EAST BUTTERWICK ROAD, BURRINGHAM

Archaeological Monitoring and Recording

Museum Site Code: BURAB

Network Project Code: BWT 16

NGR: SE 8359 0792

Museum Accession Number: TBA

Prepared by

NETWORK ARCHAEOLOGY LTD

for

IAN FOWLER AND CO.

Report Number: 594

November 2012

Ian Fowler & Co.

network archaeology

DOCUMENT CONTROL SHEET

Project title	East Butterwick Road, Burringham					
Document title	Archaeological Monitoring and Recording					
Report no.	594					
Museum site code	BURAB					
Network project code	BWT 16					
Accession number	TBA					
NGR	SE 8359 0792					
Client	Ian Fowler & Co.					
Distribution	Ambrose Fowler; Alison Williams (HER officer, North Lincolnshire Historic Environment Record); North Lincolnshire Museum Service					
Document comprises (pages)	Document control sheet	Table of contents, lists of tables, appendices, plates and figures	Text	Appendices	Plates	Figures
	1	2	12	4	2	3

Ver.	Status	Author	Reviewer	Approver	Date
0.1	First draft	Patrick Daniel, Project Officer	Chris Taylor, Company Director	Chris Taylor, Company Director	27/06/12
0.2	Second draft	Patrick Daniel, Project Officer	Chris Taylor, Company Director	Chris Taylor, Company Director	02/07/12
1.0	First issue	Patrick Daniel, Project Officer	Chris Taylor, Company Director	Chris Taylor, Company Director	02/07/12
2.0	Final issue	Patrick Daniel, Project Officer	Chris Taylor, Company Director	Chris Taylor, Company Director	07/11/12

Network Archaeology
Northern Office
15 Beaumont Fee
Lincoln LN1 1UH
Tel: 01522 532621
Email: enquiries@netarch.co.uk

Network Archaeology
Southern Office
22 High Street
Buckingham MK18 1NU
Tel: 01280 816174
Email: enquiries@netarch.co.uk

Network Archaeology delivers a complete consultancy and field service nationwide. The company's particular expertise is linear infrastructure, such as pipelines, roads, rail and cables. Its emphasis is upon good communication and recognition of clients' individual needs and priorities. Network is known for delivering professional support, taking care of the archaeology and enabling projects to keep moving forward.

CONTENTS

TABLES

APPENDICES

PLATES

FIGURES

NON-TECHNICAL SUMMARY

A programme of archaeological monitoring and recording was undertaken by Network Archaeology Ltd on land to the east of East Butterwick Road, Burringham, North Lincolnshire, during the excavation of footings for a new wind turbine. The archaeological work formed part of the discharge of conditions that accompanied planning permission for the development.

During the monitoring of the octagonal excavation area, which measured approximately 16m across, a number of deposits were recorded, revealing something of the geoarchaeological sequence of the development area. The modern agricultural ploughsoil overlay probable warp deposits, which themselves sealed a c. 1.1m thick build-up of alluvium. These overlay, at a depth of around 2m below the current ground level, a dark grey peaty silt. This material lay at the construction depth of the excavation area, so it was not examined further, but is likely to represent the top of an ancient peat bed. Borehole data, carried out as part of the wind turbine development records that the peat proper is over 6m thick.

Based on excavated and dated parallels, a prehistoric origin might be offered for the peat, whereas the alluvium might be a consequence of accelerated soil erosion caused by Late Iron Age or Roman agricultural expansion. However, with no artefacts or archaeological features present within the monitored area, such dates cannot be proven in this instance.

The degree of archaeological impact from the monitored development has been negligible. The recorded observations may have value in contributing to a deposit model of the River Trent floodplain and should assist in designing future schemes of archaeological mitigation for any other nearby developments.

1 INTRODUCTION

This report presents the results of a programme of archaeological monitoring and recording undertaken within a development area off East Butterwick Road, Burringham; it indicates the level of impact on archaeological remains recorded during groundworks, and the successful mitigation strategy adopted.

This report was commissioned by Ian Fowler and Co. The archaeological contractor was Network Archaeology Ltd.

1.1 Development area

Location

The site is approximately 500m to the east of the River Trent and 400m north of the M180 motorway, to the west of Junction 3 (SE 8359 0792). The parish church of St John the Baptist, Burringham, is just over a kilometre to the north (Fig. 1)

Development

The development involved the excavation of the footings of a wind turbine tower.

Character

Marine alluvial deposits underlie the site. The solid geology consists of mudstone belonging to the Mercia Mudstone Group (BGS 2012). The Soil Survey of England and Wales places the soils in the Romney Association (532b), described as deep, stoneless, permeable, calcareous fine silts on flat land with artificially controlled drainage. At the time of monitoring, the land was used for arable agriculture, with a high, green cereal crop present in the field. The development area lies at a height of around 2m above sea level on flat level land within the lower flood plain of the River Trent.

According to the terms of the Historic Landscape Characterisation of Lincolnshire Project, the development area lies within the Axholme Fens, described as '*drained fen and marshland resulting in a flat arable landscape...Field boundaries are predominantly formed by the hierarchy of drainage ditches, or by the long, straight roads that traverse the landscape*' (Lord and MacIntosh 2011, 11).

1.2 Legislation, regulations and guidance

Planning Permission under application number PA/2011/1386 was granted by North Lincolnshire Council providing certain conditions were met. Condition 3-5 related to mitigating the effects of the development on any potential archaeological remains on the site. This was in accordance with Policy HE9 of the North Lincolnshire Local Plan, and Section 12 of the National Planning Policy Framework.

A Written Scheme of Investigation was produced by Network Archaeology Ltd detailing the archaeological mitigation procedures to be followed (Network Archaeology 2012).

1.3 Archaeological and historical background

Prehistoric Era (10,000 BC - AD 60)

There are two findspots of prehistoric material within 1km of the development area. Firstly, a hoard of Bronze Age weapons was found at Burringham Moor sometime in the 18th

century (HER 1344[1]). Deposition of high-status metalwork into or beside water was a widespread ceremonial practice at this time, and this would appear to be a local manifestation of such a ritual. Secondly, a Bronze Age flint arrowhead has been recovered from Derrythorpe Grange (HER 17361).

In addition, there are two cropmarks visible on aerial photographs of land within 1km of the development area. One forms a sub-rectangular enclosure (HER 21096); the other is a large semi-circular feature, 180m in diameter (HER 21095). These may relate to the creation of field boundaries in the later Iron Age, although they may conceivably date to any period.

Roman (AD 43-410)

A large amount of Romano-British pottery at Derrythorpe (HER 17425) indicates occupation within 1km of the development area during this period. In addition, the cropmarks mentioned above may, perhaps, most likely relate to farming of the Trent floodplain in the Roman period. A Roman site of especial note, the large settlement at Dragonby, is located some 12km away to the north east.

Early Medieval (410-1066)

No sites of early medieval date are known within 1km of the development area. The Trent would have been an enduringly important transport and communication corridor throughout history, and that this was certainly the case in the early medieval period, when a significant Anglo-Saxon settlement flourished around 10km downstream at Flixborough.

Medieval (1066-1540)

Medieval remains within 1km of the development area comprise pottery indicating settlement at Derrythorpe (HER 17316 and 16761).

Post-medieval - Modern (1540-)

Pottery remains indicate that Derrythorpe remained a focus for occupation into the post-medieval period (HER 17316 and 16761). The presence of clay alluvium deposits and the utility of the river for transport encouraged a local brickmaking industry in the post-medieval period: the HER records two brickyards within 1km of the development area (HER 22124 and 21990).

It was during the post-medieval period that the landscape took on its present well-managed and productive appearance. This was largely due to the installation of artificial drainage systems from the 17th century onwards. At Millfield House on Derrythorpe Road, a sluice at the outfall of a warping drain into the river has been Listed Grade II (HER 10475).

A Methodist chapel stood nearby in the late 19th and early 20th century (HER 21991).

A World War II heavy anti-aircraft battery was located at Burringham, although it was unarmed by 1942 (HER 21387). This was likely to have been positioned to protect the nearby Scunthorpe steel works, which dominated local industrial production from the 19th century onwards.

The development area is overlooked by the Trent viaduct section of the M180 motorway, which was constructed in the 1970s, significantly altering the character of the surrounding area.

[1] Reference numbers relate to the scheme used by the North Lincolnshire Historic Environment Record (HER)

Previous archaeological work

Neither the National Monuments Record Excavation Index nor the North Lincolnshire Historic Environment Record (HER) contains any record of any previous archaeological investigations within 1km of the development area.

1.4 Aims

The aims and objectives of the programme of archaeological work, as set out in the WSI, were to:

- establish the presence or absence, extent, condition, character, quality and date of any archaeological remains;
- locate, recover, identify, and conserve where appropriate any archaeological artefacts
- locate, and record archaeological deposits;
- assess the overall archaeological significance of any archaeological remains;
- produce a site archive for submission to the receiving museum;
- produce a report that addresses the above;
- provide information for accession to the HER;
- publish significant results in an appropriate journal, if appropriate.

1.5 Circulation of this report

This report will be circulated to the following recipients:

- Ian Fowler and Co.
- Alison Williams (North Lincolnshire HER)
- North Lincolnshire Museum Service

2 FIELDWORK PROCEDURES

2.1 Quality standards

All archaeological work was undertaken in accordance with the Institute for Archaeologists' standard and guidance documents (I*f*A 2008a, 2008b, 2009a, 2010).

The standards represented by the Registered Organisation (RO) scheme operated by the I*f*A were adhered to throughout. Network Archaeology Limited is a Registered Organisation (RO) with the I*f*A. Key project staff are members of the I*f*A at appropriate levels.

2.2 Mechanical excavation

The monitored area was excavated by Cat 323 DL tracked excavator. For the majority of the work, a 2.4m wide toothless ditching bucket was used, although other smaller buckets were used as necessary when excavating around the concrete piles that had been inserted into the ground.

2.3 Hand excavation, recording and sampling

A full written record was maintained on site, including standardised context descriptions on pro forma record sheets. A scale representative section showing the sequence of deposits revealed was produced and digital photographs were taken. Fieldwork was undertaken on 20th June 2012 by Patrick Daniel.

2.4 Project codes and number allocations

The scheme of work has been given the internal Network Archaeology project code BWT 16. In addition, North Lincolnshire Museum Service has issued code of 'BURAB' for this site, and will allocate an accession number on deposition of the site archive.

Each deposit was allocated a unique number starting from 100.

3 RESULTS

The stratigraphically earliest deposit exposed was context *106*, a mid- to dark blue-ish grey fine clayish silt. This contained darker patches and fragments of preserved vegetation. This was present across the entire excavation area; the development did not proceed to a depth sufficient to ascertain its original thickness.

Context *106* was overlain, in turn, by context *105* and *104*, which together formed a c. 1.1m thick layer of orange/grey/brown very fine silt, with an almost 'floury' texture. The different context numbers of this material relate to differences in colour.

Context *104* was overlain by *103*, a 0.1m thick layer of brownish grey clay. This was in turn overlain by *102*, a 0.15m thick layer of dark orangey brown silty clay, which was itself sealed by the dark brown clay ploughsoil: *101*. Within the development area this had been covered over by *100*, a layer of crushed concrete and brick demolition debris, lain down over the unstripped ploughsoil in order to form a hard-standing working surface to facilitate the current development.

All deposits on the site were artefactually sterile, and indeed, notably free of any stone inclusions, with the obvious exception of context *100*.

4 DISCUSSION

The monitoring of the excavation of the footings for the wind turbine did not reveal any archaeological features or artefacts. The recorded deposits do, however, reveal something of the history of the area, and this is in keeping with its floodplain location

Context *106* has been interpreted as the top of an ancient preserved peat bed, with darker, and more characteristically fibrous peat doubtless better preserved at a greater depth below. Borehole logs produced during a ground testing exercise undertaken before the wind turbine construction record the peat as being 6.3m thick, extending from 2.2m to 8.5m below the current ground surface (Ground Engineering Ltd 2012).

The date of the formation of this peat is not currently known. Generally within the Trent valley, the formation of peat beds has been associated with a wetter climate and deteriorating drainage conditions from around 5,000 BC, although most 'are probably a few thousand years younger' (Knight and Howard 2004, 31). At South Ings Close, Rampton, Bronze Age radiocarbon dates have been extracted from a 1-2m thick peat bed, whereas peat at Adlingfleet near Trent Falls has been dated to the later 1st millennium AD (*op. cit.* 81 & 120).

Aggradation of alluvium following flooding is probably responsible for contexts *105* and *104*. The colour differences between these contexts may be due to in situ chemical weathering as much as differing episodes of deposition. Thick deposits of alluvium are a characteristic of the Trent floodplain and their deposition is generally held to be a consequence of Late Iron Age and Roman period agricultural expansion, which led to increased soil erosion (Knight and Howard 2004, 81 & 117).

Context *102*/*103* may represent 'warp', material deposited during deliberate flooding of the land; this was undertaken to increase its fertility. This method of land improvement was widely carried out in the post-medieval period, up until the 19th century. Both the listed warp drain sluice mentioned above and the nearby presence of 'Earl Beauchamp's warping drain' on modern mapping reveal that warping was once carried out hereabouts.

A possible narrative summary of the depositional sequence of the site may perhaps therefore record that prehistoric peat beds were overlain by thick layers of alluvium some time around the Roman period. The land was improved by warping in the post-medieval period, and continued to be used for arable agriculture until the early 21st century, when a focus on renewable energy prompted by concerns over climate change led to the installation of a wind turbine at this location.

5 ASSESSMENT OF IMPACT

5.1 Importance

The area around Burringham may contain remains relating to the exploitation of the lower Trent valley, dating from the prehistoric period up until the present day. Archaeological excavations within the Trent valley frequently recover sizeable and varied artefactual and environmental assemblages relating to the division and settlement of the floodplain and the culture and material circumstances of its inhabitants. At sufficient depth, ground conditions are likely to lead to conditions conducive to the preservation of organic material, boosting the archaeological potential of the area. Any remains present in the development footprint may have the capacity to contribute to an appreciation and sense of local heritage, and may, if of sufficient date and quality, be able to further current research aims (Knight, Vyner and Allan 2010).

5.2 Potential impact

The development had the potential to have an adverse and direct impact upon any archaeological remains present on the site and lying at a depth where they would be encountered during groundworks. In addition, indirect impacts on any archaeological deposits adjacent to the groundworks may theoretically have occurred. Indirect impact can include crushing and breaking of artefacts by the pressure and weight of any machinery present on the site and additional pressure applied to any below-ground remains by the weight of new structures.

5.3 Significance of impact

Due to the absence of archaeological deposits beyond those widespread geo-archaeological strata described above, and the protection from surface disturbance offered to lower deposits by the considerable thickness of alluvium, the degree of direct and indirect impact from the monitored development has been negligible. However, further unmonitored works, such as excavation of service trenches, may affect any hitherto undetected remains.

6 CONCLUSION

The scheme of monitoring and recording revealed little of archaeological importance beyond exposing the geoarchaeological sequence of this part of the lower floodplain of the River Trent. The recorded observations may have value in indicating what remains may be encountered in the immediate vicinity during any future development. In particular, the identification of peat at c.0m above sea level[2] at this location may assist in designing future schemes of archaeological mitigation for any other nearby developments. Such deposits may prove to be of high archaeological or palaeo-environmental value.

[2] Heights are approximate only, extrapolated from Ordnance Survey mapping.

7 ARCHIVE

The documentary archive will comprise:

- A copy of the Written Scheme of Investigation
- A copy of this final report
- Site records, as detailed in the table below:

Table 7.1: Quantification of the site archive

Item	Count
Context registers	1
Context sheets	7
Drawing registers	1
Drawing sheets	1
Photographic registers	1
Digital colour photographs	40

On completion of the reporting stages of the project, the archive will be prepared for long-term storage in a format agreed in advance with the relevant local depository. This will be in accordance with guidelines prepared by the UK Institute of Conservation (Walker 1990), the Museums and Galleries Commission (MGC 1992), and the I*f*A (2009b).

The recipient museum is North Lincolnshire Museum, Oswald Road, Scunthorpe, North Lincolnshire, DN15 7BD, who has assigned this site the code BURAB and will allocate an accession number on deposition of the archive.

As shown in Appendix B, details of this project have been entered onto OASIS, the online database of archaeological investigations (OASIS ID - networka2-129104).

8 ACKNOWLEDGEMENTS

Network Archaeology would like to thank Ambrose Fowler for commissioning this work; Charlie Salmon and John Adams of CLS Civil Engineering for their assistance during fieldwork and report preparation; and Alison Williams (North Lincolnshire Historic Environment Record) for provision of curatorial support and guidance.

For Network Archaeology, the work was managed by Chris Taylor and fieldwork carried out by Patrick Daniel. This report was produced by Patrick Daniel, Barney Ansell and Chris Taylor. Illustrations were by Jacqueline Churchill.

9 REFERENCES

BGS 2012, *Geology of Britain viewer*. http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html. Accessed 25th June 2012

Ground Engineering Ltd, 2012, *Report on a Ground Investigation at Site off Carr Dyke Road, Burringham, North Lincolnshire*. Report Ref. C12659. Unpublished.

Knight, D, and Howard, A J, 2004, *Trent Valley Landscapes: The Archaeology of 500,000 Years of Change*. King's Lynn

Lord, J, and MacIntosh, A, 2011, *The Historic Character of the County of Lincolnshire: The Historic Landscape Character Zones*. Available online.

I*f*A, 2008a, *Code of approved practice for the regulation of contractual arrangements in field archaeology*. Institute for Archaeologists

I*f*A, 2008b, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*. Institute for Archaeologists

I*f*A, 2009a, *Standard and Guidance for an archaeological watching brief*, Institute for Archaeologists

I*f*A 2009b, *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, Institute for Archaeologists

I*f*A, 2010, *Code of conduct*. Institute for Archaeologists

Knight, D, Vyner, B, and Allan, C, 2010, *Updated Research Agenda for the East Midlands*. http://www.nottingham.ac.uk/tpa/research/project3/index.htm. Accessed 20th July 2011

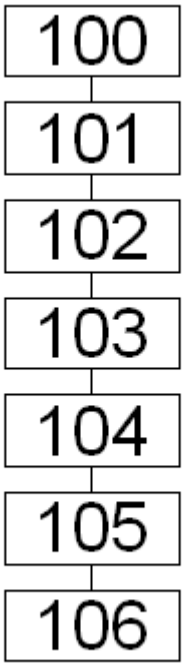
MGC, 1992, *Standards in the Museum Care of Archaeological Collections*. Museums and Galleries Commission, London

Network Archaeology 2012 East *Butterwick Road, Burringham, North Lincolnshire. Scheme of Archaeological Works.* Unpublished

Walker, K, 1990, *Guidelines for the preparation of excavation archives for long-term storage*. UK Institute for Conservation, London

Appendix A Context Summary and Harris Matrix

Context	Type	Thickness (m)	Description	Interpretation
100	Layer	0.35	Crushed concrete and brick rubble	Current hard-standing
101	Layer	0.35	Soft/plastic dark brown clay	Modern topsoil
102	Layer	0.15	Firm dark orangey brown silty clay	Subsoil/ warp
103	Layer	0.1	Plastic brownish grey clay	Warp
104	Layer	0.5	Soft, very fine orange /brown silt	Alluvium
105	Layer	0.6	Soft, very fine grey /brown silt	Alluvium
106	Layer	0.3+	Fine/soft mid-dark blue-ish clayish silt	Interface at top of peat bed



Appendix B OASIS summary

OASIS DATA COLLECTION FORM: England

List of Projects | Manage Projects | Search Projects | New project | Change your details | HER coverage | Change country | Log out

Printable version

OASIS ID: networka2-129104

Project details

Project name	East Butterwick Road, Burringham
Short description of the project	A programme of archaeological monitoring and recording was undertaken by Network Archaeology Ltd on land to the east of East Butterwick Road, Burringham, North Lincolnshire, during the excavation of footings for a new wind turbine. The archaeological work formed part of the discharge of conditions that accompanied planning permission for the development. During the monitoring of the octagonal excavation area, which measured approximately 16m across, a number of deposits were recorded, revealing something of the geoarchaeological sequence of the development area. The modern agricultural ploughsoil overlay warp deposits, which themselves sealed a c. 1.1m thick build-up of alluvium. These overlay, at a depth of around 2m below the current ground level, a dark peaty clay. The peaty clay lay at the construction depth of the excavation area, and so it was not possible to examine it further. Borehole data, carried out as part of the wind turbine development, does however reveal this peat to be over 6m thick. Based on excavated and dated parallels, a prehistoric origin might be offered for the peat, whereas the alluvium might be a consequence of accelerated soil erosion caused by Late Iron Age or Roman agricultural expansion. However, with no artefacts or archaeological features present within the monitored area, such dates cannot be proven in this instance. The degree of archaeological impact from the monitored development has been negligible. The recorded observations may have value in contributing to a deposit model of the River Trent floodplain and should assist in designing future schemes of archaeological mitigation for any other nearby developments.
Project dates	Start: 20-06-2012 End: 20-06-2012
Previous/future work	No / No
Any associated project reference codes	BWT 16 - Contracting Unit No.
Any associated project reference codes	PA/2011/1386 - Planning Application No.
Type of project	Recording project
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	NONE None

Significant Finds	NONE None
Investigation type	"Field observation"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	NORTH LINCOLNSHIRE NORTH LINCOLNSHIRE GUNNESS East Butterwick Road, Burringham
Postcode	DN17 3JD
Study area	0 Hectares
Site coordinates	SE 83586 07919 53 0 53 33 39 N 000 44 16 W Point
Height OD / Depth	Min: 0m Max: 2.00m

Project creators

Name of Organisation	Network Archaeology Ltd
Project brief originator	Local Planning Authority (with/without advice from County/District Archaeologist)
Project design originator	Network Archaeology Ltd
Project director/manager	Chris Taylor
Project supervisor	Patrick Daniel
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Ian Fowler & Co

Project archives

Physical Archive Exists?	No
Digital Archive recipient	North Lincolnshire Museum Service
Digital Contents	"other"
Digital Media available	"Images raster / digital photography"
Digital Archive notes	CD of digital photographs taken on site.
Paper Archive recipient	Norh Lincolnshire Museum Service
Paper Contents	"other"
Paper Media available	"Context sheet","Drawing","Photograph","Plan","Report","Section","Unpublished Text"
Paper Archive notes	Site archive (context sheet, drawings and registers) plus copy of report.

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	EAST BUTTERWICK ROAD, BURRINGHAM: Archaeological Monitoring and Recording
Author(s)/Editor(s)	Daniel, P
Other bibliographic details	NAL Report No 594
Date	2012
Issuer or publisher	Unpublished
Place of issue or publication	Unpublished
Description	Bound A4 report (c. 30 pages) with figures and colour plates.
Entered by	Patrick Daniel (patrickd@netarch.co.uk)
Entered on	26 June 2012

PLATES

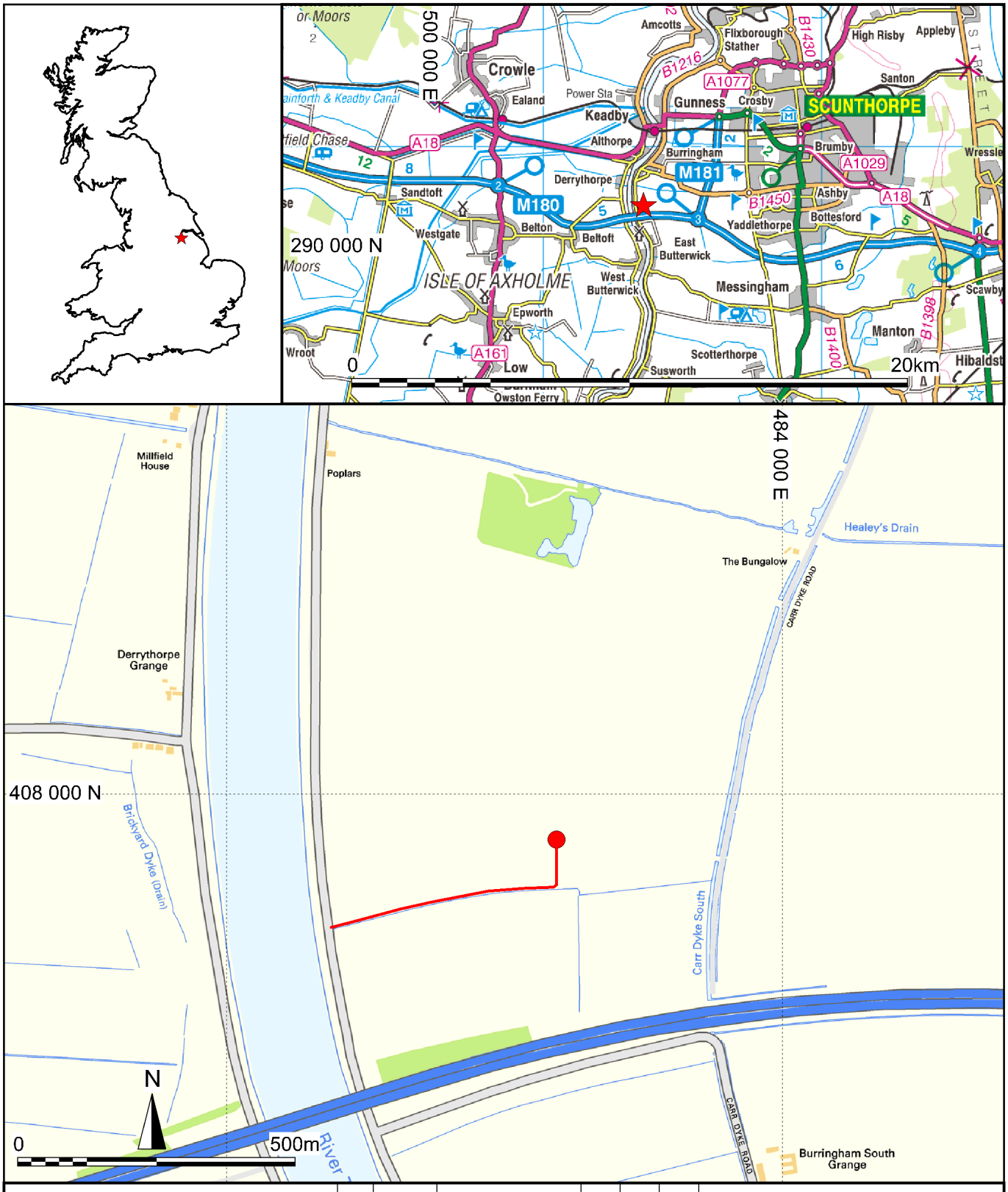
Plate 1: pre-excavation site shot, camera facing south west

Plate 2: Excavation in progress: top of peaty silt exposed below c.2m of overburden

Plate 3: Representative section of site depositional sequence

Plate 4: Area at cessation of monitoring, base stoned up. Camera facing SW

Figures



Wind turbine monitoring area

Access track

Ver	Date	Description	Drn	Chk	App
01.00	27/06/12	First issue	JLC	PD	CT

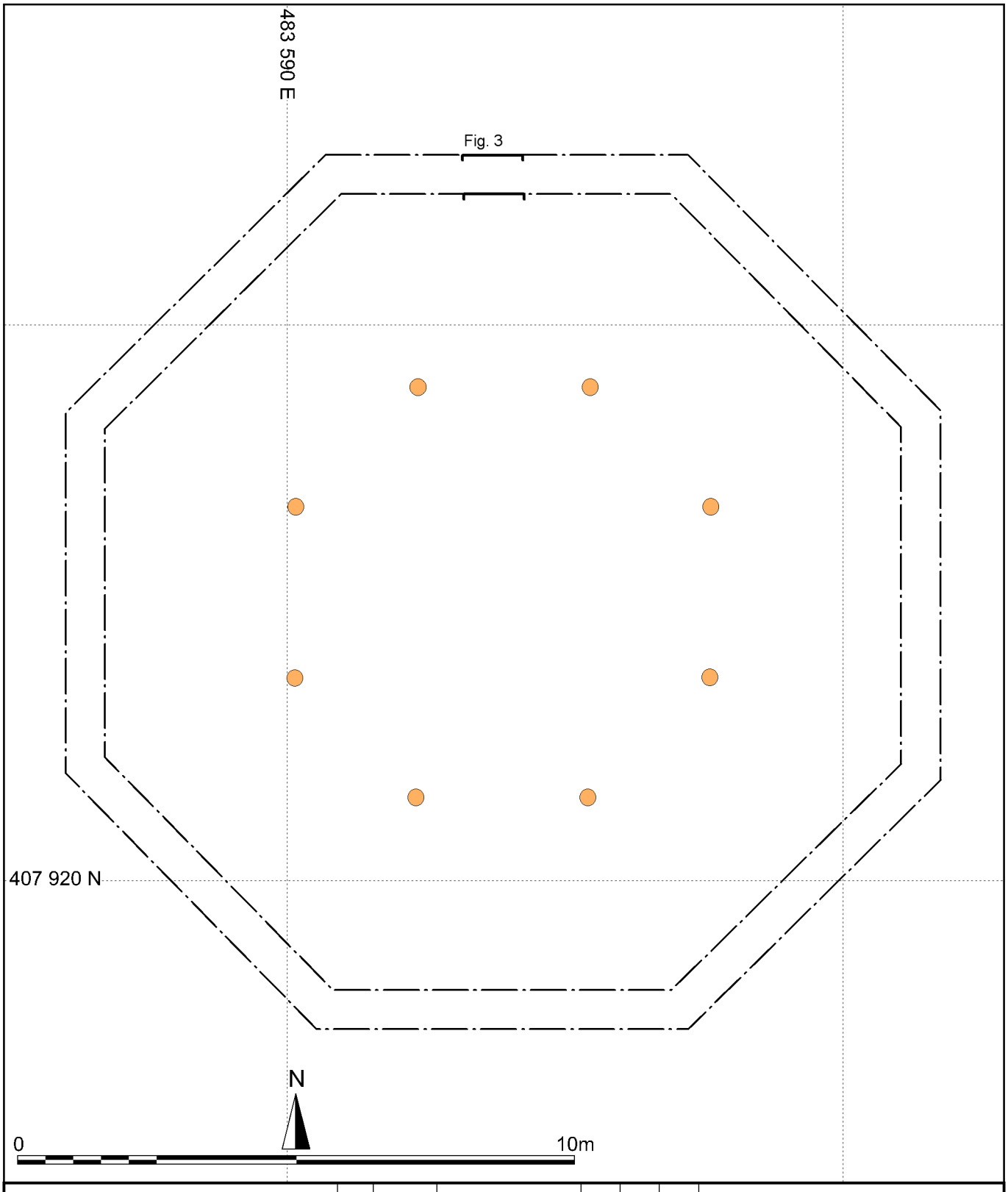
network archaeology

Burringham Wind Turbine

Figure 1: Location plan

Scale: 1:200,000 and 1:10,000

FILE NAME: BWT\16\report\illustrations\GIS\mapinfo\workspaces\ver01.00\figure01.wor



Limit of excavation

Piles

Ver	Date	Description	Drn	Chk	App
01.00	27/06/12	First issue	JLC	PD	CT

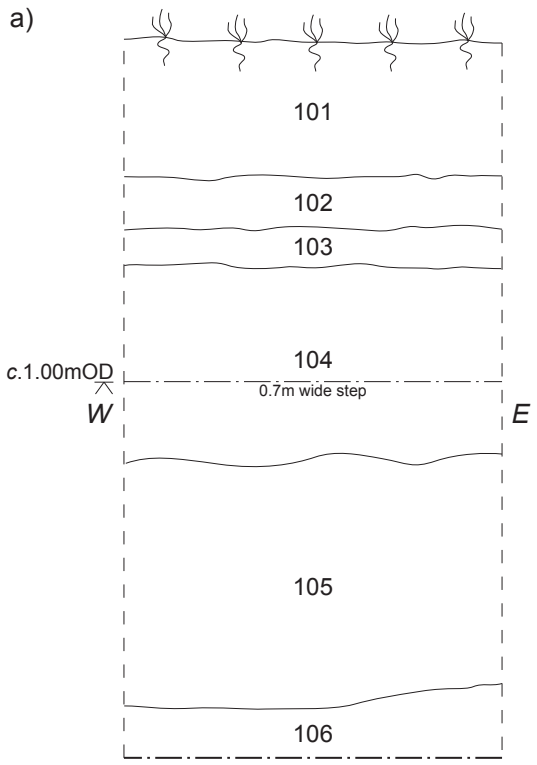
network archaeology

Burringham Wind Turbine

Figure 2: Plan of monitored area and location of representative section

Scale: 1:100

FILE NAME: BWT\16\report\illustrations\GIS\mapinfo\workspaces\ver01.00\figure02.wor



Limit of excavation

Layer line

1233 Layer/fill number

Ver	Date	Description	DM	Chk	App
01.00	27/06/12	First issue	JLC	PD	CT

network archaeology

Burringham Wind Turbine

Figure 3: Respresentative section

Scale 1:20

FILE NAME: BWT116\report\illustrations\figures\ver01.00\figure03.pdf