Thornton to Switch Island Link Road, Merseyside

Archaeological Watching Brief

Oxford Archaeology North

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Jacobs, on behalf of Balfour Beatty Ltd

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Prepared by:	Anna Hodgkinson	
Position:	Project Supervisor	
Date:	October 2009	
Checked by:	Emily Mercer	Signed.....
Position:	Senior Project Manager	
Date:	October 2009	
Approved by:	Alan Lupton	Signed.....
Position:	Operations Manager	
Date:	October 2009	

Oxford Archaeology North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1GF
t: (0044) 01524 541000
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

Janus House
Osney Mead
Oxford
OX2 0EA

t: (0044) 01865 263800
f: (0044) 01865 793496

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SUMMARY

A new 4.2km long single carriageway link road is proposed between the A565 Southport Road, at Thornton (NGR SD 3323 0160), and the Switch Island junction of the M57, M58, A59 and A5036 (NGR SD 3770 0009). Jacobs Engineering UK Ltd (Jacobs), on behalf of Balfour Beatty, are providing environmental, planning and design input into the proposed scheme, for which a programme of ground investigation (GI) works was required. As part of the GI works, a series of trial pits was excavated along the proposed route, which lies in an area of flat agricultural land where there has been little previous archaeological investigation. Due to the possibility of currently unknown archaeological remains being encountered during excavation of the trial pits, Jacobs commissioned Oxford Archaeology North (OA North) to undertake an archaeological watching brief. This would enable any archaeological remains disturbed during the groundworks to be recorded.

The watching brief was undertaken over nine days, between 15th and 28th September 2009. In total, 39 trial pits was excavated (TP101-139) under a continuous archaeological presence. The mechanical excavation of the trial pits was interrupted approximately every 0.5m by the geotechnical engineers undertaking the GI works, in order to sample the soil for the purposes of contamination and compaction testing. The trial pits measured between 0.6m and 0.7m wide, and 2.7m and 3.8m long, to an average depth of 4.0m.

No features of any archaeological significance were uncovered, but the relatively restrictive size of the investigations for archaeological purposes may have prevented the observation of such features. This may have been the case for TP113, which was situated in the vicinity of a possible post-medieval kiln, the site of which had been identified from information collated for the scoping study (Jacobs 2009). In addition, TP114 was positioned slightly to the west of the kiln site, but no evidence of the kiln was observed in either trial pit. A thin layer of dumped bricks and other building fragments were noted in TP125, that were relatively modern in origin. An infilled pond was observed in TP137, together with a series of post-medieval drains in the field containing TP120-123, and in TP127 and TP138. A field drainage ditch was also observed in each of the trial pits TP129 and TP130.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Jonathan Dempsey and Rob McNaught of Jacobs for commissioning the project and provision of information. Thanks are also due to the staff of Geotechnics Ltd, the team of site engineers undertaking the GI works.

The watching brief was undertaken by Anna Hodgkinson and Ged Callaghan. Anna also wrote this report. The finds were assessed by Chris Howard-Davis. The drawings were produced by Alix Sperr. The project was managed by Emily Mercer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 A new 4.2km long single carriageway link road is proposed between the A565 Southport Road, at Thornton, and the Switch Island junction of the M57, M58, A59 and A5036, Merseyside. Jacobs Engineering UK Ltd (Jacobs), on behalf of Balfour Beatty, are providing environmental, planning and design input into the proposed scheme, for which a programme of ground investigation (GI) works was required. As part of the GI works, a series of trial pits were excavated along the proposed route. The scheme lies within an area of flat agricultural land where there has been little previous archaeological investigation and, therefore, the potential for any below ground remains is unknown; those sites known from a scoping study (Jacobs 2009) are mainly standing structures, although the site of a post-medieval kiln is listed on the Historic Environment Record (HER) for Merseyside. For unknown archaeological remains being encountered during excavation of the trial pits, Jacobs commissioned Oxford Archaeology North (OA North) to undertake a an archaeological watching brief to enable any archaeological remains disturbed during the groundworks to be recorded.

1.1.2 The archaeological monitoring was undertaken over nine days between 14th and 28th September 2008. This report sets out the results of the watching brief.

1.2 LOCATION AND GEOLOGY

1.2.1 The proposed scheme lies approximately 8 miles to the north of Liverpool city centre, immediately to the north of two small satellite settlements, Netherton at the east end, and Thornton at the west end (Fig 1). From the Switch Island junction at the east end (NGR SD 3770 0009), the proposed route crosses Chapel Lane and then Brickwall Lane, and bypasses the A5207 between Netherton and Thornton. It eventually joins the A565 Southport Road at its junction with Ince Road and Long Lane (NGR 3323 0160).

1.2.2 To the north of the A5207, the countryside is characterised by open fields, used for agriculture. These fields have been either recently ploughed or lain to pasture. The ground is mostly flat, with little change in relief. Field boundaries exist in the form of hedges, some with ditches, or else simply as ditches that are mostly overgrown, with some scrub vegetation, and occasional trees.

1.2.3 The superficial geology of the proposed scheme is Glacial Till and Shirdley Hill sand (*ibid*), with pockets of alluvium comprising clay, silt and sand (bgs.ac.uk). The solid geology is Sherwood Sandstone and Mercia Mudstone. The Ince Blundell fault crosses the proposed scheme (*ibid*).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

1.3.1 This section is intended only as a brief summary of the known archaeological resource of the area along the proposed route, informed by the specification (Jacobs 2009, *Appendix 1*) to provide a context to the results. Sixteen sites of cultural heritage value were identified for the purposes of a scoping study within a 300m wide study area centred on the footprint of the proposed route. All sixteen sites are listed in Table 1 below.

1.3.2 None of the sites pre-date the post-medieval period (i.e. approximately 1540 or earlier), although this more likely reflects the lack of archaeological fieldwork in the area. Therefore, there is the potential for as yet unknown archaeological remains to survive below-ground. In addition, the scheme passes through a number of early field boundaries. Since the issue of the heritage information (*ibid*), the proposed route has been altered and now also crosses over the site of the post-medieval kiln in the vicinity of TP113 (Fig 2).

SITE NAME	DESIGNATION
Crosby Hall Conservation Area	Conservation Area
White House Including Stable Block, Ince Lane	Grade II Listed Building
Standing Cross at the Junction of Green Lane and Water Street	Scheduled Monument, Grade II Listed Building
Stocks at the Junction of Green Lane and Water Street	Grade II Listed Building
Site of Second World War Searchlight Battery	None
The Elms	None
Orchard House	None
Broom's Cross Wayside Cross, 150m North East of Orchard House	Scheduled Monument, Grade II Listed Building
Elm Farm	None
Site of a Medieval Cross Base	None
Post-medieval Kiln	None
Hills Farm	None
Bullins Farm	None
Manor House, Chapel Lane	Grade II Listed Building
Manor House Lodge, Chapel Lane	Grade II Listed Building
Brook Farmhouse, Chapel Lane	Grade II Listed Building

Table 1: Sites of cultural heritage value within the proposed route study area

2. METHODOLOGY

2.1 WATCHING BRIEF

2.1.1 A continuous archaeological presence was maintained during the excavation of 39 trial pits (TP101-139). These were divided across a series of fields along the proposed route of the link road (Fig 2). The numbering system for each of the excavations is in accordance with that provided by the client. The trial pits were mechanically excavated. A toothless bucket had been stipulated in the specification (*Appendix 1*), but due to the depths required for the geotechnical trial pits the client agreed with the on-site geotechnical team that a toothed bucket would be employed. The pits measured between 0.6m and 0.7m wide (i.e. the width of the machine bucket), and 2.7m and 3.8m long, to an average depth of 4.0m.

2.1.2 The watching brief recorded the location, extent and character of any surviving archaeological features and/or deposits exposed during the course of the excavation. No hand excavation was undertaken other than the cleaning up and examination of archaeological features where possible, up to 1.2m below current ground level. The work comprised the systematic examination of all subsoil horizons exposed, and the recording of all archaeological features and horizons, and any artefacts, identified during observation.

2.1.3 A daily record of the nature, extent and depths of ground works was maintained throughout the duration of the project. All archaeological contexts were recorded on OA North's *pro-forma* sheets, using a system based on that of the English Heritage Centre for Archaeology. A monochrome and digital photographic record was maintained throughout. Due to health and safety reasons profiles of features were sketched at a scale of 1:20.

2.2 FINDS

2.2.1 The finds' recovery and sampling programmes were carried out in accordance with best practice (following current Institute for Archaeologists guidelines 2008a). All artefacts recovered were retained.

2.3 ARCHIVE

2.3.1 A full archive has been compiled in accordance with current IfA (2008b) and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be provided in the English Heritage Centre for Archaeology format and will be submitted to the National Museums Liverpool on completion of the project. Copies of the report will also be submitted to the Historic Environment Record (HER), Merseyside. The Arts and Humanities Data Service (AHDS) online database *Online Access index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project. There is no material archive to be deposited within a suitable museum.

3. WATCHING BRIEF RESULTS

3.1 INTRODUCTION

3.1.1 The watching brief identified and recorded any archaeological features or deposits that may be present during the excavation of TP101-139. The results of the investigation for each trial pit is summarised below in Table 2. A list of contexts has been provided in *Appendix 2* and the finds listed in *Appendix 3*. A complete matrix for each trial pit is provided in *Appendix 4*.

3.2 RESULTS

3.2.1 The following are the most common soil types and geological occurrences encountered throughout all of the trial pits excavated. Unless otherwise described, the deposits listed in Table 2 for each trial pit fulfill these criteria:

- **Topsoil** (ploughsoil): dark brown, sometimes slightly greyish, rather friable, loosely compacted silty-sand or silty-clay, containing occasional flecks of manganese and well-sorted, occasional pebbles, usually no larger than 0.05m in diameter;

- **Subsoil**: dark brown, sometimes slightly greyish, medium-firm silty-clay with occasional manganese flecks. This deposit often contained lenses of orange natural clay;

- **Natural sand:** varying colours from light yellowish to orange to mid-brown in colour, although sometimes seen as light grey at depth, or often variegated. Occasional stones or gravel inclusions (*c* 0.05m) were noted, and it was normally observed as being friable or soft;

- **Natural clay**: brownish mid-orange in colour, containing sand lenses and occasional pebbles and cobbles varying in diameter between 0.05m and 0.2m. The higher levels of this deposit often contained lenses and pockets of sand, often up to several metres across. This deposit usually became increasingly red-brown in colour and more friable in compaction towards deeper levels;

- **Natural sandy-clay:** reddish or mid-brown to grey in colour, firm, with some shell fragments or degraded stone inclusions (<0.05m);

- **Natural sandy-silt:** mid- to dark brown in colour or bluish-grey at depth, soft friable, sometimes seen as being almost fluid-like at depth;

- **Underlying natural geology**: this deposit usually became apparent through several layers of very friable, rather wet sand, pale grey, sometimes very bright (oxidised) orange in colour and very clean. The deposit started to become more compact at a deeper level.

3.2.2 The table below provides a summary of the results for each trial pit, the locations of which are plotted in Figure 2.

TRIAL PIT	NATURE AND THICKNESS OF DEPOSIT	TRENCH SIZE
TP101	Topsoil: 0.49m Natural, pale grey brown silty-sand: 0.51m Natural, light brown clayey-sand: 0.1m Natural sandy-clay: 2.9m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP102	Topsoil: 0.55m Natural, mid-brown sand: 0.4m Natural, mid-grey clay: 2.2m Natural, mid-brown sandy-clay: 0.15m Natural clay: 0.7m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP103	Topsoil: 0.43m Natural sand: 1.6m Excavations curtailed at 2.03m due to repeated inward collapse of pit sides causing contamination of GI samples.	Length: 3.5m Width: 0.6m Depth: 2.03m
TP104	Topsoil: 0.46m Natural, pale brown sand: 0.7m Natural clay: 2.84m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP105	Topsoil: 0.5m Natural, mid-grey sandy-clay: 0.3m Natural clay: 3.2m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP106	Topsoil: 0.4m Natural clay: 3.6m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP107	Topsoil: 0.3m Subsoil: 0.1m Natural, dark-brown silty-sand: 0.1m Natural clay: 3.5m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP108	Topsoil: 0.3m Subsoil: 0.1m Natural, mid-brown sandy-clay: 1.3m Natural clay: 2.3m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP109	Topsoil: 0.3m Subsoil: 0.35m Natural, light-brown silty-sand: 0.7m Natural clay: 2.65m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP110	Topsoil: 0.15m Subsoil: 0.2m	Length: 3.5m Width: 0.6m

	Natural, light brown silty-sand: 0.4m Natural, mid-brown sandy-clay: 1.10m Natural clay: 2.15m	Depth: 4.0m
TP111	Topsoil: 0.25m Subsoil: 0.35m Natural sand: 0.4m Natural clay: 3.0m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP112	Topsoil: 0.5m Subsoil: 0.25m Natural, light brown sand: 0.5m Natural clay: 2.75m	Length: 3.75m Width: 0.6m Depth: 4.0m
TP113	Topsoil: 0.5m Subsoil: 0.1m Natural, light brown sand: 1.4m Natural, mid-brown sandy-clay: 0.5m Natural clay: 1.5m	Length: 4.0m Width: 0.6m Depth: 4.0m
TP114	Topsoil: 0.4m Subsoil: 0.1m Natural, light brown silty-sand: 0.3m Natural, mid-brown silty-clay: 1.5m Natural clay: 1.7m	Length: 4.0m Width: 0.6m Depth: 4.0m
TP115	Topsoil: 0.2m Subsoil: 0.35m Natural clay: 3.45m, with a lens of silty-sand between the depths of 2.85-3.15m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP116	Topsoil: 0.3m Subsoil: 0.2m Natural, mid-brown silty-sand: 0.45m Natural, mid-brown silty-clay: 1.1m Natural clay: 1.95m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP117	Topsoil: 0.2m Subsoil: 0.25m Natural, mid-brown sand: 0.3m Natural, dark-brown clay: 0.2m Natural, mid-brown clay: 1.2m Natural, mid-brown silty-sand: 0.4m Natural clay: 1.45m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP118	Topsoil: 0.4m Subsoil: 0.1m	Length: 3.5m Width: 0.6m

	Natural, light brown sand: 0.6m Natural clay: 1.9m	Depth: 3.0m
TP119	Topsoil: 0.3m Subsoil: 0.2m Natural, mid-brown silty-sand: 0.4m Natural, mid-brown clay: 0.6m Natural clay: 2.5m	Length: 3.5m Width: 0.6m Depth: 4.0m
TP120	Topsoil: 0.3m Subsoil: 0.2m Natural clay with sand-lenses: 3.5m A post-medieval ceramic field-drain, running roughly north/south was encountered in the centre of the trench, cut through subsoil at a depth of *c* 0.45m.	Length: 3.2m Width: 0.7m Depth: 4.0m
TP121	Topsoil: 0.45m Subsoil, orange sandy-clay, friable without inclusions: 0.15m Natural clay: 3.4m A post-medieval ceramic field-drain, running roughly north/south was encountered at the western end of the trench, cut through natural clay at a depth of *c* 0.9m. A possible field-drainage ditch with irregular profile, filled with orangeish clayey-sand without inclusions was encountered towards the mid-eastern end of trench, *c* 1.54m wide and *c* 0.84m deep.	Length: 3.2m Width: 0.7m Depth: 4.0m
TP122	Topsoil: 0.4m Natural clay: 3.6m Post-medieval ceramic field-drain, running roughly north/south encountered at western end of trench, cut through natural clay at a depth of *c* 0.65m. An irregularly-shaped shallow feature was also recorded that may be associated with the field-drain.	Length: 3.7m Width: 0.7m Depth: 4.05m
TP123	Topsoil: 0.6m Natural clay: 3.4m with a layer of natural sand between the depth of 2.2m and 2.6m A post-medieval ceramic field-drain, running roughly east/west was encountered at the southern end of the trench, cut through natural clay at a depth of *c* 0.95m.	Length: 3.2m Width: 0.7m Depth: 4.0m
TP124	Topsoil: 0.5m Subsoil, light yellow sand, friable without inclusions: 0.6m Natural clay: 2.9m	Length: 2.7m Width: 0.7m Depth: 4.0m
TP125	Topsoil: 0.4m Subsoil, dark-grey sandy-clay: 0.2m	Length: 3.5m Width: 0.63m

	Natural subsoil, pale grey, very sterile sand: 0.6m Natural clay: 2m Underlying natural geology: 0.85m + A possible feature was recorded within the upper layer of subsoil at a depth of *c* 0.5m. It consisted of a layer of dumped (?) broken bricks and other CBM fragments with occasional pieces of sandstone, with no fragment larger than 50mm. No complete bricks were discovered and the thickness of this feature did not exceed 0.1-0.2m. No evidence of charring was discovered and the cut of the feature was not evident. The fill was very similar to the surrounding layer of subsoil. This has been interpreted as a dump of building material.	Depth: 3.8m
TP126	Topsoil: 0.2m Subsoil: 0.5m Natural clay with large sand-lenses: 2.7m Underlying natural geology: 0.6m A post-medieval ceramic field-drain, running roughly north/south was encountered at the eastern end of the trench, cut through subsoil at a depth of *c* 0.5m.	Length: 3.5m Width: 0.63m Depth: 3.8m
TP127	Topsoil: 0.55m Natural clay with large sand-lens: 1.65m Underlying natural geology: 1.4m A post-medieval ceramic field-drain, running roughly north/south was encountered at the western end of the trench, cut through topsoil and clay at a depth of *c* 0.6m.	Length: 4.5m Width: 0.7m Depth: 3.6m
TP128	Topsoil: 0.3m Subsoil: 0.2m Natural subsoil, mid-brown sandy-silt, loosely compacted, without visible inclusions: 0.6m Natural clay with large sand lens: 0.9m Underlying natural geology: 1.8m+	Length: 3.6m Width: 0.7m Depth: 3.8m
TP129	Topsoil: 0.3m Subsoil: 0.15m Natural clay with sand lenses: 0.75m Underlying natural geology: 0.6m+ The cut of a field drainage ditch, running roughly east/west was encountered at mid-southern end of the trench, cut through subsoil and natural clay with a width of *c* 0.7m and a depth of 0.2m, from just below the topsoil.	Length: 3.1m Width: 0.7m Depth: 1.8m
TP130	Topsoil: 0.25m Subsoil: 0.2m Natural subsoil, mid-brown, friable sand, with	Length: 2.7m Width: 0.7m

	occasional pebbles: 0.3m Natural clay with sand lenses: 0.75m Underlying natural geology: 1.8m+ The cut of a field drainage ditch, running roughly north/south was encountered in the centre of the trench, cut through natural clay with a width of *c* 0.7m and a depth of 0.4m, from just below the natural subsoil.	Depth: 3.3m
TP131	Topsoil: 0.25m Subsoil: 0.2m Natural subsoil, light to mid-brown, friable sand, with occasional pebbles: 0.15m Natural subsoil, very oxidised sand, black in patches: 0.2m Natural clay: 0.35m Underlying natural geology: 2.5m+	Length: 2.7m Width: 0.7m Depth: 3.65m
TP132	Topsoil: 0.5m Subsoil: 0.23m Natural clay: 1.24m Natural, blueish-grey sandy-silt: 0.79m Underlying natural geology: 1.24m+	Length: 3.0m Width: 0.6m Depth: 4.02m
TP133	Topsoil: 0.15m Subsoil: 0.2m Natural subsoil, mid-brown, friable sand, with occasional pebbles: 0.25m Natural clay with sand lenses: 0.8m Underlying natural geology: 2m+	Length: 2.7m Width: 0.6m Depth: 3.4m
TP134	Topsoil: 0.2m Subsoil: 0.25m Natural subsoil, mid-orange, friable sand, with occasional pebbles: 0.05m Natural clay with sand lenses: 2.2m Underlying natural geology: 1m+	Length: 3.1m Width: 0.7m Depth: 3.7m
TP135	Topsoil: 0.2m Subsoil: 0.35m Natural clay with sand lenses: 1.95m Underlying natural geology: 0.8m+ A modern plastic field-drain, running roughly north/south was encountered in the trench, cut through natural clay at a depth of *c* 1m.	Length: 3.5m Width: 0.6m Depth: 3.3m
TP136	Topsoil: 0.4m Subsoil: 0.6m Natural clay with sand lenses: 1.7m	Length: 3.6m Width: 0.7m Depth: 3m

	Underlying natural geology: 0.3m+	
TP137	Topsoil: 0.2m Subsoil: 0.2m Cut and fills of pond: 1.4m Natural clay: 0.7m Underlying natural geology: 1.1m+ The cut of an infilled pond was encountered at a depth of *c* 2m. It was filled with firm, very wet clays and sands, all of which are formed from a mixture of subsoil and natural clay.	Length: 3.4m Width: 0.6m Depth: 3.6m
TP138	Topsoil: 0.2m Subsoil: 0.3m Natural clay: 3.5m Underlying natural geology: 0.1m+ A post-medieval ceramic field-drain, running roughly north/south was encountered at the western end of the trench, cut through natural clay at a depth of *c* 0.8m.	Length: 2.7m Width: 0.7m Depth: 4.1m
TP139	Topsoil: 0.5m Subsoil: 0.3m Natural clay 2.15m Underlying natural geology: 0.35m+	Length: 4.0m Width: 0.6m Depth: 3.3m

Table 2: Trial pit information

3.3 FINDS

3.3.1 In all, 65 fragments of artefacts were recovered from 11 trial pits during the investigation, and their distribution is shown in Table 3, below.

CONTEXT NO	TRIAL PIT NO	CERAMIC VESSEL	CERAMIC BUILDING MATERIAL	GLASS	STONE	TOTALS
12003	120	2				
12101	121	1				
12201	122	2				
12205	122		3			
12304	123		2			
12501	125	4		1		
12503	125	1	19			
12601	126	2	1			
12701	127			1		
13102	131			1		
13601	136		1			

13702	137		1			
13704	137	2	6			
13706	137	8	1			
13801	138	1				
13802	138				1	
Unstrat.		4				
Totals		*27*	*34*	*3*	*1*	*65*

Table 3: Distribution of the finds by material class

3.3.2 The majority of the material recovered comprised small and undiagnostic fragments of ceramic building material (34 fragments) with, in addition, 27 fragments of pottery, three of vessel glass, and one of coal. The entire assemblage was abraded and fragmentary, with most fragments being less than 50mm in maximum dimension.

3.3.3 Although restricted, the range of pottery fabrics present suggests a late date for most of the pottery, probably the late nineteenth century at the earliest, and continuing into the twentieth. Only fragments from the lowest fill of the pond in TP137, ***13706***, suggested any earlier activity, with the presence of Pearlware, Creamware, and 'Mocha' ware hinting at a very late eighteenth, or more likely, early nineteenth-century date. Although there were few diagnostic sherds, the range of vessels represented indicates a domestic origin for the material, with both utilitarian kitchenwares and finer tablewares (mainly white earthenwares, some transfer-printed). Their battered and abraded state, however, might suggest that they had reached their ultimate site of deposition through midden spreading, or similar agricultural activity. The very small amount of glass is of twentieth century or later date suggesting some deposition on site into the last century.

3.3.4 None of the finds have any potential for further assessment, and contribute little to the understanding of the site in a local, regional or national context, beyond that the area has been in agricultural use during the post-medieval period. Consequently, all categories of finds will be discarded and there will be requirement for storage or curation.

4. CONCLUSIONS

4.1 DISCUSSION

4.1.1 The watching brief maintained during the excavation of trial pits (TP101-139) along the proposed route of the link road did not uncover any features of any archaeological significance, but the relatively restrictive size of the investigations for archaeological purposes may have prevented the observation of such features. This may have been the case for TP113, which was situated in the vicinity of the possible post-medieval kiln, the site of which had been identified from information collated for the scoping study (Jacobs 2009). In addition, TP114 was positioned slightly to the west of the site, but no evidence of the kiln was observed in either trial pit. A thin layer of dumped bricks and other building fragments were noted in TP125, that were relatively modern in origin. An infilled pond was observed in TP137, together with a series of post-medieval drains in the field containing TP120-123, and in TP127 and TP138. A field drainage ditch was also observed in each of the trial pits TP129 and TP130.

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ILLUSTRATIONS

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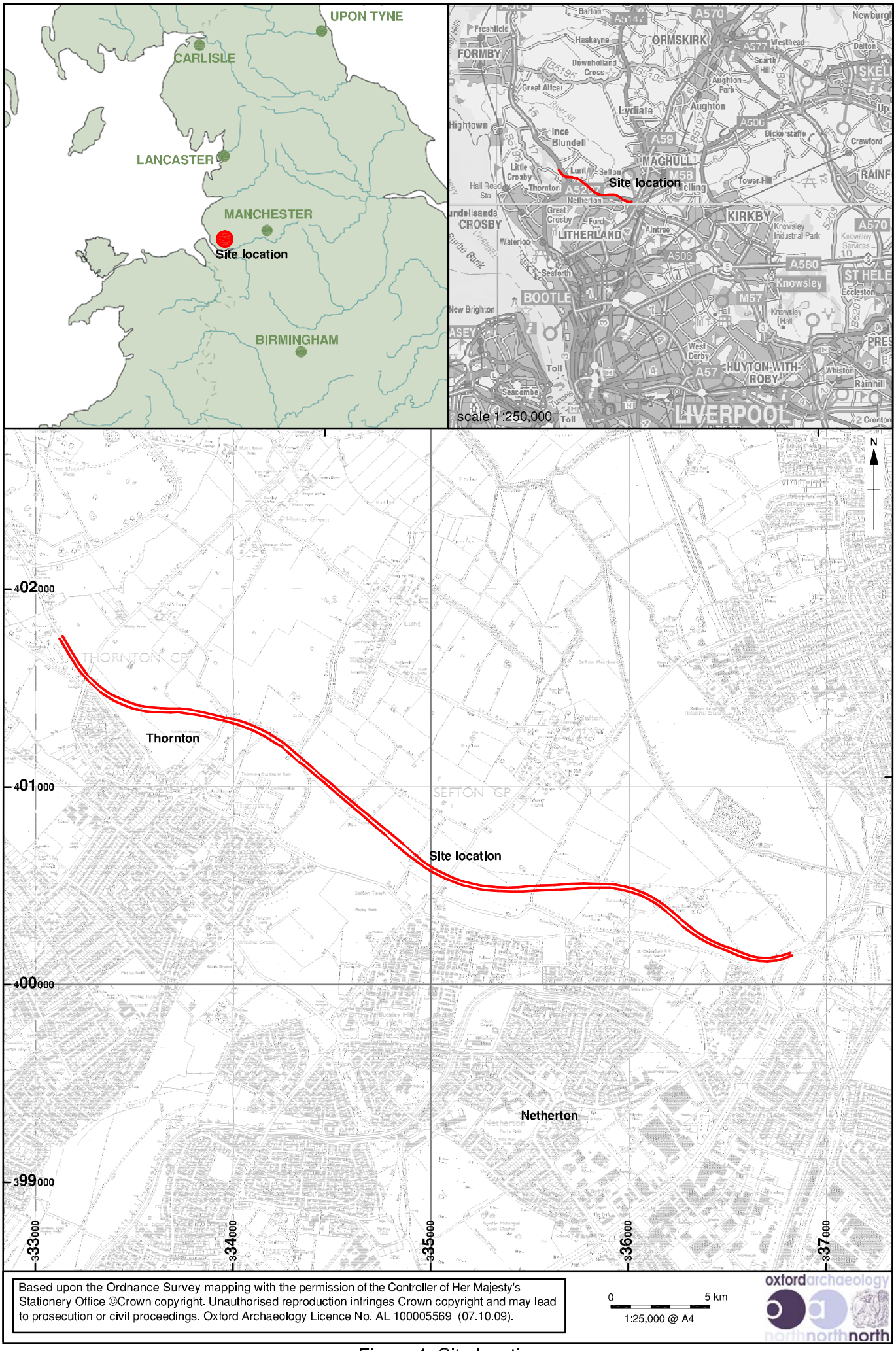
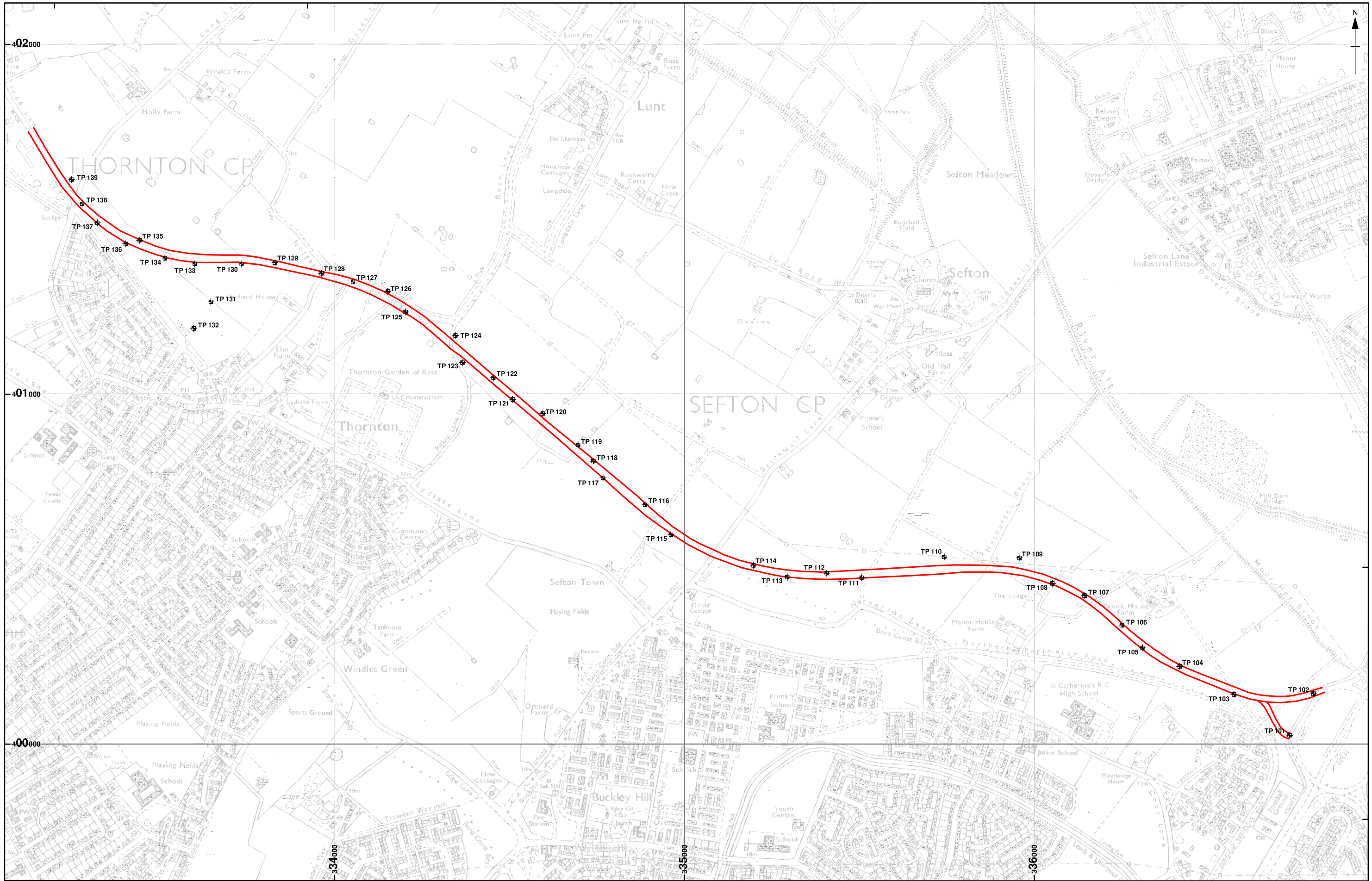


EM*L10183*APS*07.10.09

Figure 1: Site location



Site Location

TP 117 Trial Pit

0 250 m

1:10,000 @ A3

oxford archaeology north

EM*L10183*APS*07.10.09

Figure 2: Location of Trial Pits

Plate 1: South-facing section of TP121 showing land drain

Plate 2: East-facing section of TP123 showing land drain

Plate 3: Brick fragments observed in TP125

Plate 4: Sampling of TP127 by a member of the Geotechnics team

Plate 5: East-facing section of TP127

Plate 6: Drainage ditch in west-facing section of TP129

Plate 7: North-facing section of TP137 showing infilled pond deposits

APPENDIX 1: PROJECT SPECIFICATION

1.0 Introduction

Jacobs Engineering UK Ltd (Jacobs) has been commissioned by Balfour Beatty to provide environmental, planning and design input to the proposed Thornton to Switch Island Link scheme.

The proposed scheme is the Thornton to Switch Island Link Road consisting of a new single carriageway link approximately 4.2km long.

The link road will connect the A565 Southport Road, (Thornton) and the M57, M58, A59 and A5036 (Dunnings Bridge Road) at Switch Island. The proposed road crosses Brickwall Lane and Chapel Lane and bypasses the A5206 which is an existing route, and the local communities of Netherton and Thornton.

The route will be constructed as a 10m wide, two lane single carriageway with 1m wide hard strips adjacent to each 2.5m wide verge. It is proposed that the level of the highway will be either approximately at grade or on low embankment generally to the height of 1.0m.

The ground investigation is proposed for the purposes of obtaining soil and groundwater samples, carrying out in situ testing, installation and monitoring of standpipes and laboratory testing. This should gain sufficient information to allow outline design of the scheme to be carried out.

The works required comprise the following: -

• 6 cable percussive boreholes,

• 39 machine dug trial pits,

• In situ CBR testing,

• In situ standard penetration testing,

• Installation and monitoring of groundwater wells,

• Collection of soil and groundwater samples.

As agreed with Sarah-Jane Farr, Merseyside Archaeological Officer, an archaeological watching brief is required on geotechnical works consisting of:

• 39 trial pits.

The location of all works is shown on Figure 1. These locations may change in advance of or during works and should be seen as indicative only.

Jacobs propose to use Oxford Archaeology North to carry out the watching brief. A CV for the watching brief archaeologist will be provided prior to the start of works.

The following terms are used in this document:

The Employer means Jacobs Engineering UK Ltd who will appoint the Contractor;

The Consultant means a named individual appointed by Jacobs to fulfil this role;

The Contractor means Oxford Archaeology North;

The Curator means the Merseyside Archaeological Officer.

The work shall be undertaken in accordance with the requirements of:

- the Institute for Archaeologists' Standard and Guidance for an Archaeological Watching Brief (2008);
- English Heritage, 2002, Centre for Archaeology Guidelines for Environmental Archaeology; and
- English Heritage, 2004, Geoarchaeology: using earth sciences for understanding the Archaeological record.

This Specification is supplementary to these standards and guidance and all requirements of the standards and guidance shall apply.

2.0 Background

Geological Background

Information on the geology of the site has been gained from published maps and archive borehole data.

Made Ground

Made ground or worked ground is anticipated to exist only within localised pockets at the site that are associated with infilled ponds or current road alignments.

Superficial Geology

The geological maps indicate that the site is underlain by Glacial Till and recent Shirdley Hill Sand.

Solid Geology

The geological maps indicate that the site is underlain by Sherwood Sandstone and Mercia Mudstone which are indicated to dip at an angle of 5° and 18° to the north west. The Ince Blundell fault crosses the site of the site and follows and approximate north-north-west to south-south-east direction with a down throw on the eastern side of the fault.

Archaeological Background

Data gathering carried out for a scoping study (Jacobs 2009) has identified 16 sites of cultural heritage value within a study area extending 300m from the footprint of the proposed route. All sixteen sites are listed in Table 1 below and shown on Figure 1, however, only three of these are potential archaeological sites (Sites 5, 10 and 11), and none are located within the proposed scheme footprint.

Table 1 – Summary Information on Cultural Heritage Sites

Site Number	Site Name	Designation	Value
1	Crosby Hall Conservation Area	Conservation Area	Medium
2	White House Including Stable Block, Ince Lane	Grade II Listed Building	Medium
3	Standing Cross at the Junction of Green Lane and Water Street	Scheduled Monument, Grade II Listed Building	High
4	Stocks at the Junction of Green Lane and Water Street	Grade II Listed Building	Medium
5	Site of Second World War Searchlight Battery	None	Low
6	The Elms None	None	Low
7	Orchard House	None	Low
8	Broom's Cross Wayside Cross, 150m North East of Orchard House	Scheduled Monument, Grade II Listed Building	High
9	Elm Farm	None	Low
10	Site of a Medieval Cross Base	None	Negligible
11	Post Medieval Kiln	None	Low
12	Hills Farm	None	Low
13	Bullins Farm	None	Low
14	Manor House, Chapel Lane	Grade II Listed Building	Medium
15	Manor House Lodge, Chapel Lane	Grade II Listed Building	Medium
16	Brook Farmhouse, Chapel Lane	Grade II Listed Building	Medium

The absence of sites predating the medieval period is likely to reflect a lack of archaeological fieldwork, rather than the true cultural heritage resource of the study area. The land within the Study Area is relatively flat agricultural land, and has been subject to little previous archaeological investigation. It is likely that unknown archaeological remains are preserved within this area as sub-surface deposits.

3.0 Methodology for Watching Brief

Fieldwork

The archaeological watching brief shall be carried out on the following trial pits:

• TP01 through TP39.

Stripping overburden and any associated excavations shall be carried out by the Principal Contractor either by hand or using mechanical excavators fitted with toothless ditching buckets, and shall be continuously monitored by the watching brief archaeologist.

Where any remains are identified in the course of monitoring work, the watching brief archaeologist shall notify the Principal Contractor and the Engineer's Representative in charge of the geotechnical investigations and shall investigate and record the remains by the methodology set out below:

• Archaeological investigation and recording shall be undertaken in such a manner as to minimise the delay and disruption to the GI investigation, however, if necessary the archaeologist may instruct short suspensions of mechanical excavation, and may ask for backfilling to be delayed, to allow recording work to be undertaken;

• Where archaeological deposits of minor or unclear significance are identified, the GI investigation may continue to the full intended depth;

• Where the archaeological deposits are of greater significance, and in the judgement of the watching brief archaeologist, the completion of the investigation would cause an unacceptable impact, the watching brief archaeologist may instruct the abandonment of the trial pit, which may if necessary be re-sited and re-excavated subject to the approval of the Principal Contractor's representative and subsequently agreed by the relevant landowner;

• The Principal Contractor's borehole logs will be examined and any relevant data included in the report.

The excavated topsoil and subsoil should be stockpiled separately. Where the completed trial pits are to be reinstated, the excavated material should be replaced in the reverse order to excavation (i.e. subsoils first followed by topsoil).

Where structures, finds, features or deposits of archaeological interest are exposed, the watching brief archaeologist shall be afforded the opportunity to observe, clean assess, excavate by hand, sample and record them as appropriate.

Plans and sections of excavated features shall be produced at conventional scales.

All finds shall be retained and removed from the site and cleaned, catalogued and appropriately packaged.

Soil samples will be taken for palaeoenvironmental analysis where appropriate and specialist advice will be sought where necessary.

If human remains are encountered and it is not possible for them to be left in situ, the appropriate procedures shall be adhered to, including notification of the Coroner and obtaining an appropriate Ministry of Justice license for their removal.

Site Archive

This watching brief will form the first phase of works undertaken in support of the Environmental Assessment process. The resulting site archive will be transferred to the archaeological contractor appointed to undertake the remaining works at a later date. Ultimately, the site archive will be deposited with National Museums Liverpool.

Adequate resources shall be provided during fieldwork to ensure that all records are checked and internally consistent.

The Site Archive shall be prepared in accordance with the standards set out in Appendix 3 of MAP2 and the National Museums Liverpool "Guidelines for the Transfer of Archaeological Archives to National Museums Liverpool" (2006).

The Site Archive shall contain all the data collected during the investigation, including all primary written documents, plans sections and photographs. It shall be quantified, ordered, indexed and internally consistent.

Archive consolidation shall be undertaken immediately following the conclusion of fieldwork.

The site record shall be checked, cross-referenced and indexed as necessary.

All retained finds shall be cleaned, conserved, marked and packaged as necessary to maintain the archive prior to transfer.

All retained finds shall be assessed and recorded using pro-forma recording sheets, by suitably qualified and experienced staff. Initial artefact dating shall be integrated with the site matrix.

The archive shall be assembled in accordance with the guidelines set out in English Heritage's Management of Archaeological Projects 2 (MAP2; paragraphs 4.9, 6.8 and 6.10 and Appendix 3) and National Museums Liverpool "Guidelines for the Transfer of Archaeological Archives to National Museums Liverpool" (2006). In addition to the site records, artefacts, ecofacts and other sample residues, the archive shall contain:

• site matrices where appropriate;

• a summary report synthesising the context records;

• a summary of the artefact record; and

• a summary of any other records or materials recovered.

The integrity of the primary field records shall be preserved and the Contractor shall create security copies in digital, fiche or microfilm format of all primary field records.

The archive shall be presented to the archive curator within 12 months of completion of fieldwork, unless alternative arrangements have been made with the Archaeological Officer and Archive Curator.

Reporting

The Sub-Consultant shall provide verbal or written progress reports and interim plans or other data at any point during the contract, on request from the Consultant.

The report shall clearly acknowledge the role of the Employer, and shall show the logo of Jacobs, Balfour Beatty and Sefton Council. All reports shall be prepared in line with the principles set out in Appendix 4 of MAP2, and shall include as a minimum:

• a concise non-technical summary of the results;

• a description of the background to and circumstances of the work;

• a brief description of the previously known archaeology of each site;

• a description of the methodology used;

• an objective description of the results of the watching brief ("factual data" in MAP2);

• an assessment of each category of data ("statement of potential" in MAP2);

• a brief interpretation of the results of the fieldwork;

• a statement of the storage and curation requirements for each category of data;

• general and detailed plans at appropriate scales, showing the location of each trial pit accurately positioned on an up-to-date Ordnance Survey base (all scales used on any drawings should be standard scales such as would appear on a normal scale rule);

• detailed plans and sections of individual features where necessary, and

• complete matrix for each trial pit.

A draft report shall be completed within two weeks of the completion of fieldwork. Immediately upon completion of the report, the report and any data or other documentation produced during the post-

excavation assessment process shall be integrated into the site archive. The site archive will be stored in suitable conditions in a secure location until its transfer to the archaeological contractor appointed to carry out the remainder of the archaeological fieldwork.

Copies of the report shall be deposited with the Merseyside Historic Environment Record (HER) and National Museums Liverpool (ultimate recipient of the project archive).

4.0 General Provisions

Contractual Arrangements

The Contractor will be appointed under Jacobs' terms and conditions. A copy of these are provided in Appendix C.

Scheduling of Works

It is envisaged that the geotechnical works will start on Monday 14 September and last for approximately two weeks. The Principal Contractor's working hours are nominally 08:00 through 17:00. The watching brief will be in place for the field activities only. This programme is provisional and may vary.

CAD plans showing the locations of all geotechnical works and archaeological sites will be provided to the Contractor prior to the start of works.

Health and Safety

The scope and duration of the scheme means the scheme is notifiable as defined by the Construction (Design and Management) Regulations 2007.

All site staff shall be inducted onto site by the Principal Contractor. This does not negate or supersede any other health and safety requirements set out in this document.

All site staff shall be required to hold current CSCS cards and to present these to the Principal Contractor prior to induction.

A method statement for the ground investigation prepared by the Principal Contractor shall be made available to the Contractor prior to the start of works.

The Contractor shall provide the Principal Contractor with their method statement and should comply with all reasonable requests of the Principal Contractor's site team.

Welfare facilities will be provided by the Principal Contractor.

A hazard identification table has been provided in Appendix B, based on similar works undertaken in this area. This is for information only, to aid the Contractor in preparation of their method statement, safe plans of action and risk assessments. The hazards identified should not be viewed as definitive or exhaustive.

Appendix A – Standards and Guidance

Brown, Duncan H, 2007, Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation, Archaeological Archives Forum

English Heritage, 1991, Management of Archaeological Projects, Second Edition (MAP2)

English Heritage, 1996, Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood

English Heritage, 2002, Centre for Archaeology Guidelines for Environmental Archaeology

English Heritage, 2004, Geoarchaeology: using earth sciences for understanding the Archaeological record

Garratt-Frost, Stephen, 1992, "The Law and Burial Archaeology", IFA Technical Paper No. 11.

Institute for Archaeologists 1990 (revised to 2008) Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology

Institute for Archaeologists, 1985, (revised to 2008) Code of Conduct

Institute for Archaeologists, 1994, (revised 2001 and 2008) Standard and Guidance for an Archaeological Watching Brief

Institute for Archaeologists, 2001, Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Material (Revised 2008)

Institute for Archaeologists, 2008, (Interim) Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives

Jacobs, 2009, Thornton to Switch Island Link: Commissioning Report

Longworth, C., 1996, Guidelines for the Transfer of Archaeological Archives to National Museums Liverpool (Revised 2008)

McKinley, Jacqueline I and Roberts, Charlotte, 1993, Excavation and post-excavation treatment of cremated and inhumed human remains, IFA Technical Paper No. 13

Museums and Galleries Commission, 1992, Standards in the museum care of archaeological collections

United Kingdom Institute for Conservation, 1990, Guidelines for the preparation of Excavation Archives for long-term storage

Appendix B – Hazard Identification Table

In order to aid the Sub-Consultant's preparation of a Risk Assessment, Safe Plans of Action and any other health and safety considerations as required by this specification, a list of potential hazards is included below. These hazards have been identified from previous similar schemes in this area. This is not intended to be an exhaustive list but identifies significant hazards only. This does not preclude the need for the Sub-Consultant to undertake their own risk assessments, and any such assessments may differ from the information provided.

Hazard	Hazardous Activity
Crushing/asphyxiation	Working in/near excavations Working near plant
Struck by mobile plant	Working near plant Moving to/from/between sites
Falling from height	Working near excavations Working near deep land drains
Respiratory disorders - Dust and allergens	Working in/near excavations Working in agricultural land with animals present
Damage to eyes from Wind-blown sand	Working in/near excavations in sandy soils
Skin damage	Working in open areas/exposure to sunlight
Damage/injury from livestock	Working in agricultural land with animals present
Slips and trips	Working on/crossing uneven ground surface
Struck by vehicle	Working near/crossing roads
Vehicle collisions	Travelling to/from/between locations
Striking buried or overhead services	Working near plant Working in/near excavations

APPENDIX 2: CONTEXT LIST

Ctxt = Context number; TP No = Trial pit; Interp = Interpretation; T = Thickness; W = Width, D = Depth

CTXT	TP	INTERP	DESCRIPTION
10101	101	Topsoil	Dark brown soft sandy-silt (T=0.49m)
10102	101	Natural	Pale greyish brown soft silty-sand. (T=0.51m)
10103	101	Natural	Light brown soft clayey-sand. (T=0.1m)
10104	101	Natural	Mid-brown firm sandy-clay. (T=2.9m)
10201	102	Topsoil	Dark brown soft sandy-silt. (T=0.55m)
10202	102	Natural	Mid-brown soft sand. (T=0.4m)
10203	102	Natural	Mid-grey firm clay. (T=2.2m)
10204	102	Natural	Mid-brown sandy-clay with pebbles. (T=0.15m)
10205	102	Natural	Reddish brown firm clay. (T=0.7m)
10301	103	Topsoil	Dark brown soft sandy-silt. (T=0.43)
10302	103	Natural	Light brown friable sand. (T=1.6m)
10401	104	Topsoil	Mid-brown soft sandy-silt. (T=0.46m)
10402	104	Natural	Pale brown friable sand. (T=0.7m)
10403	104	Natural	Reddish brown firm clay. (T=2.84m)
10501	105	Topsoil	Dark brown soft sandy-silt. (T=0.5m)
10502	105	Natural	Mid-grey firm sandy-clay. (T=0.3m)
10503	105	Natural	Mid-brown firm clay. (T=3.2m)
10601	106	Topsoil	Greyish brown soft sandy-silt. (T=0.4m)
10602	106	Natural	Mid-brown firm clay. (T=2.0m)
10603	106	Natural	Mid-brown firm clay with shell fragments. (T=1.6m)
10701	107	Topsoil	Greyish mid-brown soft sandy-silt. (T=0.3m)
10702	107	Subsoil	Mid-brown soft sandy-silt. (T=0.1m)
10703	107	Natural	Dark brown soft silty-sand. (T= 0.1m)
10704	107	Natural	Mid-brown firm clay. (T=2.0m)
10705	107	Natural	Mid-brown firm clay with degraded stone. (T=1.5m)

10801	108	Topsoil	Mid-greyish brown friable sandy-silt. (T=0.3m)
10802	108	Subsoil	Mid-brown soft sandy-silt. (T=0.1m)
10803	108	Natural	Mid-brown firm sandy-clay. (T=1.3m)
10804	108	Natural	Reddish brown firm clay. (T=2.3m)
10901	109	Topsoil	Mid-brown friable sandy-silt. (T=0.3m)
10902	109	Subsoil	Mid-brown soft sandy-silt. (T=0.35m)
10903	109	Natural	Light brown soft silty-sand. (T=0.7m)
10904	109	Natural	Mid-brown firm clay. (T=1.0m)
10905	109	Natural	Reddish brown soft sandy-clay. (T=0.8m)
10906	109	Natural	Reddish brown firm clay with occasional pebbles. (T=0.85m)
11001	110	Topsoil	Greyish-mid-brown friable sandy-silt. (T=0.15m)
11002	110	Subsoil	Mid-brown soft sandy-silt. (T=0.2m)
11003	110	Natural	Light brown soft silty-sand. (T=0.4m)
11004	110	Natural	Mid-brown firm sandy-clay. (T=1.1m)
11005	110	Natural	Reddish-mid-brown soft clay. (T=2.15m)
11101	111	Topsoil	Light greyish-brown soft sandy-silt. (T=0.25m)
11102	111	Subsoil	Mid-brown soft sandy-silt. (T=0.35m)
11103	111	Natural	Light brown soft sand. (T=0.4m)
11104	111	Natural	Mid-brown firm sandy-clay. (T=1.1m)
11105	111	Natural	Reddish-brown firm clay with degraded stone (T=1.9m)
11201	112	Topsoil	Dark brown soft silty-sand. (T=0.5m)
11202	112	Subsoil	Dark brown soft silty-sand. (T=0.25m)
11203	112	Natural	Light brown-greyish very soft sand. (T= 0.5m)
11204	112	Natural	Mid-brown-greyish firm clay with occasional pebbles and degraded stone. (T=1.0m)
11205	112	Natural	Mid-brown-greyish very firm clay with charcoal flecks. (T=1.75m)
11301	113	Topsoil	Dark brown soft silty-sand. (T=0.5m)
11302	113	Subsoil	Dark brown soft silty-sand. (T=0.1m)

11303	113	Natural	Light brown soft sand. (T=1.1m)
11304	113	Natural	Light greyish-brown friable sand with occasional stones (T=0.3m)
11305	113	Natural	Mid-brown firm sandy-clay. (T=0.5m)
11306	113	Natural	Dark greyish-brown very firm clay (T=1.5m)
11401	114	Topsoil	Mid-brown sandy-silt. (T=0.4m)
11402	114	Subsoil	Mid-brown sandy-silt (no root action). (T=0.1m)
11403	114	Natural	Light brown silty-sand. (T=0.3m)
11404	114	Natural	Mid-brown friable silty-clay with occasional pebbles. (T=1.5m)
11405	114	Natural	Dark brown moist clay. (T=1.7m)
11501	115	Topsoil	Greyish-brown sandy-silt. (T=0.2m)
11502	115	Subsoil	Mid-brown sandy-silt. (T=0.35m)
11503	115	Natural	Mid-brown sandy-silty-clay. (T=2.3m)
11504	115	Natural	Reddish-brown sandy-clay. (T=0.85)
11505	115	Natural	Lens of silty-sand between two clay layers (***11503*** and ***11504***). (T=0.3m)
11601	116	Topsoil	Mid-greyish-brown friable sandy-silt. (T=0.3m)
11602	116	Subsoil	Dark brown soft sandy-silt (T=0.2m)
11603	116	Natural	Mid-brown soft silty-sand. (T=0.45m)
11604	116	Natural	Mid-brown firm silty-clay. (T=1.1m)
11605	116	Natural	Reddish-brown firm clay. (T=1.95m)
11701	117	Topsoil	Mid-greyish-brown friable sandy-silt. (T=0.2m)
11702	117	Subsoil	Dark brown soft sandy-silt. (T=0.25m)
11703	117	Natural	Mid-brown soft sand. (T=0.3m)
11704	117	Natural	Dark brown clay. (T=0.2m)
11705	117	Natural	Mid-brown clay with patches of degraded stone. (T=1.2m)
11706	117	Natural	Mid-brown silty-clay, very wet. (T=0.4m)
11707	117	Natural	Mid-brown clay with occasional pebbles. (T=1.45m)
11801	118	Topsoil	Mid/dark brown soft sandy-silt. (T=0.4m)

11802	118	Subsoil	Light brown soft sandy-silt. (T=0.1m)
11803	118	Natural	Light brown friable sand. (T=0.6m)
11804	118	Natural	Mid-brown firm clay. (T=1.0m)
11805	118	Natural	Mid-brown firm clay with degraded stone. (T=0.9m)
11901	119	Topsoil	Dark brown soft sandy-silt. (T=0.3m)
11902	119	Subsoil	Dark brown firm sandy-silt. (T=0.2m)
11903	119	Natural	Mid-brown soft silty-sand. (T=0.4m)
11904	119	Natural	Mid-brown firm silty-sand. (T=0.6m)
11905	119	Natural	Brownish-grey firm clay. (T=1.0m)
11906	119	Natural	Grey firm clay with degraded stone. (T=1.5m)
12001	120	Topsoil	Dark brown friable very sandy-clay. (T=0.3m)
12002	120	Cut of land drain	V-shaped cut for ceramic land drain, with flat bottom. (W=0.4m, 0.1m at the interface with ***12005***, D=0.2m)
12003	120	Fill of ***12002***	Mid-brown/orange silty-clay.
12004	120	Subsoil	Dark brown grey firm silty-clay. (T=0.2m)
12005	120	Natural	Mid-brown orange clay with occasional gravel. (T=3.5m)
12101	121	Topsoil	Dark brown friable sandy-clay. (T=0.45m)
12102	121	Subsoil	Orange friable sandy-clay. (T=0.15m)
12103	121	Natural	Mid-orange brown well-compacted clay. (T=3.4m)
12104	121	Cut of land drain	V-shaped cut for post-medieval land drain running N-S. (D=0.38m, W=0.4m)
12105	121	Fill of ***12104***	Broken ceramic land drain.
12106	121	Cut of land drain?	Possible cut of land drain ditch, irregular shape. (D=0.84m, W=1.54m)
12107	121	Fill of ***12106***	Orange-brown firm clayey-sand.
12201	122	Topsoil	Dark brown friable clayey-loam. (T=0.4m)
12202	122	Natural	Mid-brown orange well-compacted clay. (T=3.6m)
12203	122	Natural	Pocket of loose dark grey-orange sand within ***12202***.
12204	122	Cut of land drain	Cut of land drain, post-medieval, running N-S, observed on very edge of pit in plan. (W=0.2m+, D not possible to determine)

12205	122	Fill of ***12204***	Dark grey sandy-clay.
12206	122	Cut of possible feature	Irregular shaped shallow feature, possible part of disturbance ***12204***. (D=0.1m, W=0.84m)
12207	122	Fill of ***12206***	Dark brown-black compacted silty loam.
12301	123	Topsoil	Dark brown loose very sandy-clay. (T=0.6m)
12302	123	Natural	Mid-orange-brown well-compacted clay.
12303	123	Cut of land drain	Cut for post-medieval land drain, broad V-shape, running E-W. (D=0.6m, W=0.95m)
12304	123	Fill of ***12303***	Mid-orange brown friable/compact clay sand.
12305	123	Natural	Mid-orange-brown clay, gravel inclusions.
12306	123	Natural	Mid-brown loose sand. (T=0.4m)
12307	123	Natural	Mid-brown well-compacted sandy-clay. (T=3.4m)
12401	124	Topsoil	Dark brown friable sandy-clay. (T=0.5m)
12402	124	Subsoil	Light yellow loose sand. (T=0.6m)
12403	124	Natural	Brown grey well-compacted clay. (T=0.5m)
12404	124	Natural	Same as ***12304*** but dark in colour with sand lenses. (T=2.4m)
12501	125	Topsoil	Mid-dark brown friable very sandy-clay. (T=0.4m)
12502	125	Cut of Dump	Broad U-shaped cut. (D=0.12m, W=0.45m)
12503	125	Fill of ***12502***	Mid-brown grey well-compacted sandy-clay containing CBM (fragments up to 50mm).
12504	125	Subsoil	Dark grey sandy-clay. (T=0.2m)
12505	125	Subsoil	Light grey very sterile sand. (T=0.6)
12506	125	Natural	Mid-orange clay with pebbles. (T=2.0m)
12507	125	Underlying natural geology	Light grey loose sand. (T=0.8m)
12601	126	Topsoil	Mid-brown friable sandy-clay. (T=0.2m)
12602	126	Natural	Light orange clay with pebbles. (T=2.7m)
12603	126	Cut of land drain	V-shaped cut for post-medieval land drain running roughly N-S. (W=0.48m, D=0.4m)
12604	126	Fill of ***12603***	Similar to ***12601***.

12605	126	Subsoil	Dark brown well-compacted silty-clay. (T=0.5m)
12606	126	Sand lenses	Sand lenses within the natural clay ***12602***.
12607	126	Underlying natural geology	Light grey-green sand.
12701	127	Topsoil	Dark brown well-compacted sandy-clay silt. (T=0.55m)
12702	127	Natural	Mid-orange to grey-brown very firm clay. (T=1.65m)
12703	127	Cut of land drain	?V-shaped cut of post-medieval land drain (only east side observed on west side of pit), running NW-SE. (W=0.63m +, D=0.7m)
12704	127	Fill of ***12703***	Orange sandy and clayey backfill.
12706	127	Sand lenses	Sand lenses within natural clay ***12702***. (Max dimensions W= 2m+, T=1.6m)
12707	127	Underlying natural geology	Grey-yellow friable sands. (T=1.4m)
12801	128	Topsoil	Mid-dark brown friable sandy-clay/silt. (T=0.3m)
12802	128	Subsoil	Dark brown well-compacted sandy-clay. (T=0.2m)
12803	128	Subsoil	Mid-brown friable sandy-silt. (T=0.6m)
12804	128	Natural	Red-brown well-compacted clay. (T=0.8m)
12805	128	Sand lenses	Large lens of sand within natural clay ***12804***. (Max dimensions W=2.3m, T=0.5m)
12806	128	Underlying natural geology	Yellow sand. (T=1.8m)
12901	129	Topsoil	Dark brown loose sandy-silt. (T=0.3m)
12902	129	Subsoil	Dark brown well-compacted silty-clay. (T=0.15m)
12903	129	Natural	Mid-orange firm clay with sand lenses. (T=0.75m)
12904	129	Cut of land drain	V-shaped cut of land drain running E-W. (D=0.4m, W=0.7m)
12905	129	Fill of ***12904***	Dark mid-brown fine grained sand.
12906	129	Underlying natural geology	Oxidised grey sand. (T=0.6m)
13001	130	Topsoil	Mid-dark brown friable sandy-silt. (T=0.25m)

13002	130	Subsoil	Dark brown well-compacted sandy-clay. (T=0.2m)
13003	130	Subsoil	Mid-brown friable sand. (T=0.3m)
13004	130	Natural	Mid-orange firm clay. (T=0.75m)
13005	130	Cut of drainage ditch	V-shaped cut of drainage ditch running N-S. (D=0.4m, W=0.7m)
13006	130	Fill of ***13005***	Almost black friable sandy-silt.
13007	130	Underlying natural geology	Very bright orange friable sand. (T=1.8m)
13101	131	Topsoil	Dark brown-greyish friable sandy-silt. (T=0.25m)
13102	131	Subsoil	Dark brown well-compacted silty-clay. (T=0.2m)
13103	131	Subsoil	Light to mid-brown friable sand. (T=0.15m)
13104	131	Sandy Layer	Layer of sandy very oxidised soil, black flecks. (T=0.2m)
13105	131	Natural	Orange very firm clay with pebbles. (T=0.35m)
13106	131	Underlying natural geology	Yellow friable sand. (T=2.05m)
13201	132	Topsoil	Mid-brown-greyish loose sandy-silt (T=0.5m)
13202	132	Subsoil	Mid-brown-greyish firm sandy-silt. (T=0.23m)
13203	132	Natural	Light brown firm creamy clay. (T=0.67m)
13204	132	Natural	Light brown firm pinkish clay. (T=0.57m)
13205	132	Natural	Bluish-grey friable sandy-silt. (T=0.79m)
13206	132	Underlying natural geology	Bluish-grey Underlying natural geology. (T=1.24m)
13301	133	Topsoil	Mid-dark brown friable sandy-silt. (T=0.15m)
13302	133	Subsoil	Dark brown well-compacted sandy-clay/silt. (T=0.2m)
13303	133	Natural	Mid-brown friable sand. (T=0.25m)
13304	133	Natural	Mid-orange firm clay. (T=0.8m)
13305	133	Underlying natural geology	Orange sand mottles with grey sand. (T=2.0m)
13401	134	Topsoil	Mid-dark brown friable sandy-silt. (T=0.2m)

13402	134	Subsoil	Mid-dark brown loose sandy-silt. (T=0.25m)
13403	134	Natural	Mid-orange friable sand. (T=0.05m)
13404	134	Natural	Mid-orange clay with large sand lenses. (T=2.2m)
13405	134	Underlying natural geology	Yellow and grey sand. (T=1.0m)
13501	135	Topsoil	Dark-mid brown friable sandy-silt. (T=0.2m)
13502	135	Subsoil	Mid-brown medium-well-compacted sandy-clay. (T=0.35m)
13503	135	Natural	Mid-orange-brownish friable clay. (T=1.95m)
13504	135	Cut of land drain	Cut of modern plastic land drain running roughly E-W. (W=0.7m+, D=0.5m)
13505	135	Fill of ***13504***	Orange clean sand.
13506	135	Underlying natural geology	Yellow to pale grey sand. (T=0.8m)
13601	136	Topsoil	Mid-brown friable sandy-silt. (T=0.4m)
13602	136	Subsoil	Dark brown friable silty-clay. (T=0.6m)
13603	136	Natural	Mid-brown-orangeish firm clay. (T=1.7m)
13604	136	Underlying natural geology	Yellowish pale sand (T=0.3m)
13701	137	Topsoil	Mid-brown-greyish very friable sandy-silt. (T=0.2m)
13702	137	Subsoil	Mid-dark brown medium-well-compacted sandy-clay. (T=0.2m)
13703	137	Fill of ***13705***	Dark brown sandy-silt. (T=0.5m)
13704	137	Fill of ***13705***	Mid-brown-orangeish firm clay. Backfill mix of natural and subsoil. (T=0.4m)
13705	137	Cut of pond	Cut of probable pond which has been backfilled after use. (D=1.6m+, W=>3.4m)
13706	137	Fill of ***13705***	Dark brown well-compacted clay. Lowest fill of ***13705***, deliberately deposited. (T=0.7m)
13707	137	Natural	Mid-brown clay. (T=0.7m)
13708	137	Underlying natural geology	Grey sand. (T= 1.1m)

13801	138	Topsoil	Very dark brown friable sandy-silt. (T=0.2m)
13802	138	Subsoil	Mid-dark brown friable slightly clayey-sand. (T=0.3m)
13803	138	Cut of land drain	V-shaped cut of ceramic land drain running roughly N-S.(W=0.35m+, D=0.75m)
13804	138	Fill of ***13803***	Grey-brown sandy-clay.
13805	138	Natural	Mid-orange friable clay with pockets of sand. (T=3.5m)
13806	138	Underlying natural geology	Grey, clean loose sand. (T=0.1m)
13901	139	Topsoil	Dark brown sandy-silt. (T=0.5m)
13902	139	Subsoil	Dark brown greyish sandy-silt. (T=0.3m)
13903	139	Natural	Light brown firm creamy clay (T=0.29m)
13904	139	Natural	Light brown, sandy coloured firm clay. (T=0.86m)
13905	139	Natural	Mid-brown firm clay (T=1.0m)
13906	139	Underlying natural geology	Sandstone, yellowish. (T=0.35m)

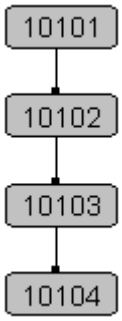
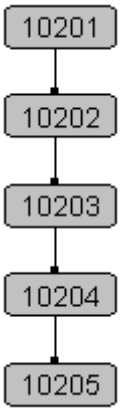
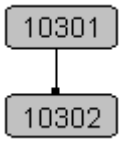
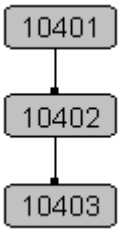
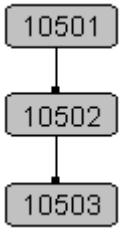
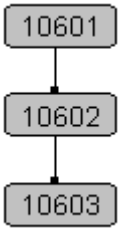
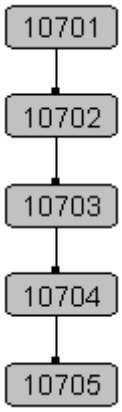
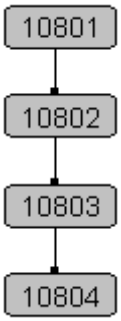
APPENDIX 3: FINDS CATALOGUE

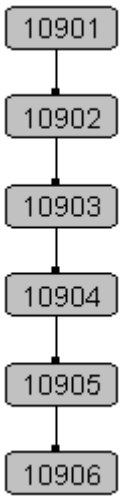
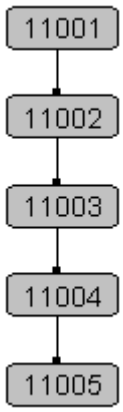
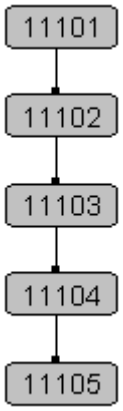
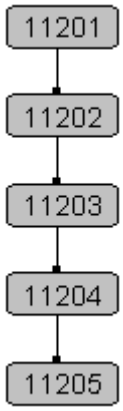
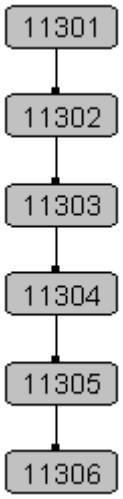
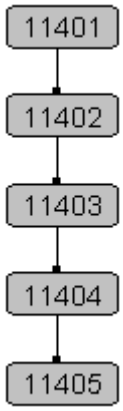
Ctxt = Context number; Mat = Material; Cat = Category; No = Number of fragments; U/S = Unstratified

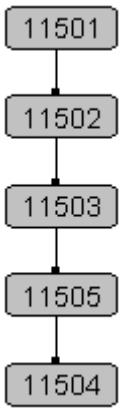
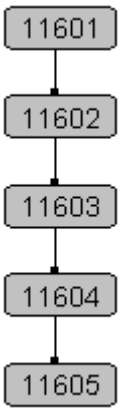
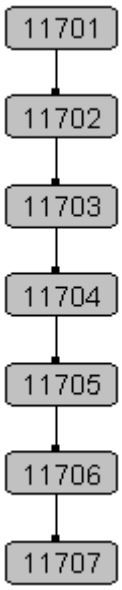
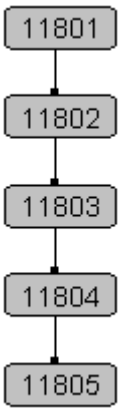
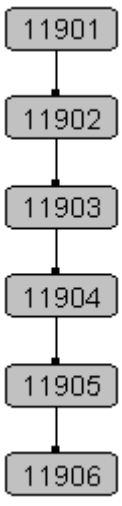
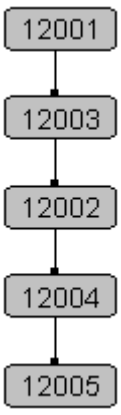
CTXT	MAT	CAT	NO	DESCRIPTION	PERIOD
12003	Ceramic	Vessel	2	Body fragments, white earthenware	Nineteenth century or later
12101	Ceramic	Vessel	1	Body fragment, hand-painted white earthenware	Twentieth century
12201	Ceramic	Vessel	2	Body fragment, white earthenware; body fragment, blue and white underglaze transfer-printed white earthenware	Nineteenth century or later
12205	Ceramic	Building material	3	Small undiagnostic fragments	Not closely dated.
12304	Ceramic	Building material	2	Small undiagnostic fragments	Not closely dated.
12501	Ceramic	Vessel	4	Three small body fragments, white earthenware; one small body, fragment black-glazed redware	Nineteenth century or later
12501	Glass	Vessel	1	Small body fragment, machine-blown bottle, colourless	Twentieth century or later
12503	Ceramic	Building material	19	Undiagnostic fragments	Not closely dated.
12503	Ceramic	Vessel	1	Body fragment of black-glazed redware, kitchen ware	Nineteenth century or later
12601	Ceramic	Building material	1	Small fragment of ventilation brick	Twentieth century or later
12601	Ceramic	Vessel	2	Body fragments, white earthenware	Nineteenth century or later
12701	Glass	Vessel	1	Small body fragment, machine-blown bottle, dark green	Twentieth century or later
13102	Glass	Vessel	1	Small body fragment, machine-blown bottle, colourless	Twentieth century or later
13601	Ceramic	Building material	1	Small undiagnostic fragment	Not closely dated.
13702	Ceramic	Building material	1	Small undiagnostic fragment	Not closely dated.
13704	Ceramic	Building material	6	Undiagnostic fragments	Not closely dated.

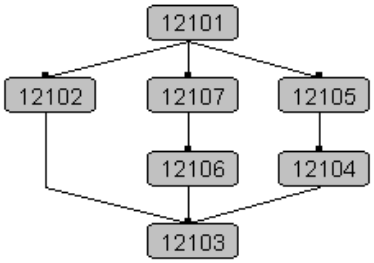
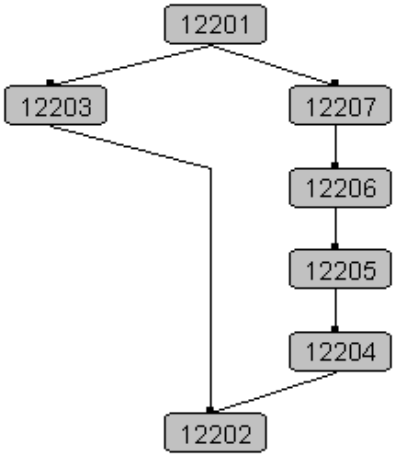
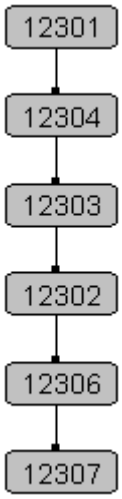
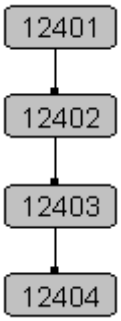
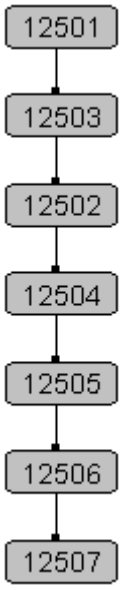
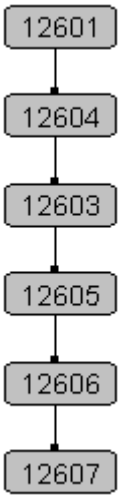
13704	Ceramic	Vessel	2	Joining fragments rim of plate or saucer, white earthenware with blue feather-edge	Early nineteenth century?
13706	Ceramic	Building material	1	Small undiagnostic fragment	Not closely dated.
13706	Ceramic	Vessel	8	One small body fragment, 'Mocha' ware; one small rim fragment of plate or saucer, white earthenware with blue feather-edge; one small body fragment, Creamware; one small base fragment, underglaze transfer-printed Pearlware; one base garment ?white salt-glazed stoneware; three body fragments of black-glazed redware, kitchen wares	Late eighteenth-early nineteenth century
13801	Ceramic	Vessel	1	Body fragment, black-glazed redware	Nineteenth century or later
13802	Stone	Coal	1	Fragment of coal	
U/S TP126	Ceramic	Vessel	2	Rim fragment, white earthenware; body fragment blue and white underglaze transfer-printed white earthenware	Nineteenth century or later
U/S TP131	Ceramic	Vessel	1	Body fragment, white earthenware	Nineteenth century or later
U/S TP134	Ceramic	Vessel	1	Body fragment, white earthenware	Nineteenth century or later
TOTAL			65		

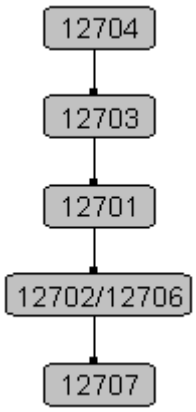
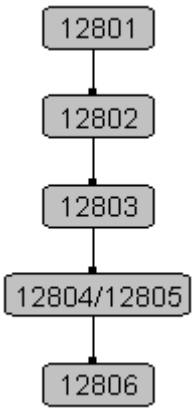
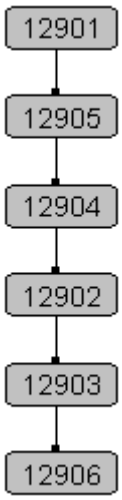
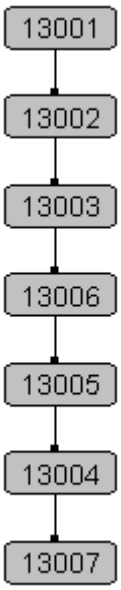
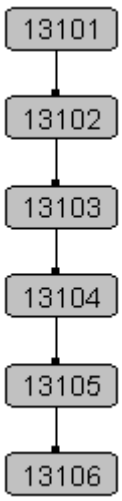
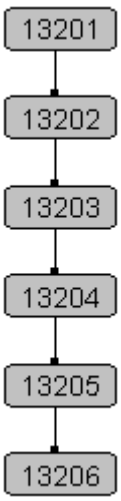
APPENDIX 4: MATRICES OF TRIAL PITS

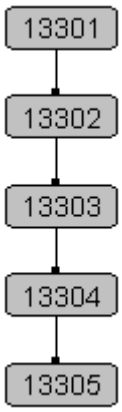
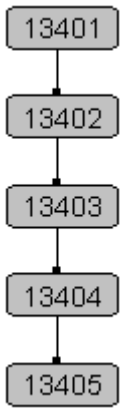
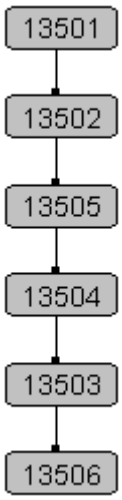
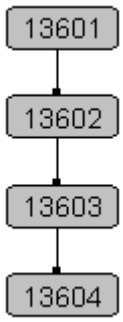
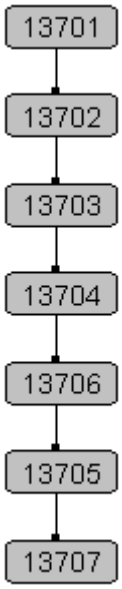
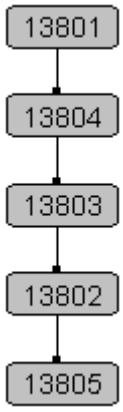
TP101		TP102	
TP103		TP104	
TP105		TP106	
TP107		TP108	

TP109		TP110	
TP111		TP112	
TP113		TP114	

TP115		TP116	
TP117		TP118	
TP119		TP120	

TP121		TP122	
TP123		TP124	
TP125		TP126	

TP127		TP128	
TP129		TP130	
TP131		TP132	

TP133		TP134	
TP135		TP136	
TP137		TP138	

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