LAND AT MANOR FARM, NEWTON ON TRENT, WEST LINDSEY, LINCOLNSHIRE

ARCHAEOLOGICAL EVALUATION

Planning ref.:	pre-application
NGR:	SK 82983 74720
PCAS Site code:	NOTE 15
PCAS Job No.:	1512
Archive accession code:	LCNCC 2015.156
OASIS ref.:	preconst3-219435

Report prepared for

B. M. Arden

September 2015

Pre-Construct Archaeological Services Ltd
47, Manor Road
Saxilby
Lincoln
LN1 2HX
Tel. 01522 703800
Fax. 01522 703656
Pre-Construct Archaeological Services Ltd

Contents

Figures

Summary

Pre-Construct Archaeological Services Ltd (PCAS) was commissioned by B. M. Arden, to undertake an archaeological trial trench evaluation on land to the northwest of Newton on Trent, in the West Lindsey District of Lincolnshire (NGR: SK 82983 74720). This work was undertaken to support a planning application for the development of the site.

A preceding geophysical survey identified a small number of potential archaeological features. Possible evidence of medieval ridge and furrow agriculture was also interpreted across much of the site.

Ten 25m long evaluation trenches were excavated, targeted on anomalies identified by the geophysical survey and to provide a representative assessment of the whole site. Archaeological features were positively identified in only one trench, located in the northwest corner of the site. The identified features consisted of a backfilled ditch and a smaller pit or possible ditch terminus. Both features contained significant amounts of Romano-British pottery and carbonised plant remains typical of the period and in sufficient quantity to indicate that crop processing probably took place nearby.

Collectively the features and their associated finds probably indicate a nearby occupation site of the 2nd century AD or later, engaged in agricultural production.

No other archaeological features were positively identified by the evaluation, and very few residual artefacts were observed within the ploughsoil. The presence of ridge and furrow agriculture could not be demonstrated as no furrows were clearly definable.

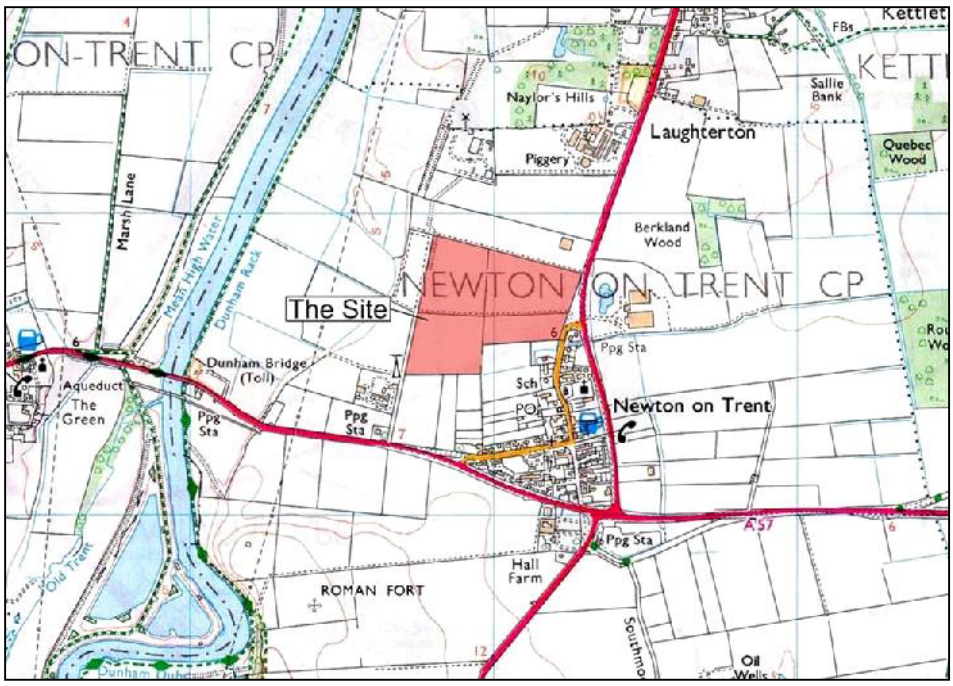

Fig. 1: Site location map. Proposed development site highlighted in red. Scale 1:25,000

1.0 Introduction

Pre-Construct Archaeological Services Ltd (PCAS) undertook an archaeological evaluation on land to the northwest of Newton on Trent in the West Lindsey District of Lincolnshire. This work was undertaken between the 17/8/15 and 21/8/15 and the results presented here are intended to inform and advise the planning process with regards to the application for the development of the site.

The programme of archaeological work was undertaken in accordance with an approved Specification for an Archaeological Evaluation (PCAS 2015b), the recommendations of the *National Planning Policy Framework* (2012), *Code of Conduct* (Institute for Archaeologists, 1994 as revised) and *Standards and Guidance for Archaeological Evaluations* (Institute of Field Archaeologists, 2008 as revised) and the Lincolnshire County Council Archaeology Handbook (as revised 2012).

2.0 Site location and description (Figs. 1 & 2, see Photo. 1)

Newton on Trent is a civil parish and village on the western border of the West Lindsey District of Lincolnshire, located on the east bank of the River Trent which forms the boundary with the neighbouring county of Nottinghamshire. The village is located at the crossroads of the A 1133 and the A 57, *c*. 14km west of Lincoln and *c*. 1km east of Dunham Bridge, that crosses the River Trent.

The proposed development site is located immediately to the northwest of the village and consists of a large field of *c*. 17 hectares currently used for free-range poultry. An area within the southern part of the site is enclosed with recent planting and effectively creates a smaller field within the larger one. The site is mostly surrounded by established hedgerows with post and wire fencing.

The eastern side of the site is bordered by the relict course of the old A1133, which was diverted in the 1980 s to the east of the modern village. The southern part of the site is flanked by the rear gardens of the northern most property of the village adjacent to the road with arable fields to the west. A raised earth bank, the secondary flood defence bank, defines the western side of the site with hedgerows and agricultural land beyond extending down to the river. The northern part of the site is flanked by a hedgerow with a grass field beyond.

3.0 Geology and topography

The underlying solid geology is mapped as Mercia mudstone of the Triassic Period. Drift geology is recorded as Holme Pierrepont Sand and Gravel, described as generally pinkish and poorly sorted sand and gravel, the latter of which is dominated by rounded quartz/quartite pebbles, with flint, sandstone and chert (PCAS 2015a).

The topography of the local area is generally low lying and flat as is the site itself. The site has a slightly undulating surface with a lowest point of *c*. 6m OD within the eastern side of the site and a highest point of *c*. 7.5m OD towards the southwest corner of the site. As noted above the western side of the site is flanked by a low raised earth bank which is part of the secondary flood defence bank which stands to a height of *c*. 8m OD.

4.0 Planning background

The National Planning Policy Framework (NPPF) came into force in March 2012. This places the responsibility for dealing with historic and archaeological sites (heritage assets) affected by development proposals with the developer. Developers are required to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible (NPPF, s141). Developers are obligated to produce a definitive method of archaeological mitigation to fulfil this requirement.

An extract of Section 128 of NPPF reads:
128. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected ... Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

In 2008 the site underwent some pre-assessment work and in July 2014 a proposal for the development of the site was submitted (application ref. 131717) although no specific construction details are available. This report along with the preceding archaeological work will support a detailed application.

5.0 Archaeological and historical background

An archaeological desk-based assessment was compiled in May 2015 (PCAS 2015a). A summary of this document follows:

Early prehistoric activity within the immediate area is evidenced by the *c*. 6000 flint and stone artefacts recovered to the south and east of the village during fieldwalking along the route of the new stretch of the A 1133. However, only a single pit was securely dated to the prehistoric period in subsequent excavations. Possible late prehistoric enclosure ditches have been identified to the south of the village by geophysical survey and provisionally dated to the Iron Age (PCAS 2015a).

In the 1st century AD a Roman fort was constructed on high ground overlooking the river to the southeast of the village at Newton Cliff. Two possible temporary military camps, possibly used during the construction of the fort have also been speculated from linear cropmarks to the south of the fort, along with possible additional defensive ditches added to the fort itself. East of the village two kilns have been identified and dated to the 2nd century AD and along with a number of loom weights indicate occupation during the Romano-British period around the area. Cropmarks identified from aerial photographs to the northeast of the village have been potentially dated to the Romano-British or Saxon period (*ibid*.).

Newton is historically first recorded in the Domesday survey of 1086 as a holding of the Archbishop of York although no details are recorded other than an additional asset of 100 acres of meadow. The place name originates from the Old English *niwe* and *tun*, meaning *the new village* or *farmstead* (Cameron 1998). Periods of dry weather and drifting sand appear to have adversely effected settlements along the Trent in the area during the late 11th century, possibly leading to the relocation of some settlements and the establishment of new ones at this time (PCAS 2015a).

During the medieval period the now established settlement was granted to the monks of the Priory of *St. Katherine without Lincoln*. The present Church tower dates from the 12th century and is speculated to be the remains of a new church built by the Gilbertine monks at this time. An established ferry crossing of the river between Newton and Dunham also dates from at least the 12th century and was sold to the Manor of Dunham in the late 13th century (*ibid*.).

The historic settlement pattern of the village appears to be well defined with houses located either side of the old north-south road that ran through the centre of the village. It has been suggested that on the east side of the road the properties occupy long narrow plots running back from the road indicating their early origins while on the west side of the road the properties are more irregular possibly indicating a later period of establishment. Aerial photography has identified several areas of medieval ridge and furrow to the southeast of the village (*ibid*.).

A geophysical survey of the site was undertaken in June 2015 which identified a series of parallel linear features covering most of the southern and eastern parts of the site. These were provisionally identified as evidence of medieval ridge and furrow agriculture. A small number of mostly short linear features on different alignments were interpreted as possible ditches of other periods and were consequently targeted by some of the evaluation trenches (Bunn 2015; fig. 2).

6.0 Methodology

The adopted methodology followed the scheme set out within the Specification (PCAS 2015b). Ten trenches, measuring 25m x 1.6m, were positioned as indicated in the Specification. These were excavated using a 360 mechanical excavator fitted with a smooth ditching bucket down to the top of the natural substrate. All machining was carried out under constant supervision by the attendant archaeologist.

Where potential archaeological features and deposits were identified they were investigated by hand excavated sections to establish their character, date and survival condition and subsequently recorded. Context sheets were completed for each feature/deposit, and multi-context drawings were produced in both plan and section. Colour slide and digital photographs were taken to complement these accounts.

7.0 Results (Figs 2 4, see Photos. 2-6)

The ten proposed trenches were excavated across the site as indicated in Figure 2, with only Trench No. 2 being shifted slightly to the south to avoid a water pipe laid across the ground surface. A consistently similar pattern was observed throughout, consisting of *c*. 0.35m 0.4m of improved modern plough soil, which had a very distinct interface horizon with the underlying subsoil. The modern plough soil sealed a sandy subsoil which was characteristically thin across the site and was only deeper than 0.2m in Trench No. 7 but had been completely ploughed out in Trench No. 6 and mostly ploughed out in Trench No. 3.

The underlying natural substrate consisted of light mottled pinkish yellow/orange-brown sand with occasional red-brown staining and concretions of iron stone with rare fragments of sandstone and flint in most of the trenches with the exception of the two eastern most trenches (Nos. 7 & 10) which had more clay-sand mix and solid clay at depth. Similar clay was also observed underlying the sand in Trench No. 4

where an archaeological feature had been excavated through the sand down to this layer.

Only two archaeological features were positively identified within Trench No. 4, located in the northwest corner of the site. The identified features were cut into the top of the natural sand substrate and sealed by the subsoil and modern plough soil which was collectively only *c*. 0.4m deep at this location. No other archaeological features were observed in any of the other trenches and residual/surface finds were rare across the site. Trenches that were devoid of archaeological features are only summarised here. Trench No. 4 is described in detail.

Trench No. 1: *This trench was located towards the southwest corner of the site and targeted an area of possible ridge and furrow.* (see Photo.3)

Although the surface of the natural substrate was heavily root disturbed no distinct furrows or other cut features were observed. As noted above modern ploughing did cut deep into the subsoil and it is possible that the geophysical survey may have identified modern 'sub-soiling' or shallow trenching for potatoes in parts of the site (see **8.0 Discussion and conclusion** below).

A sondage was excavated to a depth of *c*. 1.1m below the ground surface at the west end of the trench to confirm the sand was a geological deposit and not wind blown.

Trench No. 2: *This trench was located in the southwest part of the site and targeted two linear anomalies aligned c. north-northwest – south-southeast.*

Two ceramic land drains were identified, laid on the top of the sand substrate and correspond with the spacing and alignment of the linear anomalies identified by geophysical survey.

Trench No. 3: *This trench was located in the central western part of the site.*

The soil here was thin and the subsoil had mostly been ploughed out. A modern plastic land drain aligned *c.* north-northwest – south-southeast was revealed by this trench. This was not identified by geophysical survey.

Two sherds of pottery were recovered from the modern plough soil during machining, of which only one could be positively identified as dating from the 15th-16th century (Appendix 3.1). This possibly represents waste material discarded on a midden which was subsequently spread over the field as fertiliser during the late-medieval/early post-medieval period.

Trench No. 4: *Trench 4 was located towards the northwest corner of the site and targeted a* c*. north – south aligned linear feature. This was the only trench that positively identified archaeological features* (Fig. 3, see Photos. 5 & 6).

The geological substrate, consisting of yellow/orange-brown sand with occasional red-brown staining and concretions of iron stone (403) was encountered *c*. 0.4m below the existing ground surface. Located towards the middle of the trench was a shallow pit or possible ditch terminus [404] which extended beyond the edge of the evaluation trench to the east. This was *c*. 1m wide but only 0.16m deep and had a mostly shallow concave profile.

The feature had been in-filled with a dark brown silt-sand matrix (405) which contained 20 sherds of pottery from 7 different original vessels, dating from the 2nd

century AD or later (Appendix 3.2). Carbonised plant remains were also present in some quantity, but in generally poor condition (Appendix 3.3).

The presence of so much apparent waste material in such a relatively small feature may indicate deliberate deposition as an act of clearance and waste disposal or a concentration of activity within the immediate area while the pit/ditch was still open and a more gradual process of accumulation. Either way significant activity is indicated very close to this location during the mid Romano-British period.

At the northwest end of this trench a large ditch [406], aligned *c*. north – south, was also observed cut through the geological substrate. This feature corresponded with a faint linear feature identified by the geophysical survey. The ditch extended beyond the limits of the evaluation trench both to the north and south. It was 1.7m wide and 0.5m deep with a concave bowl shaped profile. The western side of the ditch appears to have been pushed in/displaced possibly by root disturbance along the edge of the ditch.

The ditch cut through the natural sand into a layer of grey clay below, which was also observed at depth in other trenches (see ***Trenches Nos. 7*** & ***10*** below). The primary fill of the ditch consisted of a distinct light brown-grey sandy silt with rare charcoal flecks (407). Two abraded pieces Roman brick and a single fragment of Roman roof tile were recovered from the excavated section (Appendix 3.1). This deposit appears to have accumulated over some time with occasional items being discarded during the process of silting up.

Carbonised plant remains were also recovered from this deposit, and although a much smaller quantity than in deposit (405) the depth and nature of the sediment here appears to have provided better survival conditions. Cereal crops of spelt wheat and 6-row barley have been positively identified, which are considered to be typical for arable farming of the Romano-British period. The relative proportion and quantity of wheat chaff within the sample may also indicate that processing of the crop had taken place nearby (Appendix 3.3).

The upper fill (408) of the ditch was very similar to the overlying subsoil and may be the product of slumping and deliberate infilling, perhaps even ancient ploughing over the top, pushing material back into the remains of the ditch. A single sherd of pottery (Appendix 3.2), contemporary with the pottery found in pit/ditch [404] was recovered from this deposit along with another fragment of Roman roof tile (Appendix 3.1).

Both features appear to be broadly contemporary although had distinct fills. Both features upper surfaces and edges were heavily root disturbed and appeared to have been sealed by a thin subsoil (402) from which another fragment of Roman roof tile was recovered (Appendix 3.1).

No animal bone was recovered from the two archaeological features despite the presence of other waste material. This may possibly indicate that bone may not survive well on this site. The acidic/mineralising nature of the geology has also been noted in Appendix 3.3.

Trench No. 5: *This trench was located in the middle of the site and targeted an area of possible ridge and furrow.*

As with Trench No. 1 no furrows were identified at this location.

Trench No. 6: *This trench was located in the central eastern part of the site and targeted a linear feature aligned* c. *north-northwest – south-southeast.*

Similar to Trench No. 3 there was no surviving subsoil at this location, just modern plough soil over the sand substrate. No feature was observed cut in to the natural substrate. The linear identified by the geophysical survey shared a similar alignment to the land drains identified in Trench No. 3 and may also have been a land drain possibly laid on top of the natural substrate and now ploughed out leaving only a thin trace in the top of the substrate and was not observed when the trench was opened.

Trench No. 7: *This trench was located towards the southeast corner of the site and targeted a short linear feature.*

The subsoil was deepest at this location and overlay a clay substrate. No feature was observed which corresponded with the feature identified by the geophysical survey. A deep sondage was excavated at the northwest end of this trench to establish the clay was of geological origins.

Seven sherds of pottery were recovered from the subsoil at this location, consisting of four fragments from the same Romano-British period vessel (Appendix 3.2), a single sherd dated to the 11th-12th century, a fragment of handle from a 13th-15th century vessel and a fragment from a 16th-17th century vessel. The medieval and post-medieval material is likely to be waste from the historic settlement which lay just to the south.

Trench No. 8*: This trench was located towards the northeast of the site and targeted an area of possible furrows.*

As with Trenches Nos. 1 & 5 no furrows were identified at this location.

Trench No. 9: *This trench was located in the north central part of the site and targeted a linear feature which may have connected with, or have been part of the same feature targeted by Trench No. 6, albeit on a changed alignment.*

As with Trench No. 6, no feature was observed cut into the natural substrate.

A single sherd of Romano-British period pottery and a sherd dated to the 17th-18th century was recovered from the subsoil at this location.

Trench No. 10: *This trench was located at the eastern side of the site and targeted a feature similar to the one targeted by Trench No. 7.*

As with Trench No. 7 no feature was observed which corresponded with the feature identified by the geophysical survey. A deep sondage was excavated at the northwest end of this trench which demonstrated that the sand here overlay clay which was also observed in Trench No. 7 to the south.

A sherd of *c.* 14th century pottery was recovered from the subsoil in this trench.

8.0 Discussion and conclusion

The evaluation has identified the presence of archaeology within the northwest corner of the site only. Whilst this consists merely of two features, the volume and diversity of finds recovered indicates a concentration of activity within this limited area during the mid Romano-British period. The presence of ceramic roof tile and brick indicates that a building may have stood nearby and that this building was constructed in the 'Roman' style with *Imbex* and *Tegula* tile rather than 'native' thatch. Crop processing may also have been undertaken at this site. Potentially the site may

be contemporary with the kilns identified to the east of the modern village and the two sites may be part of a wider Romanised landscape of the mid-late Romano-British period, which may have been part of the Roman Lincoln (*Lindum*) agricultural hinterland with communication links along the Trent.

Trenching across the rest (ie the majority) of the site produced very little.

9.0 Effectiveness of methodology

The evaluation has been effective in characterising the depositional sequence within the site and the nature of the archaeology contained therein, although the interpretation of the geophysical survey results has proved less successful.

10.0 Bibliography

Bunn, D. 2015. Archaeological Geophysical Survey: Proposed eco-village, Land at Manor Farm, Newton on Trent. Unpublished client report by Pre-Construct Geophysics.

Cameron, K, 1998, *A Dictionary of Lincolnshire Place-Names*, English Place Name Society, Nottingham.

PCAS 2015a, Archaeological Desk-based Assessment: Proposed eco-village, Land at Manor Farm, Newton on Trent. PCAS report no. 1420. Unpublished document by PCAS.

PCAS 2015b. Specification for an Archaeological Evaluation: Land at Manor Farm, Newton on Trent. Unpublished document by PCAS.

11.0 Site Archive

The documentary and physical archive for this scheme is currently in the possession of Pre-Construct Archaeological Services Ltd. This will be deposited at The Collection, Lincoln within six months of completion of this report under the Lincolnshire Museums archive accession code LCNCC 2015.156.

Appendix 1: Photographs

Photo. 1 The site: characteristically flat. Looking southeast towards the modern village behind the poultry sheds.

Photo. 2 Trench 9 machined; all of the trenches were characteristically similar (see also **Photo. 3**). Scales 1m, looking southwest.

Photo. 3 Sample section Trench 1: Topsoil - subsoil - natural. The horizon between the subsoil and the underlying natural sand was heavily root disturbed and very diffuse. The modern plough soil was the only distinct feature in this trench. Scale 0.5m.

Photo. 4 Sondage in Trench 7. Sondages were excavated in three trenches revealing clay at depth, which was closer to the surface along the eastern side of the site. Scale 1m.

Photo. 5 Shallow pit or ditch terminus [404]. The fill (405) was distinct, although the natural sand looks dark in this photograph because of the rain. Scale 1m. Looking east.

Photo. 6 Ditch [406] with a distinct primary fill (407) and an upper fill (408) which was very similar to the overlying subsoil. The ditch cut through the sand into the grey clay layer beneath. The western side of the ditch appears to have been distorted here possibly by root disturbance. Scales 1m and 0.5m. Looking north.

Appendix 2: Context descriptions and levels

Trench 1: OD = 7.41m (E) 7.53m (W)

Context	Type	Description	Finds/Dating
101	Topsoil	Mid brown sandy silt loam. < 0.35m thick.	-
102	Subsoil	Mid slightly greyish red-brown sandy silt 0.05m-0.2m thick	-
103	Natural	Light-mid pinkish orange orange-brown sand with mottled dark orange staining and concreted sand/iron pan and occasional natural limestone fragments. Limit of excavation.	-

Trench 2: OD = 7.23m (NE) 7.40m (SW)

Context	Type	Description	Finds/Dating
201	Topsoil	Same as (101). <0.35m thick.	-
202	Subsoil	Same as (102). <0.1m thick.	-
203	Natural	Same as (103). Limit of excavation.	-

Trench 3: OD = 7.25m (SW-NE)

Context	Type	Description	Finds/Dating
301	Topsoil	Same as (101). <0.35m thick.	Pottery x2
302	Subsoil	Same as (102). <0.05m thick.	-
303	Natural	Same as (103). Limit of excavation.	-

Trench 4: OD = 7.21m (SE) 7.22m (NW)

Context	Type	Description	Finds/Dating
401	Topsoil	Same as (101). <0.35m thick.	Pottery x1
402	Subsoil	Same as (102). <0.15m thick.	CBM x1
403	Natural	Same as (103). Limit of excavation.	-
404	Cut	Possible pit or ditch terminus, extends beyond the limit of excavation to the east. Rounded west end with parallel linear sides extending to the east. Broad shallow profile with a concave base. Very diffuse and poorly defined edges. > 1.6m long x < 1.1m wide x < 0.16m deep.	-
405	Fill of [404]	Heavily root disturbed mid-dark brown silt sand mixed with natural sand with occasional charcoal flecks and dumped material (pottery fragments). > 1.6m long x < 1.1m wide x < 0.16m deep.	Pottery x 19 Sample No. 1
406	Cut	Ditch on *c*. N-S alignment. Moderately steep sides and gently concave base. Very diffuse and poorly defined edges. > 2m long x < 1.7m wide x < 0.5m deep.	-
407	1st fill of [406]	Light-mid grey-brown silt sand with rare charcoal flecks. < 0.26m deep.	Pottery x 1 CBM x 2 Sample No. 2

408	2nd fill of [406]	Mid slightly reddish brown silt sand. < 0.4m deep.	Pottery x 2 CBM x 1

Trench 5: OD = 7.26m (N) 7.29m (S)

Context	Type	Description	Finds/Dating
501	Topsoil	Same as (101). <0.4m thick.	-
502	Subsoil	Same as (102). <0.2m thick.	-
503	Natural	Same as (103) with occasional coal fragments. Limit of excavation.	-

Trench 6: OD = 5.91m (W) 5.95m (E)

Context	Type	Description	Finds/Dating
601	Topsoil	Same as (101). <0.35m thick.	-
602	Natural	Same as (503). Limit of excavation.	-

Trench 7: OD = 5.82m (SE) 5.99m (NW)

Context	Type	Description	Finds/Dating
701	Topsoil	Same as (101). <0.4m thick.	-
702	Subsoil	Same as (102). <0.4m thick.	Pottery x 7
703	Natural	Mid slightly greyish red-brown fine silt clay. Limit of excavation.	-

Trench 8: OD = 6.04m (S) 6.14m (N)

Context	Type	Description	Finds/Dating
801	Topsoil	Same as (101). <0.4m thick.	-
802	Subsoil	Same as (102). <0.05m thick.	-
803	Natural	Same as (103). Limit of excavation.	-

Trench 9: OD = 6.04m (NE) 6.06m (SW)

Context	Type	Description	Finds/Dating
901	Topsoil	Same as (101). <0.3m thick.	-
902	Subsoil	Same as (102). <0.2m thick.	Pottery x 2
903	Natural	Same as (103). Limit of excavation.	-

Trench 10: OD = 5.83m (SE) 5.86m (NW)

Context	Type	Description	Finds/Dating
1001	Topsoil	Same as (101). <0.4m thick.	-
1002	Subsoil	Same as (102). <0.2m thick.	Pottery x 1
1003	Natural	Same as (503) becoming sand clay to southeast. Limit of excavation.	-

APPENDIX 3.1 THE POST ROMAN POTTERY AND THE TILE FROM MANOR FARM, NEWTON ON TRENT, LINCOLNSHIRE (NOTE 15)

JANE YOUNG CERAMIC CONSULTANT

INTRODUCTION

Eight post-Roman sherds and five pieces of ceramic building material were presented for examination. The material was examined both visually and using a x20 binocular microscope, then recorded using the fabric codenames (CNAME) of the City of Lincoln Archaeology Unit (Young, Vince and Nailor 2005). The assemblage was quantified by three measures: number of sherds, vessel or CBM count and weight and the resulting archive entered onto an Access database (Appendix 3.1). Recording of the assemblage was in accordance with the guidelines laid out in Slowikowski, *et al.* (2001) and complies with the Lincolnshire County Council's *Archaeological Handbook* (sections 13.4 and 13.5).

CONDITION

The material is in slightly worn but stable condition with fragments weighing between 5 grams and 212 grams.

THE RANGE AND VARIETY OF MATERIALS

Post-Roman pottery was recovered from five trenches. Deposit 301 in Trench 3 produced a body sherd from a large North Nottinghamshire Coarse Sandy ware (NNCSW) jar of mid 15tyh to 16th century date. A small and very abraded sherd of Roman or medieval date (MISC) was also found in this deposit. The base of a large Staffordshire/Derbyshire-type Brown-glazed Earthenware (BERTH) cylindrical jar of mid 17th to 18th century date was recovered from deposit 401 in Trench 4. Deposit 702 in Trench 7 produced three sherds of mixed date. The earliest sherd comes from a small Stamford ware jar of 11th to mid 12th century date. A pipkin handle is of 13th to 15th century Lincoln Glazed ware type (LSWV), but is unlikely to have been produced in Lincoln. The latest sherd comes from a North Nottinghamshire Post-medieval Coarseware (NNPMCW) jug of 16th to 17th century date. Deposit 902 in Trench 9 produced a small sherd from a Black-glazed Earthenware (BL) jug of 17th to 18th century date. The base of a large 14th to 15th century Lincoln Glazed ware (LSW3) jug of late 13th to 14th century date was recovered from deposit 1002 in Trench 10.

All five pieces of ceramic building material were found in Trench 4. Deposit 402 produced a fragment from a Roman Imbrex (IMB). A similar but larger piece came from deposit 408.

Deposit 407 produced two very abraded pieces from a Roman brick (RBRK) and a fragment of Tegula (TEG) with a pre-fired nail hole.

SUMMARY AND RECOMMENDATIONS

The recovered pottery suggests some post-Roman Saxo-Norman, medieval and post-medieval activity in the area of the site. Two of the late medieval to post-medieval sherds are of North Nottinghamshire type. The Roman tile and brick fragments recovered from the site are in similar orange medium sandy fabrics suggesting that they originate from the same production site.

The assemblage should be kept for future study.

REFERENCES

Lincolnshire Archaeological Handbook 2009 edition [Internet]. Available from http://www.lincolnshire.gov.uk/upload/public/attachments/1073/Archaeological_Handbook.pdf

Slowikowski, A.M., Nenk, B. and Pearce, J. 2001. *Minimum standards for the processing, recording, analysis and publication of post-Roman ceramics*. Occasional paper **2**. London: Medieval Pottery Research Group.

Appendix 3.2 The Roman Pottery archive- Site of proposed eco-village extension, Manor Farm, Newton on Trent, West Lindsey, Lincolnshire (NOTE15; SK 82983 74720)

I.M. Rowlandson
August 28th 2015

A small group of Roman pottery (28 sherds, 600g, RE5.25) dating from the 2nd century AD or later was presented to this author for archiving. All of the pottery appears to be in local fabrics similar to those known from local kilns at Newton on Trent and Torksey (Palmer-Brown and Field 1991, Samuels 1983). No regional or national imports were present. It is recommended that this pottery should be deposited with the relevant local museum along with the rest of the archive.

An archive has been produced to comply with the requirements of the Study Group for Roman Pottery (Darling 2004) using the codes and system developed by the City of Lincoln Archaeological Unit (Darling and Precious 2014). A tabulated summary by context and a sherd archive are presented below. The dates provided represent the pottery recorded here: the main text of the report and other specialist contributions should be consulted to ascertain the overall date attributed to each context.

NOTE15- Dating summary					
Context	**Spot date**	**Comments**	**Sherd**	**Weight (g)**	**Total RE %**
405	M2+	A small group including a fragment from a wide-mouth bowl and a very large storage jar with internal attrition.	20	684	16
408	2C+	A sherd from a large grey ware storage jar.	1	258	21
702	Roman	Sherds from a single grey ware vessel.	4	44	0
902	Roman	A single grey ware sherd.	1	2	0

NOTE15- Sherd archive												
Context	**Fabric**	**Form**	**Decoration**	**Vessels**	**Alt**	**D. No**	**Comments**	**Join**	**Sherd**	**Weight**	**Rim diam**	**Rim eve**
405	GREY	BWM2		1			RIM GIRTH		3	148	27	16
405	GREY	JL		1			BS		1	79	0	0
405	GREY	-		1	VAB		BS		1	2	0	0
405	GROG	-		1			BS		3	35	0	0
405	GROG	JS		1	ATTRITION INT		BASE LOWER WALL; VERY LARGE VESSEL		1	352	0	0
405	IAGR	-		1	VAB		BS		5	32	0	0
405	SHEL	-		1			BS; TRENTSIDE		6	36	0	0
408	GREY	J168		1			RIM		1	258	25	21
702	GREY	CLSD		1			BS		4	44	0	0
902	GREY	-		1	VAB		BS		1	2	0	0

References

Darling, M.J., 2004, Guidelines for the archiving of Roman Pottery. *Journal of Roman Pottery Studies* 11, 67-74.

Darling, M.J. and Precious, B.J., 2014, Corpus *of Roman Pottery from Lincoln*, Lincoln Archaeological Studies No. 6, Oxbow Books, Oxford

Field F. N. & Palmer-Brown, C. P. H., 1991, New evidence for a Romano-British greyware pottery industry in the Trent Valley, Lincolnshire Hist Archaeol, 26, 40-56

Samuels, J., 1983, The Production of Roman Pottery in the East Midlands, Unpublished PhD, Nottingham University

ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
Pre-Construct Archaeological Services Ltd

Manor Farm
Newton on Trent
Lincolnshire

palaeoenvironmental assessment

report 3898
September 2015

Durham University

Contents

South Road Durham DH1 3LE tel 0191 334 1121 fax 0191 334 1126
archaeological.services@durham.ac.uk www.dur.ac.uk/archaeological.services

1. Summary

The project

1.1 This report presents the results of palaeoenvironmental assessment of two bulk samples taken during archaeological works at Newton on Trent, Lincolnshire.

1.2 The works were commissioned by Pre-Construct Archaeological Services Ltd (PCAS), and conducted by Archaeological Services Durham University.

Results

1.3 The assessment provides evidence for the cultivation of spelt wheat and hulled 6-row barley at the site. These were the main cereal crops used during the Middle Iron Age to Roman period in the region. The presence of spelt wheat chaff in modest quantities in deposit (407) may indicate crop processing at or near to the site. The small assemblage of charred wild taxa recorded is typical of arable, heathland and damp ground habitats.

1.4 Abundant heather twigs, small calibre branchwood and low numbers of rhizomes, monocot stems and weed seeds typical of grassy heathland, may suggest some of the charred remains represent traditional uses such as fodder, bedding or thatch, or they may represent the remains of burnt turves.

Recommendations

1.5 No further analysis is required for these samples, but the preservation of charred plant remains indicates that other features that may be present on the site have the potential to provide further information about exploitation of woodland resources, diet and crop husbandry practices. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

1.6 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

2. Project background

Location and background

2.1 An archaeological evaluation was conducted by PCAS on land at Manor Farm, Newton on Trent, West Lindsey, Lincolnshire. This report presents the results of palaeoenvironmental assessment of two bulk samples comprising ditch or pit fill (405) and ditch fill (407), of possible Romano-British origin.

Objective

2.2 The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material, and provide the client with appropriate recommendations.

Dates

2.3 Samples were received by Archaeological Services on 27th August 2015. Assessment and report preparation was conducted between 1st and 4th September 2015.

Personnel

2.4 Sample processing was by Rosie Morris and Tessi Loeffelmann. Assessment and report preparation was conducted by Lorne Elliott.

Archive

2.5 The site code is **NOTE15**, for **N**ewton **o**n **T**rent **e**valuation 20**15**. The flots and finds are currently held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University awaiting collection. The charred plant remains will be retained at Archaeological Services Durham University.

3. Methods

3.1 The bulk samples were manually floated and sieved through a 500μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classifications follow Preston *et al.* (2002).

3.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990) and Hather (2000), and modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University.

3.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Monckton 2006; Hall & Huntley 2007; Huntley 2010). Specifically, the project has the potential to address research items relating to

arable farming methods during the transition between the Iron Age and Roman periods.

4. Results

4.1 The bulk samples produced sizeable sandy residues and relatively large (405) to small (407) flots, comprising small quantities of charcoal and low to moderate numbers of charred plant macrofossils. The charcoal and charred plant remains from fill (405) were friable and in a poor state of preservation due to yellowish brown mineral inclusions, which made identification more difficult in some instances. By contrast, the charred material from deposit (407) was in relatively good condition due to fewer mineral precipitates. Identified charcoal from (405) comprised small calibre branchwood of oak, hazel and willow/poplar, and a large quantity of charred heather twigs. Context (407) contained oak, birch and willow/poplar with evidence of insect degradation.

4.2 Although fill (407) produced a much smaller flot than (405), the plant macrofossil assemblage (charred and uncharred) was much more substantial. Charred plant macrofossils included the remains of cultivated crops (wheat/barley), weeds such as wild-radish, scentless mayweed, black-bindweed, sedges, brome and heath-grass, and indeterminate rhizomes. The wheat grains comprised the oval shape and parallel-sided morphology typical of spelt wheat (*Triticum spelta*), as summarised by Jacomet (2006). Diagnostic glume bases (chaff) recorded in both samples confirmed the presence of this species. The poor condition of the barley chaff prevented certain identification, although hulled and twisted grains recorded from (407) may indicate the presence of hulled 6-row barley (*Hordeum vulgare*). Several cereal grains were indeterminate due to pitting and degrading.

4.3 Uncharred elder fruitstones were abundant in (407). These remains may be more recent inclusions, although they are often among the more decay-resistant plant macrofossils and may be contemporary with the feature.

4.4 Finds comprised a few small fragments of pot. Material suitable for radiocarbon dating is available for both of the samples. The results are presented in Appendix 1.

5. Discussion

5.1 The assessment provides evidence for the cultivation of spelt wheat and hulled 6-row barley at the site. These were the main cereal crops used during the Middle Iron Age to Roman period in the region (Monckton 2006; Greig 1991). The presence of spelt wheat chaff in modest quantities in deposit (407) may indicate crop processing at or near to the site. The small assemblage of charred wild taxa recorded is typical of arable, heathland and damp ground habitats. The remains of brome grass in (407) are frequently associated with spelt wheat, and are believed to have been brought to Britain in imported spelt (Godwin 1975). It has been suggested that this large grass seed was deliberately included to bulk up harvests (Jones 1984).

5.2 Abundant heather twigs, small calibre branchwood and low numbers of rhizomes, monocot stems and weed seeds typical of grassy heathland, may suggest some of the charred remains represent traditional uses such as fodder, bedding or thatch (Gale & Cutler 2000; Fenton 1978), or they may represent the remains of burnt

turves, used as fuel or for constructional purposes such as clamp kilns or roofing material (Hall 2003). Many of these remains frequently occur on sites from the later prehistoric, although they are not exclusive to this period, and may reflect native settlement.

5.3 It is uncertain whether the contrast between the two deposits in the state of preservation and colour of the charcoal and charred cereal grains, is due to a different type or phase of activity or whether the difference is simply due to variability in the soil conditions.

6. Recommendations

6.1 No further analysis is required for these samples, but the preservation of charred plant remains indicates that other features that may be present on the site have the potential to provide further information about exploitation of woodland resources, diet and crop husbandry practices. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

6.2 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

7. Sources

Fenton, A S, 1978 *The Northern Isles – Orkney and Shetland*. Edinburgh

Gale, R, & Cutler, D, 2000 *Plants in archaeology; identification manual of artefacts of plant origin from Europe and the Mediterranean*. Otley

Godwin, H, 1975 *History of the British Flora*. Cambridge

Greig, J R A, 1991 The British Isles, in W Van Zeist, K Wasylikowa & K-E Behre (eds) *Progress in Old World Palaeoethnobotany*. Rotterdam

Hall, A, 2003 *Recognition and characterisation of turves in archaeological occupation deposits by means of macrofossil plant remains.* Centre for Archaeology Report **16/2003**. English Heritage

Hall, A R, & Huntley, J P, 2007 *A review of the evidence for macrofossil plant remains from archaeological deposits in northern England*. Research Department Report Series no. **87**. London

Hather, J G, 2000 *The identification of the Northern European Woods: a guide for archaeologists and conservators*. London

Huntley, J P, 2010 *A review of wood and charcoal recovered from archaeological excavations in Northern England*. Research Department Report Series no. **68**. London

Jacomet, S, 2006 *Identification of cereal remains from archaeological sites*. Basel

Jones, M, 1984 The plant remains, in B W Cunliffe (ed) *Danebury: an Iron Age hillfort in Hampshire, Volume 2*, Council for British Archaeology report **52**, 483-495. London

Monckton, A, 2006 Environmental Archaeology in the East Midlands, in NJ Cooper (ed) *The Archaeology of the East Midlands: An Archaeological Resource Assessment and Research Agenda*, 259-286. Leicester

Preston, C D, Pearman, D A, & Dines, T D, 2002 *New Atlas of the British and Irish Flora.* Oxford

Schweingruber, F H, 1990 *Microscopic wood anatomy*. Birmensdorf

Stace, C, 1997 *New Flora of the British Isles*. Cambridge

Appendix 1: Data from palaeoenvironmental assessment

Sample		**1**	**2**
Context		**405**	**407**
Feature number		**404**	**406**
Feature		**pit/ditch**	**ditch**
Material available for radiocarbon dating		✓	✓
Volume processed (l)		27	33
Volume of flot (ml)		350	50
Residue contents			
Charcoal		++	+
Pot (number of fragments)		7	2
Flot matrix			
Charcoal		++	++
Earthworm egg cases		+	-
Heather twigs (charred)		+++	+
Monocot stems (charred)		(+)	-
Rhizomes / tubers (charred)		+	++
Roots (modern)		++	+
Uncharred seeds		(+)	+++
Charred remains (total count)			
(a) *Bromus* sp (Bromes)	caryopsis	-	2
(a) *Fallopia convolvulus* (Black-bindweed)	nutlet	-	1
(a) *Raphanus raphanistrum* (Wild Radish)	pod	-	1
(a) *Tripleurospermum inodorum* (Scentless Mayweed)	achene	-	1
(c) Cerealia indeterminate	grain	-	8
(c) *Hordeum* sp (Barley species)	grain	2	6
(c) *Hordeum* sp (Barley species)	hulled grain	-	1
(c) *Hordeum* sp (Barley species)	rachis frag	-	3
(c) *Hordeum vulgare* (6-row Barley)	twisted grain	-	2
(c) *Triticum* cf. *spelta* (cf. Spelt Wheat)	grain	-	6
(c) *Triticum spelta* (Spelt Wheat)	glume base	1	81
(c) *Triticum spelta* (Spelt Wheat)	spikelet fork	-	1
(c) *Triticum* sp (Wheat species)	grain	-	3
(h) cf. *Danthonia decumbens* (cf. Heath-grass)	caryopsis	-	1
(w) *Carex* sp (Sedges)	trigonous nutlet	2	1
(x) Poaceae undiff. <2mm (Grass family)	caryopsis	-	1
(x) Poaceae undiff. >2mm (Grass family)	caryopsis	-	2
Identified charcoal (✓ presence)			
Betula sp (Birches)		-	✓
Corylus avellana (Hazel)		✓	-
Quercus sp (Oaks)		✓	✓
Salicaceae (Willow, poplar)		✓	✓

[a-arable; c-cultivated; h-heathland; w-wet/damp ground; x-wide niche.
(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant]

Appendix 4: 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

Propose eco-village, Manor Farm, Newton on Trent: Archaeological Evaluation - Pre-Construct Archaeological Services Ltd

OASIS ID - preconst3-219435

Versions

View	Version	Completed by	Email	Date
View 1	1	Alison Lane	alison@pre-construct.co.uk	4 August 2015
View 2	2	Mrs. R. D. Savage	rachel@pre-construct.co.uk	11 September 2015

Completed sections in current version

Details	Location	Creators	Archive	Publications
Yes	Yes	Yes	Yes	1/1

Validated sections in current version

Details	Location	Creators	Archive	Publications
No	No	No	No	0/1

File submission and form progress

Grey literature report submitted?	Yes	Grey literature report filename/s	preconst3-219435_1.pdf [2,134.53kb]
Report release delay specified?	Yes	Release delay	Release into ADS library once signed off
Boundary file submitted?	No	Boundary filename	
HER signed off?		NMR signed off?	

Upload images | Upload boundary file | Request record re-opened | Printable version

Email Lincolnshire HER about this OASIS record

OASIS:

Please e-mail Historic England for OASIS help and advice
 Created by Jo Gilham and Jen Mitcham, email Last modified Thursday 13 August 2015
Cite only: http://www.oasis.ac.uk/form/formctl.cfm?oid=preconst3-219435 for this page

Figure 2: Trench location plan overlaid on greyscale geophysics results, at scale 1:2500 @ A3.

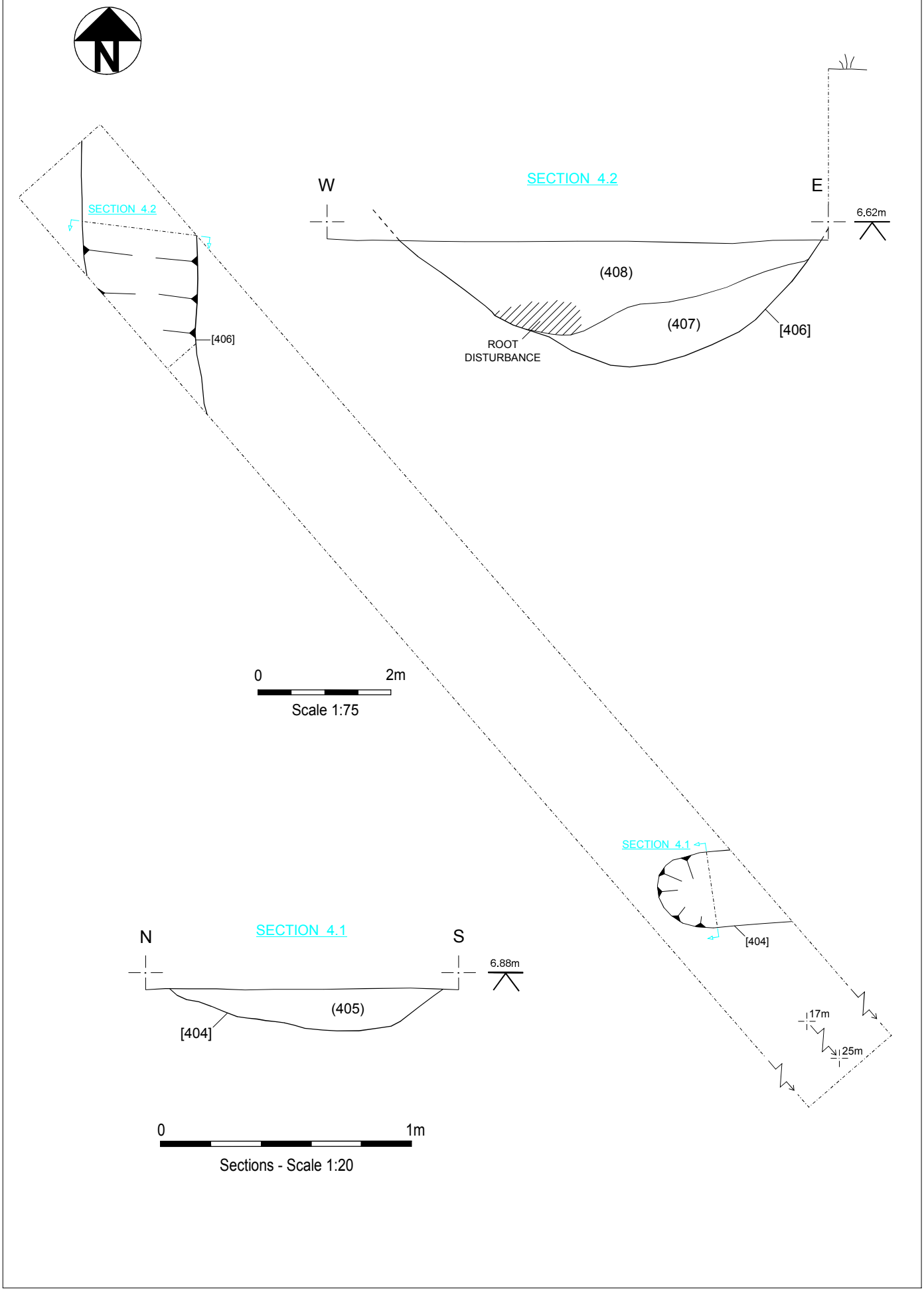

Fig.3 Trench 4. Plan 1:75 & Sections 1:20

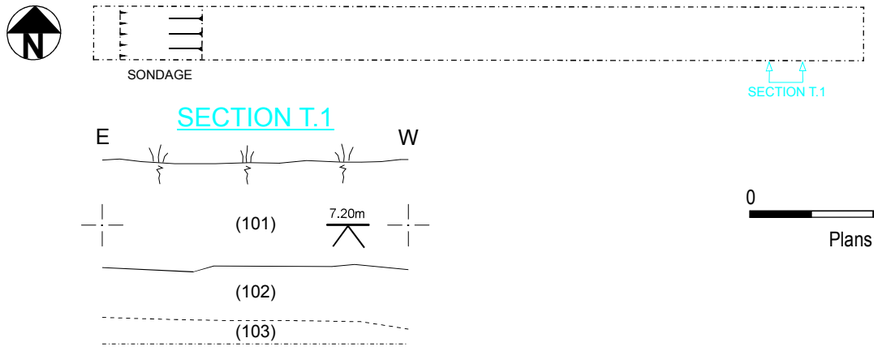

Fig.4 Trenches 1-3 & 5-10. Plans 1:200 & Sections 1:20