Archive. In depositing the archive, the Archaeological Contractor will:

- contact the SCCAS Archive at an early stage, in order to obtain their acceptance, in principle, of the archive for long-term storage and curation;
- be responsible for identifying and adhering to any specific policies or requirements provided by the repository in respect of archive preparation and submission;
- obtain a written agreement from the landowner to transfer title to all items in the material archive to the SCCAS Archive (on their behalf) ⁸; and
- grant license to copyright for documentary material (both physical and digital) to EATL, for transfer to the relevant repository.
- The Accession Numbers for the project will be the Parish Codes which will be obtained by the Suffolk HER prior to the commencement of any fieldwork.
- In the event that the fieldwork does not reveal deposits of archaeological interest and produces little or no artefactual material, there would be no requirement for an archive to be deposited. In these circumstances, the Archaeological Contractor will obtain written agreement from the Archaeological Regulator that this is the case.

8.5. Deposition of Digital Archive

- 124. Currently, the only suitable repository for digital archives is the Archaeology Data Service (ADS). The digital archive must therefore be compiled in accordance ADS standards and requirements.
- Should the archive repository confirm that they do not require the hardcopy archive, then once the digital archive has been transferred to the ADS, the Archaeological Contractor may retain, disperse or dispose of the primary hardcopy items. This may entail physical destruction of the primary record.

8.6. Notification

The Archaeological Contractor shall promptly notify the Archaeological Regulator when the archive of records and finds has been deposited with the appropriate repository.

8.7. Copyright

- 127. The Archaeological Contractor will assign copyright in all reports, documentation and images generated during the project to EATL.
 The Archaeological Contractor will retain the right to be identified as the author/originator of the material. It is the responsibility of the Archaeological Contractor to obtain such rights from any sub-contracted specialists.
- The Archaeological Contractor may apply in writing to use or disseminate any part of the project archive, documentation or images, and such permission will not be unreasonably withheld.
- 129. EATL will own all Intellectual Property Rights to photographs and documentation prepared for this project by or on behalf of the Archaeological Contractor.

⁸ If ownership of any or all of the artefactual material is to be retained by the landowner, then provision must be made for its time-limited retention by the Archaeological Contractor to facilitate its full analysis and specialist recording.

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9. **GENERAL DETAIL**

The Archaeological Contractor will undertake the works in accordance with this WSI and any subsequent written variations agreed with the Archaeological Regulator. No variation from, or changes to, this WSI will be undertaken except by prior agreement with the Archaeological Consultant or EATL, in consultation with the Archaeological Regulator where appropriate.

9.1. Personnel

- All archaeological personnel involved in this project will be suitably qualified and experienced professionals. Prior to commencement of the programme of archaeological mitigation, the Archaeological Contractor will provide the Archaeological Consultant, on behalf of EATL, with the following staff details:
 - Project Manager CV;
 - Project Officer and / or Site Supervisor CVs; and
 - A list of other archaeological personnel proposed for deployment on the project, including summary detail of professional field experience and any relevant specialisms.
- The composition of the archaeological team will be notified in writing to SCCAS, including the names of Project Officers/Site Supervisors, alongside insurance details.
- The Archaeological Contractor's Project Manager will be a Member of the CIfA or will be able to demonstrate an equivalent level of experience and competency in managing archaeological field projects of a comparable nature and scale.
- Specialist staff, including those engaged specifically for post-excavation assessment, analysis, and report-writing, will be suitably qualified and, where appropriate, will be supervised by personnel with additional relevant expertise.
- 135. Specialist staff will be available at 48 hours' notice, for the duration of the fieldwork, in order to provide specialist advice.

9.2. Access Arrangements and Welfare

- 136. Site access is to be restricted at all times, with only authorised personnel admitted.
- 137. The Archaeological Contractor will liaise with EATL and Principal Contractor in order to agree:
 - site access and egress;
 - the location(s) of compound facilities, and any relevant operational detail relating to those facilities; and
 - a spoil management strategy.
- The Archaeological Contractor will be responsible for ensuring that all personnel are made aware of, and adhere to, any site arrangements and regulations defined by EATL and Principal Contractor.
- The Principal Contractor will be responsible for providing site welfare facilities of a suitable size and standard, and for the maintenance of those facilities.

9.3. Health and Safety

- 140. Prior to commencement of the programme of archaeological mitigation, the Archaeological Contractor will:
 - · provide the Archaeological Consultant and EATL with details of their public liability and professional indemnity insurance;
 - submit a copy of their Health and Safety policy, compiled in accordance with national guidelines and all relevant Health and Safety legislation, to the Archaeological Consultant and EATL; and
 - complete a Risk Assessment detailing any project-specific Health and Safety ecological and environmental considerations, measures and requirements, and submit a copy to the Archaeological Consultant, EATL and, where necessary, the Principal Contractor.
- Prior to preparation of the site-specific Risk Assessment by the Archaeological Contractor, either EATL or the Principal Contractor will provide the Archaeological Contractor with any and all information obtained in relation to existing services within the site. This will include the most accurate information available on the nature and locations of those known services.

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Health and safety measures implemented will be proportionate to the work and risks involved. For example, areas of archaeology may require to be fenced off to allow for safe demarcation of the working area. Individual features, however, would not typically be fenced off unless a specific health and safety issue is identified.

143. During the course of the programme of archaeological mitigation, the Archaeological Contractor will ensure:

- the adherence of all on-site archaeological personnel engaged on the project to the Principal Contractor's Safety Standards and CDM Health and Safety rules;
- the implementation and management of the Archaeological Contractor's own Health and Safety Policies;
- dissemination of the site-specific Risk Assessment to all on-site archaeological personnel engaged on the project, ensuring that it is reviewed and the content acknowledged, prior to the admission of any archaeological personnel to any working areas and prior to their undertaking any other work-related tasks;
- that the identity of any on-site First Aiders is made known to all archaeological personnel engaged on the project;
- that the location(s) of First Aid boxes and fire extinguishers is made known to all archaeological personnel engaged on the project; and
- that all archaeological personnel engaged on the project are in possession of, and wear at all times (as required), the necessary Personal Protective Equipment (PPE), which, as a minimum, should include a hard hat, a hi-vis vest, safety gloves and site-appropriate footwear⁹.
- All archaeological personnel engaged on the project will be in possession of a valid Construction Skills Certification Scheme (CSCS) card.
- 145. Where required, all archaeological personnel engaged on the project will attend a Health and Safety Induction coordinated by the Principal Contractor.
- The Archaeological Contractor will leave the site in a tidy and professional condition and will remove all materials that it has introduced onto the site, unless specifically agreed otherwise with the Principal Contractor.

9.4. Confidentiality and Publicity

- 147. All communications regarding the archaeological works will be directed to the Archaeological Consultant and EATL.
- The Archaeological Contractor will not comment upon any aspect(s) of the project to members of the public or any other parties, unless specifically authorised to do so by the Archaeological Consultant or EATL.
- The Archaeological Contractor will not disseminate images or information associated with the project, either for information or publicity purposes, without the prior written consent of Archaeological Consultant or EATL.

9.4.1. Community Liaison

- EATL will manage public relations with local residents and businesses that may be affected by the proposed construction works and will maintain public relations in accordance with the Converter Station Code of Construction Practice (EA3-OND-CNS-REP-IBR-000005).
- A designated EA THREE Community Liaison Officer will field and respond to any public concerns, queries or complaints. A local liaison group will also be established to deal with specific issues, e.g., avoiding disruption to the harvest.
- Parish Councils, District Councillors and County Councillors, including Ward Members and Portfolio Holders in the area and the local liaison group will be contacted (in writing) in advance of the proposed works and ahead of key milestones in order to advise them of the ongoing works. The information provided will include a timetable of works, a schedule of working hours, the extent of the works, and a contact name, address and telephone number in case of complaint or query.

⁹ Any additional PPE, such as safety glasses/goggles, ear defenders, dust-masks etc., should be issued and worn, as required.

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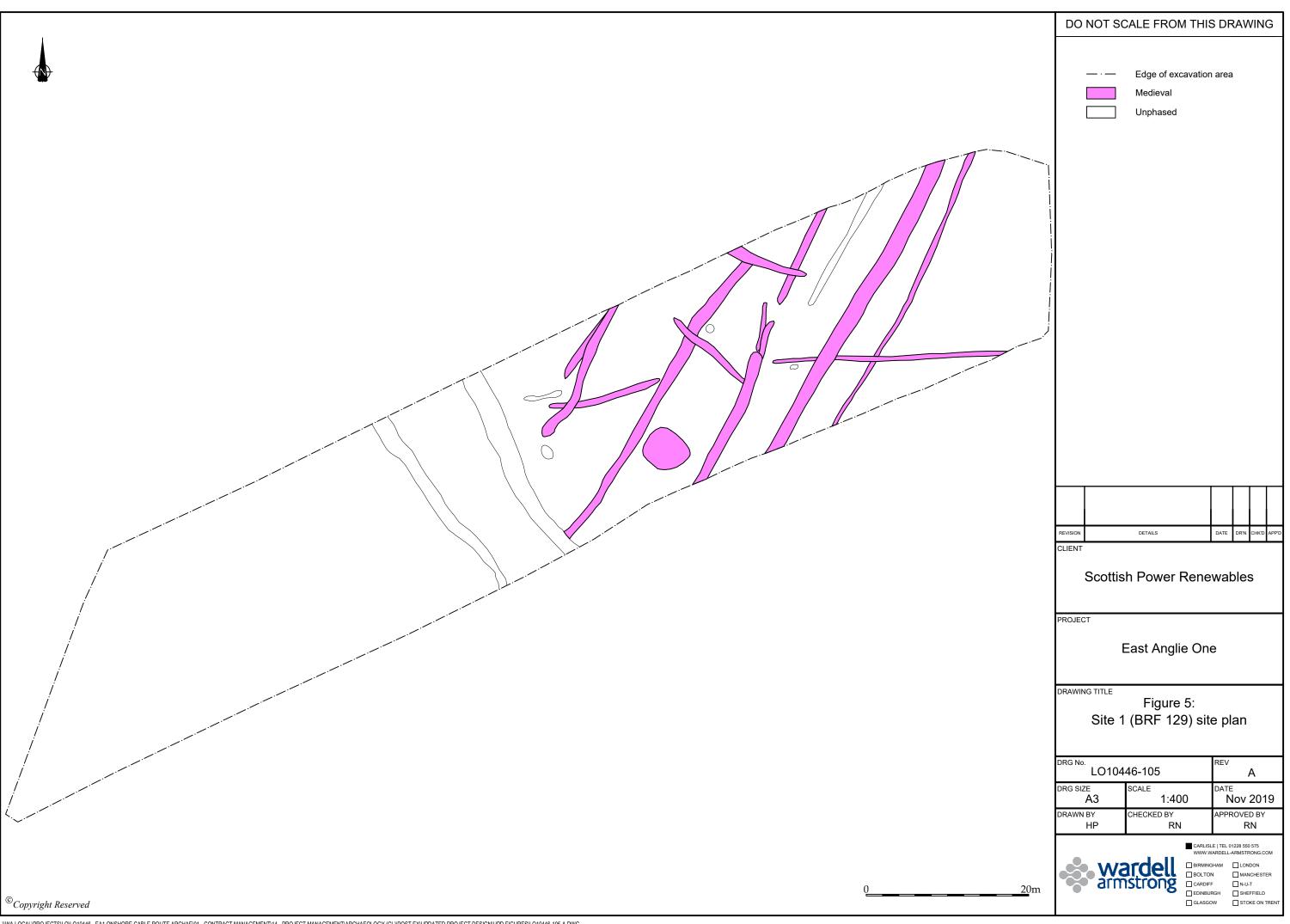
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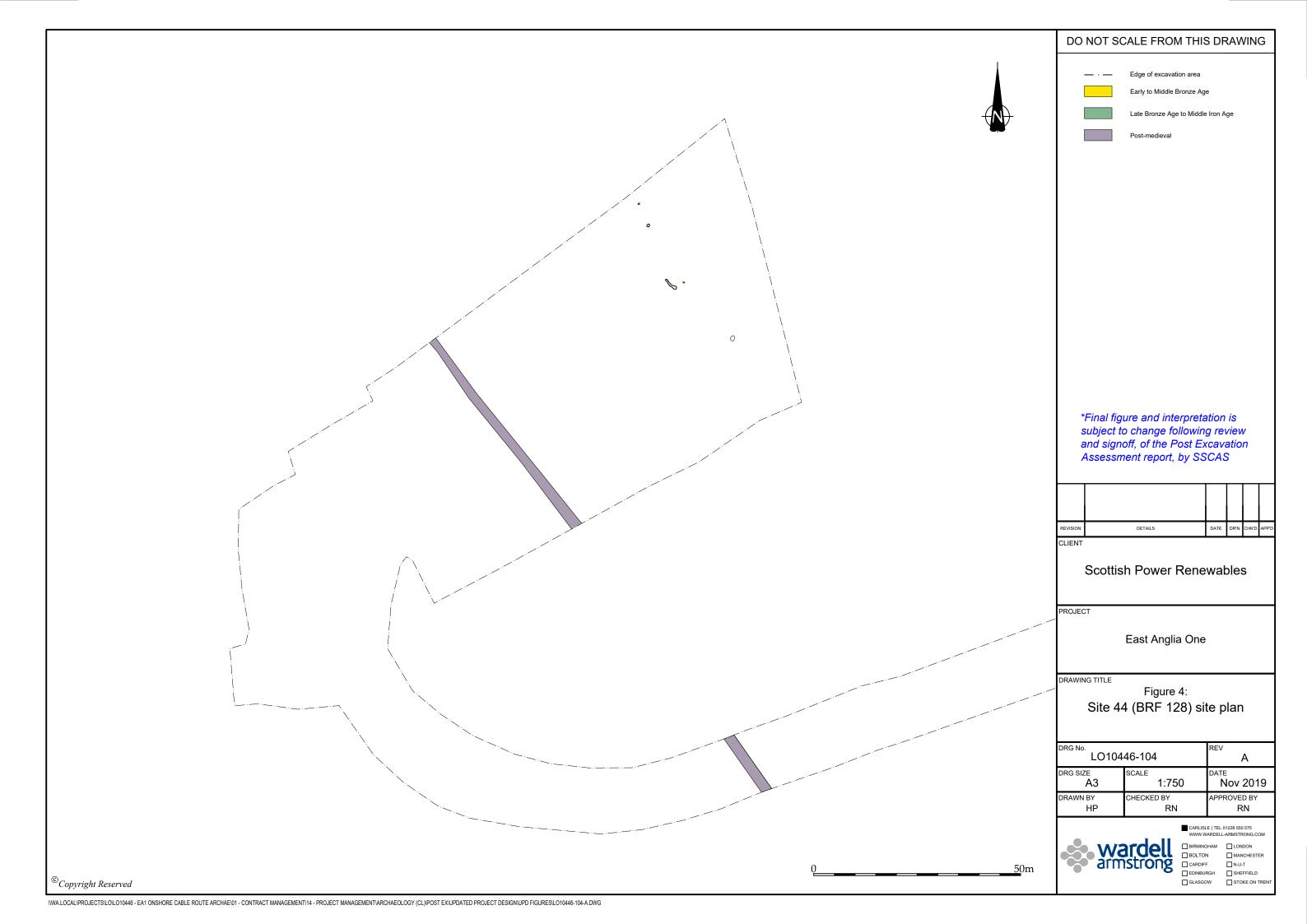


APPENDIX 1 - EXTRACTS FROM EAST ANGLIA ONE OFFSHORE WINDFARM ARCHAEOLOGICAL MITIGATION WORKS UPDATED PROJECT DESIGN









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FIGURES



