



# NORTH LINCOLNSHIRE GREEN ENERGY PARK

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## North Lincolnshire Green Energy Park

### 9.39 Overarching Archaeological Mitigation Strategy

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## Acronyms and Abbreviations

<b>Name</b>	<b>Description</b>
AGI	<i>Above Ground Installation</i>
BGS	<i>British Geological Society</i>
CBMF	<i>Concrete Block Manufacturing Facility</i>
CCUS	<i>Carbon Capture Utilisation and Storage Facility</i>
CDM	<i>Construction Design and Management</i>
CIfA	<i>Chartered Institute for Archaeologists</i>
CoCP	<i>Code of Construction Practice</i>
CSM	<i>Conceptual Site Model</i>
DCLG	<i>Department for Communities and Local Government</i>
DCO	<i>Development Consent Order</i>
DHN	<i>District Heat Network</i>
DHPWN	<i>District Heat and Private Wire Network</i>
EIA	<i>Environmental Impact Assessment</i>
ERF	<i>Energy Recovery Facility</i>
ERM	<i>Environmental Resources Management</i>
ES	<i>Environmental Statement</i>
EV	<i>Electric Vehicle</i>
HE	<i>Historic England</i>
HER	<i>Historic Environment Record</i>
LPA	<i>Local Planning Authority</i>
NHLE	<i>National Heritage List for England</i>
NLC	<i>North Lincolnshire Council</i>
NLGEP	<i>North Lincolnshire Green Energy Park</i>
NPPF	<i>National Planning Policy Framework</i>
NPS	<i>National Policy Statement</i>
NSIP	<i>Nationally Significant Infrastructure Project</i>
PEIR	<i>Preliminary Environmental Information Report</i>
PINS	<i>Planning Inspectorate</i>
PRF	<i>Plastic Recycling Facility</i>
PWN	<i>Private Wire Network</i>
RHTF	<i>Residue Handling and Treatment Facility</i>

## 1. INTRODUCTION

### 1.1 Summary

- 1.1.1.1 The North Lincolnshire Green Energy Park (NLGEP) ('the Project'), located at Flixborough, North Lincolnshire, is a NSIP with an Energy Recovery Facility (ERF).
- 1.1.1.2 The Project is classed as a NSIP and therefore a Development Consent Order (DCO) is required under the Planning Act 2008. The current document and the archaeological evaluation, mitigation and monitoring that it describes is part of the DCO Process.
- 1.1.1.3 Archaeological requirements as part of the DCO Process are secured within the DCO submission within Requirement 11. This requirement sets out that the mitigation measures must be carried out in accordance with the approved overarching archaeological mitigation strategy (OAMS) and approved written schemes of investigation.

### 1.2 Guide to using the OAMS

#### 1.2.1 Using the OAMS

- 1.2.1.1 The OAMS is a reference document and resource to aid the development of survey, site or stage specific WSI's and to provide a single document detailing all the post-examination archaeological investigations to be carried out at the proposed NLGEP.
- 1.2.1.2 The OAMS has close links to the CoCP and any relevant updates in either document and in other linked environmental or construction management plans will necessitate updates in all the others.
- 1.2.1.3 WSI's will be developed by archaeological contractors in conjunction with the Applicant's archaeological representative and North Lincolnshire Council's (NLC) Historic Environment Officer (HEO).
- 1.2.1.4 The OAMS should be understood and used as a 'live' document that is under continuous review. The OAMS requires regular updates as detailed designs become available. This includes at key stages pre- and post-determination and throughout the duration of the 6-year NLGEP construction programme.
- 1.2.1.5 The conditions under which updates should occur includes, the following:
  - If ongoing consultation with Statutory consultees (NLC or Historic England) reveals a requirement to alter or add more detail.
  - When any significant changes to archaeological baseline knowledge upon which the strategy and programme is based. The extent and nature of the evaluation, mitigation and monitoring work carried out within many of the phases of work outlined below are dependent on the results of previous phases.

- When any significant changes to works schedule.
  - At quarterly intervals for the first 6-months.
  - At six-monthly intervals for the first 2 years.
  - After the first 2 years at annual intervals for the remainder of the construction schedule.
  - When each of the 6 phases of NLGEP construction schedule commences.
- 1.2.1.6 As described under 'roles and responsibilities' (Section 3 below), the Principle Contractor is responsible for any changes to the works schedule as set out in the OAMS and the Archaeological Contractor is responsible for any changes to archaeological programme.

### 1.3 Project Description

- 1.3.1.1 The North Lincolnshire Green Energy Park (NLGEP) ('the Project'), located at Flixborough, North Lincolnshire, is a NSIP with an Energy Recovery Facility (ERF) capable of converting up to 760,000 tonnes of non-recyclable waste into 95 MW of electricity at its heart. It also includes a carbon capture, utilisation and storage (CCUS) facility, which will treat the excess gasses released from the ERF to remove and store carbon dioxide (CO<sub>2</sub>) prior to emission into the atmosphere.
- 1.3.1.2 The NSIP incorporates a switchyard, to ensure that the power created can be exported to the National Grid or to local businesses. It includes a water treatment facility, to take water from the mains supply or recycled process water to remove impurities and make it suitable for use in the boilers, the CCUS facility, concrete block manufacture, hydrogen production and the maintenance of the water levels in the wetland area. The main project elements are shown in Figure 2. The overarching aim of the Project is to support the UK's transition to a low carbon economy as outlined in the Sixth Carbon Budget (December 2020), the national Ten Point Plan for a Green Industrial Revolution (November 2020) and the North Lincolnshire prospectus for a Green Future. It will do this by enabling circular resource strategies and low-carbon infrastructure to be deployed as an integral part of the design (for example by reprocessing ash, wastewater and carbon dioxide to manufacture concrete blocks and capturing and utilising waste-heat to supply local homes and businesses with heat via a district heating network).
- 1.3.1.3 The Project will include the following Associated Development to support the operation of the NSIP:
- a bottom ash and flue gas residue handling and treatment facility (RHTF)
  - a concrete block manufacturing facility (CBMF)
  - a plastic recycling facility (PRF)
  - a hydrogen production and storage facility
  - an electric vehicle (EV) and hydrogen (H<sub>2</sub>) refuelling station

- battery storage
- a hydrogen and natural gas above ground installations (AGI)
- a new access road and parking
- a gatehouse and visitor centre with elevated walkway
- railway reinstatement works including, sidings at Dragonby, reinstatement and safety improvements to the 6km private railway spur, and the construction of a new railhead with sidings south of Flixborough Wharf
- a northern and southern district heating and private wire network (DHPWN)
- habitat creation, landscaping and ecological mitigation, including green infrastructure and 65-acre wetland area
- new public rights of way and cycle ways including footbridges
- Sustainable Drainage Systems (SuDS) and flood defence
- utility constructions and diversions.

## 1.4 Planning background and requirements

- 1.4.1.1 The Project is classed as a NSIP and therefore a Development Consent Order (DCO) is required under the Planning Act 2008. The current document and the archaeological evaluation, mitigation and monitoring that it describes is part of the DCO Process.
- 1.4.1.2 Archaeological requirements as part of the DCO Process are secured within the DCO submission within Requirement 11. This requirement sets out that the mitigation measures must be carried out in accordance with the approved overarching archaeological mitigation strategy and approved written schemes of investigation.
- 1.4.1.3 Requirement 11 states that the overarching archaeological mitigation strategy and written schemes of investigation must include and make provision for the following elements:
- mitigation fieldwork including measures to ensure the preservation in situ or by record of archaeological features of identified importance;
  - post mitigation fieldwork methodologies for assessment and analysis;
  - reporting and dissemination of findings, including publication of significant results;
  - preparation of site archive, arrangements and timetable for deposition and sustainable management at a store approved in writing by the relevant planning authority;
  - a timetable including sufficient notification to ensure that the mitigation fieldwork is undertaken and completed in accordance with the mitigation strategy before commencement of the relevant part of the authorised development;

- curatorial monitoring arrangements, including the notification in writing to the North Lincolnshire Historic Environment Record Office of the commencement of archaeological works and the opportunity to monitor such works;
- a list of all staff involved in the implementation of the mitigation strategy, including sub-contractors and specialists, their responsibilities and qualifications;
- any arrangements for community involvement; and
- measures to enhance the interpretation and public appreciation of heritage assets.

## 1.5 Standards and Guidance

1.5.1.1 This document conforms to the following UK standards and guidance:

- Chartered Institute for Archaeologists. 2019. *Code of Conduct*.
- Chartered Institute for Archaeologists. 2021. *Code of Conduct: professional ethics in archaeology*.
- Chartered Institute for Archaeologists. 2019. *Standard and guidance for archaeological advice by historic environment services*.
- Chartered Institute for Archaeologists. 2020. *Standards and guidance for archaeological excavation*.
- Chartered Institute for Archaeologists. 2020. *Standard and guidance for archaeological field evaluation*.
- Chartered Institute for Archaeologists. 2020. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*.
- Chartered Institute for Archaeologists. 2020. *Standards and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment*.
- Chartered Institute for Archaeologists. 2020. *Standards and guidance for the collection, documentation, conservation and research of archaeological materials*.
- Chartered Institute for Archaeologists. 2017. Updated guidelines to the standards for recording human remains.
- Historic England [formerly English Heritage]. 2004. *Human Bones from Archaeological Sites: Guidelines for Producing Assessment Documents and Analytical Reports*.
- Historic England. 2011. *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation (Second Edition)*.
- Historic England. 2015. *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record*.

- Historic England. 2015. Management of Research Projects in the Historic Environment. Archaeological Excavation (PPN3).
- Historic England. 2020. Deposit Modelling and Archaeology.
- United Kingdom Institute for Conservation. 1983. *Packaging and storage of freshly excavated artefacts from archaeological sites.*

## 1.6 Planning & Policy

1.6.1.1 This document conforms to the following national and local policy and guidance:

- National Policy Statements EN-1 and EN-3.
- Ancient Monuments and Archaeological Areas Act 1979 (amended by the National Heritage Act 1983 and 2003).
- Planning (Listed Buildings and Conservation Areas) Act 1990 (amended by the Enterprise and Regulatory Reform Act 2013).
- National Planning Policy Framework Section 16 (MHCLG, 2021).
- North Lincolnshire Core Strategy (North Lincolnshire Council (NLC, 2011).
- Planning for Renewable Energy Development Supplementary Planning Document (2011) - Policy 4 Heritage Assets.
- North Lincolnshire Local Plan (NLC, 2003) (Saved Policies, 2007).



## 2. BACKGROUND

### 2.1 Geology

2.1.1.1 The British Geological Survey (BGS) indicates that the Site has an underlying bedrock composed of Mudstone. A north-south aligned mudstone ridge dominates the geology of the study area, lying to the east by, and upon which the historic settlements of Flixborough, Crosby and Scunthorpe are situated. The mudstone and Ironstone bedrocks are shallow to full marine deposits from the Triassic (c. 251-201 Mya) and Jurassic (c. 201-145 Mya). The mudstone ridge forms the eastern edge of the meandering Trent Valley, which is filled with deep Holocene (12,000 years ago - present) alluvium (clay, silt, sand, and peat) and overall represents uniform to varied riverine deposition across a floodplain. The eastern edge of the valley and west side of the mudstone ridge is characterised by thick drifts of 'windblown sand', which appear to have derived from late glacial sands (BGS 2021) and in some cases are overlain by alluvium. The sand, occasionally classified as Sutton Sand Formation, is a fine silty sand formed during the Devensian to Holocene (115 thousand years ago onwards) and represents an aeolian or wind-blown redeposition of underlying glaciolacustrine deposits or bedrock.

### 2.2 Archaeological and historical background

- 2.2.1.1 For full background and gazetteer, see Historic Environment Desk-based Assessment (DBA, ERM 2021). See Figure 3 for the location of sites mentioned in the text below. The following is a summary of the background as found in the DBA.
- 2.2.1.2 Only a single find of Palaeolithic date (1,000,000-10,000 BC) has been made within the DBA study area (1 km around the Order Limits), reflecting the significant landscape changes that have taken place during the Holocene period. Mesolithic (10,000-4,000BC) flint assemblages are concentrated on the windblown sand deposits overlooking the Trent Valley with only one findspot (site 8) located on the edge of the floodplain. The paucity of Mesolithic sites in the valley suggests they are likely to be deeply buried under alluvium (if indeed, they have survived subsequent fluvial erosion), although it may also be an accurate reflection of settlement patterns as higher lying and drier ground would have been attractive to hunter-gatherers. A similar pattern is observable for finds of Neolithic date (4,000-2,200 BC). Evidence of Neolithic settlement has been found in the aeolian sands to the east of the ERF site, including at Flixborough (site 4) 200m east of Order Limits.
- 2.2.1.3 There are many Bronze Age sites and findspots within the study area. Again, the vast majority are on the higher lying aeolian sands to the east of the alluvial deposits of the Trent Valley, including material from the Flixborough sand quarry. This site also produced evidence of Iron Age metalworking, burials and pits. Evidence for Iron Age settlement was also recovered from the Flixborough excavations at North Conesby, immediately east of Order Limits and west of the scheduled area of

‘Flixborough Nunnery’. In contrast to the earlier prehistoric period, though, there is evidence of cropmarks and findspots, suggesting possible Iron Age settlement, on the fringes of the floodplain, lying within Order Limits (sites 8-14).

- 2.2.1.4 The evidence for Roman settlement within the study area again derives largely from the high ground to the east, with the main focus of settlement located at Dragonby. Roman material has been found immediately to the east of the proposed Gas AGI, including on the site of the former Flixborough sand quarry (sites 4 & 5). The cropmark enclosure sites within Order Limits on the eastern edge of the floodplain could as easily date to the Roman period as to the Iron Age (sites 9-14). No Roman material has been found to date on the floodplain part of the study area (though a bog body of late Roman date was recovered from Amcotts in the nineteenth century).
- 2.2.1.5 The medieval settlement of North Conesby excavated between 1989 and 1991, is commonly referred to as Flixborough Nunnery, although it is neither at Flixborough nor likely to represent the remains of a nunnery. The scheduled site lies c.500m south of Flixborough village and the remains found within it, dating from the 8th-9th centuries AD, are of a settlement of some 39 buildings with evidence for literacy in the form of numerous styli (metal writing instruments). The scheduled area (sites 78, 82, 83) lies a short distance east of the Order Limits. The early medieval settlement here continued into the Norman period, when All Saints Church served the village of North Conesby (a deserted medieval village).
- 2.2.1.6 Many of the villages in the vicinity of the study area have medieval or early medieval origins, including Flixborough and Conesby and, to the west of the Trent, Amcotts. It is in the medieval period that there is the first substantial evidence for settlement in the floodplain, with documentary evidence indicating that Flixborough Staithe (site 7) was in existence by the fourteenth century at the latest. As in later centuries this was probably both a ferry crossing and a river port serving the village on the high ground to the east. Neap House (site 113) could also mark the site of a medieval riverside settlement, connected to Conesby on the higher ground to the east by a trackway. The river valley remained largely undrained throughout this period, providing rich grazing land for cattle and sheep during the summer months, but prone to flooding throughout the winter.
- 2.2.1.7 The landscape of the floodplain was transformed from the seventeenth century onwards by widespread drainage schemes. In the later eighteenth century these were enhanced to enable warping of the low-lying fields of the valley. The drainage of the floodplain enabled the development of scattered farms in the valley. Within the area of the Order Limits, though, there was little further change until the twentieth century. Early mapping shows the Ferry Boat Inn beside the ferry landing on the Flixborough side of the ferry crossing to Amcotts (site 7).
- 2.2.1.8 Change came with the creation of steelworks at Normanby in 1905, which were served by a light mineral railway connecting to Flixborough Staithe,

which led to the gradual development of industrial facilities by the river. The iron ore for the steelworks came from ironstone mines at Dragonby, and spoil heaps from the works eventually overflowed across much of the deserted settlement of North Conesby. In the post-war period a nitrogen fertilizer factory was built beside the river wharf, where an accident in 1974 caused an explosion which devastated the industrial estate, killing 28 people. The historic Ferry Boat Inn, which stood more or less in the location of the entrance to river wharf today, appears to have been destroyed at this time. The wooden remains of the historic ferry jetty (site 132) are believed to survive on the river front just outside the Order Limits.

## 2.3 Previous archaeological work

2.3.1.1 The following investigations undertaken within and on the periphery of the current Project area.

### *Lincolnshire Lakes*

2.3.1.2 Located immediately to the east of the M181, adjacent to the southern 1.2 km of the DHWPN route of the current project, a geophysical survey and trial trench evaluation was conducted by AOC Archaeology (2017a, 2017b). Upper and lower peat deposits were identified, above and below a sand. Post medieval warping deposits were also identified. Monolith samples from one trench revealed well preserved pollen. The lower peat was dated to the Mesolithic, consistent with the results from the adjacent Brumby Common West site.

### *Brumby Common Lane*

2.3.1.3 Located 300m west of the M181, this site has been subject to palaeoenvironmental assessment of borehole samples from which a detailed deposit model was constructed. A watching brief of geotechnical test pits was also undertaken (Allen Archaeology 2015c, 2015d, 2015e).

2.3.1.4 These investigations identified the potential for the survival of prehistoric ground surfaces buried at depth across the site, as well as peats of some palaeoenvironmental potential sealed by post medieval warping deposits. No archaeological features or artefacts were identified in the watching brief but recommendations were made for the location of evaluation trenches.

2.3.1.5 The northern and eastern part of the Brumby Common Lane site overlaps with the proposed route for the DHWPN.

### *Brumby Common West*

2.3.1.6 Located on either side of the M181, north of Brumby Common Lane, this site has been subject to desk-based assessment (Prospect Archaeology 2014), field walking and metal detecting (Allen Archaeology 2015a), geophysical surveys (Allen Archaeology 2015b, 2015c) and an archaeological evaluation. The evaluation consisted of seventeen trial trenches aimed at testing anomalies from the 2015 geophysical survey and

evaluating other parts of the site. Sixty-nine hand-dug test pits were also excavated to investigate the geological deposits on the site.

2.3.1.7 Some linear features were identified likely connected to modern agricultural activities or warping activities. Peat deposits indicative of wetland margins were identified in a number of trenches, the deepest of which was 1.10m thick (1.96 to 0.86m BGL). Geoarchaeological and palaeoenvironmental analysis was undertaken on a column sample from one trench on the east side of the M181 (Trent and Peak Archaeology 2021). The peat was shown to date from the Mesolithic to the early Bronze Age. Considerable variation in the underlying sub-surface topography suggests areas of intermittent deep sedimentation within depressions in the underlying Sutton Sands, rather than a single blanket peat deposit.

2.3.1.8 The western half of the Brumby Common West Site partially overlaps with the proposed route for the DHWPN.

## 2.4 Development Areas

2.4.1.1 The Project site has been divided into six different Development Areas, the locations of which are shown in Figure 4.

### 2.4.2 Area 1

2.4.2.1 Area 1 (A1) comprises the location of the proposed ERF plant and the CCUS at the south western corner of the Flixborough Industrial Estate. The Bunker Hall lies within the footprint of A1, which will require the excavation of a shaft up to 10m below current ground surface.

2.4.2.2 The Desk Based Assessment undertaken as part of the current Project found that Area 1 covered much of the former site of Flixborough Staithe (site 7), the medieval and post medieval river port, including the former site of the Ferry Boat Inn. The 1778 estate map shows detail of the historic layout of this site where a small group of buildings stood to the east of the ferry wharf (site 132). One building stands immediately east of the ferry wharf with two long buildings further east on the north side of Staither Road. Later Ordnance Survey mapping identifies this group of buildings as Ferry Boat Inn, which was situated on and immediately south of the current entrance to the river port from Staither Road.

2.4.2.3 Ground Penetrating Radar (GPR) survey of this area in December 2021 as part of the current impact assessment successfully revealed a regular arrangement of buried structural remains that closely match building and road layouts shown on historical maps.

2.4.2.4 A1 lies in the floodplain, where there is also potential for deposits containing prehistoric archaeology to be buried under and within thick layers of alluvium. The recently completed geoarchaeological borehole survey carried out as part of the current Project's baseline investigation has identified peat deposits likely to date from the early Holocene to the Bronze Age buried under more than 5 metres of alluvium, and extending to 11m

below ground level (BGL) (AOC 2023). Rangefinder radiocarbon dates on the top and bottom of the peat in Area 1 have shown these deposits to date from the late Mesolithic to Bronze Age.

### 2.4.3 Area 2

- 2.4.3.1 Area 2 (A2) covers the strip of land running south from the ERF site to the B1216. A concrete block manufacturing facility and a plastic recycling facility will be built at its northern end with a new railhead, visitor centre and access road to the B1216, and the creation of wetland landscape to the south. As part of the wetland area, a number of ponds are also proposed for Area 2, which may involve some excavation. The location of these proposed ponds, and whether or not they require excavation, is not yet known.
- 2.4.3.2 Only one potential heritage asset was identified in A2 during the Desk Based Assessment. This is the former brick kiln, shown on the 1778 estate map to the south of the historic ferry crossing. Fieldwalking in 1997 for the Humber Wetland Project recorded two flint flake finds in two different locations within Development Area 2 (site 137 and site 138, Figure 3).
- 2.4.3.3 A2 lies in the western side of the modern floodplain, adjacent to the river Trent. The recent geoarchaeological evaluation included twelve new boreholes and one ERT transects within A2 confirming that it almost entirely lies within the Holocene alluvial zone, referred to as Archaeological Zone 1.
- 2.4.3.4 Archaeological Zone 1 is characterised by thick alluvial deposits formed under wetland and flood conditions (AOC 2022c). These deposits consist of an upper alluvial silt/warp deposit that has no recognisable horizons measuring 2-6m thick over most of A2, under which is a thick organic/peat layer which also reaches depths of >2m over most of A2.
- 2.4.3.5 The recently completed geoarchaeological borehole survey carried out as part of the current Project's baseline investigation has shown, however, that the alluvium/warp deposit is thinner on the southern edge of A2.
- 2.4.3.6 The archaeological potential of the northern and central part of A2 is low as prior to the drainage of this wetland from the 17<sup>th</sup> Century onwards it would have been largely unsuitable for human occupation or agriculture (AOC 2022c).
- 2.4.3.7 There remains some potential for prehistoric archaeology to be buried within the organic remains known to extend across A2, though this type of evidence (wooden trackways, boats, lithic scatters and hearths) is more likely to be concentrated on the edges of known wetland towards the southern edge of A2 and into A3 and to the east of A2 (AOC 2022c).
- 2.4.3.8 Rangefinder radiocarbon dates from the top and bottom of organic deposits within Area 2 at c. -0 and -6.5m OD have shown this deposit to have



formed from the late Mesolithic to the Iron Age (AOC53056\_BH6, AOC, 2023).

#### **2.4.4 Area 3**

- 2.4.4.1 Area 3 (A3) stretches from the southern end of the core Project area and covers the Southern DHPWN and the western section of the Northern DWPWN (east of the junction of the B1216 and A1077). It mainly consists of a linear strip alongside existing roads but also encompasses the energy storage and refuelling station to the north of the B1216 and a number of wider areas alongside the DHPWN route for construction laydown and tunnel excavation. It extends over a total area of 43.6 hectares.
- 2.4.4.2 A number of sites were identified in and on the periphery of A3 during the DBA for the current Project, including three HER listed crop marks identified through air photo analysis (sites 11a, 11b and 13), and a second World War searchlight battery (site 10).
- 2.4.4.3 Geoarchaeological modelling conducted as part of the current impact assessment has shown there is the potential for relatively shallow prehistoric/Roman remains to survive below alluvium in this area (AOC 2021; AOC 2022c).
- 2.4.4.4 Geophysical survey within Area 3 identified a number of linear anomalies that resemble possible ditch features, several weakly positive, discrete anomalies that may be pit features and a number of other weakly positive anomalies.
- 2.4.4.5 Nearly all these features were targeted by trial trench evaluation and found to be natural in origin.
- 2.4.4.6 Geoarchaeological investigations off Brumby Common Lane (Allen Archaeology 2015e) identified the edge of the lower peat deposit in part of the DHPWN route, including palaeosols and higher lying sands. An adjacent trial trench evaluation showed that the same lower peat formed during the Mesolithic to the early Bronze Age (WYAS 2021).
- 2.4.4.7 The updated deposit model which included six new boreholes on the northern edge of the proposed energy storage and refuelling facility indicates that A3 lies within an of higher archaeological potential where seasonal occupation would have been possible through much of the Holocene. This is referred to as Archaeological Zone 2 (AOC 2022c).
- 2.4.4.8 The new geoarchaeological data also shows that undifferentiated Holocene alluvium is also significantly shallower here, rendering A3 more suitable for trial trench evaluation.

#### **2.4.5 Area 4**

- 2.4.5.1 This area is situated on the (west-facing) eastern slopes of the Trent Valley immediately east of the Flixborough Industrial Estate, in a field to the south of First Avenue (which runs east-west through the middle of the industrial



estate) and extends around the northern edge of the industrial estate to the River Trent in the west.

- 2.4.5.2 These sandy slopes are well known to be rich in archaeological remains from all periods from later prehistory onwards. Excavations at Willow Halt sand quarry in a similar topographical situation 200m to the east encountered buried remains of Neolithic, Bronze Age, Iron Age and Roman date. Surface finds of prehistoric worked flint have also been recorded in this area.
- 2.4.5.3 A further 500m to the south east, the scheduled monument of Flixborough Saxon Nunnery and site of All Saints medieval church and burial ground was discovered during works associated with commercial sand pit. Prior to archaeological excavation, two metres of windblown sand overburden (aeolian reworking of post-glacial sands) had to be removed by mechanical excavation from above the archaeological remains. This overburden preserved but also concealed the site from view before it was exposed by sand quarrying.
- 2.4.5.4 The geoarchaeological borehole survey has shown, however, that if they are present at all, the windblown sand deposits in the location of the proposed Gas AGI facility and adjacent sub-station are likely to be very shallow (AOC pers. comm.).
- 2.4.5.5 Geophysical survey conducted as part of the current assessment programme identified evidence for buried archaeological features throughout Area 4 (A4).
- 2.4.5.6 Subsequent trial trench evaluation found that nearly all these features were natural in origin.

## **2.4.6 Area 5**

- 2.4.6.1 Area 5 comprises the Northern DHPWN. Here, the new utilities (insulated supply and return pipework) will be buried adjacent to the road. No trial trenching is proposed in this Development Area.

## **2.4.7 Area 6**

- 2.4.7.1 Area 6 refers to the footprint of a flood bund that will be constructed in front of the poultry farm situated less than 400m north of the Skippingdale Retail Park. Development Area 6 lies 500m southwest of the scheduled Ancient monument, Flixborough Saxon Nunnery (sites 78, 82, 83). Given the location of the proposed flood bund at the base of the slope of wind-blown sand and the proximity of the potential Iron Age/Roman cropmark site (site 9) and prehistoric findspots (site 8 & 81), there is potential to encounter relatively shallow archaeology in this area.
- 2.4.7.2 A single borehole sample (AH27) has identified a shallow 0.35m thick organic layer overlying a sand deposit likely to equate to the windblown sands known from elsewhere (AOC 2022b).

2.4.7.3 Geophysical anomalies identified in Area 6 were found to be natural in origin.

## 2.5 Previous archaeological surveys and assessments as part of the NLGEP DCO

2.5.1.1 Following guidance outlined in Section 1.5, a phased approach to archaeological resource baseline gathering and assessment was taken at the proposed NLGEP. This included a Desk Based Assessment (ERM 2021), geoarchaeological investigation (AOC 2021), electrical resistivity tomography (ERT) (Wessex Archaeology 2023a), deposit modelling (AOC 2023), and geophysical survey (Wessex Archaeology 2023a).

2.5.1.2 The size and complexity of the Proposed Development, together with the relatively unknown nature of the archaeological potential of the area, meant that the fieldwork and report writing has been undertaken over a two year period and much of it undertaken after DCO submission in May 2022 (table 1).

**Table 1 Archaeological surveys at the proposed NLGEP 2019-2023**

Date	Survey	References
April 2019-October 2021	Site visits and desk-based assessment	ERM 2021
November 2021	Geotechnical watching brief and preliminary deposit model	AOC 2021
October 2021-February 2022	Geophysical survey I	Wessex Archaeology 2022
April 2022-June 2022	Geoarchaeological survey I	AOC 2022a (WSI) AOC 2022b (Interim)
May 2022-April 2023	Geophysical survey II & ERT survey	Wessex Archaeology 2023a
September 2022-April 2023	Geoarchaeological survey II & radiocarbon dating	AOC 2023
December 2022-April 2023	Trial trench evaluation I	Wessex Archaeology 2023b

### 2.5.2 Geophysical survey

2.5.2.1 The geophysical survey consisted of magnetic surveys and ground penetrating radar.

2.5.2.2 Two types of magnetic survey were undertaken, including detailed gradiometer survey over 29.5 ha of agricultural land (Areas 3, 4 and 6) and

caesium vapour magnetometry survey across 3.5 ha within Area 3. Key findings of these surveys were the identification of possible Romano-British or Iron Age square-sided enclosures within Area 4 and a possible Bronze Age circular enclosure within Area 6. Ridge and furrow, post medieval boundaries and possible extraction and refuse pits were also identified.

- 2.5.2.3 Ground Penetrating Radar (GPR) survey of the historic inland port area at Flixborough Staithe (Area 1) identified a regular arrangement of possible buried structural remains that closely match building and road layouts shown on historical maps. Using timeslice data, these results also demonstrate that some of these remains lie close to the surface, <0.5m below ground level (bgl). Most significantly, in terms of assessing the archaeological potential of the area, the results indicate multiple building alignments over several phases.
- 2.5.2.4 An electrical resistivity tomography (ERT) was also undertaken and reported within the geophysical survey report in Appendix B (Wessex Archaeology 2023a). This survey was, however, designed as part of the geoarchaeological investigation, so discussion of the results can also be found in Appendix C (AOC 2023) and are summarized in the following section.

### **2.5.3 Geoarchaeological survey**

- 2.5.3.1 The initial phase of geoarchaeological investigation at the proposed NLGEP site, consisted of a watching brief of ground investigations (coring), and the development of a deposit model using historic data (AOC 2021). This investigation enabled a series of geoarchaeologically distinct zones to be recognised within the Application Land, which were used to inform both the design of further surveys and the impact assessment presented in ES Chapter 12 (document ref 6.2.12; examination ref APP 060).
- 2.5.3.2 The more recent geoarchaeological investigation, the full combined report of which is appended to this document as Appendix C (AOC 2023), was itself carried out over two phases in the spring and autumn of 2022. It consisted of three new core transects, two in Area 2 across the floodplain and its margins, and one in Area 4 on the high ground to the east of Flixborough Industrial estate. Single boreholes were also located within Area 1 and the southern part of Area 3.
- 2.5.3.3 A single borehole in Area 1 in the Area of Flixborough Staithe confirmed the findings from the preliminary deposit model, locating a thick peat deposit under more than 5m of alluvium, and extending to 11m bgl.
- 2.5.3.4 The two transects in the northern and southern part of Area 2 consisting of twelve new boreholes confirmed the model as described in the preliminary investigation but importantly also provided significantly higher resolution depth and thickness plots that have been crucial for assessing its archaeological potential and designing further survey .

- 2.5.3.5 Supplemented by two nearby ERT transects, the results confirmed that Area 2 lies almost entirely within Archaeological Zone 1, which is characterised by alluvial silt/warp deposit that has no recognisable horizons and measuring 2-6m thick over most of A2, under which is a thick organic/peat layer which also reaches depths of >2m over most of A2.
- 2.5.3.6 The investigations found that there remains some potential for prehistoric archaeology to be buried within the organic remains known to extend across A1 and A2 (archaeological zone 1), though this type of evidence (wooden trackways, boats, lithic scatters and hearths) is more likely to be concentrated on the edges of known wetland towards the southern edge of A2 and into A3 and to the east of A2.
- 2.5.3.7 Rangefinder radiocarbon dates of the peat deposits in Area 1 and Area 2 have now shown this peat deposit to date from the late Mesolithic to the Iron Age, which correlates to dates obtained by previous research.
- 2.5.3.8 The transect through Area 4 demonstrated that the Holocene windblown sands thought to possibly extend here and seal archaeological deposits were likely to be very shallow if present at all. The cores also identified natural Pleistocene gravel deposits at significantly shallower depths than anticipated.
- 2.5.3.9 Two optically stimulated luminescence (OSL) samples from the likely-Pleistocene age Sutton Sands, remain with the specialist laboratory. The final geoarchaeological report, included here as Appendix C will be updated and circulated to all interested parties, including NLC and Historic England, as soon as these dates are available.
- 2.5.3.10 Four ERT transects were recorded, one on the higher lying ground in Area 4 in the east of the Application Land (archaeological zone 3) and three within Area 2 and the northern part of Area 3, through the floodplain adjacent to the River Trent (archaeological zone 1) and the floodplain margin (archaeological zone 2). All transects were positioned perpendicular to the river. Transect 3 was split into 3 parts to avoid large drainage ditches. The results are presented in a series of profile plots, which at a broad level match the deposit model predictions and the results of the trial trench evaluation. Detailed interpretations can be found in Appendix B, but key findings for assessing the archaeological potential of the Application Land, are as follows:
- 2.5.3.11 Transect 1 broadly matched the findings of the geoarchaeological investigation in Area 4, importantly confirming that the thick Holocene aeolian sand deposits were not present in the western half of the transect where the Gas AGI and sub-station are located.
- Transect 2 identified the thick body of alluvium and peat that characterises the wetland deposits of archaeological zone 1, and identifying a clear step in the bedrock likely to represent the former extent of the River Trent.

- Transect 3, split into 3a, 3b, and 3c is the longest transect positioned from the apex of the bend in the river, across the centre of Area 2 to the eastern edge of the Application Land in Area 6, and provides the most complete picture across the floodplain. It clearly shows the Holocene alluvium and peat becoming thinner and the underlying sands rising up towards the east, away from the river. The eastern part of transect 3 (3c) matches closely the findings from the trial trench evaluation, where sand deposits are intermittently found very close to the surface within Area 3.
- Transect 4 also supports and provides more complete understanding of the undulating sand deposits mapped by the core samples, and also confirms the observations from trial trenching that the sand deposits dip sharply under the Holocene peat and alluvium.

## 2.5.4 Trial trench evaluation

- 2.5.4.1 One hundred and sixty-eight trenches were excavated, 101 of which were aimed at assessing the archaeological potential of possible features identified through geophysical survey. Two trenches were excavated to evaluate locations identified by historical sources and two to evaluate areas adjacent to known crop marks. A further 63 trenches were excavated to evaluate areas without previously identified features.
- 2.5.4.2 Informed by the interim geoarchaeological reports (AOC 2022b, 2022c), and following consultation with NLC's archaeological advisor, a number of trial that were now shown to be located in areas with >2m of undifferentiated alluvium/warp silts, were scoped out of the evaluation.
- 2.5.4.3 The detailed deposit model provided valuable depth and thickness data which allowed trenches to target the edge of the former wetland where alluvium/warp deposit is thinner on the southern edge of Area 2, where trial trenches had more likelihood of reaching the surface of the peat and the underlying sand where, as noted above, there is thought to be greater archaeological potential at the margins of the wetlands.
- 2.5.4.4 Nearly all the possible structural remains revealed by GPR survey lie directly beneath the current riverfront road that connects Stather Road to First Avenue and were thus considered practically unsuitable for trial trench evaluation.
- 2.5.4.5 Trenches were also originally positioned to sample the rest of Area 1, located throughout the industrial estate between First Avenue and Stather Road and immediately to the south of Stather Road. Subsequent discussions between interested parties including the HMS Port managers indicated that it would not be possible to undertake these trenches at this time for access reasons. Further evaluation investigations are, however, now planned in this location in the summer of 2023 (ERM 2023).
- 2.5.4.6 The peat deposits of high palaeoenvironmental potential are found at depths unsuitable for trial trench evaluation in Area 1 and in the northern

part of Area 2. Their extent and depth is, however, well understood from a large number of borehole observations in this area.

- 2.5.4.7 In general, the trial trench evaluation found a poor correlation between sub-surface archaeology and that predicted by the geophysical survey. Both the large square-sided features identified as likely Romano-British or Iron Age enclosures and the penannular anomaly thought to be a possibly Bronze Age ring ditch, turned out to be natural magnetic variation.
- 2.5.4.8 Seventeen of the evaluation trenches were, however, found to contain archaeological features.
- 2.5.4.9 A number of archaeological features have not been issued asset numbers and are not considered further in the assessment as they are part of the modern or post-medieval agricultural landscape. This includes:
- a linear ditch likely to be a modern agricultural feature in the southern part of Area 2 (Trench 209);
  - a furrow likely to be associated with post-medieval agricultural practices in the southern part of Area 3 (Trench 155);
  - a linear hedgerow feature in the southern part of Area 3 associated with the post-medieval or modern landscape (Trench 155);
  - a linear ditch likely to be a modern agricultural feature in the northern part of Area 4 (Trench 7);
  - two parallel linear features in the northern part of Area 4 likely to be associated with post-medieval agricultural practices (Trench 11);
  - an isolated gully feature in the north eastern part of Area 4 (Trench 7); and
  - a pit containing an animal burial that likely dates to the modern period in the south eastern part of Area 4 (Trench 37).
- 2.5.4.1 Potential for further investigation was identified in seven locations, six of which were newly identified and have been issued asset new numbers in the gazetteer (Table 2). This includes:
- a posthole alignment and a curvilinear ditch in the north east of Area 3 (site 139);
  - one linear ditch feature found in the vicinity of known crop mark sites in the northern part of Area 3 (site 140);
  - a linear ditch that corresponds to a known crop mark and may be part of a sub-rectangular enclosure in the northern part of Area 3 (site 13);
  - a linear ditch that is sealed by a peat deposit in the middle of Area 3 (site 141)
  - a pit and a possible enclosure in the south of Area 3 (site 142);
  - two post-medieval refuse pits in the north east of Area 4 (site 143); and
  - a pit and curvilinear gully that is sealed by the peat deposit in Area 6 (site 144).



- 2.5.4.2 One trench targeting a known crop mark site (site 13) confirmed that it corresponded to a buried linear ditch feature.
- 2.5.4.3 In general, the trial trench evaluation confirmed the geoarchaeological results and the broad characterisation of zones of archaeological potential.

### 3. AIMS AND OBJECTIVES

- 3.1.1.1 The aim of the current document is to present an overall strategy for the planning of evaluation, mitigation and monitoring of archaeological work in the post-examination phase at the proposed NLGEP and to set a framework for WSI development.
- 3.1.1.2 The strategy for evaluation, mitigation and monitoring works at the proposed NLGEP presented in this document has been developed in alignment with the regional research framework for the east midlands, as defined by the East Midlands Historic Environment Research Framework (2020): (<https://researchframeworks.org/emherf/>). See also Cooper (2006) and Knight et al. (2012) for earlier versions.

## 4. ROLES AND RESPONSIBILITIES

### 4.1 The Applicant and the archaeological representative

4.1.1.1 The Applicant will engage an archaeological consultant to represent them throughout the post-examination and post-determination stages of archaeological investigation. The consultant will be known as the *archaeological representative* in the OAMS and in subsequent WSI's. The archaeological representative, together with the *archaeological clerk of works*, is responsible for the maintenance of the OAMS and ensuring that the archaeological programme keeps pace with the construction schedule.

### 4.2 Principal contractor

4.2.1.1 The principal contractor will be responsible for the main works schedule. It is the role of the principal contractor to be aware of all archaeological works as set out in this OAMS. Any changes to the scope or schedule of the construction works will be communicated by the principal contractor to the archaeological representative as soon as possible so that they can update the OAMS and inform NLC's HEO.

### 4.3 Archaeological contractor

4.3.1.1 The *archaeological contractor* will be employed by the principal contractor and will be responsible for, (but not limited to) the following:

- production of WSI's.
- programming and resourcing of archaeological field teams.
- undertaking archaeological fieldwork.
- providing health, safety, and welfare.
- facilitating NLC monitoring and site visits.
- submitting interim and final reports.
- archiving and digital deposition.

### 4.4 Archaeological clerk of works

4.4.1.1 A project representative, employed by the Applicant or other main developer, is responsible for, (but not limited to) the following:

- ensuring the OAMS and the schedule of archaeological works is up to date.
- ensuring any changes to the construction schedule are communicated to all other parties.

## 5. WRITTEN SCHEMES OF INVESTIGATIONS

- 5.1.1.1 Written Schemes of Investigation can be asset specific or survey specific. These can be referred to as Asset Specific Written Schemes of Investigation (AS-WSI's) or Site Specific Written Schemes of Investigation (SS-WSI's).
- 5.1.1.2 Each WSI will include a relevant archaeological and historical background for the specific investigation described. It is expected that the WSI is produced up to date baseline knowledge gathered during pre-examination research and any subsequent stages of research that have been undertaken.
- 5.1.1.3 The aims, objectives and methods of the WSI's that follow from this document are expected to be developed in accordance with the regional research framework for the east midlands, as defined by the East Midlands Historic Environment Research Framework (2020 [REDACTED] with reference to earlier versions Cooper (2006) and Knight et al. (2012).
- 5.1.1.4 Key regional research themes that evaluation and mitigation works at the NLGEP may contribute to, include the following:
- Mesolithic 2.2.2: How were sites distributed across low-lying and upland areas, and in particular how many sites might be concealed beneath alluvium, colluvium and other masking deposits or beneath the sea?  
[REDACTED]
  - Neolithic and Early to Middle Bronze Age 3.3.4: When did the first field and boundary systems develop, how did this vary regionally and what processes may underlie their development?  
[REDACTED]
  - Late Bronze Age and Iron Age 4.6.1: Can we shed further light upon the development of field and boundary systems?  
[REDACTED]
  - Romano-British 5.4.4: How did field and boundary systems relate to earlier systems of land allotment, and how did these boundary networks develop over time?  
[REDACTED]
  - High medieval 7.7.6: How best may we enhance study of the origins and development of early land reclamation and drainage, particularly in Lincolnshire?  
[REDACTED]

5.1.1.5 Each WSI will include as a minimum and where appropriate, a detailed description of how the following aspects of the work will be undertaken:

- Locational surveying
- Excavation
- Recording
- Finds procedure including conservation of artefacts
- NLC monitoring arrangements
- Procedure for dealing with human remains
- Stop work procedure
- Post-excavation assessment
- Finds analysis
- Environmental sample analyses
- Reporting and dissemination of findings, including publication of significant results
- Preparation and deposition of site archive
- Digital archiving: OASIS
- Health and safety
- Welfare arrangements
- Programming, staffing and resourcing
- Environmental protection

5.1.1.6 Each WSI will include figures showing any archaeological works at an appropriate scale using Ordnance Survey base maps.

## 6. PROPOSED EVALUATION AREAS

### 6.1 Introduction to the archaeological evaluations

6.1.1.1 Archaeological evaluation is required at five locations within the NLGEP Order Limits. These are described from north to south. For each heritage asset/site, the following is provided:

- Description of the asset
- Outline of the potential impacts
- Site specific aims and objectives
- Outline of the proposed archaeological works

6.1.1.2 An explanation of how the archaeological investigations fit into the construction programme is also provided with a view to this being updated as other linked works are completed.

6.1.1.3 A specific section is included for each asset to enable the strategy document to be updated when the work is complete, explaining which elements may require updating following completion of the works, i.e. adding/revising mitigation section and monitoring section as required.

### 6.2 General aims and objectives of archaeological evaluations

The archaeological evaluations described in this document aim to:

- Establish the presence or absence of archaeological remains within the described site or area.
- Establish the location, extent, date, character, condition, significance and quality of archaeological remains within the described site or area.
- Establish whether further investigation of the identified archaeological remains is necessary to mitigate the impact of the project on the heritage asset.
- Establish whether the evaluation has been satisfactorily achieved or whether further evaluation is required before a decision on mitigation stage archaeological works is taken.
- Establish the potential for contributing through further research to regional research frameworks for the east midlands, as defined by the East Midlands Historic Environment Research Framework (2020): (<https://researchframeworks.org/emherf/>). See also Cooper (2006) and Knight et al. (2012).

### 6.3 Area 1a: Site 7 and Site 132 – Flixborough Staithe and ferry

#### 6.3.1 Description

6.3.1.1 This asset consists of possible medieval/post-medieval foundations and other buried remains associated with historic port, located in and possibly



around the entrance to Flixborough industrial, though possibly historically more extensive.

- 6.3.1.2 The Desk Based Assessment undertaken as part of the current Project found that Area 1 covered much of the former site of Flixborough Staithe (site 7), the medieval and post medieval river port, including the former site of the Ferry Boat Inn. The 1778 estate map shows detail of the historic layout of this site where a small group of buildings stood to the east of the ferry wharf (site 132). One building stands immediately east of the ferry wharf with two long buildings further east on the north side of Staither Road. Later Ordnance Survey mapping identifies this group of buildings as Ferry Boat Inn, which was situated on and immediately south of the current entrance to the river port from Staither Road.
- 6.3.1.3 Ground Penetrating Radar (GPR) survey of this area in December 2021 revealed what appears to be a regular arrangement of buried structural remains that closely match building and road layouts shown on historical maps.
- 6.3.1.4 Using timeslice data, these results also demonstrate that the remains lie close to the surface, <0.5m below ground. Most significantly, in terms of assessing the archaeological potential of the area, the results indicate multiple building alignments over several phases, and thus a high likelihood that buried medieval structures are present.
- 6.3.1.5 The GPR survey also identified two sets of irregular discrete features (1001 & 1002) and two linear features on the western and south western sides of the survey area, respectively.
- 6.3.1.6 There have been no intrusive investigations of this site to date due to access reasons.

### **6.3.2 Potential impacts**

- 6.3.2.1 The Work Plans for the proposed NLGEP show that the ferry wharf (site 132) lies outside of Order limits. As shown on Works Plan A (Figure 4), the eastern part of site 7 lies just within the ERF development area but the main part of the site, where GPR survey has identified likely multi-phased structural remains, lies just outside the ERF area to the west (NLGEP 2022a).
- 6.3.2.2 As shown on Figure 4, however, these possible structural remains lie within the proposed railway reinstatement corridor (Works Plan C, NLGEP 2022c). The impact of railway itself is likely to be limited in lateral extent to approximately 2.5m with a relatively shallow maximum foundation depth of 0.5m below ground level (bgl).
- 6.3.2.3 Due to the limited lateral and vertical extent of the railway reinstatement works, there is potential for avoiding buried remains.

### 6.3.3 *Site specific aims and objectives*

- Identify the extent of the possible multi-phased buildings plotted in the GPR survey.
- Identify the age, condition and cultural heritage value of the possible multi-phased buildings plotted in the GPR survey.
- Assess the character of the remains and consider whether the identified remains can be preserved in-situ.
- Assess the other extent, age, character and condition of other buried remains identified by GPR survey.
- Assess the wider ERF area for the survival of shallow remains (<1.20m bgl) that may be associated with the historic occupation of Flixborough Staithe and its vicinity.

### 6.3.4 *Proposed archaeological works*

- 6.3.4.1 Two areas of investigation have been delimited on Figure 4, both of which are shown in blue.
- 6.3.4.2 The smaller area to the west, measuring 1ha, surrounds the historically known location identified through desk-based assessment (site 7). Within this area, a number of trial trenches will be required to achieve the above objectives. At least 2-3 trenches will be required in a north east to south west orientation across the possible multi-phase buildings to obtain an adequate assessment. All other features identified by GPR will also require trial trench evaluation.
- 6.3.4.3 The second area that requires evaluation, is situated to the north and east of the smaller area and measures 5ha. It is bounded to the north by First Avenue and in the east by Belwyn Drive, where the proposed ERF is to be sited. A representative sample of the surface area by trial trenching will be agreed with NLC Historic Environment Officer.
- 6.3.4.4 Though it appears to be well outside of the direct impacts of the project works, the surviving fabric of Flixborough Ferry (site 132) will also be recorded at low water to form a permanent record of its form and current condition.

### 6.3.5 *Timing of archaeological works*

- 6.3.5.1 In order to inform potential design changes that may allow this heritage asset to be preserved *in-situ*, and to ensure this work is carried out ahead of works planned as part of Phase 1 of the NLGEP construction programme (NLGEP 2022d), the evaluation of Area 1a is provisionally scheduled for summer/autumn 2023 (Appendix B).

## **6.4 Area 1b: Site 124 – former brick kiln**

### **6.4.1 Description**

- 6.4.1.1 This asset consists of possible structural remains other buried remains associated with a former brick kiln known from historic maps. The 1778 estate map shows a brick kiln (site 124) formerly lay beside the track leading south along the river from Flixborough Staithe. The location of this site is shown on Figure 4.
- 6.4.1.2 There have been no non-intrusive or intrusive investigations of this site to date due to access reasons.

### **6.4.2 Potential impacts**

- 6.4.2.1 The main potential impact on this heritage asset will be from the construction of the proposed railhead as shown on Works Plans C2 (Figure 4). In addition a number of other work areas partially extend into the evaluation area around site 124, including some highways work, landscape works and utilities construction shown on Works Plans A (NLGEP 2022a).
- 6.4.2.2 Historical satellite images show there is also likely to be some prior disturbance and possibly contamination of the area around site 124 due to previous industrial land use.
- 6.4.2.3 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### **6.4.3 Site specific aims and objectives**

- 6.4.3.1 The site specific aims and objectives are in line with the general evaluation aims and objectives.

### **6.4.4 Proposed archaeological works**

- 6.4.4.1 A provisional evaluation area of 0.4ha has been delimited around the location known from historic mapping (Figure 4). An appropriate percentage sample of the evaluation area will be agreed with NLC Historic Environment Officer. Trial trench excavation will follow the methods agreed with NLC's Historic Environment Officer and set out in a site specific WSI.

### **6.4.5 Timing of archaeological works**

- 6.4.5.1 Archaeological evaluation of site 124 will be scheduled to commence in sufficient time to allow for fieldwork reporting and the planning and implementation of any mitigation works to be completed ahead of the railhead construction, which is scheduled to commence in Phase 1 (NLGEP 2022d). Therefore a provisional date of January to March 2024 has been scheduled (Appendix B). Precise timing will, however, depend on access and the relocation of industrial storage.

## 6.5 Area 3c: Site 139 – buried archaeological features

### 6.5.1 Description

- 6.5.1.1 Site 139 consists of a linear alignment of four sub-rectangular postholes and curvilinear ditch, located to the west of Skippingdale Roundabout. It was identified in two adjacent evaluation trenches (Trenches 115 and 116) in the north eastern part of Area 3 to the north of Phoenix Parkway (Figure 5) (Wessex Archaeology 2023b).
- 6.5.1.2 No dating evidence was retrieved from the trial excavations. But three crop mark sites, sites 11b and 12 are located close to site 139, suggesting the latter may be associated with these possible late prehistoric settlement sites. A modern origin for this site cannot however be ruled out at this stage (Wessex Archaeology 2023b).

### 6.5.2 Potential impacts

- 6.5.2.1 The main potential impact on this heritage asset will be from the construction of the proposed DHPWN, the works area for which is shown on Works Plans B (Figure 5) (NLGEP 2022b). Some landscaping and ecological works are also proposed as shown on Works Plans A (NLGEP 2022a).
- 6.5.2.2 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### 6.5.3 Site specific aims and objectives

- 6.5.3.1 The specific aims of this further evaluation is to obtain a larger excavated sample in order to better understand this site and obtain dateable material from these buried features.

### 6.5.4 Proposed archaeological works

- 6.5.4.1 Four provisional evaluation areas have been delimited on either side of the two previous evaluation trenches 115 & 116 (Figure 5) to provide a larger excavated sample of the buried features.
- 6.5.4.2 The area will be carefully machine stripped in spits down to the top of the known features and the mitigation area opened out from there.
- 6.5.4.3 Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.
- 6.5.4.4 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's Historic Environment Officer and set out in a site specific WSI.

6.5.4.5 The total area proposed for mitigation is 175m<sup>2</sup> although this may be expanded following consultation with NLC's HEO.

### **6.5.5 Timing of archaeological works**

6.5.5.1 Archaeological evaluation of site 139 is provisionally scheduled for summer/autumn 2023 (Appendix B).

## **Area 3b: Site 140 – buried archaeological features**

### **Description**

6.5.5.2 Site 140 is a new asset number assigned to a linear ditch feature identified in evaluation trenches 103 and 102 in the northern part of Area 3 to the north of Phoenix Parkway (Figure 5). The feature was, however, only recognised in the trench section within trench 102 (Wessex Archaeology 2023b).

6.5.5.3 No dating evidence was retrieved from the trial excavations. But three crop mark sites, sites 11a, 11b and 13, are known in the vicinity of site 140 suggesting the latter may be associated with these possible late prehistoric settlement sites. A modern origin for this site cannot however be ruled out at this stage (Wessex Archaeology 2023b).

### **Potential impacts**

6.5.5.4 The main potential impact on this heritage asset will be from the construction of the proposed DHPWN, the works area for which is shown on Works Plans B (Figure 5) (NLGEP 2022b). Some landscaping and ecological works are also proposed as shown on Works Plans A (NLGEP 2022a).

6.5.5.5 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### **Site specific aims and objectives**

6.5.5.6 The specific aims of this further evaluation is to obtain a larger excavated sample in order to better understand this site and obtain dateable material from this buried features.

### **Proposed archaeological works**

6.5.5.7 A provisional evaluation area has been delimited on the western side of the previous evaluation trenches 103 (Figure 5) to provide a larger excavated sample of the buried ditch feature. This provisional area, which measures 70m<sup>2</sup> will be carefully machine stripped in spits down to the top of the ditch and the mitigation area opened out from there.

6.5.5.8 Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.

6.5.5.9 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's HEO and set out in a site specific WSI.

6.5.5.10 The size of the mitigation area may be expanded following consultation with NLC's Historic Environment Officer.

### **6.5.6 Timing of archaeological works**

6.5.6.1 Archaeological evaluation of site 140 is provisionally scheduled for summer/autumn 2023 (Appendix B).

## **6.6 Introduction to archaeological mitigation**

6.6.1.1 Archaeological mitigation by excavation and recording is required in five locations within the NLGEP Order Limits. These are described from north to south. For each heritage asset/site, the following is provided:

- Description of the asset
- Outline of the potential impacts
- Site specific aims and objectives
- Outline of the proposed archaeological works

6.6.1.2 An explanation of how the archaeological investigations fit into the construction programme is also provided with a view to this being updated as other linked works are completed.

6.6.1.3 A specific section is included for each asset to enable the strategy document to be updated when the work is complete, explaining which elements may require updating following completion of the works, i.e. adding/revising mitigation section and monitoring section as required.

## **6.7 General aims and objectives of archaeological mitigation excavations**

6.7.1.1 The archaeological mitigation excavations described in this document aim to:

- Establish the location, extent, date, character, condition, significance and quality of archaeological remains within the proposed mitigation area.
- Determine the significance of the archaeological remains and consider whether it may be feasible to preserve in-situ.
- (Where preservation of archaeological features in situ is not feasible), excavate and record identified archaeological features and deposits to an appropriate level.



- Establish the potential for contributing through further research to regional research frameworks for the east midlands, as defined by the East Midlands Historic Environment Research Framework (2020): (<https://researchframeworks.org/emherf/>). See also Cooper (2006) and Knight et al. (2012).

## 6.8 Area 1a: Site 143 – thick peat deposits

### 6.8.1 Description

- 6.8.1.1 Geoarchaeological deposit modelling has shown that thick organic deposits - primarily peat - dating to between the late Mesolithic and early Iron Age extend over most of Areas 1 and 2, including the full extent (80m x40m) of the proposed underground storage area, known as the Bunker Hall (Figure 4).
- 6.8.1.2 These peats are of high palaeoenvironmental potential and could also include preserved ground surfaces with archaeological remains such as flint scatters, wooden boats, trackways or hearths.

### 6.8.2 Potential impacts

- 6.8.2.1 The excavation of a substantial shaft to this depth will disturb stratified organic deposits of palaeoenvironmental significance, and potentially prehistoric archaeological material.
- 6.8.2.2 The Bunker Hall shaft will be excavated to approximately -5m AOD and will therefore likely remove over 2m of peat (AOC 2023).
- 6.8.2.3 As the thick peat deposits are typically buried under more than 2m of alluvium and most of the proposed construction for the ERF and associated facilities will consist of piled foundations, the Bunker Hall site represents a rare opportunity to mitigate the impact on these deposits.

### Site specific aims and objectives

- 6.8.2.4 To observe the peat deposit closely over a large enough surface area to potentially locate preserved archaeological land-surfaces and preserved organic material such as worked wood.
- 6.8.2.5 To observe larger exposed vertical sections through the peat and to take bulk environmental samples and geoarchaeological column samples.

### 6.8.3 Proposed archaeological works

- 6.8.3.1 Investigation of the peat deposits will require a hybrid mitigation type combining monitoring and geoarchaeological sampling/investigation of peats. Specialist advice will be sought from Historic England regarding the precise form this work should take.



- 6.8.3.2 Due to depth of potential archaeology in this area, archaeological works will most likely be undertaken once the construction excavation area has been secured and shored up with sheet piles.
- 6.8.3.3 Archaeological works will involve close supervision of machine stripping of an appropriate sample of the peat in 10-20 cm spits.
- 6.8.3.4 Standing sections will also be left through the sequence to enable geoarchaeological samples to be taken as appropriate.
- 6.8.3.5 A programme of palaeoenvironmental analyses, interpretation, publication and public dissemination of results will also be included in the site specific WSI developed for site 143.
- 6.8.3.6 A specialist geoarchaeologist should be onsite at all times during the excavations.

### ***Timing of archaeological works***

- 6.8.3.7 Archaeological mitigation of site 134 in the area of the Bunker Hall is provisionally scheduled for March to December 2024 (Appendix B). Unlike other mitigation excavations, it will necessarily be undertaken during the groundworks associated with the construction of the ERF.

## **6.9 Area 6: Site 144 – buried archaeological features**

### ***6.9.1 Description***

- 6.9.1.1 Site 144 is a circular pit and a curvilinear gully identified by trial trench evaluation (Trench 58) in the north of Area 6 (flood bund around chicken farm), to the north west of Skippingdale Industrial Park (Figure 6).
- 6.9.1.2 Though the evaluation did not produce any dating evidence, the archaeological features that make up site 144 were shown to be sealed by a thin peat deposit and are therefore, pending further radiocarbon dating, likely to pre-date the post-medieval drainage of this area. The full extent and character of the features present is not yet known yet their shallow depth and form in plan and section indicates that they are unlikely to have served an agricultural function.
- 6.9.1.3 Two crop mark sites, sites 8 and 9 are located within 100m of site 143, suggesting the latter may be associated with these likely multi-phased settlement sites.

### ***6.9.2 Potential impacts***

- 6.9.2.1 The main potential impact on this heritage asset will be from the construction of the proposed Flood Bund, the works area for which is shown on Works Plans A (Figure 6) (NLGEP 2022b).
- 6.9.2.2 The presence of an electricity pylon and overhead cable meant that Trench 58 was repositioned to the west, along the edge of flood bund footprint

(Figure 6). And it not yet known whether site 144 extends into the works area but because of its proximity this is assumed to be the case. It is assumed that all buried remains that may survive will be removed inside the works area.

### **6.9.3 Site specific aims and objectives**

6.9.3.1 The site specific aims and objectives are in line with the general mitigation aims and objectives described above.

### **6.9.4 Proposed archaeological works**

6.9.4.1 A provisional evaluation area measuring 560m<sup>2</sup> will be carefully machine stripped in spits down to the top of the known features and the mitigation area opened out from there.

6.9.4.2 Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.

6.9.4.3 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's HEO and set out in a site specific WSI.

6.9.4.4 The size of the mitigation area may be expanded following consultation with NLC's HEO.

### **6.9.5 Timing of archaeological works**

6.9.5.1 Archaeological mitigation works at site 140 are provisionally scheduled for January-March 2024 (Appendix B).

## **6.10 Area 3d: Site 13 – sub-rectangular enclosure**

### **6.10.1 Description**

6.10.1.1 Site 13 is documented in the North Lincolnshire HER as a sub-rectangular crop mark site (MLS20572). The likely enclosure feature is situated in the northern part of Area 3 (north-south portion of the DHPWN corridor) on slightly elevated ground at the junction of the B1216 and A1077, where a raised sand deposit is visible on satellite and Lidar imagery. The recent trial trench evaluation (Trench 101) confirmed the archaeological nature of this asset, demonstrating that it corresponds to a buried ditch feature and that this feature extends into the DHPWN works corridor.

6.10.1.2 Although no artefactual evidence was recovered, the remains of charred 'free-threshing' bread wheat found within its fill indicating the feature, which was previously thought to be late prehistoric in origin, is in fact likely to date from the early medieval to post-medieval period.

### **6.10.2 Potential impacts**

- 6.10.2.1 The main potential impact on this heritage asset will be from the construction of the proposed DHPWN, the works area for which is shown on Works Plans B (Figure 5) (NLGEP 2022b).
- 6.10.2.2 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### **6.10.3 Site specific aims and objectives**

- 6.10.3.1 The site specific aims and objectives are in line with the general mitigation aims and objectives described above.

### **6.10.4 Proposed archaeological works**

- 6.10.4.1 A provisional mitigation area measuring 680m<sup>2</sup> has been delimited, positioned to catch the eastern side of the crop mark feature that appears to traverse the north western half of the DHPWN corridor (Figure 5). The area will be carefully machine stripped in spits down to the top of the feature and the mitigation area opened out from there. Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.
- 6.10.4.2 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's HEO and set out in a site specific WSI.
- 6.10.4.3 The size of the mitigation area may be expanded following consultation with NLC's HEO.

### **6.10.5 Timing of archaeological works**

- 6.10.5.1 Archaeological mitigation works at site 142 are provisionally scheduled for January-March 2024 (Appendix B).

## **6.11 Area 3e: Site 141 – buried archaeological features**

### **6.11.1 Description**

- 6.11.1.1 Site 141 is a linear ditch feature identified in evaluation trench 124 in the middle part of Area 3 (north-south portion of the DHPWN corridor) (Wessex Archaeology 2023b)
- 6.11.1.2 Though the evaluation did not produce any dating evidence, site 141 was sealed by a thin peat deposit and, pending further radiocarbon dating, is therefore, likely to pre-date the post-medieval drainage of this area.

### **6.11.2 Potential impacts**

- 6.11.2.1 The main potential impact on this heritage asset will be from the construction of the proposed DHPWN, the works area for which is shown on Works Plans B (Figure 7) (NLGEP 2022b).
- 6.11.2.2 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### **6.11.3 Site specific aims and objectives**

- 6.11.3.1 The site specific aims and objectives are in line with the general mitigation aims and objectives described above.

### **6.11.4 Proposed archaeological works**

- 6.11.4.1 A provisional mitigation area measuring 300m<sup>2</sup> has been delimited, positioned to the east of trench 124 in order to trace the extent of the feature within the DHPWN corridor (Figure 7). Depending on the results from the eastern mitigation area, a decision can be made as to whether further investigation of this ditch is required on the western side of trench 124. Here the Order Limits extend some distance away from the DHPWN works area and therefore there may be an opportunity to preserve the feature in-situ.
- 6.11.4.2 The area will be carefully machine stripped in spits down to the top of the feature and the mitigation area opened out from there. Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.
- 6.11.4.3 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's HEO and set out in a site specific WSI.
- 6.11.4.4 The size of the mitigation area may be expanded following consultation with NLC's HEO.

### **6.11.5 Timing of archaeological works**

- 6.11.5.1 Archaeological mitigation works at site 141 are provisionally scheduled for January-March 2024 (Appendix B).

## **6.12 Area 3f: Site 142 – buried archaeological features**

### **6.12.1 Description**

- 6.12.1.1 Site 142 is a gully feature and circular pit feature identified in evaluation trench 155 and 154 respectively (Figure 7). The asset is located in the southern part of Area 3 (north-south portion of the proposed DHPWN), adjacent to Nuddock Wood Lakes (Wessex Archaeology 2023b).

6.12.1.2 The shape of the gully feature in plan is indicative of an enclosure feature and therefore likely to be associated to a settlement site rather than serving a drainage or field boundary function.

### **6.12.2 Potential impacts**

6.12.2.1 The main potential impact on this heritage asset will be from the construction of the proposed DHPWN, the works area for which is shown on Works Plans B (Figure 7) (NLGEP 2022b).

6.12.2.2 The precise specification of the groundworks in this area is still to be defined, until which time it is assumed that all buried remains that may survive will be removed inside the works area.

### **6.12.3 Site specific aims and objectives**

6.12.3.1 The site specific aims and objectives are in line with the general mitigation aims and objectives described above.

### **6.12.4 Proposed archaeological works**

6.12.4.1 A provisional mitigation area measuring 680m<sup>2</sup> has been delimited, positioned to catch the eastern side of the crop mark feature that appears to traverse the north western half of the DHPWN corridor (Figure 5). The area will be carefully machine stripped in spits down to the top of the feature and the mitigation area opened out from there. Where there is no known archaeology to follow, the machine will strip in spits to the uppermost archaeological horizon or naturally deposited sediments, whichever is encountered first.

6.12.4.2 All archaeological features identified are to be sampled through hand excavation to understand their extent, condition and character, following the methods agreed with NLC's HEO and set out in a site specific WSI.

6.12.4.3 The size of the mitigation area may be expanded following consultation with NLC's HEO.

### **6.12.5 Timing of archaeological works**

6.12.5.1 Archaeological mitigation works at site 142 are provisionally scheduled for January-March 2024 (Appendix B).

## 7. ARCHAEOLOGICAL MONITORING

### 7.1 Overview of archaeological monitoring

- 7.1.1.1 Archaeological monitoring can take different forms depending on the potential effects to known or unknown heritage assets that has been identified.
- 7.1.1.2 Close archaeological supervision or monitoring of all groundworks where an archaeologist must be present at all times during any soil stripping or other groundworks is required in a number of areas.
- 7.1.1.3 This includes all works in Areas 1, 3 and 4 shown in Figure 2 and central and southern and central parts of Area 2 in close to and south of Lysaghts Drain where geoarchaeological (AOC 2023), trial trench (Wessex 2023a) and ERT investigations (Wessex Archaeology 2023b) have highlighted that there is the potential for discovery of as yet unknown heritage assets.
- 7.1.1.4 There are thirteen continuous monitoring areas outlined in the provisional archaeological works schedule (Appendix A), where it is considered likely that previously unidentified archaeological remains may be encountered.
- 7.1.1.5 Groundworks in six areas coincide with Phase 1 of the NLGEP, which is provisionally scheduled for March-December 2024. These are as follows:
- Area 2b - access roads centre and south
  - Area 2a - access roads north and visitor centre
  - Area 2a&b - Attenuation and wetland ponds plus other drainage works
  - Area 2a&b - Landscaping and ecological Works
  - Area 1b - wider ERF
  - Area 4 – substation
  - Area 3b-c E-W portion of the DHPWN
- 7.1.1.6 Groundworks in five areas coincide with Phase 1 of the NLGEP, which is provisionally scheduled for March-December 2024. These are as follows:
- Area 2a - RHTF (ash treatment)
  - Area 3a - charging, refuelling and hydrogen production facility
  - Area 4 - hydrogen facility and Gas AGI
  - Area 2a - concrete plant
  - Area 2a - plastics plant
- 7.1.1.7 Groundworks in one area, that of the southern portion of the DHPWN is provisionally scheduled for later in the scheme, after September 2027.
- 7.1.1.8 Other parts of the NLGEP works may require intermittent archaeological monitoring or site visits. This includes locations where there are known heritage assets but where the proposed work is very unlikely to have any

impact because it does not involve groundworks of any depth. This includes:

- Railway reinstatement and the construction of a laydown area at Dragonby Sidings
- Shallow depth ecological enhancement in the area close to Flixborough Saxon Nunnery

## **7.2 Methods and procedures for archaeological monitoring**

- 7.2.1.1 Archaeological monitoring consists of observation, investigation and recording during the main construction programme and will seek to cause minimal disruption whilst providing sufficient access and time for the recording of any exposed archaeology.
- 7.2.1.2 During archaeological monitoring, the archaeological contractor will monitor and observe earth stripping undertaken by the principal contractor until an archaeological horizon or natural substrate, whichever is encountered first. Where archaeological remains are identified, selective hand investigation and recording of the archaeological deposits will be undertaken by the archaeological contractor.
- 7.2.1.3 As set out in the COCP, the archaeological contractor will clearly set out the stop work procedure in the event of unexpected archaeological discoveries within each location-specific WSI and Method Statement, following in accordance with the generic policy detailed below.
- 7.2.1.4 The archaeological contractor will clearly set out the procedure in the event of the discovery of human remains within each location-specific WSI and Method Statement, in accordance with the policy as detailed below.
- 7.2.1.5 Should human remains be uncovered during any construction works, all work will cease, and H.M. Coroner and the local police will be contacted. Any human remains will be left in situ, covered and protected until the police are satisfied they are not of recent origin. If it is necessary to remove any human remains, a licence will be obtained from the Ministry of Justice in accordance with the Burial Act 1857. The archaeological contractor will be responsible for obtaining all necessary permits.



## 8. ENHANCEMENT

- 8.1.1.1 These enhancement proposals are put forward in the context of the significant impacts on the setting of the scheduled site of Flixborough Nunnery and on the historic landscape. While there are no clear options for direct mitigation of such impacts, engagement with local communities and other interested stakeholders provides a way of enhancing knowledge, appreciation and access to the cultural heritage of the area.
- 8.1.1.2 The site of the former excavation and medieval settlement of North Conesby is currently overgrown and has no signage or information. It is therefore recommended that the Project should work with local organisations (e.g. Scunthorpe Museum/local heritage groups) to improve management and information sharing for the public relating to the site.
- 8.1.1.3 A programme of public engagement to communicate the results of archaeological field investigation will enhance public understanding and appreciation of the historic environment. In particular the history of Flixborough Staithe – from its origins as a medieval river port to the disaster of 1974 – should be documented and shared with the public, using appropriate media including information boards on or near the site. This should again be done in collaboration with local organisation/heritage groups.

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## **APPENDIX A    FIGURES**



**North Lincolnshire Green Energy Park**

**Title** Figure 1  
NLGEP Project Location

**Client Information**

**Client** North Lincolnshire Green Energy Park Ltd  
**PINS Proj No** 010116  
**Date** 09/05/2023  
**Drawn by** MTC  
**Checked by** NW  
**Version** PO

**Map Information**

**CRS EPSG** 27700  
**CRS Name** British National Grid

**Scale** 250,007

**ArcMap File**

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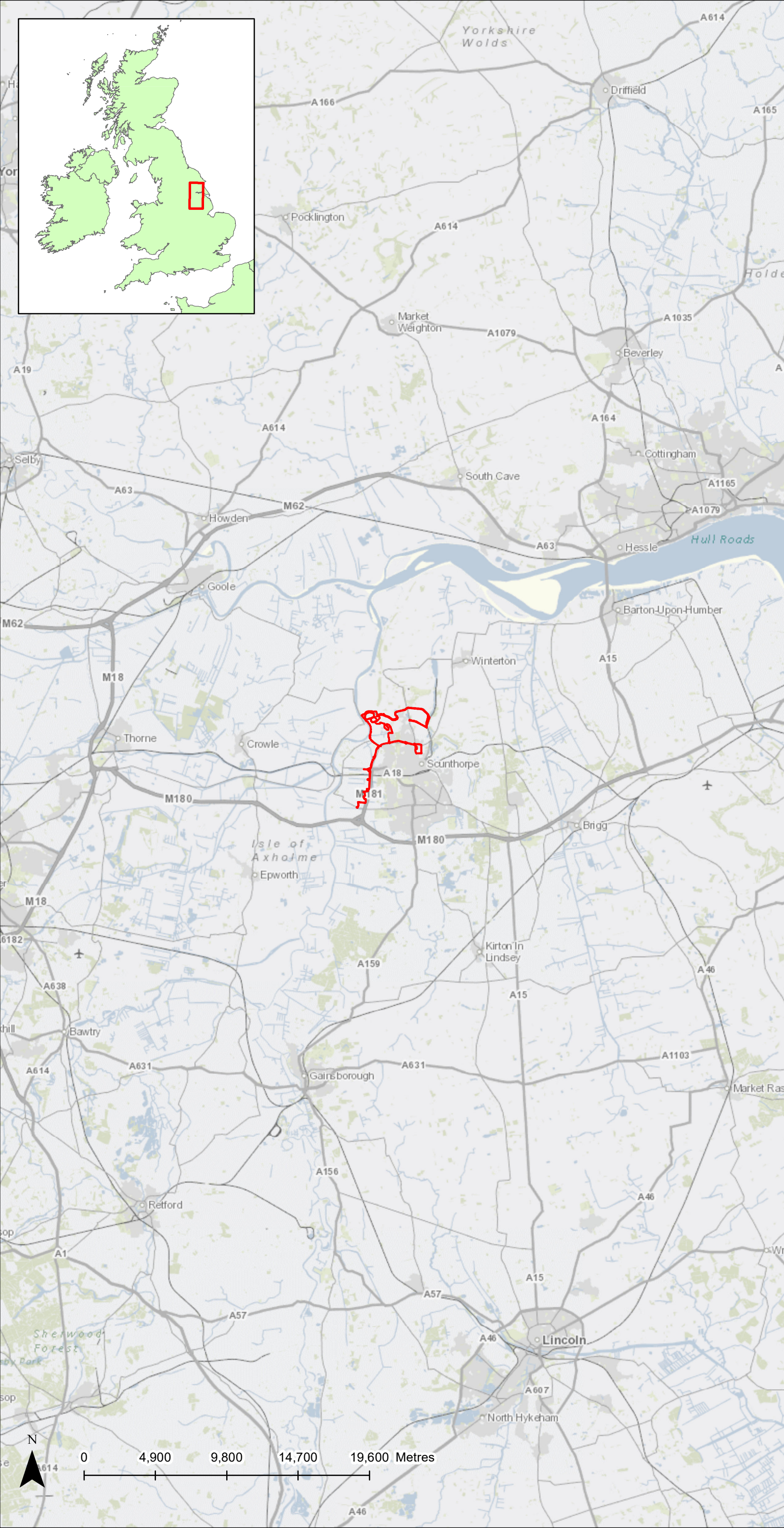
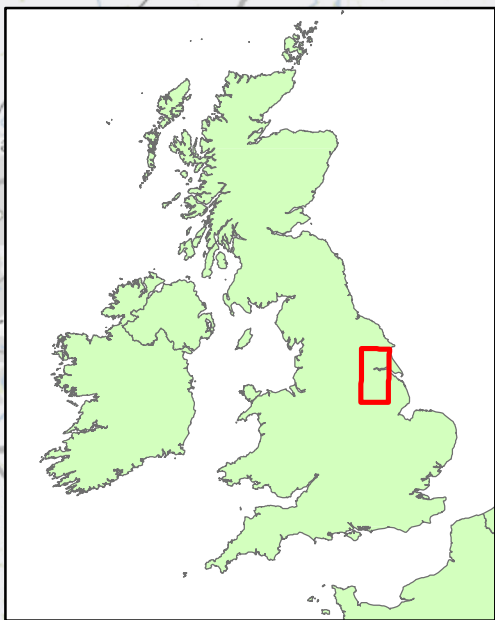
**Legend**

Order Limits

**Layer Source Information**

Contains OS data © Crown Copyright and database right 2020

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# North Lincolnshire Green Energy Park

**Title** The NLGEP Project area, Order Limits and Development Areas

Figure 2

## Client Information

**Client** North Lincolnshire Green Energy Park Ltd.  
**PINS Proj No** EN010116  
**Date** 05/05/2023  
**Drawn by** MW  
**Checked by** CA  
**Version** P0

## Map Information

**CRS EPSG** 27700  
**CRS Name** British National Grid  
**Scale** 1:35,000

## ArcMap File

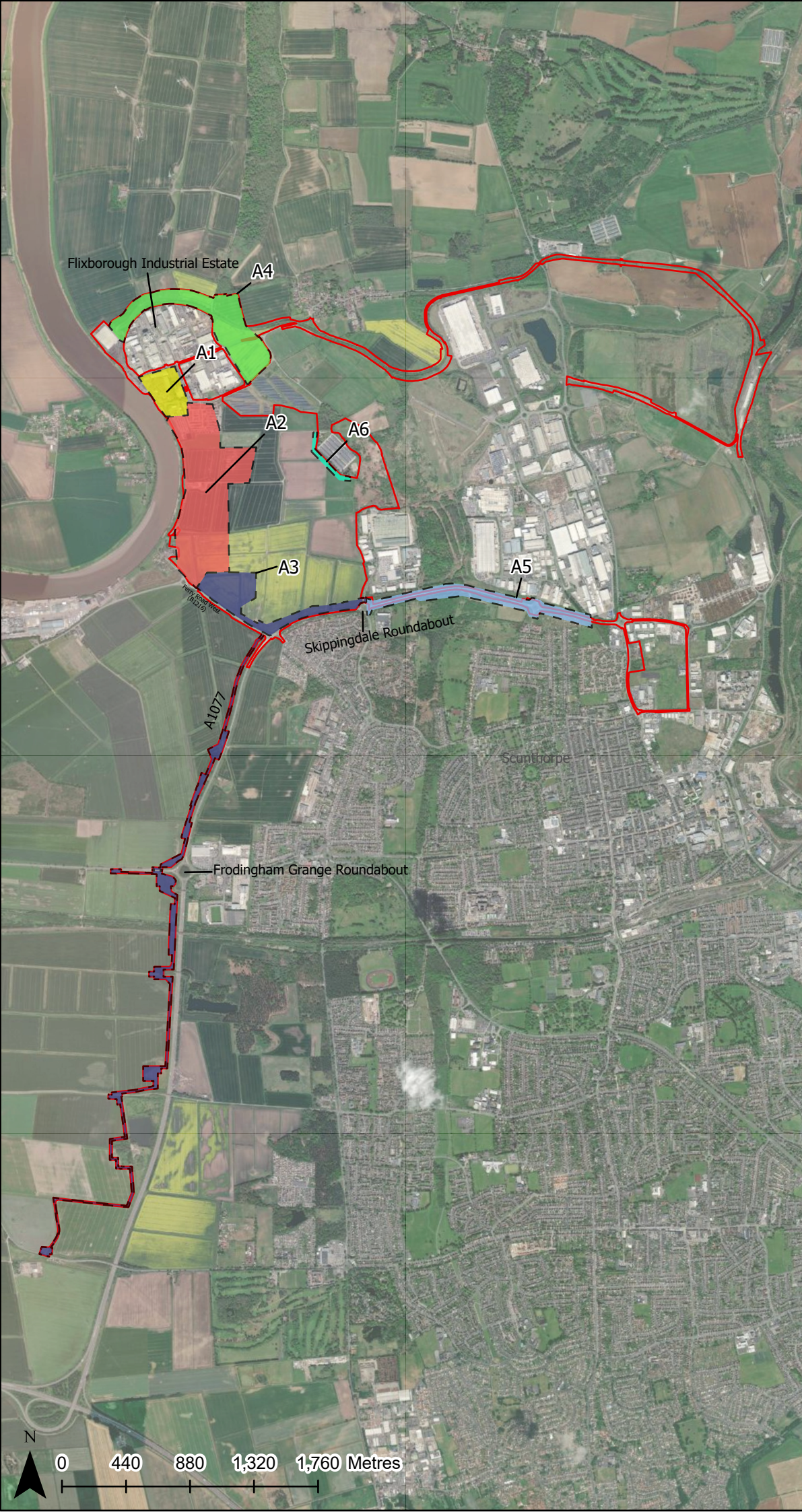
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## Legend

### Areas

- 1
- 2
- 3
- 4
- 5
- 6

Order Limits



## Layer Source Information

World Imagery: Maxar, Microsoft World Street Map: Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS© Crown copyright and database rights 2021 OS Licence 100035409 Reproduced with the permission of the National Library of Scotland

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**North Lincolnshire Green Energy Park**

**Title** Figure 3  
The NLGEP Project Area Showing Designated and Undesignated Sites

**Client Information**

**Client** North Lincolnshire Green Energy Park Ltd.  
**PINS Proj No** EN010116  
**Date** 09/05/2023  
**Drawn by** MTC  
**Checked by** CLQ  
**Version** P1

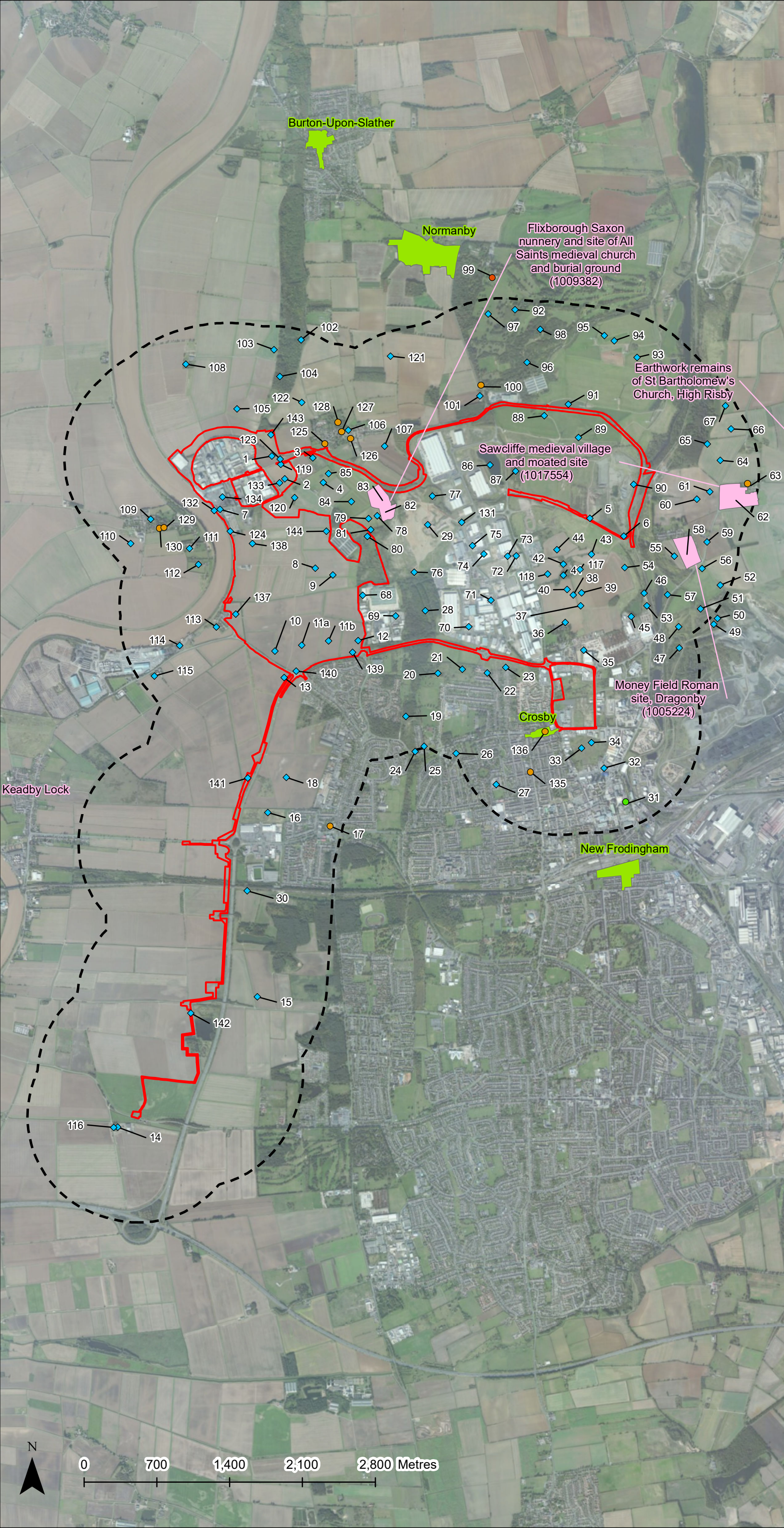
**Map Information**

**CRS EPSG** 27700  
**CRS Name** British National Grid  
**Scale** 35,001  
**ArcMap File**

HER\_ES\_ProjectArea\_Designated\_NonDesignatedAssets\_A01

**Legend**

- Order Limits
- ◆ Non-Designated Assets
- Listed Buildings**
- Grade I Listed Building
- Grade II Listed Building
- Grade II\* Listed Building
- Scheduled Monuments
- Conservation Area
- 1km Buffer



**Layer Source Information**

Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

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**Figure 4 Edited extract of Works Plan A1 (NLGEP 2022a) showing evaluation areas at site 7, site 124 and mitigation area at site 134**

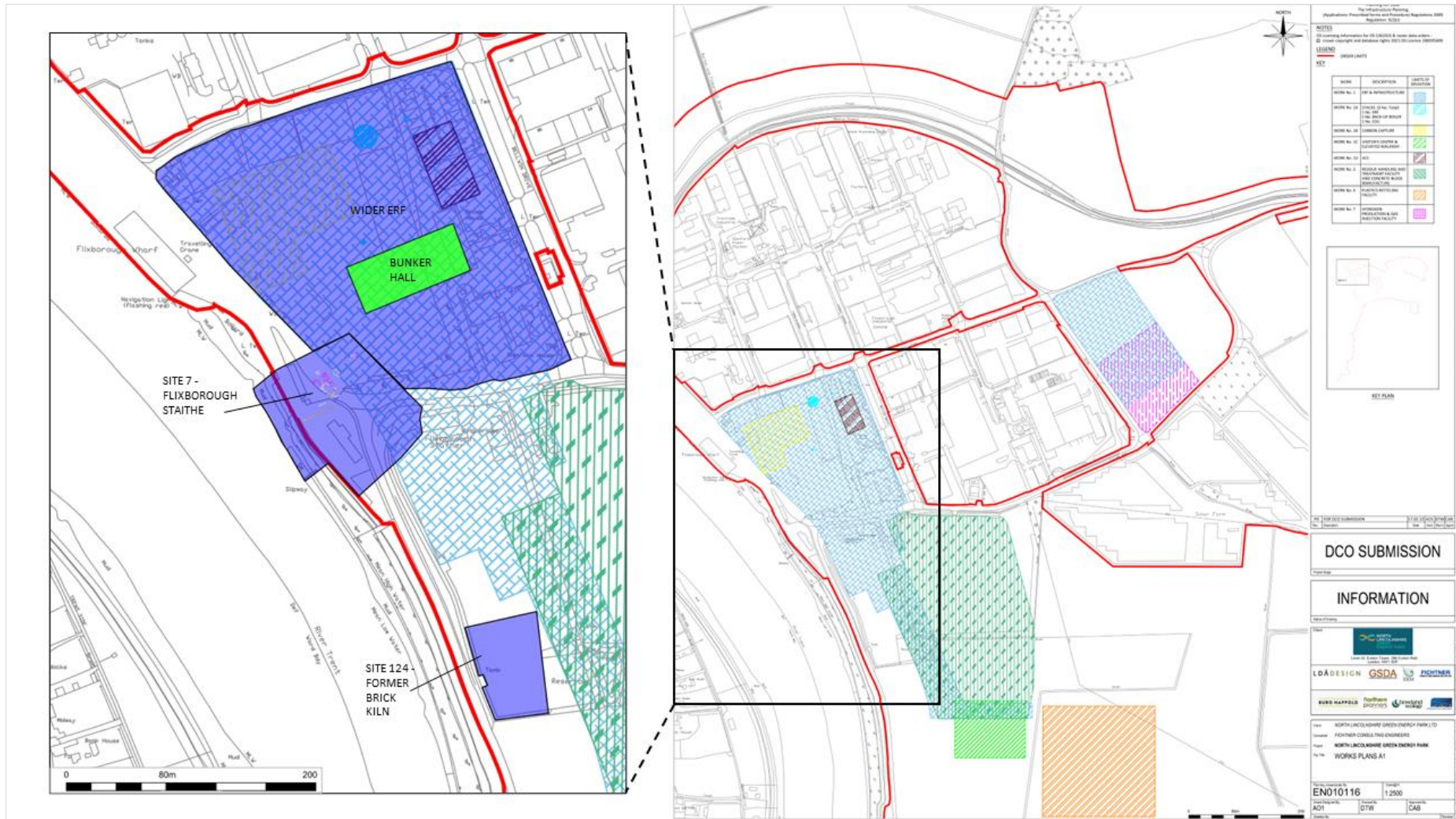


Figure 5 Edited extract of Works Plan B4 (NLGEP 2022b) with inset showing evaluation areas at site 139, site 140 and mitigation at site 13

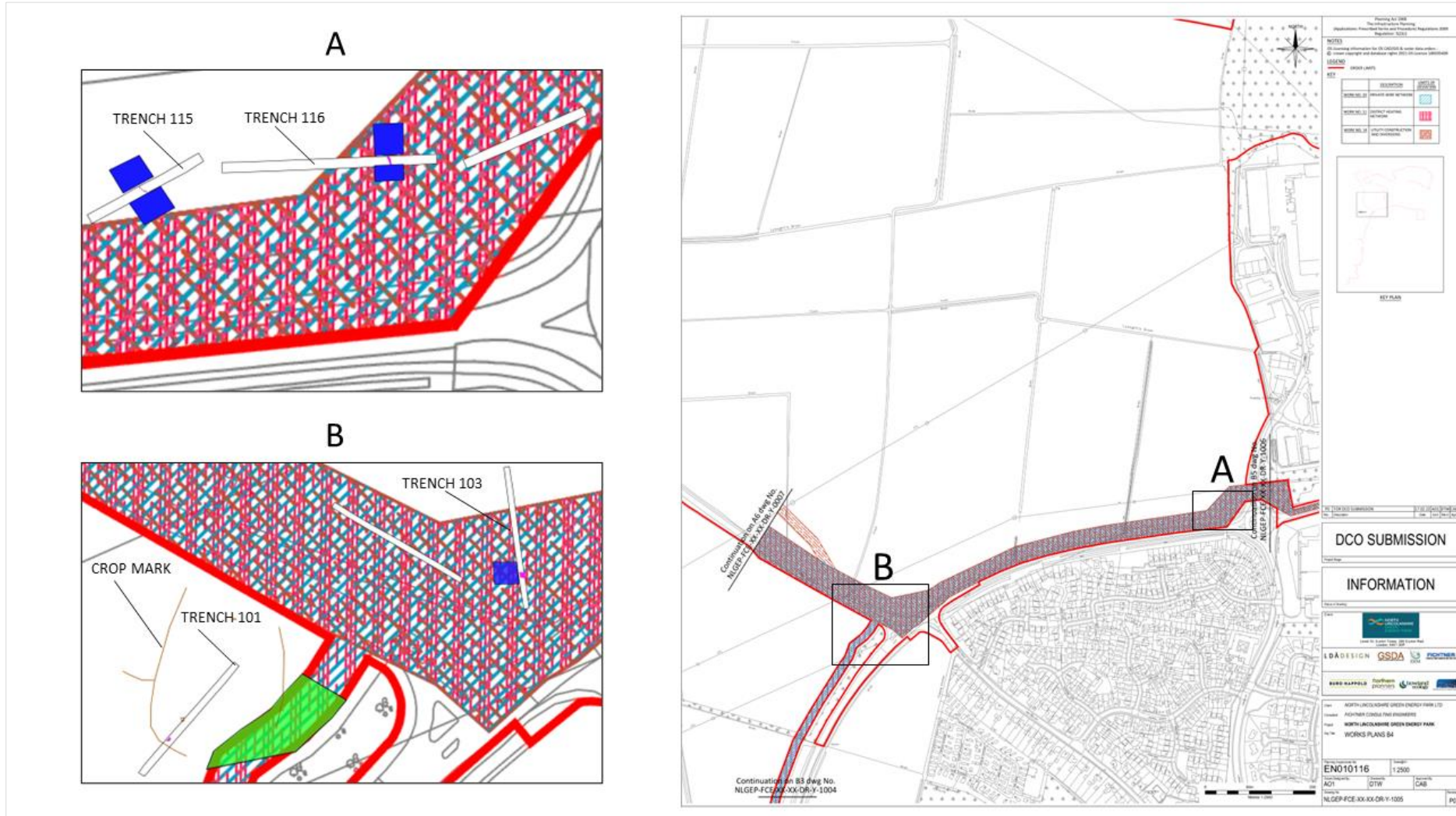




Figure 6 Edited extract of Works Plan A13 (NLGEP 2022a) with inset showing mitigation area at site 144 in Area 6.



Figure 7 Edited extract of Works Plan B3 (NLGEP 2022b) with inset showing mitigation area at site 141

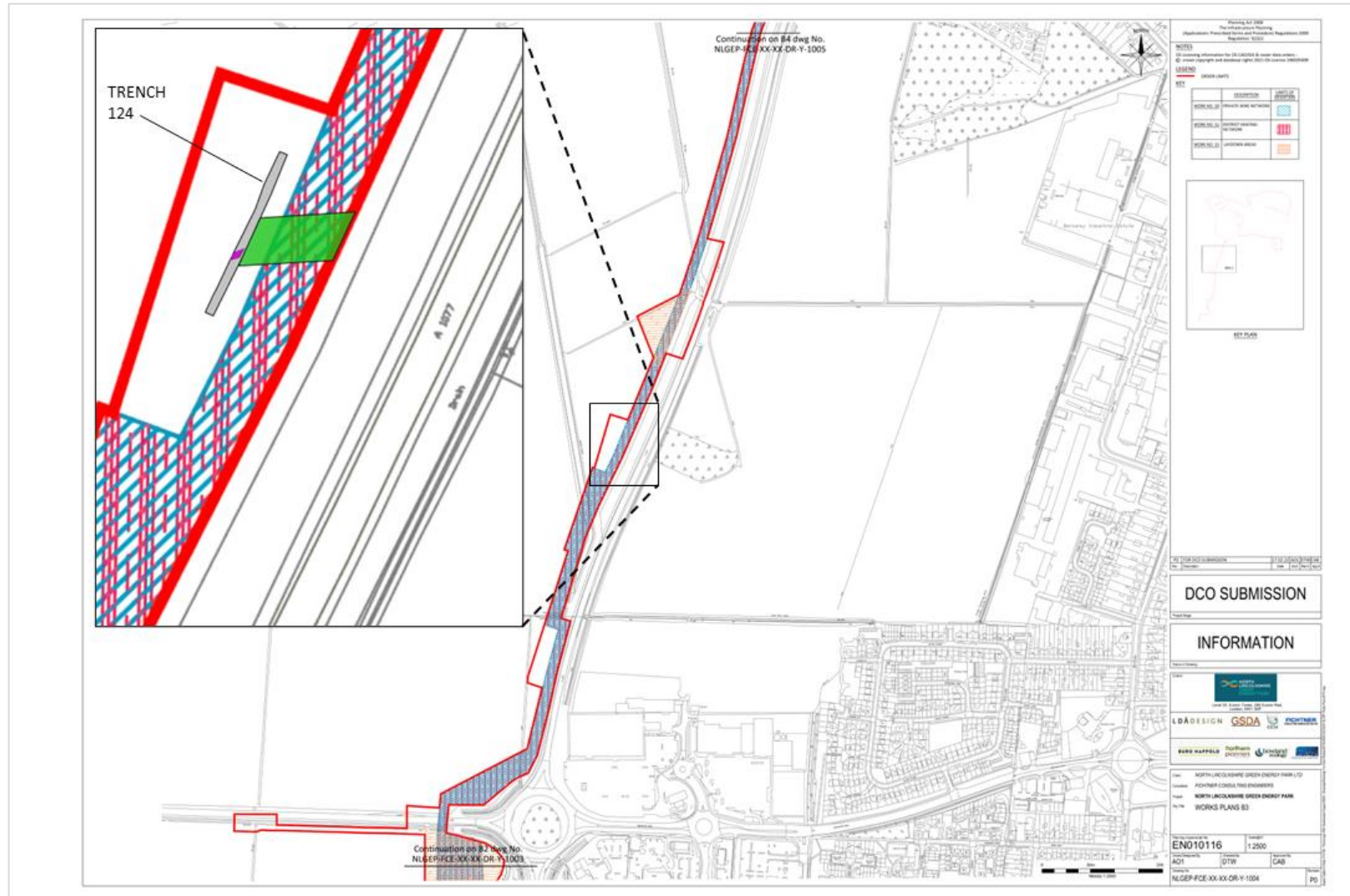
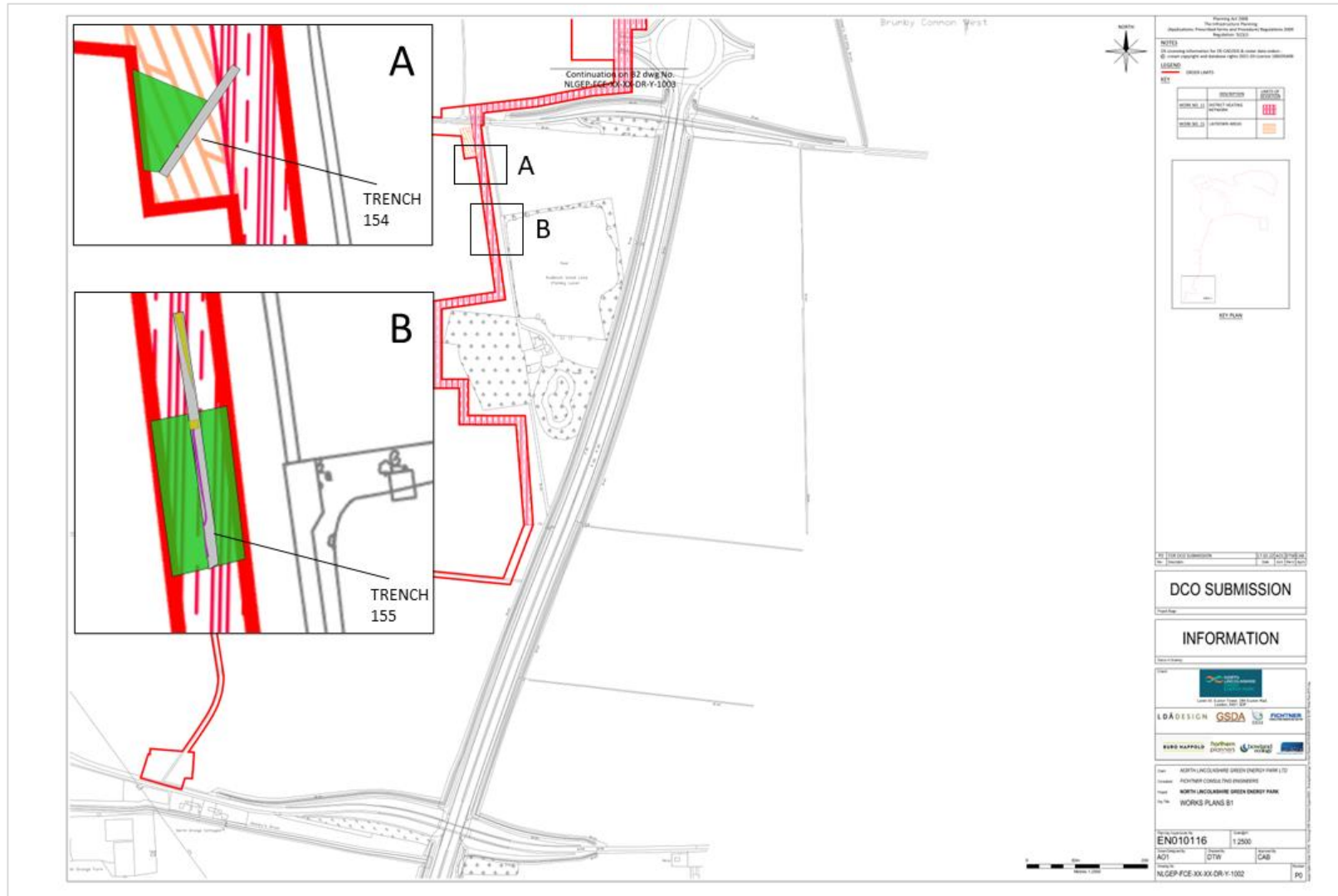


Figure 8 Edited extract of Works Plan B (NLGEP 2022b) with inset showing mitigation area at site 142



## **APPENDIX B    WORKING SCHEDULE OF ARCHAEOLOGICAL INVESTIGATIONS**

	Pre-determination	Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Application Works Number	Estimated August 2023	Estimated January-March 2024	Estimated March-December 2024	Intermittent monitoring	Estimated August-October 2025	Intermittent monitoring	Intermittent monitoring	Estimated September 2027-October 2029
Works No.10 & 11	█							
Work No.3	█							
Work No.1	█							
Works No.10 & 11	█							
Work No.3		█						
Work No.13		█						
Works No.10 & 11		█						
Works No.10 & 12		█						
Works No.10 & 11		█						
Work No.5			█					
Work No.5			█					
Work No.13			█					
Work No.12			█					
Work No.1			█					
Work No.7			█					
Works No.10 & 11			█					
Work No.1			█					
Work No.2					█			
Works No.8 & 9					█			
					█			
Work No.2					█			
Work No.6					█			
Works No.10 & 11								█