

**ARCHAEOLOGICAL INVESTIGATIONS  
AT WYNYARD MAIN REINFORCEMENT  
SCHEME,  
HARTLEPOOL, TEESSIDE**

**POST-EXCAVATION ASSESSMENT  
REPORT**

**JULY 2017**

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PRE-CONSTRUCT ARCHAEOLOGY

**Archaeological Investigations at Wynyard Main Reinforcement Scheme,  
Hartlepool, Teesside**

**Post-excavation Assessment Report**

**Central National Grid Reference: NZ 42721 30284 to NZ 46254 31452**

**Site Code: HWW 16**

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July 2017**

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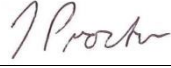
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**DOCUMENT VERIFICATION**

**ARCHAEOLOGICAL INVESTIGATIONS AT WYNARD MAIN REINFORCEMENT SCHEME,  
HARTLEPOOL, TEESSIDE**

**POST-EXCAVATION ASSESSMENT REPORT**

Pre-Construct Archaeology Limited Quality Control	
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<i>Site Code</i>	HWW 16
<i>Report Number</i>	RN 11075

<i>Task</i>	<i>Name</i>	<i>Signature</i>	<i>Date</i>
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## 1. NON-TECHNICAL SUMMARY

- 1.1 A programme of archaeological work was undertaken August - October 2016 by Pre-Construct Archaeology Limited in advance of the construction of a new pipeline for the Wynyard Main Reinforcement Scheme, Hartlepool by Anglian Water Services Limited. The c. 4.1km pipeline route which has an easement topsoil strip of 15m in width runs through an area of arable farmland from Amerston Hall (NGR NZ 42721 30284) eastwards towards Dalton Piercy on the outskirts of Hartlepool, Teesside (NZ 46254 31452).
- 1.2 The site was considered to be of archaeological interest because of its location within an area of known prehistoric and medieval activity. A geophysical survey undertaken along the pipe line route in 2015 identified several anomalies representing buried sub-surface features. Based on the results of the survey three areas within the pipeline route were targeted for strip, map and record excavation and watching briefs; Area 6 (NGR NZ 43402 30729), Area 9 (NZ 44443 30898) and Area 14. A change to the pipeline route meant that archaeological monitoring was not required in Area 14 as this area was bypassed by the new route. In Area 6 the geophysical survey identified a ring ditch interpreted as a possible round barrow or roundhouse along with internal pit-like anomalies. Several undetermined linear anomalies were also identified. In Area 9 irregular-shaped pit-like anomalies and undetermined linear anomalies were identified. The original route of the pipeline in Area 6 encompassed the entire area of the ring ditch identified by geophysical survey. The pipe corridor was subsequently moved to the south in this area to avoid much of the ring ditch and further geophysical survey undertaken across the new route.
- 1.3 The scope of work for the archaeological strip, map and record excavation for Area 6 and watching brief for Area 9 was set out in a Brief compiled by Tees Archaeology. A Written Scheme of Investigation was compiled by PCA and approved prior to the commencement of work. In sum, the aim of the work was to excavate and record any archaeologically significant features or deposits within the areas of archaeological potential as identified by geophysical survey.
- 1.4 The archaeological features recorded during the strip, map and record excavation have been placed within five broad phases of activity. Natural geological material (Phase 1) was exposed as the basal deposit across both areas investigated (Areas 6 & 9).
- 1.5 The earliest activity at the site comprised undated but probably Bronze Age and Iron Age features (Phase 2). The southern side of the ring ditch was excavated and this revealed a segmented ditch with associated post-pit. The ring ditch was situated on an area of high ground and probably represents a ploughed-out round barrow. Palaeoenvironmental analysis was undertaken on three bulk samples taken from the upper backfill deposits of the ditch. One sample contained substantial quantities weed seeds and a small quantity of charred oat and wheat grains. The assemblage of grain, although not large, probably represents cereal production being carried out in the local area and the chaff remains recovered may be waste

from processing the grain. Cattle, sheep/goat, pig and horse bone were recovered from the upper deposits of the ditch.

- 1.6 To the east of the ring ditch were features which may represent the largely ploughed-out remains of elements of roundhouses.
- 1.7 Phase 3 represents undated but probably early medieval settlement at Area 6. This includes a group of three similarly NNW-SSE aligned ditches which may represent boundary and drainage features and a rectangular structure set at right angles to the ditches. This was represented by narrow wall construction trenches with an entrance to the east. A single pit was recorded within the internal area of the rectangular structure however this feature could potentially be prehistoric in date. A small assemblage of finds recovered from Phase 3 features include a single piece of fired clay from the pit and horse and cattle bone from the rectangular gully and ditches. A possible iron mount was also recovered from the western terminal of the southernmost wall construction trench.
- 1.8 No archaeological remains were encountered within Area 9 and the geophysical anomalies appear to represent variations in the natural sub-stratum.
- 1.9 Colluvial deposits (Phase 4) were recorded in Both Areas 6 and 9. The colluvium extended across the entirety of Area 9 but was only present within areas of low elevations in Area 6.
- 1.10 Ploughsoil (Phase 5) formed the existing ground surface across both Areas 6 and 9.

## **2. INTRODUCTION**

### **2.1 General Background**

- 2.1.1 This report details the methodology and results of a programme of archaeological investigations undertaken by Pre-Construct Archaeology Limited (PCA) 29th August – 3rd October 2016, in association with the construction of a new pipeline for the Wynyard Main Reinforcement Scheme, Hartlepool by Anglian Water Services Limited. The new pipeline runs from Amerston Hall (NGR NZ 42721 30284) eastwards towards Dalton Piercy on the outskirts of Hartlepool, Teesside (NZ 46254 31452) (Figure 1). Archaeological mitigation was undertaken in two areas; Area 6 located c. 60m north-east of Amerston Hill Farm (NGR NZ 43402 30729) and Area 9 (c. 1km to the east (NZ 44443 30898) (Figure 2).
- 2.1.2 The archaeological project was undertaken as a condition of the planning permission on the recommendation of the Planning Archaeologist at Tees Archaeology who provide archaeological advice to the Local Planning Authority. The archaeological potential of the site was initially established by geophysical survey (Magnitude Surveys 2015) which identified several anomalies representing potential buried sub-surface features within Areas 6 and 9 (Figures 3-5).
- 2.1.3 The scope of work required to fulfil the relevant planning conditions was set out in a brief compiled by Peter Rowe, Planning Archaeologist at Tees Archaeology (Tees Archaeology 2015). The archaeological excavation phase was carried out according to a Written Scheme of Investigation (WSI) prepared by PCA (PCA 2016a) and approved by Tees Archaeology. The original route of the pipeline in Area 6 encompassed the entire area of the ring ditch identified by geophysical survey. The pipe corridor was subsequently moved to the south in this area to avoid much of the ring ditch and further geophysical survey undertaken across the new route. An updated WSI was prepared detailing the new route (PCA 2016b).
- 2.1.4 The archaeological project herein described was designed according to the guidelines set out in Management of Research Projects in the Historic Environment (MoRPHE) (English Heritage 2006). In line with MoRPHE guidelines, this Assessment Report sets out a formal review of the data collected during the fieldwork.
- 2.1.5 At the time of writing, the Site Archive, comprising written, drawn, and photographic records is housed at the Northern Office of PCA, Unit N19a Tursdale Business Park, Durham, DH6 5PG. When complete, the Site Archive will be deposited with Tees Archaeology, under the site code HWW 16. The Online Access to the Index of Archaeological Investigations (OASIS) reference number for the project is: preconst1-286381.

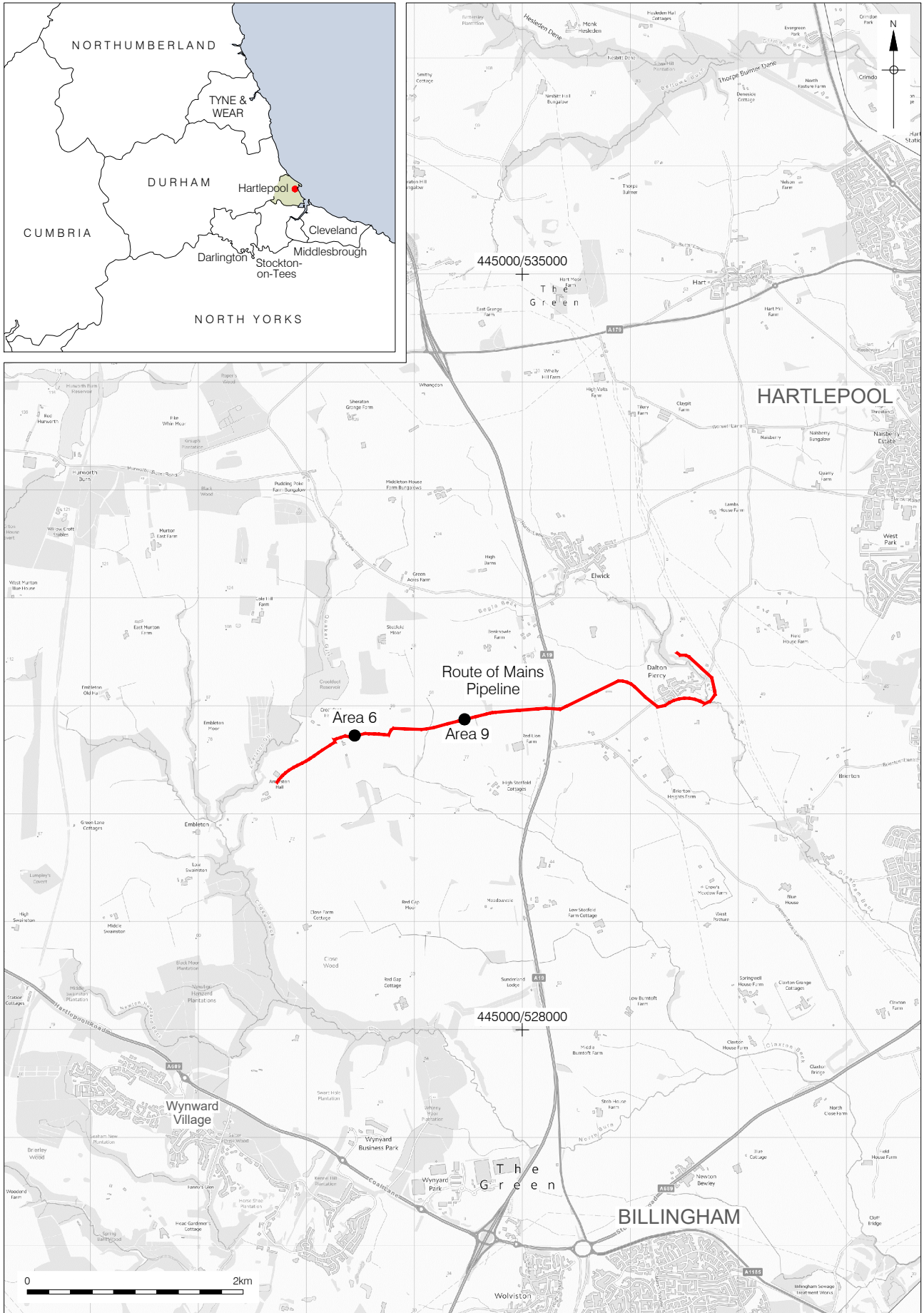


## **2.2 Site Location and Description**

- 2.2.1 The corridor of land through which the route of the water main runs is predominately flat at the western end, rising towards a summit on Amerston Hill, where the land levels before dropping steeply towards a stream. From here the land rises to a high point of 85m AOD north of Red Lion Farm, before gently dropping to the A19 road. East of the A19, the land rises steadily to Dalton Piercy. Present land use is a mixture of pasture and arable farming.
- 2.2.2 Two areas (Areas 6 & 9) were archaeological investigated to target potential archaeological remains identified by geophysical survey (Figure 2). Area 6 (NGR NZ 43402 30729) is located c. 60m north-east of Amerston Hill Farm and measured c. 160m ENE-WSW by c. 10m wide for most of its length with the exception of the WSW extent where it was up to 25m wide. The area was bounded on the north, east, and south by arable fields, and to the west by an unnamed road leading to the residential buildings (Figure 3)
- 2.2.3 Area 9 comprised a rectangular shaped area located 0.9km to the east of Area 6 measuring 70m ENE-WSW by 20m NNE-SSE situated within a large arable field (Figure 2).

## **2.3 Geology and Topography**

- 2.3.1 The solid geology of this part of Teesside is composed of Ford Formation Dolostone overlain by Devensian till deposits or 'boulder clays' (information from the *British Geological Survey* website). The soils are primarily slowly permeable, seasonally wet but base-rich loamy and clayey (Soilscapes website).
- 2.3.2 Area 6 was located within an area of gently undulating land with a maximum height of 89.21m AOD recorded within the central portion of Area 6 and the land gradually sloping downwards to the east and west to minimum heights of 85.37m AOD and 83.60m AOD, respectively. The ring ditch was located on this area of high ground.
- 2.3.3 Area 9 was located within the wide gently undulating landscape with a ground sloping gradually towards the south the area under archaeological investigation lay between elevations of 85.00m AOD and 86mAOD.
- 2.3.4 A stream flows southwards c. 0.6km to the east of Area 6 and 0.3km to the west of Area 9m, joining a south-eastern flowing stream located c. 0.3km to the south-east of Area 6.

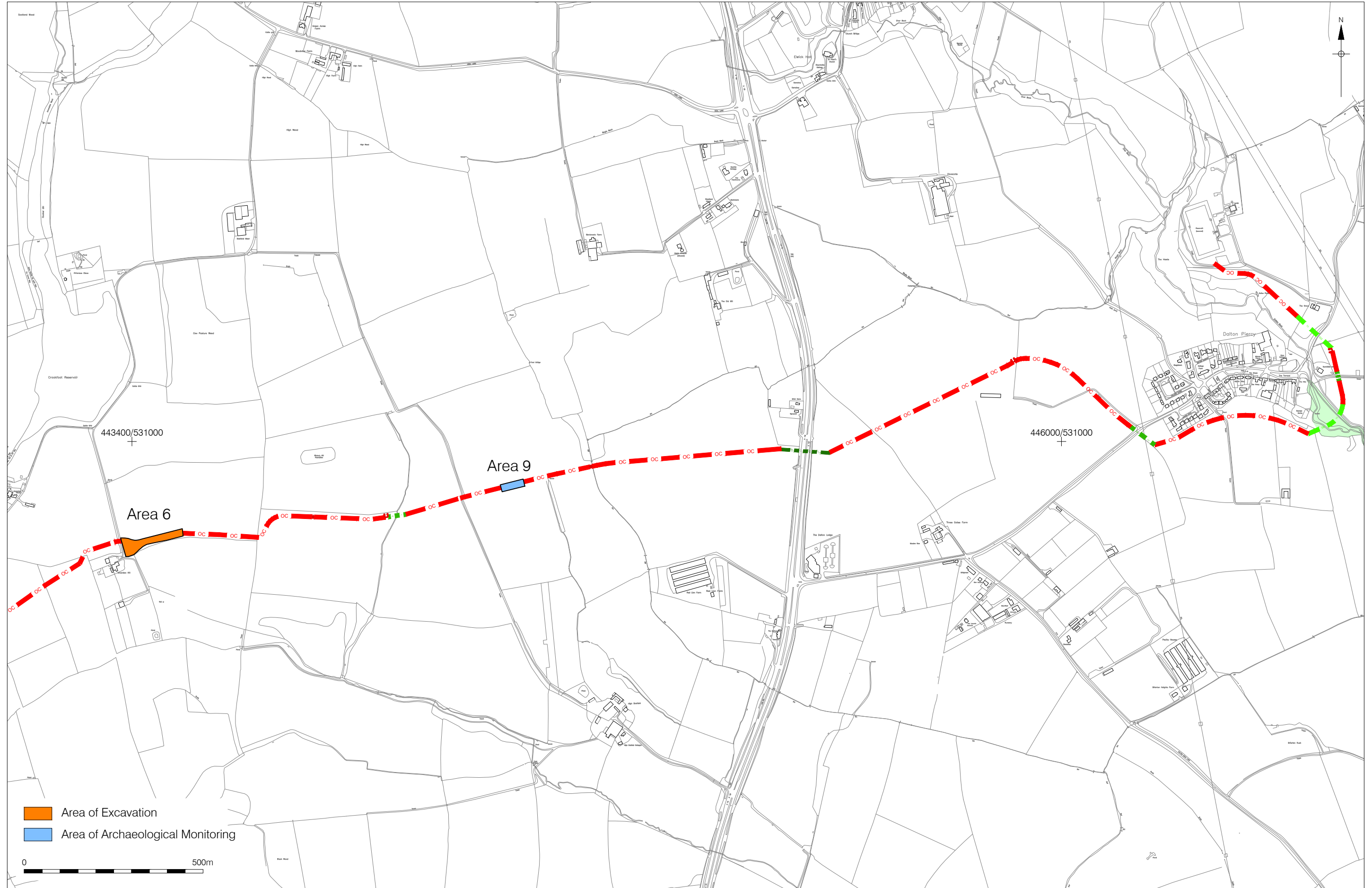


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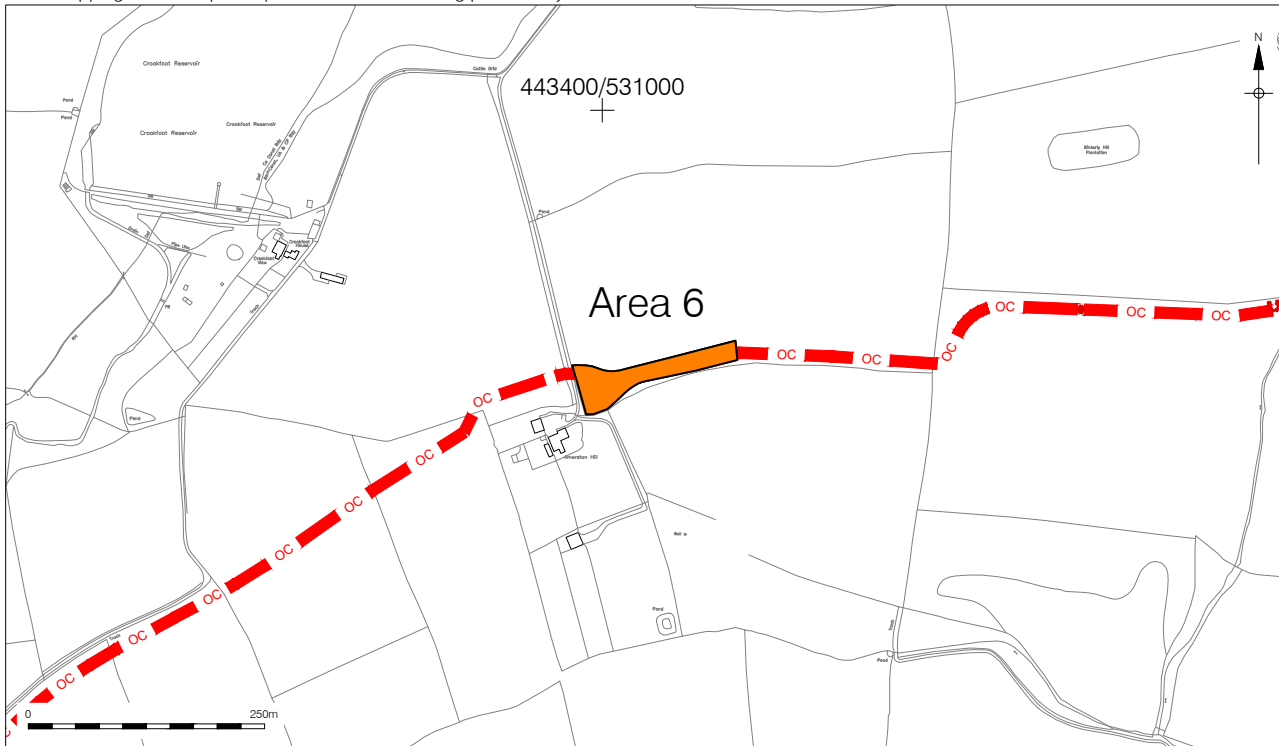
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Figure 1  
Site Location  
1:2,000,000, 1:50,000 at A4

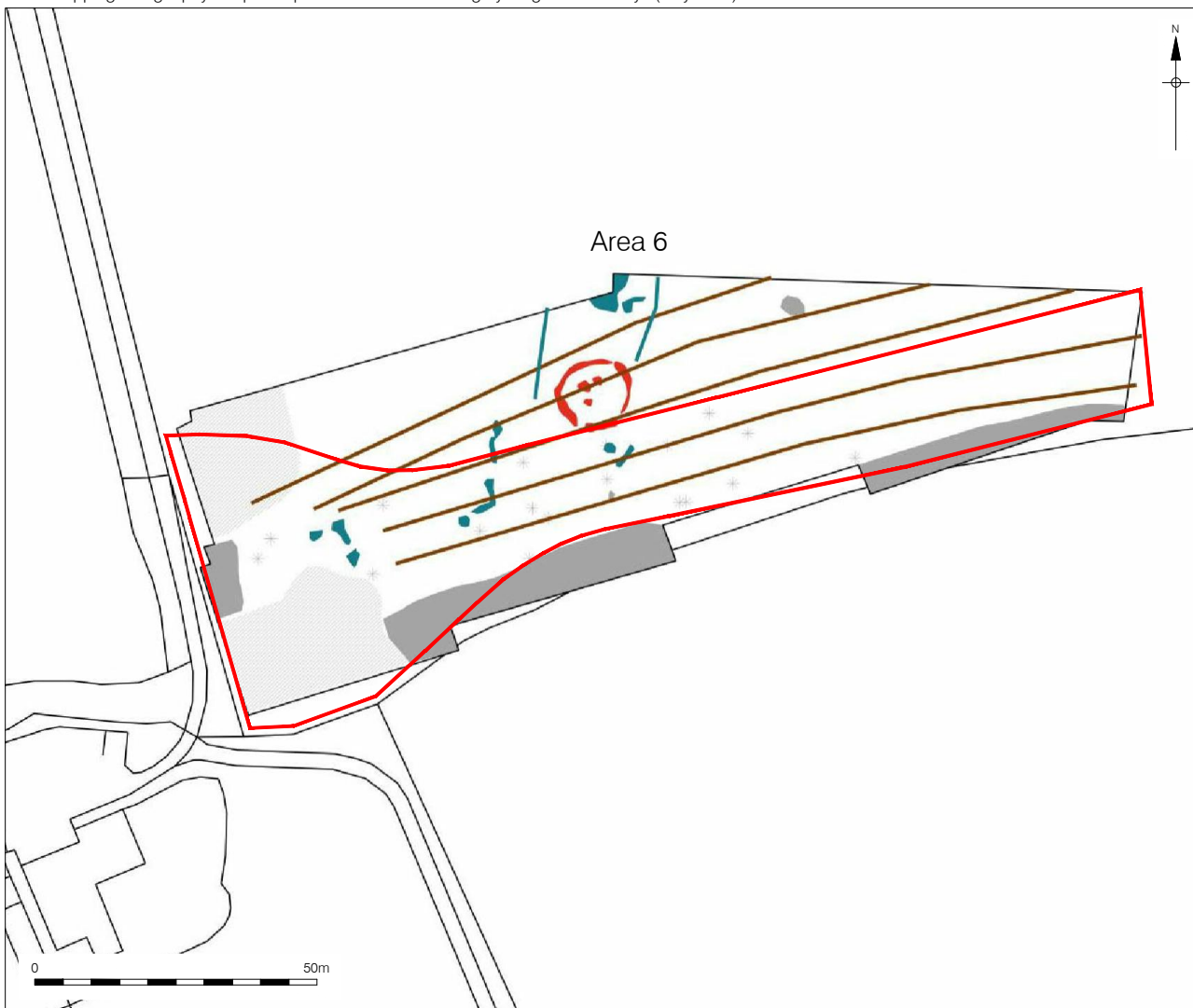




Base mapping and route plan reproduced from a drawing provided by the client



Base mapping and geophysics plan reproduced from a drawing by Magnitude Surveys (May 2016)



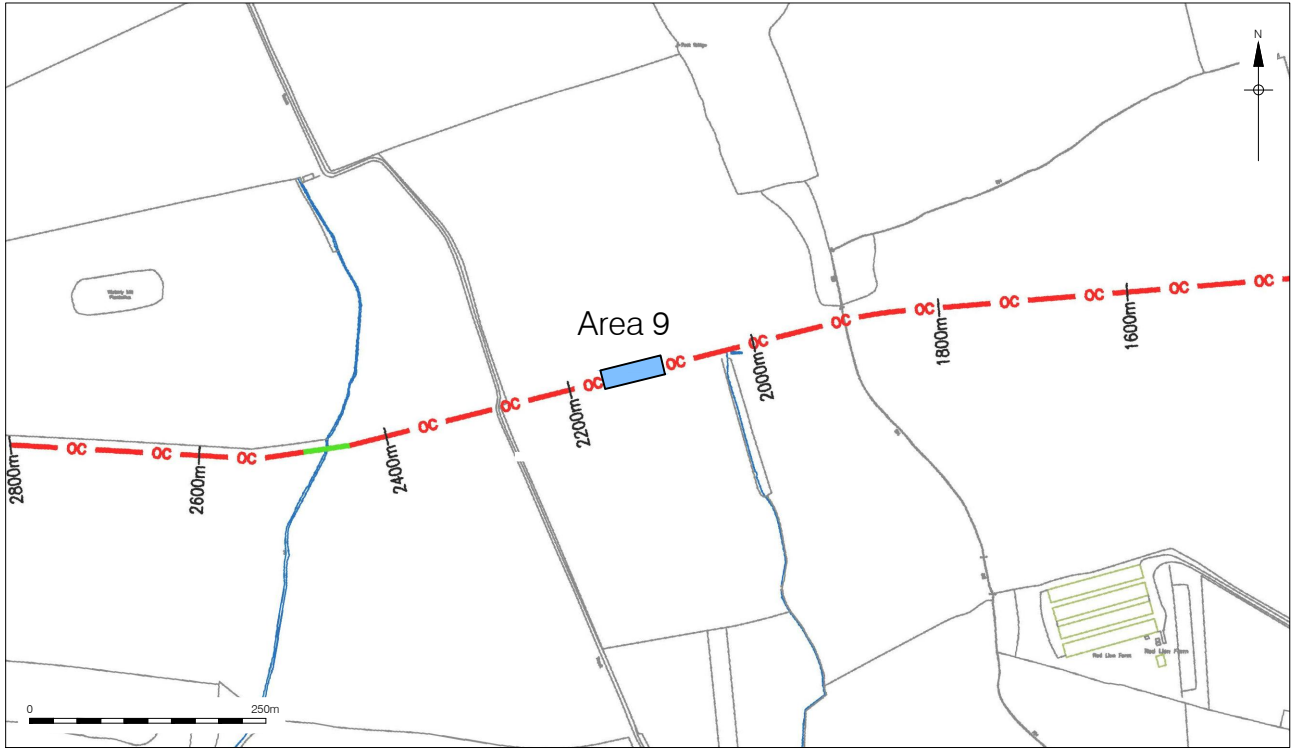
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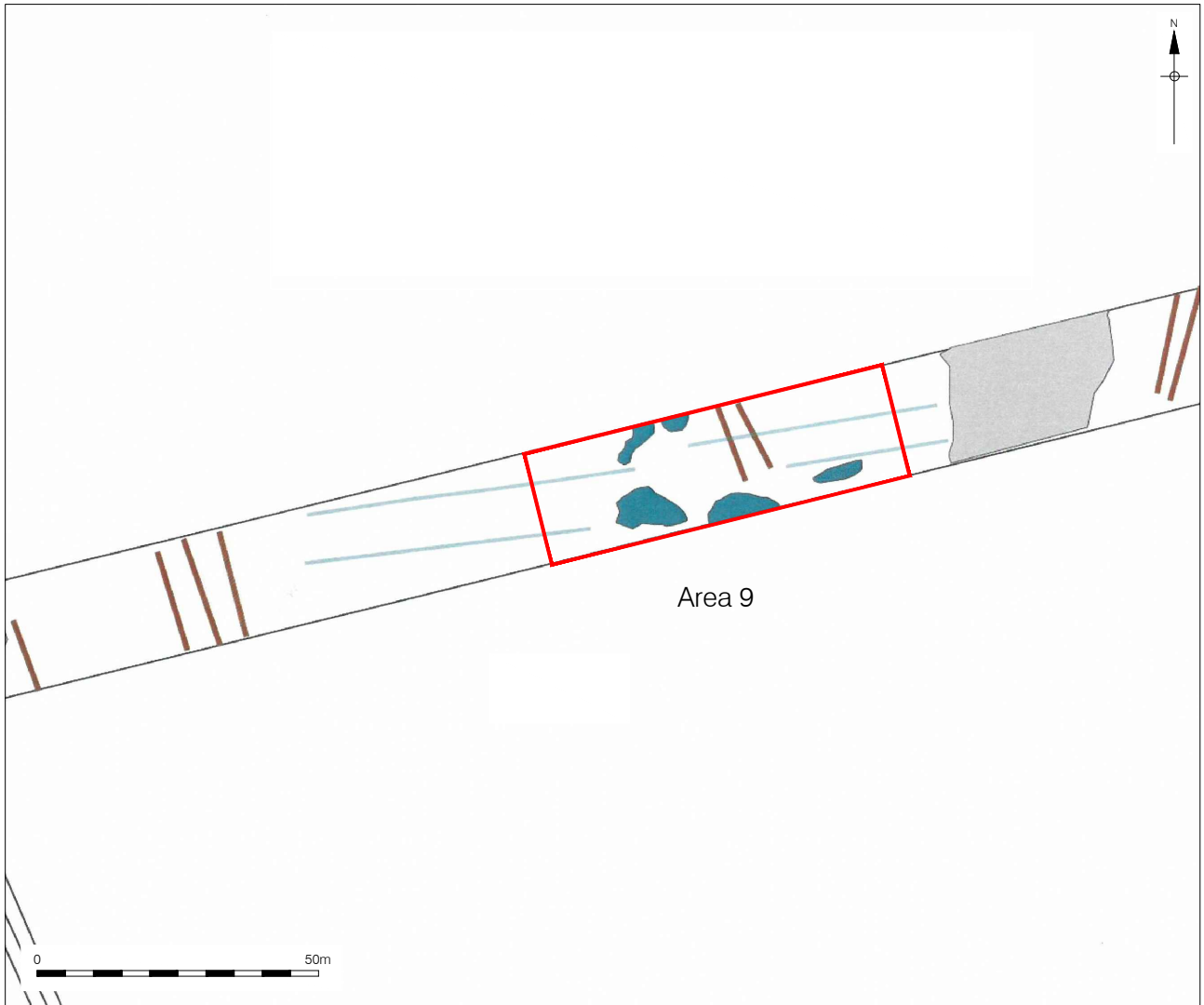
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Figure 3  
Detailed plan of Area 6 (showing geophysics)  
1:8,000 and 1:1,250 at A4

Base mapping and route plan reproduced from a drawing provided by the client



Base mapping and geophysics plan reproduced from a drawing by Magnitude Surveys (2015)



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17/02/17 RM

Figure 4  
Detailed of Area 9 (showing geophysics)  
1:8,000 and 1:1,250 at A4

## 2.4 Planning Background

2.4.1 An appropriately specified programme of archaeological work was required in association with a new pipeline running from Amerston Hall (NGR NZ 42721 30284) eastwards towards Dalton Piercy on the outskirts of Hartlepool, Teesside (NZ 46254 31452). The route is c. 4.1km long with an easement topsoil strip of 15m in width.

2.4.2 At a national level, justification for the work lies within guidance on the historic environment now contained within Section 12, 'Conserving and enhancing the historic environment' of the *National Planning Policy Framework* (NPPF) (Department of Communities and Local Government, 2012). The NPPF aims to balance the demands of development with conservation, respecting both national standards and local empowerment but carries a presumption in favour of sustainable development. The planning permission also had to comply with paragraph 141 of the National Planning Policy Framework:

*Para. 141: "Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers 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. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted"*

2.4.3 In addition to the Government legislation regarding national planning policy for the historic environment the work also is subject to relevant planning policy at a local level, namely that administered by the Local planning Authority (LPA), Hartlepool Borough Council. Tees Archaeology monitors all planning applications and other development proposals in Hartlepool and advises the LPA on a suitable response regarding the potential implications of proposed schemes with regard to the historic environment.

2.4.4 As part of the implementation of a Local Planning Framework (LPF) by Hartlepool Borough Council, the Hartlepool Local Plan 2006 will be superseded in due course with the Hartlepool Local Plan 2016 that is currently at 'Publication' stage. The site had potential for sub-surface archaeological remains within areas of the pipeline route therefore the 'saved' policies from the Hartlepool Local Plan 2006 relevant to the site are:

Policy HE14: Protection of Archaeological Sites

THE BOROUGH COUNCIL WILL SEEK TO PROTECT ARCHAEOLOGICAL SITES AND, WHERE APPROPRIATE, THEIR SETTING.

WHERE DEVELOPMENT PROPOSALS AFFECT SITES OF KNOWN OR POSSIBLE ARCHAEOLOGICAL INTEREST THE BOROUGH COUNCIL MAY REQUIRE THAT AN ARCHAEOLOGICAL ASSESSMENT / EVALUATION IS CARRIED OUT PRIOR TO ANY

PLANNING APPLICATION BEING DETERMINED. THIS IS INTENDED TO INDICATE WHETHER THE DEVELOPMENT IS LIKELY:

- TO BE SUBJECT TO ARCHEAOLOGICAL RECORDING,
- TO BE SUBJECT TO A REQUIREMENT TO PRESERVE REMAINS IN SITU, OR
- TO BE REFUSED.

WHERE NATIONALLY IMPORTANT REMAINS ARE FOUND TO EXIST THEN THEIR PRESERVATION IN SITU WILL BE REQUIRED. WHERE THIS CANNOT BE ACHIEVED BY SENSITIVE DESIGN THEN PLANNING PERMISSION MAY ULTIMATELY BE REFUSED.

WHEN PHYSICAL PRESERVATION IS NOT REQUIRED, AND WHERE APPROPRIATE, THE COUNCIL WILL, BY MEANS OF CONDITIONS, REQUIRE THE APPLICANT TO MAKE PROPER PROVISION FOR THE INVESTIGATION OF THE SITE BEFORE AND DURING DEVELOPMENT.

2.4.5 The scope of work required to fulfil the relevant planning conditions was set out in a Brief compiled by Peter Rowe, Planning Archaeologist at Tees Archaeology (Tees Archaeology 2015). A WSI for the excavation phase of work was produced by PCA and approved by Tees Archaeology (PCA 2016a). Following the submission of this WSI, the route of the pipeline was altered within Area 6 and the wayleave for the pipe corridor moved to the south to largely avoid the ring ditch. Subsequently the WSI was amended (PCA 2016b) and approved by Tees Archaeology prior to commencement of work.

## 2.5 Archaeological and Historical Background

*(Information in this section is extracted from the Written Scheme of Investigation (PCA 2016) and the research and writing of those responsible is acknowledged. Supplementary information has been added from various sources. The Tees Archaeology Historic Environment Record entry numbers are distinguished by the HER prefix.*

2.5.1 A number of flints have been found in the vicinity of the pipeline – a flint core was found c. 250m south of the site (HER 1669), three flint scrapers and blade were found c. 600m to the south-west (HER 1667; HER 1668), and a flint flake was recorded c. 960m to the south (HER 1661). To the north of Amerston Hill Farm, two flint scatters have also been recorded (HER 1670 & 1698). The remains of a deer were found in the early 19th century in a field c. 390m to the south-west of Area 14 (HER 825); these were believed to date from the prehistoric period.

2.5.2 Evidence for the Mesolithic period for the lower Tees Valley is principally registered on the HER as flint scatter sites and stray find spots. Flint scatters indicate Mesolithic presence on the Durham Magnesium Limestone plateau (Petts and Gerrard 2006, 18). Similarly Neolithic activity in the lowlands is restricted to find spots and flint scatters. Hartlepool Bay and the surrounding area around was a significant focus of Mesolithic and Neolithic activity. Investigation of the peat beds of the 'Submerged Forest' in Hartlepool Bay from the 19th century onwards have produced some remarkable finds including part of a Neolithic wattle fish weir and a skeleton from the same period (Vaughman et al. 2005). The marginal wetlands of the Bay provided an

important range of resources and activity during the Mesolithic and Early Neolithic seems to have been focused around the large watercourse which flowed through the Bay. A cluster of sites is also known in the hinterland to the north of the Bay (Waughman *et al.* 2005) including some of the largest Mesolithic flint scatters in the region at Crimdon Dene (Weyman 1984, 44–45). Significant Mesolithic activity has also been discovered at Hart, c. 4km north-east of the eastern end of the route of the pipeline (Weyman 1984).

- 2.5.3 The geophysical survey of the proposed route of the pipeline identified a ring anomaly approximately 10m in diameter on the summit of the survey area within Area 6, towards the western end of the route of the pipeline. The ring is partially obscured by ridge and furrow but two small, pit like features have been detected in the centre (Magnitude Surveys 2015). The feature is considered likely to be of prehistoric date and may represent a round barrow ditch or roundhouse gully.
- 2.5.4 Early Bronze Age round barrows are found across the uplands and lowlands of the region; a large number of upstanding upland barrows in Durham, Northumberland, and Yorkshire were explored by Greenwell in the 19th century (Petts and Gerrard 2006, 21). In the lowlands centuries of ploughing have denuded the mounds of these prehistoric barrows leaving just the ditches visible as cropmarks on aerial photographs. Two bronze age round barrows, one of which contained three cist burials, are listed as Scheduled Monuments on the Pastscape website at Brierton, c 3.5km to the south-east of Area 6 (Monument No 27014).
- 2.5.5 Some inhumations in round barrows may be of Late Bronze Age or Iron Age date and there is also evidence to suggest that some may have been reused for burial in the Late Anglo-Saxon and early Medieval periods (Petts and Gerrard 2006, 39; 66).
- 2.5.6 Geophysical anomalies of potential archaeological interest were also recorded in Area 9, towards the central part of the route of the pipeline, and Area 14, at the eastern end of the route (Magnitude Surveys 2015). A group of linear and pit-like anomalies in Area 9 and sinuous anomalies in Area 14 may represent traces of Late Iron Age/Roman period settlement or agricultural activity.
- 2.5.7 Archaeological investigations undertaken in recent years indicate that the North East coastal plain was relatively densely occupied during later prehistory. A recent archaeological assessment of the aggregate-producing areas of Durham, which the site lies close to the eastern extent of, concluded that there is potential for Iron Age settlement sites to be situated practically anywhere in this area (Hewitt 2011, 62). Sub-rectangular or square ditched enclosures, generally with east-facing entrances and containing one or two circular structures, are a well-recognised later prehistoric and Roman period settlement form in lowland areas. This type of settlement seemingly proliferates along the coastal plains of Northumberland and Durham, extending south as far as the Cleveland Hills, although most of the recorded examples have been identified as cropmarks on aerial photographs (Petts and Gerrard 2006, 36; Hewitt 2011, 52–61). However, the results of a wider body of archaeological work undertaken over the



last 20 years have challenged established ideas about patterns of settlement and society in the lowlands of south-east Northumberland and Durham during the Iron Age and early Roman period (Proctor 2009; Hewitt 2011; Hodgson *et al.* 2013). As more and more settlements with complex and multi-phase sequences of activity have been identified by large scale area excavations, established models of settlement morphology and chronology have become less clear (Petts and Gerrard 2007, 135).

- 2.5.8 The HER indicates that the general area was densely populated from at least the Late Iron Age; an Iron Age settlement is known at Red Gap Moor (HER 8076) c. 1.1km south-west of Area 6. Major multi-period sites are also observed in the general vicinity such as Stob House (HER 0609) and east of Brierton (HER 8263). The settlement at Stob House Farm, located c. 4.3km south of Area 14 has been identified as on cropmarks on an aerial photograph taken in 2011 and is considered to be of Iron Age/Roman date. The settlement comprises a number of adjoining/parallel rectilinear enclosures. At least three roundhouse ring ditches, either inside or truncated by the enclosures can be seen suggesting multi-phase activity. Numerous linear ditches to the west of the enclosures appear to form field boundaries and/or trackways. A sub-square enclosure, possibly with an internal circular structure, has been identified on aerial photographs c. 1km to the east of Area 14 (HER 1602).
- 2.5.9 Significant activity dating from the Late Iron Age and Roman period has been identified at Catcote, c. 2.7km to the east of Area 1. Excavations over a number of years have revealed a long-lived settlement which in the first century BC comprised an unenclosed settlement with several roundhouses, subsidiary structure, traces of fields and other associated enclosures (Long 1988; Vyner and Daniels 1989). This settlement covered an area of some 10 hectares and the economy was based on mixed farming, although the site evidently occupied a relatively high position in the local hierarchy of settlements (Daniels 2007, 8). Romano-British and imported artefactual material demonstrates close links between the inhabitants of the site and Roman markets (Long 1988). The settlement continued to prosper in the early Roman period but the deliberate infilling of ditches and abandonment of roundhouses in the second century indicates a hiatus at the site. It re-emerged as a wealthy settlement in the fourth century AD, when Roman style buildings rectangular buildings with mortar and tiled roofs were constructed; large numbers of fourth-century coins have been recovered from the settlement along with a variety of imported material (Vyner and Daniels 1989; Daniels 2007, 8–9; Cool and Mason 2008, 301).
- 2.5.10 Extensive cropmarks have been identified at Newton Bewley, c. 4.6km south of Area 14 including several indicative of roundhouses and a series of linked enclosures (Platell 1999; Platell and Johns 2001). A small portion of the site excavated in advance of a pipeline demonstrated that occupation began in the Iron Age, although most of the activity within the excavated area dated from the second century AD onwards. The settlement was evidently occupied throughout the Roman period and into the fifth century (Platell and Johns 2001).

- 2.5.11 There is no direct evidence of Roman activity within the route of the pipeline. However, two Romano-British brooches have been found through metal detecting c 0.84km north-west of Area 14 (HER 3569) and (HER 4076). A Romano-British pottery sherd (HER 1758) was recovered c 0.40m north of Area 9. To the south and south-east of Dalton Piercy there are a number of HER entries dating from the Roman period. These include the Roman settlement at Brierton (HER 806), a Roman coin at Brierton Quarry area (HER 6171, and a pottery scatter at Brierton Moorhouse (HER 557).
- 2.5.12 The village of Dalton Piercy has medieval origins. It still retains its original form as a linear two-row plan with a central green (HER 682). In the 12th century, the village was known simply as Dalton. A 14th-century copper-alloy strap end/buckle (HER 3567) was found during metal detecting c.1.1km to the south-west of Area 14.
- 2.5.13 Evidence of ridge and furrow ploughing has been identified in throughout the vicinity of the route of the pipeline. One of these is in the field immediately to the south-east of Area 14 (HER 1496). There are two further sites in Dalton Piercy (HER 93; HER 1495), two at Elwick to the north (HER 405; HER 1254) and three more to the south and south-west of Area 14 (HER 62; HER 336; HER 541). It is likely that the area was used as agricultural land during the medieval period, particularly given the proximity to existing ridge and furrow ploughing in the field adjacent to Area 14 in the eastern end of the pipeline.
- 2.5.14 The area also included nucleated settlements at Brierton (HER 0638), Red Gap (HER 0600) and High Stotfold (HER 8238).
- 2.5.15 Dalton Piercy is named on Speed's map of 1611 as 'Dauton'. Armstrong's map of 1768 shows 'Dalton' situated on the road running north-west/south-east between Elwick and Greatham Hospital. The nearest church is at Elwick, with Dalton depicted as a smaller settlement. College Farmhouse (HER 1048), located 80m south of the pipeline, dates from c.1700, as does Rose Cottage (HER 1493) at the eastern end of the village. The farmhouse and cottage at The Priory, on the south side of the green, date to the mid-18th century (HER 1494). On Greenwood's map of 1820, the village is shown in much more detail. The medieval two-row form of the village, centred on a green, can clearly be seen.
- 2.5.16 Within Dalton Piercy itself, Manor Farm dates to the early 19th century (HER 1492), with Leamount, immediately to the west of it, being built in the late 18th/early 19th century (HER 8100). The 1st Edition Ordnance Survey map of 1861 shows Dalton Piercy to be much the same as in 1843.

### **3. PROJECT AIMS AND RESEARCH OBJECTIVES**

#### **3.1 Project Aims**

3.1.1 The archaeological investigations at the site were threat led, since the proposed pipeline had potential to disturb or destroy significant sub-surface archaeological remains of the prehistoric and medieval period, specifically those potential archaeological remains identified by geophysical survey.

3.1.2 An archaeological strip, map and record excavation at Area 6 and archaeological monitoring (Watching Brief) at Area 9 was therefore required as part of the planning process. From the outset, the aim of the work was set out in a Brief compiled by Tees Archaeology (Tees Archaeology 2015). Subsequently a WSI was prepared by PCA (PCA 2016) and approved by Tees Archaeology prior to commencement of the work. In sum, therefore, the main aims of the strip, map and record excavation and archaeological monitoring, as outlined in the WSI were:

- to determine the absence/presence of archaeological remains;
- identify, investigate and record any archaeological remains observed during the excavation within Area 6 and the watching brief Area 9;
- to define the nature and date of any potential archaeological features noted during the geophysical survey in Areas 6 & 9.

3.1.3 The broad aim of the project was to record the heritage assets within the development site prior to their destruction. Additional aims of the project were:

- to compile a Site Archive consisting of all site and project documentary and photographic records, as well as all artefactual and palaeoenvironmental material recovered;
- to compile a report that contains an assessment of the nature and significance of all data categories, stratigraphic, artefactual, etc.

#### **3.2 Research Objectives**

3.2.1 Specific research objectives to be addressed by the project were formulated with reference to *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard 2006). The NERRF highlights the importance of research as a vital element of development-led archaeological work. It sets out key research priorities for all periods of the past allowing commercial contractors to demonstrate how their fieldwork relates to wider regional and national priorities for the study of archaeology and the historic environment. The aim of NERRF is to ensure that all fieldwork is carried out in a secure research context and that commercial contractors ensure that their investigations ask the right questions.

3.2.2 Given the results of the geophysical survey the project was considered to have high potential to contribute to existing knowledge of the prehistoric periods.

3.2.3 The following research priorities for the early medieval period (EM) within the NERRF research agenda and strategy were considered to be of particular relevance to this project:

- EMi. Landscape
- EMii. Settlement

3.2.4 The following research priorities for the prehistoric periods include Neolithic and Early Bronze Age (NB) and Late Bronze Age and Iron Age (I) within the NERRF research agenda and strategy were considered to be of particular relevance to this project:

- NBiii. Monumentality
- Iii. Settlement
- Iix. Burials

3.2.5 In sum, the work had potential to contribute to key research priorities in the NERRF research agenda and strategy for the prehistoric periods (Neolithic, Early Bronze Age, Late Bronze Age and Iron Age periods) and the early medieval period.

## 4. ARCHAEOLOGICAL METHODOLOGIES

### 4.1 Fieldwork

- 4.1.1 The fieldwork was undertaken in compliance with the codes and practice of the Chartered Institute for Archaeologist and the relevant ClfA standard (ClfA 2014a) and guidance document (ClfA 2014b&c). PCA is a ClfA 'Registered Organisation'. All fieldwork and post-excavation was also carried out in accordance with the *Yorkshire, the Humber & The North East: Regional Statement of Good Practice* (Yorkshire, The Humber and the North-East 2009).
- 4.1.2 A Brief compiled by Tees Archaeology (Tees Archaeology 2015) set out the research aims and objectives of the project. Accordingly a WSI was produced by PCA (PCA 2016a) that detailed method statements for project execution, described the techniques and approaches to be employed to achieve the aims and objectives of the Brief. The original route of the pipeline in Area 6 was subsequently moved to the south in this area to avoid the ring ditch and an updated WSI was prepared detailing the new route (PCA 2016b). The updated WSI was approved by Tees Archaeology prior to commencement of the archaeological work. The Tees Archaeology Officer was notified in advance of the start date and provisional programme for the fieldwork and invited to monitor the progress of the fieldwork.
- 4.1.3 The scheme involved excavation within Area 6 in advance of the construction of the new pipeline and archaeological monitoring ('watching brief') within Area 9 during the groundworks for the construction of the pipeline (Figure 2).
- 4.1.4 In Areas 6 and 9 'overburden', comprising topsoil, was removed by tracked c. 20- tonne 360° excavator, using a wide toothless bucket, down to the level of the natural sub-stratum. All machine excavation was undertaken under direct archaeological supervision.
- 4.1.5 All visible features were marked with spray paint as they were exposed by machine excavation. A Leica Viva Smart Rover Global Navigation Satellite System (GNSS) was used to map all observed remains and set out base lines for planning.
- 4.1.6 The investigation of archaeological remains was by hand, with cleaning, examination and recording both in plan and in section, where appropriate. Cleaning was restricted to portions of probable and certain archaeological features identified during machine removal of overburden. Investigations followed the normal principals of stratigraphic excavation and were conducted in accordance with the methodology set out in PCA's site manual (PCA 2009).
- 4.1.7 An adequate proportion of archaeological features were excavated by hand in order to determine their form and function, where possible.
- 4.1.8 Sections excavated through archaeological features were located using the Smart Rover GNSS and recorded as appropriate, using a single context recording system utilising *pro forma* context recording sheets. Plans were drawn at 1:20 and sections at 1:10 or 1:20
- 4.1.9 A detailed photographic record of the investigations was compiled using SLR cameras (35mm

film black and white prints for archive purposes) and by digital photography, illustrating in both detail and general context the principal features and finds discovered. The photographic record also included 'working shots' to illustrate more generally the nature of the archaeological operation mounted. All record photographs included a legible graduated metric scale.

- 4.1.10 The Smart Rover GNSS was used to establish Temporary Bench Marks (TBMs) on the site. The height of all principal strata and features were calculated relative to Ordnance Datum using the TBMs and indicated on the appropriate plans and sections.

## **4.2 Post-excavation**

- 4.2.1 The stratigraphic data generated by the project is represented by the written, drawn and photographic records. A total of 71 archaeological contexts were defined during the course of the archaeological investigations (Appendix 2). The contents of the paper and photographic elements of the Site Archive are quantified in Section 6. Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data (Appendix 1). The archaeological remains were assigned to five broad phases of activity. A written summary of the archaeological sequence was then compiled, as described below in Section 5.
- 4.2.2 All processing of artefacts and ecofacts were undertaken away from site. All finds were treated in accordance with the guidelines set out in *First Aid for Finds* (Watkinson and Neal 2001), *Packing and Storage of Freshly Excavated Artefacts from Archaeological Sites* (UKIC 1983) and *Standard and guidance: for the collection, documentation, conservation and research of archaeological materials* (CifA 2014d). The artefactual and ecofactual material recovered during the excavation comprised an individual find of an iron strap (Appendix 4) and a small assemblage of animal bone (Appendix 5).
- 4.2.3 The complete Site Archive, in this case comprising the written, drawn and photographic records (including all material generated electronically during post-excavation) and the artefactual assemblage, will be packaged for long term curation.
- 4.2.4 In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document (Brown 2007; CifA 2014e; Walker 1990) will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document (Walker, UKIC 1990) and an IfA publication (CifA 2014c). The depositional requirements of the body to which the Site Archive will be ultimately transferred will be met in full.
- 4.2.5 The palaeoenvironmental sampling strategy of the project was to recover bulk samples where appropriate, from well-dated stratified deposits covering the main periods or phases of occupation and the range of feature types represented, with specific reference to the objectives of the excavation. To this end, 15 bulk samples were collected from deposits of probable prehistoric and early medieval date; six samples were selected for post-excavation processing

and assessment for palaeoenvironmental remains (Appendix 6). An assessment report has been produced including a basic quantification of the recovered material and a statement of potential for further analysis and recommendations for such work (Section 8).

- 2.2.4 At the time of writing the Site Archive is housed at the Northern Office of PCA, Unit N19a TurSDale Business Park, Durham, DH6 5PG. When complete, the Site Archive will be deposited with Tees Archaeology, under the site code HWW16. The Online Access to the Index of Archaeological Investigations (OASIS) reference number for the project is: preconst1-286381.

## 5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

*During the investigations, separate stratigraphic entities were assigned unique and individual 'context' numbers, which are indicated in the following text as, for example, [100]. The archaeological sequence is described by placing stratigraphic sequences within broad phases, assigned on a site-wide basis in this case. An attempt has been made to add interpretation to the data, and correlate these phases with recognised historical and geological periods.*

### 5.1 Phase 1: Natural Sub-stratum

5.1.1 Phase 1 represents the natural geological material, [101] and [102], exposed across Areas 6 and 9, respectively, and generally comprised clay and sandy clay. Both areas were situated within a gently undulating landscape on relatively high ground and the natural topography where exposed broadly corresponds to this.

5.1.2 In Area 6 the natural sub-stratum was recorded at a maximum height of 88.97m AOD within the central portion of the site, this gradually sloping downwards to the east and west where minimum heights of 84.02m AOD and 82.96m AOD, respectively, were recorded.

5.1.3 It is probable that within the higher elevations of Area 6, where no colluvium was present, the upper interface of the glacial till had been subject to truncation by agricultural activity during the medieval to modern periods.

5.1.4 Although the natural topography broadly corresponds with the current ground levels in both areas, within Area 6 the sloping ground to the west and east would have in the past been markedly steeper; substantial deposits of colluvium were recorded within two sample excavations undertaken within areas of low elevations. The westernmost sample excavation recorded colluvial deposits up to 1.50m thick (Figure 8, Section 1). The natural topography sloping down towards the east would have been only marginally steeper with a colluvial deposit up to 0.34m thick recorded within the easternmost sample excavation (Figure 8, Section 4).

### 5.2 Phase 2: Prehistoric and Undated

5.2.1 A presumed to be oval shaped post-pit, [148], was recorded at the northern edge of Area 6 which measured at least 1.50m NE-SW by 0.89m NW-SE and was up to 0.33m deep, encountered at a maximum height of 88.84m AOD (Figure 8, Section 23; Plates 1 & 4). Its single sandy silt backfill, [147], contained frequent quantities of small to large sub-rounded and sub-angular stones that probably represent packing material associated with a posthole, [150], measuring c. 0.19m by 0.33m deep, recorded within the base of pit [148]. A small assemblage of animal bone was recovered from the sandy silt backfill, [149], of posthole [150] including two fragments cattle and pig bone (Appendix 5).

5.2.2 The western portion of the post-pit was truncated by the terminal of the segmented ring ditch (Group 159), and it therefore must predate this. It is unclear however if the post-pit forms part of an earlier prehistoric phase of activity at this location or forms part of an entrance contemporary in date with the ring ditch, discussed below, and further excavation of the ring ditch feature to the north would be required to establish this.



- 5.2.3 The southern side of the ring ditch identified by geophysical survey was exposed adjacent to the northern limit of Area 6. This was situated within an area of high ground along the northern edge of Area 6 and probably represents part of a ploughed-out Bronze Age barrow (Figure 6; Plate 4). The ring ditch was initially identified by geophysical survey as a positive magnetic ring c. 10m in diameter with two small internal pit-like anomalies (Magnitude Surveys 2015) (Figure 5). This was to be fully exposed and excavated however an amendment to the route of the pipeline resulted in only a small portion of this being exposed.
- 5.2.4 The ring ditch was initially thought be continuous however the exposed portion comprised an ENE-WSW aligned ditch segment (Group 159). This segment was exposed for a distance of 9.54m and had a squared terminus to the ENE and a rounded terminus to the west (Plates 2 & 4). The ditch itself had a broad U-shaped profile and measured up to 1.16m wide by up to 0.61m deep and was encountered at maximum and minimum heights of 88.92m AOD and 88.77m OAD, respectively (Plate 3).
- 5.2.5 The ditch was filled with two depositional events. The initial depositional event represents the natural silting (Group 160) of the ring ditch that was overlain by backfilling deposits (Group 161) (Figure 8, Sections 16, 21 & 22). Table 1 below summarises the dimensions for each natural silting and backfill deposit.

context	cut	section	<i>Natural silting (Group 160)</i> <i>Backfill (Group 161)</i>	<i>Thickness</i>	<i>mAOD</i>	
					<i>Highest</i>	<i>Lowest</i>
[131]	[134]	16	Backfill	0.34m	88.77	88.69
[132]	[134]	16	Backfill	0.15m	88.77	88.38
[133]	[134]	16	Natural silting	80mm	88.64	88.31
[143]	[145]	21, 22	Backfill	0.31m	88.92	88.79
[144]	[145]	21, 22	Natural silting	80mm	88.68	88.52
[146]	[145]	21, 22	Backfill	0.22m	88.62	88.50

Phase 2 Groups 160 &amp; 161 Dimensions for Barrow Ditch Fills

- 5.2.6 The basal fill within the ring ditch comprised natural silting deposits (Group 160), relatively sterile sandy silt, [133] and [144], up to 80mm thick, from which no datable material was recovered.
- 5.2.7 Backfill deposits (Group 161) comprised various compositions of clay, silt and sand and had a maximum combined thickness of 0.52m. A small assemblage of animal bone was recovered from these deposits (Appendix 5). Identifiable fragments of hand collected animal bone and those recovered from palaeoenvironmental samples from the ditch backfill comprised remains from domesticates of cattle, sheep/goat, pig and horse. Also recovered from the sample was a single fragment of bone from a small mammal, likely to be a rodent.

- 5.2.8 Three palaeoenvironmental samples (Samples 8, 11 & 15) were analysed from the ditch backfills [132], [143] and [146], respectively (Appendix 6). Although the preservation of environmental material from Samples 8 and 15 was poor, Sample 11 contained relatively substantial quantities of weed seeds of predominantly, but not exclusively, *chenopodium sp.* (goosefoots) and a small amount of charred oat and wheat grain. The grain assemblage recovered from these deposits was sparse and probably represents cereal production being carried out within the locality with the chaff remains possibly representing waste from grain processing. Also recovered were small quantities of wood charcoal including large pieces recovered from Sample 11.
- 5.2.9 A group of features recorded to the east of the ring ditch have been interpreted as representing the truncated remains of an open settlement of uncertain, but probably Iron Age date (Figure 6).
- 5.2.10 Located c. 7m to the east of the ring ditch was a short linear feature, [140], with a shallow U-shaped profile measuring 1.72m NE-SW, 0.30m wide and up to 50mm deep (Figure 8, Section 17). Its single backfill comprised clay silt, [139], from which no datable material was recovered. This feature has tentatively been interpreted as a gully possibly forming a surviving portion of a drainage feature associated with a roundhouse structure.
- 5.2.11 At the eastern side of Area 6 various elements associated with a roundhouse structure were recorded including a curvilinear feature, [120], a posthole, [126] and an oval feature [128] (Figure 6). The surviving portion of a roughly east-west aligned curvilinear feature, [120], with a shallow U-shaped profile measured 2.40m long up to 0.41m wide and up to 0.14m deep (Figure 8, Section 11; Plate 5). This feature is characteristic of a drainage gully or 'eaves drip' gully that would have surrounded a roundhouse structure. Only a single piece of undiagnostic fired clay was recovered from its silty clay backfill [119].
- 5.2.12 A circular posthole, [126], c. 1.90m north of gully, [120], measured c. 0.20m in diameter and survived to a depth of 0.15m (Figure 8, Section 13). This posthole probably represents a surviving structural element associated with the roundhouse. No datable material was recovered from its single silty clay backfill [125].
- 5.2.13 A shallow oval-shaped feature, [128], measuring 1.04m north-south by 0.58m wide and up to 40mm thick was recorded c. 3.50m north of gully [120] (Figure 6). Its single backfill comprised dark grey ashy clayey silt, [127], from which no datable material was recovered. Certain interpretation of this feature is impossible due to truncation however it could represent the basal portion of a hearth associated with the roundhouse.

### 5.3 Phase 3: Early Medieval and Undated

- 5.3.1 The earliest Phase 3 features recorded in Area 6 comprised a group of three NNW-SSE aligned ditches, Groups 155, 156 & 162 (Figure 7; Plates 6-9). The westernmost ditch, Group 155, was exposed for a maximum distance of 10.94m and had a rounded terminus to the NNW (Figure 7; Plate 9). Three slots excavated through the ditch had similar broad U-shaped profiles that

measured up to 1.56m wide by up to 0.43m deep, with maximum and minimum heights of 86.97m AOD and 86.85m AOD, respectively (Figure 8, Sections 3, 7 & 10; Plate 8).

- 5.3.2 Located c. 11.50m to the east of Group 155 ditch, were two ditches, Groups 156 and 162, on the same NNW-SSE alignment with a c. 4.10m wide entrance formed by the two rounded termini (Plate 6). The southernmost ditch (Group 156) was exposed for a distance of 10.30m, continuing south beyond the limit of excavation, and had a rounded terminal to the north-north-west. The northernmost ditch (Group 162) was exposed for a distance of 5.20m, continuing north beyond the limit of excavation, and had a rounded terminal to the south-east. Three slots excavated through Group 156 ditch and a single slot excavated through ditch Group 162 recorded similar broad U-shaped profiles that measured up to 1.60m wide by up to 0.25m deep (Figure 8, Sections 2, 5, 6, 8 & 9; Plate 7). These ditches were encountered at maximum and minimum heights of 88.64m AOD and 87.86m AOD, respectively.
- 5.3.3 A single sandy clay backfill deposit (Group 163, 164 and 165) was recorded in each slot excavated through the three ditches (Groups 155, 156 and 165) from which only a small assemblage of hand collected animal bone was recovered, including cattle and horse with a further fragment of horse bone recovered from a palaeoenvironmental sample (Appendix 5).
- 5.3.4 Two palaeoenvironmental samples (Samples 3 & 4) were analysed from the backfills of Group 162 and Group 155 ditches, respectively (Appendix 6). Both samples produced limited environmental remains with small quantities of weed seeds present in both samples and a small quantity of wood charcoal recovered from Sample 4.
- 5.3.5 These ditches probably represent boundary ditches, also functioning as drainage features, with a possible 4.10m wide entrance formed by the terminals of the easternmost ditches (Figure 7). Although no datable material was recovered from any of these ditches the compositions of the backfills were identical suggesting they are contemporary. Due to the absence of any datable material these features have tentatively been attributed to Phase 3 activity however they could potentially be prehistoric in date.
- 5.3.6 Elements of narrow linear features which truncated the Group 156 and 162 ditches are interpreted as representing wall construction trenches for a rectangular structure which measured up to c. 14.40m east-west by 6.80m north-south. A central entrance along the eastern side was formed by two rounded termini with a possible further entrance along the northern side (Plates 10, 11 & 12). The northern and southern elements of the structure were formed by two linear features, Groups 158 and 157, respectively, and truncated the Phase 2 barrow ditch to the north. The western part of the structure may have been formed by the Phase 3 ditches Group 156 and 158 (Figure 7).
- 5.3.7 The southern part of the structure comprised a linear feature (Group 157) that was aligned ENE-WSW and recorded for a distance of 13.44m, turning at its ENE extent to a north-south alignment for a distance of 3.70m, with rounded termini at the northern and WSW extents. This

had a narrow U-shaped profile up to 0.60m wide by up to 0.26m deep and was encountered at maximum and minimum heights of 88.60m AOD and 88.44m AOD, respectively (Figure 8, Sections 12, 14, 24 & 25; Plate 11). The northern part of the structure comprised a similarly aligned ENE-WSW linear feature (Group 158) recorded for a distance of 13.30m, turning at its ENE extent to a NW-SE alignment for a distance of 2.60m, with rounded termini to the WSW and south-east extents. This had a similar narrow U-shaped profile measuring up to 0.65m wide by up to 0.35m deep and was encountered at maximum and minimum heights of 88.92m AOD and 88.68m AOD, respectively (Figure 8, Sections 15, 18 & 19).

- 5.3.8 Both features (Groups 157 & 158) contained a single backfilling deposition event that comprised clayey silt (Groups 166 & 167, respectively) from which a small assemblage of animal bone was recovered that was exclusively from cattle. Also recovered was an individual find of an iron strap (SF 1) (Appendix 4). This was heavily corroded and X- radiography undertaken identified small circular perforations close to its edge indicating a possible function as a mount.
- 5.3.9 Three palaeoenvironmental samples (Samples 6, 9 & 14) were analysed from the backfill deposits from which limited environmental remains were recovered (Appendix 6). Environmental remains recovered comprised weed seeds and small quantities of wood charcoal. Of note was an increase in the quantity of birch seeds from the Phase 2 prehistoric samples, however this may not represent a change in the local vegetation as these seeds are often transported over long distances.
- 5.3.10 The linear features are interpreted as construction slots for timbers which would have formed the walls of the structure. Along the eastern side was a c. 1.50m wide entrance formed by two rounded termini (Plate 12) with a further possible c.0.80m wide entrance recorded to the north, although this may be the result of truncation rather than an entrance. The WSW extents of both Group 157 and 158 gullies truncated the eastern edges, but did not extend beyond, the earlier NNW-SSE aligned ditches (Groups 156 & 162) and it is unclear if the western part of the rectangular structure has been truncated by later agricultural activity or alternatively was formed by the line of the earlier ditches.
- 5.3.11 Although no securely datable material was recovered from this structure, based on its form and the iron strap, an early medieval date is likely.
- 5.3.12 Located within the internal area of the rectangular structure was an oval shaped feature, [142]. This had an irregular U-shaped profile and measured 1.18m NW-SE by 0.66m NE-SW and was 0.24m deep (Figure 8, Section 20; Plate 13). Only a single piece of undiagnostic fired clay was recovered from its single clayey silt backfill, [141], therefore a definitive date for this feature is impossible. Due to an absence of datable material it is unclear if this is contemporary with the rectangular structure. The pits backfill was similar to that recorded for the rectangular structures ditches and has therefore been attributed to Phase 3 early medieval activity but could potentially be prehistoric in date.

5.3.13 A palaeoenvironmental sample (Sample 10) was analysed from the backfill [141] of the pit from which limited environmental remains were recovered (Appendix 6).

#### **5.4 Phase 4: Colluvium**

5.4.1 In Area 6 colluvial deposits were present within areas of low lying elevations and recorded within sample excavations undertaken within the eastern and western parts of the site (Figure 5 & 8, Sections 1 & 4; Plate 14).

5.4.2 The earliest colluvial deposit recorded within the western part of the site comprised sandy clay, [103]; this was exposed within the sample excavation and was up to 0.90m thick. This was directly overlain by a further colluvial deposit which comprised sandy silt, [102], up to 0.60m thick. This extended over an area measuring up to 27.90m east-west and was exposed for a distance of c. 9.00m north-south. The maximum and minimum height recorded for the uppermost strata of such deposits was 85.34m AOD and 84.84m AOD, respectively.

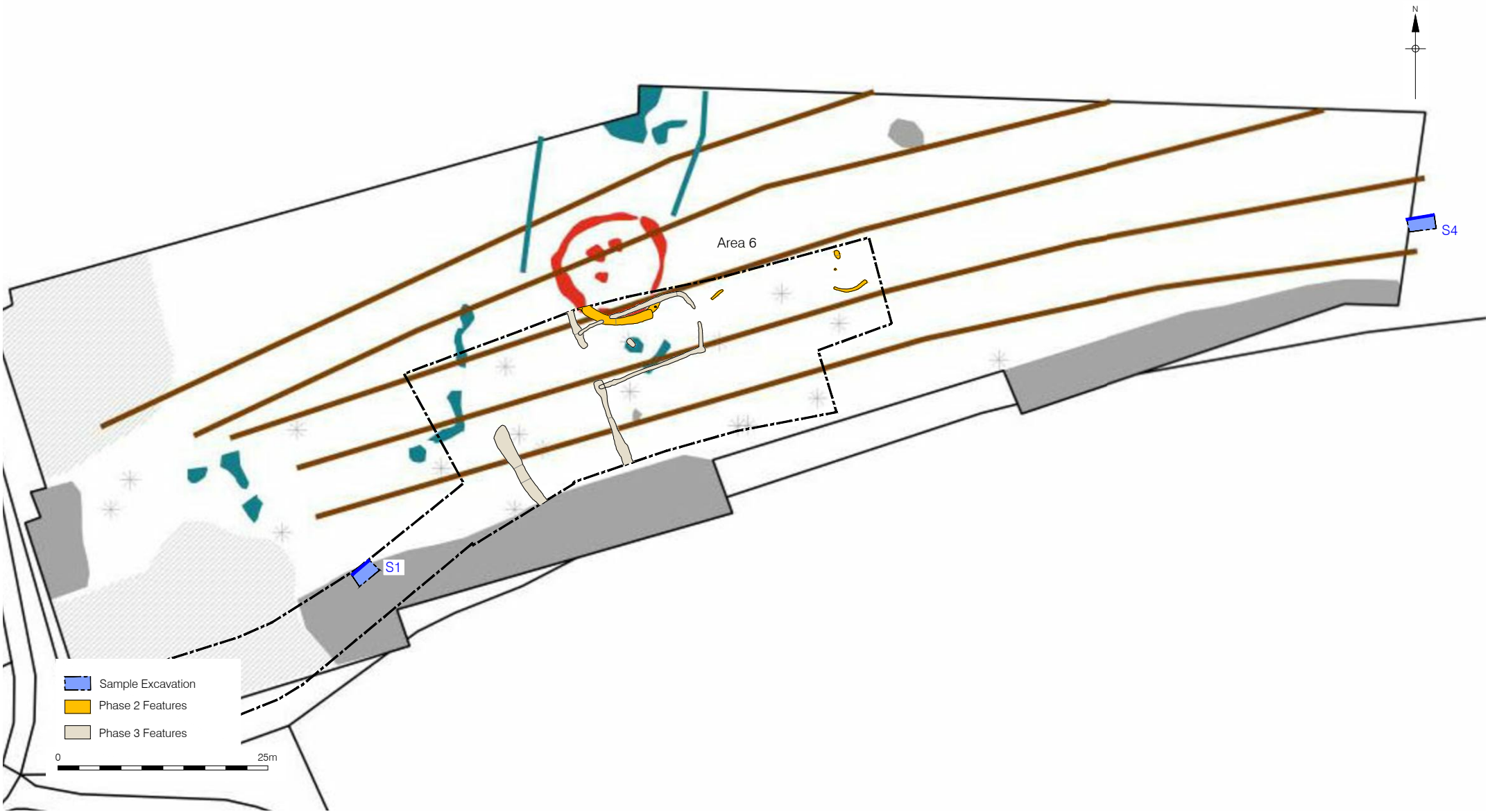
5.4.3 At the western extent of Area 6 a single colluvial deposit recorded within the sample excavation area comprised silty sand, [110], up to 0.35m

5.4.4 A uniformly c. 0.24m thick colluvium deposit was recorded extending across Area 9 and comprised sandy clay [201].

5.4.5 No datable material was recovered from any of the colluvial deposits therefore the date that such deposits were formed is uncertain. The presence of two distinct colluvial deposits recorded within the western part of the Area 6 indicates that at this location there were at least two depositional events.

#### **5.5 Phase 5: Modern**

5.5.1 Ploughsoil formed the existing ground surface across both areas and directly overlay Phase 1 natural sub-stratum in Area 9 and Phase 3 early medieval activity and Phase 4 colluvium in Area 6. The ploughsoil comprised silty clay, [100] up to 0.35m thick in Area 6 and sandy clay, [200], up to 0.28m thick in Area 9, respectively.



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 17/02/17 RM

Figure 5  
 Plan of features in Area 6 overlain onto Geophysical Survey Interpretation  
 1:625 at A4

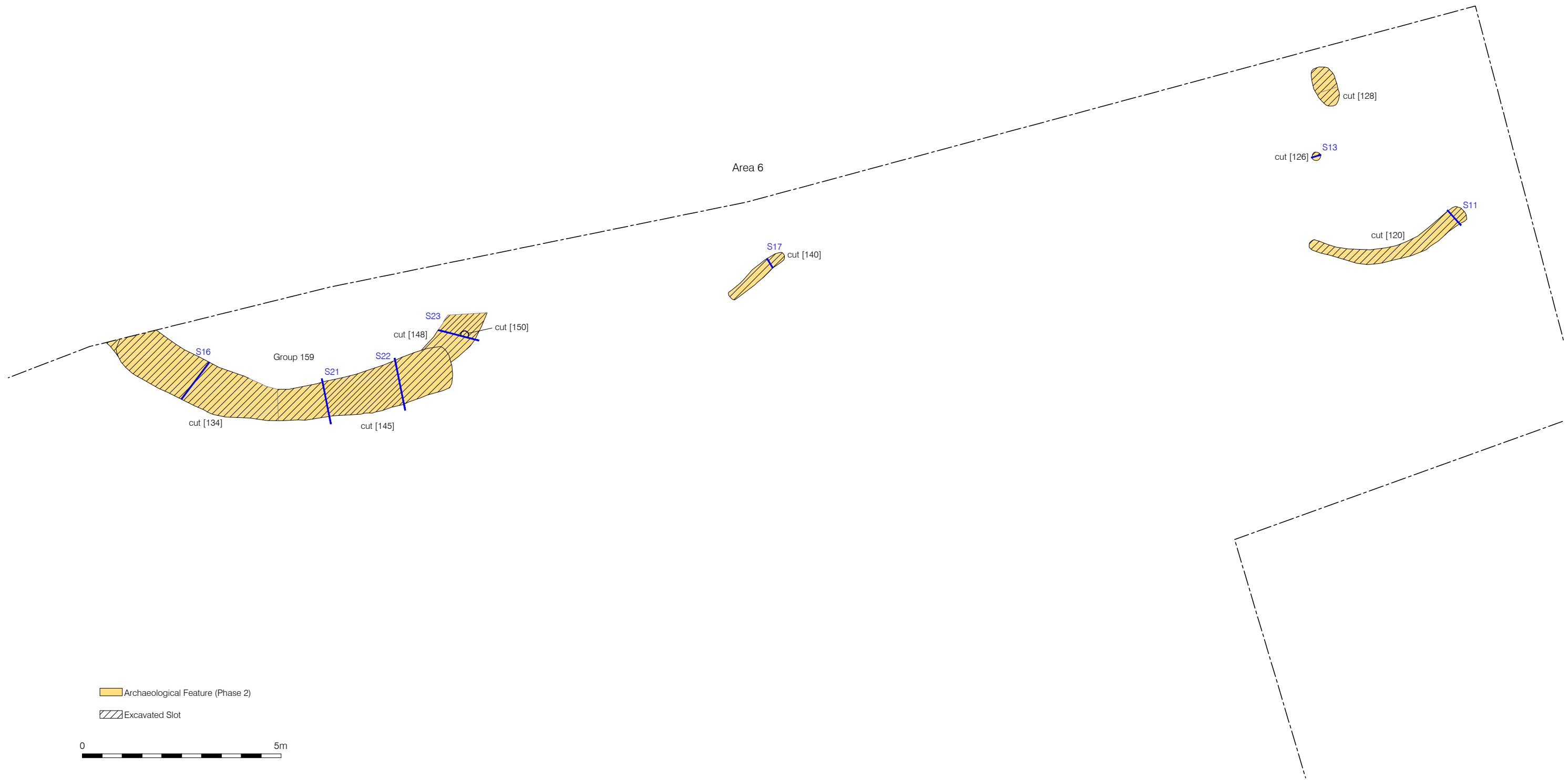


Figure 6  
Plan of features in Area 6 (Phase 2)  
1:100 at A3

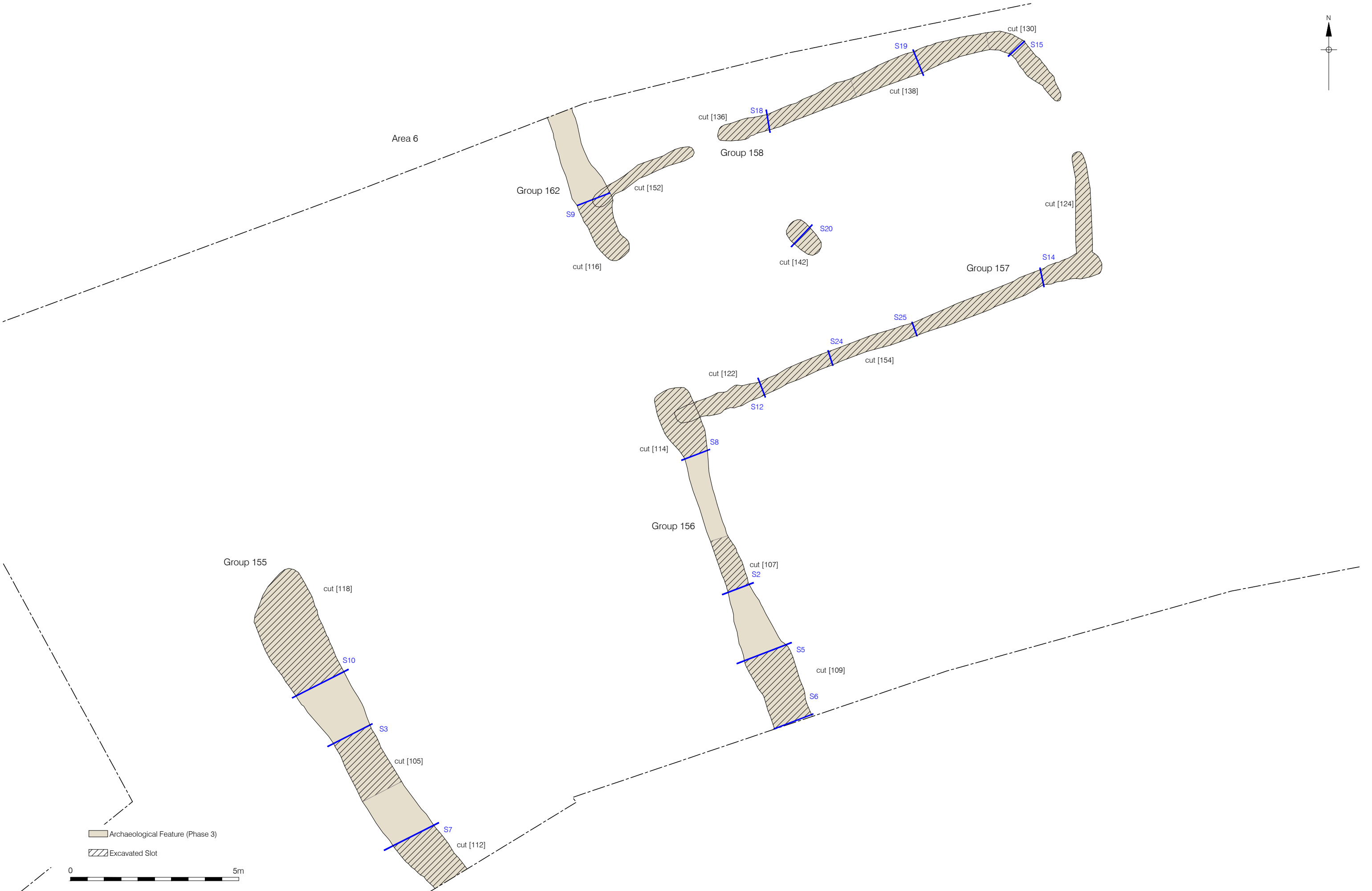
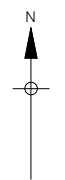
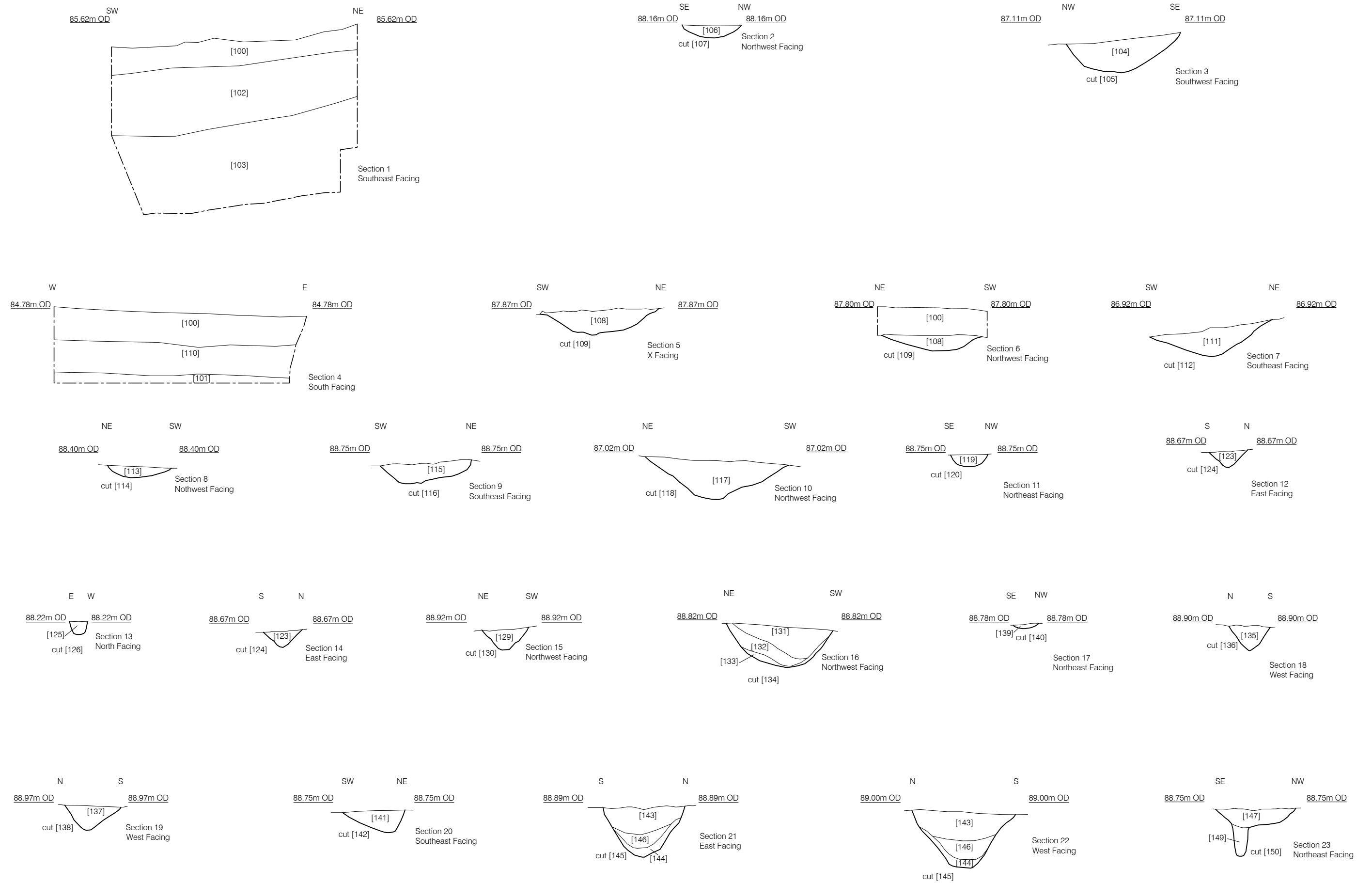


Figure 7  
Plan of features in Area 6 (Phase 3)  
1:100 at A3





## 6. STRATIGRAPHIC DATA

### 6.1 Paper Records

6.1.1 The paper element of the Site Archive is as follows:

Item	No.	Sheets
Context register	1	3
Context/Group Sheets	71	71
Section register	1	1
Section drawings	25	9
Plans	8	23

*Table 6.1: Contents of the paper archive*

### 6.2 Photographic Records

6.2.1 The photographic element of the Site Archive is as follows:

Item	No.	Sheets
Monochrome print registers	2	3
Monochrome prints	47	6
Monochrome Negatives	47	2
Digital photograph registers	1	4
Digital photographs	117	N/A

*Table 6.2: Contents of the photographic archive*

### 6.3 Site Archive

6.3.1 The complete Site Archive, including the paper and photographic records, is currently housed at the PCA Northern Regional Office.

6.3.2 The Site Archive will eventually be deposited Tees Archaeology, under the site code HWW16, for permanent storage and the detailed requirements of the repository will be met prior to deposition.

## **7. SUMMARY DISCUSSION OF THE ARCHAEOLOGICAL FINDINGS**

### **7.1 Phase 1: Natural Sub-stratum**

7.1.1 Phase 1 represents the natural geological material exposed across both Areas 6 and 9; these Devensian till deposits or 'boulder clays' overlie the solid geology of Ford Formation Dolostone.

### **7.2 Phase 2: Prehistoric and Undated**

7.2.1 Phase 2 represents all prehistoric activity encountered within Area 6. The earliest activity comprised the southern part of a ring ditch that probably forms the outer ditch of a ploughed-out round barrow. No other barrow monuments have been identified within the near vicinity of the site and there are no barrows listed on the HER within the borough of Hartlepool. It is therefore considered that such remains associated with the barrow are of high local and possibly regional significance.

7.2.2 The ring ditch was initially identified by geophysical survey as a positive magnetic ring c. 10m and was thought to be a continuous ditch, however the exposed portion of the ring ditch comprised a segment of a curving linear ditch and an associated post-pit at its eastern end. The geophysical survey did identify the segmented nature of the ring ditch but it was assumed this was the result of later ploughing activity.

7.2.3 The primary fill of the ring ditch comprised a relatively sterile fill derived from natural silting that was directly overlain by darker material which represents deliberate backfill depositions. Although no datable material was recovered from any of the fills of the ring ditch, based on its form and location within the landscape it is likely to represent a Bronze Age round barrow. This would have comprised a central mound surrounded by a ditch with all traces of the mound truncated by successive medieval to modern agricultural activity. The later deliberate backfill deposits may represent the use of the ditch for the disposal of refuse from the settlement activity identified in the area to the east.

7.2.4 Palaeoenvironmental samples from the ring ditch backfills contained relatively limited environmental remains with small quantities of wood charcoal and charred oat and wheat grain identified along with varying quantities of weed seeds. Although the grain assemblage was sparse it does indicate that cereal production was being carried out in the local area and chaff remains recovered may represent waste from the processing of grain.

7.2.5 Due to the change in the pipeline route the internal area of the round barrow lay beyond the northern limit of excavation with only a small portion of the internal area exposed. Although no internal features were identified within the Area 6 excavation, the geophysical survey did identify three pit-like anomalies within the central and northern portion of the internal area; these features could potentially represent the locations of burials.

7.2.6 The ring ditch was located within a typical position for a Bronze Age barrow with these types of monuments often sited on hilltop or hillcrest locations that overlook lower-lying land (Hewitt

2011). In this case the ring ditch is sited within an area of high ground that presently slopes gradually downwards to the east, west and south. Colluvial material was recorded to the east and west of the barrow within areas of low elevations and a substantial thickness of up to 1.50m of this material was recorded to the west in a sample excavation indicating that the westernmost gradient may have been markedly steeper during the prehistoric period.

7.2.7 The ring ditch had not been previously identified as a cropmark on aerial photographs, presumably due to the extent of plough truncation which had resulted in the survival of a relatively shallow ditch. Although the geophysical survey undertaken in Area 6 identified a single barrow, the survey only comprised the proposed pipeline route and the alternative pipeline route to the south. Therefore, there is potential for further barrows to be present within the area of high ground to the north of the pipeline.

7.2.8 Parts of linear and curvilinear features interpreted as parts of roundhouse structures were recorded within the eastern portion of Area 6 and may represent the surviving elements of an unenclosed settlement of probable Iron Age date. The easternmost curvilinear feature is characteristic of a penannular drainage gully or 'eaves drip' gully that would have surrounded a roundhouse. Only a single posthole and a possible hearth survived within the internal area of the curvilinear gully therefore it was not possible to accurately calculate the precise dimensions of the building and an approximate diameter of c. 7m for the building has been estimated. This size of building falls within the range for most domestic dwellings of the Late Iron Age to early Roman period with structures recorded at the Thorpe Thewles settlement in the Tees Valley ranging from 6m to 10m in diameter (Heslop 1987) and at Faverdale, near Darlington also in the Tees Valley, from 7m to 10m (Proctor 2012).

7.2.9 Evidence recovered from excavations of Late Iron Age to early Roman period open settlements in the region demonstrate that mixed pastoral and arable agricultural regimes were well established in this region by this time. No faunal remains were recovered from any of these Phase 2 structural features.

7.2.10 Precise dating of the settlement activity recorded at Area 6 is not possible due to the absence of datable artefactual material. These features are therefore tentatively attributed to the Late Iron Age to Early Roman period based on their form.

### **7.3 Phase 3: Early Medieval and Undated**

7.3.1 Medieval activity at the site comprised part of a group of three similarly aligned ditches and a rectangular shaped building and associated pit.

7.3.2 The earliest features attributed to Phase 3 activity comprised three similarly NNW-SSE aligned ditches. The westernmost ditch only extended into the central part of Area 6 with a rounded terminus to the NNW and the eastern most ditches located c.11.50m to the east were on the same alignment with a possible c. 4.00m wide entrance formed by two rounded termini.

- 7.3.3 The function of these ditches is unclear but they may represent boundary ditches that may also function as drainage features. Two linear anomalies were initially identified by the geophysical survey however these lay to north beyond the limit of excavation within the original pipeline route and did not extent southwards into the alternative route. The easternmost recorded ditch does broadly correspond with the westernmost linear geophysical anomaly and could represent a continuation of this to the north.
- 7.3.4 Dating for these ditches was not possible due to the absence of any datable material from these features therefore they could potentially be prehistoric in date forming a series of boundary features associated with the Bronze Age barrow.
- 7.3.5 A single rectangular structure was recorded within Area 6 that measured 14.40m east-west by 6.80m north-south and had an entrance to the east and further possible entrance to the north. As with the barrow monument the structure was located within the area of high ground with the barrow presumably visible as an earthwork at this time.
- 7.3.6 Palaeoenvironmental samples taken from various Phase 3 features recovered limited environmental remains. Wood charcoal recovered from Sample 4 could potentially provide a date by the use of Accelerator Mass Spectrometry (AMS) radiocarbon dating if the charcoal remains are suitable.
- 7.3.7 There is sparse evidence for early medieval settlement within the near vicinity of the site with the nearest extensive early medieval settlement recorded to the east of the site on the headland at Hartlepool. Here extensive Anglo-Saxon settlement remains have been recorded, primarily associated with monastic settlement of Hild, comprising structures, boundaries and cemeteries (Daniels 2010). The Anglo-Saxon structures recorded here fall into three categories of construction including timber set in bedrock, timbers set in trenches and stone footings. It is assumed that rectangular structure recorded within Area 6 falls into the timber set in trench category.
- 7.3.8 The dimensions of the Anglo-Saxon structures where the post in trench construction method was used and where full dimensions were provided ranged from a maximum and minimum length of 5.1m and 4.1m long and a maximum and minimum width of 3.3m and 2.6m, respectively (Daniels 2007). The structure recorded at Area 6 was far more substantial than these structures and could potentially represent a large hall or meeting house.
- 7.3.9 The structure has largely been attributed to the early medieval period based on the form of the structure with very little in the way of securely datable material recovered this. Only an individual find of an iron strap was recovered from the gullies fill that may represent a mount and based on its slight curve in plane and the presence of perforations suggests it originates from a large vessel.

#### **7.4 Phase 4: Colluvium**

- 7.4.1 In Area 6 Colluvium deposits up to 1.50m thick were recorded immediately to the west of the prehistoric Phase 2 and early medieval Phase 3 activity within an area of low lying ground indicating that at this location the natural slope would have been much steeper than the present day topography. Also of note was that there were two separate depositional events of colluvium with this potentially reflecting the two separate phases of activity at the site.
- 7.4.2 A further colluvium deposit up to 0.34m thick was recorded within a sample excavation at the eastern extent of the Area 6 site also within an area of low lying ground. At this location the gradually sloping natural topography would only have been marginally steeper than the present day topography.
- 7.4.3 Colluvium recorded in Area 9 was roughly uniformly 0.24m thick with the natural topography within this location broadly corresponding with the present topography.

## **8. SIGNIFICANCE OF THE PROJECT DATA AND SUMMARY OF POTENTIAL FOR FURTHER ANALYSIS**

- 8.1 Archaeological remains of potential Late Bronze Age, Iron Age/early Roman and early medieval date were only encountered within Area 6. The focus of activity was across an area of higher ground and the archaeological features had evidently been subject to plough truncation. There was no trace of a mound associated with the barrow beyond the route of the pipeline and the ditch survived as a relatively shallow and narrow feature. The internal area of the barrow was not investigated therefore it could not be established if the geophysical anomalies in this area represented burials. Only very fragmentary traces of a possible open settlement of Late Iron Age/early Roman date survived and only limited remains of the possible early medieval activity were recorded. The artefactual and ecofactual assemblages were very limited and no closely datable material was recovered.
- 8.2 It is therefore considered that no further analysis of the stratigraphic, artefactual or ecofactual remains is required and that this report, along with the archive, will form the permanent record of the investigations.

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## 10. ACKNOWLEDGEMENTS AND CREDITS

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*Fieldwork:* Aaron Goode (Site Supervisor), Danni Parker, James Hopper, Lucy Roberts, Scott Vance

*Report:* Aaron Goode

*Illustrations:* Ray Murphy

*Faunal remains:* Karen Deighton

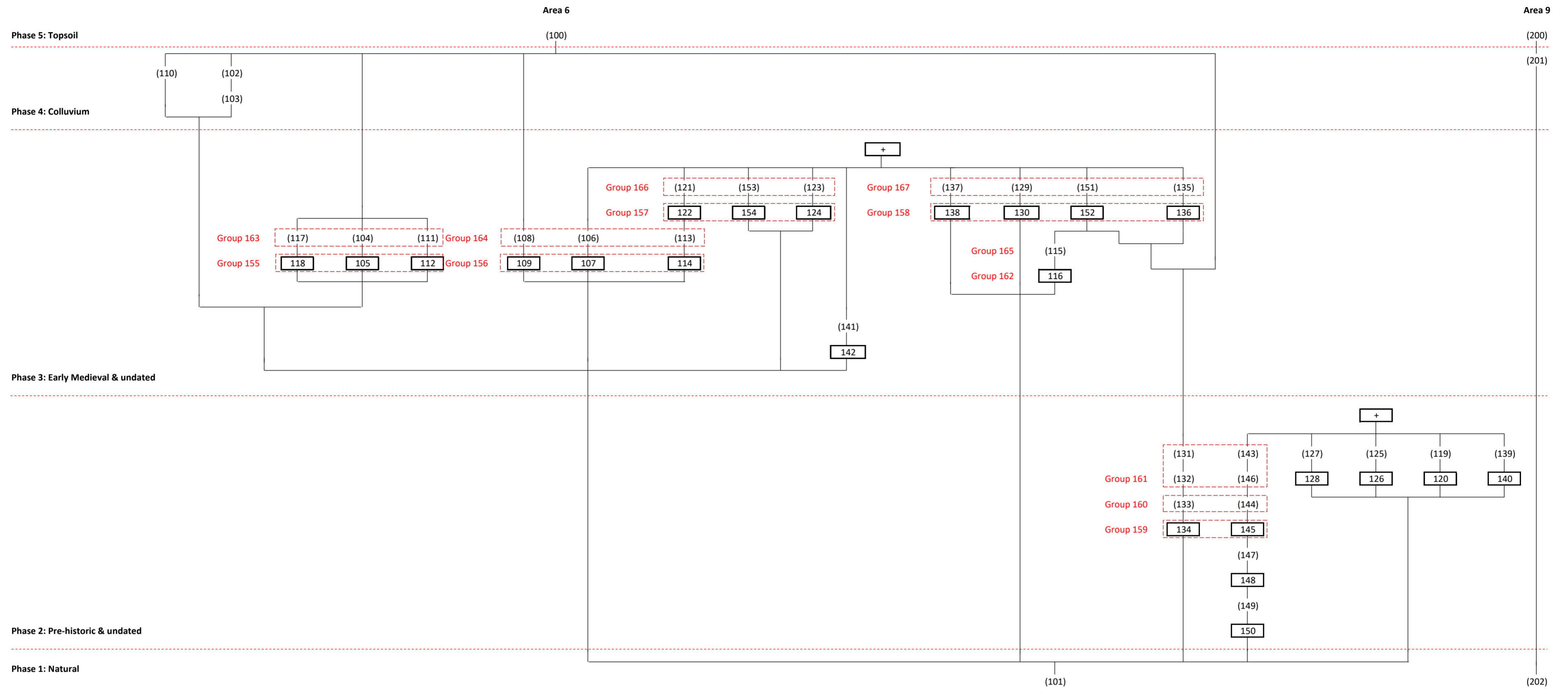
*Palaeoenvironmental remains:* Kate Turner

*Small finds:* Märit Gaimster

### **Other Credits**

*Conservation:* Karen Barker

# APPENDIX 1: STRATIGRAPHIC MATRIX



**APPENDIX 2 CONTEXT INDEX**

<b>Context.</b>	<b>Group</b>	<b>Area</b>	<b>Phase</b>	<b>Fill of</b>	<b>Type 1</b>	<b>Type 2</b>	<b>Interpretation</b>
100	-	6	5	-	Deposit	Layer	Topsoil
101	-	6	1	-	Deposit	Layer	Natural
102	-	6	4	-	Deposit	Layer	Colluvium
103	-	6	4	-	Deposit	Layer	Colluvium
104	163	6	3	[105]	Deposit	Fill	Fill of ditch [105]
105	155	6	3	-	Cut	Ditch	Cut of ditch filled by (104)
106	164	6	3	[107]	Deposit	Fill	Fill of ditch [107]
107	156	6	3	-	Cut	Ditch	Cut of ditch filled by (106)
108	164	6	3	[109]	Deposit	Fill	Fill of ditch [109]
109	156	6	3	-	Cut	Ditch	Cut of ditch filled by (108)
110	-	6	4	-	Deposit	Layer	Colluvium
111	163	6	3	[112]	Deposit	Fill	Fill of ditch [112]
112	155	6	3	-	Cut	Ditch	Cut of ditch filled by (111)
113	164	6	3	[114]	Deposit	Fill	Fill of ditch terminus [114]
114	156	6	3	-	Cut	Ditch	Cut of ditch terminus filled by (113)
115	165	6	3	[116]	Deposit	Fill	Fill of ditch terminus [116]
116	162	6	3	-	Cut	Ditch	Cut of ditch terminus filled by (115)
117	163	6	3	[118]	Deposit	Fill	Fill of ditch [118]
118	155	6	3	-	Cut	Ditch	Cut of ditch filled by (117)
119	-	6	2	[120]	Deposit	Fill	Fill of curvilinear feature [120]
120	-	6	2	-	Cut	Linear	Cut of curvilinear feature filled by (119)
121	166	6	3	[122]	Deposit	Fill	Fill of gully [122]
122	157	6	3	-	Cut	Gully	Cut of gully filled by (121)
123	166	6	3	[124]	Deposit	Fill	Fill of gully [124]
124	157	6	3	-	Cut	Gully	Cut of gully filled by (123)
125	-	6	2	[126]	Deposit	Fill	Fill of posthole [126]
126	-	6	2	-	Cut	Discrete	Cut of posthole filled by (125)
127	-	6	2	[128]	Deposit	Fill	Fill of feature [128]
128	-	6	2	-	Cut	Feature	Cut of feature filled by (127)
129	167	6	3	[130]	Deposit	Fill	Fill of gully terminus [130]
130	158	6	3	-	Cut	Gully	Cut of gully terminus filled by (129)
131	161	6	2	[134]	Deposit	Fill	Upper fill of ditch [134]
132	161	6	2	[134]	Deposit	Fill	Fill of ditch [134]
133	160	6	2	[134]	Deposit	Fill	Lower fill of ditch [134]
134	159	6	2	-	Cut	Ditch	Cut of ditch filled by (131), (132), (133)
135	167	6	3	[136]	Deposit	Fill	Fill of ditch terminus [136]
136	158	6	3	-	Cut	Ditch	Cut of ditch filled by (135)
137	167	6	3	[138]	Deposit	Fill	Fill of ditch [138]
138	158	6	3	-	Cut	Ditch	Cut of ditch filled by (137)
139	-	6	2	[140]	Deposit	Fill	Full of gully [140]
140	-	6	2	-	Cut	Gully	Cut of gully filled by (139)
141	-	6	3	[142]	Deposit	Fill	Fill of pit [142]
142	-	6	3	-	Cut	Discrete	Cut of pit filled by (141)
143	161	6	2	[145]	Deposit	Fill	Upper fill of ditch [145]
144	160	6	2	[145]	Deposit	Fill	Lower fill of ditch [145]
145	159	6	2	-	Cut	Ditch	Cut of ditch filled by (143), (144) & (146)
146	161	6	2	[145]	Deposit	Fill	Fill of ditch [145]
147	-	6	2	[148]	Deposit	Fill	Fill of post pit [148]

148	-	6	2	-	Cut	Discrete	Cut of post pit filled by (147)
149	-	6	2	[150]	Deposit	Fill	Fill of posthole [150]
150	-	6	2	-	Cut	Discrete	Cut of posthole filled by (149)
151	167	6	3	[152]	Deposit	Fill	Fill of ditch [152]
152	158	6	3	-	Cut	Ditch	Cut of ditch filled by (151)
153	166	6	3	[154]	Deposit	Fill	Fill of ditch [154]
154	157	6	3	-	Cut	Ditch	Cut of ditch filled by (153)
155	-	6	3	-	Group Number		Ditch [112], [105], [118]
156	-	6	3	-	Group Number		Ditch [109], [107], [114]
157	-	6	3	-	Group Number		Construction slot [122], [124], [154]
158	-	6	3	-	Group Number		Construction slot [152], [136], [138], [130]
159	-	6	2	-	Group Number		Barrow ditch [134], [145]
160	-	6	2	-	Group Number		Natural silting (133), (144) of ditch [159]
161	-	6	2	-	Group Number		Backfill (131), (132), (143), (146) of ditch group 159
162	-	6	3	-	Group Number		Ditch [116]
163	-	6	3	-	Group Number		Natural silting (104), (111), (117) of ditch group 155
164	-	6	3	-	Group Number		Natural silting (106), (108), (113) of ditch group 156
165	-	6	3	-	Group Number		Natural silting of ditch group 162
166	-	6	3	-	Group Number		Natural silting (121), (123), (153), of slot group [157]
167	-	6	3	-	Group Number		Natural silting (129), (135), (137), (151) of slot group [158]
200	-	9	5	-	Deposit	Layer	Topsoil
201	-	9	4	-	Deposit	Layer	Colluvium
202	-	9	1	-	Deposit	Layer	Natural



Plate 1. North-east facing section, Phase 2 post-pit [148] (scale 0.5m)



Plate 2. Phase 2 ring ditch north-western terminus Group No. 159, looking south-east (scale 1m)





Plate 3. Phase 2 ring ditch Group No.159, looking west (scale 1m)



Plate 4. Phase 2 post-pit [148] and ring ditch Group No. 159, looking south-west (scale 2m)





Plate 5. Phase 2 gully [120], looking west (scale 1m)



Plate 6. Phase 3 Ditch terminal Group No. 162, looking north (scale 1m)





Plate 7. North-west facing section of Phase 3 ditch [107] Group No. 156 (scale 0.5m)



Plate 8. North-west facing section of Phase 3 ditch [118] Group No. 155 (scale 1m)





Plate 9. Phase 3 ditch terminal [118] Group No. 155, looking south (scale 1m)



Plate 10. South-eastern corner of Phase 3 structure [124] group No. 157, looking north-west (scale 1m)





Plate 11. Phase 3 structure [154] Group 157, looking west (scale 1m)



Plate 12 Phase 3 structure eastern entrance [124] & [130] Groups 157 & 158, looking south (scale 2m)





Plate 13. South-east facing section of Phase 3 pit [142] (scale 0.5m)



Plate 14. South-east facing section of westernmost sample excavation showing Phase 4 colluvial deposits [102] and [103] (scale 2m)

## APPENDIX 4: SMALL FINDS

### *Märit Gaimster*

#### IRON STRAP

An iron strap (SF 1) of unclear function was recovered from context [121], the fill of one of the linear features in group [157], a possible wall construction trench of a rectangular structure. The strap, which measures 155mm in length, tapers from a broader end (W 40mm) that is broken, towards a narrower (W 32mm) true end curving down from one edge. While the strap resembles a large knife or seax with the back sharply turned down at the tip, it lacks the distinguishing blade back and cutting edge. It is also gently curved in plane, and slightly dished. X-radiography shows a small circular perforation close to the edge just before it curves down at the true end. Towards the broken end, along the same edge, is a further possible perforation. Undiagnostic strips and plates of iron are difficult to identify in terms of original use, but the piercings indicate a function as a mount. A Late Saxon iron strap from York of similar dimensions, but curved, may have been a hinge strap from a door or chest (Ottaway 1992, 624 and fig. 261 no. 3379). The slight curve in plane of the Hartlepool piece may also suggest it originates from a large vessel, such as a bucket or barrel (*ibid.*, 623).

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## APPENDIX 5 FAUNAL REMAINS ASSESSMENT

*Karen Deighton*

### Introduction

A total of 295 fragments of animal bone were hand collected during the course of excavation from prehistoric ditches and a post pit and early medieval ditches and possible wall construction trench. Material from the residues of three environmental samples was also examined (mesh sizes 2mm and 10mm).

### Method

The material was sorted into recordable and non-recordable fragments and bones with fresh breaks were reassembled. Identification was aided by Schmid (1972). Sheep/goat distinction follows Boesneck (1969).

The following were recorded for each element: context, anatomical element, taxa, proximal fusion, distal fusion, side, burning, butchery, pathology and erosion. Ribs and vertebra were recorded as horse, pig, dog, sheep size or cattle size but not included in quantification as their multiple numbers introduce bias. Recording of fusion follows Silver (1969). Cattle and pig teeth were aged after Grant (1982) and sheep teeth after Payne (1973). Recognition and recording of butchery is after Binford (1981). Recording of sexing data for pig canines follows von den Driesch (1976) Measurements were taken after von den Driesch. The material was recorded onto an access database.

### The Assemblage

#### *Preservation*

Fragmentation was heavy, with no whole bones noted and most material at the fragmented stage, indeed several contexts contained single bones reduced to numerous fragments. Bone surface erosion was severe. Both these factors adversely affected identification, with 21% of bone categorised as indeterminate. Evidence of canid gnawing was noted on only three bones and butchery evidence (chopping and knife marks) was also restricted to three bones, no doubt these were also affected by poor preservation.

Table 1: taxa by context (Phase 2)

Context	Cut	Group	Cattle	Cattle Size	Horse	Sheep/Goat	Sheep	Pig	indet	Total
131	134	161	#6			2			7	15
132	134	161				1				1
143	145	161	15*	1	1	2	1	4		24
146	145	161				1				1
147	148		1					1	3	5
<b>Total</b>			<b>22</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>5</b>	<b>10</b>	<b>46</b>

\*Multiple skull and mandible fragments not included in quantification, #multiple fragments of same bone

Table 2: Taxa by context (Phase 3)

Context	Cut	Group	Cattle	Cattle Size	Horse	indet	Total
104	105	163	#1				1
108	109	164		1			1
111	112	163				1	1
117	118	163			1		1
121	122	166		1			1
123	124	166		#1			1
<b>Total</b>			<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>6</b>

#multiple fragments of same bone

Table 3 taxa by sample number and context

Context	Cut	Group	Sample	Bos	Sheep/goat	Horse	Sm mam	indet	Total
117	188	163	4			1			1
132	134	161	8		1			1	2
143	145	161	11	1*					1
146	145	161	15		1		1	29	31
<b>Total</b>				<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>30</b>	<b>35</b>

\*Possibly belong to cattle skull hand collected from this context

The paucity of material (particularly after allocation to phase) and its poor preservation precludes further discussion on its contribution to the understanding of the site other than to say that a range of domestic taxa were associated with the site. Again the value of comparison with local contemporary sites would also be limited for the same reasons.

Unfortunately material from samples adds little to the hand collected assemblage.

## Conclusion

A small, poorly preserved faunal remains assemblage was recovered from Phase 2 and 3 features. No further work is recommended.

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## **APPENDIX 6: PALAEOENVIRONMENTAL ASSESSMENT**

***Kate Turner***

### **INTRODUCTION**

This report summarises the findings of the rapid assessment of nine bulk samples taken during the excavation of land following the route of a new water pipeline, running from Amerston Hall eastwards towards Dalton Percy, near Hartlepool, Teesside. These samples were taken from a series of pits, ditches and possible wall construction trenches thought to date to the prehistoric and early medieval periods, the context information for which is given in Table 1.

The aim of this assessment is to:

1. Give an overview of the contents of the assessed samples;
2. Determine the environmental potential of these samples;
3. Establish whether any further analysis is necessary.

### **METHODOLOGY**

Nine samples, between nine and thirty-four litres in volume, were processed using the flotation method; material was collected using a 300µm mesh for the light fraction and a 1mm mesh for the heavy residue. The heavy residue was then dried, sieved at 1, 2 and 4mm and sorted to extract artefacts and ecofacts. The abundance of each category of material was recorded using a non-linear scale where '1' indicates occasional occurrence (1-10 items), '2' indicates occurrence is fairly frequent (11-30 items), '3' indicates presence is frequent (31-100 items) and '4' indicates an abundance of material (>100 items).

The light residue (>300 µm), once dried, was scanned under a low-power binocular microscope to quantify the level of environmental material, such as seeds, chaff, charred grains, molluscs and charcoal. Abundance was recorded as above. A note was also made of any other significant inclusions, for example roots and modern plant material. The results of this assessment are shown in Tables 2 and 3.

### **RESULTS**

#### **Residues**

The heavy residues contained very little in the way of environmental or cultural artefacts. A small amount of wood charcoal (<10 pieces per sample) was identified in samples <4>, <11> and <15>, the majority of which was over 2 mm in length and width, so of a suitable size for species to be determined. In addition, samples <11> and <15> contained moderate to abundant amounts of large animal bone, the highest concentration being reported in sample <15>, the fill of a prehistoric ditch. Fragmented bone was also present in four samples, <4>, <8> <11> and <15>.

#### **Flots**

All the processed bulk samples produced flots, ranging from 18 ml to 70 ml in volume. Preservation of environmental material was mixed; wood charcoal was reported throughout, however none of the pieces were of significant size (>2mm in length/width). A small amount of highly fragmented wood was also identified in sample <14>.

Weed seeds were common, though observed in generally small to moderate concentrations (<30 specimens per sample). Species diversity was limited; the majority of seeds were of the genus *Chenopodium* (goosefoots), specimens of which were found in all of the assessed residues. The greatest range of taxa was observed in samples <3> and <11>, the former of which contained *Chenopodium sp.* seeds, along with small numbers of *Carex sp.* (sedges), *Rubus sp.* (brambles), *Rumex/polgonum sp.* (docks/sorrels/knotweed) and *Stellaria sp.* (stitchwort). Sample <11>, taken from the upper fill of the ring ditch, as well as featuring a greater species diversity also contained the largest abundance of seeds reported in this assemblage; over one hundred specimens of *Chenopodium* were identified, as well as a low concentration of knotweed (*Persicaria sp.*), birch (*Betula sp.*), sedges and stitchworts.

Carbonised cereals were additionally reported in samples <8>, <9>, <11> and <15>. No one sample contained more than 30 complete grains, with the majority containing less than 20. Oat (*Avena sativa*) and wheat (*Triticum sp.*) were reported, with wheat being the most common, found in four samples. Samples <8> and <11> also contained a small amount of material that was too heavily burnt and broken for species to be determined, suggesting that grains may have been subject to high temperature or prolonged combustion. Chaff fragments were present in sample <15> only.

In terms of other environmental material, insect remains were the most abundant, recorded in five of the nine samples. Concentrations were generally low (<30 specimens), with the exception of sample <11>, which contained between thirty and one-hundred disarticulated remains. This deposit also yielded a moderate amount of fragmented animal bone. Snails were sparse in the sample set, with only samples <10> and <14> containing a small number of juvenile shells of terrestrial species. All of the assessed samples apart from sample <15> also contained root material, which may be a sign of bioturbation.

Combustion residue, in the form of heavily fragmented coal and globules of vitreous material was identified throughout the assemblage; sample <11> contained the greatest density of material, with over one hundred tiny pieces of coal. The remainder of the samples contained less than thirty examples per residue.

## DISCUSSION

For the purposes of this discussion, the samples will be divided by assessment phase.

### *Phase 2: Prehistoric*

Three samples taken from the backfills of the ring ditch from two slots, [134] and [145], are thought to date to the prehistoric period. Environmental preservation in samples <8> and <15> was poor with only a minimal amount of wood charcoal identified, the majority of fragments less than 2 mm in length, and a small number of weed seeds and/or charred grains. In contrast, sample <11>, taken from the upper backfill of ditch slot [145], contained over one hundred seeds, the bulk of which are of the type *Chenopodium sp.* (goosefoots), along with a small amount of charred oat and wheat grains, and a number of sizeable chunks of wood charcoal. Though the concentration of grain is low in the Phase 2 samples, it may be evidence of cereal production being carried out in the local area; sample <15> additionally contained chaff remains, which may be waste from grain processing. Ditch slot [145] also produced a moderate amount of large mammal bone and fragmented bone, which could be a product of domestic activity, or larger scale processing of carcasses. Fragments of coal and vitreous matter were identified throughout the sample set. As there is evidence for root disturbance in these samples, the possibility should be considered that small artefacts such as these may not be in situ.

### *Phase 3: Early medieval*

A total of six samples were taken from four ditches, a pit and a gully terminus of early medieval date. Archaeobotanical material was sparse throughout, though a small amount (<10 fragments) of larger pieces of wood charcoal were reported in sample <4>. Weed seeds were also found in low to moderate concentrations in all of the assessed samples though, as with the phase two samples, *Chenopodium* were dominant, with scattered amounts of *Carex* (sedges) and *Betula* (birch). An increase in birch seeds was noted from the prehistoric period, particularly in feature [136], the fill of a ditch terminus, however as these seeds are often transported long distances this may not be an indication of any significant change to local vegetation. Grain remains were sparse, and where present likely to be the result of accidental inclusion rather than deliberate deposition. Other environmental material was also limited in these contexts, and as a result, little can be determined as to the purpose of the containing features.

## CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

To summarise, of the nine samples assessed the majority contained limited environmental material. Plant remains are common, but species diversity and overall density was low indicating that presence in these deposits is likely to be as the result of wind-scatter. Animal bone occurs frequently during the prehistoric period in moderate amounts, which, along with scattered grain remains, could indicate that the site had a domestic focus during this phase of occupation. Generally, however, there is little to suggest how the site functioned on a day-to-day basis, and the majority of the remains are likely to represent occupational waste rather than suggest any particular large-scale domestic or industrial activity. Further, the presence

of roots in the bulk of the material may indicate disturbance of contained material, via bioturbation, signifying that smaller ecofacts may have become re-distributed post deposition.

No further analysis is recommended on this assemblage.

## REFERENCES

Cappers, R.T., Bekker, R.M. and Jans, J.E., (2012). Digitale Zadenatlas van Nederland/Digital seed atlas of the Netherlands (Vol. 4). *Barkhuis*.

Stace, C. (1991) New flora of the British Isles. *Cambridge: Cambridge University Press*.

**Table 1:** Context information for environmental samples

Context No.	Group	Area	Phase	Fill of	Interpretation
115	165	6	3	[116]	Fill of ditch terminus [116]
117	163	6	3	[118]	Fill of ditch [118]
129	167	6	3	[130]	Fill of gully terminus [130]
132	161	6	2	[134]	Fill of ditch [134]
135	167	6	3	[136]	Fill of ditch terminus [136]
141	-	6	3	[142]	Fill of pit [142]
143	161	6	2	[145]	Upper fill of ditch [145]
146	161	6	2	[145]	Fill of ditch [145]
153	166	6	3	[154]	Fill of ditch [154]

**Table 2:** Assessment of environmental residues

Sample No.	3	4	6	8	9	10	11	14	15
Context No.	115	117	129	132	135	141	143	153	146
Feature No.	116	118	130	134	136	142	145	154	145
Bulk weight (litres)	32	23	9	9	34	10	32	25	33
Method of processing	F	F	F	F	F	F	F	F	F
<b>Charcoal</b>									
Charcoal <2mm									
Charcoal 2-4mm		1							
Charcoal >4mm							1		1
Frag. of ID size		□					□		□
<b>Bone</b>									
Large animal bone							3		2
Small animal bone									
Fish bone									
Bone fragments		2		2			3		2

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant

**Table 3:** Assessment of environmental flint samples

Sample No.	3	4	6	8	9	10	11	14	15
Context No.	11	11	12	13	13	14	14	15	14
	5	7	9	2	5	1	3	3	6

Feature No.		11 6	11 8	13 0	13 4	13 6	14 2	14 5	14 5	15 4
<b>Volume of flot (milliliters)</b>		24	41	18	10	70	20	58	56	45
<b>Charcoal</b>										
Charcoal >1mm		2	3	1	3	3	1	4	2	3
Charcoal <1mm		3	4	2	3	4	2	4	3	4
Fragms. of ID size		X	X	X	X	X	X	X	X	X
<b>Seeds</b>										
<i>Allium cepa</i> cf.	Onion								1	
<i>Betula</i> sp.	Birch					2	1	1	1	
<i>Carex</i> sp.	Sedges	1	1				1	1		
<i>Chenopodium</i> sp.	Goosefoots	2	2	1	1	2	1	4	1	1
<i>Persicaria</i> sp.	Knotweeds							2		
<i>Rubus</i> sp.	Brambles	1								
<i>Rumex/polygonum</i> sp.	Docks/sorrels/knotweed	1						1		
<i>Stellaria</i> sp.	Stitchworts	1								
Unknown										
<b>Grain</b>										
<i>Avena sativa</i>	Oat							1		
<i>Poaceae</i> indet. (small)	Grasses							1		
<i>Triticum</i> sp.	Wheat				1	1		1		1
Chaff										1
Unknown					1			1		
<b>Other plant macrofossils</b>										
Fragmented wood									1	
Modern straw/grasses										1
Roots		3	3	3	1	3	2	2	3	
<b>Snails</b>										
Terrestrial juveniles (misc)							1		1	
<b>Other remains</b>										
Bone fragments								3		
Insect remains		1	1			1		3	2	
Insect eggs		2	2			1				
Coal		1	1	1	1	2		4	2	1
Vitreous globules		1			1	2	1	2		1

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant

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