

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

**Document 6.3: Environmental Statement
Volume 3 Appendices**

Appendix 9C

**Written Scheme of Investigation
on Trial Pits and Trenches**



Suffolk County Council

WRITTEN SCHEME OF INVESTIGATION ON TRIAL PITS AND TRENCHES





Suffolk County Council

WRITTEN SCHEME OF INVESTIGATION ON TRIAL PITS AND TRENCHES

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1 INTRODUCTION

1.1 THE SCHEME

- 1.1.1. The scheme involves the construction, operation and maintenance of a new bascule bridge highway crossing linking the areas north and south of Lake Lothing in Lowestoft, hereafter referred to as the Lake Lothing Third Crossing ("the Scheme").
- 1.1.2. The Scheme would provide a new single-carriageway road crossing of Lake Lothing, consisting of a multi-span bridge with associated approach roads, and would comprise:
- an opening bascule bridge over the Port of Lowestoft, in Lake Lothing;
 - on the north side of Lake Lothing, a bridge over Network Rail's East Suffolk Line, and a reinforced earth embankment joining that bridge, via a new roundabout junction, to the C970 Peto Way, between Rotterdam Road and Barnards Way; and
 - on the south side of Lake Lothing, a bridge over the northern end of Riverside Road including the existing access to commercial property (Nexen Lift Trucks) and a reinforced earth embankment (following the alignment of Riverside Road) joining this bridge to a new roundabout junction with the B1531 Waveney Drive.
- 1.1.3. The Scheme would be approximately 1 kilometre long and would be able to accommodate all types of vehicular traffic as well as non-motorised users, such as cyclists and pedestrians.
- 1.1.4. The opening bascule bridge design would allow large vessels to continue to use the Port of Lowestoft.
- 1.1.5. A new control tower building would be located immediately to the south of Lake Lothing, on the west side of the new highway crossing, to facilitate the operation of the opening section of the new bascule bridge.
- 1.1.6. The Scheme would also entail the following changes to the existing highway network
- the closure of Durban Road to vehicular traffic at its junction with Waveney Drive;
 - the closure of Canning Road at its junction with Riverside Road, and the construction of a replacement road between Riverside Road and Canning Road to the west of the Registry Office; and
 - a new access road from Waveney Drive west of Riverside Road, to provide access to property at Riverside Business Park;
 - improvements to Kimberley Road at its junction with Kirkley Run; and
 - part-signalisation of the junction of the B1531 Victoria Road / B1531 Waveney Drive with Kirkley Run;
 - the provision of a pontoon for use by recreational vessels, located to the east of the new highway crossing, within the Inner Harbour of Lake Lothing; and
 - works to facilitate the construction, operation and maintenance of the Scheme, including the installation of road drainage systems; landscaping and lighting; accommodation works for accesses to premises; the diversion and installation of utility services; and temporary construction sites and access routes.
- 1.1.7. The works required for the delivery of the Scheme are set out in Schedule 1 to the draft DCO (application document reference 3.1), where they are referred to as "the authorised development", with their key component parts being allocated reference numbers, which correspond to the layout of the numbered works as shown on the Works Plans (application document reference 2.4). The General Arrangement Plans (application document reference 2.2) illustrate the key features of the Scheme.
- 1.1.8. Plate 1 provides a diagrammatic representation of the Scheme:

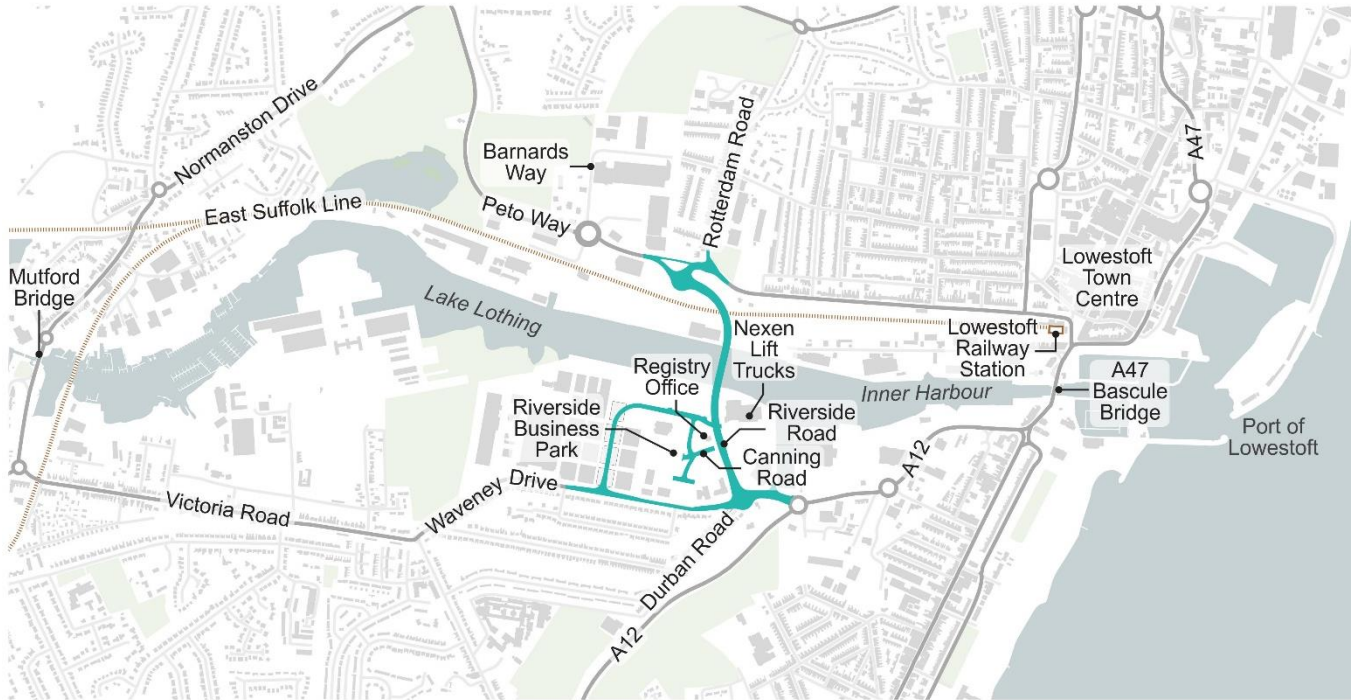


Plate 1: Location of the Scheme in Lowestoft

2 ARCHAEOLOGICAL BACKGROUND

2.1 PRECIS

2.1.1. This section provides a brief outline of the archaeological and historic background of the area of the Scheme. Information is summarised from a more detailed Archaeological and Historical background presented as part of the Environmental Statement. Preparation of the baseline evidence has involved consultation of information held by the Suffolk Historic Environment Record (HER) and the National Heritage List for England (NHLE).

2.2 HISTORY AND ARCHAEOLOGY

2.2.1. Heritage assets within a 500m study area surrounding the Scheme are described in the context of a timeline of archaeological periods from prehistoric through to modern. Selected heritage assets beyond the 500m study area are included in the text where they add context to the baseline heritage information. The time periods discussed can be broadly divided as follows:

- Prehistoric:
 - Palaeolithic c.800,000 – 10,000 BC
 - Mesolithic 10,000 – 4,000 BC
 - Neolithic 4,000 – 2,500 BC
 - Bronze Age 2,500 – 700 BC
 - Iron Age 800 BC – AD 43
- Roman AD 43 – 410
- Early Medieval AD 410 – 1066
- Medieval AD 1066 – 1540
- Post-Medieval AD 1540 – 1900
- Modern AD 1900 – present

2.2.2. A single find spot of Palaeolithic archaeological remains is recorded locally; in the 19th century five early Palaeolithic flints, including one possible handaxe, were recovered from 'Cannon-shot' gravels at Normanston c.300m to the north east of the Scheme. Further afield, well preserved evidence, comprising Lower Palaeolithic worked flints, associated palaeoenvironmental material and animal bone dated to c.700,000 BP, has been discovered within the Cromer Forest Bed Formation at Pakefield, c.2.5km to the south. This geological formation includes evidence of the earliest known presence of pre-modern humans in northern Europe, comprising footprints dated to c.800,000 BP discovered in 2013 at Happisburgh Beach, Norfolk. The Cromer Forest Bed Formation may be present beneath the Scheme, but will be deeply buried beneath later alluvial, marine and glacial deposits.

2.2.3. Evidence for activity of the Mesolithic and Neolithic periods is restricted to an isolated Neolithic pit found at Walton Road, Lowestoft, and find spots of Neolithic flint tools at Victoria Road, Lowestoft and Heath Road, Oulton. Evidence of the Bronze Age and Iron Age is restricted to undated cropmarks located at an area of playing fields situated to the north west of the Scheme (Barnard's Meadow), and at an area situated to the south west of the Scheme that was developed for housing during the 1960s. Episodes of marine transgression affected the study area during the latter part of the Neolithic, the early part of the Bronze Age, and the late Iron Age and evidence of these periods situated at lower lying parts of the study area may have been buried by marine, alluvial and peat deposits.

2.2.4. Evidence for the Roman period situated close to the Scheme comprises two find spots of Roman coins. In the wider area it has been suggested that a Roman road from Colchester to Burgh Castle passed through Lowestoft and evidence interpreted as forming part of this road, or an associated bridge, is reputed to have been found during the 19th century at the mouth of Lake Lothing in the vicinity of the current Bascule Bridge. The closest settlement evidence, including a coin hoard, a possible cremation urn and the skeletons of a number of horses is located approximately 700m to the north east of the Scheme at a part of Lowestoft now known as "Roman Hill". The lower lying parts of the area continued to be affected by a marine transgression and its use may have been limited to exploitation of marine and estuarine resources.

2.2.5. There is no recorded evidence for activity of the Early Medieval period in the study area although the nearby villages of Lowestoft and Kirkley are mentioned in the Domesday Book and consequently had been founded by the latter part of this period. The early focus of Lowestoft is thought to have been located some distance

away from the present town centre, perhaps in the vicinity of St Margaret's church, c.1km north of the Scheme. It is probable that the majority of study area remained as marginal land exploited for estuarine and wetland resources

- 2.2.6. For much of the medieval period the core of Lowestoft may have retained its earlier focus around, or slightly to the south of St Margaret's church. Lake Lothing is a remnant of a turbary, an extensive area of medieval peat cutting, the speed with which the peat was cut is currently uncertain. The Domesday Survey of 1086 records rent for land being partly paid in herrings, which suggests that fishing formed a significant part of the village economy.
- 2.2.7. Kirkley may have been the most important port at this part of the coast for a brief part of the 14th century. It has been suggested that Lake Lothing was open to the sea for some of the medieval period and that the area surrounding Kirkley Ham inlet may have seen activity associated with the medieval port of Kirkley, but this interpretation is not supported by results of archaeological investigations completed around the inlet, which have not discovered any evidence of medieval activity. An alternative interpretation is that during the medieval period Lake Lothing may have been a small freshwater mere separated from the sea by a sand bar.
- 2.2.8. In the wider area Lowestoft was granted markets in 1308 and 1445 and was a significant fishing port and the most important settlement in the area by the end of the medieval period. Until the latter part of this period the core of Lowestoft may have retained its focus around St Margaret's church.
- 2.2.9. In the post medieval period the port and town of Lowestoft continued to expand and in 1679 the town was granted port status with certain specified rights of export and import. By the beginning of the 18th century up to 25% of men were involved in the fishing industry. The main catch of the fishing fleet comprised herring.
- 2.2.10. At the end of the 18th century Lowestoft was a moderately sized market town and fishing port with a population of about 2,300. Lowestoft had doubled in size by 1841 and by 1871 the population was over 13,000. Until the mid-19th century the majority of the study area was situated to the west and south of the town and port; it comprised a landscape of dispersed farms, enclosed fields and marginal land located along the shores of Lake Lothing.
- 2.2.11. The focus of the port was the north shore until the 19th century, with Lake Lothing separated from the sea by a sand bar until harbour works, including construction of lock gates and a customs office known as The Port House, were completed alongside the Inner Harbour in 1832.
- 2.2.12. This first phase of harbour works included land reclamation at both north and south sides of the eastern end of Lake Lothing. This work involved the importation of large amounts of material to raise the ground level behind quay walls in order to establish the Inner Harbour. Historic cartographic evidence shows that much of the land behind the current quaysides was low-lying and prone to flooding prior to this first episode of reclamation.
- 2.2.13. The government forced the sale of the harbour in 1842 after the harbour works proved ineffective and a loan could not be repaid. The harbour was eventually sold to Sir Samuel Morton Peto in 1844 and further harbour works were then carried out. Mooring for 1000 boats was provided at the outer harbour and permanent access was established to the Inner Harbour with boat and ship building yards, fish processing, ancillary marine and manufacturing industries constructed along each side.
- 2.2.14. In the second half of the 19th century Sir Samuel Morton Peto played a leading role in the expansion of the town. He opened a rail link between Lowestoft and Norwich in 1847, with the station located just to the north of the Bascule Bridge. He subsequently built several other railways linking Norwich and Lowestoft to Ipswich and is credited with establishing Lowestoft as a holiday resort. The investment in the town stimulated the expansion of the town to the south of Lake Lothing and resulted in the construction of many grand Victorian buildings including the Grade II* listed Royal Norfolk and Suffolk Yacht Club.
- 2.2.15. Lowestoft continued to expand into the early part of the 20th century with the fishing fleet, boat building and associated trades forming the mainstay of its economy. The quayside and marine industries at the north and south sides of Lake Lothing expanded westward during these years and the population had reached 37,886 by 1911, which reflects the peak in production for the British fishing industry.
- 2.2.16. The First World War saw some of the more capable local boats requisitioned by the Admiralty for patrolling and minesweeping. The town was bombed on a number of occasions, and on 25th April 1916, the German High Seas Fleet shelled the town and harbour leaving forty houses destroyed, two hundred damaged and four people killed.

- 2.2.17. During the inter war period the fishing industry and the town suffered a decline, but the start of the Second World War saw Lowestoft transformed into an important naval base with an all-round defensive perimeter of trenches, pillboxes and dense belts of barbed wire. None of the defences now survive but many of their locations have been recorded by the HER and the Defence of Britain project. The town was extensively bombed during the Second World War and much redevelopment was necessary during the post war period.
- 2.2.18. During the latter part of the 20th century the port remained a focus of shipbuilding and developed as a focal point for operations of the oil and gas industries in the southern North Sea.

2.3 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS FOR THE SCHEME

2.3.1. A preliminary deposit model (Mouchel 2017) has been prepared to examine surviving Holocene deposits and the potential presence of the Cromer Forest Bed Formation. Results show that:

- Holocene alluvium is present and localised deposits of peat survive toward the southern end of the Scheme, but peat appears to be absent from the area situated in closer proximity to the southern side of Lake Lothing;
- Extensive deposits of Holocene alluvium are present and localised areas of peat survive to the north of Lake Lothing. The deepest sequence of the Holocene deposits was identified adjacent to the north quay wall; and
- The Cromer Forest Bed Formation may be absent. However, the density of existing geotechnical investigations and the level of detail recorded was not deemed sufficient to enable definitive interpretation.

2.3.2. A programme of archaeological monitoring of geotechnical investigations, which comprised one test trench located in close proximity to the south quay wall (APS 2017), and fifteen trial pits (AOC 2018) located to the north and south of Lake Lothing showed that:

- The made ground forming the south quay is c.2.0m deep;
- Peat deposits were not present beneath the made ground near the south quay;
- The made ground close to the south quay directly overlay an undetermined depth of grey silty alluvium; and
- At the north near Denmark Road the natural soil profile appears to have been significantly truncated prior to the introduction of levelling deposits.

3 AIMS, OBJECTIVES AND STANDARDS

3.1 AIMS

The aims of the archaeological monitoring are as follows:

- To examine and record the character, extent, significance, condition, quality, depth and date of any archaeological deposits, features and artefacts revealed by GI trial pits and trenches; and
- To record the presence or absence of palaeoenvironmental deposits, such as alluvium and peat;

3.2 OBJECTIVES

The objectives of the archaeological monitoring are as follows:

- To use the results of the archaeological monitoring to inform a future mitigation strategy; and
- To complete a report and archive to the required standard.

3.3 UPDATING AIMS AND OBJECTIVES

- 3.3.1. The aims and objectives will be updated to respond to evidence as it is uncovered in accordance with Research and Archaeology Revisited: A Revised Framework for the East of England (Medleycott 2011) and in consultation with SCCAS and Historic England.

3.4 STANDARDS

- 3.4.1. The project will be carried out with reference to Standards for Field Archaeology in the East of England (Gurney 2003) the Chartered Institute for Archaeologists Code of Conduct (ClfA 2014) and other ClfA Standards and Guidance documents, Historic England guidelines, including those for environmental archaeology (HE 2011) and geoarchaeology (HE 2015), and SCCAS Guidelines for Palaeoenvironmental Assessment (2011).

4 METHODOLOGY

4.1 METHOD STATEMENTS

- 4.1.1. Method statements, including RAMS, for monitoring will be prepared by the appointed archaeological contractor ('archaeological contractor') for approval by SCCAS. SCCAS may consult Historic England as part of the process of approving the method statement. Both bodies, including Historic England's Senior Science Advisor, will be consulted by as necessary during preparation of method statements.
- 4.1.2. Method statements must include a summary of heritage assets likely to be encountered; aims and methods tailored to the character and significance of potential or known heritage assets; and provide detail of the intrusive investigation, programme, contingencies and appointed specialists.
- 4.1.3. Site work set out in a method statement will not commence until the method statement has been approved by SCCAS.
- 4.1.4. The appointed archaeological contractor for the Scheme must also provide SCCAS with a minimum of 14 days notification before commencement of site work.

4.2 GENERAL REQUIREMENTS

- 4.2.1. Archaeological monitoring will be carried out during ground investigation works, comprising the machine excavation of any further trial pits which are distributed along the route of the proposed third crossing and two T shaped trenches situated close to the north and south quaysides (Figures 1069948/GI/001 and 1069948/GI/002).
- 4.2.2. The scheduled maximum depth of the trial pits is 3m and the two T shaped trenches will be excavated to sufficient depth to determine the location of quay wall tie rods and no greater than 250mm deeper than the tie levels.
- 4.2.3. The archaeological contractor will consult the Suffolk HER Officer to obtain an event number prior to the commencement of site work. This number must be clearly marked on all documentation relating to the work.
- 4.2.4. The archaeological contractor will have demonstrable experience of working on similar projects and with comparable archaeological remains. The archaeological contractor will supply a suitably qualified and experienced archaeologist to carry out the monitoring and will maintain regular consultation with the managing archaeological consultant during the course of the works.
- 4.2.5. Health and safety considerations mean that it is unlikely that the archaeological contractor will be able to enter trial pits or trenches.
- 4.2.6. The geotechnical contractor will supply plant and will work closely with the archaeological contractor to provide details of their programme and to facilitate access.
- 4.2.7. The managing archaeological consultant will oversee all archaeological work and will undertake all consultation with SCCAS.
- 4.2.8. The following sections set out minimum standards that will apply during the archaeological monitoring.

4.3 ARCHAEOLOGICAL MONITORING

- 4.3.1. The excavation of each trial pit or trench will be monitored by the archaeological contractor at all times.
- 4.3.2. The spoil from the trial pits and trenches will be inspected by the monitoring archaeologist to recover artefacts or ecofacts of archaeological interest and if practicable the spoil will be scanned using a metal detector.
- 4.3.3. The monitoring archaeologist will record any palaeoenvironmental deposits and archaeological deposits, features or finds revealed by the trial pits and trenches, but will not enter trial pits or trenches to investigate further unless given express permission to do so by the geotechnical contractor.
- 4.3.4. Deposits and features of archaeological and palaeoenvironmental significance will be excavated, recorded and sampled as appropriate (subject to access constraints) to establish a stratigraphic and chronological sequence, recognise structural evidence and recover economic, artefactual and environmental evidence.
- 4.3.5. Environmental sampling will be collected from securely stratified fills of archaeological features and deposits with high palaeoenvironmental potential (subject to access constraints) and sampling procedures will follow

guidance provided in Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation (Historic England 2011) and Geoarchaeology – Using earth sciences to understand the archaeological record (Historic England 2015a).

- 4.3.6. The archaeological contractor will work closely with the geotechnical team to ensure that any investigation and recording of palaeoenvironmental deposits, archaeological deposits, features or finds is completed with minimum delay to the geotechnical works.
- 4.3.7. If archaeological deposits or features of high significance or sensitivity are encountered during trial pitting and trenching, the ground investigation must be halted and no further ground disturbance may occur at that area until SCCAS has been consulted.
- 4.3.8. The spoil from trial pits and trenches will be inspected by the archaeological contractor to recover artefacts, or of archaeological interest.

4.4 MONITORING – MAPPING, SAMPLING, RECORDING AND ASSURANCE

- 4.4.1. All features, deposits and finds will be recorded by the archaeological contractor according to accepted professional standards (see references section) and in line with established recording systems.
- 4.4.2. The archaeological contractor shall record on pro-forma record sheets discovered features, deposits and finds and a site diary, including a description and discussion of any archaeological heritage assets, is to be maintained on a daily basis.

MAPPING

- 4.4.3. In the event that archaeological deposits, features, or finds are exposed, the managing archaeological consultant will be informed on the day of discovery. If necessary the archaeological contractor will hand-clean the surface of deposits and features and will plan their distribution and extent by instrument survey. Dependent on the character and potential significance of deposits and features a site meeting will be arranged to review the pre-excavation plan and agree subsequent sampling strategies with the archaeological contractor, and SCCAS will be invited to attend.
- 4.4.4. All instrument survey will be completed relative to Ordnance Survey National Grid in 3D at a resolution sufficient to fulfil the requirements of SCCAS. Deposits and features shall be recorded in plan at least 1:20 scale and in section at least 1:10 scale. Site plan and section drawings will be completed on plastic drafting film. A 'Harris Matrix' stratification diagram will be used to record all stratigraphic relationships on the site and spot dating will be incorporated where applicable.

SAMPLING STRATEGY

- 4.4.5. If access to ground investigation trial pits and trenches is safe, final sampling percentages for any archaeological deposits and features will be agreed with SCCAS once pits and trenches are open. However, the following sampling levels will form the usual minimum standard to be applied to archaeological features and deposits.
 - Pits - 50% minimum of fill;
 - Post-holes - 100% of fill;
 - Ring ditches or roundhouse gullies - 50% minimum of fill;
 - Ditches and gullies will have all relationships and terminals defined, investigated and recorded;
 - Linear features associated with structural remains - 20% minimum of fill;
 - Linear features not associated with structural remains - 10% minimum of fill; and
 - Features/layers/deposits/horizontal stratigraphy relating to significant industrial activity - 100% of deposit;

PHOTOGRAPHY

- 4.4.6. A photographic record of the work shall be made and incorporated into the site archive. This will consist of high quality, colour digital photographs taken in approved formats as directed by the digital archive policies of the relevant archive repository.

ARTEFACTS

- 4.4.7. All artefacts recovered during site operations are the property of the Landowner. On completion of the archaeological works the Landowner(s) will be contacted to approve deposition of the archive, including all artefacts, with the relevant archive depository.

- 4.4.8. Artefacts will be carefully recovered by hand and initial conservation and storage will follow guidance included in First Aid for Finds (Watkinson and Neal 1998). Bulk artefacts will be collected and bagged according to their archaeological context. The location of registered finds, including in situ worked flint will be recorded three dimensionally. If necessary, an appropriately qualified and experienced archaeological conservator will be appointed to advise and assist in the lifting of fragile finds of significance, or value and to arrange for the X-raying and investigative conservation of object as may be necessary. Where appropriate to address the aims of the monitoring, sieving of deposits will be undertaken to maximise the recovery of small artefacts.
- 4.4.9. All pottery, bone and worked flint recovered during the fieldwork will be washed and then marked in accordance with the archive depository guidelines to identify the site and context. Most building material and burnt flint (not including significant diagnostic material) will be identified, counted, weighed and discarded, although representative samples will be retained as appropriate. The finds identification and specialist work will be undertaken by specialists agreed with SCCAS and will use relevant county or region-specific type series, where available.
- 4.4.10. Records of artefact assemblages will clearly state how they have been recovered, sub-sampled and processed. Sub-sampling procedures will be agreed with the managing archaeological consultant and SCCAS and will follow the guidance and advice of the depository which will receive the Site archive.

ENVIRONMENTAL SAMPLING

- 4.4.11. The archaeological contractor will set out in their method statement environmental sampling strategies appropriate to the aims, objectives, character and significance of potential archaeological remains present.
- 4.4.12. The strategies, methodologies and programmes for the sampling, recording, processing, assessment, analysis and reporting of deposits with environmental archaeology potential will be agreed with SCCAS.
- 4.4.13. Environmental sampling strategies will follow Historic England Centre for Archaeology Guidelines “Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation” (HE 2011). Any variation to, or departure from, this guidance will be agreed in advance with SCCAS.
- 4.4.14. The following environmental sampling procedures and levels shall usually be a minimum, unless otherwise agreed by SCCAS.
- Where deposits are dry, bulk samples will be taken from secure contexts in dateable features. The size of the sample is expected to be in the range of 40-60 litres per context or 100% of smaller contexts;
 - Where deposits are wet, waterlogged or peaty, monoliths will be taken along cleaned vertical surfaces for the retrieval of pollen, diatoms, ostracods and foraminifera. Bulk samples of 20 litres will also be taken for the retrieval of plant macro-remains and insects; and
 - Environmental samples will be taken, processed and assessed while each excavation is in progress. The results of the assessment will be fed back to site at no more than weekly intervals to inform site interpretation, and enable refinement of the sampling strategy to maximise recovery of environmental information. The programmes and mechanism for processing, assessment and feedback will be agreed with SCCAS.

ANIMAL BONE

- 4.4.15. The archaeological contractor will provide detailed sampling strategies for recovery of animal bone which are appropriate to the aims and objectives set out in the method statement and the character and significance of the expected archaeological remains.
- 4.4.16. Strategies and methodologies for the recovery, sampling, recording, processing, assessment, analysis, reporting and archiving of animal bone assemblages will be agreed by the archaeological contractor’s Zooarchaeologist with SCCAS.
- 4.4.17. The strategy will follow Historic England Centre for Archaeology Guidelines “Animal Bones and Archaeology – Guidelines for Best Practice” (2014). Any variation to this guidance will be agreed in advance with SCCAS.
- 4.4.18. The following sampling procedures and levels shall usually be a minimum, unless otherwise agreed by SCCAS.
- Deposits containing assemblages of animal bone will be bulk sampled to ensure collection of a representative sample and avoid the bias which may be introduced into assemblages through hand collection;

- Bulk samples will be collected only from secure, well stratified deposits. Samples will not be collected from mixed deposits unless the retrieved information will answer specific questions;
- Unusual assemblages of animal bone, such as those from feasting or structured deposition, will ideally be 100% sampled;
- Assemblages of animal bone will be assessed by the Zooarchaeologist while each excavation is in progress; and
- If necessary, the results of assessment will be fed back to site at no more than weekly intervals to inform site interpretation, to enable refinement of the sampling strategy and to maximise recovery of zooarchaeological information.

WATERLOGGED WOOD

- 4.4.19. The archaeological contractor will provide a detailed sampling strategy for excavation, sampling, recovery and conservation of waterlogged wood which is appropriate to the detailed aims and objectives set out in the method statement and the character and significance of the expected archaeological remains.
- 4.4.20. The strategies and methodology for the recovery, sampling, recording, processing, conservation, assessment, analysis, reporting, and archiving of waterlogged wood will be agreed by the archaeological contractor with SCCAS.
- 4.4.21. Artefactual waterlogged wood may require complete excavation, recording, analysis and conservation dependent on its character and date.
- 4.4.22. The strategy and method will follow Historic England Centre for Archaeology Guidelines “Waterlogged Wood – Guidelines for Recording, Sampling, Conservation and Curation” (2010). Any variation to this guidance will be agreed in advance with SCCAS.

ARCHAEOMETALLURGY

- 4.4.23. The archaeological contractor will provide detailed strategies for discovery and recovery of evidence of metalworking which are appropriate to the aims and objectives set out in the method statement and the character and significance of the expected archaeological remains.
- 4.4.24. Strategies and methodologies for the discovery, recovery, sampling, recording, processing, assessment, analysis and archiving of metalworking evidence will be agreed by the archaeological contractor with SCCAS.
- 4.4.25. All bulk samples will be scanned for evidence of metalworking as they are processed. If necessary, the results of this assessment will be fed back to site at no more than weekly intervals to enable better site interpretation and refinement of excavation strategies to maximise recovery of metalworking evidence.
- 4.4.26. The strategy and methods will follow Historic England Centre for Archaeology Guidelines “Archaeometallurgy – Guidelines for Best Practice” (2015). Any variation to this guidance will be agreed in advance with SCCAS.

HUMAN REMAINS

- 4.4.27. In the event that human burials are discovered these will be left in situ and their treatment agreed with SCCAS.
- 4.4.28. Should their excavation and removal from the site be required, the archaeological contractor shall obtain a Ministry of Justice Exhumation Licence in accordance with Section 25 of the Burial Act 1857 before the remains are disturbed.

TREASURE

- 4.4.29. The archaeological contractor will report artefacts that fall under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) to the relevant Coroner’s Office, the Suffolk Finds Liaison Officer (FLO), the landowner and SCCAS.
- 4.4.30. The archaeological contractor must complete and submit a treasure receipt and a report to the Coroner’s Office and the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence.

ARCHAEOLOGICAL SCIENCE

- 4.4.31. Where necessary the archaeological contractor will seek the advice of the Senior Science Advisor for Historic England regarding specialist sampling requirements and any scientific applications relevant to the archaeological excavation of features, deposits and artefacts.

- 4.4.32. The archaeological contractor will make appropriate provision for the application of scientific dating techniques such as radiocarbon, dendrochronology, archaeomagnetic, optically stimulated luminescence and thermoluminescence. The advice of the Senior Science Advisor for Historic England will be sought in advance of the application of these techniques.

ASSURANCE

- 4.4.33. As a minimum the archaeological contractor will provide a mid-week verbal progress report and a weekly summary site report to the appointed managing archaeological consultant. At least one site meeting will take place during the monitoring and SCCAS will be informed of the dates of site meetings in advance and will attend at their discretion. Additional site meetings will be arranged as required to discuss any significant developments.

5 REPORTING

5.1 GENERAL REQUIREMENTS

- 5.1.1. A draft report will be completed for the archaeological monitoring by the archaeological contractor. The draft reports will be submitted in .docx format to the managing archaeological consultant for review within six weeks of completion of fieldwork.
- 5.1.2. Once any amendments are made and no later than three months after the completion of fieldwork a .pdf copy of the report/s will be submitted to SCCAS, and where significant finds have been made to Historic England.
- 5.1.3. After any SCCAS and Historic England comment has been addressed, the final report/s will be submitted to the Suffolk Historic Environment Record.
- 5.1.4. The results of the monitoring will be recorded on the OASIS database. All parts of the OASIS online form <http://ads.ahds.ac.uk/project/oasis/> will be completed and a copy will be included in the final report and also with the site archive. A digital copy of the approved report will be uploaded to the OASIS website.
- 5.1.5. The reports will become public documents after an appropriate period of time (usually not exceeding six months).

5.2 REPORTING MINIMUM STANDARDS MONITORING

- 5.2.1. A fully illustrated report will be produced for the archaeological monitoring, including baseline summary, topography and geology, archaeological potential, previous work(s) relevant to the archaeology of the site; detailed scope and methodology, dates of fieldwork, plans of the areas investigated; results and observations.

5.3 REPORT CONTENT

- 5.3.1. The reports will include, as a minimum:

- 5.3.2. A summary sheet providing the following information:

- Site name and grid reference;
- Site activity (i.e. type of investigation);
- Suffolk HER Event Number;
- Date and duration of project;
- Contractor Site code;
- Area of site;
- Summary of results; and
- Location and reference of archive.

- 5.3.3. The following main sections, as appropriate to type of work and results:

- Executive summary;
- Site location;
- Methodology;
- Description of results (including stratigraphic description, if necessary);
- Interpretation of the results in the appropriate context;
- Summary of the archaeological potential of the Scheme site and its immediate surrounding area;
- Consideration of the significance of the findings on a local, regional and national basis;
- Critical review of the effectiveness of the methodology;
- References;
- Appropriate photographs in colour;
- Location Plan (no smaller than 1:10 000);
- Site layout plans on an OS base, with north point and scale with the location of trial pits/trenches;
- Other plans, sections, elevations and deposit models as necessary, including Cardinal Points, Ordnance Datum, vertical and horizontal scales;
- Specialist descriptions of artefacts and ecofacts as required;

- Summary of the contents of the project archive and its location (including summary catalogues of finds);
- Photographic Register; and
- OASIS record form.

5.4 ANALYSIS, PUBLICATION AND PUBLIC ENGAGEMENT

- 5.4.1. Should the results of the archaeological monitoring works identify remains of a significance meriting further analysis and publication, a report on the results of the work, including any further analysis of the site archive will be prepared for publication in a suitable archaeological journal to a scope agreed with SCCAS.
- 5.4.2. The results of the investigations may have significant local interest. While the technical post-excavation reporting shall be released to the public, it may be appropriate to disseminate the results in a less technical manner such as public presentations, educational packs etc. The scope of any public engagement will be agreed with SCCAS.

6 ARCHIVE

- 6.1.1. The site archive will be assembled in accordance with Guidelines for Preparation and Deposition of Archaeological Archives in Suffolk (SCCAS Conservation Team 2014). MoRPHE (Historic England 2015), Guidelines for the Preparation of Excavation Archives for Long-term Storage (United Kingdom Institute for Conservation, 1990), Standards in the Museum Care of Archaeological Collections (Museums and Galleries Commission, 1994); and relevant ClfA standards and guidance will be used as good practice guidance.
- 6.1.2. The site archive will contain all the data collected during the fieldwork, including records and finds, and all reports. The archaeological contractor will ensure that the archive is quantified, ordered, indexed and internally consistent, and adequate resources will be provided to ensure that all records are checked. Archive consolidation will be undertaken immediately following the conclusion of fieldwork.
- 6.1.3. The archaeological contractor will contact the SCCAS Archaeological Collections Officer to determine costs and accession arrangements for the archive prior to deposition at Suffolk Archaeological Services Store.

7 OPERATIONAL FACTORS

7.1 PROJECT TIMETABLE AND MONITORING ARRANGEMENTS

- 7.1.1. A programme of archaeological works and access will be agreed as necessary between the archaeological contractor, the main contractor and SCCAS before the project commences.

7.2 HEALTH AND SAFETY

- 7.2.1. With specific regard to site hazards, the archaeological contractor will be responsible for ensuring that all works are conducted in a safe manner. The archaeological contractor will report immediately the nature and extent of any unexpected site hazards and the appropriate health and safety precautions required.
- 7.2.2. Dependent on the timing of work the archaeological contractor may be supplied with an overall site risk assessment by the main contractor and these documents and all relevant health and safety regulations will be adhered to throughout. The archaeological contractor field staff may have to attend site inductions.

7.3 INSURANCE

- 7.3.1. Full details of the insurance and copies of certificates covering the archaeological contractor shall be supplied to the managing archaeological consultant upon request by them.

PROJECT TEAM

- 7.3.2. The work will be undertaken by an archaeological contractor who is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), or by an archaeological contractor who will agree to abide by the standards and guidance documents of CIfA. The project will be managed by a fully qualified archaeologist with full membership of the CIfA.
- 7.3.3. Summary details of the proposed project team and specialist staff including post-excavation specialists will be provided with the archaeological contractor tender. CVs of the key members of staff will be available upon request.

7.4 COPYRIGHT

- 7.4.1. Copyright of reports will remain with the archaeological contractor under the Copyright, Designs and Patents Act 1988 with all rights reserved. An exclusive licence will be provided to the Applicant, and their appointed representative(s), for use of all project records and reports in all matters directly relating to the project. The archaeological contractor will retain the right to be identified as the author of all of their project documentation and reports.

REFERENCES

- Gurney, D 2003 Standards for Field Archaeology in the East of England. East Anglian Archaeology Occasional Papers 14
- Historic England 2015 MoRPHE (Management of Research Projects in the Historic Environment)
- Historic England 2007, Understanding the Archaeology of Landscapes; a guide to good recording practice
- Historic England 2010 Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood
- Historic England 2011 Environmental Archaeology: A guide to the theory and practice of methods of sampling and recovery to post excavation
- Historic England 2014 Animal Bones and Archaeology – Guidelines for Best Practice
- Historic England 2015a Geoarchaeology – Using earth sciences to understand the archaeological record
- Historic England 2015b Archaeometallurgy – Guidelines for Best Practice
- CIfA 2014a Standards and Guidance for Archaeological Watching Brief
- CIfA 2014b Standards and Guidance for Archaeological Excavation
- CIfA 2014c Standard and guidance for the collection, documentation, conservation and research of archaeological materials
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- Museums and Galleries Commission, 1994 Standards in the Museum Care of Archaeological Collections
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- Watkinson D and Neal V 1998 (3rd ed) First Aid for Finds
- United Kingdom Institute for Conservation 1990 Guidelines for the Preparation of Excavation Archives for Long-term Storage



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