

Environmental Statement: Volume III

Appendix 13E: Outline Written Scheme of Investigation-

VPI Immingham OCGT Project

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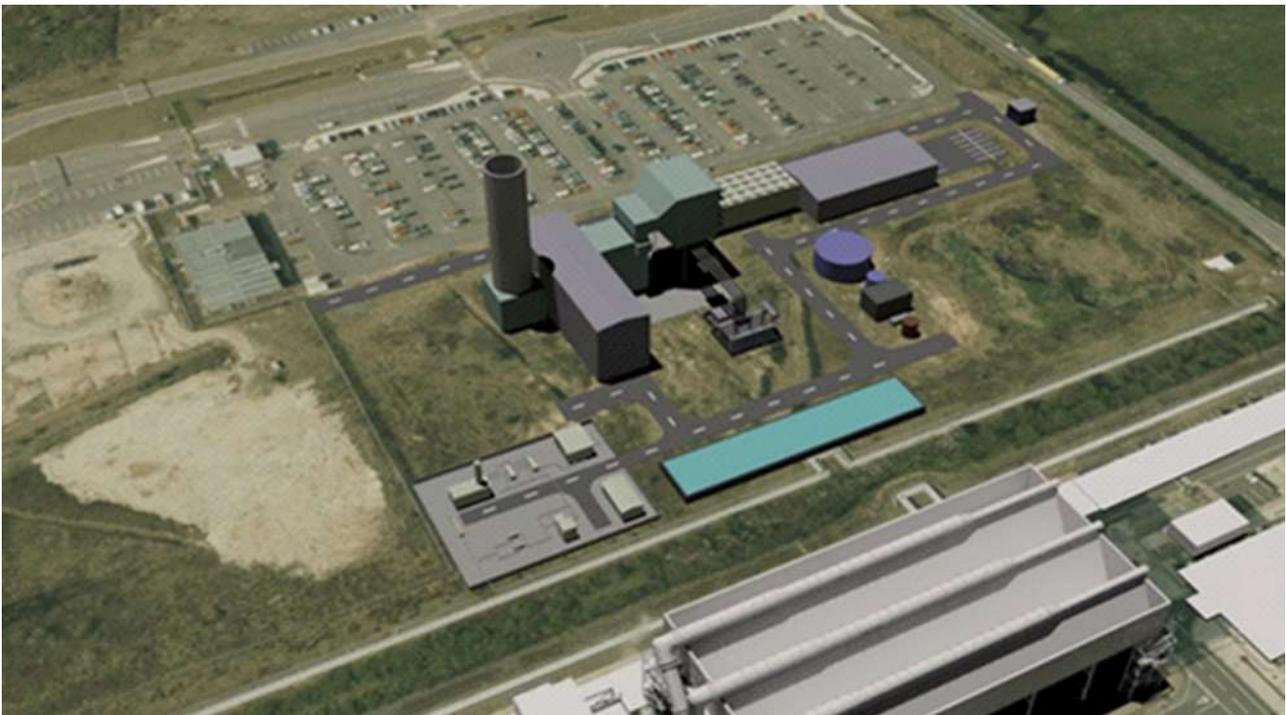
The Immingham Open Cycle Gas Turbine Order

Land to the north of and in the vicinity of the VPI Immingham Power Station, Rosper Road, South Killingholme, Lincolnshire, DN40 3DZ

Environmental Statement Volume III Appendix 13E: Outline Written Scheme of Investigation

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(e)



Applicant: VPI Immingham B Ltd

Date: April 2019

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GLOSSARY

Abbreviation	Description
AQP	Academically Qualified Person
AGI	Above Ground Installation
bgl	below ground level
CRO	Construction Related Operation
CSCS	Construction Skills Certification Scheme
CIFA	Chartered Institute for Archaeologists
CHP	Combined Heat and Power
H&S	Health and Safety
HER	Historic Environment Record
MoRPHE	Management of Research Projects in the Historic Environment
MW	Megawatts
NLC	North Lincolnshire Council
OASIS	Online Access to the Index of Archaeological Investigation Scheme
OCGT	Open Cycle Gas Turbine
PQP	Professionally Qualified Person
PPE	Personal Protective Equipment
RAMS	Risk Assessment and Method Statement
SLR	Single Lens Reflex
SSSTS	Site Supervisor Safety Training Scheme
VPIB	VPI Immingham B Ltd
UKIC	United Kingdom Institute of Conservators
WSI	Written Scheme of Investigation

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1.0 INTRODUCTION

- 1.1.1 AECOM (The Consultant) have been commissioned by VPI Immingham B Ltd (VPIB) (the Client) to prepare a Written Scheme of Investigation (WSI) for an archaeological strip, map and record excavation required prior to the development of a proposed new gas-fired power station on land adjacent to the existing Combined Heat and Power (CHP) Plant at South Killingholme, Immingham (the 'Site').
- 1.1.2 VPIB is seeking development consent for the construction, operation and maintenance of a new gas-fired electricity generating station with a gross output capacity of up to 299 megawatts ('MW'), including electrical and gas supply connections, and other associated development (the 'Proposed Development'). The Proposed Development is located primarily on land (the 'Site') to the north of the existing VPI Immingham Power Station, Rosper Road, South Killingholme, North Lincolnshire, DN40 3DZ.
- 1.1.3 The archaeological fieldwork for this area will comprise a scheme of archaeological strip, map and sample excavation and recording to be undertaken prior to the development groundworks.
- 1.1.4 This document outlines the methodology to be used for the archaeological strip, map and record excavation and has been prepared in consultation with Alison Williams, Historic Environment Officer at North Lincolnshire Council (NLC). This consultation (Ref: CON/2018/2201 - in accordance with Section 42 of the Planning Act 2008) was carried out in November 2018.
- 1.1.5 A detailed Method Statement for the works will be produced prior to the commencement of the fieldwork for approval by the Client and Consultant, and for agreement by Alison Williams at NLC.
- 1.1.6 This approach was also outlined in Chapter 11 (Cultural Heritage) of the Environmental Statement for the site (AECOM 2018).
- 1.1.7 For clarification, the following terminology is used throughout this document:
- Client (VPIB);
 - Consultant (AECOM);
 - Contractor (the groundworks contractor commissioned to carry out site works); and
 - Archaeological Contractor (the suitably qualified archaeological contractor commissioned to carry out the fieldwork outlined in this document)

2.0 SITE LOCATION, DEVELOPMENT DESCRIPTION AND GEOLOGY

- 2.1.1 The Site is primarily located on land immediately to the north of the Existing VPI CHP Plant Site, as previously stated. Immingham Dock is located approximately 1.5 kilometres ('km') to the south east of the Site at its closest point. The Humber ports facility is located approximately 500 metres ('m') north and the Humber Refinery is located approximately 500m to the south.
- 2.1.2 The villages of South Killingholme and North Killingholme are located approximately 1.4 km and 1.6 km to the west of the Site respectively, and the town of Immingham is located approximately 1.8 km to the south east. The nearest residential property comprises a single house off Marsh Lane, located approximately 325 m to the east of the Site.
- 2.1.3 The Site comprises the following main parts:
- Open Cycle Gas Turbine (OCGT) Power Station Site;
 - Access Site;
 - Temporary Construction and Laydown Site;
 - Gas Connection Site;
 - Existing Above Ground Installation (AGI) Site;
 - Electrical Connection Site; and
 - Utilities and Services Connections Site.
- 2.1.4 The Site is located entirely within the boundary of the administrative area of North Lincolnshire Council (a unitary authority). A small part of the Existing Gas Pipeline Site (explained further below) lies within the administrative area of North East Lincolnshire District Council, the neighbouring local authority.
- 2.1.5 The bedrock geology of the site comprises Burnham Chalk formation and the superficial geology consists of Devensian Till (Diamicton) across the majority of the site and Tidal Flats Deposit (clay and silt) in the east of the study area. (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).
- 2.1.6 Based on the results of previous investigations conducted on the site, the depth to bedrock is anticipated to vary between 15m below ground level (bgl) in the west of the site and up to 30m bgl in the eastern end of the site.

3.0 ARCHAEOLOGICAL BACKGROUND

- 3.1.1 A study area of 1km from the centre of the site was undertaken for both designated and non-designated assets. The distance has been judged as appropriate to inform the assessment and to provide the context of and potential for heritage assets within the wider landscape. The information below has been summarised from Chapter 11 (Cultural Heritage) of the Environmental Statement for the site (AECOM 2018).
- 3.1.2 A total of 58 archaeological heritage assets were recorded on the Historic Environment Record within the defined study area. The bracketed numbers after sites within the text are depicted on Figure 2 and detailed in Appendix 1.
- 3.1.3 There are 11 assets of prehistoric date. The earliest recorded asset was Mesolithic (10,000 – 4,000BC) organic remains recorded from peat deposits identified from a borehole (A50). Six of the assets consist of individual finds and scatters of flint, including scrapers, cores and flakes (A4; A5; A7; A31; A48), as well as a fragment of a Neolithic (4,000 – 2,500BC) polished stone axe (A42). In addition to these, features have been recorded, including a pit (A39), and ditches with charcoal evidence (A32; A33) all discovered during archaeological evaluation. A further linear feature and enclosure was recorded from cropmarks (A1). Prehistoric land surfaces were also identified from boreholes to the east of the site, during palaeoenvironmental assessment at Able Marine Energy Park. Iron Age/ Roman (800BC – AD410).
- 3.1.4 There are a number of assets that date to the Iron Age (800BC – AD43) and Roman (AD43 – 410) periods. Three assets are dated exclusively to the Iron Age and comprise ditches and sub-rectangular features recorded as cropmarks (A15), and ditches found to contain Iron Age pottery (A17; A41). Evaluation within the Proposed Development, and to the north, was undertaken in 2006 by Archaeological Project Services. This suggested the area was used for agricultural purposes during the Iron Age, as environmental samples recorded a lack of occupational debris.
- 3.1.5 The area around the site has significant evidence of Iron Age/ Roman industry. There are five assets dated to the late Iron Age and Roman, three of which are settlements. The first is located on the site of the Existing VPI CHP Plant Site, and contained evidence of an early Iron Age settlement and a late Iron Age/ Roman settlement (A6). Part of this settlement survives within the eastern part of the site boundary. The second settlement (A35) is recorded to the north of Station Road and approximately 1.2km north of the Conoco CHP plant. This settlement was recorded through geophysical survey and a number of ditches and enclosures were identified, as well as possible hearths or kilns. A third settlement (A34), located to the north of Humber Road, and south-east of the previous two sites, contained evidence of salt making and iron smelting near the settlement. Two additional assets include cropmarks of a rectilinear enclosure and a small L-shaped feature (A10), which has been at least partially destroyed by the oil refinery at South Killingholme, and ditches identified through archaeological trial trenching with evidence of both Iron Age and early Roman pottery (A37).
- 3.1.6 There are six assets of Roman date recorded in the study area, four of which are finds of greyware pottery sherds (A2; A8; A9; A18). There are also two records of ditches (A36 & A49).

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- 3.1.7 The place-names of Immingham and Killingholme have Anglo-Saxon origins. Killingholme was referred to in the Domesday Survey 1086 as ‘Cheluinggeholm’ and was in the Wapentake of Yarborough. Killingholme and nearby Immingham date back to at least the latter part of the early medieval period as they were in the control of lords prior to the Norman Conquest – Alwin in Immingham and Fulcric in Killingholme, both recorded in the Domesday Book, 1086. There are no assets of early medieval (AD410-1066) date recorded within the study area, and four of medieval (AD1066-1500) date. There are two areas of ridge and furrow recorded (A11; A13); both were identified through geophysical survey. Within the study area is also a hedgerow (A14), recorded on enclosure maps, which formed the historic boundary between North and South Killingholme. A ditch (A19), containing a Toynton ware pottery sherd, has also been identified to the west of Rosper Road.
- 3.1.8 There are three scheduled monuments recorded outside of the 1km study area. These consist of three moated sites. These sites would have had contained high status domestic dwellings from the 11th and 12th centuries and would have resulted in the land being managed as a feudal system. The first is at Manor Farm (1008044) and is located approximately 1.9km west north-west from the western edge of the Proposed Development. The second site is at Baysgarth Farm, located approximately 2.5km north-west of the Proposed Development, while the third scheduled monument is North Garth moated site (1007815), located approximately 2.2km north-west of the Proposed Development. The 14th century Thornton Abbey is located approximately 4.6km north-west of the site (and 2.64km NNW of the western end of the pipeline of the proposed development). The abbey consists of a late 14th century gatehouse and barbican of the Augustinian monastery, an outer precinct with the remains of associated buildings and features.
- 3.1.9 There are 11 archaeological assets of post-medieval (1500 – 1900) date recorded within the study area. There are two historically important hedgerows in North and South Killingholme (A20; A21), thought to pre-date 1840, and a cropmark representing a previous field boundary (A23). The remaining eight assets are sites of 19th century farmsteads (A29; A51; A52; A53; A54; A55; A56; A58) that were recorded on the 1887 OS map. Most of the farmsteads comprise a regular courtyard with associated outbuildings, and are now demolished.
- 3.1.10 There are 12 assets of modern date recorded within the study area. These mostly consist of assets recorded from OS mapping, including the site of a mission room (A43), a day school and school house (A44), Myrtle Villas House (A45), and a chapel (A57). There are also four assets associated with the railways, the Humber Commercial Railway (A30), built in 1912, and the Barton and Immingham Light Railway (A40), built 1910-1911, Killingholme railway station (A46), opened in 1910, and the former station master’s house (A47), built post-1945. To the west of the development site is the former RAF North Killingholme as well as the Killingholme Power Stations and the Humber oil refinery.
- 3.1.11 There are also two assets relating to the Second World War, the site of a barrage balloon anchorage (A24), of which two shelters and the main and secondary anchorages survive, and aircraft obstructions (A27), recorded on wartime aerial photography in a T-shaped arrangement. Further assets include the site of a row of approximately 16 terraced houses (A28), and a survey trench (A12) identified as a linear feature during geophysical survey.

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- 3.1.12 There are six assets of unknown date recorded within the study area. These include a linear feature and series of circular and sub-circular features (A3) recorded as cropmarks. Further sites which yielded no archaeological evidence when evaluated included an ovoid enclosure (A22), an L-shaped magnetic anomaly (A25) and magnetic anomalies to the south of Station Road (A38). Also recorded is a system of creeks, which were thought to represent a former shoreline from the deposits found (A16) and a small square enclosure (A26) identified through cropmarks, although this has now been obscured by the southern edge of the Existing VPI CHP Plant Site.

4.0 PROJECT OBJECTIVES

4.1.1 The principal objective of the archaeological fieldwork covering the area of the proposed development is to ensure the recording of archaeological remains within the site boundary.

4.1.2 The specific objectives of the archaeological excavation are:

- To identify, record and sample excavate any archaeological deposits, features and artefacts which may be present within the development;
- To characterise and date any anomalies or finds recovered; and to produce a report on the findings of the works.

5.0 WORKS SPECIFICATION

5.1 General Works

- 5.1.1 All archaeological works will be carried out by a suitably qualified Archaeological Contractor in accordance with this document (and any further instruction from the Consultant). This Specification has been produced in accordance with the published guidelines for archaeological excavation and archiving produced by the Chartered Institute for Archaeologists (CIfA, 2014a; CIfA, 2014b), and the CIFA Code of Conduct (CIfA, 2014c). The Archaeological Contractor shall also take into consideration other relevant guidance and good practice (Appendix 2).
- 5.1.2 Upon commission, the Archaeological Contractor shall prepare and submit a detailed Method Statement for the works prior to the commencement of the fieldwork for approval by the Client and Consultant. This must also be agreed with Alison Williams at NLC in regard to the fieldwork methodology and specific requirements of the Method Statement.
- 5.1.3 A timetable for the completion of the investigations shall be submitted for agreement to the Consultant prior to the start of the fieldwork. The Archaeological Contractor shall ensure that the investigations are suitably staffed for the nature and extent of the fieldwork, and the Archaeological Contractor shall liaise with the Consultant to agree the level of resourcing for the duration of the work.

5.2 Archaeological Excavation

- 5.2.1 The archaeological excavation will be carried out in accordance with this document and the method statement (and any further instructions from the Consultant).
- 5.2.2 The initial stage of excavation will be undertaken using an appropriate 360° mechanical excavator fitted with a toothless ditching bucket. A toothed bucket or breaker may only be used temporarily if concrete, tarmac or other hard standing is encountered. A toothless bucket is to be used at all other times. Mechanical excavation will proceed under direct archaeological supervision in transects across the full width of the development impact zone. Machine excavation will be carried out using a flat bladed bucket within all areas where ground reduction is required for the development. Upon removal of the topsoil, the underlying subsoil shall be removed by mechanical excavator under close archaeological supervision until either the top of the first archaeological horizon or undisturbed natural deposits are encountered. Particular attention should be paid to achieving a clean and well-defined horizon with the machine. Topsoil overburden and subsoil will be stockpiled separately. The mechanical excavator will not traverse any stripped areas.
- 5.2.3 If archaeological deposits are identified during the groundworks the Archaeological Contractor will be given sufficient time to clean, record and sample excavate the remains as appropriate. The machined surface will be hand cleaned if necessary, and inspected for archaeological features, and all identified features should be marked on the ground to ensure that they are not “lost” during the mapping stage. Pre-excavation planning will be undertaken to record all identified archaeological features. The pre-excavation plan will form the basis for discussion on site to inform the strategy for detailed excavation of the archaeological remains.

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- 5.2.4 If extensive or significant archaeological deposits and/or features are identified the Archaeological Contractor will notify the Consultant immediately. Additional archaeologists may be deployed, subject to agreement from the Consultant. If complex archaeological deposits, groups of features or structures are uncovered, stripping will continue to define their full extent as identified in this document, before their excavation. The purpose of this is to determine if the sampling strategy detailed in the final WSI is appropriate. Once the extents have been defined the area will be cordoned off to allow the Archaeological Contractor to record the archaeology and to allow main stripping works by the Principal Contractor to continue in other areas, subject to agreement with the Historic Environment Officer at NLC.
- 5.2.5 Hand excavation, recording and sampling will proceed in accordance with the methodology outlined in this document and confirmed in writing by the Archaeological Contractor's Method Statement, in order to meet the aims and objectives of the excavation.
- 5.2.6 Archaeological deposits will be excavated and recorded stratigraphically in accordance with a recording system approved by the Historic Environment Officer at NLC. All relationships between features or deposits will be investigated and recorded. Machine-assisted excavation may be permissible by the Archaeological Contractor employed if large deposits are encountered but only after consultation and agreement with the Consultant and the with the Historic Environment Officer at NLC
- 5.2.7 Areas affected by the groundworks (even if they reveal no archaeological features) will be recorded on a suitable base map/ development plan and the stratigraphy and depth of excavation will be recorded. Details on recording procedures where significant archaeology is discovered are detailed in the section below.

5.3 Archaeological Sampling

- 5.3.1 A sufficient sample of deposits/features will be investigated through sample excavation in each area to record the horizontal and vertical extent of the stratigraphic sequence to the level of undisturbed natural deposits. The following sampling strategies will be used as a minimum:
- 5.3.2 Any deposits relating to funerary/ritual activity (e.g., burials, cremations,) and domestic/industrial activity (post-holes, hearths, floor surfaces/floor make-up deposits) will be investigated by removing a 100% sample of the deposit from each feature.
- 5.3.3 Features relating to agricultural and other activities will be subject to the following sampling levels. Pits will require a minimum of a 50% sample of the deposits from each feature; linear features (e.g., ditches/gullies, paths/tracks) will require a minimum of a 20% sample of the deposits from each feature.
- 5.3.4 There may be cases when individual features do not merit these sampling levels. Any sampling variation would need to be approved by the Consultant and the Historic Environment Officer at NLC following on-site discussion.
- 5.3.5 Should deep features, such as wells, be uncovered that will require excavation below a safe working depth, machine excavation may be permissible in agreement with the Consultant and the Historic Environment Officer at NLC. Provision should be made for the

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taking of intact geo-archaeological borehole samples to the base of the feature by an appropriate professional contractor.

5.4 Environmental Sampling

5.4.1 Upon appointment, the Archaeological Contractor should contact the Historic England Regional Advisor for Archaeological Science, currently Samantha Stein (01904 601995) who should be consulted regarding the sampling strategy to be adopted during the fieldwork. The sampling strategy should be included in the Archaeological Contractor's Method Statement. Provision will also be made for the recovery of material suitable for scientific dating.

5.4.2 Any samples taken must come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled, and a register of all samples will be kept. Once the samples have been obtained they should be stored appropriately in a secure location prior to being sent to the appropriate specialist.

5.5 Archaeological Recording

5.5.1 A unique site code should be assigned for the project. Prior to the commencement of all site investigations the Archaeological Contractor will liaise with North Lincolnshire Council to ensure that the Site Code and Context Numbering system is compatible with their adopted system. An accession code should also be obtained from the recipient museum.

5.5.2 Following machine excavation, the extent of the excavation area will be accurately recorded using electronic survey equipment. The data will be overlaid at a scale of 1:500 onto the Ordnance Survey National Grid (using digital map data).

5.5.3 A full written, drawn and photographic record will be made of each area even where no archaeological features are identified. Hand drawn plans and sections of features will be produced at an appropriate scale (normally 1:20 for plans and 1:10 for sections). All plans and sections will include spot heights relative to Ordnance Datum in metres, correct to two decimal places.

5.5.4 Photographs will be taken to record archaeological features and excavated areas. General site photographs will also be taken in order to provide a visual overview of the site. Attention should be paid to obtaining shots suitable for displays, exhibitions and other publicity.

5.5.5 A full graphic, photographic and written record of the findings will be made. Individual contexts will be recorded on separate contexts sheets within a context register. Plans shall be drawn to a 1:50 or 1:20 scale and section drawings to a scale of 1:20 or 1:10 as appropriate. Drawn records will be related to Ordnance Survey datum and published boundaries where appropriate.

5.5.6 Photography (preferably colour transparency and monochrome negative photographs) will be taken using a minimum format of 35 mm. In addition to records of archaeological features and excavated areas, a number of general site photographs will also be taken to give an overview of the site. Particular attention should be paid to obtaining shots suitable for displays, exhibitions and other publicity. Digital photography may be used to

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supplement the formal photographic record, for example to produce images to illustrate the report or for publicity. Site staff visible in photographs must be wearing the full Personal Protective Equipment (PPE) required.

- 5.5.7 Digital images should be captured on a Single Lens Reflex (SLR) camera at a minimum resolution of 10 mega-pixels. The camera must be set at the largest file size and highest picture quality. Images are acceptable as high quality .jpg files or camera .raw files. If the .raw setting is used the archive must include a set of images saved as .tiff files as manufacturer specific specialist software may be required to open the .raw files.

5.6 Artefact Recovery

- 5.6.1 All artefacts will be collected, stored and processed in accordance with standard methodologies and national guidelines (Appendix 2). All non-modern artefacts will be collected and retained. Each 'small find' will be recorded three dimensionally. Similarly if artefact scatters are encountered these should be also recorded three dimensionally. Bulk finds will be collected and recorded by context.

- 5.6.2 Where necessary the artefacts will be stabilised, conserved and stored in accordance with the guidelines of the UKIC (United Kingdom Institute of Conservators). Artefacts will be stabilised for storage after excavation. If necessary, a conservator will visit the site to undertake 'first aid' conservation treatment. Should any complex or significant discoveries be encountered, the Consultant should be contacted immediately to discuss the situation in consultation with the Historic Environment Officer at NLC.

- 5.6.3 Artefacts will be stored in appropriate materials and conditions, and monitored to minimise further deterioration until their final conservation and deposition.

5.7 Human Remains

- 5.7.1 Should human remains be discovered during the course of the excavations, the remains will be covered and protected and left *in situ* in the first instance. The removal of human remains will only take place in accordance with the appropriate Department for Constitutional Affairs and Environmental Health regulations and the Burial Act 1857, if appropriate. In the event of the discovery of human remains the Archaeological Contractor will notify the Consultant immediately. The Archaeological Contractor will be responsible for obtaining a burial licence should the need arise.

5.8 Treasure

- 5.8.1 Any artefacts that fall within the scope of the Treasure Act (1996) will be reported to the Consultant. The Consultant will contact H.M. Coroner for the North Lincolnshire area to ensure that Treasure Act procedures are followed; and ensure that all relevant parties are kept informed.

6.0 COMPLETION OF FIELDWORK

- 6.1.1 The Archaeological Contractor shall prepare a Completion Statement at the end of the fieldwork. The Completion Statement shall be submitted to the Consultant within one working day of completion.
- 6.1.2 The area where investigations are carried out will be left in a tidy and workmanlike condition and the Archaeological Contractor will ensure that all materials brought onto site are removed.
- 6.1.3 As a minimum, an OASIS entry (Online Access to the Index of Archaeological Investigation Scheme) shall be completed within one month of the end of the fieldwork, irrespective of whether a formal report is required (available online at: <http://ads.ahds.ac.uk/project/oasis/>). If appropriate the entry should include caveats about conclusions drawn in advance of analysis. The OASIS entry may be updated and re-submitted no later than three months after the completion of the report.

7.0 MONITORING, PROGRESS REPORTS & MEETINGS

- 7.1.1 The fieldwork may be subject to regular weekly monitoring visits by the Consultant, who will have unrestricted access to the records or any other information. The work will be inspected to ensure that it is being carried out to the required standards and that it will achieve the stated objectives.
- 7.1.2 Progress meetings between the Consultant and the Archaeological Contractor will be held on site during the course of the fieldwork. The Historic Environment Officer at NLC and, if required, Historic England's Regional Inspector shall be invited to attend. These meetings will be arranged by the Consultant.
- 7.1.3 The Archaeological Contractor will only accept instruction from the Consultant and the Historic Environment Officer at NLC.

8.0 REPORTING

- 8.1.1 The appointed Archaeological Contractor shall undertake a post-excavation assessment of archive material from this and all preceding phases. The strategy for assessment will be subject to agreement with the Historic Environment Officer at NLC. Each category of data and material recovered by the fieldwork (site records/stratigraphic data, each category of artefact or other find, each category of palaeoenvironmental/economic evidence, any other data) shall be examined and assessed by a suitably qualified and experienced archaeologist or specialist in line with the principles set out by Historic England in Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (MoRPHE, 2015). If necessary to achieve the aims and objectives of the post-excavation works, dating evidence shall be obtained by the application of radiocarbon, dendrochronological or other scientific dating techniques.
- 8.1.2 The finds and samples will be processed (cleaned and marked) as appropriate. A suitably qualified archaeologist or specialist will assess each category of find or environmental/industrial material and their results will be incorporated into the report.
- 8.1.3 The post-excavation assessment report for the excavation works will be prepared in line with MoRPHE.
- 8.1.4 The report will include the following:
- A non-technical summary;
 - Site area location;
 - A brief description of the background and circumstances of the work;
 - Archaeological and historical background (to include the work undertaken by all previous contractors);
 - Methodology;
 - Aims and objectives (as detailed in this project WSI and with consideration of subsequent findings detailed in the interim report for each phase);
 - Results (to include brief description, assessment of condition, quality and significance of the remains);
 - Statement of potential with recommendations;
 - A statement of the significance of the results in their local, regional and national context according to the Research Framework;
 - Publication proposals if warranted;
 - Archive storage and curation;
 - General location plan of the investigation areas accurately positioned on an Ordnance Survey base map (to a known scale);
 - Detailed plans and sections, if appropriate (to a known scale);
 - A composite plan produced at a scale of 1:50;
 - A complete site matrix;

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- A quantification of the project archive; and
 - A consideration of the results of earlier field-work, post-excavation assessment and analysis.
- 8.1.5 The report shall be accompanied by an Updated Project Design in accordance with MoRPHE and other relevant national guidelines. The Updated Project Design shall summarise and consider all preceding phases of work and set out the further analytical and reporting works, if any, that are required to achieve the research objectives identified in the post-excavation assessment report. If the assessment process identifies that no further work is required for the phase area then the updated project design should clearly state that this is the case.
- 8.1.6 Following completion of the final post-excavation assessment report and Updated Project Design, a covering letter will be provided to the Consultant setting out the itemised costing for the recommended further works. The assessment will be completed within 12 weeks after the completion of the fieldwork. In finalising the post-excavation assessment report the comments of the Consultant and the Historic Environment Officer at NLC will be taken into account.
- 8.1.7 One copy of the complete report will be submitted to the Consultant as a draft. In finalising the report the comments of the Consultant and the Historic Environment Officer at NLC will be taken into account.
- 8.1.8 Finalised digital copies will be required within one week of the receipt of the Consultant comments on the draft report.
- 8.1.9 Electronic files will be provided in Word for Windows and pdf format.
- 8.1.10 The Consultant will submit one digital copy to the North Lincolnshire Council Historic Environment Record.
- 8.1.11 Provision will be made for a publication of the results in a recognised local or national journal or monograph series. The final report and place of publication will be approved by the Consultant and passed on to the Historic Environment Officer at NLC for final approval. The appropriate editor should be consulted, and an estimate of publication costs obtained and included in the updated costs for the production of the post-excavation analysis report and publication.
- 8.1.12 Reports for publication (and illustrations) will be peer reviewed and submitted initially to the Consultant for review, comment and approval before being provided to the Historic Environment Officer at NLC.

9.0 RESOURCES AND TIMETABLE

- 9.1.1 All archaeological personnel involved in the project should be suitably qualified and experienced professionals. The Archaeological Contractor shall provide the Archaeological Consultant with staff CVs of the Project Manager, Site Supervisor and Site assistants. All site assistants should have an appropriate understanding of fieldwork procedures.
- 9.1.2 The Archaeological Consultant will inform the Archaeological Contractor of the start date for the works and the Archaeological Contractor will provide the Archaeological Consultant with a programme for the works (fieldwork and reporting) within two days of the start date.

10.0 ARCHIVE PREPARATION AND DEPOSITION

- 10.1.1 The archive of finds and records generated during the fieldwork will be kept secure until the deposition stage of the post-excavation process. All records and materials produced will be quantified, ordered, indexed and internally consistent by the Archaeological Contractor and cross checked accordingly upon receipt of the previous phase archive. The archives for each phase and the final collation of all archives will be produced to the standards outlined by Historic England (1991, Appendix 2).
- 10.1.2 The Archaeological Contractor appointed to undertake the Post-Excavation Assessment will, prior to the start of the final phase, contact the recipient museum to obtain agreement in principle to accept the artefactual, documentary, digital and photographic archive for long-term storage and curation. The Archaeological Contractor will be responsible for identifying any specific requirements or policies of the museum in respect of the archive, and for adhering to those requirements.
- 10.1.3 The Archaeological Contractor will store the archive in a suitable secure location until it is either passed to the subsequent contractor or deposited in the agreed museum following the final phase of work.
- 10.1.4 The final deposition of the archive forms the final stage of this project. The Archaeological Contractor shall provide the Archaeological Consultant with copies of communication with the recipient museum and written confirmation of the deposition of the archive. The Archaeological Consultant will deal with the transfer of ownership and copyright issues.
- 10.1.5 The archiving of any digital data arising from the project should be undertaken in a manner consistent with professional standards and guidance (Richards & Robinson 2000). The Archaeological Contractor should liaise with an appropriate digital archive repository to establish their detailed requirements and discuss the transfer of the digital archive.
- 10.1.6 The archaeological contractor should also liaise with the Historic Environment Officer at NLC, to make arrangements for digital information arising from the project to be submitted to the North Lincolnshire Council Historic Environment Record for Historic Environment Record (HER) enhancement purposes.
- 10.1.7 One copy of the complete report will be submitted to the Archaeological Consultant as a draft. When finalising the report, the comments of the Consultant and the Historic Environment Officer at NLC will be taken into account.
- 10.1.8 Finalised digital versions of the report will be required within one week of the receipt of comments on the draft report.
- 10.1.9 Electronic files will be provided in Word for Windows and pdf format.
- 10.1.10 The Archaeological Contractor will deposit the archive with an appropriate depository which must be identified in advance of the project. It is the responsibility of the Archaeological Contractor to adhere to any clauses the said depository may have.
- 10.1.11 HER is currently participating in the OASIS scheme. As part of this the Archaeological Contractor is required to fill in an OASIS data capture form on completion of each the
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Appendix 13E: Outline Written Scheme of Investigation

project, and on deposition of the final archive. Details of the progress, copies of the form and guidelines for its completion can be found at <http://ads.ahds.ac.uk/project/oasis> . Failing this, the Archaeological Contractor shall contact the Archaeology Data Service directly for further advice

11.0 COPYRIGHT

- 11.1.1 The Archaeological Contractor shall assign copyright in all reports, documentation and images produced as part of this project to the Client. The Archaeological Contractor shall retain the right to be identified as the author or originator of the material. This applies to all aspects of the project. It is the responsibility of the Archaeological Contractor to obtain such rights from sub-contracted specialists.
- 11.1.2 The Archaeological Contractor may apply in writing to use or disseminate any of the project archive or documentation (including images). Such permission will not be unreasonably withheld.
- 11.1.3 The results of the archaeological works shall be submitted to the Client, the Historic Environment Officer at NLC and if required to Historic England by the Consultant and will ultimately be made available for public access.
- 11.1.4 The HER shall be able to use the reports for reference purposes, on the understanding that such licence does not cover commercial use of the material by NLC or any third party. In all cases the Archaeological Contractor and the commissioning body will retain the right to be identified as the originator of the work.

12.0 ACCESS ARRANGEMENTS AND SITE INFORMATION

- 12.1.1 Access to the application site to carry out archaeological investigations will be arranged by the Archaeological Consultant.
- 12.1.2 Should the Archaeological Contractor require adjustment to the location of fieldwork interventions or works areas due to local conditions, this shall be agreed with the Archaeological Consultant prior to its implementation.

13.0 INSURANCES AND HEALTH AND SAFETY

- 13.1.1 The Archaeological Contractor will provide the Client with details of their public liability and professional indemnity insurance cover.
- 13.1.2 . The Archaeological Contractor, will prepare the necessary Health and Safety Plan, Risk Assessment and Method Statements, provide suitable welfare facilities and undertake Health and Safety (H&S) Site inductions for all staff that work on the project. The Archaeological Contractor will also co-ordinate their Health and Safety Plan, Risk Assessment and Method Statements following consultation with the Contractor appointed to carry out general site groundworks.
- 13.1.3 The Archaeological Contractor will have their own Health and Safety policy as required under the Health and Safety at Work etc. Act 1974. A copy of the Archaeological Contractor's latest Health and Safety policy will be submitted to the Client, who will forward it on to the Employer.
- 13.1.4 The Archaeological Contractor shall prepare Risk Assessment(s), Method Statement(s) (RAMS), and a project specific Health and Safety Plan and submit these to the Client for approval prior to starting on site. The Archaeological Contractor will not be permitted to start on site until the Client has confirmed that the Plan is acceptable for the proposed works. If amendments are required to these reports during the works, the Client and the Consultant must be provided with the revised document at the earliest opportunity.
- 13.1.5 The site supervisor will be qualified to a minimum Site Supervisor Safety Training Scheme (SSSTS) level. All other staff involved in the fieldwork will be Construction Skills Certification Scheme (CSCS) qualified. For the majority, this will comprise holding an "Academically Qualified Person" (AQP) card, though CSCS-qualified "Professionally Qualified Person" (PQP) card holders, "Labourer" green card holders, and those holding currently valid Construction Related Operation (CRO) "Archaeological Operative" cards may be deployed to the scheme. CVs will include details of SSSTS, CSCS and all other relevant qualifications and accreditations, with expiry dates.
- 13.1.6 The Client will provide the Archaeological Contractor with the results of recently conducted service and utility searches; however, the Archaeological Contractor shall be responsible for identifying any buried or overhead services and taking the necessary precautions to avoid damage to such services, prior to and during the fieldwork. The Archaeological Contractor will ensure that any individual scanning for buried services is both competent and appropriately trained. The Archaeological Contractor shall at all times maintain a safe working distance from the overhead and buried services / utilities. In addition, the Archaeological Contractor shall be responsible for any requirements with regard to work in the vicinity of watercourses and live carriageways. The Archaeological Contractor's Risk Assessment(s) and project Health and Safety Plan shall make reference to relevant guidance and good practice (for example: Health and Safety Executive SEGS6 - Avoidance of Danger from Overhead Lines; HS (G)47 - Avoiding Danger from Underground Services; Energy Networks Association The Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines; PAS 128 – Specification for underground utility detection, verification and location).

Appendix 13E: Outline Written Scheme of Investigation

- 13.1.7 The Archaeological Contractor's supervisor will maintain a record of site attendance and complete a daily briefing, including a review of health & safety requirements, at the start of work for each day that there is a team in the field.
- 13.1.8 All site personnel will wear PPE as defined by the Archaeological Contractor's risk assessment undertaken in accordance with mandatory requirements. Any visitors to the investigations will require a site induction in accordance with the Archaeological Contractor's Health and Safety requirements and will have read the appropriate Archaeological Contractor's Risk Assessment and Method Statement (RAMS). The Archaeological Contractor will ensure that any visitors to the investigations are equipped with suitable PPE prior to entry to the site. All equipment that is used in the course of the fieldwork must be 'fit for purpose' and be maintained in a sound working condition that complies with all relevant Health and Safety regulations and recommendations.
- 13.1.9 The Archaeological Contractor will ensure the provision and maintenance of adequate, suitable and sufficient welfare and sanitary facilities at appropriate locations for the duration of the works. The locations for the temporary site welfare facilities will be agreed with the Client prior to the start of the works, and arrangements for temporary parking shall also be agreed should they be required. Health and Safety considerations will be of paramount importance and will override archaeological considerations at all times. This includes all stages of the archaeological works, including site-based and office-based activities. All anticipated activities should be included in the Archaeological Contractor's RAMS and suitable mitigation measures to reduce the risk of injury be put in place. The Archaeological Contractor's RAMS will be kept under continuous review throughout the works and updated as necessary. General Provisions
- 13.1.10 The Archaeological Contractor will undertake the works in accordance with this document and in any subsequent written variations. No variation from, or changes to, the specification will occur except by prior agreement with the Consultant (where appropriate in consultation with the Historic Environment Officer at NLC).
- 13.1.11 The site will be left in a tidy and workable condition and the Archaeological Contractor will ensure that all materials brought onto site are removed.
- 13.1.12 The Archaeological Contractor shall make the minimum of disturbance during the fieldwork and will avoid any unnecessary damage. If appropriate, access for temporary parking and the location of site welfare shall be agreed with the Principal Contractor prior to the commencement of the fieldwork. The provision of welfare facilities shall be the responsibility of the Archaeological Contractor.

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Annex 13E.1 Identified Heritage Assets

Reference	Grid Reference	Period	Description	Number
1614	TA 1608 1662	Bronze Age; Roman	Cropmarks consisting of a linear feature and enclosure, with a Bronze Age flint knife and Roman grey ware pottery discovered within.	A1
1630	TA 165 178	Roman	Roman greyware sherds dated to the 3 rd -4 th century AD were found at a site to the east of the Lindsey oil refinery.	A2
4635	TA 164 176	Unknown	A linear and series of circular and sub-circular features cropmark site east of the Lindsey oil refinery.	A3
19726	TA 1685 1791	Prehistoric	Late Mesolithic core and three flakes, two of which are likely of Bronze Age date. These were found near Killingholme Marshes.	A4
19727	TA 168 182	Prehistoric	A scatter of Neolithic artefacts, including a scraper, two cores and nine flakes. Found to the north of station road.	A5
19771	TA 167 171	Iron Age/ Roman	An Iron Age and Roman settlement site on the site of Conoco CHP plant. There appeared to be an early Iron Age settlement on the site, followed by a late Iron Age/ Roman settlement. Most of the pottery found dates from the 2 nd -4 th centuries AD. There was also evidence of both iron and salt production in the Iron Age at the site from briquetage fragments of ceramic trays.	A6
19803	TA 1638 1847	Prehistoric	A single flint flake, dated to Mesolithic/Neolithic was found to the east of Rosper Road.	A7
19806	TA 1666 1823	Roman	A single greyware sherd found to the north of Station Road.	A8
19807	TA 1672 1796	Roman	A single greyware sherd found to the south of Station Road.	A9
20078	TA 161 167	Iron Age/ Roman	A cropmark of a rectilinear enclosure, measuring c.30m by 20m, and a small L-shaped feature was recorded on 1958 aerial photos. It has been partially or totally destroyed by the construction of the oil refinery at South Killingholme.	A10

Reference	Grid Reference	Period	Description	Number
20098	TA 15 18	Medieval	Medieval ridge and furrow recorded through geophysical and walkover surveys. The ridge and furrow system measured 122m aligned north-east to south-west.	A11
20103	TA 1674 1754	Modern	A linear anomaly recorded on geophysical survey, identified as a modern survey trench during evaluation.	A12
20104	TA 159 166	Medieval	North south oriented ridge and furrow, located to the west of Rosper Road, detected by geophysical survey.	A13
20121	TA 16505 17943	Medieval	A hedgerow which forms the parish boundary between North and South Killingholme. It is shown on enclosure maps.	A14
20124	TA 1655 1759	Iron Age; Unknown	Cropmark ditches and sub-circular features were recorded on aerial photographs. One of the sites identified Iron Age ditches but the others found no traces of archaeological features.	A15
20141	TA 17 17	Unknown	A system of creeks was detected by geophysical surveys and the deposits were thought to represent a former shoreline.	A16
20422	TA 166 176	Iron Age	A ditch running parallel to Rosper Road for over 400m recorded in 9 trial trenches. A small drainage or boundary features was also identified on the site with nine sherds of early-middle Iron Age pottery.	A17
20423	TA 1653 1776	Roman	Eight sherds of Roman greyware pottery, found in an un-stratified context on land west of Rosper Road.	A18
20424	TA 1657 1733	Medieval	A ditch containing a 13-15 th century Toynton ware pottery sherd was found to the west of Rosper Road. The ditch was 1m wide by 0.15m deep and aligned north west-south east.	A19
20569	TA 16 18	Post-medieval	Historically important hedgerows in North Killingholme Parish. The boundaries shown on maps are pre 1840.	A20
20570	TA 17 17	Post-medieval	Historically important hedgerows in South Killingholme Parish. The boundaries shown on maps are pre 1840.	A21

Reference	Grid Reference	Period	Description	Number
20789	TA 1737 1781	Unknown	An ovoid enclosure with a double ditch trackway to the east. The enclosure measures approximately 94 by 42m and the trackway varies in width from 7m to 10m. Geophysical survey on the site did not detect either of these.	A22
21101	TA 1684 1698	Post-medieval	Cropmark of a field boundary visible on aerial photography. It measures approximately 83m, and shown on 1 st edition OS map, 1887.	A23
21225	TA 1724 1821	Modern	The site of a barrage balloon anchorage, operated by 942 Squadron Balloon Command during WWII. Two shelters remain and have both been modified for use as cattle byre, and main and secondary anchorages are still in place.	A24
21315	TA 1714 1685	Unknown	An L shaped magnetic anomaly was identified by geophysical survey, although trial trenching revealed only natural deposits.	A25
21321	TA 1683 1703	Unknown	A small square enclosure visible as a cropmark on aerial photography. The site is now masked by the southern edge of the Immingham CHP plant.	A26
21322	TA 173 170	Modern	World War II Aircraft obstructions. These were shown through a T-shaped arrangement of ditches visible on wartime aerial photography. Four further sections of ditch were located to the east of Rosper Road.	A27
21323	TA 1744 1737	Modern	The site of a row of c.16 terraced houses was built on the south side of Marsh Lane in the early 20 th century. They had been demolished by 1975.	A28
21324	TA 1763 1750	Post-medieval	Site of Marsh Farm, shown on 1887 OS map, recorded as a group of four buildings. The farm is shown on mapping up to 1983. Aerial photography in 2009 records a parchmark in the grass showing the outline of one of the farm buildings.	A29
21326	TA 148 169	Modern	The Humber Commercial Railway, constructed in 1912 to link the eastern jetty at Immingham Dock with the main Grimsby- New Holland line at Ulceby.	A30
21544	TA 169 170	Prehistoric	A scatter of flint was found during field walking, west of Rosper Road. A total of 223 pieces of flint were found, mostly undiagnostic flakes and chunks. There was also a bladelet was late Mesolithic and a bladeliike flake was late Mesolithic or early Neolithic, two possibly Neolithic	A31

Reference	Grid Reference	Period	Description	Number
			cores, and a single Bronze Age scraper. Further worked flints found during excavation.	
21553	TA 1745 1678	Prehistoric	A deposit of burnt stone and charcoal flakes, radiocarbon dated to the Late Bronze Age. The feature was curvilinear and 0.02m deep.	A32
21554	TA 1741 1682	Prehistoric	A probable ditch recorded during evaluation, charcoal was recorded from within the feature and radiocarbon dated to the early Bronze Age.	A33
21556	TA 1750 1676	Iron Age/ Roman	An Iron Age/ Roman settlement, located to the north of Humber Road on the edge of the Humber estuary. Evidence of salt making and iron smelting may have been occurring near the settlement.	A34
21567	TA 167 183	Iron Age/ Roman	An Iron Age/ Roman settlement recorded through geophysical survey, north of Station Road. 112 sherds of Roman pottery and 5 fragments of tile were collected during field walking and trial trenching. A number of ditches and enclosures were identified, several of the latter with possible hearths or kilns. Finds from the site include a copper alloy armlet, a coin, as well as plant and animal remains.	A35
21568	TA 1698 1830	Roman	Geophysical survey recorded a possible enclosure, north of Station Road. Two substantial ditches were recorded, one containing early Roman pottery.	A36
21569	TA 1702 1785	Iron Age/ Roman	Iron Age and Roman enclosures, to the south of Station Road, identified through geophysical survey. Trial trenches recorded ditches, mid-late Iron Age pottery and 1 st -2 nd century Roman pottery.	A37
21570	TA 1729 1826	Unknown	A geophysical survey recorded magnetic anomalies in a field to the south of Station Road. Trial trenching only revealed natural deposits.	A38
21571	TA 1745 1802	Prehistoric; Roman	An undated pit identified during excavations to the south of Station Road. Its fill consisted of a late Neolithic or Early Bronze Age flint scraper and a single Roman sherd.	A39
21959	TA 143 189	Modern	The Barton and Immingham Light Railway opened in 1910-1911. The passenger service ran until 1963, although the section between Immingham and Killingholme was still used for oil	A40

Reference	Grid Reference	Period	Description	Number
			traffic.	
22428	TA 1708 1678	Iron Age	Two late Iron Age ditches, to the west of Rosper Road. Both ditches contained Iron Age pottery. These may have been part of an occupied enclosure.	A41
22487	TA 164 179	Neolithic	A fragment of Neolithic polished stone axe was found at Burkinshaw's Covert.	A42
22497	TA 1716 1702	Modern	Site of a mission room, shown on the OS 1945 map. The building was L shaped and is shown set back from the road approximately 13m. The building originally contained a stable and a vestry was added in 1923. The building contained a date stone of 1910.	A43
22489	TA 1722 1691	Modern	Site of a day school and associated school house, shown on the OS 1945 map. It is roughly rectangular with the school house situated to the NE.	A44
22499	TA 1715 1704	Modern	Site of Myrtle Villas House, located on the east side of Rosper Road. Consisted of a rectangular building with an outbuilding to the NE, shown on OS 1945 map.	A45
22569	TA 1737 1829	Modern	Killingholme Railway Station on the Barton and Immingham Light Railway, opened in 1910 and closed in 1965.	A46
22570	TA 173 183	Modern	The former station master's house, Station Road, near the site of Killingholme railway station shown on the post 1945 OS maps.	A47
22737	TA 165 183	Prehistoric	Seven pieces of Neolithic-Bronze Age worked flint were collected in two adjoining fields during field walking. Six of these were struck flints and one was a flint nodule with some flake removal.	A48
22743	TA 1701 1740	Roman	A group of later Roman ditches, north of Marsh Lane was recorded during trial excavations. The fill contained 4 th century pottery.	A49
22851	TA 1780 1763	Mesolithic	A thin deposit of peat was recorded within a borehole at Marsh Lane. Organic samples were dated to 4651-4451 Cal BC.	A50
24999	TA 1587 1810	Post-	The site of an unnamed 19 th century farmstead, North Killingholme, with a regular courtyard of U	A51

Reference	Grid Reference	Period	Description	Number
		medieval	plan. It was later demolished.	
25000	TA 1594 1749	Post-medieval	Site of Cawber Farm, South Killingholme, a 19 th century farmstead. It consisted of a regular courtyard with multiple regular yards and the farmhouse is attached to a range of working buildings. Now demolished.	A52
25012	TA 1760 1748	Post-medieval	Site of Marsh Farm, South Killingholme, a 19 th century farmstead. It consisted of a regular courtyard of L plan; the farmhouse is detached from the main working complex. Now demolished.	A53
25013	TA 1687 1745	Post-medieval	Site of an unnamed 19 th century farmstead, South Killingholme. It comprised a regular courtyard with linked working buildings to all four sides of the yard with the farmhouse detached from the main working complex. Now demolished.	A54
25014	TA 1673 1768	Post-medieval	Site of an unnamed 19 th century farm, Killingholme. It was of regular courtyard of U shaped plan, and has now been demolished.	A55
25015	TA 1594 1801	Post-medieval	Site of Woodlands, North Killingholme, a 19 th century farmstead. The farmhouse had an attached range of working buildings, and is now demolished.	A56
26104	TA 1701 1714	Modern	Site of a chapel, shown on the OS 1945 map. It was in use in the 20 th century, forming part of the former settlement of South Killingholme haven. Now demolished.	A57
26105	TA 1623 1639	Post-medieval	The site of a former 19 th century farmstead, South Killingholme. It was shown on the 1887 OS map, and is now demolished.	A58

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