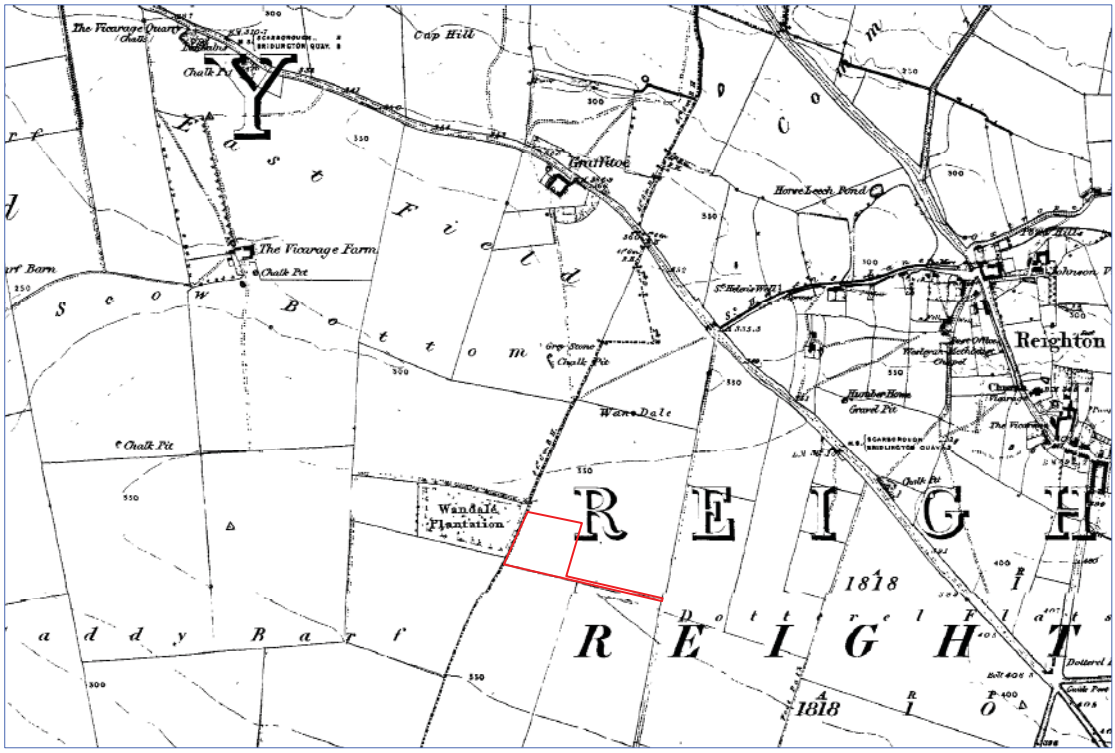
ARCHAEOLOGICAL STRIP, MAP AND RECORD:

EXPLORATION WELLSITE AT

WILLOWS A, REIGHTON, NORTH YORKSHIRE

NGR: TA 1205 7485



Report prepared for
Roc Oil (GB) Limited

by Mark Allen and Chris Clay

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Contents

Appendices

List of Figures

List of Plates

Cover Plate: 1st Edition Ordnance Survey Map of Reighton (1854) – site outlined in red

Summary

An archaeological strip, map and record programme was undertaken in advance of the construction of an exploration well site and access road at The Willows, Reighton, North Yorkshire.

The site is situated in a landscape that has considerable evidence of prehistoric activity, from the Neolithic through to the Iron Age. A previous geophysical survey of the site had revealed a series of anomalies interpreted as probable enclosures of later prehistoric or Romano-British date.

The strip, map and record exercise exposed a palimpsest of archaeological remains dating from the Neolithic, Bronze Age, Iron Age and Romano-British periods.

The Neolithic activity was restricted to a group of pits that were relatively uniform in fill composition, with evidence of structured deposition, probably associated with ritual activities.

Following a hiatus in the early Bronze Age, a small number of pits were excavated in the middle Bronze Age, with their fills strongly suggestive of a continuation in activities started in the earlier Neolithic period. During this period a solitary post was erected, possibly as a totem or marker.

An unusual ring ditch was then dug at the south-west corner of the site in the later Bronze Age. The western half, facing the valley to the west and south-west, appeared to be an open ditch into which pottery and animal bone had been thrown, suggestive of the remains of feasting activities. The eastern half was more unusual, as the ditch appeared to have been backfilled and a ring gully added, possibly for a wooden palisade. The structure has been tentatively interpreted as a possible excarnation monument, open towards the west and closed off by a wooden screen to the east.

The area then appears to have been abandoned until the later Iron Age, when a series of enclosures were dug as part of a farmed landscape. One ring gully is likely to have enclosed a roundhouse of this period, and a trackway is likely to have existed between the enclosures. In the Roman period, probably during the 2nd century AD, the enclosure ditches were cleaned and at some stage the trackway was gravelled. Wheel ruts in the gravel surface attest to the use of wheeled carts at the time of its use. The site was then abandoned until a quarry pit was excavated, probably during the post-medieval period.

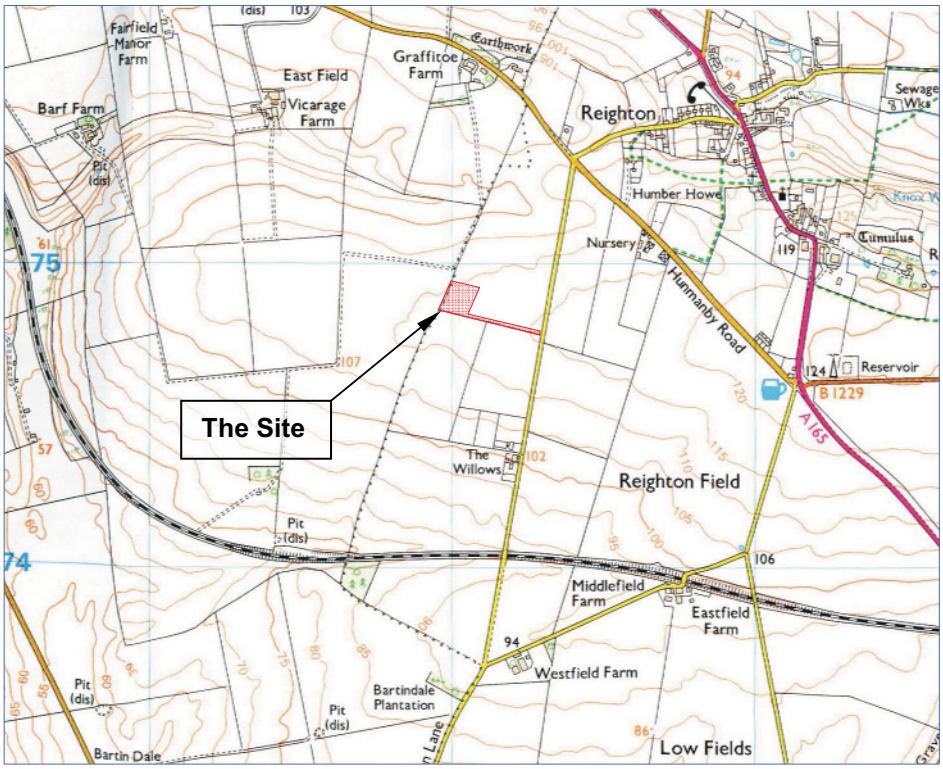

Figure 1: Site location at scale 1:25,000 with site outlined in red

1.0 Introduction

1.1 Allen Archaeological Associates was commissioned by Roc Oil (GB) Ltd to undertake archaeological works in advance of the construction of a well site at Willows A, Big Field – TA1275, C/o Hind House Manor Farm, Reighton, North Yorkshire.

1.2 The site works and reporting conform to current national guidelines, as set out in the Institute for Field Archaeologists '*Standards and guidance for archaeological excavation'* (IFA 1999), and a Written Scheme of Investigation (WSI) that was devised by Allen Archaeological Associates (hereafter AAA) following a meeting between Mr Neil Campling (Principal Archaeologist, North Yorkshire County Council), Mr Jonathan Foster (Lands Officer, Roc Oil (GB) Limited) and Mr Mark Allen (AAA) on the 24th May 2005 (Allen 2005).

1.3 The archive will be submitted to the museum in Scarborough for long-term storage following completion of the publication.

2.0 Location, topography and geological background

2.1 Reighton is in the County of North Yorkshire, less than 2km from the modern east coast, approximately 6km south-south-east of Filey and some 9.5km northwest of Bridlington. The site lies c.1km southwest of Reighton and 2km northeast of the deserted medieval settlement of Bartindale. The site is positioned in the south-west corner of a large rectangular arable field, with an access road to be constructed along the existing field boundary, running east-south-east to North Burton Lane, at National Grid Reference TA 1205 7485 (Figure 1). The western field boundary forms the border between the parishes of Reighton and Hunmanby.

2.2 The drift geology of the area is described as Quaternary Till over Flamborough Chalk Formation.

2.3 The site lies at approximately 110m OD, on an east – west spur of land, with the ground falling gradually to the west, northwest and southwest.

3.0 Archaeological and historical background

3.1 Prehistoric non-funerary activity within 1km of the site was limited to a scatter of flints and cropmarks that may indicate the presence of an early Bronze Age settlement approximately 800m to the north-northwest of the site, and several other cropmark settlement sites such as a probable enclosure immediately to the west of the site (Brett 2005).

3.2 A number of possible round barrows are known within 1km of the site, including one cropmark example that is situated within the footprint of the development area. Round barrows enter the archaeological record in the Middle Neolithic (c.3500 BC); however their main period of construction was in the Early Bronze Age (c.1500 BC) (Woodward 2000).

3.3 By the late Bronze Age a series of large linear boundaries, known as 'Dykes', began to appear across the landscape, mainly in North and East Yorkshire. Several of these territorial boundaries have been identified within the desktop study area as a series of cropmarks, including one running northeast – southwest across the site, which the geophysical survey of the site failed to identify (Brett 2005).

3.4 Funerary sites of Iron Age date (mainly 4th century BC – 1st century AD date) are known to exist at some distance to the south of the site. These 'Arras type' burials comprised square barrows

and burial pits, which were often laid out in structured cemeteries with associated grave goods such as brooches, beads, bracelets and pottery (Cunliffe 2005).

3.5 Remains of Roman or Saxon date have not been identified within 1km of the site. Reighton is however listed in the Domesday Survey of 1086 suggesting at least a late Saxon origin to the village (Williams and Martin 2002). Elements of the shrunken medieval village survive as cropmarks and earthworks to the north-east of the site, indicating that Reighton was a considerably larger settlement in the Middle Ages.

4.0 Palaeoenvironmental background

4.1 The Yorkshire Wolds were mainly forested in the early Neolithic period, with evidence for woodland clearance emerging in the palaeoenvironmental record soon after. At Kilham, approximately 12.3km to the south-west of the site, a cycle of clearance, cultivation, abandonment and woodland regeneration was found to have occurred at least twice before the construction of a long barrow in the early Neolithic (Stoertz 1997, 3).

4.2 By the late Bronze Age/Iron Age, when large dykes were being constructed across the Wolds, the landscape appears to have been open, probably with a mix of animal husbandry and cereal production (*ibid*.). Probably later in the Iron Age, and certainly in the Romano-British period, there was a greater emphasis on cereal production over herding of livestock in the landscape.

5.0 Previous investigations

5.1 Prior to the current phase of work, a desktop study and geophysical survey was undertaken by Pre-Construct Archaeology (Lincoln) (Brett 2005). The desktop study showed that the site lay in an area of high archaeological potential, particularly for the prehistoric period. The geophysical survey identified a series of rectilinear enclosure-like cropmarks and associated features such as trackways and pits of probable Iron Age or Romano-British date (figure 2).

6.0 Mitigation: Strip, Map and Record

6.1 Based upon the results of the desktop assessment and geophysical survey, and in consultation with North Yorkshire County Council's Principal Archaeologist, a Written Scheme of Investigation (WSI) for further archaeological works at the site was submitted by AAA (Allen 2005) and accepted by the Principal Archaeologist.

6.2 Allen Archaeological Associates was commissioned by Roc Oil (GB) Ltd to undertake the archaeological strip, map and record exercise. The work was undertaken in accordance with the appropriate Institute of Field Archaeologists' standards and guidelines notes (IFA 1999) between 3rd October and 15th November 2005.

6.3 The Well Site works entailed the stripping of the topsoil with a tracked 360^0 excavator with smooth ditching bucket and a bulldozer, on the premise that the machines did not track across the stripped area, all under archaeological supervision by a suitably competent archaeologist. The Access Road topsoil stripping was completed exclusively by 360^0 excavator, supervised at all times by an archaeologist.

6.4 A full written record of all archaeological features and deposits was made on standard AAA recording sheets, accompanied by detailed plan and section drawings at an appropriate scale (1:10, 1:20 and 1:50). A full photographic record was also made using colour slide, black and

white and digital, and selected slide and digital shots have been included as an appendix in this report (Appendix 1).

6.5 The site works and all archaeological deposits were digitally planned using an Electronic Distance Measurer (EDM).

7.0 Aims and objectives

7.1 A series of aims and objectives were devised for the Written Scheme of Investigation, that are summarised below: -

to recover as much of the plan of the remains within the impact area as possible and to sample or fully excavate features and deposits that are exposed

to recover domestic pottery and other finds that will allow secure dating of the site, and an assessment to be made regarding the functional use of the site

to study the site within its landscape context

to recover data that will provide information relating to the social character of the site, if possible, its status, function and economy

To provide data to enhance the regional chronological framework, through analysis of the material culture and selective scientific dating

8.0 STRATIGRAPHIC REPORT

8.1 The site archive comprised the following: -

214 individual context records

8 context summary sheets (214 individual contexts)

4 photographic record sheets (120 individual photographs)

3 drawing record sheets (82 individual drawings)

1 sample record sheets (26 samples)

1 small finds record sheet (2 individual finds)

82 section drawings at scales 1:10 or 1:20

82 individual plans at scales 1:10 or 1:20

A digital overall site plan

8.2 A description of the features and deposits is included as Appendix 7.

9.0 The Well Site Strip

9.1 Five main periods were identified at the site from the analysis of context records, drawn records and stratigraphic matrices, in conjunction with the dating of the pottery and worked lithic assemblages.

Phase 1: Neolithic

Phase 2: Middle Bronze Age

Phase 3: Late Bronze Age

Phase 4: Late Iron Age/Romano-British

Phase 5: Post-Medieval/Modern

10.0 Natural deposits

10.1 Machine-stripping of the topsoil revealed a mix of pink clay with chalk and flint gravels and yellow/grey sand, identified as glacial till. Excavation of a number of features showed that the glacial till overlay chalk bedrock.

11.0 Phase 1: Neolithic (Figures 4 and 5)

11.1 A group of three Neolithic pits (021, 023 and 028) were identified adjacent to the southern edge of the site. These were characterised by multiple fills, with frequent charcoal and pieces of Neolithic pottery, worked lithic material and burnt stones.

11.2 Pit 028 contained a number of sherds of early Neolithic Towthorpe Ware, typical of East Yorkshire (See Appendix 3), along with a notched flint blade of similar date. A soil sample from the basal fill of the pit was found to contain nearly 800 fragments of hazelnut shell, a small, background sample of crab apple husk fragments, and single examples of charred dock seeds and grass. Eighteen pieces of worked flints were recovered, including seven irregular pieces that are likely to indicate knapping. A serrated bladelet of late Mesolithic/early Neolithic date and a Mesolithic piercer were also found.

11.3 Pit 021 contained two sherds of mid – late Neolithic Peterborough Ware pottery within its uppermost fill (Ebbsfleet type). The middle of the three fills, interpreted as a backfill event, was sampled due to its visible charred plant remains content. A large volume of charred crab apple skins and cores were identified from the processed flots, suggesting that whole fruit had been burnt. A quantity of burnt hazelnut fragments was also present within the processed flots. Three flint flakes were also recovered from the feature, one of which was dateable to the late Mesolithic/early Neolithic.

11.4 Pit 023 contained a sherd of Neolithic pottery within its secondary backfill, 240. Five sherds of Middle Bronze Age pottery were recovered from the uppermost fill; however the similarities between the fill structure and processed soil sample with those of pit 021 suggest they are broadly contemporary. It seems likely the later material was recovered from a Middle Bronze Age feature cutting the Neolithic pit that was not recognised by the excavator. Seven worked flints from the pit were of mainly Neolithic or late Mesolithic/early Neolithic date.

11.5 Four further features produced lithic material of probable Neolithic date (017, 045, 053 and 109). Pit 017 contained only a single abraded flint flake however, making the date of the feature far from certain (see 16.2 below). Also, feature 109 contained three flint flakes of Mesolithic to Early Neolithic date, these are considered to be residual as a sherd of late Iron Age pottery was also recovered from the feature (see 14.24 below).

11.6 Pit 045 contained six worked flints, three of which are dateable (Mesolithic/early Neolithic, late Mesolithic/early Neolithic and early Neolithic). An environmental sample from the pit contained three fragments of hazelnut.

11.7 A total of twenty-three modified flints were recovered from pit 053, a number of which are suggestive of flint knapping. The majority of the dateable lithics were of late Mesolithic/early Neolithic date; however based on other evidence across the site the latter is the most likely. A single small slightly abraded fragment of late Bronze Age pottery was found within the fill, and is considered to be intrusive.

12.0 Phase 2: Middle Bronze Age (Figures 6 and 7)

12.1 Two pits and an unusual posthole were identified as being probably of middle Bronze Age origin (pits 005 and 049 and posthole 075), all situated towards the south side of the site, close to the pits of Neolithic date.

12.2 Sixteen sherds of middle Bronze Age pottery were recovered from pit 005, along with four worked flints, two of which are of Neolithic date. The environmental remains recovered from the pit were found to resemble those from Neolithic contexts (see Phase 1 above), with over a hundred fragments of hazelnut shell recorded, along with a small number of charred wild plant seeds including fat hen (a plant of waste and cultivated ground).

12.3 Pit 049 contained fifteen sherds of middle Bronze Age pottery, along with nine pieces of worked or modified flint. The dateable flints were in the main Mesolithic or early Neolithic pieces; however the number of sherds of pottery makes it likely the pit was of this date.

12.4 Posthole 075 contained five pieces of late Mesolithic/early Neolithic modified flint, including two bladelets. Seven sherds of probable middle Bronze Age pottery were also recovered from the pit, placed in a semi-circular arrangement half way up the backfill and surrounding the soil mark for a former post that rotted in situ. The soil mark suggested the post had a diameter of 0.13m, with a slightly rounded base that rested on the base of the pit. The pit was 0.86m wide and 0.61m deep with a step towards the base on its east side. The backfill, 076, contained cereal and barley grains as well as chaff from the processing of emmer or spelt wheat. Weed/wild plant seeds that were identified included orache and clover/medick.

12.5 Five sherds of middle Bronze Age pottery were also recovered from the uppermost fill of Neolithic pit 023. The number of sherds suggests that these were unlikely to be intrusive, and it is suggested these may reflect an otherwise undetected later feature truncating the Neolithic pit.

13.0 Phase 3: Late Bronze Age (Figures 8 to 10)

13.1 A single late Bronze Age feature, a small ring ditch, was exposed at the southwest corner of the site. Ring ditch 007 was very unusual in that the east and west halves had very different surviving profiles and fills. Initially, the evidence suggests that a 1m wide shallow circular ditch was excavated with an internal diameter of c.3m. Following an episode of silting, 010, the eastern half of the feature appeared to have been recut with a much steeper profile, 197. This was interpreted as a construction trench for a series of wooden posts, perhaps forming a screen,

with stone packing filling the voids to support the posts. During the primary silting of 007, some animal bone was deposited within the open ditch, among which cattle and horse has been identified. A spread of medium-sized stones, 009, was then placed in the ditch, sealing 010, before it was backfilled with a black clayey silt with abundant burnt material, 008, including grains and chaff of emmer wheat and barley. A total of fourteen pottery sherds from at least three vessels dated this backfill to the Late Bronze Age.

13.2 Environmental remains from the two halves of the feature contrasted sharply; clearly a product of their differing functions at the time the gully/ditch was open. A sample from the primary fill of the western half of the feature, 010, was found to contain a charred barley grain, as well as two fragments that could only be recognised as emmer or spelt wheat glume bases. The tertiary fill, 008, was also identified as having potential to preserve charred plant remains, and a sample of this deposit confirmed this. A slightly larger number of cereal grains and chaff were recovered, including both cereal grains and chaff of possible emmer wheat, along with grains of barley. Of note were significant quantities of charred weed/wild plant seeds, the majority of which were from grasses and sedges. The wild/weed assemblage also contained blinks, which normally grow in damp environments.

13.3 The backfill of the eastern ring gully half, 198, contained no charred crop detritus, and only a small quantity of charred wild/weed plant seeds, including grasses and thyme leaved sandwort which grows on open ground on well drained soils.

14.0 Phase 4: Iron Age/Romano-British (Figures 11 to 15)

14.1 The previous geophysical survey showed the site lay within a landscape of rectilinear enclosures of probable later prehistoric/Romano-British date (Brett 2005). The stripping of the topsoil confirmed this with a series of ditches found to mirror the geophysical linear anomalies. Enclosure ditch 192/195 ran across the site on a broadly west-north-west to east-south-east alignment. Two sections were excavated across the ditch, revealing a contrasting sequence. The primary cut of the ditch was between 2.4m and 2.6m wide and 0.5m deep, with moderately steep sides. The primary silting deposit in the easternmost section, context 191, produced sixteen sherds of probable Late Iron Age vesicular pottery. A possible recut, 196, was identified in this section, which contained a series of largely similar natural silting deposits, 188, 189 and 190, which produced no dating evidence. In the westernmost section, the primary cut, 195 contained two natural silting deposits 194, overlain by 133, both of which were undated.

14.2 A second recut, 187, was identified in section 192. This was steep sided and flat based and was filled by a compact layer of sub-angular chalk chunks and gravel in a matrix of grey/brown sandy clay, 128. Four sherds of Romano-British greyware from the feature dated to the early to mid 2nd century AD. The feature was interpreted as a channel excavated to aid drainage. This was less apparent in section 195 to the west, although a thin spread of stone was identified that may have represented the truncated remains of this feature.

14.3 Both ditch sections had been recut a final time, by ditch 117/193. Five sherds of pottery were recovered from the eastern section, 117, suggesting a date of deposition in the mid 2nd century AD. A further three sherds of 2nd – 3rd century greyware was recovered during machining over the ditch.

14.4 Ditch 192/195 was paralleled c.42m to the north by ditch 152. Two sections were also excavated across this feature. It was 1.15m wide and 0.45m deep, with a clearly defined terminus at its east end, approximately 2m from the eastern limit of excavation. The slot excavated across the terminus contained two natural silting deposits, 153 and 154, the latter of the two, 153, containing three Late Iron Age or Roman vesicular sherds.

14.5 Two fills were also identified in the section excavated to the west. The primary fill, 212, contained 23 sherds of Late Iron Age/Roman vesicular ware, and the secondary fill, 213 produced one small abraded sherd of the same pottery type and five sherds of a Dressel 20 type amphora of early/mid 2nd century AD date from Spain. A soil sample from 212 contained small quantities of charred cereal grain.

14.6 Towards the west end of the site, ditches 192/195 and 152 adjoined a ditch running north-north-east to south-south-west. A slot excavated through the ditch at the north side of the site in Trench 1 exposed a stratigraphic sequence very similar to that identified in ditch 192/195, suggesting that it formed part of the same enclosure feature. The primary cut, 160, was 0.8m deep and was recut on its west side by 201, which was 1.8m wide and 0.8m deep. Both cuts were undated. Ditch 201 had been recut by 157, a steep sided feature containing a layer of poorly sorted sub-rounded chalk fragments, 158, set in a matrix of compact brown clayey silt, 159. This feature was very similar to 187 (the recut of ditch 192) and is likely to have had a similar function.

14.7 A subsequent recut was defined by 155, a ditch measuring 1.85m wide and 0.5m deep. It contained a natural silting deposit, 156, which produced a single sherd of abraded Romano-British greyware and small quantities of charred cereal and weed seeds within a soil sample. This appeared to cut the east – west ditch 152.

14.8 A slot through this ditch in Trench 2 revealed a less complex sequence, comprising a single cut, 174, measuring 2.25m wide and 0.55m deep. The ditch was filled by a single undated natural silting deposit, 175. It is suggested the cut is likely to represent a continuation of recut 155, with the later ditch having removed all traces of its predecessor.

14.9 The sequence exposed in Trench 3 was comparable with that recorded in Trench 1. A primary ditch cut, 222, on the west side of the section contained a single natural silting deposit. This had been recut by 220 (paralleled with 201, the recut of 160). Both cuts contained a single homogenous fill indicative of natural silting. Following recutting a compact stone layer was laid in the base of the ditch (context 223), representing a truncated component of the drainage feature identified recutting both 160 and 192. This in turn had been recut by 218, representing the same feature as 155 and 174, and probably 117 and 193 in the east – west arm of the enclosure feature. No dating evidence was recovered from any of the deposits excavated in this ditch section.

14.10 A slot excavated at the junction of ditch 192/195 and 160/174/222 failed to identify a relationship, largely due to an extensive gravel spread sealing the area, however it is likely that they are contemporary, forming two sides to an enclosure.

14.11 To the south of this junction, the alignment of the ditch was continued by 003. This ditch was 1.86m wide and 0.31m deep, and contained a single fill of grey/brown sandy silt, 004, that contained thirty sherds of pottery of late 2nd century date. The ditch narrowed considerably towards its north end, ending with a clearly defined terminus 0.8m wide and 0.18m deep immediately to the south of ditch 192/195, forming an entrance into the enclosure measuring over 3m wide.

14.12 A large linear was initially identified by the geophysical survey along the western edge of the site, running east-south-east to west-north-west, although the topsoil strip did not expose it due to a spread of subsoil 172 (See 14.14 below). To expose the ditch a machine-excavated slot was stripped through the subsoil horizon revealing a large ditch, 182, measuring 4.44mwide and 0.8m deep. The ditch had an interesting fill sequence that differed to that noted in the other enclosure ditches. Initially the ditch partially silted with 183, brown silt with occasional small chalkstones and flint, before a large amount of soil (grey/brown sandy silt 184) was dumped along the northern edge. This material contained a number of animal bone fragments, mainly

cattle, with sheep/goat and pig, some exhibiting damage including gnawing. A single human femur with an old break was also recovered from this deposit. A possible interpretation of the deposit is that the dumped soil may be the remnants of a slighted bank along the northern edge of the ditch, with the animal bone perhaps being domestic refuse that was dumped at the same time the bank was destroyed. The human bone fragment may suggest that there was an inhumation burial within this putative bank. Overlying this possible former bank material was a dump of grey/brown sandy silt, 185, that was concentrated on the south side of the ditch. The part backfilled ditch was then allowed to silt naturally with brown sandy silt 186.

14.13 On the west side of ditch 160/174/222, a possible Romano-British metalled road surface was identified, as defined by deposit 162, a compact layer of small and medium sized gravel. Its interpretation as a road surface was reinforced by the presence of a number of shallow linear grooves representing probable wheel ruts. Towards the north end of the site, 162 was approximately 7m wide, but it narrowed gradually towards the south.

14.14 The road surface was sealed beneath a shallow brown clayey silt subsoil, 172, that was exposed at the western end of the site. This material has been interpreted as post-Roman colluvium (hill wash) that has formed following the abandonment of the site. Modern ploughing appears to have mostly removed this horizon across the site (save along the access road, see 17.0 below); its survival at the west end of the site may be attributed to the spoil from a probable post-medieval quarry pit protecting the deposit. Without this protection the colluvium is likely to have been lost and the gravel track to have been substantially damaged. This is likely to have been the case at the south-west end of the site, where the gravel road was noted to be diffuse and difficult to map. Certainly in places the gravels overlay the top of enclosure/roadside ditch 003, suggesting the stones had been disturbed, probably by ploughing.

14.15 Trenches 1, 2 and 3 that were excavated across the road surface identified a probable roadside ditch running along the west side of 162. Ditch sections 163, 166 and 204 respectively varied between 0.68m and 2.2m wide, and between 0.35m and 0.8m deep. Only ditch section 163 produced any dating evidence: two small sherds of Romano-British greyware.

14.16 Following recording of the road surface in Trenches 1, 2 and 3, it was removed by mini-digger in an attempt to identify earlier deposits within the trenches. In Trench 1, a linear feature, 230 was exposed, running north-north-east to south-south-west. The ditch was 1.35m wide and 0.4m deep with steep sides and a concave base. It was filled by a single natural silting deposit of grey/brown sandy silt, 229, which was undated. The feature however respected the alignment of the Late Iron Age/Romano-British ditches on the site and is also likely to belong to this phase.

14.17 In Trench 3, the ditch cut a sub-circular pit, 206, which was 0.92 m wide and 0.3m deep. The pit was filled by naturally accumulated grey/brown silt, 207, which contained four sherds of Late Iron Age vesicular pottery. The trench also exposed part of a ditch, 208, running north-east to south-west. Three vesicular pottery sherds from the ditch were of Late Iron Age or Romano-British date.

14.18 In the south-west corner of the site, a group of five parallel linear gullies; 033, 037, 039, 041 and 043 ran north-north-east to south-south-west. All were shallow and diffuse, and extended from the south limit of excavation, becoming increasingly indistinct towards the north. All the ditches also cut the earlier Bronze Age ring ditch 007 (see above). The presence of Late Iron Age/Roman pottery in the upper fills of this feature has been attributed to intrusiveness caused by disturbance by this group of ditches. The shallowness of the features was a good indicator of the level of truncation of the archaeological deposits across the site by modern ploughing.

14.19 The three easternmost gullies of the sequence overlapped, and showed a gradual shift westwards with each subsequent ditch cut. The first in the sequence, 043, produced two small vesicular pottery sherds of Late Iron Age to Romano-British date. This was cut by 041, which was in turn

cut by 039. Both of these were undated, as were 033 and 037. A second slot through 033 however, context 026, produced four sherds of Romano-British greyware. The alignment of 026/033 may be continued by ditch section 176 at the west end of Trench 5, which was undated.

14.20 Towards the northern edge of the site, a short length of ditch, 142, ran on a west-north-west to east-south-east alignment for approximately 31m, with a clearly defined terminus at each end. It contained a series of undated natural silting deposits of dark brownish grey clayey silt, 143, 145, 146, 147. Although undated, the ditch appeared to respect the alignment of the other dated features of this phase, and is therefore likely to be contemporary.

14.21 To the east of ditch 142, in the north-east corner of the site, was a single isolated small sub-circular pit, 170. Despite surviving to only 0.07m deep, it contained 17 sherds of Late Iron Age or Roman vesicular ware from the broken base of an upturned vessel. The reason the broken pot was placed upside down within the pit is unclear.

14.22 A probable post hole, 137, located in the southern portion of the site, produced one small sherd of Late Iron Age/Roman shelly ware, which tentatively places the feature in this phase. The feature was filled by a primary silting deposit, 139, sealed by a layer of brown clayey silt containing frequent chalk and flint fragments that was interpreted as the collapsed remains of a post packing.

14.23 A stone lined pit 073 located north-west of ring ditch 059 measured 1.15m by 0.82m in plan, and survived to a depth of 0.2m. The feature had initially been filled by a thin layer of brown clayey silt, 132, before being lined with rounded and sub-rounded pebbles. This in turn was sealed by a natural silting deposit, 130, over which was 074, a layer of stones capping the feature. Artefacts recovered from the feature were a small fragment of bone from layer 132, a whetstone found amid the stone lining 131, and five sherds of late Iron Age/Romano-British pottery, also from the stone lining. The whetstone appeared to have been deliberately placed within the stone-lined chamber.

14.24 A shallow oval feature 109 approximately 1.7m long and 1.23m wide was excavated towards the south-east end of the site. The fill, 110, had gradually silted and a single sherd of later Iron Age or Romano-British pottery was found within, as well as a number of residual flints. The pot sherd has been used to tentatively date the feature.

14.25 An L-shaped shallow gully, 119, was found to contain a small piece of pottery or later Iron Age or Romano-British date within its fill, 120. The feature was very ephemeral as modern ploughing appears to have removed the majority of it. Its orientation however suggests it is contemporary with the enclosure system, and a possible interpretation is that the feature may have been a livestock pen within the northern enclosure.

15.0 Phase 5: Post-Medieval/Modern (Figures 16 and 17)

15.1 A large pit, 178, was exposed towards the western edge of the site. The oval feature, which was identified during the geophysical survey, had near vertical south-east and south-west edges, with a more gradually sloping north side. The full depth exceeded safe limits so remains unknown. The fill of this probable quarry pit comprised 179, very compact mid brown slightly clayey silt with frequent small fragments of chalk and pieces of coal.

16.0 Undated (Figures 2 and 18)

16.1 An oval pit, 065, appeared to have silted naturally with grey/brown silty sand 066. An early Mesolithic flint knife similar to examples from the early Neolithic site at Star Carr was recovered from the fill. This feature has only been tentatively assigned to the early Mesolithic period; based on other datable features from the site and the rarity of early Mesolithic cut features, it is more likely that the knife was residual in this context.

16.2 Pit 017 contained a single worked flint flake of early Mesolithic/early Neolithic that exhibited signs of post-depositional damage, making it unlikely the pit is of this date. The feature was located within a possible ring gully, defined by two lengths of curvilinear gully cuts, 013 and 015. Gully 015 contained a single small pottery sherd (weighing 1g), of probable prehistoric date, insufficient to provide a firm date. The pit also produced 126 fragments of burnt animal bone, probably all from the same animal, and most likely representing a deliberate deposit of possible ritual significance, associated with feasting or sacrifice.

16.3 A second pit, 019, located to the south of 013, was a small steep sided pit with stone packing. A central concentration of burnt bone may suggest that remains were carefully placed in the feature, contained in a bag of leather or cloth that has since decayed, after which the pit was backfilled with burnt material, possibly pyre debris. The central concentration of bone comprised 25 fragments of burnt animal bone, of which only one could be identified as a sheep/goat astragalus. Several unburnt bones were also recovered, a piece of juvenile cow humerus and several juvenile cattle teeth.

16.4 A group of small pits or post holes clustered around ring ditch 059 (contexts 011, 051, 069, 081, 083, 099, 101, 111, 135, 168 and 227) produced no dateable artefacts and gave little indication of their function. Pit 083 however, produced a very charcoal rich fill, suggesting that burnt waste had been dumped into the feature. A soil sample from the pit contained only four fragments of hazelnut shell.

16.5 The spatial association of these features with the ring ditch and other dateable features nearby suggests that they may be of Neolithic to Bronze Age date, but this cannot be confirmed on current evidence.

16.6 An isolated undated pit, 150 was excavated towards the north side of the site, east of the eastern terminus of ditch 142.

17.0 The Access Road Strip (Figures 2 and 19)

17.1 The topsoil was removed using a 360^0 excavator along a 4m wide and 220m long strip westwards from North Burton Lane to the Well Site, in advance of the construction of an access road. At the east end of this strip, adjacent to North Burton Lane, the topsoil was found to overlie the natural glacial till. As the road strip progressed westwards the glacial till was found to be sealed by subsoil 232/237, which comprised grey/brown clayey silt with a mix of small and medium sized chalkstones and pebbles and occasional flecks of charcoal. Three hand dug slots through this deposit showed it was up to 0.4m deep (figure 19). A number of artefacts were recovered from 232/237, including nine sherds of pottery of mid – late 2^{nd} and mid to late 4^{th} century AD date and a number of worked prehistoric flints. This deposit was found to extend for some 200m, stopping less than 10m from the Well Site at the west end of the Access Road strip. It has proved difficult to interpret this deposit, although it is suggested that it may be the remnant of a former ploughsoil sealed beneath the modern ploughzone. This interpretation is perhaps given further credence by the high level of abrasion in the pottery and flint assemblage from this deposit.

17.2 The geophysical survey and cropmark evidence suggested that further enclosure ditches associated with those identified in the Well Site strip were expected to be exposed in the Access Road works. The buried soil horizon however masked any archaeological features, and three hand dug slots over the locations of the enclosure ditches failed to identify them.

18.0 Discussion

18.1 Neolithic

18.1.1 The Neolithic period is characterised by the excavation of a number of pits in a small area along the southern edge of the site. Recovery of artefactual material from within the pits is highly suggestive of selective deposition, and the dumping of large volumes of charred plant matter probably signifies feasting events.

18.1.2 A tentative interpretation of this evidence is that each pit may represent a special event, perhaps a meeting between two groups for the purpose of barter and exchange, re-affirming ties of friendship, or other acts between two otherwise distinct groups. The charred plant remains may be evidence of feasting, and the careful placing of the pottery and lithic material within the pits may have symbolised agreements or pacts made between those people present. The highly symbolic backfilling of the pits may have represented the sealing of the bargain or agreement.

18.1.3 The concentration of the pits suggests a focal point for this activity, and that they were either excavated within a short period of time, or are evidence of a location that was held in special regard by local communities, and was visited on a number of occasions over an extended period of time.

18.1.4 Recovery of charred crab apple remains, including skin, flesh and seeds is unusual, although it is recorded at Caythorpe on the Yorkshire Wolds, and at Marton-le-Moor in North Yorkshire. The presence of these, and the hazelnuts, indicates the presence of woodland in the vicinity of the site at the time the pits were excavated, and also suggests a continued exploitation of wild resources to augment the farmed resources of the community. Furthermore, the presence of whole charred apples among the soil samples further reinforces the notion of a special, ritual deposit in these pits rather than waste from crop processing or hearth waste (Appendix 5).

18.1.5 It is interesting that pit 053 produced the detritus from flint making during this phase of activity. The constituents of this feature do not resemble the other Neolithic activities identified; perhaps indicating that flint knapping was also undertaken here, perhaps on a personal and private scale away from others, within a perceived protected zone, i.e. the meeting place between two separate groups.

18.2 Middle Bronze Age

18.2.1 Two pits and a large posthole can confidently be assigned to this phase of activity, all located towards the south side of the site, close to the earlier Neolithic pits and the Late Bronze Age ring ditch. It is possible that the pits represent a continuation of the same practices defined by the nearby Neolithic pits, however the nature of the fills of the middle Bronze Age features compared to the Neolithic pits suggests that there was some difference in activity. The presence of charred hazelnut shells in the processed soil samples certainly support this view, although the weed seeds present are those often found on cultivated ground, gathered accidentally with crops, which may be taken to suggest an increased reliance on agriculture in this period.

18.2.2 The posthole 075 is of particular interest in that it was very much an isolated feature, and the hole for the post was surprisingly large for the post it contained. Also of note, the excavator

identified that seven sherds of middle Bronze Age pottery, all from one vessel, were arranged part way down in the backfill, outer surface facing upwards, in a semi-circular arrangement against where the post had originally stood before it rotted away. These had certainly been placed there as part of the setting of the post, and are unlikely to have fallen in such an arrangement accidentally. The placing of the pottery was probably very significant to the people setting the post suggesting the post itself marked a place of some importance. The lack of other associated posts nearby is suggestive that the post may have functioned as a marker or totem for marking a special place such as an area for meeting and trade and exchange.

18.3 Late Bronze Age

18.3.1 Late Bronze Age activity is restricted to a single circular feature at the southwest corner of the site. The form of the monument was unusual in that it suggested different activities occurred in the opposing halves. Initially, the feature was excavated as a single uniform entity, and was subject to a short episode of natural silting. Soon after this, the form and function of the east and west sides of the feature diverged significantly.

18.3.2 In the western half of the ditch, a layer of stones was deposited over the initial silting deposit. This layer was then sealed by a deliberately placed deposit containing animal bone, pottery and a quantity of charcoal; material highly suggestive of feasting activities associated with the western half of the structure.

18.3.3 The eastern half of the ditch was recut with a steep sided gully that had been packed with stony material perhaps quarried from the ditch, forming a narrow gully that possibly served as a construction trench for a series of posts.

18.3.4 The monument is unusual and interpretation of its function remains enigmatic, although a possible interpretation is included here. Initially, a ring ditch was excavated and left open for a short period of time, allowing it to partially silt up. A layer of stones was then added to the west half of the ditch, whilst a gully was excavated throughout the eastern half. The gully is very reminiscent of a palisade trench, and it is suggested that a wooden screen may have been built around the eastern half of the monument, perhaps acting as a barrier from view, upslope to the east. The western side of the monument, looking out across the valley to the west, was kept open however, and domestic material including charcoal, pottery and animal bone was dumped within. The monument may have functioned as an excarnation area, with the deceased being laid within the circle, with the detritus from ritual feasting being placed in the open ditch on the west side of the circle, prior to the disposal of the dead.

18.3.5 There is no evidence of archaeological activity on the site between the Late Bronze Age and Late Iron Age. This may suggest that the area was completely abandoned, especially as there is evidence to suggest deterioration of the climate throughout Europe in the first half of the first millennium BC (Cunliffe 2005, 33-34). The area may have continued to be exploited, in a way that left no archaeological trace however, such as pasture for sheep, to which the area is well suited. Such use appears to have been widely practised in the Yorkshire Wolds throughout the Iron Age (Fenton-Thomas 2005).

18.4 Late Iron Age/Romano-British

18.4.1 Many of the features in this phase could only be dated very broadly to the Late Iron Age to Romano-British periods. This was due to the small number of sherds from many of the excavated sections and the scrappy, abraded nature of the assemblage. Nevertheless, a tentative sequence of activity throughout this period can be established.

18.4.2 In the Later Iron Age there appears to have been a move towards a more utilitarian exploitation of the site. At this time a series of linear ditches were excavated, most likely performing the dual function of land division and drainage. The principal feature in this phase was the large enclosure ditch running across the middle of the site and turning northwards towards the west side of the site. A date in the Late Iron Age for the creation of this feature is indicated by a coherent group of sixteen sherds from ditch section 192 at the east end of the site. A number of recuts were identified along the length of this ditch, suggesting that it was maintained for a long period of time, and may have been subject to rapid silting. This accords with the wider regional and national pattern that sees a rise in population and a concomitant intensification of agricultural activity, particularly into more marginal upland zones such as is occupied by the current site (Haselgrove et.al. 2001, 29).

18.4.3 The above features were further developed during the Romano-British period. Particularly significant is the presence of the substantial stone lined feature evident in four of the five sections excavated across the ditch. Initial field interpretations that it may be simply field clearance is deemed unlikely due to the concentration and linearity of the stones; a more plausible explanation is that it was an attempt to aid drainage and limit silting in the ditch, comparable to a French drain. Only one section through this feature, 187, the recut of 192, produced any dating evidence, comprising four sherds of 2nd century AD pottery. Despite the presence of this stone drainage feature, the ditch required cleaning, as defined by recuts 117, 193, 155, 174 and 218. Cut 174, in Trench 2, had completely truncated any evidence of the earlier phases of the ditch. Dating evidence from this phase of recutting suggested that it took place in the 2nd century AD, although this date was largely reliant on a single fragment of Central Gaulish samian ware.

18.4.4 Another ditch, 152, which had not been recut, ran on the same alignment as 192 and is likely to be part of the same process of division/organisation of the landscape. The dating evidence from the earliest fills of this feature was only sufficient for a very broad Late Iron Age/Romano-British date. It is notable that the feature had a clear terminus at its east end, the result of deliberate excavation rather than later truncation. This terminus was only 2m from the eastern baulk, and may have formed one side of an entrance. A possible corresponding ditch is shown as a faint linear anomaly on the geophysical survey, continuing the alignment of 152 to the east of the excavated area.

18.4.5 Ditch 152 also continued to be used into the Romano-British period, attested by the presence of pottery of 2nd century AD date in the upper fills of the ditch, including sherds from a Dressel 20 amphora imported from Spain.

18.4.6 The imported piece of samian fineware from France, along with the Spanish Dressel 20 amphora, strongly suggests that by the second century AD Roman goods and ideas were being accepted in the region. The Dressel 20 amphora was a vessel used to import olive oil from Spain, and as such indicates that there were people living in the area who had adopted elements of a Romanised diet.

18.4.7 The gravelled trackway (road surface 162) at the west end of the site appears to have run adjacent to the later Iron Age enclosures depicted on the geophysical survey (see Figure 2) and identified during the excavations. The metalling of the track is suggestive of Roman technology, perhaps indicating the gravel was added to an existing track at some point, perhaps during the 2nd century AD maintenance to the existing enclosures. Part of this system of ditches, acting as both roadside drains and enclosure boundaries at the southern end of the site, contained thirty sherds of 2nd century AD pottery, confirming the date of the recutting of the initial system of enclosure ditches.

18.4.8 Careful cleaning of the road surface revealed grooves in Trench 1 that are very likely wheel ruts, indicating carts used the road for an extended period of time.

18.4.9 The ditch to the west of the road did not reveal complex fills or recuts, suggesting it may have been added as a roadside ditch rather than as a component of enclosures beyond the site to the west. This is difficult to confirm as the only dating evidence is restricted to two small sherds of Romano-British greyware.

18.4.10 The road and its accompanying flanking ditches clearly formed a major landscape feature, which seems to have influenced the landscape to this day. The parish boundary between Reighton and Hunmanby which forms the western site boundary to the site runs parallel with this trackway. Beyond the site, it is likely that the line followed by the field boundaries and the parish boundary reflects the former line of the road, which can be traced at least from Hunmanby Road to the north of the site (and possibly beyond), and perhaps southwards as far as the railway line to Bridlington.

18.4.11 A number of features exposed to the west of the road were broadly of Late Iron Age to Romano-British date. Ditches 033, 037, 039, 041 and 043 have been interpreted as a successive sequence of linear boundary features. The three intercutting ditches 039, 041 and 043 show a gradual shift westwards, which was probably continued by ditches 033 and 037. The only relevant dating evidence from this group was four sherds of Romano-British greyware from ditch 033, although two sherds of pottery from ditch 043 were Late Iron Age or Roman date and may suggest that the first phase of this ditch group pre-dated the road surface. All the shallow ditches were truncated at their north ends by a large quarry pit, 178 so their destination is unclear, although the previous geophysical survey of the site suggests they were probably elements of the enclosure system encountered across the site, perhaps turning westwards to join with ditch 182.

18.4.12 Ditch 182, which is likely to have been associated with further enclosures to the west of the site (see cropmark evidence, Figure 2), provided evidence for a bank on the north side having slumped or been pushed into the ditch after it had gone out of use. Interestingly, a single human femur was recovered from this material, perhaps suggesting the disturbance of a burial within the enclosure bank.

18.4.13 The enclosures and associated trackways that were identified by the geophysical survey and partially exposed in the strip, map and record scheme are part of a much wider landscape of ladder settlements that emerged on the Yorkshire Wolds around the 1st century BC to 1st century AD (Giles 2007, 236).

18.4.14 The ring gully identified towards the southern end of the site (context cut numbers 047, 055, 057 and 059) has been assigned to this phase of activity as although two sherds from a late Bronze Age vessel were present within the gully, two pieces of late Iron Age/Romano-British pottery were also recovered. The ring gully was probably surrounding a circular structure that would fit with being a farmstead associated with the enclosures, rather than the ritualised behaviour strongly associated with the later Bronze Age activities on the site.

18.4.15 Although the southernmost of the two exposed enclosures may have housed a farmstead and the northerly may have been used to hold livestock, cereal production was almost certainly a major concern. The presence of barley and wheat in the palaeoenvironmental samples from the enclosure ditches suggest both types of cereal are likely to have been cultivated nearby. Previous investigations have shown that there was an increasing reliance on cereal production during the Iron Age and into the Romano-British period, most lately argued for the production of surpluses for feasting activities, or for trading outside of the region for exotic goods (Van der Veen and Jones 2007, 427). Although this may have emerged in the earlier Iron Age in southern England,

current evidence suggests such a model of production, consumption and exchange may have occurred in the north of England (including the study area) from the later Iron Age onwards.

18.4.16 The conquering of southern France by the Romans opened up old trade routes that were exploited by both sides of the channel in the Iron Age, with slaves and raw materials heading to the continent in exchange for quantities of wine and exotic goods to the south of England (Cunliffe 2001, 431). Further northern expansion by the Romans in Europe in *Belgica* and *Germania Inferior* may have opened further trade routes across the North Sea, encouraging the expansion of cereal production in northern parts of Iron Age Britain such as the North Yorkshire Wolds.

18.4.17 The two enclosures exposed by the excavations contrasted sharply with each other. The southernmost enclosure almost certainly contained a roundhouse (represented by ring gully 047, 055, 057 and 059) and a series of pits and postholes that on balance of evidence are quite likely to be contemporary, whilst the northern enclosures were devoid of evidence of domestic activity, beyond a single pit containing an upturned pot at the north-east corner of the site. The northern enclosure may have functioned as a paddock or yard, with the shallow L-shaped gully within perhaps associated with stock control.

18.4.18 A stone-lined pit, 073, found at the north-west corner of the southern enclosure (close to the entrance with the trackway to the west) was unusual in its make-up. Following excavation, the pit was left open for a period of time, allowing some silting to occur. A stone surface was then prepared on part of the base of the feature and further stones added to form walls with a whetstone placed in a gap in the stone surface. A large rounded flat stone was then placed on top of the structure to form a sealed stone-lined chamber. Soil percolated down onto the floor of the chamber, before it collapsed at some point in antiquity. The function of such a feature remains a mystery, although the presence of such a fine whetstone on the floor of the chamber is unlikely to have been due to accidental loss, instead it is more likely to have been deliberately placed there. Its position close to the entrance of the enclosure is also unlikely to be accidental, being located away from the main activities in the enclosure but near a formal entrance. One would perhaps associate such activities with burial although careful excavation revealed only a single small fragment of unidentified bone from the silting beneath the stone floor. It is possible that any human remains from within the chamber have since degraded, however evidence elsewhere on the site suggests bone survives fairly well from late Iron Age/Romano-British deposits.

18.4.19 Romano-British activity appears to have almost entirely ceased by the end of the 2nd century AD; only a single sherd of pottery from the ploughsoil could be dated to the 4th century. This seems to mirror a pattern prevalent across the region, when the landscape was reorganised, with rural estates set up to centralise and manage agricultural production (Fenton-Thomas 2005, 75). This reorganisation of the land may have been associated with a move from an emphasis on animal husbandry to a bias towards cereal farming (Dent 1983, 42, and Section 17.4.14 above).

18.5 Post-Roman

18.5.1 Following the abandonment of the site at the end of the 2nd century AD erosion of the ground upslope to the east resulted in a layer of hillwash accumulating over the archaeological deposits, including the road surface. In the main this deposit was later removed by modern ploughing, however some remained at the north-western end of the site, sealing and protecting the Roman road surface, and other archaeological features.

18.5.2 A chalk quarry pit was excavated at some stage following abandonment of the site, probably during the post-medieval period. Other chalk pits are depicted on the first edition Ordnance

Survey Map of 1854 (see front cover), and it seems likely that they are a relatively contemporary phenomenon.

19.0 Acknowledgements

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Appendix 1: Colour Plates

Plate 1: Well Site stripping underway. Photo taken from SW corner looking NE to E

Plate 2: Phase 1 Neolithic pit 023 ESE-facing section, looking WNW. Neolithic pit 021 is to the right of the picture

Plate 3: Phase 1 Neolithic pits 021 and 023 following excavation, looking NW

Plate 4: Phase 1 Neolithic pit 028 during excavation, looking S. Note placed deposits of pottery and stone

Plate 5: Phase 2 Middle Bronze Age posthole 075 N facing section, looking S

Plate 7: Phase 3 Late Bronze Age ring ditch 007 with gully 197, E facing section, looking W

Plate 6: Phase 3 Late Bronze Age ring ditch 007 following exposure and part excavation, looking S

Plate 8: Phase 4 Late Iron Age/Romano-British enclosure/roadside ditch 160 showing stone spread 158 in recut 157, looking E

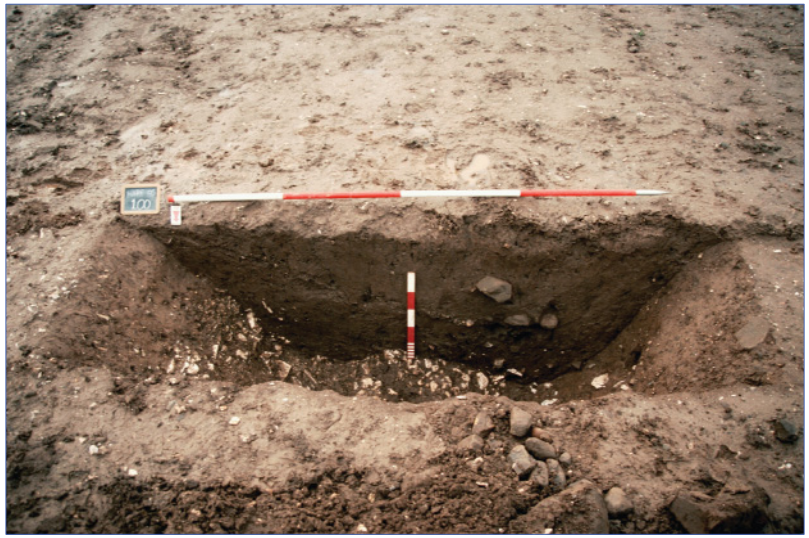

Plate 9: Phase 4 Late Iron Age/Romano-British enclosure/roadside ditch 160 following removal of stone spread 158

Plate 10: Phase 4 Late Iron Age/Romano-British enclosure ditch 117 east facing section. Note stone spread in southern half of ditch. Orange flags denote possible features

Plate 11: Phase 4 Late Iron Age/Romano-British linears 33, 37, 39, 41 and 43, NNE facing section, looking SSW. Note modern plough damage has all but removed the features

Plate 12: Phase 4 Late Iron Age/Romano-British road surface and roadside ditches in Trench 3, looking E

Plate 13: Phase 4 Late Iron Age/Romano-British road surface close up, looking SSW

Plate 14 (right): Phase 4 Late Iron Age/Romano-British stone-lined chamber 073 prior to excavation, looking ESE. Orange flags denote possible features

Plate 15: Phase 4 Late Iron Age/Romano-British stone-lined chamber following removal of eastern half, looking WNW. Small white arrow shows location of whetstone

Plate 16 (right): NNE facing slot through subsoil 232/237 in Access Road Strip, looking SSW

Appendix 2: Lithic Materials Assessment

Jim Rylatt, May 2006

1.0 Introduction

This report concerns an assemblage of lithic material recovered during an archaeological excavation at the Willows A site, Reighton. A total of 192 pieces of struck or modified flint were retrieved, along with a whetstone. The items with diagnostic traits were indicative of activity extending from the early Mesolithic to the late Neolithic or early Bronze Age. The different elements of this collection comprised two end scrapers, two end & side scrapers, a miscellaneous scraper **,** a notched flake, a combined piercer/notched flake, three piercers, an awl, one serrated blade, a saw/denticulate, a burin, two knives, three retouched flakes, one retouched blade, one utilised blade-like flake, three unmodified primary flakes, 39 secondary flakes, 38 tertiary flakes, four secondary blades, four tertiary blades, two primary blade-like flakes, 20 secondary blade-like flakes, fifteen tertiary blade-like flakes, six cores, two core fragments and 38 pieces of irregular waste.

2.0 Method of study

All of the artefacts were physically examined in order to create an archive catalogue. The attributes of each piece were noted to determine its position in the reduction sequence, any observable characteristics of the reduction technology and an assessment of its functional potential. The catalogue also records the presence of patination, cortex, and whether any piece has been burnt. Additionally, metrical data was recorded for complete flakes or tools, and each piece was weighed. Selected artefacts were also examined with a x3 hand-lens to determine whether there was any evidence of localised modification that could be indicative of use.

3.0 Assemblage Description

3.1 Raw materials

3.1.1 Colour

Although there is a degree of variability in the raw materials, the majority of the artefacts were manufactured from mid-grey opaque flint, which often contained frequent white 'bubbly' flecks. There was also some paler or darker-grey opaque flint. Variation in the quantities and forms of the inclusions meant that there was frequently a range of different shades within a single piece of flint and many incorporating chalky masses. Overall, the characteristics of this material indicate that the bulk of the assemblage consists of flint derived from strata formed within the chalk deposits of the Yorkshire Wolds. The assemblage also contained a few pieces of greyish-brown and brownish-grey translucent flint, which were of a relatively good quality, having relatively few flaws or fossils.

3.1.2 Cortex

There is a relatively high incidence of cortex on the items from the site, with 111 pieces having some surviving cortex (57.8%). Cortical surfaces are generally creamy or pale-brown in colour, have relatively thin cross-sections and a solid matrix, while relatively large areas often have a rounded profile. In combination, these characteristics suggest that flint pebbles were being utilised for tool production (i.e. a large surface area relative to volume).

The largest proportion of the cortical pieces had cortex covering less than 30% of the surface area (65 pieces: 58.6% of cortical component) (fig. 1). There were a 33 pieces with 30 to 60 per cent surface area coverage (29.7% of cortical component) and a further 13 pieces with 60 to 100 per cent (11.7%). The presence of primary flakes and other pieces with large areas of

cortex indicate that there were a number of occasions when the initial stages of core reduction had been undertaken within the area that was investigated.

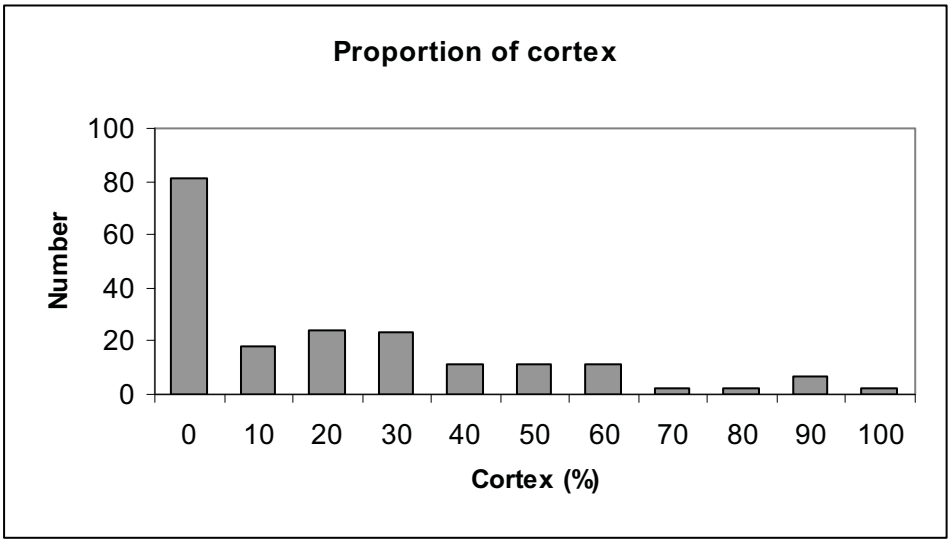

Figure 1: The relative proportions of cortex on the worked and modified flint from the Willows A site, Reighton.

3.1.3 Sources

It is likely that the flint raw materials were obtained locally. The village of Reighton sits in a valley presumably formed by glacial melt-water running eastward off the Wolds. It is likely that the outwash will have deposited gravel along the valley floor and sides, 19th century Ordnance Survey maps noting a gravel pit to the south-west of the village. It is also possible that some flint was gathered from the deposits exposed along the beech situated approximately 2km to the east of the site.

The pebbles will have been rolled and battered by fluvial/tidal forces and may also have been subject to the extreme temperatures prevailing in a glacial or peri-glacial environment. These processes will have caused a proportion of the nodules to fracture, creating the sub-angular, recorticated surfaces evident on a number of the artefacts. Furthermore, these processes will have restricted the size of the majority of the pebbles, which is demonstrated by the metrical data collected from the assemblage; the maximum dimension of any flake was 80mm (001a), while the mean length was 30.9mm. The collection of flint from secondary deposits is likely to have been a relatively expedient process, which may simply have involved the inspection of tree throws or erosion scars along the banks of rivers and streams (Edmonds 1995). Alternatively, the creation of slight delves in the upper surface of out-cropping gravel deposits may have proved to be a more reliable means of acquisition.

3.2 Condition

3.2.1 Patination

The level of patination was largely restricted to a milky discolouration (51 pieces, 26.6%), with only four pieces having a more developed, opaque surface (2.1%).

3.2.2 Burning

Elements of the assemblage exhibited evidence of thermal damage resulting from burning (sixteen pieces – 8.3%, with a further five pieces that may have been heated – 2.6%). The crystalline structure of these pieces has been altered and in most cases small pot-lids have become detached. There is a correlation between the burnt material and its context, as fourteen of the burnt or possibly burnt examples were recovered from only two small pits; within pit **[023]** there were eight pieces (four in **(024)**/**(025)** and four in **(240)**), while pit **[028]** contained the other six (all in **(029)**). Virtually all of the burnt material consisted of irregular

waste and debitage, but there was one burnt tool, a serrated blade (SF 1 - 029a). One of the pieces from **[028]** was not worked - 029n was a large fragment of a shattered pot-boiler, which had been used to heat water. This indicates that there was a hearth on, or in the immediate vicinity of the site, and that domestic or craft activities were being undertaken.

In most cases it was possible to determine that the flint had been burnt after it had been knapped. However, it is unclear whether this was an economic process associated with the utilisation of lithic waste for some other purpose (e.g. pot temper), represented some form of cleansing at the end of discrete episodes of activity or merely reflects the unstructured dispersal of waste while people were reducing cores next to a fire.

3.2.3 Post-depositional damage

A large proportion of the assemblage is in an excellent state of preservation, having fresh and undamaged flake margins that are unchanged since manufacture and deposition (100 undamaged – 52.1%; 53 pieces indeterminate – 27.6%). The outstanding condition of these artefacts suggests that much of the assemblage was recovered from stratified deposits. Evidence of post-depositional damage was exhibited by only 39 pieces (20.3%), ten of which were recovered from the ploughsoil, **(001)**. Another seven damaged pieces were recovered from **(237)**, which is thought to be a buried ploughsoil, while another four came from a large quarry pit, **[178]**, and were therefore not within their primary contexts.

3.3 Composition of the assemblage

The archive catalogue indicates that there is lithic material from every stage of reduction, including some primary flakes, waste from the manufacture of tools and, other pieces that indicate the use and discard of definable types of tools.

3.3.1 Cores and core fragments

Six cores and two core fragments were recovered (table 1). Even when grouped together this material only constitutes 4.2% of the total assemblage. Four of the cores and both fragments were utilised in the production of blades, or blades and small flakes. Two of these had a single platform (046a and 054w - type A2), while another three had two perpendicular platforms (010a, 010b and 129a – type B3) (after Clark 1960).

	ID	**Date**	**Type**	**Weight (g)**	**Dimensions (mm)**
Cores	010a	Neo	B3 blade & flake	23.6	35x39x16
	046a	E.Neo	A2 blade & flake	39.1	40x40x25
	054w	Mes/E.Neo	A2 blade	71.4	46x58x41
	129a	E.Neo	B3 blade	77.4	53x49x25
	238a	Neo	A2 flake	66.4	38x53x35
	240a	-	B3 flake	19.1	28x49x18
			Total	297.0	
Core fragments	010b	Neo	B3 flake & blade	30.4	
	240x	E.Neo	Cb blade & flake	53.9	

Table 1: The attributes of the cores recovered from Willows A, Reighton.

It is notable that several cores had been discarded before they were exhausted (mean weight 49.5g) and there was little evidence for core rejuvenation. This suggests that the curation of raw materials was not a significant concern and that flint was relatively abundant in the immediate vicinity of the site (this observation is supported by the recovery of a flint pot-boiler - see 3.2.2). One possible effect of the apparent readiness to discard cores is that the microlithic proportions of some blades could indicate that there is a direct correlation with later Mesolithic industries, rather than reflecting difficulties in the procurement of raw materials.

3.3.2 Irregular waste

The assemblage incorporated 38 chunks and chips (19.8%), which constitute the unintentional by-product of core reduction. Some of the chunks are relatively large suggesting that they were created during the earlier stages of core reduction. Several pits contained clusters of irregular waste (**[053]** eight pieces, **[028]** seven pieces, **[023]** six pieces and **[005]** four pieces), which could indicate there were knapping floors around the mid-point of the southern edge of the site.

3.3.3 Flakes and blades

Unmodified flakes and blades form 65.1% of the total assemblage, while the ratio of complete cores to unmodified flakes and blades is 1: 21. Pieces have been classified as blades on the basis of them exhibiting traits that are indicative of deliberate blade manufacture and also having a length to breadth ratio that is equal to or greater than 2: 1. Traits of blade manufacture include the creation of parallel-sided pieces, guiding ridges on the dorsal surface running parallel to the lateral margins, structured removal from curated cores and careful platform edge preparation. 'Blade-like flakes' is a less rigidly defined category that incorporates irregular elongated pieces manufactured using the same technologies that made blades.

A significant proportion of the unmodified flakes and blades were the product of blade technologies - a total of 71.2% of this material, comprising blades (eight pieces), blade-like flakes (37), or flakes that are the by-product of 'narrow flake' reduction technologies (44). In addition, some of the smaller flakes are likely to been produced during the preparation and maintenance of the platform edges of blade cores. Complete, unmodified blades range from 26mm to 40mm in length, while the complete flakes range in size from 72 x 73mm to examples as small as 12 x 18mm. A number of flakes appear to be the by-products of tool manufacture, including three pieces possibly removed during the creation of larger bifacial tools like axes and adzes (029c, 054b and 240j). It is possible that some of the broader unmodified flakes were also generated by technologies primarily focussed upon the production of blades. However, there are indications that some of this material could represent the residues of later Neolithic or early Bronze Age activity.

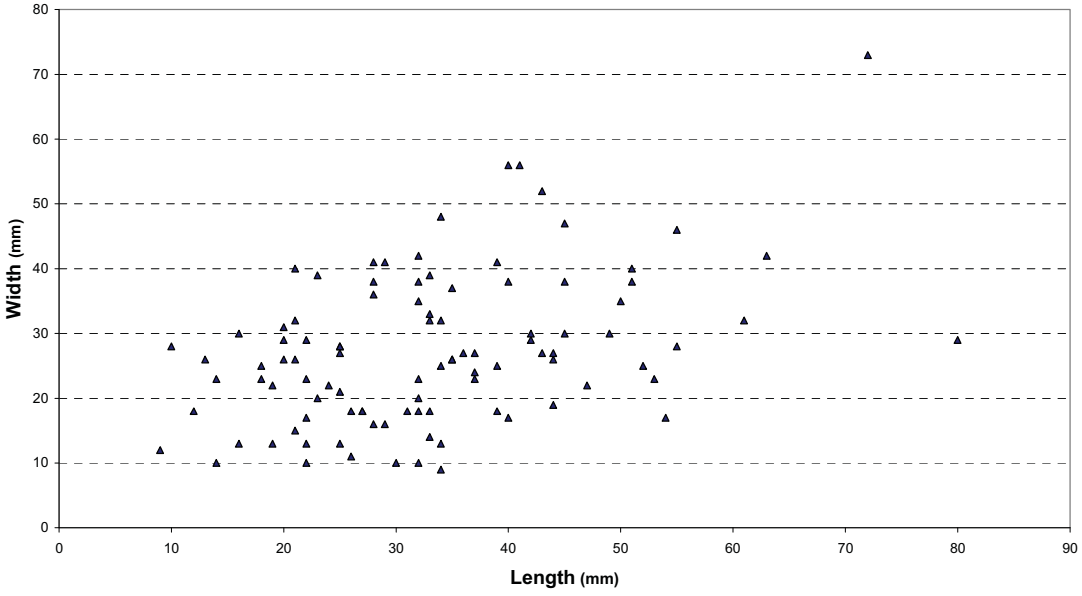

Figure **2**: The relative proportions of the complete flakes, blades and tools recovered from Willows A, Reighton.

3.3.4 Tools and retouched pieces

The collection contains fifteen pieces that have been transformed into tools with a distinct morphological classification (7.8% of the assemblage), four pieces that have been modified by minimal retouch (2.1%) and two unmodified pieces showing evidence of use-wear (1.0%) (table 2). The presence of these items suggests that both tool manufacture and use occurred on this site.

Tool Type	**Quantity**	**Contexts**
Awl	1	050c
Burin	1	240d
Knife	1	232b
Notched flake	1	054h
Piercers	3	029b, 237g, 237j
Piercer/notched flake	1	129e
Saw/denticulate	1	129c
Scrapers	5	046c, 050d, 054a, 232a, 237k
Serrated blade	1	029a
Miscellaneous retouch	4	129d, 217a, 217b, 240z
Utilised blade-like flake	2	066a, 076c
Total	**21**	

Table2: Quantity and distribution of retouched and utilised pieces.

3.3.4.1 Scrapers

Scrapers form the principal tool type, with five examples. All but one of these tools were manufactured upon flake blanks, the exception being a bifacially worked scraper that utilised a fragment of irregular waste, 237k. The two end scrapers are notably unusual (046c and 050d). Each consists of the proximal end of a blade or blade-like flake, which has been abruptly retouched across the butt. They then appear to have been inverted, with the dorsal side of the proximal margin having acquired a diffuse polish. It is possible that both were originally longer blades that broke during use, or alternatively they could represent a local form created for a specific purpose. Mesolithic assemblages can contain small, crude scrapers similar to this type.

An end and side scraper was created on a long primary flake (054a). The nature and extent of the retouch, together with the form and thickness of the flake, are indicative of scrapers produced during the earlier Neolithic. In contrast, the second side and end scraper was created on a relatively small, gracile flake, and is likely to be a product of a later Neolithic or early Bronze Age industry (232a).

3.3.4.2 Piercers and awls

The assemblage also included three piercers (029b, 237g, 237j), an awl (050c) and a combined piercer/notched flake (129e). One of the piercers is a refined form that functioned as a type of drill bit referred to as a *meche de foret* (029b). This bladelet has been abruptly retouched along both lateral edges to create a long, narrow point with a triangular cross-section. The facets along the point are worn and polished as a result of its use. It is likely to have been created and used during the Mesolithic, as is the awl (050c). The latter utilised a broad blade, which was inversely retouched along the distal half of one lateral edge, while the other lateral edge had normal retouch, thereby creating a long, narrow point, with a triangular cross-section. Again, the point is worn, with areas of diffuse polish. This is a relatively large piece that is comparable to awls found at the early Mesolithic site of Star Carr, which is located 11.5km to the north-west (e.g. Clark 1954: fig 39, #102 & 105).

A relatively squat flake, which was probably detached from a bladelet core, appears to have been modified to create a piercer (237g). It is likely to have been expediently manufactured, with the use of a bladelet core suggesting a later Mesolithic or early Neolithic industry. Another expediently produced piercer, 237j, has characteristics more indicative of the early Neolithic.

Composite tools, such as the piercer and notched flake 129e, initially appear in the earlier Neolithic, but are relatively rare during that period (Butler 2005). They become more common during the later Neolithic, the morphology of the blank also being consistent with industries employed during the 3rd millennium BC.

3.3.4.3 Other tools and retouched pieces

The assemblage also includes a serrated blade, (029a), which has had one lateral margin retouched to create a row of saw-like microdenticulations. The percussion for these notches was from the ventral side, which is potentially indicative of the early Neolithic, but the overall dimensions of the piece indicate that it could also be of later Mesolithic date. The assemblage also contained a saw-like 'denticulate' (129c), which has a much coarser cutting edge created by the removal of small flakes, each 5 - 7mm wide, thus creating a series of spurs along a cog-like convex edge. The distal end of the other lateral edge has been retouched to create a larger notch, which would enable a forefinger to apply pressure through denticulate edge.

The knife is a large bifacially worked flake (232b), with similarities to the ovates and discoidal knives produced during the later Neolithic. The piece has backing along one long edge, while the opposite edge is acutely retouched and could have been used for cutting or chopping.

Retouch has been used in a more *ad hoc* manner to modify four flakes or blades. One piece has an abruptly retouched edge (240z), the ridges of which have become worn, possibly through use as a crude scraper. With the other pieces the retouch is either invasive to semi-abrupt, suggesting that these pieces could have been used as crude flake knives.

4.0 Dating

4.1 Mesolithic

A large proportion of the assemblage has morphological characteristics that are indicative of Mesolithic industries or are consistent with undifferentiated Mesolithic and earlier Neolithic technologies (93 pieces - 48.4%). Among the most diagnostic items are the drill bit (*meche de foret*) (029b), which is a distinctly Mesolithic type. The awl, (050c), is also a Mesolithic form. The broad blade with its abruptly retouched point is comparable to awls and piercers found at the earlier Mesolithic site at Star Carr (e.g. Clark 1954: fig 39, #102 & 105). Radiocarbon dating has established that the earlier Maglemosian occupation at Star Carr occurred from 8,700 to 8,350BC (Day & Mellars 1994). Utilised flake 066a is also analogous to artefacts recovered from Star Carr (e.g. Clark 1954: fig 45, #164). It is a large hard hammer flake detached from a core producing broad blades, with the end of one lateral edge having been used for cutting; small, invasive spalls are detached along the ventral margin, which is worn and has small areas of polish.

The assemblage contains one burin, 240d, which is manufactured on the proximal end of a bladelet or small blade-like flake. The dimensions of this piece are characteristic of the microlithic technologies employed during the late Mesolithic. Another proximal fragment of a blade or blade-like flake, 236b, appears to have abrupt retouched around a large proportion of its margin. It could therefore be a micro-burin, which is a bi-product of the creation of microliths; this is not an unequivocal interpretation, as the 'retouch' could result from post-depositional damage.

The collection from Willows A did not include any microliths, but there are a number of bladelets with microlithic proportions. The discovery of small blades does not constitute definitive evidence of a later Mesolithic presence, because the size of the available flint pebbles could have restricted the size of cores, and thus their products. Consequently, the dimensions of the blades could be partly conditioned by raw materials rather than reflecting chronological variation in lithic technology. Therefore, a proportion of the assemblage has been categorised as later Mesolithic/early Neolithic (36 pieces) or Mesolithic/early Neolithic (38 pieces), because it was considered inappropriate to use size as the primary means of differentiating between the products of these successive periods. Nevertheless, the fact that a

number of cores were discarded before they were exhausted suggests that flint was an abundant resource (see 3.3.1). The implication is that people had few constraints with regard to the size and quantity of stone tools, which in turn, suggests that the small blades are the result of later Mesolithic activity.

Context No.	Pottery type	Ceramic date range	Lithic technology	No. pieces	Lithic date range
006	MBA?		E.Neo Neo	1 1	4000-3000BC 4000-2200BC
022	Peterborough (Ebbsfleet)	3400-2500BC	L.Mes/E.Neo	1	6500-3000BC
024/025	BA/MBA		Mes/E.Neo L.Mes/E.Neo E.Neo Neo	2 4 1 1	9000-3000BC 6500-3000BC 4000-3000BC 4000-2200BC
029	Neo	3500-2500BC	Mes Mes/E.Neo L.Mes/E.Neo	1 2 5	9000-4000BC 9000-3000BC 6500-3000BC
050	MBA		E.Mes Mes/E.Neo	1 3	9000-6500BC 9000-3000BC
054	LBA		Mes/E.Neo L.Mes/E.Neo E.Neo	4 4 1	9000-3000BC 6500-3000BC 4000-3000BC
060	LBA		Mes/E.Neo	2	9000-3000BC
076	MBA?		Mes/E.Neo L.Mes/E.Neo	2 4	9000-3000BC 6500-3000BC
118	Preh	-	Mes/E.Neo L.Mes/E.Neo	1 2	9000-3000BC 6500-3000BC
240	Neo	3500-2500BC	Mes/E.Neo L/Mes L.Mes/E.Neo E.Neo	13 1 4 2	9000-3000BC 6500-4000BC 6500-3000BC 4000-3000BC

Table 3: Archaeological contexts that contained both lithic and ceramic artefacts with datable traits.

4.2 Early Neolithic

The lithic assemblage contains evidence for an early Neolithic presence on the site, which is also attested to by fragments of pottery (table 3). The collection of lithic material includes twelve pieces that have been identified as early Neolithic and another 74 pieces that are of Mesolithic to early Neolithic date (see 4.1). Pieces with diagnostic characteristics indicative of early Neolithic industries include a scraper created on a piece of irregular waste, 237k, and an end and side scraper, 054a. A retouched blade, 217b, is also likely to be an early Neolithic product, although an earlier Mesolithic origin cannot be discounted. Further evidence of earlier Neolithic activity is provided a number of cores, including a type B3 core (129a) and a type A2 pebble core (046a), both of which were principally used for the production of blades.

4.3 Later Neolithic and Bronze Age

It is notable that only a very small proportion of the assemblage exhibits any clear affinities with late Neolithic and early Bronze Age lithic technologies. Only two pieces can be definitely assigned to this period of activity and interestingly, both come from the same context, **(232)** – possibly a buried soil. These two artefacts consist of a side & end scraper (232a), produced on a relatively small, gracile blank, and a bifacially worked knife, 232b, which has similarities to ovates and discoidal knives.

Of further interest is the apparent absence of any identifiable worked lithic material that could relate to the middle and late Bronze Age activity signified by a range of pottery recovered from the south-western quadrant of the site. The archaeological features that were exposed suggest that this was the most significant episode of prehistoric activity, but it is essentially invisible in the lithic assemblage.

5.0 Discussion

Several archaeological deposits contained interesting groups of lithic artefacts, some of which were accompanied by ceramics. The most conspicuous collection of artefacts comes from the primary fill of a small pit, **[028]**. This deposit, **(029)**, contained eighteen pieces of struck flint, including a serrated blade (029a, S.F. 1), a *meche de foret* drill bit (029b) and three thinning flakes from core tool manufacture (029c, d & e). The pit also contained a large fragment of a flint potboiler, which indicates the presence of a hearth and suggests some form of domestic, craft or ritual activity was being undertaken. Although the drill bit is a form that is specific to the Mesolithic, the other pieces are more broadly characteristic of the later Mesolithic and early Neolithic. The recovery of 39 sherds of Neolithic pottery from pit **[028]** indicates that the lithic material belongs to the latter end of the indicated date range. Consequently, this feature is likely to date to the 4th millennium BC, the presence of an undamaged later Mesolithic drill bit, albeit potentially residual, possibly indicating a date before 3,500BC. The material from **[028]** could represent the residues of everyday activity. However, it is also possible that this relatively diverse collection of artefactual material (several stone tools, waste from the manufacture of a core tool, sherds from at least five different pots and burnt and charred material) could represent the remains of a deliberately constituted structured deposit.

Approximately 5m to the north of pit **[028]** was a second small pit, **[023]**, which also contained an interesting range of lithic artefacts. Its secondary fill, **(240)**, contained 26 pieces of worked flint that attested to the reduction of blade cores and also suggested that larger core tools were being manufactured (e.g. 240j). Once again, three or four of these pieces of debitage were burnt. Three sherds of prehistoric pottery were also recovered from **(240)**, one of these sherds being a Neolithic fabric that is directly comparable to the material from **(029)**. The upper fill of pit **[023]**, deposit **(024)**/**(025)**, contained another fourteen pieces of struck flint, including three or four pieces that had been burnt. All of this data appears to suggest that pit **[023]** and pit **[028]** belonged to the same phase of activity and that they could even have been contemporaneous features. However, the three sherds of pottery from **(024)**/**(025)**, have been dated to the Bronze Age (possibly the middle Bronze Age). A third pit, **[021]**, which was situated between **[023]** and **[028]**, contained a sherd of Peterborough ware pottery and three pieces of flint indicative of Mesolithic or early Neolithic activity; this material suggests that this deposit, **(022)**, should date to c. 3,400 – 3,000BC.

Two small pits or postholes located further to the east, **[049]** and **[053]**, are also worthy of mention. The former was filled by a deposit, **(050)**, containing nine pieces of flint, including an awl (050c - probably of early Mesolithic date) and an unusual end scraper (050d). The other pit, **[053]**, contained a deposit incorporating 23 pieces of worked flint, among them an earlier Neolithic side & end scraper (054a), a notched flake (054h) and a very large flake potentially created during the thinning of a bifacial core tool (054b). Although both of these pits/postholes contained lithic material indicative of early Neolithic industries, they also contained middle or later Bronze Age pottery, and both lay adjacent to a later prehistoric ring gully. Consequently, there is a significant discrepancy between the dating provided by the lithic and ceramic materials recovered from pits **[023]**, **[049]** and **[053]**. This could indicate that significant quantities of earlier Neolithic material lay on or close to the ground surface in this area of the site and subsequently became incorporated into Bronze Age features. Alternatively, it is possible that the small sherds of Bronze Age pottery that were found in these archaeological contexts could have migrated into earlier deposits due to taphonomic processes. The almost total absence of damage to the lithic material supports the latter scenario, but the actual sequence of events remains debatable.

The almost total absence of lithic artefacts that are clearly products of later Neolithic and early Bronze Age technologies suggests that there was a significant hiatus in human activity after the early Neolithic, the domestic and/or ritual occupation appearing to cease in the later 4th or early 3rd millennium BC. The absence of more crudely manufactured flint tools could also indicate that middle and late Bronze Age intervention consisted of a restricted range of activities, which did not include the routine tasks for which such tools appear to have been manufactured (Ford *et al* 1984).

6.0 Recommendations

Microwear analysis of the tools and utilised pieces that have developed a polish along their flake margins could provide an indication of the nature and range of activities undertaken at this site during the Mesolithic and Neolithic periods.

A number of the pieces from this assemblage should be illustrated. These items would be selected after consultation with the project manager. It is anticipated that these drawings would need to be checked and an accompanying descriptive catalogue produced.

7.0 References

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WIRE 05 - Catalogue of worked and modified lithic materials - Key to abbreviations:

Type	(P)	Primary
	(S)	Secondary
	(T)	Tertiary
Date	Mes	Mesolithic
	Neo	Neolithic
	BA	Bronze Age
	E.	Early
	L.	Late
Size	comp	complete – (if so, dimensions given*)
	incomp.	Incomplete
Recort	(recorticated)	Yes
		Partly
Burnt		Yes
	poss	Possible
Retouch		yes
	u/w	use-wear
	poss	possible
	prob	probable
Platf	(platform)	
	comp	complex
	cort	cortical
Bulb	diff	diffuse
	pron	pronounced
	sm.pr	small pronounced
	v.sm.pr	very small pronounced
Term	(termination)	
	feath	feathered
	hinge	hinged
	step	stepped
P-dep damage	(post-depositional damage)	
		Yes
		No
Comments	cort	cortical
	dist	distal
	frag	fragment
	incl	inclusions
	irreg	irregular
	lat	lateral
	negative	negative
	platf	platform
	poss	possible/possibly
	perp	perpendicular
	prob	probable/probably
	prox	proximal
	signif	significant
	v	very

*Measurements are given only for complete flakes and complete tools. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. The maximum thickness is also given for cores. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

Appendix A: Lithic material from bulk soil samples

Context No.	Sample No.	No Pieces	Provisional Date	Comments
006	001	13	L.Mes/E.Neo	1x v. small (microlithic) bladelet; 1x blade-like flake (failed attempt to detach bladelet); 1x proximal fragment of blade-like flake, possibly from type A bladelet core; 5x truncated bladelets (2x proximal, 1x medial, 2x distal fragments) - possibly indicative of microlith production?; 5x small trimming flakes, probably detached from platform edge during core maintenance. Mid-grey opaque Wolds flint used for 14 pieces, exception is medial bladelet fragment. One piece is possibly burnt.
029	005	1	Mes/E.Neo	1x flake, dorsal scars suggest earlier blade-like removals. Mid-grey opaque Wolds flint.
046	019	2	L.Mes/Neo	1x blade-like flake (L.Mes/E.Neo); 1x irregular flake (indeterminate age, possibly Neo.). Mottled mid to dark grey opaque Wolds flint - both pieces possibly from same core?
048	004	4	L.Mes/E.Neo	1x proximal/medial fragment of large flake from blade core; 1x distal flake fragment; 1x small trimming flake; 1x squat flake, with series of v. small blade-like removals from single platform - possibly utilised, slight gloss along one lateral edge. Pale, mid and dark grey opaque Wolds flint.
054	016	26	L.Mes/Neo	1x proximal half of large hard hammer flake (truncated by secondary blow, negative scar of which evident); 3x flakes from multiple/rotating platform core, with edge preparation - probably thinning of large tool (1x is distal end only); 2x flakes possibly from single platform core (1x distal end only); 1x small blade-like flake; 3x truncated bladelets (1x proximal, 2x distal fragments); 16x small trimming flakes, some possibly detached from platform edge during core maintenance, others could have been produced during creation of core tool (see larger flakes, above). Pale, mid and dark grey opaque Wolds flint used for 24 pieces; other 2 pieces are caramel-brown opaque flint.
213	024	1	L.Mes/E.Neo	1x proximal end of bladelet, snapped truncation. Mid-grey opaque Wolds flint.
238	025	5	L.Mes/E.Neo	3x truncated bladelets (all distal fragments); 2x small trimming flakes. All mid-grey opaque Wolds flint.
240	026	10 1	L.Mes/E.Neo	1x core rejuvenation flake, previous platform indicating removal of small flakes, with edge preparation; 1x small bladelet; 1x blade-like flake (hinged termination = failed attempt to detach bladelet); 5x truncated bladelets/blade-like flakes (all distal fragments) - possibly indicative of microlith production?; 4x small trimming flakes, generally indicative of single platform working & probably detached from platform edge during core maintenance. 1 x dark & 9x mid-grey opaque Wolds flint. 1x fragment of fine-grained sandstone pebble; unclear if modified by human action, no obvious sign of burning (surfaces neither discoloured nor distinctly angular); two external surfaces of pebble at c. 15 degrees to each other, meeting at narrow, rounded edge; one of surfaces has series of striations following two slightly different orientations - origin again unclear.
Total		**63**		

Comments

The lithic material recovered from the bulk soil samples is broadly consistent with the collection of material recovered during the archaeological excavation. Most of these pieces are bladelets, blade-like flakes and flakes produced from prepared and curated cores, traits that are indicative of the core reduction strategies employed during the Mesolithic and early Neolithic periods. It is possible that some of the material was produced in the later Neolithic, particularly given the small dimensions of most of the pieces, but there is no explicit evidence for this

Appendix B: Whetstone from Willows A

1.0 Introduction

A whetstone was discovered at the Willows A site, Reighton, East Yorkshire. It was found within a stone lined pit or cist [073] and was associated with a small fragment of bone.

2.0 Description

Context	**Small Find No.**	**Length** (mm)	**Maximum Width** (mm)	**Maximum Thickness** (mm)	**Weight** (g)
131	2	96	24	12	55.6

This whetstone is complete. It has a rectangular cross-section, the two broad sides taking the form of an elongated sub-rectangle with rounded corners, which is roughly comparable in size to a large human finger. Each of the sides and the ends is distinct, but their margins are all rounded. All of the facets and corners have a smooth surface, most of which has developed a polish. The quality of this polish varies; it has a relatively dull and diffuse surface at the ends and along the narrow lateral edges of the piece, but a glossy finish across most of the two broader sides.

One of the broad faces is flat, but the other has a slight ridge that runs across the width of the piece, one-third of the way from the broader end. One of the narrow lateral edges has a slightly convex margin, but the other has a distinct bevel. This bevelled edge is most pronounced at the narrower end of the piece, where it is slightly concave, and it has evidently been created or enhanced through the prolonged use of the whetstone. The relationship between the ridge and the bevelled edge suggests that the latter was created by holding the whetstone in the left hand, gripping it in such a way that the index finger was underneath on the flat side, with the tip of the thumb resting against the ridge on the upper surface. The objects being sharpened were held in the right hand and then obliquely struck against the narrow edge of the whetstone. Striations along this narrow edge indicate these metal objects were moved backwards and forwards parallel to the long axis of the whetstone; a manner comparable to the use of a butchers steel.

Both of the broad faces of the whetstone are also scored by numerous fine striations. These generally form small groups of shallow parallel grooves, the varying orientations of each cluster indicating that the whetstone was gripped in numerous different ways when the larger surfaces were in use, which contrasts with the more structured utilisation evident on the narrow edges. An examination of the whetstone with a hand lens also reveals that there are small, discrete silvery metallic flecks adhering to the two wide surfaces.

The whetstone has had two small chips detached from its surface. The larger chip, removed from one lateral edge, has some wear across part of the uneven flake surface, indicating that the whetstone remained in use for some time after this damage occurred. The other chip was removed from the edge of the wide, flat face. The flake surface does not exhibit any sign of wear, the unevenness of this scar suggesting that the whetstone is manufactured from a very fine-grained sandstone, which produces a conchoidal fracture when struck. This sandstone is a mid to dark reddish-brown.

Directly comparable artefacts have not been identified in published and unpublished sources. However, the piece is similar in form, but only two-thirds of the size, of a whetstone recovered from a well within the principia of the Bar Hill Roman fort on the Antonine Wall (Robertson, et al. 1975: fig 12, 45). This fort was constructed and occupied during the mid 2nd century AD (c. 140-180AD).

References

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Figure 1: The whetstone from pit [073].

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
001a	crested blade (S)	Neo	25.3	80x29	10 T.A				flat	diffuse	feath	yes	large blade with triangular cross-section, the ridge down the centre of the dorsal surface indicates removal of flakes & blades from perpendicular platfs; flake scar ridges are crushed and abraded far beyond level of damage to margins; pale grey opaque Wolds flint, with bubbly white inclusions
001b	blade (T)	Mes/E.Neo	2.2	33x14				poss			feath	yes	small blade, prob from type A core; platf is detached, the two parallel truncation scars could be deliberate, forming 'truncation burin', but there is signif damage to margins so unclear; mid-grey opaque Wolds flint, with black and white 'bubbly' inclusions
001c	b-l flake (T)	Mes/E.Neo	0.7	no							feath	yes	dist frag of small blade, from type B or C core; mid-grey opaque Wolds flint, with white 'bubbly' and black inclusions
001d	flake (T)	E.Neo	9.3	36x27								yes	flake detached from type A blade core; heavy damage to flake margins and ventral surface - in plough zone for extended period; greyish-brown semi-trans flint, with creamy inclusions
001e	flake (T)		6.5	28x36		partly			flat	v.sm.pr	feath	yes	irreg flake, poss from type B core; mid-grey opaque Wolds flint, with white 'bubbly' inclusions
001f	b-l flake (S)	Mes/Neo	8.8	29x41	40 T.A				comp	pron	feath	yes	irreg b-l flake, hard hammer removal, dorsal surface shows similar removals from 1 platf ; mottled mid to dark-grey opaque Wolds flint, with white 'bubbly' inclusions
001g	b-l flake (T)	Mes/E.Neo	2.5	no					flat			yes	prox & medial frag of blade/b-l flake, prob from type B core; bulb detached by eraillure flake, but dorsal scars suggest small & pronounced; dist end snapped off; mottled pale to mid-grey opaque Wolds flint, with white 'bubbly' inclusions
001h	flake (T)	L.Mes/E.Neo	5.0	35x28					flat	pron	feath	yes	irreg flake; 1 lat edge preserves section of platf used to produce small blades by hard hammer percussion; mottled mid to dark-grey opaque Wolds flint, with white 'bubbly' and black inclusions
001i	chunk (S)		21.8	no	20 T.R.A							yes	thick, irreg frag, with flake scars on 3 of 4 surfaces - prob core frag (blades?), but signif post-dep damage prevents definite attribution; mid-greyish-brown semi-trans flint
001j	chunk (S)		7.2	no	10 T.A		poss						poss dist end of flake from multi-platf core; half of piece has irreg surface with granular structure; mottled mid to dark-grey opaque Wolds flint, with black inclusions
001k	flake (S)		2.3	21x26	30 T.A				comp	pron	feath	yes	irreg flake; dark-grey opaque Wolds flint, with chalky inclusions
003a	flake (T)	Mes/LBA	2.6	10x28					comp	diffuse	feath	no	squat flake detached from type B core producing small blades/b-l flakes; mid-grey opaque Wolds flint, with white 'bubbly' inclusions
003b	flake (S)		1.2	no	20 T.A	partly			flat	sm.pr			prox frag of thin flake, poss from type A core; brownish-grey semi-trans flint
003c	chip (S)		1.6	no	70 T.A		yes					no	b-l sliver of heavily burnt and calcined flint
006a	flake (T)	E.Neo	19.2	51x38					flat	pron	hinge		broad flake from type A core producing broad blades (6+ removals); lip along dorsal edge of butt suggests blades removed with soft hammer/punch, after which there was no platf edge prep before this flake detached by hard hammer (i.e. deliberate adaptation of core reduction strategy); mid grey opaque Wolds flint, with chalky & white 'bubbly' inclusions.
006b	flake (S)	Neo	14.5	41x56	50 T.A	partly				pron	hinge	no	triangular flake with broad & relatively thick dist end; scars of 3 - 4 previous b-l removals from single platf; dist half 1 late edge is

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													crushed/chipped poss naturally or in use as hammer/chopper; mottled mid to dark-grey opaque Wolds flint with chalky inclusions
006c	chunk (T)		15.2	no									irreg waste - surviving flake surfaces suggest from type B or C core; mid grey opaque Wolds flint, with chalky inclusions.
006d	chip (T)		1.5	no									small frag poss representing dist end of irreg flake; surviving flake surfaces; mid grey opaque Wolds flint, with chalky inclusions.
006e	chip (T)		1.4	no			yes					no	small frag, heavily burnt with granular structure and potlids detached from surviving flake surfaces; grey opaque Wolds flint
006f	chip (T)		1.5	no								no	small frag, with surviving flake surfaces; mid grey opaque Wolds flint, with chalky inclusions.
010a	core (S)	Neo	23.6	35x39x16	30 T.A							no	type B3 flake core worked to exhaustion; scars along 2 surviving platf edges suggest removal of small and relatively squat flakes (partially conditioned by size of core) with minimal platf edge prep & small pronounced bulbs - prob hard hammer, as 1 of surviving platfs has several insipient cones of percussion resulting from miss-hits too far from platf edge; brownish-grey opaque Wolds flint, with 'bubbly' inclusions
010b	core fragment (S)	Neo	30.4	23x42x29	50 T.R.A							no	piece of pebble core, poss type B3 flake core, scars along 2 surviving platf edges suggest removal of small flakes/b-l flakes (partially conditioned by size of core) with some platf edge prep & mix of pronounced & v small pronounced bulbs - former prob hard hammer, latter removed with a punch; 1 irreg flake surface suggests unintentional fracture detached piece from core; brownish-grey opaque Wolds flint, with 'bubbly' inclusions
010c	chip (T)		2.7	no			yes						small irreg frag, heavily burnt and calcined, with granular structure and potlids detached from surviving flake surfaces; flint
018a	flake (T)	E.Mes/E.Neo	12.9	45x38		partly		poss	comp	pron	feath	yes	irreg flake, with dorsal scars indicating production of broad blades from opposed platfs; also has a facetted butt preserving section of earlier perpendicular platf edge, with some crushing to margin raising poss this removal served to rejuvenate core; majority of 1 lat edge appears to have been inversely retouched, difference in patination indicates either reuse of discarded piece or, more likely, accidental post-dep damage; mid grey opaque Wolds flint, with dark and chalky inclusions
022a	flake (T)		3.2	no					comp			no	prox end of broad flake, lip along fracture suggests deliberate truncation; dorsal scars suggest removals from 1 platf, poss with hard hammer (eraillure flake has removed bulb); mid grey opaque Wolds flint, with dark and 'bubbly' inclusions
022b	flake (T)		5.5	no							feath		dist frag of flake with irreg fracture; dorsal scars suggest removal of b-l flakes from 2+ platfs; mottled pale to mid grey opaque Wolds flint
022c	b-l flake (S)	L.Mes/E.Neo	1.0	no	50 T.R.A		yes				feath		dist end of blade or b-l flake; flint has granular structure; grey opaque flint
024a	flake (T)	E.Neo	3.2	no			yes		flat	sm.pr		yes	prox end of flake or large b-l flake; heavily burnt & calcined with potlids detached - burnt after flaking, but snapped after burning; flint
024b	flake (S)	Neo	7.9	37x27	30 T.R.A	partly	yes		flat	pron	feath	no	irreg flake, poss from type B core, with b-l removals; heavily burnt with potlids detached; mottled grey opaque Wolds flint, with dark inclusions
024c	chip (S)		2.1	no	10 T.A		yes						irreg frag, heavily burnt, with granular structure and potlids detached from surviving flake surfaces; flint

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
024d	flake (S)		1.2	13x26	30 T.A				comp	pron	feath	no	irreg, squat, hard hammer flake, with dorsal scars of similar removals; mid-grey opaque Wolds flint
024e	flake (T)		<0.1	16x13					flat	diffuse	feath	no	small flake, prob indirect percussion, poss unsuccessful attempt to detach blade/bladelet; mid-grey opaque Wolds flint
024f	flake (T)	E.Mes/E.Neo	1.6	no		partly						yes	medial frag of blade/b-l flake; dist portion has scar suggesting deliberate truncation, prox end removed by post-dep damage; mid-grey opaque Wolds flint, with chalky inclusions
024g	chip (T)		1.3	no		yes						no	irreg frag, with surviving flake surfaces; opaque flint
025a	bladelet (T)	L.Mes/E.Neo	1.1	26x11					comp	v.sm.pr	step	no	bladelet, with single dorsal ridge, which is crushed & abraded suggesting removal of natural surface of non-cortical pebble; brownish-grey trans flint
025b	flake (T)	L.Mes/E.Neo	0.8	26x18		partly				diffuse	hinge	no	prob detached from type A blade core, with platf edge prep; mid-grey opaque flint, with 'bubbly' inclusions
025c	b-l flake (T)	L.Mes/E.Neo	1.6	29x16					flat	v.sm.pr	feath	no	irreg b-l flake, detached during core prep - removing irreg ridge incl section of redundant perpendicular platf edge; mid-grey opaque Wolds flint, with white & black inclusions
025d	flake (T)	Mes/E.Neo	1.4	no							hinge	no	dist end of broad blade or b-l flake; mid-grey opaque Wolds flint, with white inclusions
025e	flake (S)	L.Mes/E.Neo	2.2	22x17	20 T.R.A	partly			crushed	v.sm.pr	feath	no	flake detached from small bladelet core, prob type A, with platf edge prep; mid to dark-grey opaque Wolds flint
025f	chip (T)		1.2	no		yes						no	irreg b-l frag, with surviving flake surfaces; mid-grey opaque Wolds flint
025g	chip (S)		0.8	no	10 T.A		poss						irreg frag, poss dist end flake/blade; dark-grey opaque flint
027a	chunk (S)		4.0	no	60 T.R.A								frag with surviving flake surfaces & chipping along margins; mid-grey opaque Wolds flint, with 'bubbly' inclusions
029a (SF 1)	serrated bladelet (T)	L.Mes/E.Neo	1.0	34x9			yes	yes				no	narrow elongated bladelet, with platf & dist end both deliberately truncated; 1 lat edge has micro-denticulations, with percussion for these notches from ventral side - suggests E.Neo, although size more indicative of L.Mes; granular structure with potlids detached; dark-grey opaque Wolds flint
029b	piercer (S)	Mes	1.2	30x10	60 T.R.A			yes				no	*meche de foret* - bladelet, with dorsal scars of similar removals; 1 lat edge is straight & retouch by removal of abrupt spalls, prox half of other lat edge also retouched by small abrupt spalls creating concave edge, thus forming long narrow point with triangular cross-section - facets along retouched point are worn with areas of diffuse polish; dist truncated, poss during use?; mid to dark-grey opaque flint
029c	flake (T)	L.Mes/E.Neo	1.2	25x21					flat	sm.pr	feath	no	bending flake, prob from thinning of bifacial core-tool - dorsal scars indicate similar removals, with rotating platf & minimal edge prep; mid-grey opaque Wolds flint
029d	flake (S)	L.Mes/E.Neo	3.5	34x32	40 T.R.A				crushed	sm.pr	feath	no	bending flake, prob from thinning of core-tool - dorsal scars indicate similar removals, with some platf edge prep & crushing; mid-grey opaque Wolds flint
029e	flake (T)	L.Mes/E.Neo	1.7	no					flat	sm.pr	feath	no	flake prob from thinning of core-tool - dorsal scars indicate similar removals from rotating platf; platf & dist end detached, prob in antiquity; mid-grey opaque Wolds flint
029f	flake (S)	Mes/E.Neo	1.2	no	10 T.A				cort	v.sm.pr		no	prox frag of broad blade or b-l flake, with dorsal scars indicating removal of similar from 1 platf; mid-grey opaque Wolds flint, with white

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													inclusions
029g	flake (T)	Mes/E.Neo	2.0	no					abraded	v.sm.pr		no	prox frag of flake or b-l flake, with dorsal scars indicating removal of similar from 2 perp platfs; mid-grey opaque Wolds flint, with white 'bubbly' inclusions
029h	b-l flake (T)	L.Mes/E.Neo	0.7	no							feath		dist end of b-l flake, poss from type A core; mid-grey opaque Wolds flint
029i	flake (S)		3.5	22x23	30 T.R.A	partly			flat	v.sm.pr	feath		squat irreg flake, dorsal scars indicating similar removals from 1 platf; pale-grey opaque flint, with chalky inclusions
029j	flake (S)		15.9	40x38	20 T.R.A				flat	pron	feath	no	large hard hammer flake, poss from type B3 core, dorsal scars indicate removal of similar flakes; mid to dark grey opaque Wolds flint, with 'bubbly' inclusions
029k	flake (T)		1.8	no							feath		dist end of flake, removing non-cortical natural surface of pebble core; pale-grey opaque Wolds flint, with white inclusions
029l	chunk (S)		3.2	no	40 T.R.A	partly	yes					yes	prob medial frag of irreg flake - burnt with granular structure; surviving flake surfaces; mid-grey opaque Wolds flint
029m	chunk (S)		11.7	no	30 T.R.A							no	prob frag of core (poss producing flakes & blades); surviving flake surfaces; mid-grey opaque Wolds flint, with chalky inclusions
029n	chunk (S)		226.7	no	60 T.R.A		yes						potboiler - large frag of rounded pebble - heavily burnt & shattered, with granular structure, insipient fractures & potlids detached; grey opaque Wolds flint
029p	chip (S)		2.3	no	10 T.A							no	irreg frag, flaked across both surfaces, but scars on more irreg (dorsal) side suggest from rotating core, poss bi-product of thinning core-tool?; mottled mid to dark-grey opaque Wolds flint
029q	chip (S)		<0.1	no	30 T.A		yes					no	small frag, heavily burnt with potlids detached; grey opaque flint
029r	chip (S)		0.7	no	20 T.A		yes					no	small frag, heavily burnt & calcined; flint
029s	chip (T)		<0.1	no		yes	poss						small frag, poss prox end of small blade or b-l flake, with flat platf & v.sm.pr bulb; flint
029t	chip (S)		<0.1	no	40 T.A	partly							small frag, with surviving flake surfaces; brownish-grey flint
032a	flake (T)		1.0	no		partly					feath	yes	dist end of flake, pale-grey opaque Wolds flint, with white inclusions
034a	flake (S)	E.Neo	1.7	no	10 T.A				cort	pron			prox end of irreg flake, prob 1st removal from new platf - dorsal scars indicate small blade/b-l removals from perp platf; greyish-brown semi-trans flint, with opaque caramel inclusions
042a	chunk (S)		5.9	no	10 T.A	partly						yes	frag, poss flaked flake, with surviving flake surfaces, prob from type C core (3+ platfs); greyish-brown opaque Wolds flint, with 'bubbly' inclusions
046a	core (S)	E.Neo	39.1	40x40x25	60 T.R.A							no	type A2 pebble core, with flat platf & 7 small b-l flake/flake removals - blades detached with small hard hammer, little or no platf edge prep, insipient cone (miss-hit) near edge of platf; small core discarded relatively quickly, poss proved difficult to work; mid-grey opaque Wolds flint, with 'bubbly' inclusions
046b	flake (P)		4.5	32x23	90 T.R.A				comp	sm.pr	feath	no	irreg, cortical hard hammer flake; mid-grey opaque Wolds flint, with dark grey & white inclusions
046c	end scraper (T)	Mes/E.Neo	1.5	no				yes	comp	sm.pr			prox end, prob from blade; has a facetted butt - prob abrupt retouch of prox end, as facets along dorsal margin are worn with diffuse polish - suggests unusual scraper used dorsal side downwards; truncation scar indicates piece snapped, poss during use?; crude unusual form more

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													consistent with Mes; mid-grey opaque Wolds flint, with white inclusions
046d	b-l flake (T)	L.Mes/E.Neo	1.1	no					flat	diffuse		yes	prox frag of bladelet or b-l flake; mid-grey opaque Wolds flint, with dark-grey and 'bubbly' inclusions
046e	flake (S)		1.8	16x30	30 T.A				comp	pron	feath	yes	irreg, squat flake (now in 5 pieces); butt suggests detached from discoidal core; dark-grey opaque Wolds flint, with stripes of white inclusions
046f	chip (T)		0.5	no								no	small frag, with surviving flake surfaces; mid-grey opaque Wolds flint
050a	b-l flake (T)	E.Mes/E.Neo	5.7	44x26					comp	sm.pr	hinge	no	b-l flake, poss detached from type B1 blade core, with little platf edge prep; mid-grey opaque Wolds flint, with 'bubbly' inclusions;
050b	b-l flake (S)	E.Mes/E.Neo	6.1	47x22	20 T.R.A	partly			flat		step	no	irreg b-l flake, poss detached during early stages of reduction of blade core; mottled pale-grey and white opaque Wolds flint, with rusty inclusions
050c	awl (T)	E.Mes	6.7	53x23				yes	abraded	sm.pr		no	broad blade, poss from type A core producing similar blades - inverse semi-abrupt & invasive retouch along dist half 1 lat edge; dist half of other lat edge has (normal - i.e. retouch on alternate faces) abrupt retouch creating concave edge - two retouched edges together form long narrow point with triangular cross-section - facets along retouched point are worn with areas of diffuse polish; relatively large piece comparable to awls (a variation of the *meche de foret* drill bit) found at the E.Mes site of Star Carr (e.g. Clark 1954: fig 39, #102 & 105); mid to dark-grey opaque flint
050d	end scraper (T)	Mes/E.Neo	3.9	43x27				yes	comp	pron	feath	no	b-l flake, with facetted butt - prob abrupt retouch of prox end, as facets & surface along dorsal margin are worn with diffuse polish - suggests unusual scraper used dorsal side downwards (see also 046c); poss expedient adaptation of core rejuvenation flake; unusual form more consistent with Mes; mid to dark-grey opaque Wolds flint, with chalky inclusions
050e	flake (S)		28.0	40x56	20 T.A				flat	pron	feath	no	thick, irreg hard hammer flake, prob from early stages of core reduction; mid-grey opaque Wolds flint, with dark-grey & chalky inclusions
050f	flake (S)		3.0	20x31	20 T.A	partly			flat	pron	feath	no	irreg hard hammer flake, with dorsal scars of similar removals from 1 platf; refits to 050g; dark-grey opaque Wolds flint, with 'bubbly' & rusty inclusions
050g	flake (S)		3.5	22x29	40 T.A	partly			flat	pron	feath	no	irreg hard hammer flake, with dorsal scars of similar removals from 1 platf; refits to 050f, which is an earlier removal; dark-grey opaque Wolds flint, with 'bubbly' & rusty inclusions
050h	flake (T)		1.9	23x20					flat	pron	feath	no	irreg hard hammer flake, with dorsal scars suggesting b-l removals from 1 platf; pale-grey opaque Wolds flint, with 'bubbly' inclusions
050i	flake (S)		0.7	12x18	20 T.A	partly			abraded	v.sm.pr	feath	no	small flake, poss trimming edge of core during early stages of reduction?; dark-grey opaque Wolds flint, with chalky inclusions
052a	flake (S)		7.1	21x40	30 A	partly			flat	pron	feath	no	irreg hard hammer flake, with dorsal scars suggesting similar removals; crushed & abraded natural thermal flake ridges on dorsal surface; dark-grey opaque Wolds flint, with 'bubbly' & chalky inclusions
052b	flake (S)		1.3	no	60 T.A	partly					feath	no	dist end of flake or broad blade, prob deliberately truncated; mid-grey opaque Wolds flint
054a	end & side scraper (P)	E.Neo	11.2	45x30	80 T.R.A			yes	flat	pron	feath	no	long flake with abrupt serial retouch along dist end, with contiguous semi-abrupt/invasive retouch extending half way along 1 lat edge, &

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													irreg spalls detached from prox end of other lat edge; mid-grey opaque Wolds flint, with 'bubbly' inclusions
054b	flake (S)		60.5	72x73	40 T.R.A				comp	pron	feath	no	v large flake, poss from discoidal core - dorsal scars indicate removal of similar large hard hammer flakes from rotating platf - poss from early stages of reduction of bifacial core tool; mottled mid to dark-grey opaque Wolds flint, with 'bubbly' and chalky inclusions
054c	b-l flake (T)	L.Mes/E.Neo	1.6	33x18					crushed	diffuse	feath	no	small rod-like b-l flake, poss detached from type A blade core, some platf edge prep; mid-grey opaque Wolds flint
054d	b-l flake (T)	L.Mes/E.Neo	1.2	no					flat	v.sm.pr			prox end of b-l flake, poss detached from type A blade core; platf edge prep; pale-grey opaque Wolds flint, with white inclusions;
054e	flake (T)	L.Mes/E.Neo	5.7	33x32					flat	pron	feath	no	irreg tapering flake, poss from type A blade core; pale-grey opaque Wolds flint, with chalky inclusions
054f	b-l flake (P)	L.Mes/E.Neo	3.0	34x13	100 T.R.A				cort	diffuse	feath	no	small cortical b-l flake, with large hinged eraillure flake detached from ventral surface; mid-grey opaque Wolds flint
054g	flake (S)		17.0	no	50 T.R.A	partly					feath	no	dist frag of large flake, poss deliberately truncated; mottled mid to dark-grey opaque Wolds flint, with 'bubbly' inclusions
054h	notched flake (P)		19.4	43x52	90 T.R.A			yes			feath	no	dist end of large flake, deliberately truncated, with localised abrupt retouch removing spur along truncation scar (backing); relatively large invasive flake detached from 1 lat edge to create notch 12mm wide & 4mm deep - on dorsal surface two areas of neg flake scar assoc with notch have glossy polish - on ventral surface two v narrow straight bands of glossy polish diverge from same initial point on margin of notch; mottled mid to dark-grey opaque Wolds flint, with 'bubbly' inclusions
054i	flake (S)		13.1	no	60 T.R.A				cort	pron		no	prox end of large flake , poss deliberately truncated, dorsal scars indicate flake removal from 1 platf, poss early stages of working core; brownish-grey semi-trans flint
054j	flake (S)	Mes/E.Neo	4.1	34x25	20 T.R.A	partly			flat	sm.pr	feath	no	slightly irreg flake, poss by indirect percussion (punch); dorsal scars indicate similar removals from single platf; mid-grey opaque Wolds flint, with 'bubbly' inclusions
054k	flake (T)		12.1	50x35					comp	pron	feath	yes	hard hammer flake with facetted butt, poss from discoidal core; pale-grey opaque Wolds flint, with black & chalky inclusions
054l	flake (S)	Mes/E.Neo	3.0	25x27	60 T.R.A	partly			cort	pron	feath	no	irreg hard hammer flake, contrasting with only dorsal scar - a bladelet detached by indirect percussion (punch); poss same core as 054m & n - brownish-grey trans flint
054m	flake (S)	Mes/E.Neo	0.5	no	10 T.R.A						feath	no	dist end of flake broad blade, prob deliberately truncated; dorsal scars suggest removal of blades; poss same core as 054l & n - brownish-grey trans flint
054n	chip (S)		<0.1	no	20 T.A							no	small frag, with surviving flake surfaces; poss same core as 054l & m - brownish-grey trans flint
054p	b-l flake (T)		0.8	no		partly					hinge		dist end of b-l flake, poss from type A core; mid-grey opaque Wolds flint, with 'bubbly' inclusions
054q	chip (S)		1.1	no	40 T.R.A							no	small frag or irreg flake preserving neg scar of small flake on 1 surface; mid-grey opaque Wolds flint, with 'bubbly' inclusions
054r	chip (S)		2.5	no	10 T.R.A							no	small frag, with surviving flake surfaces; mid-grey opaque Wolds flint, with dark inclusions
054s	chip (S)		1.6	no	10							no	small frag, with surviving flake surfaces; mid-grey opaque Wolds flint

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
054t	chunk (S)		25.3	no	T.R.A 50 T.A							no	frag, poss dist end of v thick flake, with surviving flake surfaces suggesting working from 3+ platfs; dark-grey opaque Wolds flint, with white inclusions
054u	chunk (P)		19.2	no	70 T.A							no	poss section of large truncated flake, with surviving flake surfaces; mottled mid to dark-grey opaque Wolds flint
054v	chunk (P)		46.0	no	90 T.A								large b-l piece, with extreme hinge-type termination - removes corner of abraded pebble; dark-grey opaque Wolds flint, with 'bubbly' inclusions
054w	core (S)	Mes/E.Neo	71.4	46x58x41	30 T.R.A							no	type A2 core - large irreg piece; 1 surface indicates removal of bladelets/blades (8+ removals), with soft hammer or punch - 4 insipient cones on platf (miss-hits); part of platf v irreg due to chalky inclusions, prob resulting in premature discard of core; mid-grey opaque Wolds flint, with chalky & 'bubbly' inclusions
054x	chunk (P)		38.8	no	90 T.A							no	large irreg frag, with surviving flake surfaces; brownish-grey opaque Wolds flint, with 'bubbly' inclusions
060a	b-l flake (T)	E.Mes/E.Neo	9.1	55x28					flat	pron	feath		b-l flake, dorsal scars suggest detached from type A blade core, with limited platf edge prep; mid-grey opaque Wolds flint, with 'bubbly' inclusions;
060b	b-l flake (S)	E.Mes/E.Neo	9.2	no	40 T.A						feath	no	dist end of large b-l flake, dorsal scars suggest detached from type A blade core; mid-grey opaque Wolds flint, with chalky inclusions;
066a	utilised flake (knife) (S)	E.Mes	37.9	63x42	20 T.R.A			poss	flat	pron	feath	no	large hard hammer flake, detached from type B3 core predominantly producing broad blades - platf edge prep with abrasion; dist end & prox half of one lat edge cortical, other half of lat edge is convex & has been chipped or invasively retouched along ventral margin - facets and margin have localised areas of diffuse and glossy polish; parallels with utilised flakes from Star Carr (e.g. fig 45, #164: E.Mes); mottled pale to mid-grey opaque Wolds flint, with 'bubbly' inclusions
076a	b-l flake (S)	Mes/E.Neo	4.9	37x23	30 T.R.A	partly			flat	pron	feath		broad b-l flake with dorsal scars of similar removals from 1 platf; mid-grey opaque Wolds flint, with chalky inclusions
076b	bladelet (T)	L.Mes/E.Neo	2.0	32x18		partly		poss	crushed	v.sm.pr	feath		bladelet, poss from type A core by indirect percussion; abrupt spalls removed irreg along 1 lat edge (other lat edge has abrupt flake scar) - poss retouch, but flake margins are worn & chipped, suggesting post-dep rolling/damage; mid-grey opaque Wolds flint, with chalky inclusions
076c	utilised b-l flake (T)	Mes/E.Neo	5.0	no				prob u/w	flat	pron			prox frag of broad b-l flake with dorsal scars of similar removals from 1 platf; most of dist end truncated, prob deliberately, small surviving section of dist end has area of glossy polish along margin; mottled pale to mid-grey opaque Wolds flint, with 'bubbly' inclusions
076d	bladelet (S)	L.Mes/E.Neo	2.9	no	50 T.R.A	partly			flat	v.sm.pr		no	prox frag of bladelet, poss from type A core by indirect percussion, platf edge prep; poss deliberately truncated; mottled mid to dark-grey opaque Wolds flint, with chalky, 'bubbly' & rusty inclusions
076e	b-l flake (T)	L.Mes/E.Neo	0.3	no							feath		dist end of blade or b-l flake; mid-grey opaque Wolds flint, with dark inclusions
098a	blade (T)	L.Mes/E.Neo	0.8	no		partly					hinge	no	dist end of blade/bladelet, with dorsal scars of similar removals; prob deliberately truncated; pale-grey opaque Wolds flint, with 'bubbly' inclusions
110a	b-l flake (S)	L.Mes/E.Neo	9.4	54x17	20 T.A	partly			abraded	diffuse	feath	no	rod-like b-l flake, dorsal scars suggest detached from type B1 blade core, with distinct platf edge prep; dark-grey opaque Wolds flint, with

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													chalky, 'bubbly' & rusty inclusions
110b	flake (S)	Mes/E.Neo	19.2	39x41	30 T.A	partly			cort	sm.pr	hinge	no	thick, irreg flake , prob from type A flake core, with some platf edge prep; mottled pale to mid-grey opaque Wolds flint, with 'bubbly' inclusions
110c	flake (T)		4.4	33x39					flat	pron	feath		irreg flake from platf at 90 degrees to previous removals; pale-grey opaque Wolds flint, with 'bubbly' inclusions
118a	flake (S)	Mes/E.Neo	3.2	21x32	20 T.R.A			prob	cort	sm.pr	feath		irreg flake with some platf edge prep; 1 lat edge prob retouched by removal of abrupt spalls, although poss post-dep rolling/damage; mid-grey opaque Wolds flint, with dark & 'bubbly' inclusions
118b	flake (T)	L.Mes/E.Neo	6.8	23x39		partly			flat	pron	feath		squat irreg flake, prob removed from type B2 blade core worked with small hard hammer; mottled brownish-grey & mid-grey opaque Wolds flint, with dark & 'bubbly' inclusions
118c	b-l flake (S)	L.Mes/E.Neo	1.4	no	30 T.A	partly					feath	no	dist end of blade or b-l flake from type A core; truncated in antiquity; greyish-brown trans flint
118d	chip (S)		2.4	no	30 T.R.A	yes						no	frag with surviving flake surfaces; pale-grey opaque Wolds flint
126a	b-l flake (S)	L.Mes/E.Neo	0.9	no	20 T.A				flat	sm.pr		yes	prox frag of bladelet or b-l flake, with platf edge prep; chipping to flake margins; greyish-brown trans flint
127a	b-l flake (S)	L.Mes/E.Neo	1.1	22x13	30 T.A	partly			flat	sm.pr	feath	yes	small b-l flake, with platf edge prep; chipping to flake margins; mid-grey opaque Wolds flint
128a	b-l flake (S)	L.Mes/E.Neo	1.0	no	10 T.A				cort				prox & medial frag of small b-l flake, with platf edge prep and neg scars of bladelets removed from single platf; brownish-grey trans flint
129a	core (S)	E.Neo	77.4	53x49x25	10 T.R.A							no	type B3 core (20+ removals) - both platfs predominantly produced blades (soft hammer/indirect percussion), with minimal platf edge prep & evidence for working on an anvil; 1 platf has larger flake removed, prob with hard hammer; mottled pale to mid-grey opaque Wolds flint, with chalky inclusions
129b	flake (T)		6.5	28x41					flat	pron	feath	yes	irreg hard hammer flake, with dorsal scars of similar removals from 1 platf; mottled pale to mid-grey opaque Wolds flint, with chalky inclusions
129c	saw/denticulate (T)	Mes/Neo	4.8	44x19				yes					blade, poss from type B3 core; butt removed & scar retouched; dist end & adjacent half 1 lat edge retouched by removal of series of small flakes (5 - 7mm wide) to create cog-like convex edge - adjacent part of other lat edge has larger notch (15mm wide & 3mm deep) created by serial removal of abrupt spalls - latter likely to be backing o enable forefinger to apply pressure through denticulate edge; prob from same core as 129d; mottled caramel-grey opaque Wolds flint, with dark & chalky inclusions
129d	retouched flake (T)	Mes/Neo	2.1	no				yes					dist end of flake or blade; truncation scar has been retouched by bifacial removal of small invasive flakes, semi-abrupt & invasive flakes also bifacial removed from surviving portion of opposing dist end (section at corner 1 lat edge/dist end has broken away) - 1 lat edge is unmodified; prob from same core as 129c; mottled caramel-grey opaque Wolds flint, with dark & chalky inclusions
129e	piercer/notched flake (S)	Neo	14.4	33x33	20 T.R.A			yes				yes	composite tool - frag, poss dist end of large irreg flake from type B1 core, poss deliberately truncated; upper portion 1 lat edge has concave cortical margin, adjacent margin on ventral surface has diffuse polish & wear suggesting expedient use as a notched flake; junction of dist end

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													& other lat edge has been minimally retouched to create short point with triangular cross-section, facets of point are worn; such tools increasingly common with progress through Neo (i.e. prob mid-L.Neo?) mid-grey opaque Wolds flint, with bubbly inclusions
129f	chip (T)		0.5	no								no	frag with surviving flake surfaces; dark-grey flint
131a	chip (T)		0.4	no			poss					no	frag with surviving flake surfaces; dark-grey flint
139a	blade (S)	Mes/E.Neo	3.3	40x17	20 T.A				cort	diffuse	feath	no	blade, with scar of similar removal from same platf & a flake from an oblique platf; pale-grey opaque Wolds flint, with 'bubbly' inclusions
162a	b-l flake (S)	L.Mes/E.Neo	0.4	no	40 T.A	partly			flat	v.sm.pr		yes	prox frag of bladelet or small b-l flake; mid-grey opaque Wolds flint
164a	b-l flake (S)	L.Mes/E.Neo	0.8	no	50 T.A	partly					feath	no	dist frag of bladelet or small b-l flake, poss deliberately truncated; greyish-brown semi-trans flint
178a	b-l flake (S)	E.Mes/E.Neo	16.1	61x32	30 T.A	partly			comp	pron	feath	yes	large irreg b-l flake, prob from type B1 flake & blade core, prob soft hammer removal; signif chipping a retouch-like removals from lat edges, but prob all post-dep damage, after formation of patina on main flakes surfaces; mottled pale to mid-grey opaque Wolds flint, with chalky & dark inclusions
178b	b-l flake (T)	Mes/E.Neo	3.1	no		partly			abraded	sm.pr		yes	prox frag of blade or b-l flake, poss deliberately truncated; mid-grey opaque Wolds flint, with 'bubbly' inclusions
178c	b-l flake (P)	Mes/E.Neo	4.3	no	100 T.R.A	partly						yes	dist frag of blade or b-l flake, poss deliberately truncated, also tip of dist end broken off & some chipping to margins; brownish-grey trans flint
178d	flake (S)		16.2	44x27	20 T.A				flat	pron			thick & v irreg flake, from type B or C blade & flake core, with platf prep along surviving platf edge; mid-grey opaque Wolds flint, with 'bubbly' inclusions
178e	flake (T)		6.0	no		partly					feath	yes	dist end of irreg flake from type B or C core; mid-grey opaque Wolds flint, with 'bubbly' inclusions
178f	chunk (S)		16.6	no	20 T.A								frag with surviving flake surfaces indicating use of multiple platfs; mottled pale to mid-grey opaque Wolds flint
191a	flake (T)	Mes/Neo	4.9	no		partly					feath		dist frag of flake, dorsal scars suggest removed from type B3 core with platf edge prep, mottled pale to mid-grey opaque Wolds flint, with dark and 'bubbly' inclusions
199a	flake (S)	Mes/Neo	13.6	34x48	30 T.R.A			prob			feath		denticulate? - dist end of large irreg flake, truncated effected by 3 different fresh breaks, prob deliberate; the convex dist margin has scalloped edge from removal of small semi-abrupt hard hammer flakes leaving projecting spurs 6- 9mm wide - 1 of spurs has broken off and others show slight crushing along margins - suggests piece was a denticulate (although absence of severe wear could indicate the irregular edge is actually platf edge of crudely worked pebble core); mottled pale to mid-grey opaque Wolds flint, with 'bubbly' inclusions
199b	b-l flake (S)	Mes/E.Neo	2.3	no	30 T.R.A	partly							medial frag of blade/b-l flake, poss from type B1 blade core, with platf edge prep; mottled caramel & mid-grey opaque Wolds flint, with 'bubbly' inclusions
212a	chip (P)		3.0	no	90 T.R.A	partly						no	flake-like frag with surviving flake surfaces; mid-grey opaque Wolds flint
217a	retouched flake (S)	Neo	12.8	32x42	40 T.A	partly		yes	flat	pron	feath		irreg bending flake poss detached from type B blade core; dist end retouched by removal of small invasive flakes & spalls - some of facets & areas of ventral margin have diffuse polish; mid-grey opaque Wolds

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
													flint, with chalky inclusions
217b	retouched blade	E.Neo	8.5	52x25	30 T.R.A			yes					broad blade with butt and dist end detached, prob from type A blade core; 1 lat edge cortical, other lat edge has invasive retouch along most of ventral margin - dorsal margin & some of facets are worn & have diffuse polish; mottled to dark-grey opaque Wolds flint, with chalky inclusions
217c	flake (T)		9.7	32x35					crushed	pron	hinge		irreg hard hammer flake, with dorsal scar of similar removal - poss from discoidal core; mottled caramel to mid-grey opaque Wolds flint, with dark & chalky inclusions
232a	side & end scraper (T)	L.Neo/EBA	5.7	35x26		partly		yes	flat	sm.pr		no	relatively small & thin flake blank, poss from type A core; small spalls removed to abruptly retouch dist end and semi-abruptly retouch lateral edge; pale-grey opaque Wolds flint
232b	knife (S)	L.Neo	49.3	55x46	60 T.R.A			yes					large bifacial worked flake; dorsal margin - small semi-abrupt flakes removed from 3 sides; ventral margin - several abrupt/semi-abrupt flakes detached from one long edge creating uneven backed edge, other long edge has overlapping series of semi-abrupt/acute flakes and spalls detached, both shorter edges have had hard hammer flakes detached leaving large pron neg scars to improve grip; similar to ovate, but cruder, acutely retouched edge could be used for cutting or chopping; mid-grey opaque Wolds flint, with chalky, 'bubbly' & dark inclusions
236a	b-l flake (S)	Mes/E.Neo	3.3	no	30 T.R.A	partly					feath		dist frag of blade or b-l flake, poss deliberately truncated; poss from type B3 core?; mid-grey opaque Wolds flint, with chalky inclusions
236b	flake (T)	Mes	2.2	no				prob	flat	pron		yes	prox frag of blade or flake from blade core (poss type A, with some platf edge prep); abrupt spalls detached from a large proportion of margin, suggesting piece is an expedient scraper or micro-burin, but post-dep damage also poss; brownish-grey opaque Wolds flint with pale inclusions
237a	b-l flake (S)	L.Mes/E.Neo	0.5	22x10	10 T.A	partly			crushed	v.sm.pr	step	no	small b-l flake from type B flake & bladelet core, with platf edge prep (L.Mes?); mid-grey opaque Wolds flint, with 'bubbly' inclusions
237b	flake (S)	Mes/Neo	4.0	no	50 T.R.A	partly			cort	sm.pr		yes	prox frag of flake or b-l flake, poss from type A core; mid-grey opaque Wolds flint, with chalky inclusions
237c	flake (S)		4.8	25x28	40 T.R.A				flat	sm.pr	hinge	no	squat flake from type B or C core, dorsal scars suggest removal of similar flakes; mid-grey opaque Wolds flint, with 'bubbly' inclusions
237d	flake (T)	L.Mes/E.Neo	0.2	14x10					flat	v.sm.pr	feath	yes	v small b-l flake, prob from trimming of platf edge of blade core; mid-grey opaque Wolds flint
237e	flake (T)	Mes/Neo	2.5	18x23					flat	pron	feath	yes	squat hard hammer flake, poss from type B3 core, with platf edge prep; dark-grey opaque Wolds flint, with 'bubbly' inclusions
237f	b-l flake (S)	Mes/E.Neo	16.0	49x30	60 T.R.A				crushed	diffuse	feath	yes	irreg b-l flake, poss type A blade core; pale-grey opaque Wolds flint, with 'bubbly' inclusions
237g	piercer (S)	L.Mes/E.Neo	2.6	20x28	30 T.R.A	partly		yes	flat	sm.pr	feath		squat irreg flake, prob from type B1 bladelet core; spur 1 side old platf (junction lat edge & dist end) - chipping & poss retouch to point - irreg abrupt retouch (spalls) on dist end & 1 lat edge (backing); prob expedient tool; mid-grey opaque Wolds flint, with chalky inclusions
237h	flake (S)		8.1	no	20 T.R.A						feath		dist frag of flake, poss from type A blade/flake core; poss deliberately truncated; mid-grey opaque Wolds flint, with 'bubbly' inclusions

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
237i	flake (T)		2.4	no							feath	yes	dist frag of flake, poss from type A blade/flake core; mid-grey opaque Wolds flint, with 'bubbly' inclusions
237j	piercer (T)	E.Neo	5.0	25x28				yes	comp	pron	feath	yes	hard hammer flake, poss type B flake/blade core; spur 1 side platf (junction with lat edge) - poss minimal retouch to point, facets worn & rounded; irreg abrupt retouch (spalls) on dist end & adjacent lat edge (backing); prob expedient tool; mid-grey opaque Wolds flint, with 'bubbly' inclusions
237k	scraper (S)	E.Neo	16.9	35x37	10 T.A			yes				no	thick frag irreg waste - poss from type B1 core; 1 end bifacially retouched - small invasive flakes ventral surface & semi-abrupt flakes/spalls dorsal surface; opposing end, 2/3 invasive flakes from ventral surface (prob backing to assist handling), with small spalls from both sides (further backing); mid-grey opaque Wolds flint, with chalky inclusions
237l	flake (T)	Mes/Neo	0.8	19x22					flat	diffuse	feath	yes	irreg flake, from bladelet core (rotating platf), poss platf trimming; mid-grey opaque Wolds flint, with 'bubbly' inclusions
238a	core (S)	Neo	66.4	38x53x35	60 T.R.A		yes					no	type A2 pebble core, flat platf, c. 5 removals - hard hammer flakes; core subsequently burnt, granular structure & potlids detached; dark-grey opaque Wolds flint
239a	flake (T)	L.Mes/E.Neo	1.7	24x22					flat	sm.pr	feath	no	flake, prob from type A bladelet/flake core, platf edge prep; dark-grey opaque Wolds flint, with dark inclusions
239b	b-l flake (T)	Mes/E.Neo	2.1	31x18							feath		b-l flake, with small butt detached, poss type B blade core, platf edge prep; dark-grey opaque Wolds flint, with chalky inclusions
239c	flake (T)	Mes/E.Neo	4.1	20x29					flat	diffuse		no	irreg flake - dorsal scars suggest similar removals; mottled pale to mid-grey opaque Wolds flint
240a	core (S)		19.1	28x49x18	50 T.R.A							no	flake-like pebble core, type B3 (flakes), worked to exhaustion; mottled mid to dark-grey opaque Wolds flint, with chalky inclusions
240b	flake (S)	L.Mes/E.Neo	2.6	27x18	60 T.R.A		poss		flat	v.sm.pr	feath	yes	v small b-l flake, platf edge prep, poss early stages of blade core prep; dark-grey opaque Wolds flint
240c	blade (S)	L.Mes/E.Neo	4.1	39x18	30 T.A				crushed	sm.pr	feath		blade, prob from type A core, poss worked on anvil; mottled mid to dark-grey opaque Wolds Flint, with chalky inclusions
240d	burin (T)	L.Mes	0.8	25x13				yes	crushed	diffuse		no	single-angle burin - prox end of bladelet or b-l flake from blade core; prob deliberately truncated (snapped); burin spall removed from butt, detaching ventral side of prox lat edge; opposite section lat margin has diffuse polish; mid-grey opaque Wolds flint
240e	flake (P)	Mes/Neo	6.7	42x29	90 T.R.A				cort	diffuse	feath	no	poss from core worked on anvil; mid-grey opaque Wolds flint, with chalky inclusions
240f	b-l flake (S)	Mes/E.Neo	3.7	32x20	20 T.A				flat	diffuse	feath	no	b-l flake, poss type A blade core; mid-grey opaque Wolds flint
240g	b-l flake (T)	Mes/E.Neo	2.2	27x18					flat	diffuse	feath	no	b-l flake, poss type A blade core, platf edge prep; mottled pale to mid-grey opaque Wolds flint
240h	b-l flake (T)	L.Mes/E.Neo	1.6	28x16		partly			flat	sm.pr	feath	no	irreg b-l flake, poss type A blade core; 1 recort scar raises poss of reuse; mid-grey opaque Wolds flint, with dark inclusions
240i	flake (S)	Mes/E.Neo	6.9	19x31	20 T.R.A				flat	pron	feath	no	relatively squat hard hammer flake, prob from type A blade/flake core, minimal platf edge prep; pale-grey opaque Wolds flint
240j	flake (T)	Mes/Neo	13.8	45x47					comp	pron	hinge	no	large hard hammer flake; dorsal scars indicate removal of similar from rotating platf, while facetted edges suggest discoidal core - poss flake roughout/preform stage of bifacial core tool manufacture; pale-grey opaque Wolds flint, with chalky inclusions

WIRE 05: worked and modified lithic materials

Context	Type	Date	Weight	Comp	Cortex	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
240k	flake (S)	Mes/Neo	6.7	28x38	50 T.R.A				flat	pron	feath		hard hammer flake, poss from type A flake core; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240l	flake (T)	Mes/Neo	9.0	32x38					flat	pron	hinge	no	irreg hard hammer flake, dorsal scars indicate similar removals; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240m	flake (S)	Mes/E.Neo	5.4	no	10 T.R.A		yes		crushed	pron	feath	yes	prox & medial frag irreg flake; heavily burnt, with granular structure & potlids detached; mid-grey opaque Wolds flint, with chalky inclusions
240n	b-l flake (S)	E.Neo	11.8	42x30	20 T.R.A		yes		flat	pron	feath	yes	b-l hard hammer flake, poss from type A broad blade core; heavily burnt, with granular structure & potlids detached; brownish-grey opaque Wolds flint, with 'bubbly' inclusions
240p	flake (S)	Mes/E.Neo	8.1	37x24	10 T.R.A		yes		crushed	diffuse	feath		irreg flake, from blade core, prob type A with platf edge prep; heavily burnt, partially calcined, with granular structure, potlids & 1 flake surface detached; grey opaque Wolds flint, with chalky inclusions
240q	b-l flake (S)	L.Mes/E.Neo	1.9	32x10	50 T.R.A				flat	v.sm.pr	feath	no	irreg rod-like b-l flake, prob blade core; mid to dark-grey opaque Wolds flint
240r	flake (S)	Mes/Neo	4.9	39x25	30 T.R.A				cort	diffuse	feath	no	irreg flake, dorsal scars suggest from type B2 core with platf edge prep; mottled mid to dark-grey opaque Wolds flint, with 'bubbly' inclusions
240s	flake (S)		1.2	14x23	10 T.A				flat	sm.pr	hinge	no	squat irreg flake, removed from type B1 core - poss as core maintenance, as removes neg scar of hinged termination; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240t	flake (S)	Mes/E.Neo	1.3	21x15	20 T.A	partly			cort	diffuse	feath	no	flake from type C core, prob blade core; poss core maintenance, as 1st removal from the platf & removes ridge at junction of 3 neg scars; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240u	flake (T)		2.7	18x25					flat	pron	feath		hard hammer flake, with neg scar of similar removal; mid-grey opaque Wolds flint
240v	flake (T)	Mes/Neo	0.3	9x12		partly			crushed	diffuse	hinge	no	v small flake, prob from trimming of platf edge of blade core - dorsal scars from edge prep; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240w	flake (P)		2.0	no	90 T.R.A						feath		dist end of flake, poss deliberately truncated; mid-grey opaque Wolds flint, with dark & 'bubbly' inclusions
240x	core fragment (T)	E.Neo	53.9	58x48x21		partly						no	large irreg frag of type Cb (4+ platfs) producing broad blades & flakes; 2 sections of plaft edge, with some platf edge prep & overhang/lip surrounding small neg bulb = soft hammer; mid-grey opaque Wolds flint, with chalky & 'bubbly' inclusions
240y	chunk (P)		28.7	no	80 T.R.A								frag with surviving flake surfaces ; mottled pale to mid-grey opaque Wolds flint, with dark & chalky inclusions
240z	retouched flake (T)	Mes/E.Neo	22.4	51x40							feath	no	v irreg, thick flake, poss from type A blade & flake core (3+ blades with some platf prep); butt thinned & bulb removed by several b-l invasive flakes struck from prox end - small abrupt spalls also detached along dorsal margin of former platf edge, facets are worn & rounded, prob used as expedient scraper; mid-grey opaque Wolds flint, with 'bubbly' inclusions
240aa	chunk (T)		8.3	no									frag with surviving flake surfaces; pale-grey opaque Wolds flint, with chalky inclusions

WIRE 05: worked and modified lithic materials

SUMMARY:

No. of finds	Type	Date	Weight (g)	Comp		Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage
192	end scraper **2** end & side scraper **2** scraper **1** notched flake **1** piercer/notched flake **1** piercer **3** awl **1** serrated blade **1** saw/denticulate **1** burin **1** knife **1** retouched flake **3** retouched blade **1** utilised b-l flake **2** flake (P) **3** flake (S) **39** flake (T) **38** blade (S) **4** blade (T) **4** blade-like flake (P) **2** blade-like flake (S) **20** blade-like flake (T) **15** core **6** core fragment **2** chunk/chip **38**	E. Mes **2** E.Mes/E.Neo **7** Mes/E.Neo **31** Mes/Neo **14** Mes **2** L.Mes **1** L.Mes/E.Neo **36** E.Neo **12** Neo **8** L.Neo **1** L.Neo/EBA **1**	**1801.2**g	yes **107** no **85**	0 **81** 10 **18** 20 **24** 30 **23** 40 **11** 50 **11** 60 **11** 70 **2** 80 **2** 90 **7** 100 **2**	yes **4** partly **51**	yes **16** poss **5**	yes **18** prob **3** poss **4** prob u/w **2**	flat **58** cort **13** comp **17** crushed **12** abraded **5**	diff **20** pron **44** sm.pr **23** v.sm.pr **16**	feath **93** hinge **14** step **3**	yes **39** no **100**

Willows A, Reighton, East Yorkshire
WIRE 05

Lithic Materials: Assessment

Report by Jim Rylatt – May 2006

1.0 Introduction

This report concerns an assemblage of lithic material recovered during an archaeological excavation at the Willows A site, Reighton. A total of 192 pieces of struck or modified flint were retrieved, along with a whetstone. The items with diagnostic traits were indicative of activity extending from the early Mesolithic to the late Neolithic or early Bronze Age. The different elements of this collection comprised two end scrapers, two end & side scrapers, a miscellaneous scraper , a notched flake, a combined piercer/notched flake, three piercers, an awl, one serrated blade, a saw/denticulate, a burin, two knives, three retouched flakes, one retouched blade, one utilised blade-like flake, three unmodified primary flakes, 39 secondary flakes, 38 tertiary flakes, four secondary blades, four tertiary blades, two primary blade-like flakes, 20 secondary blade-like flakes, fifteen tertiary blade-like flakes, six cores, two core fragments and 38 pieces of irregular waste.

2.0 Method of study

All of the artefacts were physically examined in order to create an archive catalogue. The attributes of each piece were noted to determine its position in the reduction sequence, any observable characteristics of the reduction technology and an assessment of its functional potential. The catalogue also records the presence of patination, cortex, and whether any piece has been burnt. Additionally, metrical data was recorded for complete flakes or tools, and each piece was weighed. Selected artefacts were also examined with a x3 hand-lens to determine whether there was any evidence of localised modification that could be indicative of use.

3.0 Assemblage Description

3.1 Raw materials

3.1.1 Colour

Although there is a degree of variability in the raw materials, the majority of the artefacts were manufactured from mid-grey opaque flint, which often contained frequent white 'bubbly' flecks. There was also some paler or darker-grey opaque flint. Variation in the quantities and forms of the inclusions meant that there was frequently a range of different shades within a single piece of flint and many incorporating chalky masses. Overall, the characteristics of this material indicate that the bulk of the assemblage consists of flint derived from strata formed within the chalk deposits of the Yorkshire Wolds. The assemblage also contained a few pieces of greyish-brown and brownish-grey translucent flint, which were of a relatively good quality, having relatively few flaws or fossils.

3.1.2 Cortex

There is a relatively high incidence of cortex on the items from the site, with 111 pieces having some surviving cortex (57.8%). Cortical surfaces are generally creamy or pale-brown in colour, have relatively thin cross-sections and a solid matrix, while relatively large areas often have a rounded profile. In combination, these characteristics suggest that flint pebbles were being utilised for tool production (i.e. a large surface area relative to volume).

The largest proportion of the cortical pieces had cortex covering less than 30% of the surface area (65 pieces: 58.6% of cortical component) (fig. 1). There were a 33 pieces with 30 to 60 per cent surface area coverage (29.7% of cortical component) and a further 13 pieces with 60 to 100 per cent (11.7%). The presence of primary flakes and other pieces with large areas of cortex indicate that there were a number of occasions when the initial stages of core reduction had been undertaken within the area that was investigated.

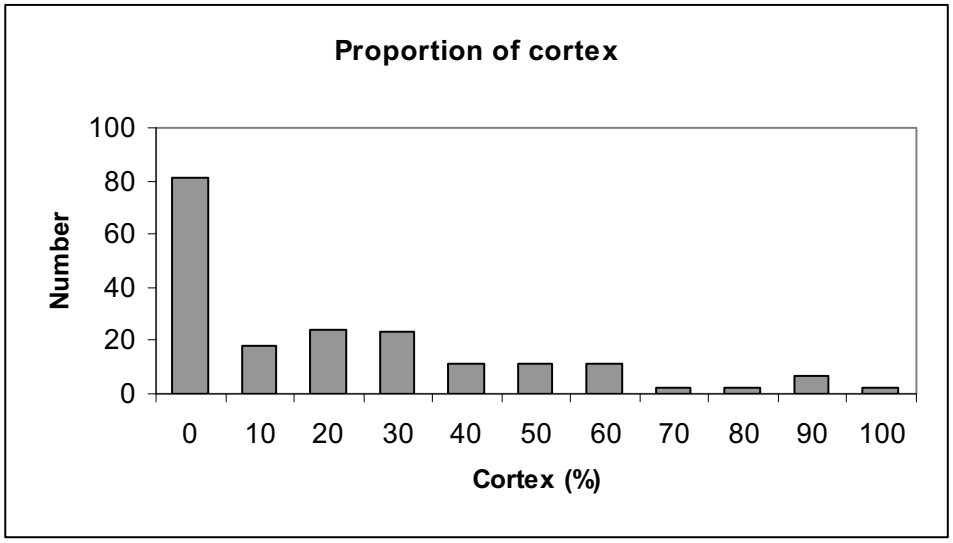

Figure 1: The relative proportions of cortex on the worked and modified flint from the Willows A site, Reighton.

3.1.3 Sources

It is likely that the flint raw materials were obtained locally. The village of Reighton sits in a valley presumably formed by glacial melt-water running eastward off the Wolds. It is likely that the outwash will have deposited gravel along the valley floor and sides, 19th century Ordnance Survey maps noting a gravel pit to the south-west of the village. It is also possible that some flint was gathered from the deposits exposed along the beech situated approximately 2km to the east of the site.

The pebbles will have been rolled and battered by fluvial/tidal forces and may also have been subject to the extreme temperatures prevailing in a glacial or peri-glacial environment. These processes will have caused a proportion of the nodules to fracture, creating the sub-angular, recorticated surfaces evident on a number of the artefacts. Furthermore, these processes will have restricted the size of the majority of the pebbles, which is demonstrated by the metrical data collected from the assemblage; the maximum dimension of any flake was 80mm (001a), while the mean length was 30.9mm. The collection of flint from secondary deposits is likely to have been a relatively expedient process, which may simply have involved the inspection of tree throws or erosion scars along the banks of rivers and streams (Edmonds 1995). Alternatively, the creation of slight delves in the upper surface of out-cropping gravel deposits may have proved to be a more reliable means of acquisition.

3.2 Condition

3.2.1 Patination

The level of patination was largely restricted to a milky discolouration (51 pieces, 26.6%), with only four pieces having a more developed, opaque surface (2.1%).

3.2.2 Burning

Elements of the assemblage exhibited evidence of thermal damage resulting from burning (sixteen pieces – 8.3%, with a further five pieces that may have been heated – 2.6%). The crystalline

structure of these pieces has been altered and in most cases small pot-lids have become detached. There is a correlation between the burnt material and its context, as fourteen of the burnt or possibly burnt examples were recovered from only two small pits; within pit **[023]** there were eight pieces (four in **(024)**/**(025)** and four in **(240)**), while pit **[028]** contained the other six (all in **(029)**). Virtually all of the burnt material consisted of irregular waste and debitage, but there was one burnt tool, a serrated blade (SF 1 - 029a). One of the pieces from **[028]** was not worked - 029n was a large fragment of a shattered pot-boiler, which had been used to heat water. This indicates that there was a hearth on, or in the immediate vicinity of the site, and that domestic or craft activities were being undertaken.

In most cases it was possible to determine that the flint had been burnt after it had been knapped. However, it is unclear whether this was an economic process associated with the utilisation of lithic waste for some other purpose (e.g. pot temper), represented some form of cleansing at the end of discrete episodes of activity or merely reflects the unstructured dispersal of waste while people were reducing cores next to a fire.

3.2.3 Post-depositional damage

A large proportion of the assemblage is in an excellent state of preservation, having fresh and undamaged flake margins that are unchanged since manufacture and deposition (100 undamaged – 52.1%; 53 pieces indeterminate – 27.6%). The outstanding condition of these artefacts suggests that much of the assemblage was recovered from stratified deposits. Evidence of post-depositional damage was exhibited by only 39 pieces (20.3%), ten of which were recovered from the ploughsoil, **(001)**. Another seven damaged pieces were recovered from **(237)**, which is thought to be a buried ploughsoil, while another four came from a large quarry pit, **[178]**, and were therefore not within their primary contexts.

3.3 Composition of the assemblage

The archive catalogue indicates that there is lithic material from every stage of reduction, including some primary flakes, waste from the manufacture of tools and, other pieces that indicate the use and discard of definable types of tools.

3.3.1 Cores and core fragments

Six cores and two core fragments were recovered (table 1). Even when grouped together this material only constitutes 4.2% of the total assemblage. Four of the cores and both fragments were utilised in the production of blades, or blades and small flakes. Two of these had a single platform (046a and 054w - type A2), while another three had two perpendicular platforms (010a, 010b and 129a – type B3) (after Clark 1960).

	ID	Date	Type	Weight (g)	Dimensions (mm)
Cores	010a	Neo	B3 blade & flake	23.6	35x39x16
	046a	E.Neo	A2 blade & flake	39.1	40x40x25
	054w	Mes/E.Neo	A2 blade	71.4	46x58x41
	129a	E.Neo	B3 blade	77.4	53x49x25
	238a	Neo	A2 flake	66.4	38x53x35
	240a	-	B3 flake	19.1	28x49x18
			Total	297.0	
Core fragments	010b	Neo	B3 flake & blade	30.4	
	240x	E.Neo	Cb blade & flake	53.9	

Table 1: The attributes of the cores recovered from Willows A, Reighton.

It is notable that several cores had been discarded before they were exhausted (mean weight 49.5g) and there was little evidence for core rejuvenation. This suggests that the curation of raw materials was not a significant concern and that flint was relatively abundant in the immediate vicinity of the site (this observation is supported by the recovery of a flint pot-boiler - see 3.2.2). One possible effect of the apparent readiness to discard cores is that the microlithic proportions of some blades

could indicate that there is a direct correlation with later Mesolithic industries, rather than reflecting difficulties in the procurement of raw materials.

3.3.2 Irregular waste

The assemblage incorporated 38 chunks and chips (19.8%), which constitute the unintentional by-product of core reduction. Some of the chunks are relatively large suggesting that they were created during the earlier stages of core reduction. Several pits contained clusters of irregular waste (**[053]** eight pieces, **[028]** seven pieces, **[023]** six pieces and **[005]** four pieces), which could indicate there were knapping floors around the mid-point of the southern edge of the site.

3.3.3 Flakes and blades

Unmodified flakes and blades form 65.1% of the total assemblage, while the ratio of complete cores to unmodified flakes and blades is 1: 21. Pieces have been classified as blades on the basis of them exhibiting traits that are indicative of deliberate blade manufacture and also having a length to breadth ratio that is equal to or greater than 2: 1. Traits of blade manufacture include the creation of parallel-sided pieces, guiding ridges on the dorsal surface running parallel to the lateral margins, structured removal from curated cores and careful platform edge preparation. 'Blade-like flakes' is a less rigidly defined category that incorporates irregular elongated pieces manufactured using the same technologies that made blades.

A significant proportion of the unmodified flakes and blades were the product of blade technologies - a total of 71.2% of this material, comprising blades (eight pieces), blade-like flakes (37), or flakes that are the by-product of 'narrow flake' reduction technologies (44). In addition, some of the smaller flakes are likely to been produced during the preparation and maintenance of the platform edges of blade cores. Complete, unmodified blades range from 26mm to 40mm in length, while the complete flakes range in size from 72 x 73mm to examples as small as 12 x 18mm. A number of flakes appear to be the by-products of tool manufacture, including three pieces possibly removed during the creation of larger bifacial tools like axes and adzes (029c, 054b and 240j). It is possible that some of the broader unmodified flakes were also generated by technologies primarily focussed upon the production of blades. However, there are indications that some of this material could represent the residues of later Neolithic or early Bronze Age activity.

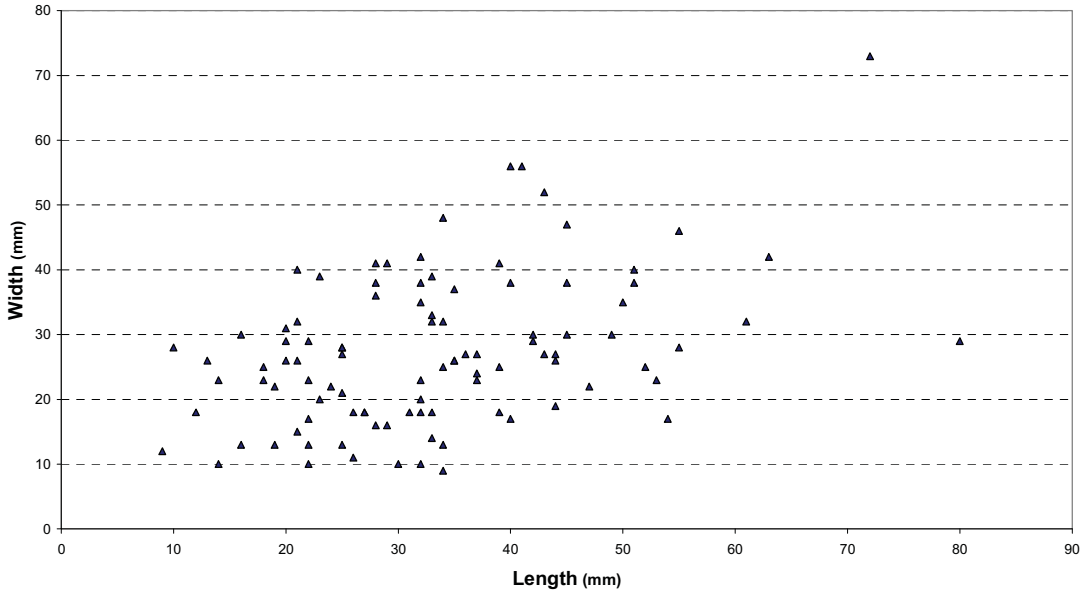

Figure **2**: The relative proportions of the complete flakes, blades and tools recovered from Willows A, Reighton.

3.3.4 Tools and retouched pieces

The collection contains fifteen pieces that have been transformed into tools with a distinct morphological classification (7.8% of the assemblage), four pieces that have been modified by minimal retouch (2.1%) and two unmodified pieces showing evidence of use-wear (1.0%) (table 2). The presence of these items suggests that both tool manufacture and use occurred on this site.

Tool Type	**Quantity**	**Contexts**
Awl	1	050c
Burin	1	240d
Knife	1	232b
Notched flake	1	054h
Piercers	3	029b, 237g, 237j
Piercer/notched flake	1	129e
Saw/denticulate	1	129c
Scrapers	5	046c, 050d, 054a, 232a, 237k
Serrated blade	1	029a
Miscellaneous retouch	4	129d, 217a, 217b, 240z
Utilised blade-like flake	2	066a, 076c
Total	**21**	

Table2: Quantity and distribution of retouched and utilised pieces.

3.3.4.1 Scrapers

Scrapers form the principal tool type, with five examples. All but one of these tools were manufactured upon flake blanks, the exception being a bifacially worked scraper that utilised a fragment of irregular waste, 237k. The two end scrapers are notably unusual (046c and 050d). Each consists of the proximal end of a blade or blade-like flake, which has been abruptly retouched across the butt. They then appear to have been inverted, with the dorsal side of the proximal margin having acquired a diffuse polish. It is possible that both were originally longer blades that broke during use, or alternatively they could represent a local form created for a specific purpose. Mesolithic assemblages can contain small, crude scrapers similar to this type.

An end and side scraper was created on a long primary flake (054a). The nature and extent of the retouch, together with the form and thickness of the flake, are indicative of scrapers produced during the earlier Neolithic. In contrast, the second side and end scraper was created on a relatively small, gracile flake, and is likely to be a product of a later Neolithic or early Bronze Age industry (232a).

3.3.4.2 Piercers and awls

The assemblage also included three piercers (029b, 237g, 237j), an awl (050c) and a combined piercer/notched flake (129e). One of the piercers is a refined form that functioned as a type of drill bit referred to as a *meche de foret* (029b). This bladelet has been abruptly retouched along both lateral edges to create a long, narrow point with a triangular cross-section. The facets along the point are worn and polished as a result of its use. It is likely to have been created and used during the Mesolithic, as is the awl (050c). The latter utilised a broad blade, which was inversely retouched along the distal half of one lateral edge, while the other lateral edge had normal retouch, thereby creating a long, narrow point, with a triangular cross-section. Again, the point is worn, with areas of diffuse polish. This is a relatively large piece that is comparable to awls found at the early Mesolithic site of Star Carr, which is located 11.5km to the north-west (e.g. Clark 1954: fig 39, #102 & 105).

A relatively squat flake, which was probably detached from a bladelet core, appears to have been modified to create a piercer (237g). It is likely to have been expediently manufactured, with the use of a bladelet core suggesting a later Mesolithic or early Neolithic industry. Another expediently produced piercer, 237j, has characteristics more indicative of the early Neolithic.
Composite tools, such as the piercer and notched flake 129e, initially appear in the earlier Neolithic, but are relatively rare during that period (Butler 2005). They become more common

during the later Neolithic, the morphology of the blank also being consistent with industries employed during the 3rd millennium BC.

3.3.4.3 Other tools and retouched pieces

The assemblage also includes a serrated blade, (029a), which has had one lateral margin retouched to create a row of saw-like microdenticulations. The percussion for these notches was from the ventral side, which is potentially indicative of the early Neolithic, but the overall dimensions of the piece indicate that it could also be of later Mesolithic date. The assemblage also contained a saw-like 'denticulate' (129c), which has a much coarser cutting edge created by the removal of small flakes, each 5 - 7mm wide, thus creating a series of spurs along a cog-like convex edge. The distal end of the other lateral edge has been retouched to create a larger notch, which would enable a forefinger to apply pressure through denticulate edge.

The knife is a large bifacially worked flake (232b), with similarities to the ovates and discoidal knives produced during the later Neolithic. The piece has backing along one long edge, while the opposite edge is acutely retouched and could have been used for cutting or chopping.

Retouch has been used in a more *ad hoc* manner to modify four flakes or blades. One piece has an abruptly retouched edge (240z), the ridges of which have become worn, possibly through use as a crude scraper. With the other pieces the retouch is either invasive to semi-abrupt, suggesting that these pieces could have been used as crude flake knives.

4.0 Dating

4.1 Mesolithic

A large proportion of the assemblage has morphological characteristics that are indicative of Mesolithic industries or are consistent with undifferentiated Mesolithic and earlier Neolithic technologies (93 pieces - 48.4%). Among the most diagnostic items are the drill bit (*meche de foret*) (029b), which is a distinctly Mesolithic type. The awl, (050c), is also a Mesolithic form. The broad blade with its abruptly retouched point is comparable to awls and piercers found at the earlier Mesolithic site at Star Carr (e.g. Clark 1954: fig 39, #102 & 105). Radiocarbon dating has established that the earlier Maglemosian occupation at Star Carr occurred from 8,700 to 8,350BC (Day & Mellars 1994). Utilised flake 066a is also analogous to artefacts recovered from Star Carr (e.g. Clark 1954: fig 45, #164). It is a large hard hammer flake detached from a core producing broad blades, with the end of one lateral edge having been used for cutting; small, invasive spalls are detached along the ventral margin, which is worn and has small areas of polish.

The assemblage contains one burin, 240d, which is manufactured on the proximal end of a bladelet or small blade-like flake. The dimensions of this piece are characteristic of the microlithic technologies employed during the late Mesolithic. Another proximal fragment of a blade or blade-like flake, 236b, appears to have abrupt retouched around a large proportion of its margin. It could therefore be a micro-burin, which is a bi-product of the creation of microliths; this is not an unequivocal interpretation, as the 'retouch' could result from post-depositional damage.

The collection from Willows A did not include any microliths, but there are a number of bladelets with microlithic proportions. The discovery of small blades does not constitute definitive evidence of a later Mesolithic presence, because the size of the available flint pebbles could have restricted the size of cores, and thus their products. Consequently, the dimensions of the blades could be partly conditioned by raw materials rather than reflecting chronological variation in lithic technology. Therefore, a proportion of the assemblage has been categorised as later Mesolithic/early Neolithic (36 pieces) or Mesolithic/early Neolithic (38 pieces), because it was considered inappropriate to use size as the primary means of differentiating between the products of these successive periods. Nevertheless, the fact that a number of cores were discarded before they were exhausted suggests that flint was an abundant resource (see 3.3.1). The implication is that people had few constraints with regard to the size and quantity of stone tools, which in turn, suggests that the small blades are the result of later Mesolithic activity.

Context No.	Pottery type	Ceramic date range	Lithic technology	No. pieces	Lithic date range
006	MBA?		E.Neo Neo	1 1	4000-3000BC 4000-2200BC
022	Peterborough (Ebbsfleet)	3400-2500BC	L.Mes/E.Neo	1	6500-3000BC
024/025	BA/MBA		Mes/E.Neo L.Mes/E.Neo E.Neo Neo	2 4 1 1	9000-3000BC 6500-3000BC 4000-3000BC 4000-2200BC
029	Neo	3500-2500BC	Mes Mes/E.Neo L.Mes/E.Neo	1 2 5	9000-4000BC 9000-3000BC 6500-3000BC
050	MBA		E.Mes Mes/E.Neo	1 3	9000-6500BC 9000-3000BC
054	LBA		Mes/E.Neo L.Mes/E.Neo E.Neo	4 4 1	9000-3000BC 6500-3000BC 4000-3000BC
060	LBA		Mes/E.Neo	2	9000-3000BC
076	MBA?		Mes/E.Neo L.Mes/E.Neo	2 4	9000-3000BC 6500-3000BC
118	Preh	-	Mes/E.Neo L.Mes/E.Neo	1 2	9000-3000BC 6500-3000BC
240	Neo	3500-2500BC	Mes/E.Neo L/Mes L.Mes/E.Neo E.Neo	13 1 4 2	9000-3000BC 6500-4000BC 6500-3000BC 4000-3000BC

Table 3: Archaeological contexts that contained both lithic and ceramic artefacts with datable traits.

4.2 Early Neolithic

The lithic assemblage contains evidence for an early Neolithic presence on the site, which is also attested to by fragments of pottery (table 3). The collection of lithic material includes twelve pieces that have been identified as early Neolithic and another 74 pieces that are of Mesolithic to early Neolithic date (see 4.1). Pieces with diagnostic characteristics indicative of early Neolithic industries include a scraper created on a piece of irregular waste, 237k, and an end and side scraper, 054a. A retouched blade, 217b, is also likely to be an early Neolithic product, although an earlier Mesolithic origin cannot be discounted. Further evidence of earlier Neolithic activity is provided a number of cores, including a type B3 core (129a) and a type A2 pebble core (046a), both of which were principally used for the production of blades.

4.3 Later Neolithic and Bronze Age

It is notable that only a very small proportion of the assemblage exhibits any clear affinities with late Neolithic and early Bronze Age lithic technologies. Only two pieces can be definitely assigned to this period of activity and interestingly, both come from the same context, **(232)** – possibly a buried soil. These two artefacts consist of a side & end scraper (232a), produced on a relatively small, gracile blank, and a bifacially worked knife, 232b, which has similarities to ovates and discoidal knives.

Of further interest is the apparent absence of any identifiable worked lithic material that could relate to the middle and late Bronze Age activity signified by a range of pottery recovered from the south-western quadrant of the site. The archaeological features that were exposed suggest that this was the most significant episode of prehistoric activity, but it is essentially invisible in the lithic assemblage.

5.0 Discussion

Several archaeological deposits contained interesting groups of lithic artefacts, some of which were accompanied by ceramics. The most conspicuous collection of artefacts comes from the primary fill of a small pit, **[028]**. This deposit, **(029)**, contained eighteen pieces of struck flint, including a serrated blade (029a, S.F. 1), a *meche de foret* drill bit (029b) and three thinning flakes from core tool manufacture (029c, d & e). The pit also contained a large fragment of a flint potboiler, which indicates the presence of a hearth and suggests some form of domestic, craft or ritual activity was being undertaken. Although the drill bit is a form that is specific to the Mesolithic, the other pieces are more broadly characteristic of the later Mesolithic and early Neolithic. The recovery of 39 sherds of Neolithic pottery from pit **[028]** indicates that the lithic material belongs to the latter end of the indicated date range. Consequently, this feature is likely to date to the 4th millennium BC, the presence of an undamaged later Mesolithic drill bit, albeit potentially residual, possibly indicating a date before 3,500BC. The material from **[028]** could represent the residues of everyday activity. However, it is also possible that this relatively diverse collection of artefactual material (several stone tools, waste from the manufacture of a core tool, sherds from at least five different pots and burnt and charred material) could represent the remains of a deliberately constituted structured deposit.

Approximately 5m to the north of pit **[028]** was a second small pit, **[023]**, which also contained an interesting range of lithic artefacts. Its secondary fill, **(240)**, contained 26 pieces of worked flint that attested to the reduction of blade cores and also suggested that larger core tools were being manufactured (e.g. 240j). Once again, three or four of these pieces of debitage were burnt. Three sherds of prehistoric pottery were also recovered from **(240)**, one of these sherds being a Neolithic fabric that is directly comparable to the material from **(029)**. The upper fill of pit **[023]**, deposit **(024)**/**(025)**, contained another fourteen pieces of struck flint, including three or four pieces that had been burnt. All of this data appears to suggest that pit **[023]** and pit **[028]** belonged to the same phase of activity and that they could even have been contemporaneous features. However, the three sherds of pottery from **(024)**/**(025)**, have been dated to the Bronze Age (possibly the middle Bronze Age). A third pit, **[021]**, which was situated between **[023]** and **[028]**, contained a sherd of Peterborough ware pottery and three pieces of flint indicative of Mesolithic or early Neolithic activity; this material suggests that this deposit, **(022)**, should date to c. 3,400 – 3,000BC.

Two small pits or postholes located further to the east, **[049]** and **[053]**, are also worthy of mention. The former was filled by a deposit, **(050)**, containing nine pieces of flint, including an awl (050c - probably of early Mesolithic date) and an unusual end scraper (050d). The other pit, **[053]**, contained a deposit incorporating 23 pieces of worked flint, among them an earlier Neolithic side & end scraper (054a), a notched flake (054h) and a very large flake potentially created during the thinning of a bifacial core tool (054b). Although both of these pits/postholes contained lithic material indicative of early Neolithic industries, they also contained middle or later Bronze Age pottery, and both lay adjacent to a later prehistoric ring gully. Consequently, there is a significant discrepancy between the dating provided by the lithic and ceramic materials recovered from pits **[023]**, **[049]** and **[053]**. This could indicate that significant quantities of earlier Neolithic material lay on or close to the ground surface in this area of the site and subsequently became incorporated into Bronze Age features. Alternatively, it is possible that the small sherds of Bronze Age pottery that were found in these archaeological contexts could have migrated into earlier deposits due to taphonomic processes. The almost total absence of damage to the lithic material supports the latter scenario, but the actual sequence of events remains debatable.

The almost total absence of lithic artefacts that are clearly products of later Neolithic and early Bronze Age technologies suggests that there was a significant hiatus in human activity after the early Neolithic, the domestic and/or ritual occupation appearing to cease in the later 4th or early 3rd millennium BC. The absence of more crudely manufactured flint tools could also indicate that middle and late Bronze Age intervention consisted of a restricted range of activities, which did not include the routine tasks for which such tools appear to have been manufactured (Ford *et al* 1984).

6.0 Recommendations

Microwear analysis of the tools and utilised pieces that have developed a polish along their flake margins could provide an indication of the nature and range of activities undertaken at this site during the Mesolithic and Neolithic periods.

A number of the pieces from this assemblage should be illustrated. These items would be selected after consultation with the project manager. It is anticipated that these drawings would need to be checked and an accompanying descriptive catalogue produced.

7.0 References

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WIRE 05 - Catalogue of worked and modified lithic materials - Key to abbreviations:

Type	(P)	Primary
	(S)	Secondary
	(T)	Tertiary
Date	Mes	Mesolithic
	Neo	Neolithic
	BA	Bronze Age
	E.	Early
	L.	Late
Size	comp	complete – (if so, dimensions given*)
	incomp.	Incomplete
Recort	(recorticated)	Yes
		Partly
Burnt		Yes
	poss	Possible
Retouch		yes
	u/w	use-wear
	poss	possible
	prob	probable
Platf	(platform)	
	comp	complex
	cort	cortical
Bulb	diff	diffuse
	pron	pronounced
	sm.pr	small pronounced
	v.sm.pr	very small pronounced
Term	(termination)	
	feath	feathered
	hinge	hinged
	step	stepped
P-dep damage	(post-depositional damage)	
		Yes
		No
Comments	cort	cortical
	dist	distal
	frag	fragment
	incl	inclusions
	irreg	irregular
	lat	lateral
	negative	negative
	platf	platform
	poss	possible/possibly
	perp	perpendicular
	prob	probable/probably
	prox	proximal
	signif	significant
	v	very

*Measurements are given only for complete flakes and complete tools. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. The maximum thickness is also given for cores. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

Appendix A: Lithic material from bulk soil samples, Willows A, Reighton, E. Yorks. (WIRE 05)

Context No.	Sample No.	No Pieces	Provisional Date	Comments
006	001	13	L.Mes/E.Neo	1x v. small (microlithic) bladelet; 1x blade-like flake (failed attempt to detach bladelet); 1x proximal fragment of blade-like flake, possibly from type A bladelet core; 5x truncated bladelets (2x proximal, 1x medial, 2x distal fragments) - possibly indicative of microlith production?; 5x small trimming flakes, probably detached from platform edge during core maintenance. Mid-grey opaque Wolds flint used for 14 pieces, exception is medial bladelet fragment. One piece is possibly burnt.
029	005	1	Mes/E.Neo	1x flake, dorsal scars suggest earlier blade-like removals. Mid-grey opaque Wolds flint.
046	019	2	L.Mes/Neo	1x blade-like flake (L.Mes/E.Neo); 1x irregular flake (indeterminate age, possibly Neo.). Mottled mid to dark grey opaque Wolds flint - both pieces possibly from same core?
048	004	4	L.Mes/E.Neo	1x proximal/medial fragment of large flake from blade core; 1x distal flake fragment; 1x small trimming flake; 1x squat flake, with series of v. small blade-like removals from single platform - possibly utilised, slight gloss along one lateral edge. Pale, mid and dark grey opaque Wolds flint.
054	016	26	L.Mes/Neo	1x proximal half of large hard hammer flake (truncated by secondary blow, negative scar of which evident); 3x flakes from multiple/rotating platform core, with edge preparation - probably thinning of large tool (1x is distal end only); 2x flakes possibly from single platform core (1x distal end only); 1x small blade-like flake; 3x truncated bladelets (1x proximal, 2x distal fragments); 16x small trimming flakes, some possibly detached from platform edge during core maintenance, others could have been produced during creation of core tool (see larger flakes, above). Pale, mid and dark grey opaque Wolds flint used for 24 pieces; other 2 pieces are caramel-brown opaque flint.
213	024	1	L.Mes/E.Neo	1x proximal end of bladelet, snapped truncation. Mid-grey opaque Wolds flint.
238	025	5	L.Mes/E.Neo	3x truncated bladelets (all distal fragments); 2x small trimming flakes. All mid-grey opaque Wolds flint.
240	026	10 1	L.Mes/E.Neo	1x core rejuvenation flake, previous platform indicating removal of small flakes, with edge preparation; 1x small bladelet; 1x blade-like flake (hinged termination = failed attempt to detach bladelet); 5x truncated bladelets/blade-like flakes (all distal fragments) - possibly indicative of microlith production?; 4x small trimming flakes, generally indicative of single platform working & probably detached from platform edge during core maintenance. 1 x dark & 9x mid-grey opaque Wolds flint. 1x fragment of fine-grained sandstone pebble; unclear if modified by human action, no obvious sign of burning (surfaces neither discoloured nor distinctly angular); two external surfaces of pebble at c. 15 degrees to each other, meeting at narrow, rounded edge; one of surfaces has series of striations following two slightly different orientations - origin again unclear.
Total		**63**		

Comments

The lithic material recovered from the bulk soil samples is broadly consistent with the collection of material recovered during the archaeological excavation. Most of these pieces are bladelets, blade-like flakes and flakes produced from prepared and curated cores, traits that are indicative of the core reduction strategies employed during the Mesolithic and early Neolithic periods. It is possible that some of the material was produced in the later Neolithic, particularly given the small dimensions of most of the pieces, but there is no explicit evidence for this

WILLOWS, REIGHTON, E YORKS
WIRE05
REPORT ON PREHISTORIC POTTERY AND FIRED CLAY

By Carol Allen

1 Quantifications and Catalogue

1.1 A total of 131 sherds and fragments of pottery were found on this site weighing 815g. The pottery sherds represent approximately 26 separate vessels of prehistoric date. Many of the sherds cannot be identified to a type with any certainty and no complete profiles were apparent. All the sherds are detailed in the attached catalogue (Table 1). An additional 38 sherds and 15 fragments of prehistoric pottery (140g) were found in the sieved samples (Table 2).

1.2 From all these sherds 13 vessels are represented which have form or decoration and these can be identified to a specific type. Of these pots 12 are illustrated and are allocated a number in the catalogue.

1.3 Two pieces of fired clay were also found on the site (Table 3).

2 Methodology

2.1 The pottery and fired clay has been recorded and described according to the guidelines of the PCRG (1997). In addition, this report conforms to the standards and guidance of the IFA (2001). All the sherds were counted, weighed and recorded and are detailed on the catalogues attached. The wall thickness, fabric type and the abrasion level of the sherds is also given and the part of the pot remaining, rim, body or base is recorded.

2.2 All the sherds were examined by use of a x2 binocular microscope in order to allow the fabric types to be summarised. Four sherds representative of two of the main tempering types observed were sent for thin section analysis.

3 Fabrics

3.1 Six different fabric types were recognised by examination of all the sherds by eye and with a x2 binocular microscope. The division of the fabric types was made based upon the apparent tempering materials visible by eye and the appearance, colour and firing of the sherds. This assumes that the potters were aiming to produce pots with a distinctive appearance and tempering.

3.2 Full details of the six types are provided in Appendix 1, where the coding, quantity and sizes are shown. The six types are summarised on Table 3.

3.3 Most of the pottery was made from fabric 6. Fabric 1 tended to be used for the Bronze Age vessels and fabric 6 was common in the Neolithic pots. The tempering in fabrics 2 to 6 is similar and the variations in type are reflected in the general appearance of the sherds. Changes in fabric types used in prehistoric pottery through time are commonly seen even on the same site (Allen 1991, 4-5; Chowne *et al* 2001). Traditions of pottery manufacture changed with each period and the tempering materials varied according to the region (Allen and Hopkins 2000, fig. 8; Cleal 1995).

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3	LIMV/QUSF	Voids indicative of limestone leached out	11
4	LISV	Chalky material large pieces up to 7mm	1
5	LISC/QUMC	Voids and chalky material, large angular white quartz	1
6	LIMV/FLSV/QUSF	Chalk and voids and large angular flint	63

3.4 Four sherds were sent for thin section analysis, selected from contexts in which there were suitable sherds. Two sherds were selected from fabric 1 (contexts 006 and 050) and two from fabric 6 (029/2 and 029/3). These represented the main tempering materials in the assemblage.

3.5 The results of the thin section analysis are presented in Appendix 2 and confirm the identifications given above (fabric 1 006 – V3490, 050 - V3491: fabric 6 029/2 - V3492, 029/3 – V3493). The analysis suggests that it is very likely that the materials for tempering were obtained locally and that the vessels were manufactured from the local boulder clay with the addition in the case of fabric 1 of deliberately crushed erratics also available in the vicinity.

4 Types of Pottery

4.1 *General* – Twelve vessels were clearly identified and of these seven were middle Neolithic impressed wares commonly called Peterborough Wares. These include six vessels of Fengate style and one which is probably of Mortlake type. Sherds of two middle Bronze Age bucket urns are apparent and parts of three pots of late Bronze Age type. Comparative pottery and dating is provided in the typological sections below.

4.2 The remaining sherds are of prehistoric date and some attempt has been made to identify these in the catalogue. However, these sherds are small and without form or decoration and therefore discussion will concentrate on the sherds which are securely identified.

5.1 Neolithic Mortlake and Fengate Ware

5.1. *Form* – Seven of these vessels are similar to the Fengate style of Peterborough Wares which has been seen in Eastern Yorkshire (Manby 1975 & 1988; Manby, King and Vyner 2004, 55). The vessels have inturning tapered rims and small raised collars with a slight neck (Fig. 1, pots 1, 2, 3 and 5, and Fig. 2, pot 4). Abraded sherds of pots 3 and 4 were also found in the sieved samples, together with an abraded rim sherd of another vessel very similar to pot 4 (Table 2, 238, not illustrated). The vessels have conical shaped bodies which would appear to be extending towards a narrow, flat base, although no sherds of the bases are apparent. These forms are comparable to pots of this type seen elsewhere in Yorkshire at Carnaby Top (Manby 1988, fig. 4.14.6; Manby 1975, fig. 14. 10 and 11).

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5.3 *Finish* - The surface of these sherds is pitted with small voids indicating the former presence of limestone or chalk. The exterior colour varies from orange to buff and the interior and cores are brown and dark grey as described on similar vessels from other Yorkshire sites (Manby 1988, 69). The pots are irregularly fired, all are made from fabric 6 and the sherds are slightly abraded.

5.4 *Mortlake* - A single unabraded sherd of Peterborough Ware, probably of Mortlake type, was found on the site, also made from fabric 6. This is a body sherd with an angled shoulder decorated with whipped cord 'maggots' in a chevron design (Fig. 2.7). The sherd is black and slightly burnished in good condition. Sherds of similar design have been found on 'Corner Field site' in East Yorkshire (Manby 1975, fig. 8.4 and 8.5).

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6 Middle Bronze Age

6.1 *Form* - Parts of two middle Bronze Age bucket urns, often seen as a type of Deverel Rimbury pottery, were found in two separate contexts on this site. A single base sherd was found in a pit (Fig. 2, pot 7). Also body and rim sherds, all joining, from another bucket shaped pot were uncovered in a pit (Fig. 2.8). This vessel has pre-firing perforations in the upper part of the body below the rim, which is simple and rounded.

6.2 *Comparative material* - Pottery of very similar form is known from other sites in East Yorkshire, for example at Catfoss (McInnes 1968) and a number of other sites in the region such as Malton and Pickering (Manby 1980). The pierced holes were also seen in pottery at Catfoss (McInnes 1968, 3).

6.3 *Dating* – This type of vessel has often been found at cremation cemeteries and settlements where dates are known. Material found with a small bucket-shaped pot at Swarkeston, Derbyshire within a hollow oak trunk provided a date of 1450-1130 cal BC (2 sigma: Beta-104495, Knight 2002, 123). Charcoal associated with similar pottery from the settlement site of Billingborough in Lincolnshire was dated to 1530-1260 cal BC 2 sigma: BM-1410, Chowne et al 2001, 5).

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7.1 Two pieces of fired clay were found in context (018) the fill of a cremation pit [017] in the north of the site. These pieces were small and slightly shaped but their function is unclear. Fired clay is usually thought to be indicative of domestic occupation and may have formed part of hearths, ovens or other domestic structures.

8 Late Bronze Age

8.1 *Form* – Sherds of a globular bowl with a flattened and rim which turns outwards were found with ring ditch (007) in the north of the site. This is late Bronze Age Post-Deverel Rimbury type (LBA PDR). The black surface finish and form of the vessel were common in this period. Two other vessels of this type are also represented by two small sherds found further south. A rounded rim sherd of a small black cup was found in a pit (Fig. 3.11) and a similar rounded rim of a thin black vessel was uncovered in the segmented curving ditch (Fig. 3.12). Another similar and abraded rim sherd was found in the secondary backfill of a pit 023 (Table 2, 240), and was considered intrusive.

8.2 *Comparative material* – In recent excavations at Washingborough, east of Lincoln, similar forms and rims were seen (Allen 2006), and also at Hibaldstow, near Brigg in Humberside (Allen and Knight 2001). This type of LBA PDR pottery is known throughout eastern England and elsewhere (Knight 2002, 124; Brossler *et al* 2004).

8.3 *Dating* – There are few dates for this type of pottery in this region. At Washingborough, Lincs, this type of pottery has been dated to between 1050 and 800 cal BC (M Allen pers comm.) At Flag Fen, Cambs, a similar globular vessel was found beneath a timber dated by dendrochronology to *c*900BC (Knight 2002, 126).

9 Context

9.1 *Neolithic*

9.1.1 Five of the Neolithic Peterborough Ware pots of Fengate type (pots 1-5. Figs 1 and 2) were found in context (029) the primary fill of pit [028] where a number of flints were also found. Pot 7 (Fig. 2), the Mortlake style pot, was found in context (021) the third and final fill pit [021] just to the northeast and Fengate pot 6 (Fig. 1) was found in context (240) the second fill of another pit [023] which was nearby.

9.1.2 Deposition of material of this type in pits, alongside animal bone, burnt material and other artefacts, is well known (Thomas 1999, 64-5). The Neolithic pottery on this site was either unabraded (pot 7) or only slightly abraded (pots 1–6) suggesting that this was not rubbish which had been swept into the pits. The deliberate deposition of pottery of this type in pits may have had some symbolic significance (ibid, 72).

9.1.3 The Fengate type of Peterborough Ware is not often found and therefore these vessels add interesting information on the forms and decoration in this region.

9.2 *Middle Bronze Age*

9.2.1 These sherds from bucket urns were also found in pits or postholes. The base sherd (pot 9) was found in context (076) the fill of pit [075] and the body and rim sherds (pot 8) were found in context (050) the fill of pit or posthole [049]. All this material is moderately abraded suggesting that it may have been swept into the contexts from nearby.

9.2. This type of pottery is usually associated with cremation burials in flat cemeteries or outside a ring ditch or barrow (Allen *et al* 1987; Martin and Allen 2001;

Allen 2004). In eastern Yorkshire Deverel Rimbury bucket urns are known from cemeteries and less often also from settlements (Manby 1980).

9.3 *Late Bronze Age*

9.3.1 Part of a late Bronze Age plainware bowl (pot 10) was found within context (008) the third fill of the ring ditch [007]. The sherds are unabraded and indicate the use of this area in that period. Other sherds which may also be of LBA type were found in the ring ditch [007], and in the backfill of pit [023].

9.3.2 The rim sherd of a small cup (pot 11) was found in context (036) the fill of pit [035] and the rim of a thin walled vessel was found in context (060) the fill of curvilinear gully [059]. Both these sherds are unabraded but are very small and the fragmentary nature of the finds suggests that these contexts may not be the location of their original deposition.

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Appendix 3: Prehistoric Pottery and Fired Clay Report

Dr Carol Allen, 25/06/06

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9.2.1 These sherds from bucket urns were also found in pits or postholes. The base sherd (pot 9) was found in context (076) the fill of pit [075] and the body and rim sherds (pot 8) were found in context (050) the fill of pit or posthole [049]. All this material is moderately abraded suggesting that it may have been swept into the contexts from nearby.

9.2. This type of pottery is usually associated with cremation burials in flat cemeteries or outside a ring ditch or barrow (Allen *et al* 1987; Martin and Allen 2001; Allen 2004). In eastern Yorkshire Deverel Rimbury bucket urns are known from cemeteries and less often also from settlements (Manby 1980).

9.3 *Late Bronze Age*

9.3.1 Part of a late Bronze Age plainware bowl (pot 10) was found within context (008) the third fill of the ring ditch [007]. The sherds are unabraded and indicate the use of this area in that period. Other sherds which may also be of LBA type were found in the ring ditch [007], and in the backfill of pit [023].

9.3.2 The rim sherd of a small cup (pot 11) was found in context (036) the fill of pit [035] and the rim of a thin walled vessel was found in context (060) the fill of curvilinear gully [059]. Both these sherds are unabraded but are very small and the fragmentary nature of the finds suggests that these contexts may not be the location of their original deposition.

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WILLOWS, REIGHTON, E YORKS, WIRE05
CATALOGUE OF ILLUSTRATED POTTERY
By Carol Allen

Figure 1: Neolithic Pottery, Peterborough Ware

1 Body sherd with collar ridge, Fengate type, undecorated, slightly abraded, fabric 6, context 029/pot 1, primary fill of pit 028

2 Rim and body sherds of Fengate pot, tapered inturning rim with diagonal fingernail impressions inside rim, slight collar, conical body shape, slightly abraded, fabric 6, context 029/2, primary fill of pit 028

3 Rim sherd of Neolithic pot, probably Fengate type, tapered and inturning, undecorated, slightly abraded, fabric 6, context 029/3, primary fill of pit 028

5 Body sherd with raised collar, Fengate type, undecorated, slightly abraded, fabric 6, context 029/5, primary fill of pit 028

6 Rim of Fengate pot, tapered inturning rim with fingernail diagonally on exterior and interior of rim, slight collar and vesicular surface, conical body shape, slightly abraded, fabric 6, context 240, secondary backfill of pit 023

Figure 2: Neolithic and Bronze Age Pottery, 4 and 7, Neolithic Peterborough Ware, 8 & 9 Middle Bronze Age

4 Rim and body sherds of Fengate pot, tapered inturning rim with fingernail impressions diagonally inside rim, diagonal fingernail impressions on exterior of slightly raised collar, conical body shape, slightly abraded, context 029/4, primary fill of pit 028

7 Body sherd of Peterborough ware probably of Mortlake type with whipped cord decoration in chevron pattern, black finish, unabraded, fabric 4, context 022, third and last fill of pit 021

8 Rim and body sherds of middle Bronze Age Deverel Rimbury bucket urn with straight sides and simple rounded rim, pre-firing hole below rim, undecorated with some burning, moderately abraded, fabric 1, context 050, fill of pit/posthole 049

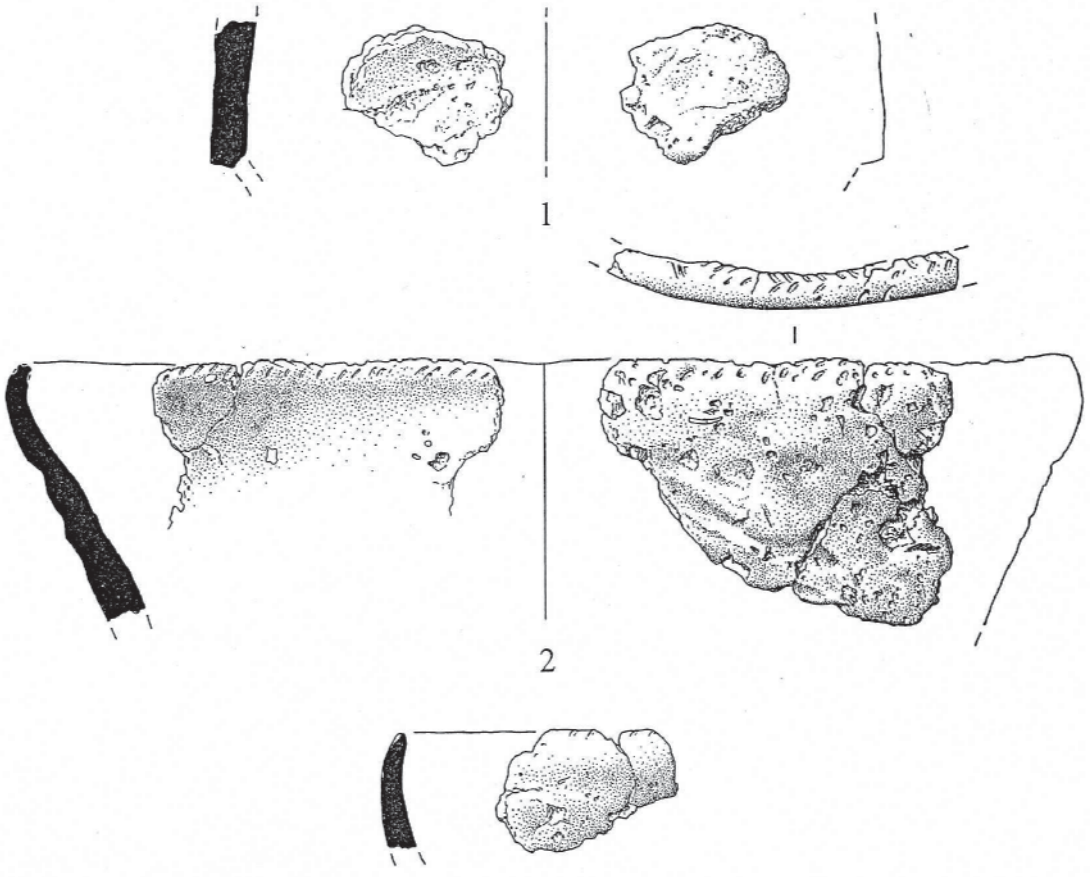
9 Base and lower body sherd probably from middle Bronze Age bucket urn, flat base, undecorated, moderately abraded, fabric 2, context 076, fill of pit 075

Figure 3: Late Bronze Age Plainwares

10 Rim and body sherds from small late Bronze Age black globular bowl, with a flat everted rim, thin body, unabraded, fabric 2, context 008/032/1, tertiary fill of 007=031

11 Rim sherd of small cup of late Bronze Age date, simple rounded rim, black surface, unabraded, fabric 3, context 036, fill of pit 035

12 Rim and body sherd of small cup of late Bronze Age date, simple rounded rim, black surface, fabric 1, context 060, fill of curvilinear gully 059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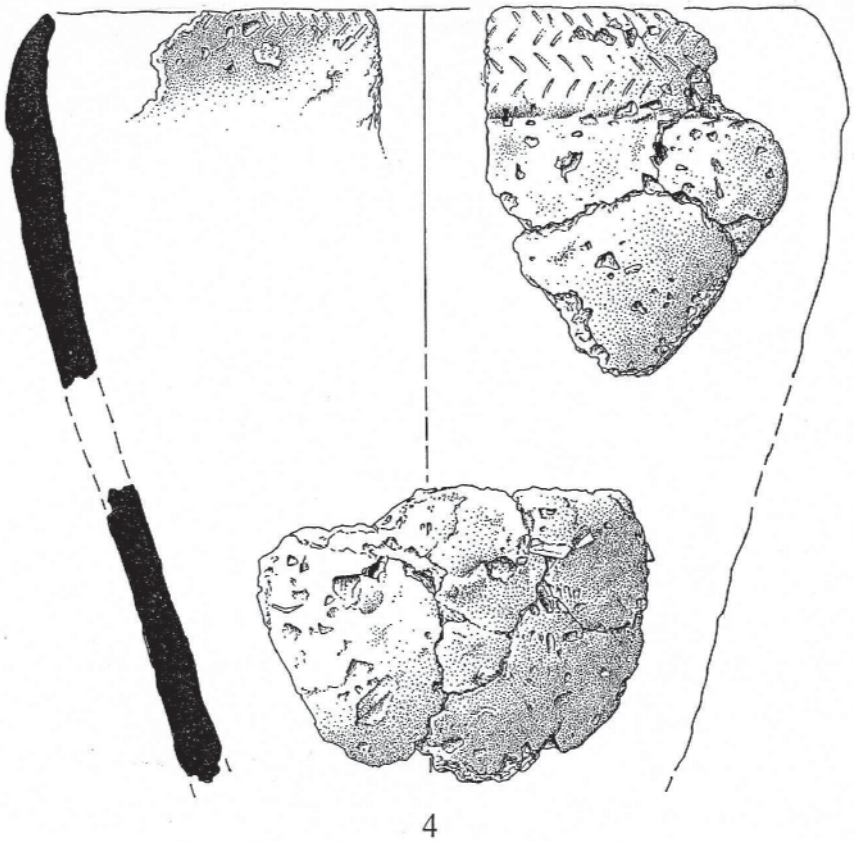
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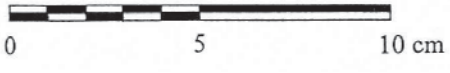
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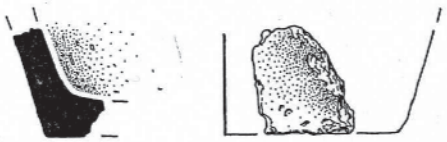

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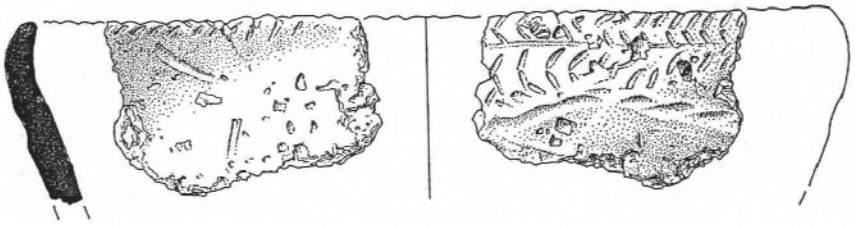

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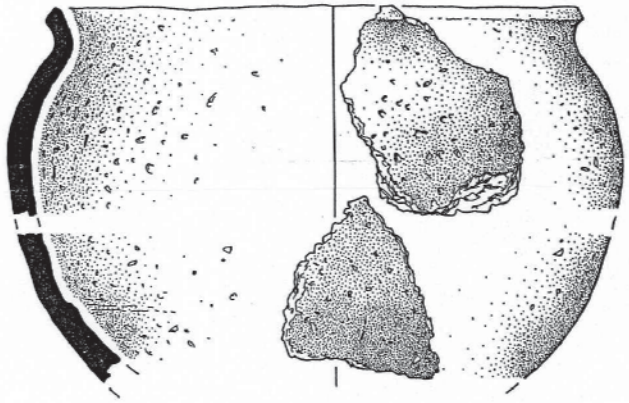

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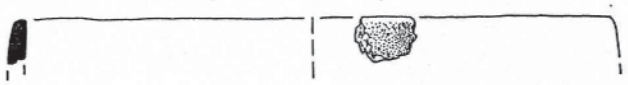

12

0 5 10 cm

Table 1: Catalogue of prehistoric pottery from features

Context	Description	Pot no	Sherds no	Weight g	Wall mm	Date	Thin section	Fabric	Abrasion level	Drawing no	Pot part	Description
006	fill pit 005	1	16	71	11	MBA poss		1				thick coarse orange
							TS1		S	0	B	undec sherd
008	3rd fill ring ditch	1	1	12	5	LBA		2	U	10	R, B	small black globular bowl flat everted rim
008	007	2	6	28	10	LBA?		3	S	0	B, Ba	flat base buff/brown ext
008		3	7	29	6	LBA?		3	S	0	B	orange sherds
016	curvilinear gully	1	1	1	3	Preh		3	A	0	B	small thin sherds orange ext
020	crem pit 019	1	3	3	7	Preh		3	S	0	Ba	brown base sherds
022	top fill pit 021	1	2	10	9	Neo		4	U	7	B	PB Ware Mortlake? whipped cord chevron dec
022		2	1	1	5	Preh		3	A	0	B	orange
024/025	top fill	1	2	9	7	Preh/BA?		2	A	0	B	grey/brown/black surface
	pit 023	2	5	11	8	MBA?		1	M	0	B	orange ext, grey/br int
029	fill pit 028	1	1	12	9	Neo		6	S	1	B	PB Fengate slight collar undec
029		2	4	75	9	Neo	TS3	6	S	2	R, B	PB Fengate int tapered rim fnail on int rim slight shoulder
029		3	11	72	8	Neo	TS4	6	S	3	R, B	PB Fengate round tapered inturning rim undec
029		4	22	320	9	Neo		6	S	4	R, B	PB Fengate orange ext, tapered int rim fnail incisions diagonally
029		5	1	9	7	Neo		6	S	5	B	PB Fengate shouldered sherd
032	fill ring ditch 031=007	as 008/1	3	15	5	LBA		2	U	as 10	B	small bl glob bowl vesicular ext joins 008/1
032		as 008/2	1	12	10	LBA?		3	U	0	B	buff/brown ext
036	fill pit 035	1	1	1	3	LBA		3	U	11	R	black, rim of thin cup

050	fill of pit/ phole 049	1	15	35	7 MBA	TS2	1	M	8	R, B	simple rd rim + small hole below rim bucket urn
054	fill pit 053	1	1	1	3 LBA?		1	S	0	B	thin black body sherd
060	curvilinear gully	1	2	4	5 LBA		1	U	12	R, B	simple rim thin
076	fill pit 075	1	7	18	7 MBA poss		2	M	9	B, Ba	orange ext
118	fill ditch 117	1	3	8	7 Preh		3	S	0	B	black & undec
202	primary fill ditch 160	1	1	2	9 MBA poss		3	U	0	B	orange ext small body sherd
203	sec fill ditch 160	2	3	1	5 Preh		3	V	0	B	fragment
219	fill ditch recut 220	1	8	11	7 Preh		5	M	0	B	orange ext
240	sec backfill pit 023	1	1	29	7 Neol		6	S	6	R	PB Ware Fengate simple inturning rim Neo bowl fnail on ext & int rim buff/brown ext
240		2	2	15	5 Preh		1	U	0	B	black throughout
Totals			**131**	**815**							

Table 2: Catalogue of prehistoric pottery from sieved samples

Context	Description	Pot no	Sherds no	Weight g	Wall mm	Date	Finds No	Fabric	Abrasion level	Drawing no	Pot part	Description
006	fill pit 005 fill ring dit	poss 1	20	87	11	MBA		1	A	0	B	thick & undec
008	ch		1 frag			Preh						
029	fill 028	poss 4	1	6	9	Neo	005	6	A	0	R	vague dec
029	fill 028	poss 3	1	2	7	Neo	005	6	A	0	R	fnail on exterior rim
029	fill 028	0	11 2	13	8	prob Neo	005	6	V	0	B	undec
112	fill of 111	0	frags			Preh	011					
130	fill of 073	0	1 frag			Preh	007					
132	fill of 173	0	1 frag 10			Preh	006					
171	fill of 170	0	frags	6		IA?	012					
238	backfill 021	0	2	6	5	Neo	025	2	A	0	R +B Fengate	vague dec fnail ext incised chevron int rim
240	backfill 023	0	1	2	6	LBA	026	2	A	0	R	black burnished round rim tapered int
240	backfill 023	0	2	18	10	Preh	026	3	A	0	B	coarse abraded sherds
Totals			**38 15 frags**	**140**								

Abbreviations

Date of pot

Preh=Prehistoric, Neo=Neolithic, MBA=middle Bronze Age, LBA=late Bronze Age

Type of pot

PB=Peterborough Ware

Pot Part

B=Body, Ba=Base, R=Rim

Abrasion Level

S=slightly abraded (5-25% of surface affected), M=moderately abraded (25-50% of surface affected)

Fabric Type

Table 3: Catalogue of fired clay

Context	Description	Pieces	Weight g	Fabric type	Description
018	fill cremation pit 017	2	14	fine quartz	shaped pieces of unclear function

Appendix 1
Fabric Types
By Carol Allen

Fabric 1: LIMV/FLMV/ROSV/QUSF

This fabric contains a moderate amount of limestone/chalk which is poorly sorted and subangular, with low sphericity and the inclusions are of coarse and very coarse size. It also contains a moderate amount of flint, poorly sorted and very angular, with low sphericity and very coarse in size. There is also a sparse amount of igneous rock inclusions moderately sorted and angular of high sphericity and very coarse size. A sparse amount of quartz is also seen which is well rounded and high in sphericity and of fine size. The sherds are orange and buff on the exterior and have a black interior and black/brown core. The exterior is oxidised and interior if unoxidised and the core is irregularly fired

Fabric 2: LIMC

This fabric contains a moderate quantity of moderately sorted sub-angular voids or chalk pieces with low sphericity and of coarse size. The exterior of the sherds is black and the interior and core is black and orange. The exterior is unoxidised and the interior and core are irregularly fired.

Fabric 3: LIMV/QUSF

A moderate amount of limestone/chalk material is seen in this fabric which is moderately sorted, sub-angular and of low sphericity, and very coarse in size. Also apparent is a sparse quantity of well sorted and rounded quartz of high sphericity and fine size. Occasional larger angular pieces of quartz were seen. The sherds are brown and grey and irregularly fired throughout.

Fabric 4: LISV

This fabric contains a sparse amount of limestone or chalky material which is poorly sorted and sub-angular of low sphericity and very coarse in size. Some very large pieces up to 7mm in length are apparent. The sherds are black and unoxidised throughout.

Fabric 5: LISC/QUMC

A moderate quantity of moderately sorted white angular quartz is seen in this fabric, of low sphericity and coarse size. In addition a sparse quantity of chalky material moderately sorted and angular of low sphericity and coarse size is seen. The sherds are black and orange throughout with a unoxidised exterior and oxidised interior and unoxidised core.

Fabric 6: LIMV/FLSV

This fabric exhibits voids consistent with leached put limestone and some limestone pieces which are moderately sorted sub-angular and of low sphericity and very coarse in size. There is also a sparse amount of flint which is angular of low sphericity and very coarse in size. The voids are large up to 5 and 6 mm in length. The flint is also large up to 5mm. The sherds are brown on the exterior and interior and have a dark grey core, and are irregularly fired on the interior and exterior with an unoxidised core.

The fabric codes provided above are explained below. Each tempering material code is composed of four letters, the first two of which describe the inclusion type, the third describes the quantity of that inclusion and the fourth letter provides the median size range.

Type

LI	limestone or chalk
FL	flint
RO	igneous rock
QU	quartz

Quantification

S	Sparse >3-10%
M	Moderate 11-25%

Size Range of Inclusions

F	Fine <0.25 mm
M	Medium 0.25-1.00mm
C	Coarse >1.00-3.00mm
V	Very Coarse >3.00mm

Appendix 2
Petrological Analysis of Prehistoric Pottery from Reighton, East Yorkshire
By Alan Vince

Summary
Samples of four prehistoric pots from excavations at Reighton, East Yorkshire, were submitted for thin section analysis (Table 1). All four were probably made from local boulder clay containing a mixture of rocks derived from the Chalk and erratics of Scottish or Scandinavian origin. There is evidence for the deliberate crushing of erratics as tempering, a technique which is common in the area by the Bronze Age (Wardle 1991) and was common by the Iron Age (Freestone and Humphrey 1992;Freestone and Middleton 1991; and 2004). The presence of flint and probably chalk in each section indicates the use of local boulder clay, since boulder clay from further north does not contain flint or chalk and does contain mudstones and sandstone fragments absent from these samples.

Table 1

TSNO	Action	locality	county	site name	Site code	Context	cname
V3490	TS	Reighton	East Yorkshire	Willows	WIRE05	006	MBAERRA
V3491	TS	Reighton	East Yorkshire	Willows	WIRE05	050	MBAERRA
V3492	TS	Reighton	East Yorkshire	Willows	WIRE05	029/2	NEOFLINT
V3493	TS	Reighton	East Yorkshire	Willows	WIRE05	029/3	NEOFLINT

Description
Visual examination suggested the presence of two fabric groups, one consisting of two vessels of Neolithic date (V3492 and V3493) containing flint inclusions and one consisting of two vessels of Middle Bronze Age date (V3490 and V3491) containing angular erratic rock inclusions. Thin section analysis confirms this basic classification, but indicates that all four sections have slightly different suites of inclusions and thus each is described individually below.

V3490
The following inclusion types were observed:
Basic igneous rock. Rounded and subangular fragments of basic igneous rock ranging from 0.3mm to 3.0mm across. The fragments vary in lithology and include examples with an altered glassy groundmass and phenocrysts of feldspar up to 0.7mm long, fragments composed of interlocking laths of feldspar and fragments which may be a volcanic breccia, which contain angular fragments of varying texture welded together.
Flint. Sparse angular unstained and brown-stained fragments up to 1.0mm across, containing spherical microfossils.
Voids. Sparse rounded voids up to 1.5mm across.
Angular quartz. Abundant angular and subangular grains, moderately well-sorted and between 0.1mm and 0.3mm across.
Muscovite. Sparse laths of muscovite up to 0.2mm long.
The groundmass consists of optically anisotropic baked clay minerals and sparse rounded opaque grains up to 0.1mm across.

V3491
The following inclusion types were observed:
Basic igneous rock. subangular fragments of basic igneous rock ranging from 0.3mm to 3.0mm across. Two lithologies are present but both have a moderate grain size (c.0.4mm to

1.0mm) and consist of laths of feldspar with small quantities of quartz and other unidentified minerals.
Voids. Sparse rounded voids up to 0.5mm across.
Angular quartz. Moderate angular and subangular grains, moderately well-sorted and between 0.1mm and 0.3mm across.
The groundmass consists of optically anisotropic baked clay minerals and sparse rounded opaque grains up to 0.1mm across.

V3492
The following inclusion types were observed:
Flint. Sparse angular unstained and brown-stained fragments up to 1.0mm across, containing spherical microfossils.
Voids. Abundant rounded voids up to 1.5mm across.
Angular quartz. Abundant angular and subangular grains, moderately well-sorted and between 0.1mm and 0.3mm across.
Muscovite. Sparse laths of muscovite up to 0.2mm long.
The groundmass consists of optically anisotropic baked clay minerals and sparse rounded opaque grains up to 0.1mm across.

V3492
The following inclusion types were observed:
Quartz-mica schist. One tabular fragment c.3.0mm long consisting of bands of mosaic quartz and muscovite and dark brown/opaque material.
Flint. Sparse angular unstained fragments up to 3.0mm across.
Voids. Moderate rounded voids up to 1.5mm across.
Angular quartz. Abundant angular and subangular grains, moderately well-sorted and between 0.1mm and 0.3mm across.
Muscovite. Sparse laths of muscovite up to 0.2mm long.
The groundmass consists of optically anisotropic baked clay minerals and sparse rounded opaque grains up to 0.1mm across.

Discussion
The parent clay in each of the samples has a similar character, containing little silt-sized quartz or muscovite and sparse rounded opaque inclusions. In each case a fine sand consisting of angular and subangular quartz and sparse muscovite laths was present, although there are variations in the frequency of this sand. It is likely that this sand was present in the parent clay already mixed (otherwise one might expect to find lenses with a greater and lesser amount of sand present, given the lack of evidence for mixing of the clay).

Coarser inclusions were present in each section and given their size only a few examples were present in any section. Nevertheless, it is likely that the parent clay contained at least some of these inclusions and that they consist of a mixed gravel of angular and rounded grains consisting of rounded voids, flint and erratics. The voids might have held chalk, or calcite (which commonly occurs as veins in the Wolds chalk).

In two cases, however, the incidence of erratics is higher, and consists of several inclusions of the same rock types. This is atypical of the incidence of erratics in the local boulder clay and suggests the selection of one or two rocks and their preparation (probably by calcining to disaggregate the rock by thermal shock). These two samples consist of the two Middle Bronze Age vessels, one of which contains fine-grained basic rock fragments and the other of which contains coarse grained basic or intermediate rock fragments. These two samples conform to the criteria established by Wardle and others for the deliberate tempering of vessels with erratic rock fragments.

The presence of flint in the samples indicates that the boulder clay was obtained from the local area, or further south in Holderness, since it does not occur in the boulder clays of the North Yorkshire Moors.

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http://www.postex.demon.co.uk/index.html
A copy of this report is archived online at
http://www.avac.uklinux.net/potcat/pdfs/avac2006063.pdf

Appendix 4: Later prehistoric and Romano-British Pottery Report

Margaret J Darling M.Phil., F.S.A., M.I.F.A, 13th May 2006

The pottery totalled 163 sherds, weighing 1.609kg, from 32 deposits. Most deposits were scrappy and very abraded, the average sherd weight overall being only 9.9g. No problems are anticipated for future storage. The pottery has been archived using count and weight as measures according to the guidelines laid down for the minimum archive by *The Study Group for Roman Pottery*. The archive record, Appendix 2 (available on disk) will be curated for future study. Archive codes are detailed under Fabric definition, and in Appendix 3.

INTRODUCTION

Quantities by context are shown in Appendix 1 below. The only larger deposits were from the ditch 003, ditch 152, pit 170, and ditch 192. No definite sherd links between contexts were observed, although the same fabric with fine shell occurred in both pit 075 and the posthole? 137, both as very abraded irregular fragments.

OVERVIEW OF FABRICS AND VESSELS

The fabrics are detailed in table 2 below.

Table 2

Fabric	Code	Sherds	%	Weigh t	%
Erratic-tempered ware	ETW	1	0.61	49	3.05
Amphorae Dressel 20	DR20	5	3.07	242	15.04
Fired clay	FCLAY	1	0.61	6	0.37
Grey fine	GFIN	1	0.61	6	0.37
Grey	GREY	26	15.95	169	10.5
Grey fairly fine	GRFF	1	0.61	11	0.68
Huntcliff	HUNT	1	0.61	43	2.67
Oxidized	OX	2	1.23	4	0.25
Post-Roman	PRO	1	0.61	2	0.12
Samian Central Gaulish	SAMC G	1	0.61	14	0.87
Shell-gritted?	SHEL	2	1.23	5	0.31
CBM	TILE	2	1.23	39	2.42
Vesicular	VESIC	119	73.00	1019	63.33
Total		163	100	1609	100

The bulk of the sherds are in vesicular fabrics, the inclusions having been leached out. The nature of the vesicules and some residual content indicates that the lost inclusions were mainly calcite. With the level of abrasion, determining the method of manufacture is difficult, but where it has been possible, they are from hand-made vessels, and while hand-made coarse pottery continues through most of the Roman period in this area, it is likely they belong to the later Iron Age. Some of the sherds designated as GREY may also belong to this period, containing other inclusions likely to occur in the boulder clay of the area, some being of indeterminate manufacturing method (silting cxt 140; ditch 026, very similar sherds, and a

thicker sherd from pit 109). With such small abraded sherds, definitive identification is impossible.

There are three vessels represented by rims which might provide definition of the difficult Late Iron Age to early Roman dating, all in vesicular, originally calcite-gritted fabrics. One is a jar or bowl with an slackly everted rim, slightly chamfered internally, diameter at least 30cm, from the ditch 192; only the rim and part of the wall survives. This is similar to vessels from The Enclosure, Rudston (Rigby 2004, fig 56,2; fig 58,4), with parallels to early vessels from the Rudston Villa site (Rigby 1980, fig 32, 53; fig 37,134) and at Hanging Cliff, Kilham (Rigby 2004, fig 83,6). Similar rim types occur at Nafferton, Driffield Wold (Rigby 2004, fig 63). The Enclosure, Rudston appears to be a similar site, with a rectangular enclosure with ring-ditches internally, broadly datable to 100 B.C. to A.D.100, and likely to be related to the early pre-villa features at Rudston. The vessels from Nafferton are considered to be typically early Roman, while the Kilham pit deposit fits into the range 400 B.C. to A.D. 120., Middle Iron Age to Roman.

Only damaged rim fragments survive of the other two vessels, making identification of the type difficult. One vessel, also from ditch 192, has a squared rim, very slightly hollowed internally, and probably everted. This is the only one where a diameter can be estimated, probably c. 22cms, and is too fragmentary to be certain of the vessel type, although possible parallels occur from early deposits at Rudston Villa (as Rigby 1980, fig 27, 10). The other vessel, from pit 206, is also squared but appears to be inturned, possibly from a barrel jar, similar to the Bronze Age bucket urns (Rigby 2004, fig 4), but no estimate of diameter is feasible. If it is of this type, it is a long-lived type, still occurring in Middle to Late Iron Age deposits, and derivatives survive into the Roman period.

Given this fragmentary evidence, the similarity with The Enclosure, Rudston is probably the most useful, where it appears the enclosure was probably abandoned in the later 1st century A.D. (Rigby 2004, 160), and this may be the case with the enclosure at Reighton.

An interesting find is a sherd from coarse erratic-tempered ware from the ploughsoil (cxt 237).
Erratic-tempered wares contain common rock fragments, which appear to be from crushing glacial erratic boulders and pebbles, including dolerite. This type of tempering was used from the Late Bronze Age to the early Iron Age in north-east England (Rigby 2004; Freestone and Rigby 1983; Freestone and Middleton 1991; Wardle 1992), mostly in areas covered by deposits of Boulder Clay, as in the lowland coastal area of Yorkshire. Two fragments of stone included with the pottery were of the type used in this ware.

Definite Roman sherds include an abraded base fragment of a bowl or dish in Central Gaulish samian from ditch 117, datable to the mid-2nd century or later, five sherds from a Dressel 20 Spanish olive-oil amphora from the secondary fill of ditch 152, in a gritty fabric, broadly datable to the early- to mid-2nd century. A single very abraded rim fragment from a Huntcliff jar came from ploughsoil, datable to the later 4th century. A GREY bowl with a low bead and flange came from the material machined from over the enclosure ditch (cxt 214), which would fit a later 2nd to 3rd century date, and a grey jar rim from the ploughsoil dating to the mid- to late-2nd century. Ditch 003 contained fragments in a standard Roman GREY fabric from a jar or bowl, possibly of 2nd-century date. The only other definite Roman sherds came from the wall foundation trench 187, including a fragment of a lid with a moulded rim (similar in type to Darling 1984, fig 16, 85 datable to the Flavian to Hadrianic period), and traces of burnished wavy-line decoration, datable probably to the early- to mid-2nd century. There was also a body sherd from a closed form in fine grey fabric, of similar date from this deposit.

The only post-Roman sherd was a glazed Scarborough ware sherd datable to the 13th- to early 14th-century from the quarry pit 178 (identified by Chris Cumberpatch).

CONCLUSIONS

The fragmentary Iron Age pottery suggests a later Iron Age date, the enclosure perhaps going out of use in the early Roman period. Dressel 20 amphora sherds from ditch 152 cannot be closely dated, but a range of late 1st to mid 2nd century is possible for this fabric type. The fragments of a grey jar or bowl from ditch 003 are too badly flaked to provide any certain date. The only other datable Roman sherd stratified is the lid from the wall foundation trench 187, almost certainly decorated with a burnished wavy line, and it is this feature that suggests a date-range in the early- to mid-2nd century, although the lid type occurs in the later 1st century. All other Roman sherds not usefully stratified suggest some activity in the area in the 2nd century, while the latest sherd, the Huntcliff jar fragment is very abraded, perhaps from manuring. The closing sherd is the glazed Scarborough ware sherd, datable to the 13th- to early 14th-century.

FABRIC DEFINITION

Publication of *The National Roman Fabric Reference Collection*, abbreviated NRFRC (Tomber and Dore 1998), obviate the need to describe the major imported and widely traded Romano-British wares in detail.

DR20	Amphorae Dressel 20 amphorae. Peacock & Williams 1986 Class 25, from Baetica, Southern Spain. Contents, olive oil. **NRFRC: Baetican (Early) Amphorae 1 BATAM1.**
ETW	Erratic-tempered ware. Crushed igneous rocks including dolerite, a type of fabric used from the Bronze Age to the Iron Age, and perhaps later, mostly seen in north-eastern Britain. Varying fabric textures from dense to coarse, with sparse to common inclusions of crushed rock.
FCLAY	Fragments of fired clay.
GFIN	Grey fine. This coding is used for reduced fabrics lying between the common quartz-gritted GREY used for most jars and bowls, and the very fine fabrics used for London-type ware and Parisian ware. Some Parisian ware is coarser and fits into this category. Single body sherds from wall foundation trench 187.
GREY	Grey, undifferentiated quartz-gritted grey fabrics, hard wares with sparse to common sub-rounded quartz inclusions. Some sherds with inclusions suggesting a source using the local boulder clay.
GRFF	Grey, fairly fine fabric. This code covers fabrics intermediate between the common grey wares with sparse to common quartz and fine grey wares (GFIN), which itself is coarser than the very fine fabrics used for Parisian and 'London' wares. Usually used for finer vessels for the table, particularly beakers.
HUNT	Huntcliff, calcite gritted ware. **NRFRC: HUN CG**.
OX	Oxidized, miscellaneous oxidized wares. This coding comprises all miscellaneous oxidized sherds, usually in varying red-brown shades and degrees of grittiness, for which no significant fabric groupings are evident. Only two small fragments, with sparse to common quartz inclusions from ploughsoil.
PRO	Post-Roman sherds, single sherds from quarry pit 178.
SAMCG	Samian Central Gaul, from Lezoux. **NRFRC : LEZ SA**

SHEL Shell-gritted, miscellaneous shell-gritted ware. Just two small irregular fragments with common fine shell, pit 075 and ?posthole 137.

TILE Tile fragments, usually building material. Flaked fragment ditch 003; ?Roman fragment quarry pit 178.

VESIC Vesicular, vesicular sherds, probably due to loss of calcite inclusions.

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APPENDIX 1 SUMMARY OF QUANTITIES, DATING AND COMMENTS

Cut	Feature	Detail	Cxt	Sherds	Weight	Date	Comments
-	Unstratified	-	080	1	9	LIA/ROM?	
-	Layer	Silting layer	140	2	5	ROM?	
-	Finds x mach.o/ encl.ditch	-	214	3	51	L2-3	
-	Roadside ditch	Roadside ditch	230	1	9	LIA/ROM?	
-	Former ploughsoil?	Former ?ploughsoil	232	1	17	ML2+	
-	Former ploughsoil?	?Former ploughsoil	237	8	119	ML4	
007	Ring ditch	Fill of [007]	127	4	1	LIA/ROM?	
003	Ditch	Ditch	003	30	104	ROM	Poss L2 on
007	Ring ditch	Fill of [007]	125	1	2	LIA/ROM?	
026	Ditch	Fill of [026]	027	4	20	ROM?	
043	Ditch	Fill of [043] II	126	2	1	LIA/ROM?	
047	Curvilinear gully	Fill of [047]	048	2	3	LIA/ROM?	Not def. datable
073	Stone lined pit	Fill of [073]	131	5	19	LIA/ROM?	
075	Pit	Fill of [075]	134	1	1	UNDATED	
109	Pit	Fill of [109]	110	2	7	LIA/ROM?	
117	Ditch	Fill of [117]	129	5	35	M2+?	Ign.rock frag;wt 5g
119	Gully	Fill of [119]	120	1	5	LIA/ROM?	
137	Posthole?	Primary fill of [137]	139	1	4	LIA/ROM?	
152	Ditch	Secondary fill of [152]	153	3	13	LIA/ROM?	
152	Ditch	Primary fill of [152] II	212	23	115	LIA/ROM?	
152	Ditch	Secondary fill of [152] II	213	6	243	EM2?	
155	Ditch recut	Fill of [155]	156	1	1	ROM	
163	Ditch	Fill of [163]	164	2	13	ROM	
170	Pit	Fill of [170]	171	17	536	LIA/ROM?	
178	Quarry pit	Quarry pit	178	2	23	13-E14C	Scarborough ware Phase II
187	Wall foundation trench	Fill of [187]	128	4	31	EM2?	
192	Ditch	Fill of [192]	191	16	135	LIA?	
197	Ditch recut of [087]	Fill of [197] IV	199	3	13	LIA/ROM?	
197	Ditch recut of [087]	Fill of [197] II	200	1	9	LIA/ROM?	
206	Pit	Fill of [206]	207	4	23	LIA	

Cut	Feature	Detail	Cxt	Sherds	Weight	Date	Comments
208	Ditch	Fill of [208]	209	3	10	LIA/ROM?	Ign.rock frag;wt 4g
233	Recut of curvilinear ditch [234]	Silting of recut [233]	236	4	32	LIA/ROM?	

APPENDIX 2 ARCHIVE DATA

Cut	Feature	Cxt	Fabric	Form	Manuf+	Ve	Alt	D#	Details	Lnk	Shs	Wt
-	Unstratified	080	VESIC	?	HM?	-	-	-	BS ?BASE;DKGRY;TINY WHT ANG.INCLS+RB&QTZ;CHK FB	-	1	9
-	Unstratified	080	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
-	Silting layer	140	GREY	-	?	-	ABR	-	BS DKGRY;FFINE FB;FE INCLS;OCC QUARTZITE;FINE MICA;CF 027	-	1	4
-	Silting layer	140	VESIC	-	?	-	VABR	-	BS SCRAP;DKGY;QTZ SS?;?CALCITE	-	1	1
-	Silting layer	140	ZDATE	-	-	-	-	-	ROM?	-	-	-
-	Finds x machining o/encl.ditch	214	GREY	BFBL	-	1	ABR	02	COMP PROF;LT GRY;LOW BEAD;STUBBY FLANGE;DIAM14?	-	3	51
-	Finds x machining o/encl.ditch	214	ZDATE	-	-	-	-	-	L2-3	-	-	-
-	Roadside ditch	230	VESIC	-	HM	-	-	-	BS;DKGRY;PROB CALCITE	-	1	9
-	Roadside ditch	230	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
-	Former ploughsoil?	232	GREY	JCUR	-	-	-	-	RIM/NECK;DIAM14;LTGRY;FFINE;SPARSE FINE QTZ	-	1	17
-	Former ploughsoil?	232	ZDATE	-	-	-	-	-	ML2+	-	-	-
-	Former ploughsoil?	237	HUNT	JHUN	HM	-	VABR	-	RIM FRAG;DKGRY;VESIC FB;RNDED PEBBLES	-	1	43
-	Former ploughsoil?	237	GREY	-	-	-	VABR	-	BS LTGRY;FFINE;SPARSE QTZ	-	1	3
-	Former ploughsoil?	237	OX	-	-	-	VABR	-	BS LTRB;FFINE;SPARSE QTZ	-	1	2
-	Former ploughsoil?	237	OX	CLSD	-	-	VABR	-	BS GRY FB;RB EXT;COMM QTZ	-	1	2
-	Former ploughsoil?	237	GREY	CLSD	-	-	VABR	-	BS ?BASE FRAG;COMM QTZ	-	1	13
-	Former ploughsoil?	237	GREY	-	-	-	VABR	-	BS QUARTZITE	-	1	5
-	Former ploughsoil?	237	VESIC	-	-	-	VABR	-	BS ?CALCITE/SHELL;ROUND PEBBLE	-	1	2
-	Former ploughsoil?	237	ETW	-	-	-	ABR	-	BS LGE IGN.ROCK INCLS;ERRATIC TEMP	-	1	49
-	Former ploughsoil?	237	ZDATE	-	-	-	-	-	ML4	-	-	-
003	Ditch	003	TILE	-	-	-	VABR	-	FLAKED FRAG ONLY;FFINE FB	-	1	18
003	Ditch	003	GREY	JB	-	1	FLAKED	-	FLAKES RIM;NONE COMP;GRY FB;LTER SURFS;MOD.QTZ	-	7	12
003	Ditch	003	ZDATE	-	-	-	-	-	ROM	-	-	-
003	Ditch	003	VESIC	-	?	1?	VABR	-	BSS DKGRY;FINER VESIC;FE ONLY OBV INCLS	-	3	16
003	Ditch	003	VESIC	CLSD?	HM	1?	VABR	-	BSS 2 BASE FRS;COARSE VESIC;LOST ?CALCITE	-	19	58
003	Ditch	003	ZZZ	-	-	-	-	-	POSS L2>	-	-	-
007	Ring ditch	125	VESIC	-	-	-	VABR	-	FLAKE;SMALL;GRY W BN SURF;QUARTZITE;VABR	-	1	2
007	Ring ditch	125	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
007	Ring ditch	127	VESIC	-	-	-	VABR	-	TINY SCRAPS;GREY;?CALCITE	-	4	1
007	Ring ditch	127	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
026	Ditch	027	GREY	CLSD	WM	1	-	-	BSS DKGRY;GRY SLATE?;QUARTZITE;BIOTITE;HARD;BOULDER CLAY;CF 140	-	4	20
026	Ditch	027	ZDATE	-	-	-	-	-	ROM?	-	-	-
043	Ditch	126	VESIC	-	-	-	VABR	-	TINY SCRAPS;?CALCITE VESIC	-	2	1
043	Ditch	126	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
047	Curvilinear gully	048	VESIC	-	?	1	VABR	-	BSS/FLAKES J;BN FB;PT RB SURFS;?CALCITE	-	2	3

Cut	Feature	Cxt	Fabric	Form	Manuf+	Ve	Alt	D#	Details	Lnk	Shs	Wt
047	Curvilinear gully	048	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
047	Curvilinear gully	048	ZZZ	-	-	-	-	-	NOT DEF.DATABLE	-	-	-
073	Stone lined pit	131	VESIC	-	-	-	VABR	-	BSS DKGY FB;PT BN SURF;?CALCITE	-	5	19
073	Stone lined pit	131	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
075	Pit	134	SHEL	-	-	-	VABR	-	IRREG LUMP;NO SURFS;COMMON LINEAR SHELL INCLS	-	1	1
075	Pit	134	ZDATE	-	-	-	-	-	UNDATED	-	-	-
109	Pit	110	GREY	CLSD	?	-	-	-	BS DKGRY;BN EXT;ANG QUARTZITE;BIOTITE;SPARKLEY	-	1	6
109	Pit	110	VESIC	-	?	-	ABR	-	FLAKE ONLY;?CALCITE	-	1	1
109	Pit	110	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
117	Ditch	129	SAMCG	B?	-	-	VABR	-	BS PT FTRG;THICKISH WALL	-	1	14
117	Ditch	129	GREY	CLSD	-	-	-	-	BS LTGRY;STD FAB;TINY INCLS	-	1	10
117	Ditch	129	VESIC	-	-	-	VABR	-	BS DKGRY;?CHALK;QUARTZITE;CRYSTAL.INCL	-	1	3
117	Ditch	129	VESIC	-	-	-	VABR	-	SCRAP ONLY;DKGRY	-	1	2
117	Ditch	129	FCLAY	-	-	-	VABR	-	IRREG LUMP;RB;NO SURFACES	-	1	6
117	Ditch	129	ZDATE	-	-	-	-	-	M2+?	-	-	-
117	Ditch	129	ZZZ	-	-	-	-	-	IGN.ROCK FRAG;WT 5G	-	-	-
119	Gully	120	VESIC	-	?	-	ABR	-	FLAKE BS;GRY W BN SURFS;MICA;OCC QTZ;?CALCITE	-	1	5
119	Gully	120	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
137	Posthole? Primary fill	139	SHEL?	-	-	-	VABR	-	BS DKGY;DENSE FINE SHEL;LGER INCLS INCL CALCITE	-	1	4
137	Posthole? Primary fill	139	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
152	Ditch Secondary fill	153	VESIC	CLSD	-	1	-	-	BS DKGY;COARSE VESIC;?BNT INT;?FLINT FLAKES	-	2	12
152	Ditch Secondary fill	153	VESIC	-	-	-	VABR	-	FLAKE;BN SURF;DKGRY	-	1	1
152	Ditch Secondary fill	153	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
152	Ditch Secondary fill II	213	DR20	A	-	1	-	-	BSS;E-M GRITTY FAB	-	5	242
152	Ditch Secondary fill II	213	VESIC	-	HM?	-	VABR	-	SCRAP DKGRY;PROB CALCITE	-	1	1
152	Ditch Secondary fill II	213	ZDATE	-	-	-	-	-	EM2?	-	-	-
152	Ditch Primary fill II	212	VESIC	CLSD	HM	1?	-	-	BSS DKGRY;RB EXT;LOST ?CALCITE	-	23	115
152	Ditch Primary fill II	212	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
155	Ditch recut	156	GREY	-	-	-	VABR	-	BS SCRAP;RB FFINE FB W OCCAS.QTZ SS?;DKGY EXT	-	1	1
155	Ditch recut	156	ZDATE	-	-	-	-	-	ROM	-	-	-
163	Ditch	164	GREY	CLSD	-	1	VABR	-	BSS DKGRY COMM QTZ;GRYBN SURFS	-	2	13
163	Ditch	164	ZDATE	-	-	-	-	-	ROM	-	-	-
170	Pit	171	VESIC	JBL?	HM	1	-	-	BASE FRAG DIAM20?;BSS;DKGY;BN SURFS;TRACE VERT SMOOTHING;CALCITE	-	17	536
170	Pit	171	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
178	Quarry pit	178	PRO	-	GLAZ	-	-	-	BS RB FB;GREEN GLAZE INT/EXT;SCARBORO PHASE II	-	1	2
178	Quarry pit	178	TILE	-	-	-	VABR	-	FRAG DENSE FINE QTZ ETC INCLS;?ROM	-	1	21
178	Quarry pit	178	ZDATE	-	-	-	-	-	13-E14C	-	-	-
187	Wall foundation trench	128	GREY	LMR	BWL?	-	-	-	RIM/PT WALL;DKGY;F.COMM SR QTZ;?FLINT;MOULDED RIM;TRACE BWL	-	1	11
187	Wall foundation trench	128	GFIN	CLSD	-	-	ABR	-	BS DKGRY S'WICH FB/S;SILT SIZE INCLS	-	1	6
187	Wall foundation trench	128	GRFF	CLSD?	-	-	VABR	-	BS LTGRY;V SPARSE INCLS;SOME MICA;SOFTISH	-	1	11
187	Wall foundation trench	128	GREY	-	-	-	VABR	-	BS SCRAP;BNISH FB;F.COMM QTZ;DKGY SURFS	-	1	3

Cut	Feature	Cxt	Fabric	Form	Manuf+	Ve	Alt	D#	Details	Lnk	Shs	Wt
187	Wall foundation trench	128	ZDATE	-	-	-	-	-	EM2?	-	-	-
192	Ditch	191	VESIC	BEV	HM	1	BNT EXT	01	RIMS/PT WALL;DIAM30+;IRREG/ANG VESIC ?CALCITE	-	2	60
192	Ditch	191	VESIC	B?	HM	1	VABR;FLAKED	-	RIMS;SQUAR'ISH;?INTURNED;NON J BSS/FLAKES;OCC QTZ;CALCITE;DIAM22?	-	14	75
192	Ditch	191	ZDATE	-	-	-	-	-	LIA?	-	-	-
197	Ditch recut of [087] IV	199	VESIC	-	HM	1	-	-	BSS DKGRY;BN SURFS;VESIC=?CALCITE	-	3	13
197	Ditch recut of [087] IV	199	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
197	Ditch recut of [087] II	200	VESIC	-	HM?	-	-	-	BS DKGRY;?CALCITE	-	1	9
197	Ditch recut of [087] II	200	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
206	Pit	207	VESIC	JB	HM	1	-	-	RIMS FLAT-TOP;?INTURN;SOME QTZ;CALCITE;RB SURF	-	2	11
206	Pit	207	VESIC	-	HM	1	-	-	BSS SIMILAR FAB;SAME VES?	-	2	12
206	Pit	207	ZDATE	-	-	-	-	-	LIA	-	-	-
208	Ditch	209	VESIC	-	HM	1?	-	-	BSS DKGRY;VESIC MORE LINEAR?;SHELL OR CALCITE?	-	3	10
208	Ditch	209	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-
208	Ditch	209	ZZZ	-	-	-	-	-	IGN.ROCK FRAG 4G	-	-	-
233	Recut of curvil. ditch;silting [234]	236	VESIC	-	HM	-	-	-	BS OXID RB;?FOSSIL L'STONE SHELL	-	1	23
233	Recut of curvil. ditch;silting [234]	236	VESIC	-	HM	-	BNT	-	BS OXID BN BURNT;SQ VESIC ?CALCITE	-	1	3
233	Recut of curvil. ditch;silting [234]	236	VESIC	-	HM	-	BNT	-	BSS BURNT;?CALCITE	-	2	6
233	Recut of curvil. ditch;silting [234]	236	ZDATE	-	-	-	-	-	LIA/ROM?	-	-	-

APPENDIX 3 ARCHIVE CODES

Code	Form
?	Uncertain form
A	Amphora
B?	Bowl?
BEV	Bowl everted-rim
BFBL	Bowl low bead-and-flange
CLSD	Closed form
JB	Jar or bowl
JBL?	Jar or bowl large
JCUR	Jar curved-rim
JHUN	Jar Huntcliff
LMR	Lid moulded-rim

Code	Manuf+
?	Uncertain manufacture
BWL?	Burnished wavy-line
GLAZ	Glazed
HM	Hand-made
WM	Wheel-made

Appendix 5: Charred Plant Remains Report

Ellen Simmons, ARCUS, July 2006

CONTENTS

TABLES

NON-TECHNICAL SUMMARY

Charred plant macrofossils from Willows Site A have provided evidence for the cultivation of emmer wheat and barley in the Early Neolithic and Late Bronze Age. Wheat most likely to be spelt, and barley were cultivated in the Late Iron Age/Roman period. Charred hazel nuts and crab apple provide evidence for the gathering of wild food resources during the Early Neolithic and Middle Bronze Age.

Checked by:	Passed for submission to client:
Date:	Date:
Dr Peter Marshall *Post Excavation Manager*	James Symonds *Director*

1 Introduction

During excavations at Willows Site A, Reighton, North Yorkshire, samples were taken for the recovery of charred plant macrofossils and charcoal. Twenty five soil samples were taken, using a judgmental sampling system, from features dated to the Early Neolithic, Middle Bronze Age, Late Bronze Age, Late Iron Age and Roman periods.

2 Methodology

Samples were processed for charred plant macrofossils using a water separation machine. The flots were collected in sieves of 1mm and 300µm mesh, and the remaining heavy residue retained in a 1mm mesh. The > 1mm and > 300m flot material was sorted using a low power binocular microscope (x7-x45), and the heavy residue material sorted by eye, for organic remains and artifacts. Random sub-samples of not less than ¼ were taken from the particularly rich flots and residues of samples 5, 25 and 26 using a riffle box in order to produce a representative sub-sample. The remaining flots and residues were sorted in their entirety.

Charred plant macrofossils were identified by comparison with the reference collection at the Department of Archaeology, University of Sheffield. Plant nomenclature follows Stace (1997). The results are summarised in Tables 1 – 4.

3 Results

The results are discussed by phase and by feature type.

3.1 Early Neolithic (phase 1)

Samples were collected from fill (029) of pit [028], fill (054) of pit [053], fill (046) of pit [045], fill (238) of pit [021] and fill (240) of pit [023], as well as from the fill (076) a post hole [075].

Posthole

One sample taken from fill (076) of a post hole [075] contained cereal and barley grain as well as chaff identified as emmer/spelt wheat. Weed / wild plant seeds which were identified included orache (*Atriplex* sp.) and clover/medick (*Trifolium* / *Medicago*).

Pits

A small number of cereal grains were present in pit deposit (054) [053] including possible wheat, as well as weed / wild plant seeds including stinking mayweed (*Anthemis cotula*), which is a plant of cultivated land, rough ground and heavy soils. A small quantity of charred hazel nutshell was present in pit deposit (054) and (046).

Early Neolithic Pit deposits (238) [021] and (240) [023] were found to contain exceptional quantities of charred pericarp fragments as well as a small number of seeds of crab apple (*Malus sylvestris*). Both the outer skin and the core, occasionally still containing charred seeds, was present on many of the larger fragments suggesting that the whole fruits rather than apple cores had been burnt. A large number of charred hazel nutshell fragments (*Corylus avellana*) were also present. Examination of the broken edges of the charred hazel nutshells indicated that they were fragmented prior to charring and not as a result of excavation or sample processing and no hazel nut kernels or whole hazel nuts were present.

Pit deposit 029 also contained a large number of charred hazel nutshell fragments but with only a residual presence of apple pericarp fragments. One charred seed of dock (*Rumex* sp) and one of grass (*Poaceae*) were also present in this deposit.

3.2 Middle and Late Bronze Age (phases 2 and 3)

One sample was collected from the fill (006) of a Middle Bronze Age pit [005]. Samples were also collected from the primary (010) and tertiary (008) fill of a ring ditch and the backfill (198) of a ring gully from a Late Bronze-Age ring gully/ditch feature [007].

Middle Bronze Age Pit
The one Middle Bronze Age sample contained a similar assemblage of charred plant remains to the Early Neolithic samples. A large quantity of charred hazel nutshell fragments were present, along with a small number of charred wild plant seeds including fat hen (*Chenopodium album* type), which is a plant of waste and cultivated ground.

Late Bronze Age ring ditch / gully fills
The primary fill (010) of the ring ditch on the eastern side of the ring gully / ditch feature [007] contained one charred barley grain as well as two glume bases which could only be identified as either emmer or spelt wheat. A sample taken from the tertiary fill of the same ring ditch contained a slightly larger number of charred cereal grains and chaff, including grains and chaff of possible emmer wheat (*Triticum* cf. *dicoccum*) as well as grains of barley (*Hordeum* sp.). Also present in this fill were significant quantities of charred weed / wild plant seeds the majority of which were from grasses (*Poaceae*) and sedges (*Carex* sp.), but also included blinks (*Montia fontana* ssp. *chondrosperma*) which usually grows in damp environments.

The backfill (198) of a ring gully on the western side of the ring ditch/gully feature contained no charred crop material and only small numbers of charred wild / weed plant seeds, including grasses and thyme leaved sandwort (*Arenaria serpylifolia*), which grows on open ground on well drained soils.

3.3 Late Iron Age/Early Roman (phase 4)

Samples were collected from the primary (212) and secondary (213) fill of ditch [152] as well as from the secondary fill of ditch [182], fill (191) of ditch [192], the fill 156 of ditch recut [155] and a stone spread (215) in ditch [216]. The fill (048) of a ring gully [047] was also sampled as was the fill of an upturned pot vessel (171).

Ditch and gully fills
Charred cereal remains were found to be present in small numbers in the ditch fills (184), (212), (156) and (215) and the gully fill (048) and included wheat grain (*Triticum* sp.) and barley grain. Relatively small numbers of charred wild / weed plant seeds were present in all the ditch fills and the gully fill. These included knotgrass (*Polygonum arenastrum/aviculare*), common chickweed (*Stellaria media*), thyme leaved sandwort and grasses which are all generally plants of open, waste or cultivated ground as well as blinks which tends to grow on damp ground and sedge. Seed pod fragments of wild radish (*Raphanus raphanastrusm* L.) were also present.

Fill of upturned pot vessel
This deposit contained poorly preserved charred cereal grain, two fragments of root/tuber and two sedge seeds.

3.4 Unphased

Samples from undated contexts included pit [019] fill (020) and pit [017] fill (018) both of which contained large quantities of burnt animal bone, two fills (130) and (132) from a stone lined possible burial chamber [073], the backfill (112) of stone lined pit [111] and the fill (084) of fire pit [083] .

Pits
Two charred barley grains and two wild radish seed pods were present in pit fill 018. A large number of the charred seeds of weed / wild plants were present in pit fills 020 and 018. These include fat hen (*Chenopodium album* L.), equal leaved knotgrass (*Polygonum arenastrum* Boreau.), common chickweed (*Stellaria media* L.), sheep's sorrel (*Rumex acetosella* L.) and dock (*Rumex* sp.) which are all representative of open grassy habitats and disturbed ground.

Stone lined burial? chamber
Wheat and barley were present in the primary fill (132) of this feature while one possible emmer wheat grain was in the secondary fill (130). Charred weed / wild plant seeds were also present most of which could not be identified to species but included grasses and sheep's sorrel (*Rumex acetosella*), a plant of open ground, short grassland and cultivated land.
A small number of unidentified wheat and cereal grains as well as one possible emmer wheat (*Triticum dicoccum*) grain were present in this feature. Also present were a small number of wild / weed seeds which were probably harvested along with the crops then charred following removal during crop processing. These include sheep's sorrel (*Rumex acetosella*) a plant of open and cultivated ground and grassland. This assemblage is likely to represent re-deposited waste material from hearths and fires.

Stone lined pit
A charred cereal and barley grain were present in this deposit along with charred dock and grass seeds and a fragment of root/tuber.

Fire Pit
Four charred fragments of hazel nutshell were present in this deposit.

4 Discussion

The charred plant assemblage from Early Neolithic contexts at Willows Site A, consisting of the remains of cultivated cereals and remains of gathered wild plant foods is typical for the Neolithic period in Britain (Moffett *et al*, 1989, Grieg, 1991, G. Jones, in press).

The cereal grain present in pit [053] and posthole [075] was poorly preserved. Barley grain was present although it could not be determined whether this was the hulled or naked type. Wheat grain was also present along with a glume base identified as either emmer or spelt wheat. Emmer wheat and barley are both present at other early Neolithic sites in Northern Britain including Lismore fields in Buxton (Garton, 1991, Jones forthcoming) as well as the Scottish sites of Balbridie (Fairweather and Ralston, 1993) and Claish (Millar and Ramsay, 2002). The presence of charred cereal chaff and wild/weed plant seeds is more unusual for sites of this period. This material possibly represents weeds harvested along with the crops and then burnt as waste along with chaff following removal during crop processing. The low density of charred cereal remains as well as charred wild plant seeds in the pit and posthole fills suggests that they represent a background scatter of accidentally burnt grain and crop processing waste which was then re-deposited in the fills of these features.

Charred hazel nutshell is very common on Neolithic sites, especially in pits (Moffett, *et al* 1989), but the presence of charred crab apple skin and flesh as well as seeds is more unusual, although similar material has been found at Caythorpe on the Yorkshire Wolds and at Marton-le-Moor North Yorkshire (Huntley and Stallibrass, 1995). Crab apple and hazelnut suggest the presence of woodland in the vicinity of the site.

Charred hazel nutshell is likely to represent waste material from the processing of hazel nuts for their kernels, with the shells then being burnt as waste, or possibly used as kindling (Jones, 2000). The presence of charred apples in two of the pits may represent an accident during cooking or drying with the charred waste being discarded in the pits. Evidence for dried apple has been found at the early Neolithic site of Tankardsdown, in Ireland (Monk, 1988) and at excavations in the Arrow Valley, Warwickshire (Moffett and Ciaraldi, 1999). The pottery and flint present within the pit fills did not however derive from a burnt context, which, along with the low density of charcoal present, suggests that this material is unlikely to represent general hearth waste.

The presence of charred fragments of whole apples rather than just apple cores also suggests possibility that this material represents wild plant food storage in the pits. This possibility is significant, as much recent discussion has centred around the relative importance of cereals and wild food plants during the Neolithic in Britain (Jones 2000, Robinson 2000, Monk, 2000). The

rarity of cereal remains and the ubiquitousness of charred wild food plant remains such as hazel nutshells, in charred assemblages from Neolithic sites, has led to an interpretation (for example Edmonds, 1999, Whittle, 2003, Pollard and Reynolds, 2002) that cereal cultivation in the Neolithic was limited and that wild foods were as, if not more, important than cereals in the Neolithic diet. As argued by Jones, (2000) and Monk, (2000) this paucity in the record is more likely to be due to cereals coming into contact with fire infrequently as they are a product intended for consumption rather than waste, as is the case with hazel nutshell. Crop material is also more fragile and less likely to survive in the archaeological record than nutshells.

Where burnt Neolithic storage contexts have been sampled for charred plant remains as at Balbridie in Scotland (Fairweather and Ralston, 1993) and Lismore Fields in Yorkshire (Garton, 1991), large amounts of cereal remains have been found with little evidence for stored wild plant foods.

Evidence for the storage of crab apple at Willows Site A would support an interpretation of them being an important part of year round Neolithic food resources rather than an occasional, seasonal, food resource. The charred remains of hazel nuts present in the same deposits as the charred crab apple did not however include any kernels or whole hazelnuts suggesting that this material is unlikely to represent a burnt storage context.

It is possible that the charred crab apple and the hazel nutshells were deposited in the pits as part of some form of ceremony. Robinson (2000) comments that 'carbonised hazel nutshells are abundant in pits either because the pits were used to store nuts which were then processed nearby or the deposition of burnt nutshells was a common ceremony associated with pits.' The presence of food remains including charred wild plant foods along with highly decorated pottery, some of which was placed, in Mid and Late Neolithic pits at Yarnton near Oxford were interpreted by Hey *et al* (2003) as 'probably the result of small, household rituals commemorated by acts of deposition within the ground'.

The one sample from a Middle Bronze Age pit also contained large amounts of charred hazel nutshell. This suggests the gathering of this wild food resource continued into the Bronze Age at Willows Site A.

The charred plant assemblage in samples from a Late Bronze Age ring ditch/gully feature included emmer and barley grain. These crops are again typical of the Bronze Age in Northern Britain (Grieg, 1999) and were present in samples from Late Bronze Age hut circles at Hallshill, Northumberland, (Van der Veen, 1985) and within Late Bronze Age palisade trenches at Eston Nab, Cleveland (Van der Veen, 1988). The charred wild plant seeds that were also present were from plants which generally grow in open grassy environments, on cultivated ground and in damp soils. These plants are likely to have been harvested along with the crops, and the seeds charred as waste following removal during crop processing. The low density of this material suggests that it represents accidental burning of grain during cooking and burnt waste from crop processing which became re-deposited into the fills of the ditches and gully.

This feature has been interpreted as a possible excarnation platform with the gully possibly backfilled following feasting. The remains of cereals present in the fills of this feature may therefore represent food consumed as part of ceremonies associated with the site. It is equally likely however that this material originated from a settlement in the vicinity of the site or from the everyday rather than the ceremonial consumption of food.

Barley and wheat were present in the fills of ditches dated to the Late Iron Age/Roman period. Barley and spelt wheat (*Triticum spelta*) are the most common cereals found at Iron Age and Roman sites in Northern Britain (Grieg, 1991) such as Thorpe Thewles, Cleveland (Van der Veen, 1987). Relatively small numbers of charred wild/weed plant seeds from plants which generally indicate open ground, grass land and cultivated ground as well as damp soils were also present. These are likely to represent weeds harvested along with the crops and burnt as waste following removal during crop processing. This assemblage in general is characteristic of a

background scatter of charred remains from crop processing and food preparation, probably from a nearby settlement.

5 Conclusions

The charred plant macrofossils present in samples taken during excavations at Willows Site A have provided evidence for the cultivation of emmer wheat and barley in the Early Neolithic and Late Bronze Age and wheat, which is most likely to be spelt, and barley in the Late Iron Age/Roman period. Charred remains of hazel nuts and crab apple have also provided evidence for the gathering of wild food resources, and suggest the proximity of woodland, during the Early Neolithic and Middle Bronze Age period.

The charred remains of crab apple are unusual and significant due to the presence of relatively large quantities of flesh and skin fragments, as well as seeds, indicating that whole crab apples rather than cores had been charred. The pit deposits within which the charred crab apple was found also contained charred hazel nutshells, but little evidence for other burnt material indicative of hearth waste and a low density of charcoal. No whole hazelnuts or hazel nut kernels were present suggesting that the material is unlikely to represent a burnt storage context. It is possible that the crab apple and hazel nutshells may have been deposited in the pits as part of some form of ceremony.

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SAMPLE NUMBER	*5*	*16*	*19*	*25*	*26*	**009**
CONTEXT TYPE	*pit*	*pit*	*pit*	*pit*	*pit*	**post hole**
CONTEXT NUMBER	*029*	*054*	*046*	*238?*	*240?*	**076**
Fraction of sample sorted	1/2	1/1	1/1	1/4	1/4	***1/1***
cereals and food plants						
Triticum dicoccum/spelta (emmer/spelt whea						
glume base	-	-	-	-	-	1
cf. Triticum (cf. wheat)						
grains	-	0.5	-	-	-	-
Hordeum sp. (barley)						
grain	-	-	-	-	-	1
Cerealia indet (cereal indet)	-	1	-	-	-	2
Corylus avellana (hazel)						
nutshell fragments (number)	787	12	3	628	488	-
nutshell fragments (weight in grams)	11.63	0.11	0.01	8.09	10.60	-
Malus sylvestris (crab apple)						
flesh fragments (number)	10	-	-	1640	1010	-
flesh fragments (weight in grams)	0.09	-	-	18.48	16.76	-
seed	-	-	-	5	4	-
Raphanus raphanastrum L. (wild radish)	-	-	-	-	-	1
weeds / wild						
Atriplex sp.	-	-	-	-	-	1
Rumex sp.	1	-	-	-	-	-
Trifolium / Medicago	-	-	-	-	-	1
Anthemis cf. cotula	-	1	-	-	-	-
Poaceae (grasses) < 2mm	-	1	-	-	-	-
Poaceae (grasses) > 2mm	1	-	-	-	-	-
other						
cf. root / tuber fragments	-	-	-	-	-	1
volume of soil processed (litres)	**14**	**10**	**4**	**4**	**8**	**16**

Table 1 - Charred plant remains from phase 1 contexts (Early Neolithic).

SAMPLE NUMBER	*001*	*14*	*15*	**21**
CONTEXT TYPE	*pit*	*ring ditch*	*ring ditch*	**ring gully**
CONTEXT NUMBER	*006*	*008*	*010*	**198**
Fraction of sample sorted	1/1	1/1	1/1	***1/1***
cereals and food plants				
Triticum *cf*. dicoccum (cf. emmer)				
grain	-	2	-	-
glume base	-	1	-	-
T.dicoccum/spelta (emmer/spelt wheat)				
glume base	-	2	2	-
Triticum sp. (wheat)				
grains	-	1	-	-
Hordeum sp. (barley)				
grain	-	1	1	-
Cerealia indet	-	4	-	-
Corylus avellana (hazel)				
nutshell fragments (number)	226	-	-	-
nutshell fragments (weight)	3.30	-	-	-
cf. Raphanus raphanastrum L. (cf. wild radish)	-	-	-	1
weeds / wild				
Chenopodium album L. (fat hen)	1	-	-	-
Chenopodium sp. kernels	-	1	-	-
Montia fontana ssp. chondrosperma Fenzl. (blinks)	-	1	-	-
Arenaria serpylifolia L. (thyme leaved sandwort)	-	-	-	1
Rumex sp.	1	-	1	-
Compositeae	-	-	1	-
Carex sp. trigonous	-	9	1	-
Poaceae > 2mm	-	23	3	1
Poaceae < 2mm	-	11	-	1
other				
cf. root / tuber fragments	-	3	-	-
volume of soil processed (litres)	**12**	**21**	**15**	**17**

Table 2 - Charred plant remains from phases 2 and 3 (Early and Middle Bronze Age)

SAMPLE NUMBER	*017*	*020*	*023*	*018*	*022*	*024*	*004*	**012**
CONTEXT TYPE	*ditch*	*ditch*	*ditch*	*ditch*	*ditch*	*ditch*	*ring gul*	**pot fill**
							048	**171**
CONTEXT NUMBER	*184*	*191*	*212*	*156*	*215*	*213*	1/1	***1/1***
Fraction of sample sorted	1/1	1/1	1/1	1/1	1/1	1/1		
cereals and food plants								
Triticum sp. (wheat)								
grain	-	-	1	-	1	-	-	-
Hordeum sp. (barley)								
grain	-	-	2	-	-	-	-	-
Cerealia indet (cereal indet)	1	-	-	1	1	-	-	2
Raphanus raphanastrum L. (wild radish)	-	-	-	-	-	-	2	-
weeds / wild								
Montia Fontana ssp. chondrosperma Fenzl. (blinks)	1	-	-	-	-	-	-	-
Arenaria serpylifolia L. (thyme leaved sandwort)	-	-	-	-	-	1	-	-
Stellaria media L. (common chickweed)	-	2	-	-	-	-	-	-
Stellaria cf. media	-	1	-	-	-	-	-	-
Polygonum arenastrum/aviculare (knotgrass)	-	-	-	-	-	-	1	-
Potentilla sp.	-	-	1	-	-	-	-	-
Trifolium / Melilotus	-	1	-	-	-	-	-	-
Compositeae	-	-	-	1	-	-	-	-
Carex sp. trigonous	6	-	-	-	-	-	1	2
Poaceae > 2mm	3	1	2	1	-	1	1	-
Poaceae < 2mm	4	4	3	1	2	4	-	-
other								
cf. root / tuber fragments	-	-	1	-	-	-	-	2
volume of soil processed (litres)	**21**	**12**	**13**	**23**	**16**	**18**	**20**	**1**

Table 3 - Charred plant remains from phase 4 contexts (Late Iron Age/Roman)

SAMPLE NUMBER	*2*	*3*	*6*	*7*	*11*	**10**
CONTEXT TYPE	*pit*	*pit*	*chamber*	*chamber*	*pit*	**fire pit 084**
CONTEXT NUMBER	*020*	*018*	*132*	*130*	*112*	***1/1***
Fraction of sample sorted	1/1	1/1	1/1	1/1	1/1	
cereals and food plants						
Triticum *cf*. dicoccum (cf. emmer) grain	-	-	-	1		-
Triticum sp. (wheat) grains	-	-	3	-		-
Hordeum sp. (barley) grain	-	2	1	-	1	-
Cerealia indet	-	-	-	0.5	1	-
Corylus avellana (hazel) nutshell fragments						4
Raphanus raphanastrum L. (wild radish)	-	6	-	-		
weeds / wild						
Ranunculus acris/repens/bulbosus (buttercup)	-	1	-	-	-	-
Chenopodium album type (fat hen)	-	8	-	-	-	-
Chenopodium sp.	-	2	2	-	-	-
Chenopodium sp. kernels	2	2	-	-	-	-
Atriplex sp. (oraches)	-	4	-	-	-	-
Arenaria serpylifolia L. (thyme leaved sandwort)	-	1	-	-	-	-
Stellaria media L. (common chickweed)	1	24	-	-	-	-
Stellaria cf. media	-	4	-	-	-	-
Cerastium sp.	1	-	-	-	-	-
Caryophyllaceae	-	5	-	-	-	-
Polygonum arenastrum Boreau. (equal leaved knotgrass)	1	5	-	-	-	-
Polygonum arenastrum / aviculare	-	3	-	-	-	-
Fallopia convolvulus L. (black bindweed)	-	2.5	-	-	-	-
Fallopia cf. convolvulus	-	3	-	-	-	-
Rumex acetosella L. (sheep's sorrel)	1	7	-	1	-	-
Rumex sp.	1	4	-	-	1	-
Rumex sp. kernal	-	3	-	-	-	-
cf. Viola sp.	-	1	-	-	-	-
Vicia/Lathyrus	-	-	1	-	-	-
Trifolium/Melilotus	-	-	1	-	-	-
Galeopsis bifida Boenn. (hemp nettle)	-	1	-	-	-	-
Carex sp. lenticular	-	1	-	-	-	-
Carex sp. trigonous	1	-	-	-	-	-
Poaceae > 2mm	1	18	4	3	4	-
Poaceae < 2mm	45	60	1	2	3	-
other						
cf. root / tuber fragments	-	-	-	-	1	-
volume of soil processed (litres)	**32**	**32**	**9**	**10**	**14**	**14**

Table 4 - Charred plant remains from unphased contexts

Appendix 6: Faunal and Human Remains Report

Jennifer Kitch, APS

Introduction
A total of 364 (1438g) fragments of animal bone were recovered by Allen Archaeological Associates during strip, map and record archaeological works in 2005 at The Willows, Reighton, North Yorkshire. A further 608 (135g) fragments were recovered from environmental sieved samples. A single fragment (117g) of human bone was also recovered.

Methodology
Identification of the bone was undertaken with access to a reference collection and published guides. All the animal remains were counted and weighed, and where possible identified to species, element, side and zone (Serjeantson 1996). Also fusion data, butchery marks (Binford 1981), gnawing, burning and pathological changes were noted when present. Ribs and vertebrae were only recorded to species when they were substantially complete and could accurately be identified. Undiagnostic bones were recorded as micro (mouse size), small (rabbit size), medium (sheep size) or large (cattle size). The separation of sheep and goat bones was done using the criteria of Boessneck (1969) and Prummel and Frisch (1986). Where distinctions could not be made, the bone was recorded as sheep/goat (s/g). No differentiation is made between horse and donkey, unless readily apparent and therefore these remains are recorded as *equid*.

The condition of the bone was graded using the criteria stipulated by Lyman (1996). Grade 0 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

The quantification of species was carried out using the total fragment count, in which the total number of fragments of bone and teeth was calculated for each taxon. Where fresh breaks were noted, fragments were refitted and counted as one.

Tooth eruption and wear stages were measured using a combination of Halstead (1985), Grant (1982) and Levine (1982), and fusion data was analysed according to Silver (1969). Measurements of adult, that is, fully fused bones were taken according to the methods of von den Driesch (1976), with asterisked (*) measurements indicating bones that were reconstructed or had slight abrasion of the surface.

Results

Condition
The overall condition of the bone was quite varied within the assemblage. As can be seen from tables 1 and 2 below, the assemblage contains material ranging from grade 1 to grade 5 of the Lyman (1996) criteria. The majority of the assemblage occurs within grades 3 to 4, which is generalised to a moderate to poor overall condition.

Table 1, Condition of Hand Collected Assemblage, by phase

	Phase			
Condition (Lyman 1996)	**Late Bronze Age**	**Late Iron Age/Romano-British**	**Unphased**	**Total**
2	3	4	15	22
3	13	10	232	255
4	6	13	67	86
5			1	1
Total	22	27	315	364

Table 2, Condition of Sieve Collected Assemblage, By Phase

	Phase				
Condition (Lyman 1996)	**Mid Bronze Age**	**Late Bronze Age**	**Late Iron Age/Romano-British**	**Unphased**	**Total**
2		2		3	5
3	4	38	2	428	472
4		11		120	131
Total	4	51	2	551	608

The late Bronze Age bone displays a very slight difference in condition when compared with the later phase late Iron Age/Romano-British assemblage. The slightly better condition noted maybe due to the depositional context of the remains. The late Iron Age/Romano-British material were all recovered from ditches, either as part of enclosures, road side ditches and possible robber cut/ditch, which are often subject to disturbance, abrasion and weathering. The remains recovered from the late Bronze Age phase are all recovered from the semi-circular ditch [007], [031] and re-cut [197]. As the feature has possibly a funerary or ritual function the level of disturbance and weathering may be slightly less.

The remains recovered from the sieved assemblage reflects the same condition patterns displayed within the hand collected assemblage, where the data is available.

Butchery
Two fragments of bone displayed evidence of butchery. A fragment of cattle horncore recovered from late Bronze Age ring gully re-cut [197] had been chopped through the base, where the horncore attaches to the skull. Chopping through the horncore is usually a result of horn removal for the purposes of hornworking.

A cattle astragalus, recovered from the undated boundary ditch [182], showed evidence of butchery consistent with disarticulation.

Pathology
A fragment of large mammal size skull displayed evidence of new bone growth on the cortical surface, possibly resulting from periosteal trauma.

Burning
A total of 401 fragments of burnt bone were recovered within the assemblage. Two fragments of burnt medium mammal long bone were recovered from the late Bronze Age semi-circular ditch [031]. The remaining burnt bone was recovered from two distinct deposits, from pits [017] and [019].

The burnt bone assemblage recovered from [017] appears to consist of sheep/goat remains, probably from a single individual. A total of 376 (90g) fragments of bone were unidentifiable to species although it is considered likely these remains were all from the same animal. The bones have been heavily burnt although some are not fully calcined. The identifiable skeletal elements within the assemblage are all extremities, limb bones, skull and horncore. It is possible that this may indicate the animal could have been spit roasted as part of some form of feast or the animal had been burnt as an offering, with the more recognisable/ larger bones collected for deposition.

Burnt remains recovered from [019] consisted of 25 fragments, only one fragment was identifiable as a sheep/goat astragalus. The remainder of the assemblage were from a medium sized mammal or unidentifiable. The assemblage also contained a fragment of un-burnt juvenile cattle humerus and several juvenile cattle teeth.

Species Representation
Tables 3 and 4 summarises the identified taxa for the hand collected and sieve collected assemblages by the phases of activity at the Willows, Reighton.

Table 3, Hand collected Assemblage Taxa, by Phase

	Phase			
Taxon	**Late Bronze Age**	**Late Iron Age/ Romano-British**	**Unphased**	**Total**
Equid (Horse family)	2	4	1	7
Cattle	4	3	25	32
Sheep/Goat	3	1	9*	13
Pig	2		2	4
Large Mammal	1	8	11	20
Medium Mammal	8	5	55	68
Unidentified	2	6	212	220
Total	22	27	315	364

Table 4, Sieve Collected Assemblage Taxa, By Phase

Taxon	**Mid Bronze Age**	**Late Bronze Age**	**Late Iron Age/Romano-British**	**Unphased**	**Total**
Cattle		1		8	9
Sheep/Goat		1		14*	15
Pig				3	3
Rodent		1		1	2
Large Mammal				2	2
Medium Mammal				41	41
Small Mammal		1			1
Micro Mammal				1	1
Unidentified	4	47	2	481	534
Total	4	51	2	551	608

* From Single Individual

Cattle remains are predominant within the assemblage, followed by sheep/goat, horse and pig. No wild species were identified within the assemblage. The assemblage is limited in size providing little information of the husbandry practice undertaken on site. In addition due to the potential funerary/ritual nature of the site the animals present within the assemblage may not be a true representation of the normal husbandry regimes that took place. The condition of the bone is moderate to poor, which may suggest a collection and preservation bias towards the larger and more robust bones, small and young animals are less likely to survive. Therefore the identified species within tables 3 and 4 only indicates the animals were present on site, providing little information on animal husbandry practices.

The sieved assemblage reflects the remains identified within the hand collected assemblage. The abundance of sheep/goat remains were recovered from a single deposit identified as a single individual, and therefore artificially inflates the perceived number of sheep/goat remains present within the assemblage.

Two rodent incisors were identified within the sieved assemblage; these were unidentifiable further to species. Micro species such as mice and voles would have been present within the local environs. However, as these are burrowing species their presence within the assemblage may be intrusive.

Contexts of Interest

Neolithic Pits [021], [023], [028] and, [045]
No bone was recovered from the Neolithic pit group.

Late Bronze Age Semi-circular ditch [007] and re-cut [197]
A total of 22 (329g) fragments of bone were recovered from the ditches [007] and [197]. Fragments of medium mammal sized long bone; rib and vertebra were recovered, along with small fragments of sheep/goat and pig skull. A fragment of cattle tooth and a navicular were recovered from ditch [007] and a fragment of scapula and chopped horncore were recovered from ditch re-cut [197]. A pair of metacarpal bones, left and right, possibly from the same animal were recovered from the semi-circular ditch [007]. Measurement calculations suggested the animal(s) had a withers height of 13.07 hands and

13.46 hands, suggesting an animal of pony proportions. These heights are comparable with other equid of the late Bronze Age Iron Age period (Archaeological Data Services 2003). The skeletal element representation suggests a predominance of butchery waste within the assemblage, although only a fragment of cattle horncore displayed evidence of butchery.

Undated stone lined pit [073], possibly prehistoric
Two fragments of bone were recovered from the stone lined pit [073]. A fragment of possible sheep/goat long bone fragment was recovered from context (131) and a further fragment of medium mammal sized long bone, possibly juvenile, was recovered from context (132).

Undated possible cremation pits [017] and [019]
Despite the lack of dating evidence the two possible cremation pits are generally though to be prehistoric in date. As previously discussed within this report, pit [017] contained the burnt remains of a single sheep/goat, with main emphasis on the extremities. Pit [019] was stone lined and contained further burnt bone from medium sized mammals. Also incorporated within the assemblage were several fragments juvenile cattle teeth and a fragment of juvenile cattle humerus.

Undated boundary ditch [182]
A total of 23 (380g) fragments of animal bone were recovered from ditch [182]. The remains appear to be predominantly cattle and large mammal size remains, a single astragalus displays evidence of butchery. The skeletal elements appear to represent predominantly primary butchery waste; i.e. bones that would be removed during the initial butchery process. In addition a single right human femur was also recovered from the deposit. The remains consisted of the distal shaft and condyles of a fused femur, therefore originating from an individual older than 14 years (Mays 1998, 48). The proximal shaft displays an old break indicating the bone was disturbed in antiquity.

Discussion
The size and condition of the assemblage limits the potential of the assemblage to provide information on the husbandry practices undertaken during the occupation of the site. The late Iron Age/Romano-British contexts are predominantly enclosure and boundary ditches. There is little evidence for settlement, suggesting these boundaries would have been on the periphery of any true occupation areas. The presence of the main domestic species suggests some form of mixed farming taking place.

The single fragment of human femur recovered from ditch [182] is not unusual, solitary fragments of human bone are frequently incorporated into pit and ditches along with deposited rubbish. This is especially common in the Iron Age period. This may indicate an articulated burial had been disturbed in antiquity and the disturbed remains had been incorporated within the ditch fill.

Potential prehistoric ritual activity within the southwest of the excavation area does provide some further potential interest. The late Bronze Age funerary feature [007] contained a number of animal remains within the ditch and subsequent re-cut. There is a vague suggestion of butchery waste within the ditch fills. Evidence of feasting remains has been identified with Bronze Age barrows (Clark, 1995, 171), although a higher predominance of meat bearing bones would be expected.

The burnt bone deposits recovered from [017] and [019] may also be a continuation of this ritual activity. Possible ritual deposits of burnt pig and sheep/goat remains have been identified at the Iron Age ritual enclosure at Normanton golf course, west Yorkshire (Higbee and Bond, 2005), and a pit alignment at Nosterfield quarry (Rowland 2004). Clark also reported deposits of burnt bone within the stake rings associated with Buckskin Barrow, indicating cooking at the barrow site (Clark, 1995, 171). Often feasting is associated with the consumption of young individuals, which there is little evidence for excepting the few fragments of cattle from pit [019] and the possible juvenile fragment recovered from the stone lined pit [073], however the lack of preservation of more fragile remains in areas of poor preservation may have removed most or any juvenile remains that may have been present.

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October 2006

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Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
3	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	2	1	4	Molar fragments
8	14	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	7	0	Burnt white
8	14	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	17	0	Burnt grey
8	14	Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	7	Upper PM
8	14	Sheep/Goat	Phalanx (II)	R	N	N	Y	Y	Y	Y	Y	Y	U	F	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt white
10	15	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	11	1	
10	15	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	3	0	Burnt white
10	0	Cattle	Nav-Cuboid	R	N	Y	N	Y	N	Y	N	Y	X	X	N	N	N	N	N	N	N	N	X	3	1	5	
10	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	2	1	
10	0	Medium Mammal	Cervical	B	N	N	N	N	N	N	N	N	F	X	N	N	N	N	Y	N	N	N	X	3	1	1	
10	0	Equid	Metacarpal	L	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	Y	N	R	3	1	92	
16	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	3	4	
18	0	Sheep/Goat	Metatarsal	L	N	N	Y	Y	N	Y	N	N	X	X	N	N	Y	N	Y	N	N	N	X	3	1	4	Burnt grey
18	3	Sheep/Goat	Phalanx (I)	R	Y	Y	Y	Y	N	N	N	N	F	X	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt grey/white
18	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	9	5	Burnt brown
18	3	Sheep/Goat	Nav-Cuboid	R	Y	Y	Y	Y	N	Y	N	Y	X	X	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt grey
18	3	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	15	6	Burnt grey
18	3	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	7	4	Burnt white
18	3	Medium Mammal	Skull	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	9	2	Burnt grey/white
18	3	Sheep/Goat	Horncore	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	2	1	Burnt grey/white
18	3	Sheep/Goat	Phalanx (I)	L	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt grey/white
18	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	23	7	Burnt grey
18	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	89	13	Burnt grey

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
18	3	Medium Mammal	Carpal/Tarsal	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	2	0	Burnt grey
18	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	28	2	Burnt white
18	0	Sheep/Goat	Astragalus	L	Y	Y	Y	Y	N	N	N	N	X	X	N	N	Y	N	Y	N	N	N	X	3	1	0	Burnt white
18	0	Sheep/Goat	Horncore	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt grey/white
18	0	Sheep/Goat	Humerus	L	N	N	N	N	N	N	Y	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt grey
18	0	Sheep/Goat	Mandible	R	N	Y	Y	Y	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	3	Burnt grey
18	0	Sheep/Goat	Metacarpal	L	N	N	N	N	Y	Y	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	2	Burnt grey
18	0	Medium Mammal	Skull	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	3	0	Burnt white
18	3	Medium Mammal	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	2	1	Burnt grey
18	3	Sheep/Goat	Skull- otic	L	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	2	Burnt grey/black
18	3	Sheep/Goat	Radius	R	Y	Y	N	N	N	N	N	N	F	X	N	N	Y	N	N	N	N	N	X	3	1	2	Burnt grey/white
18	3	Sheep/Goat	Metapodial	X	N	N	N	N	N	N	Y	Y	X	X	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt grey/white
18	3	Sheep/Goat	Mandible	L	Y	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt grey
18	3	Sheep/Goat	Tibia	L	N	N	N	N	N	N	Y	N	X	F	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt grey
18	3	Sheep/Goat	Metapodial	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt white, single condyle
18	3	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	250	70	Burnt grey/white
18	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	23	8	Burnt white
18	3	Sheep/Goat	Phalanx (II)	L	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt white
18	3	Medium Mammal	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	6	1	Burnt grey
20	0	Cattle	Humerus	R	N	N	N	Y	Y	Y	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	4	Juv
20	0	Sheep/Goat	Astragalus	L	Y	N	Y	N	Y	Y	Y	Y	X	X	N	N	Y	N	N	N	N	N	X	3	1	2	Burnt white

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
20	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	5	Upper PM fragments
20	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	5	1	Enamel fragments
20	0	Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	4	lower dpm4=a
20	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	Y	X	2	1	4	lower dpm4=a
20	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	3	2	Burnt grey
20	0	Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	2	Unworn upper PM
20	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	2	1	3	Unworn upper PM
20	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	0	Burnt white/grey
20	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	14	3	Burnt white
20	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	55	4	
20	2	Large Mammal	Skull- otic	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	2	6	
20	2	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	18	1	Burnt white
20	2	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	7	1	Enamel fragments
20	2	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	40	4	
20	2	Sheep/Goat	Metapodial	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt grey, single condyle
20	2	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	40	6	Burn grey
20	2	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	63	4	
20	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	6	1	Burnt black
32	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	1	
32	0	Medium Mammal	Vertebra	B	N	N	N	N	N	N	N	N	X	F	N	N	N	N	N	N	N	N	X	3	1	1	
32	0	Pig	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	2	1	4	Upper Molar
32	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	Y	N	N	N	X	3	2	1	Burnt white
46	19	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	4	7	0	Burnt white

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
76	9	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	4	0	Burnt white
112	0	Cattle	Innominate	R	N	Y	Y	Y	N	N	Y	Y	X	X	N	N	N	N	Y	N	N	N	R	4	1	79	
112	0	Sheep/Goat	Mandible	L	N	N	Y	Y	N	N	N	N	X	X	N	N	N	N	Y	N	N	Y	R	4	1	11	
112	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	4	2	3	
112	0	Cattle	Innominate	L	N	N	Y	Y	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	4	1	23	
112	0	Cattle	Scapula	L	N	N	Y	Y	Y	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	4	1	51	
112	0	Cattle	Scapula	L	Y	Y	Y	Y	Y	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	4	1	72	
112	11	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	15	1	
129	0	Large Mammal	Scapula	L	N	N	Y	N	Y	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	4	1	7	
129	0	Equid	Rib	L	N	Y	Y	Y	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	13	
129	0	Equid	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	30	Upper M3 Unworn
129	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	3	
129	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	8	Lower incisor
129	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	2	8	
129	0	Medium Mammal	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	4	3	
129	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	4	5	
129	0	Medium Mammal	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	2	
129	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	2	
131	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	poss sheep/goat
132	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	5	1	0	Infant/juv?
133	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	2	3	10	
140	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	11	
164	0	Equid	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	24	Upper Molar
180	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	4	1	19	Upper PM

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
180	0	Equid	Metacarpal	R	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	Y	N	R	4	1	129	
184	0	Large Mammal	Skull-zygomatic	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	12	
184	0	Cattle	Skull- frontal	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	32	+ horncore
184	0	Cattle	Metapodial	X	N	N	N	N	N	N	N	N	X	F	N	N	N	Y	N	N	N	N	X	3	1	27	Snapped midshaft, shaft and condyle fragment, carnivore gnawing on the distal end
184	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	5	
184	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	2	
184	0	Cattle	Femur	L	N	N	Y	Y	Y	N	N	N	X	X	N	N	N	N	N	N	N	N	R	3	1	71	
184	0	Large Mammal	Skull	X	N	N	N	N	N	N	N	N	X	X	Y	N	N	N	Y	N	N	N	X	2	1	8	New bone growth on the cortical surface of the skull, periosteal trauma
184	0	Cattle	Innominate	L	N	Y	Y	N	N	N	N	N	F	X	N	N	N	N	Y	N	N	N	X	3	1	51	
184	0	Cattle	Metatarsal	R	Y	Y	Y	Y	Y	Y	N	N	F	X	N	N	N	N	N	N	Y	N	R	4	1	106	
184	0	Cattle	Astragalus	L	Y	Y	Y	Y	N	Y	N	Y	X	X	N	Y	N	N	Y	N	N	N	X	2	1	28	Cuts across the dorsal condyles
184	17	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	fragment
184	0	Cattle	Calcaneus	L	N	N	N	N	Y	Y	Y	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	14	
184	0	Human	Femur	R	N	N	Y	Y	Y	Y	Y	Y	X	F	N	N	N	N	Y	N	N	N	X	3	1	117	Old break through the proximal shaft
184	17	Rodent	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	front insicor
184	17	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	35	3	

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
184	17	Sheep/Goat	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	4	Upper PM
184	0	Large Mammal	Mandible	L	N	N	N	N	N	Y	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	15	
184	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	11	9	
184	17	Pig	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	fragment
191	20	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	2	0	
191	0	Cattle	Mandible	R	N	N	N	N	Y	Y	Y	Y	X	X	N	N	N	N	Y	N	N	N	R	3	1	72	
191	0	Large Mammal	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	8	
198	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	3	
198	21	Rodent	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	Front insicor
198	21	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	9	0	
198	21	Small Mammal	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	0	
199	0	Pig	Skull-maxilla	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	4	
199	0	Sheep/Goat	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	2	Upper M2
200	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	0	
200	0	Sheep/Goat	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	2	1	0	enamel fragments
200	0	Medium Mammal	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	1	
200	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	7	
200	0	Sheep/Goat	Skull-zygomatic	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	1	
200	0	Cattle	Horncore	X	N	N	Y	Y	Y	Y	N	N	X	X	N	Y	N	N	N	N	N	N	X	3	1	35	Chopped through the horncore base
200	0	Cattle	Scapula	L	N	N	N	N	Y	N	N	N	X	X	N	N	N	N	Y	N	N	N	R	3	1	22	
205	22	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	13	2	
205	22	Pig	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	0	Upper PM2
205	0	Sheep/Goat	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	Y	X	3	1	2	Lower M2=f
205	0	Pig	Femur	R	N	N	Y	Y	Y	Y	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	16	

Ctxt No.	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Cond	No.	(g)	Notes
205	22	Micro Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	0	
205	22	Pig	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	1	Upper PM3
209	0	Equid	Tibia	L	N	N	Y	Y	Y	Y	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	97	
209	0	Cattle	Metatarsal	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	4	1	12	Shaft fragment
209	0	Pig	Mandible	L	N	N	Y	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	Y	R	3	1	12	
209	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	R	3	1	6	Fragmentary molar
214	0	Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	0	Unerupted lower PM3/4 fragment
219	0	Cattle	Radius	L	N	N	Y	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	R	3	1	22	
235	0	Large Mammal	Scapula	X	N	N	N	Y	Y	Y	N	N	X	X	N	N	N	N	Y	N	N	N	R	4	1	23	
236	0	Sheep/Goat	Humerus	L	N	N	N	N	Y	Y	Y	Y	X	F	N	N	N	N	Y	N	N	N	X	3	1	7	

Key:
Codes and references used in cataloguing animal bone

Taxon: Species, family group or size category.
Non-species specific codes: -
: Equid- Horse Family
: Gadidae- Cod Family
: Passer- *Passerine,* Small songbirds i.e. Sparrow or Finches
: Turdid- *Turdidae,* Blackbird/Thrush family
: Corvid- *Covidae*, Crow family i.e. Crow, Rook or Jackdaw
: Galliform- Fowl or Pheasant
: Large Mammal – Cattle, Horse, Red Deer size
: Medium Mammal- Sheep/Goat, Pig, Dog, Roe Deer size
: Small Mammal- Cat, Rabbit size
: Micro Mammal- Mouse sized
: Unidentified- Not identified to species

Element: Skeletal element represented.
: Unidentified- Not identified to element

Side: L-Left, R- Right, B- Both

Zones: Records presence/absence of individual areas of the bone.
Based on Zone illustrations in Serjeantson, D, 1996 The Animal Bones, in *Refuse and Disposal at Area 16, East Runnymede: Runnymede Bridge Research Excavations,* Vol. 2, (eds) E S Needham and T Spence, British Museum Press, London.

Prox & Dist: Fusion of proximal and distal epiphyses
: X- Not present, F- Fused, U- Unfused, B- Unfused diaphysis and epiphysis present, V- Fusion Line visible.

Age Range: Age range based on age at fusion. Based on
Silver, I, A, 1969, The Ageing of Domestic Animals*,* in D. Brothwell and E.S. Higgs*, Science in Archaeology*, Thames and Hudson.

Path: Presence of pathology, details in notes column.

Butch: Presence of butchery, details in notes column.

Burnt: Presence of burning, details in notes column.

Gnaw: Presence of gnawing, details in notes column.

Worked: Fragment shows evidence of working, details in the notes column.

Fresh Break: Fresh break noted, fragments re-fitted as one bone.

Associated: Articulating or adjoining bones.

Measured: Measurements taken as according to Von den Driesch, A, 1976 *A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum.

Tooth Wear: Tooth wear score for aging data, taken as according to:
Grant, A, 1982 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', in B Wilson *et al*. *Ageing and Sexing Animal Bones from Archaeological Sites*, BAR British Series 109, 91-108, Oxford
Halstead, P, 1985 A Study of Mandibular Teeth from Romano-British Contexts at Maxey, in F Pryor, *Archaeology and Environment in the Lower Welland Valley*, East Anglian Archaeology Report 27:219-224

Levine, M A, 1982 The Use of Crown Height Measurements and Eruption-Wear Sequences to Age Horse Teeth. In Wilson, B et al. *Ageing and Sexing Animal Bones from Archaeological Sites*. BAR British Series 109. 223 – 250

Surface: Taphonomies noted on the bone surface:
W- Weathered
A- Abraded
R- Rootlet etched
D- Chemical etching from digestion

Condition: Grades 0-5, where 0 = pristine and 5= indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable. Based on Lyman, R L, 1996 *Vertebrate Taphonomy*, Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge

No.: Number of individual bones/fragments

(g): Weight in grams

Notes: Notes on observed taphonomies, differences and associations.

Appendix 7: Context Summary List

Context No.	Type	Description	Interpretation
01	Layer	Mid grey clayey silt, occ. small stones.	Modern topsoil
02	Layer	Mixed deposit of pink clay with chalk & flint gravels, yellow/grey sand lenses.	Natural glacial till
03	Cut	N – S aligned linear ditch, shallow sides, concave base. Contains 004.	Ditch cut, possible boundary feature
04	Fill	Grey/brown sandy silt, moderate small pebbles.	Natural silting of [003]
05	Cut	Shallow, circular pit cut. Contains 006.	Small pit cut
06	Fill	Dark grey/brown sandy silt, occ charcoal.	Natural silting of [005]
07	Cut	Semi-circular ditch, shallow sides, flat base. Contains 008, 009, 010. Same as 031.	Ditch surrounding possible funerary pyre. Probable Bronze Age date.
08	Fill	Black clayey silt, moderate small chalk & flint pebbles, frequent charcoal. Same as 032, 125, 127	Tertiary fill of [007]. Backfill of burnt material. Seals 009
09	Fill	Layer of medium sub-rounded flint & river pebbles.	Secondary fill of [007]. Possible deliberate dump of material. Seals 010, sealed by 008.
10	Fill	Brown clayey silt, moderate flint and chalk pebbles. Same as 180, 181.	Primary fill of [007]. Probable natural silting.
11	Cut	Sub-oval pit, long axis E –W.	Pit cut, undated. Function unknown
12	Fill	Grey/brown clayey silt, occ small stones & charcoal flecks	Natural silting of [011]
13	Cut	Curvilinear gully, aligned E –W. Shallow sides, flat base. Associated with gully 015. Contains 014.	Curvilinear gully cut, forming part of a feature with 015.
14	Fill	Brown clayey silt, occ charcoal flecks & stones	Natural silting of [013]
15	Cut	Curvilinear gully, aligned E – W. Associated with gully 013. Steep, concave sides, flat base. Contains 016.	Curvilinear gully cut, forming part of a feature with 013.
16	Fill	Brown clayey silt, occ charcoal flecks & stones	Natural silting of [015]
17	Cut	Circular pit, steep sides and flat base. Contains 018.	Cremation pit.
18	Fill	Dark grey clayey silt, frequent charcoal flecks, occ flint gravels, human bone.	Backfill of cremation pit [017]
19	Cut	Oval pit, steep sides and flat base. Contains 020. Stone packing around sides of feature.	Cremation pit. Stone lining may suggest bones contained in bag in centre of pit.
20	Fill	Dark grey clayey silt, frequent charcoal flecks, occ flint gravels, human bone.	Backfill of cremation pit [019]
21	Cut	Sub-rectangular pit cut, steep sides, concave base. Contains 022, 238, 239.	Neolithic pit
22	Fill	Grey sandy silt, occ charcoal flecks & angular pebbles. Seals 238.	Tertiary fill of 021
23	Cut	Sub-rectangular pit cut, steep sides, flat base. Contains 024, 240, 241.	Neolithic pit
24	Fill	Brownish grey sandy silt, occ charcoal flecks & angular silt	Tertiary fill of pit [023]
25	Fill	Brownish grey sandy silt, occ charcoal flecks & angular silt.	Same as 024
26	Cut	NE – SW aligned linear ditch. Shallow sides and flat base. Contains 027. Same as 033. Cuts 032.	Linear boundary feature, cuts semi circular ditch 007
27	Fill	Brown/grey clayey silt, occ small stones & charcoal flecks. Same as 034.	Natural silting of [026]
28	Cut	Sub-circular pit, steep sides, concave base. Contains 029. Burnt stones in base of feature. Contains 029, 030.	Small pit, possible ritual function – contains burnt stones, flint, pot etc.
29	Fill	Dark brown/black sandy silt, frequent charcoal, prehistoric pottery, burnt stone. Sealed by 030.	Primary fill of [028]. Deliberate backfill.

Context No.	Type	Description	Interpretation
30	Fill	Brown sandy clay, poorly sorted flint & pebbles. Seals 029.	Secondary fill of [028].
31	Cut	Semi-circular ditch, shallow sides, flat base. Contains 032. Same as 007.	Ditch surrounding possible funerary pyre. Probable Bronze Age date.
32	Fill	Dark grey clayey silt, small stones. Cut by 026. Same as 008.	Fill of [031]. Backfill of burnt material.
33	Cut	NE – SW aligned linear ditch. Shallow sides and flat base. Contains 034. Same as 026. Cuts 032.	Linear boundary feature, cuts semi circular ditch 007. One of a series of migrating boundary features, with 037, 039, 041, 043
34	Fill	Brown/grey clayey silt, occ small stones, charcoal flecks. Same as 027.	Fill of [033], natural silting. Burnt material derived from cutting adjacent ditch 007.
35	Cut	Oval pit, shallow sides, slightly concave base. Contains 036.	Small pit, function unknown.
36	Fill	Light yellow brown sandy silt, occ small stones.	Natural silting of [035]
37	Cut	NE – SW aligned linear ditch. Shallow sides and concave base. Contains 034	Linear boundary feature. One of a series of migrating boundary features, with 033, 039, 041, 043.
38	Fill	Brown clayey silt, occ small stones, charcoal flecks	Natural silting of [037]
39	Cut	NE – SW aligned linear ditch. Shallow sides and flat base. Contains 040.	Linear boundary feature. One of a series of migrating boundary features, with 033, 037, 041, 043.
40	Fill	Brown clayey silt, occ small stones, charcoal flecks	Natural silting of [039]
41	Cut	NE – SW aligned linear ditch. Steep sides and flattish base. Contains 042.	Linear boundary feature. One of a series of migrating boundary features, with 033, 037, 039, 043.
42	Fill	Brown clayey silt, occ small stones.	Natural silting of [041]
43	Cut	NE – SW aligned linear ditch. Shallow sides and flat base. Contains 042. Cuts 125, 127.	Linear boundary feature. One of a series of migrating boundary features, with 033, 037, 039, 041.
44	Fill	Orange brown clayey silt, occ charcoal flecks & small stones. Same as 126.	Natural silting of [043]
45	Cut	Circular in plan, steep sides, concave base. Contains 046.	Possible posthole
46	Fill	Dark grey/brown silty sand, frequent charcoal.	Charcoal rich backfill of [045]
47	Cut	Curvilinear gully cut, steep sides, concave base. Contains 048.	Possible eaves-drip gully of Iron Age roundhouse.
48	Fill	Grey/brown sandy clay, occ sub-rounded flints.	Backfill of [047]
49	Cut	Circular in plan, steep sides, concave base	Posthole/small pit, associated with ring gully 047.
50	Fill	Dark grey/brown sandy silt, moderate charcoal, occ small stones.	Natural silting of [049]
51	Cut	Oval in plan, long axis E –W. Irregular sides, concave base. Contains 052, 041	Posthole/small pit
52	Fill	Light grey/brown silty sand, occ gravel. Sealed by 141.	Primary fill of [051], natural silting
53	Cut	Circular in plan, steep sides, concave base. Contains 054.	Small pit – Late Bronze Age
54	Fill	Dark grey/brown silty sand, frequent charcoal. Occ flint frags.	Fill of [053]. Probable deliberate backfill.
55	Cut	Very shallow, truncated curvilinear feature. Contains 056.	Curvilinear gully. Possible Iron Age round house eaves drip gully.
56	Fill	Orange/brown sandy silt, occ chalk & flint frags.	Natural silting of [055]
57	Cut	Very shallow, truncated curvilinear feature. Contains 058.	Curvilinear gully. Possible Iron Age round house eaves drip gully.
58	Fill	Grey/brown silty sand, occ poorly sorted stones.	Possible backfill of [057]

Context No.	Type	Description	Interpretation
59	Cut	Very shallow, truncated curvilinear feature. Contains 060, 144.	Curvilinear gully. Possible Iron Age round house eaves drip gully.
60	Fill	Grey/brown sandy silt, occ small flint frags. Same as 144	Probable natural silting of [059]
61	-	Number not used	-
62	-	Number not used	-
63	-	Number not used	-
64	-	Number not used	-
65	Cut	Oval in plan, steep sides, concave base. Contains 066.	Pit, function and date unknown
66	Fill	Grey/brown silty sand, occ small flints	Natural silting of [065]
67	-	Number not used	-
68	-	Number not used	-
69	Cut	Sub-circular in plan, steep sides, flat base. Contains 070.	Probable posthole, undated.
70	Fill	Red/brown clayey silt, occ stones & charcoal flecks.	Natural silting of [069]
71	-	Number not used	-
72	-	Number not used	-
73	Cut	Sub-rectangular in plan, long axis aligned NW – SE, flat base. Contains 074, 130, 131, 132.	Stone lined and capped pit. Possible burial function?
74	Fill	Sub-rounded & sub-angular stones, poorly sorted, in a matrix of brown clayey silt. Seals 130.	Stone capping layer of pit [073]
75	Cut	Sub-circular in plan, steep sided, concave base. Contains 076, 134	Prehistoric post pit, in which post has rotted in situ. Pottery and flints from upper part of fill.
76	Fill	Orange/brown clayey silt, frequent poorly sorted chalk & flint, occ charcoal.	Backfill of 075, packing around post.
77	Cut	Circular in plan, concave base, shallow S edge, steep N edge. Contains 078	Posthole/small pit. Date and function unknown.
78	Fill	Brown sandy silt, occ chalk flecks	Natural silting of [077]
79	-	Number not used	-
80	-	Number not used	-
81	Cut	Oval in plan, long axis N – S, steep sides, concave base. Contains 082.	Pit. Date and function unknown.
82	Fill	Dark brown sandy silt, moderate flints & rounded pebbles.	Possible backfill of [081]
83	Cut	Oval in plan, long axis N – S, steep sides, concave base. Contains 084	Possible fire pit
84	Fill	Black silt, abundant charcoal.	Burnt fill of [083]
85	Cut	Irregular, sub-oval in plan, steep sides, flat base. Contains 086, 167.	Possible post pit with stone packing and in situ burnt wood
86	Fill	Dark grey/brown sandy silt, abundant charcoal.	Natural silting of pit [085], with fragments of in situ burnt post
87	Cut	Sub-oval pit, steep sides, slightly concave base. Contains 088.	Possible post pit, backfilled and replaced by 137.
88	Fill	Orange brown clayey silt, frequent poorly sorted chalk and flint stones, occ charcoal flecks. Cut by 137.	Possible backfill of [087]
89	-	Number not used	-
90	-	Number not used	-
91	-	Number not used	-
92	-	Number not used	-
93	-	Number not used	-
94	-	Number not used	-
95	-	Number not used	-
96	-	Number not used	-

Context No.	Type	Description	Interpretation
97	-	Number not used	-
98	Deposit	Finds allocation number	Area of animal disturbance (burrow?), containing worked flint
99	Cut	Oval in plan, long axis aligned E – W, steep sides, concave base. Contains 100.	Pit. Date and function unknown.
100	Fill	Dark grey/brown sandy silt, moderate small angular pebbles, flint	Possible backfill of [099]
101	Cut	Circular in plan, shallow sides, concave base. Contains 102.	Possible stone packed post hole. Undated.
102	Fill	Grey/brown sandy silt, possible stone packing.	Natural silting of [101]
103	Cut	Circular in plan, steep sides, concave base. Contains 104.	Possible post hole. Undated
104	Fill	Grey/brown silty sand, occ charcoal & small angular pebbles	Natural silting of [103]
105	-	Number not used	-
106	-	Number not used	-
107	-	Number not used	-
108	-	Number not used	-
109	Cut	Oval in plan, long axis aligned E – W. Steep side to N, shallow side to S. Flat base. Contains 110.	Pit, truncated to N by modern activity. Possible natural feature.
110	Fill	Grey/brown sandy silt, occ charcoal & chalk flecks, gravel & small stones.	Natural silting of [109]
111	Cut	Oval in plan, long axis N – S, steep sides, flat base. Contains 112.	Small pit/posthole, date and function unknown.
112	Fill	Dark grey/brown sandy silt, occ charcoal	Possible backfill of [111]
113	-	Number not used	-
114	-	Number not used	-
115	Cut	Circular in plan, near vertical sides and flat base	Posthole
116	Fill	Grey sandy silt	Fill of [115]
117	Cut	Linear feature, aligned NE – SW. Moderately steep sides, slightly irregular base.	Possible robber cut, robbing out wall 187.
118	Fill	Reddish brown silty sand, occ gravel.	Natural silting of [117]
119	Cut	L-shaped linear feature, aligned N – S, shallow sides, slightly concave base. Contains 120.	Iron Age/Romano-British linear gully
120	Fill	Grey/brown sandy silt, occ flint and chalk flecks. Same as 173	Natural silting of [119]
121	-	Number not used	-
122	-	Number not used	-
123		Number not used	-
124		Number not used	-
125	Fill	Dark grey clayey silt, poorly sorted stones. Same as 008, 032, 127	Backfill of [007]
126	Fill	Dark grey clayey silt, moderate poorly sorted stones, occ charcoal flecks. Same as 044	Natural silting of [043] II
127	Fill	Dark grey clayey silt, poorly sorted stones, occ charcoal flecks. Same as 008, 032, 125	Backfill of [007]
128	Fill	Grey/brown silty sand, moderate cobbles, occ gravel. Cut by 117.	Backfill of construction cut [187]
129	Fill	Brown/grey sandy silt with occasional pebbles and gravel	Fill of [193]
130	Fill	Red/brown silt, occ charcoal flecks & poorly sorted sub-rounded stones. Seals 131, 132, sealed by 074	Natural silting of [073]
131	Fill	Medium & large rounded and sub-rounded pebbles. Sealed by 130.	Stone lining at base of pit [073]
132	Fill	Red/brown clayey silt, occ charcoal flecks. ?sealed by 131.	Natural silting prior to deposition of [173], or surrounding matrix.
133	Fill	Greyish brown sandy silt, occ chalk flecks. Seals	Secondary fill of [195] Silting.

Context No.	Type	Description	Interpretation
		124, Sealed by 129. Cut by 193.	
134	Fill	Brown silt	Natural silting of post pipe in [075]
135	Cut	Oval in plan, long axis aligned E - W, steep sides, concave base. Contains 136.	Pit, date and function unknown
136	Fill	Brown clayey silt, poorly sorted stones, occ charcoal flecks	Possible backfill of [135]
137	Cut	Sub-circular in plan, steep sides, concave base. Contains 138, 139. Cuts 088	Possible post hole, replacing 087?
138	Fill	Brown clayey silt, frequent chalk and flint pebbles, occ charcoal.	Secondary fill of [137]. Remnants of post-packing?
139	Fill	Grey slightly clayey silt, occ chalk and flint stones.	Primary fill of [137], natural silting.
140	Layer	Brown clayey silt, occ chalk pebbles.	Silting layer, infilling hollow over pos pits 087 and 137.
141	Fill	Grey/brown silty sand, frequent small gravel	Secondary fill of [051], possibly represents a recut.
142	Cut	Linear in plan, aligned NW – SE, steep sided, concave base. Contains 143, 145, 146, 147.	Linear boundary feature, parallel to 152. Undated
143	Fill	Dark brownish grey slightly clayey silt, moderate small angular flints. Same as 145, 146, 147.	Natural silting of [142]
144	Fill	Grey/brown sandy silt, occ angular chalk. Same as 060.	Natural silting of [059] II
145	Fill	Yellow brown clayey silt, moderate small angular flints. Same as 143, 146, 147	Natural silting of [142]
146	Fill	Dark brownish grey slightly clayey silt, moderate small angular flints. Same as 143, 145, 147.	Natural silting of [142] II
147	Fill	Greyish brown silty sand, yellowish brown mottling, moderate small angular flints. Same as 143, 145, 146. Cut by 148	Natural silting of [142] III
148	Cut	Linear in plan, aligned NNE – SSW, irregular profile, peters out to SSW. Contains 149. Cuts 147.	Ditch, undated.
149	Fill	Light brown sandy silt, yellow mottling, occ flint gravel.	Natural silting of [148]
150	Cut	Subcircular in plan, steep southern edge, concave base. Contains 151	Small pit, date and function unknown.
151	Fill	Brown slightly clayey silt, reddish brown mottling, frequent flint grave and rounded stones	Natural silting of [150], some animal disturbance evident.
152	Cut	Linear in plan, aligned NW – SE. Steep sides, concave base. Terminus at SE end. Contains 153, 154.	Linear boundary feature, parallel to 142. Possible Bronze Age pot recovered from terminus
153	Fill	Brown clayey silt, frequent small angular stones and charcoal flecks. Same as 213.	Secondary fill of [152], natural silting.
154	Fill	Reddish brown silt, frequent flint and chalk gravel, frequent charcoal flecks. Same as 212	Primary fill of [152], initial slumping of ditch sides.
155	Cut	Linear in plan, aligned N – S. Moderately steep sides, slightly concave base. Contains 156. Cuts 158, 159, 161, 225.	Recut of ditch [160]. Possible Romano-British roadside ditch associated with road 162.
156	Fill	Brown silt, frequent poorly sorted stones. Large stones at base derived from underlying wall 158. occ charcoal flecks.	Natural silting of [155].
157	Cut	Linear in plan, aligned N – S. Moderately steep E side, vertical W side, flat base. Contains 158, 159, Cuts 161.	Construction trench for Romano-British wall in ditch 160.
158	Spread	Medium to large rounded, sub-rounded and sub-angular stones. Sealed by 159. Cut by 155.	Stone spread in [157], remnants of robbed out wall
159	Fill	Brown clayey silt, occ small stones. Seals 158, cut by 155	Natural silting of construction trench [157] after robbing of wall
160	Cut	Linear in plan, aligned N – S, steep sides, flat base.	Possible Iron Age enclosure ditch.

Context No.	Type	Description	Interpretation
		Contains 161. Same as 174, 201?	
161	Fill	Brown silt, occ small stones & charcoal flecks. Cut by 155, 157.	Natural silting of [160]
162	Layer	Compact layer of small and medium rounded gravel. Sealed by 172.	Probable Romano-British road surface. Associated with roadside ditches 155, 163.
163	Cut	Linear in plan, aligned N – S. Steep sides, concave base. Contains 164.	Probable Romano-British roadside ditch associated with road 162.
164	Fill	Brown silt, occ small stones & charcoal flecks.	Natural silting of [163]
165	Fill	Brown sandy silt, occ small stones.	Natural silting of [166]
166	Cut	Linear in plan, aligned N – S. Steep E side, shallow W side, flat base. Contains 165. Same as 163?	Probable Romano-British roadside ditch associated with road 162.
167	Fill	Grey/brown sandy silt, frequent angular stones.	Possible remnants of post packing in pit [085]
168	Cut	Oval in plan, shallow sides, concave base. Contains 169.	Pit, date and function unknown.
169	Fill	Grey/brown sandy silt, angular & rounded pebbles	Natural silting of [168]
170	Cut	Oval in plan, shallow sides, slightly concave base. Contains 171	Pit, possible Iron Age date on pottery.
171	Fill	Dark grey/brown sandy silt, occ small stones	Probable natural silting of [170]
172	Layer	Brown clayey silt, poorly sorted stones. Seals 162.	Naturally formed silting deposit over Romano-British road 162.
173	Fill	Grey/brown sandy silt, occ chalk flecks, flint, charcoal. Same as 120.	Natural silting of [119] II
174	Cut	Linear in plan, aligned N – S. Moderately steep sides, uneven base. Contains 175. Same as 155/160?	Possible Iron Age enclosure ditch, later recut as Romano-British roadside ditch.
175	Fill	Brown clayey silt, occ small stones.	Natural silting of [174]
176	Cut	Excavated in Trench 5. Linear in plan, aligned N – S. Moderately steep sides and concave base. Contains 177	Boundary ditch. Possibly same as 033 in SW corner of site.
177	Fill	Mid – dark brown clayey silt, occ small stones.	Natural silting of [176]
178	Cut	Oval in plan, steep sides except for shallow N edge. Not fully excavated due to depth. Contains 179.	Probable quarry pit of post-medieval date.
179	Fill	Brown slightly clayey silt, moderate poorly sorted chalk & flint frags, occ coal.	Mixed siliting & backfill deposit in quarry pit [178]
180	Fill	Orange/brown sandy silt, occ poorly sorted stones and charcoal flecks. Same as 010, 181. Cut by 197.	Natural silting of [007] II
181	Fill	Orange/brown sandy silt, occ poorly sorted stones. Same as 010, 180. Cut by 197.	Fill of [007] V
182	Cut	Linear in plan, aligned N – S. Steep sides, concave base. Contains 183, 184, 185, 186.	Linear boundary feature. Nature of fills suggests slumped bank material.
183	Fill	Brown silt, occ small stones and flint.	Primary natural silting of [182]
184	Fill	Dark grey/brown sandy silt, occ small stones. Small amounts of disarticulated human bone	Secondary fill of [182], slumping of bank material?
185	Fill	Dark grey/brown sandy silt, occ small stones.	Tertiary fill of [182], slumping of bank material?
186	Fill	Grey/brown sandy silt, occ small stones.	Final fill of [182], natural silting.
187	Cut	Linear in plan, aligned NE – SW. Steep sides, flat base. Contains 128.	Wall foundation trench for probable Romano-British wall 128
188	Fill	Grey/brown silty clay, occ pebbles and gravel. Seals 189. Cut by 117, 187.	Tertiary fill of [196]. Natural silting
189	Fill	Grey/brown sandy clay, frequent gravel, occ charcoal. Seals 190, sealed by 188. Cut by 187.	Secondary fill of [196], probable natural silting.
190	Fill	Grey/brown sandy clay, frequent gravel and	Primary fill of [196], probable

Context No.	Type	Description	Interpretation
		angular pebbles, occ charcoal. Sealed by 189. Cut by 187	natural silting.
191	Fill	Orange/brown sandy clay, occ charcoal flecks, chalk fragments, gravel. Cut by 117, 187, 196.	Natural silting of 192
192	Cut	Linear in plan, aligned NE – SW. Moderately sloping sides, concave base. Contains 191.	Possible Iron Age enclosure ditch.
193	Cut	Linear in plan, aligned NE – SW. SE side shallow, NW side steep, slightly concave base. Contains 129. Cuts 133, 194.	Recut of ditch 195.
194	Fill	Yellow/grey sandy silt. Sealed by 133. Cut by 193	Primary natural silting of [195]
195	Cut	Linear in plan, aligned NE – SW. Steep, convex sides, flat base. Contains 133, 194.	Enclosure ditch
196	Cut	Linear in plan, aligned NE – SW. Truncated by 187 to SW. NE side moderately steep, concave base. Contains 188, 189, 190. Cuts 191.	Recut of enclosure ditch 192.
197	Cut	Circular gully, vertical sides and flat base. Contains 010, 198, 199, 200. Cuts 008, 009, 010.	Recut of east half of ring ditch 007, possible beam slot for post line.
198	Fill	Brown sandy silt, frequent small stones, occ charcoal flecks. Same as 199	Possible backfill of [197] II
199	Fill	Brown sandy silt, frequent poorly sorted stones, occ charcoal flecks. Same as 198	Possible backfill of [197] IV
200	Fill	Dark grey/black sandy silt, occ small stones, moderate charcoal flecks.	Fill of [197] II. Similar deposit to 010 – possibly the same formation process.
201	Cut	Linear in plan, aligned N – S. Steep sides, flat base. Contains 202, 203. Same as 155, 174.	Recut of [160]
202	Fill	Brown clayey silt, occ small stones.	Fill of [201]. Slumping from west side of ditch – bank material?
203	Fill	Brown clayey silt, occ small stones & charcoal	Secondary fill of [201]. Natural silting.
204	Cut	Linear in plan, aligned N – S. Steep sides, flat base. Contains 205. Cuts 207.	Linear ditch/gully. Undated boundary feature.
205	Fill	Grey/brown silt, occ flint & pebbles.	Natural silting of [204].
206	Cut	Oval in plan, shallow sides, concave base. Contains 207.	Pit, function unknown. Late Iron Age
207	Fill	Grey/brown silt, occ flint. Cut by 204.	Natural silting of [206]
208	Cut	Linear in plan, NE – SW. Shallow sides, flat base. Contains 209.	Linear boundary feature, undated.
209	Fill	Grey/brown sandy silt, occ flints, 2 large stones lining base.	Natural silting of [208]
210	Cut	Linear in plan, aligned N – S. Steep sides, concave base. Contains 211.	Linear boundary feature, undated.
211	Fill	Grey/brown sandy silt, occ small stones & flints.	Natural silting of [210]
212	Fill	Brown clayey silt, frequent poorly sorted stones, occ charcoal flecks. Sealed by 213. Same as 154.	Primary backfill of [152] II, with possible bank material.
213	Fill	Grey/brown clayey silt, occ poorly sorted stones. Seals 212. Same as 153.	Secondary fill of [152] II. Natural silting of ditch. Romano-British date on pottery.
214	-	Surface finds from machining over enclosure ditch	-
215	Spread	Context record missing	Stone spread in ditch [216]
216	Cut	Context record missing	Ditch
217	Fill	Yellow/brown silty sand, occ gravel. Seals 223.	Natural silting of [218]
218	Cut	Linear in plan, aligned N – S. Shallow sides, concave base. Contains 217, 223. Cuts 219, 224.	Enclosure ditch recut
219	Fill	Greyish brown sandy silt, frequent chalk fragments. Cut by 218.	Natural silting of ditch recut [220]
220	Cut	Linear in plan, aligned N – S. One steep side	Enclosure ditch recut.

Context No.	Type	Description	Interpretation
		exposed, base not excavated. Contains 219. Cuts 221.	
221	Fill	Yellow/brown silty sand. Cut by 220.	Natural silting of enclosure ditch [222].
222	Cut	Linear in plan, aligned N – S. Steep side, base not fully exposed. Contains 221	Primary enclosure ditch cut.
223	Spread	Large cobbles in yellow/brown silty sand matrix. Sealed by 217	Stone spread at base of ditch recut [218] to aid drainage.
224	-	Number not used	-
225	Cut	Linear in plan, aligned E – W. Steep sides, flat base. Contains 226.	Ditch, probable drainage/boundary feature. Undated
226	Fill	Dark grey/brown sandy silt, occ flint & small angular stones. Cut by 155.	Natural silting of ditch [225]
227	Cut	Circular in plan, steep sides, concave base. Contains 228.	Post hole, undated
228	Fill	Grey/brown sandy silt, occ charcoal, stones, flint	Natural silting of posthole [227]
229	Fill	Grey/brown sandy silt.	Natural silting of ditch [230]
230	Cut	Linear in plan, aligned N – S. Steep sides, flat base. Contains 229.	Roadside ditch of probable Romano-British date.
231	Layer	Yellow/brown sandy silt, occ gravel	Possible colluvium.
232	Layer	Grey/brown clayey silt, poorly sorted stones, occ charcoal flecks. Located in access road strip. Same as 237	Possible former ploughsoil.
233	Cut	Curvilinear in plan, steep sides, flat base. Contains 236. Cuts 235.	Recut of curvilinear ditch [234].
234	Cut	Curvilinear in plan, steep sides, flat base. Contains 235.	Curvilinear ditch, possibly Iron Age
235	Fill	Light brown silt, occ small stones and flint. Cut by 233.	Natural silting of ditch [234].
236	Fill	Grey/brown sandy silt, occ flint, chalk & charcoal flecks.	Natural silting of recut [233]
237	Layer	Grey/brown clayey silt, poorly sorted stones, occ charcoal flecks. Located in access road strip. Same as 232	Possible former ploughsoil
238	Fill	Black silt, abundant charcoal, occ small flint. Seals 239, sealed by 022.	Secondary backfill of [021]
239	Fill	Greyish brown sandy silt, occ charcoal flecks. Sealed by 238.	Primary backfill of [021]
240	Fill	Black sandy silt, occ charcoal flecks & frags. Seals 241, sealed by 024.	Secondary backfill of pit [023]
241	Fill	Greyish yellow brown silty sand, occ charcoal flecks. Leaching from 240 above. Sealed by 240.	Primary backfill of [023]
242	Cut	Circular in plan, steep sides, concave base. Contains 243.	Posthole, undated.
243	Fill	Grey clayey silt, occ small stones & charcoal flecks	Backfill of posthole [242].

Figure 2: Location of site works (in red) in relation to the previous geophysical survey (Brett 2005) at scale 1:2000. Known cropmarks are shown in green. Hand dug slots in access road are shown in yellow (see Figure 19 for sections)

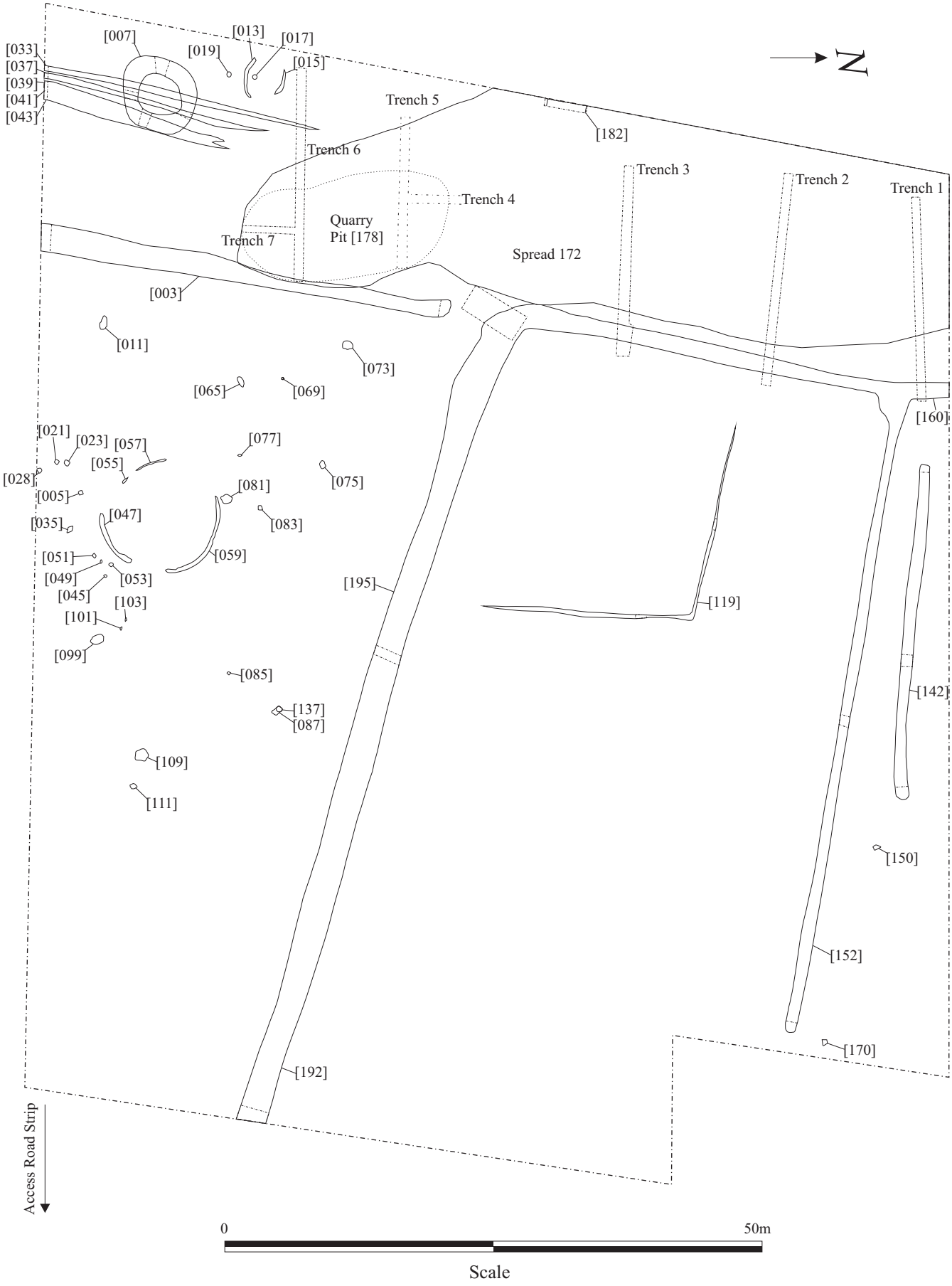


Figure 3: Willows A Well Site plan of archaeological remains
at scale 1:500

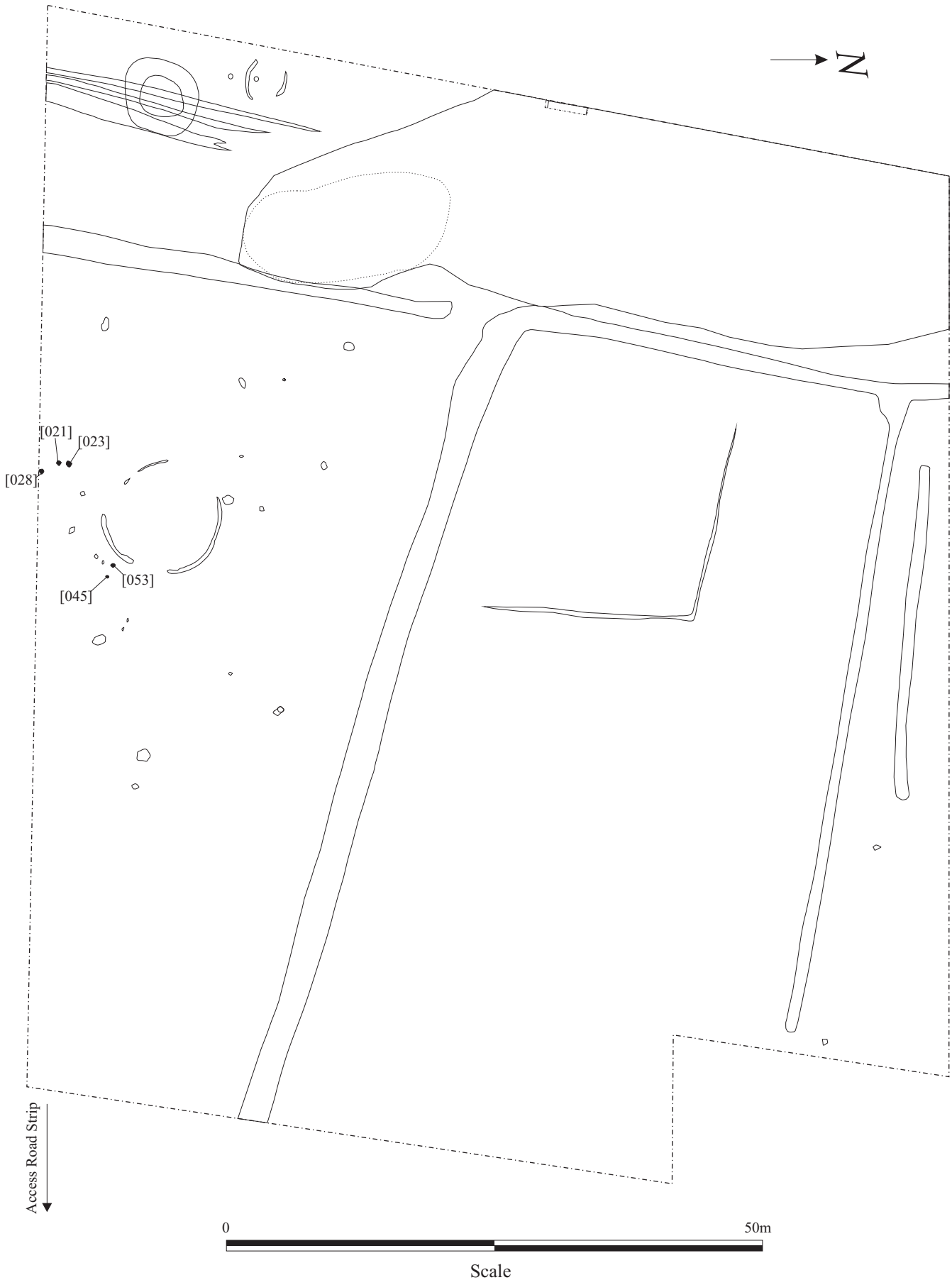


Figure 4: Plan of Phase 1 (Neolithic) features at scale 1:500

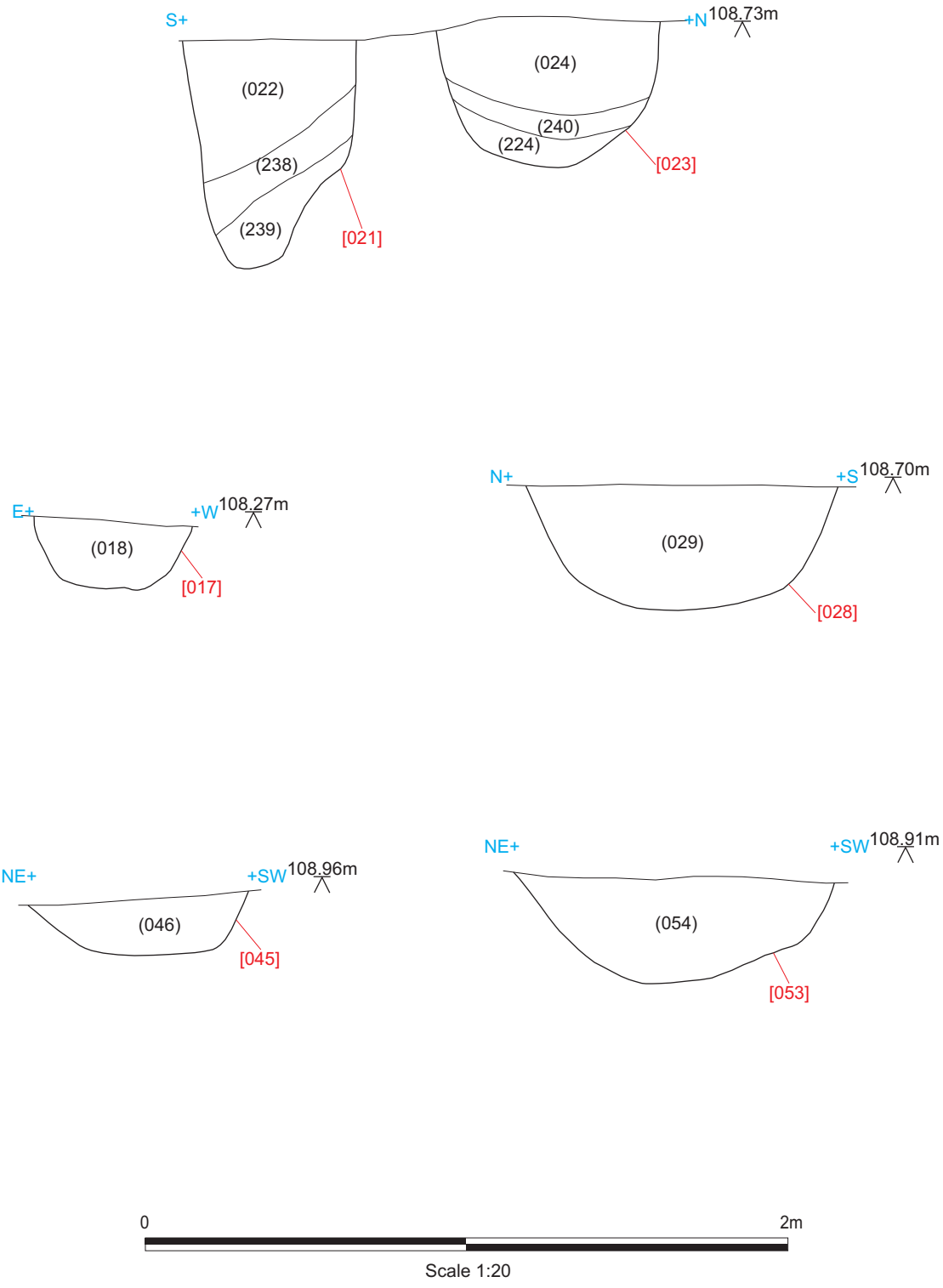


Figure 5: Phase 1 (Neolithic) sections at scale 1:20

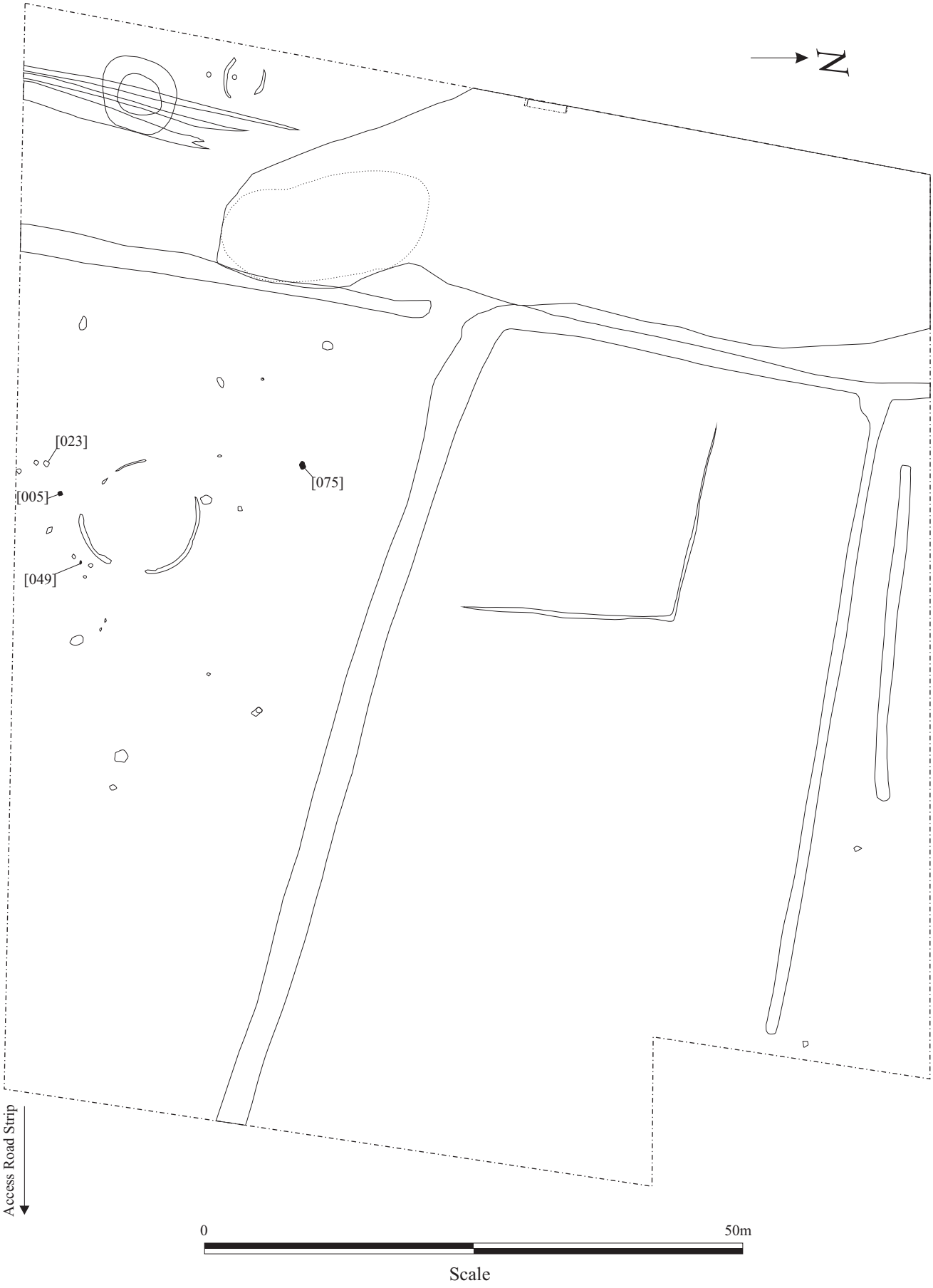


Figure 6: Plan of Phase 2 (Middle Bronze Age) features at scale 1:500. Phase 1 Pit [021] is shown as Middle Bronze Age pottery was recovered from its upper fill

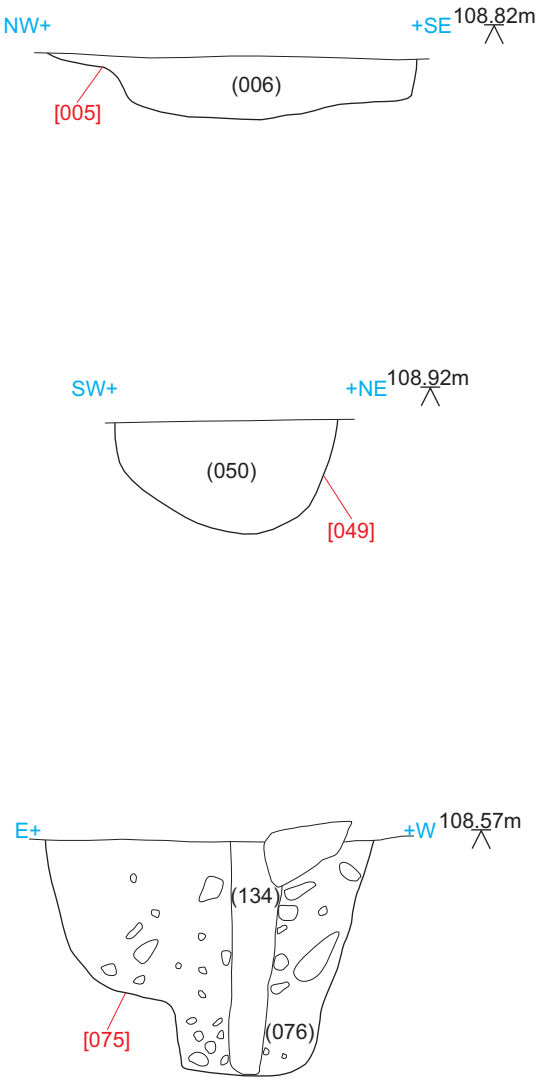


Figure 7: Phase 2 (Middle Bronze Age) sections at scale 1:20

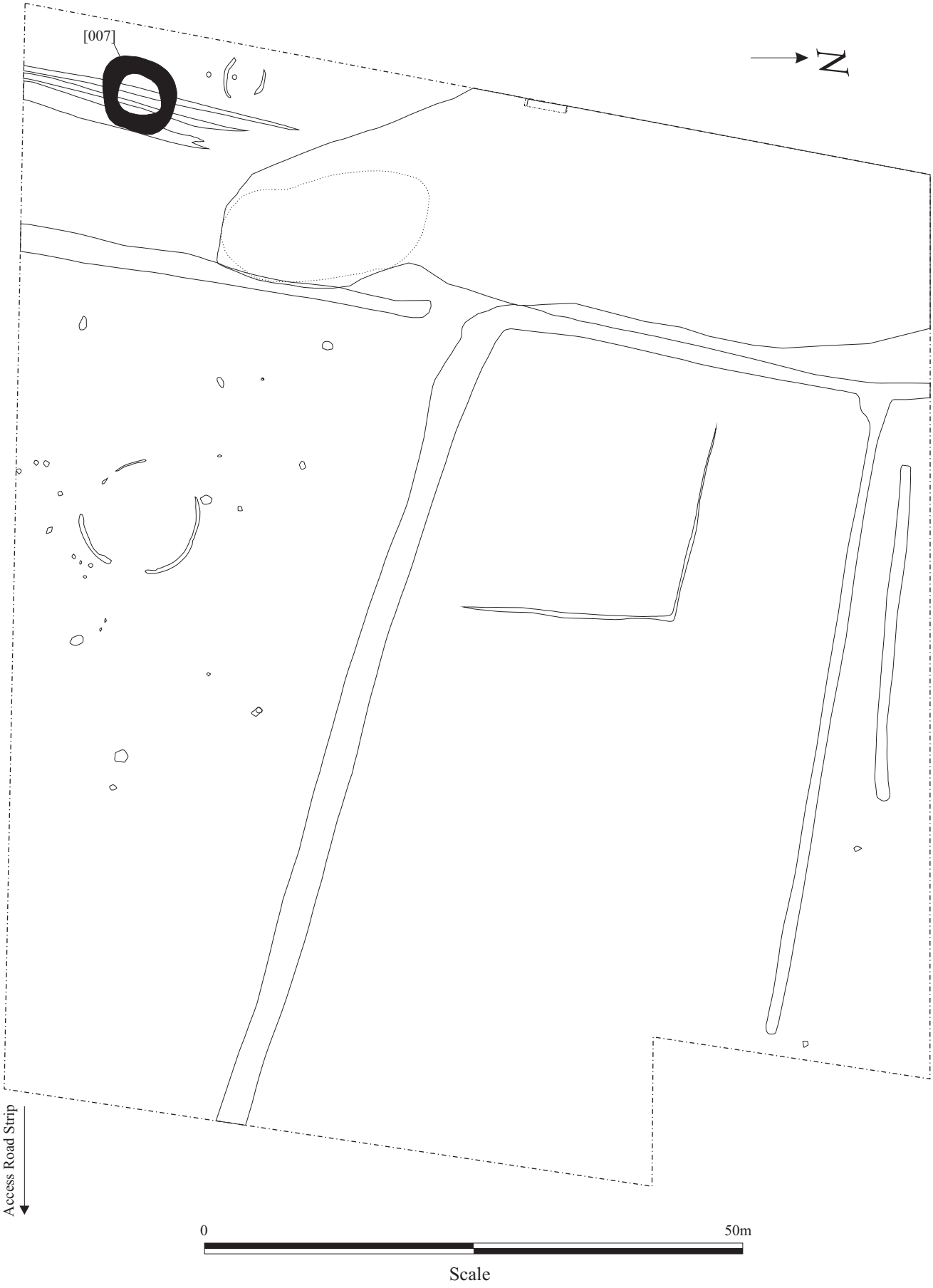


Figure 8: Plan of Phase 3 (Late Bronze Age) features at scale 1:500

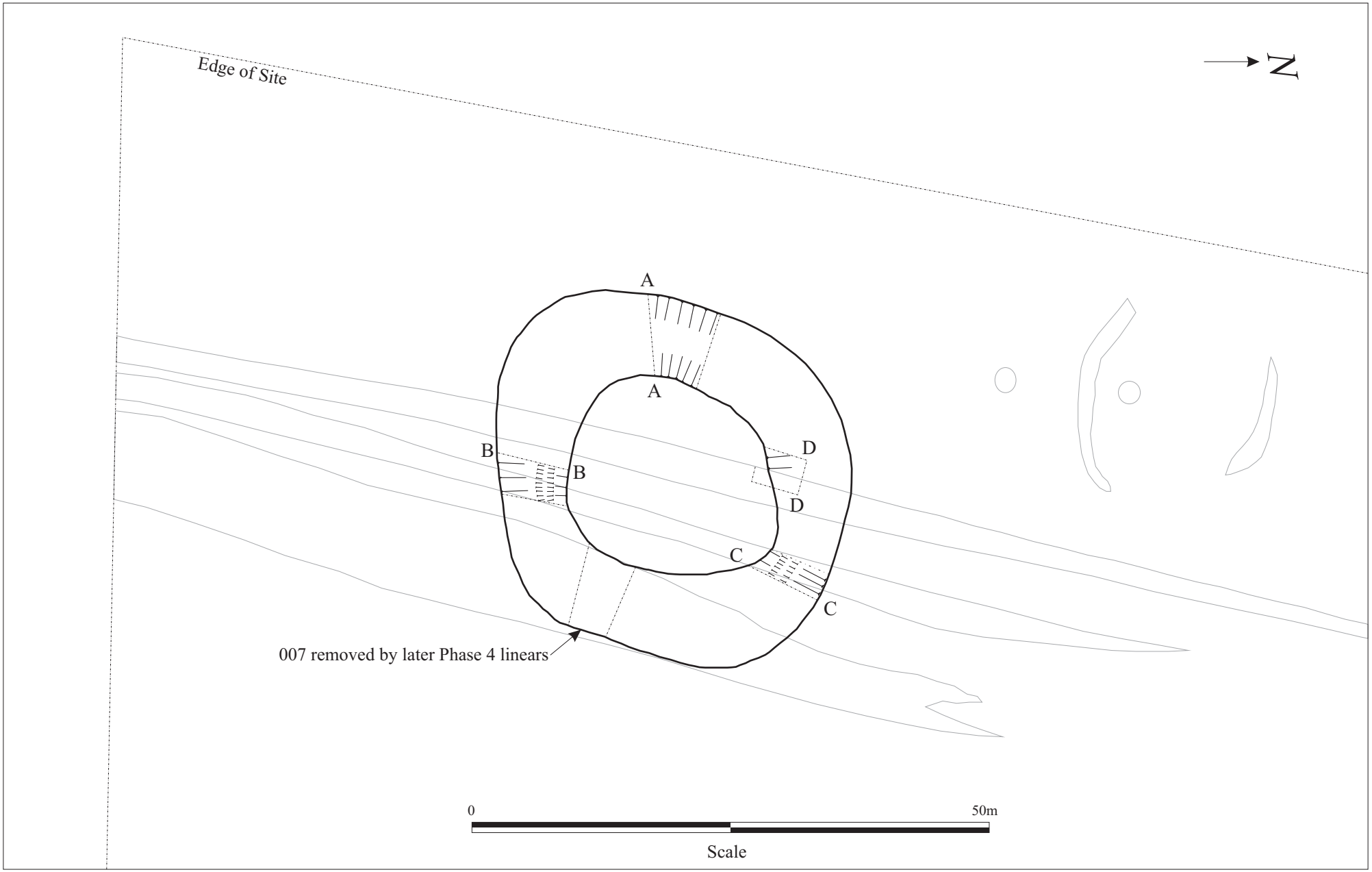


Figure 9: Plan of Phase 3 circular feature 007 at scale 1:100 (see Figure 10 for sections A - D)

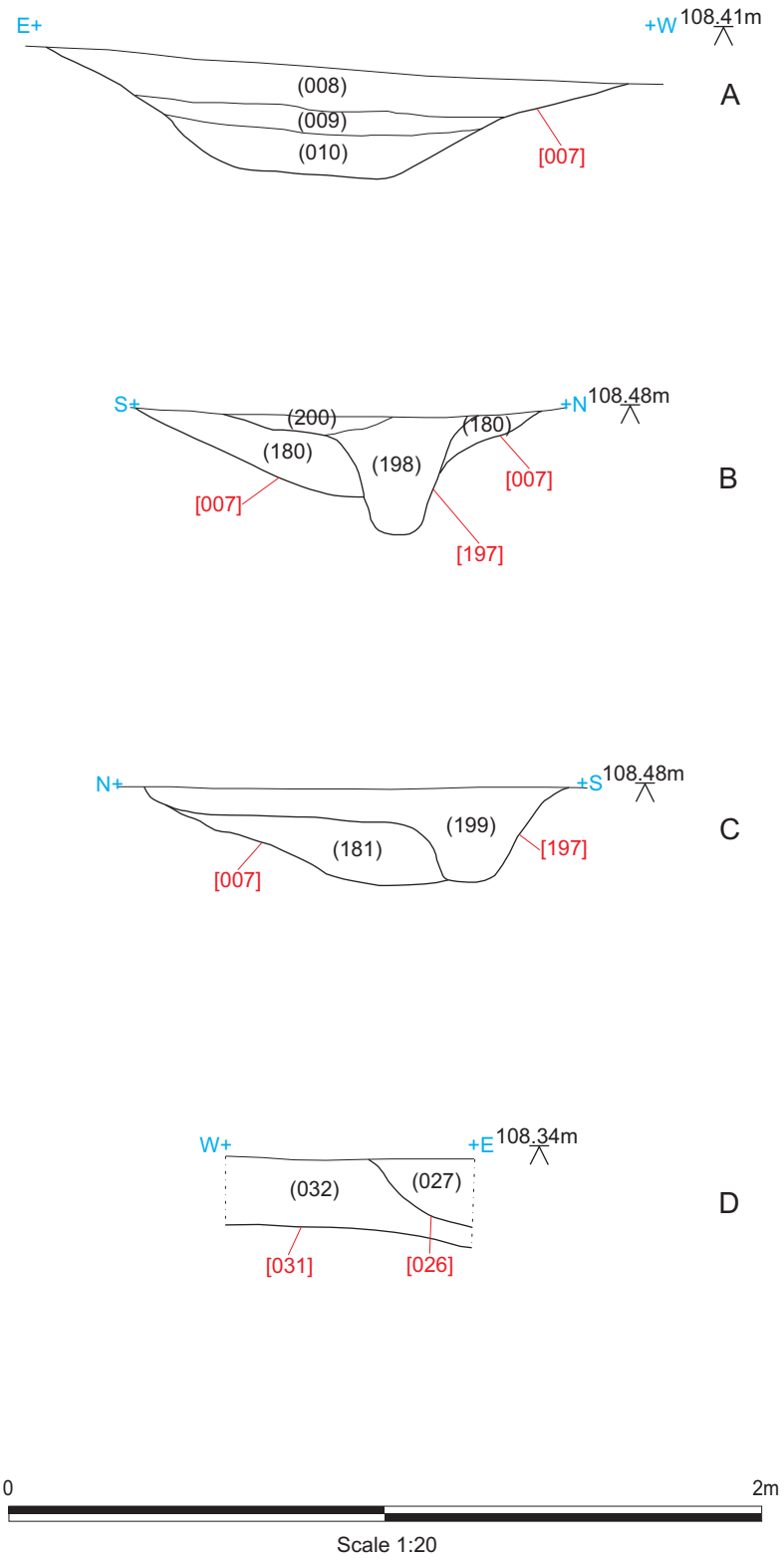


Figure 10: Phase 3 (Late Bronze Age) sections at scale 1:20

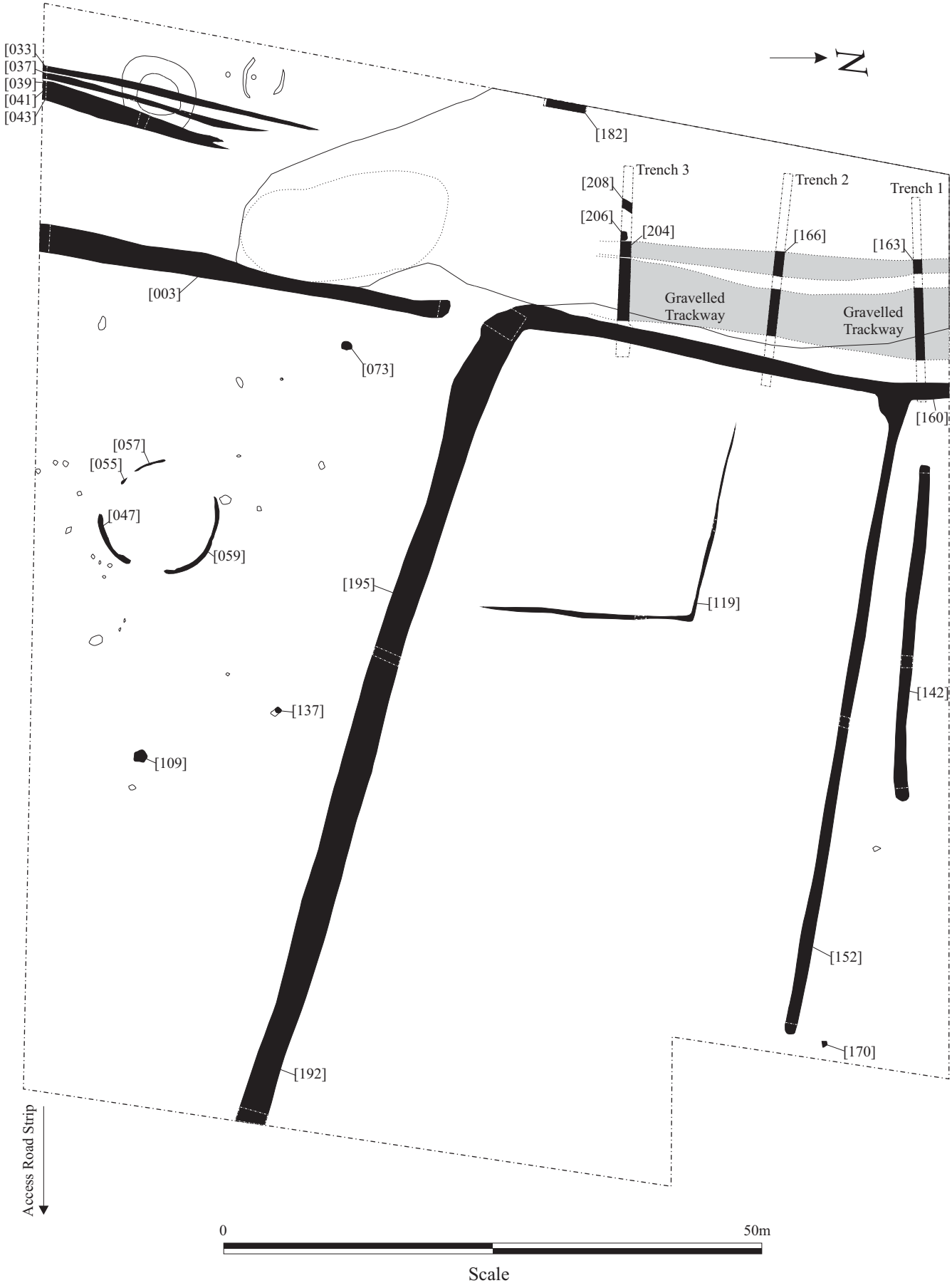
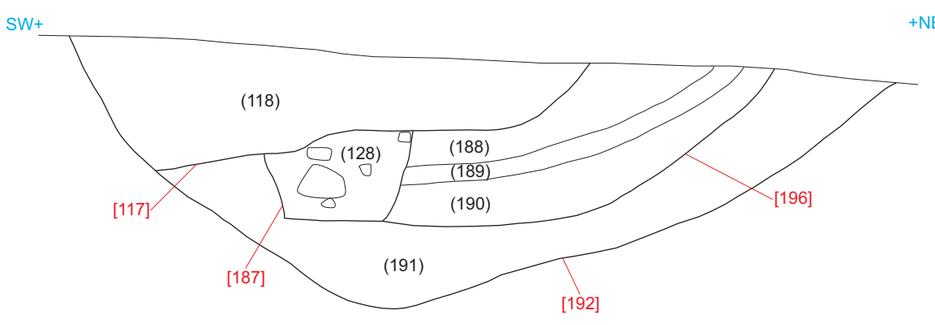


Figure 11: Plan of Phase 4 (Late Iron Age/Romano-British) features at scale 1:500



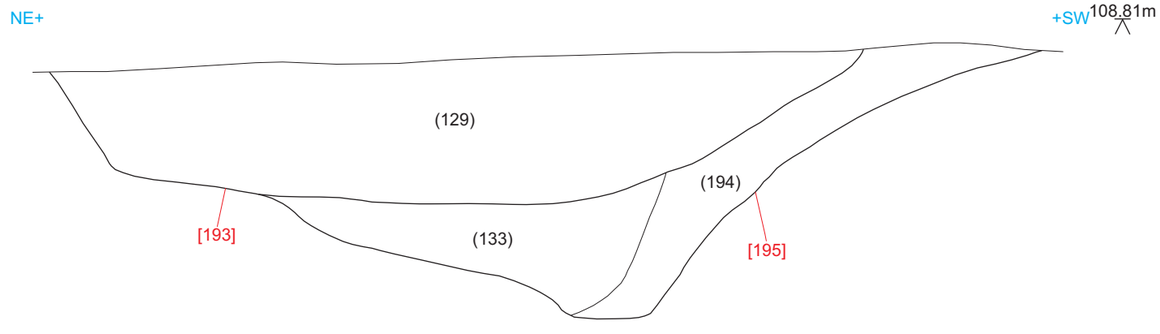
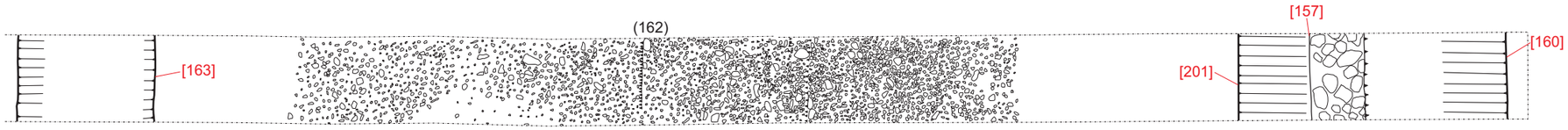
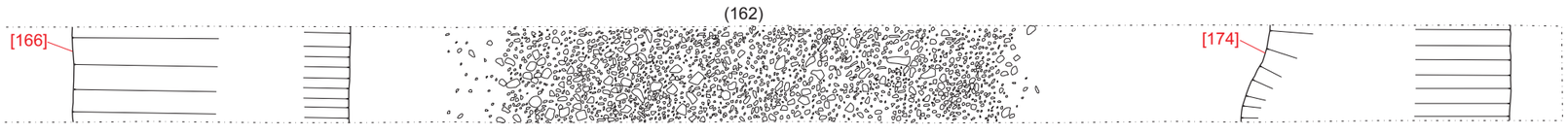


Figure 12: Phase 4 (Late Iron Age/Romano-British) enclosure ditch sections at scale 1:20



Trench 1

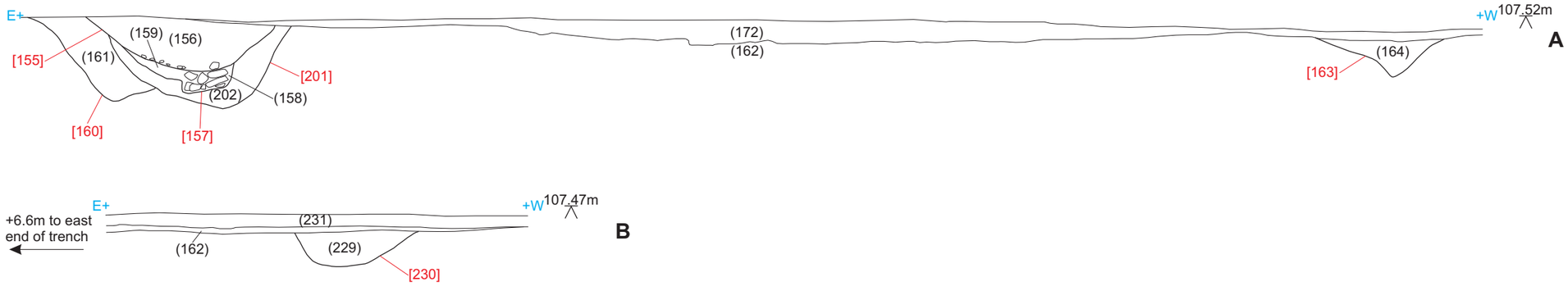


Trench 2

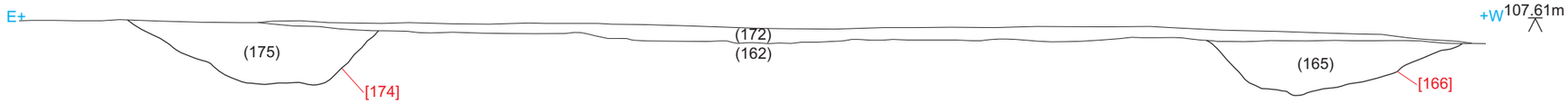
Trench 3

Figure 13: Phase 4 (Later Iron Age and Romano-British). Plans of gravelled track and roadside ditches exposed in Trenches 1 - 3 at scale 1:50.

Trench 1 north facing section



Trench 2 north facing section



Trench 3 north facing section

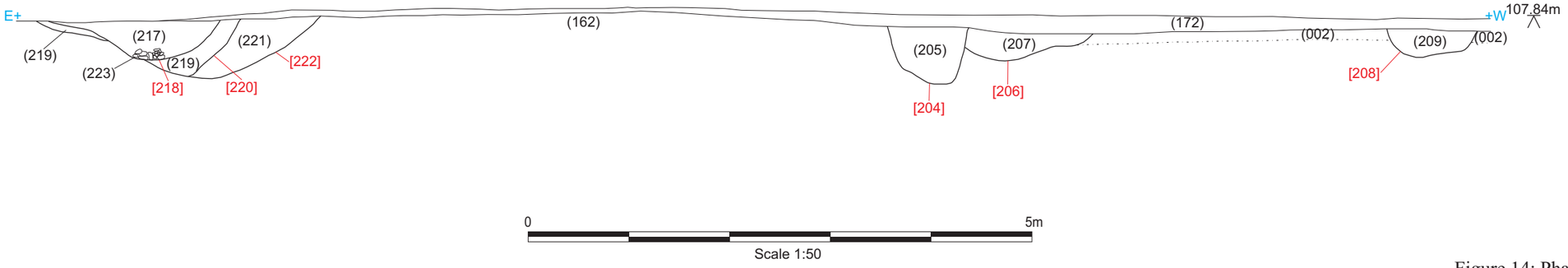


Figure 14: Phase 4 (Later Iron Age and Romano-British). Sections through road with enclosure/roadside ditches at scale 1:50.

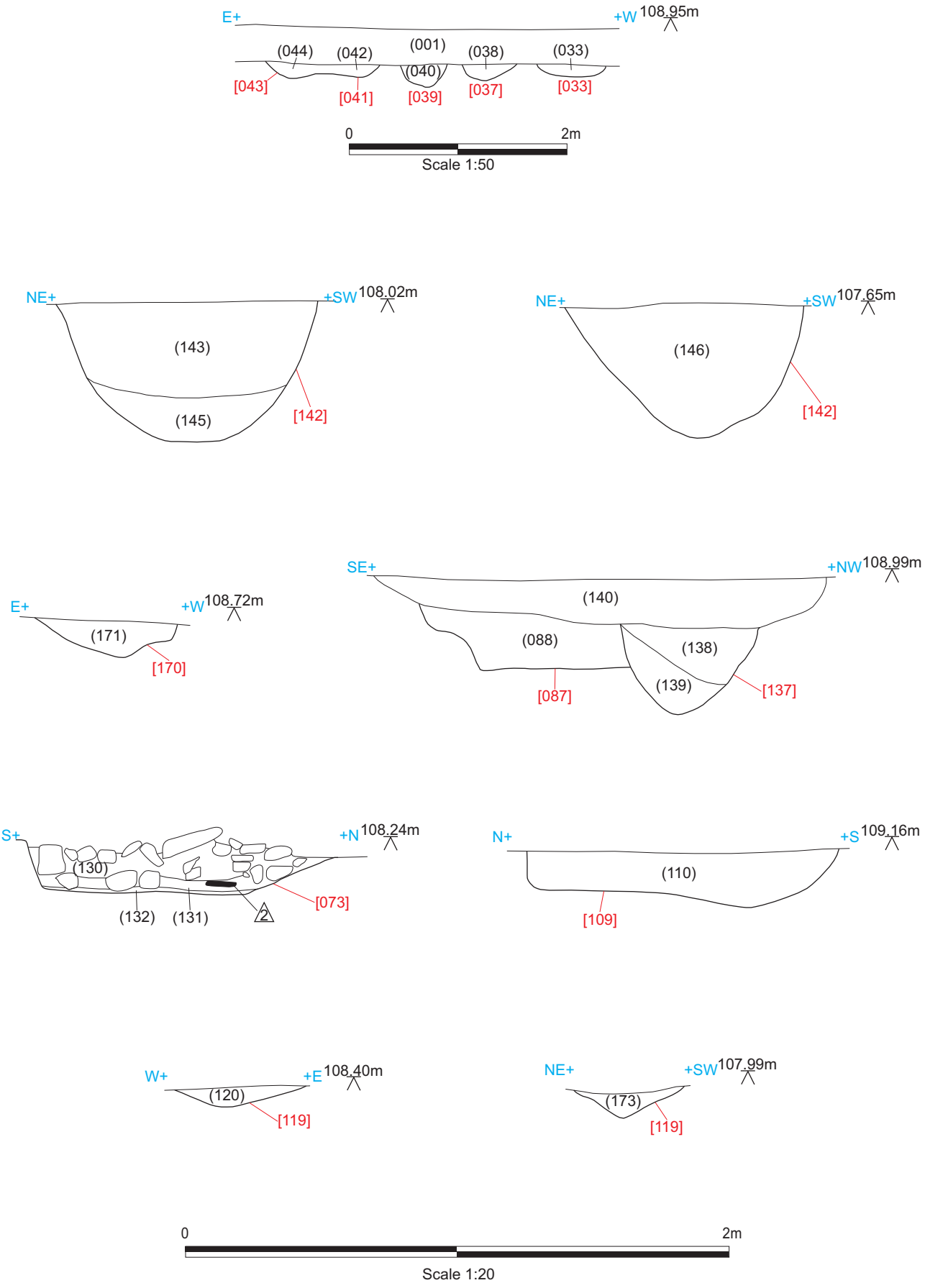


Figure 15: Phase 4 (Late Iron Age/Romano-British) feature sections at scales 1:20 and 1:50

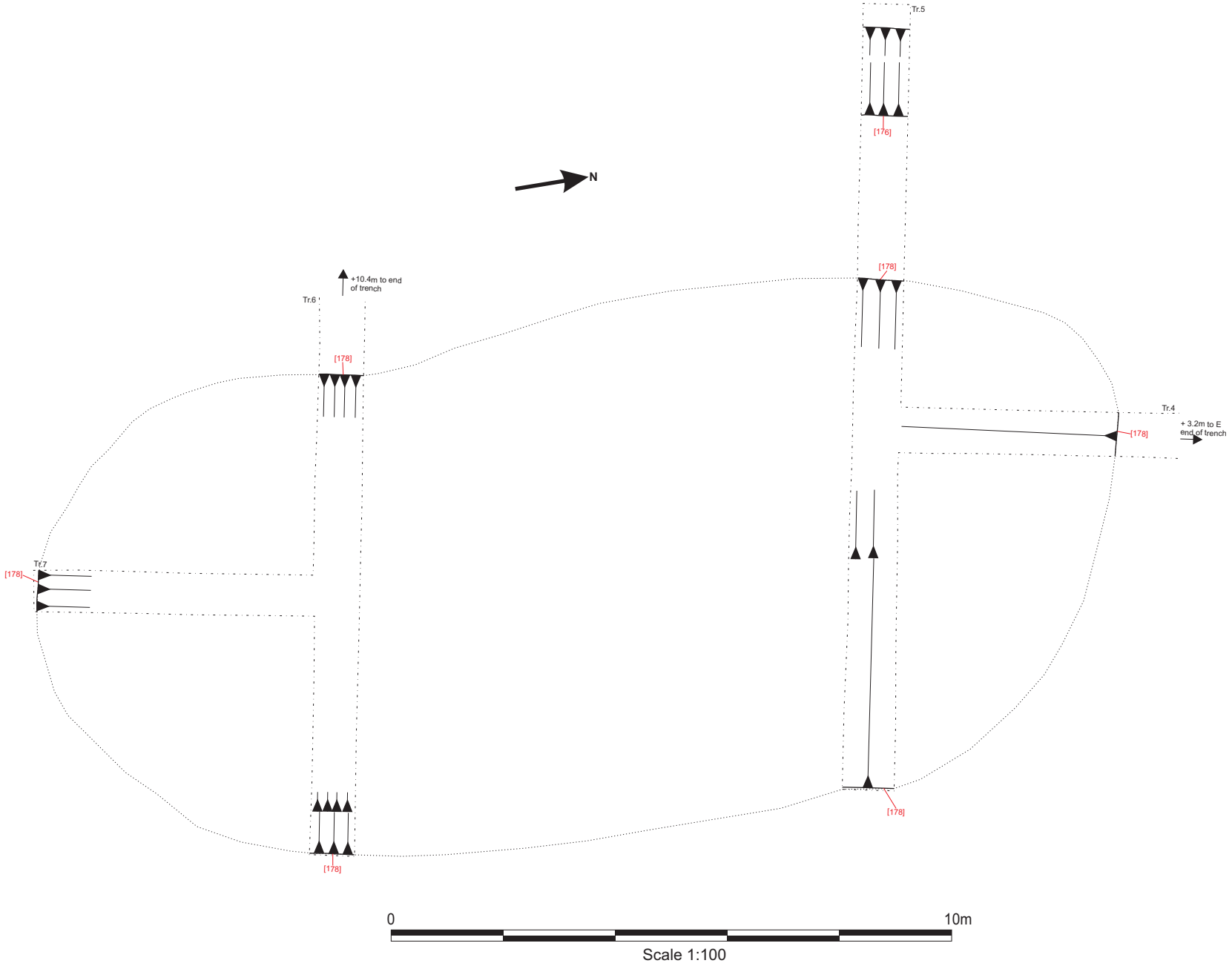


Figure 16: Detailed plan of Phase 5 (Post-medieval/modern) quarry pit at scale 1:100

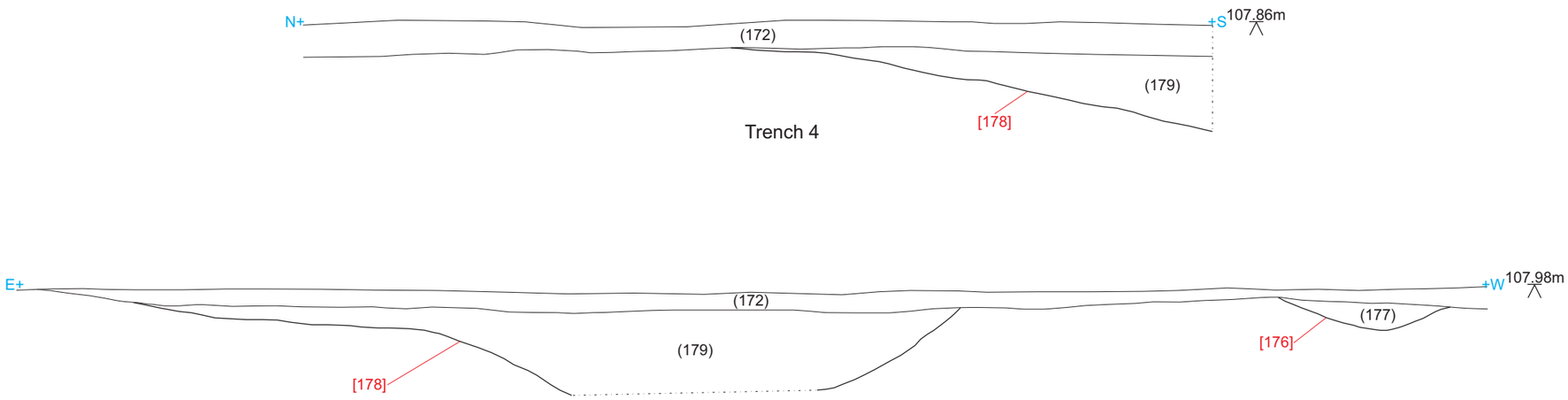


Figure 17: Phase 5 sections (post-medieval/modern) at scale 1:50

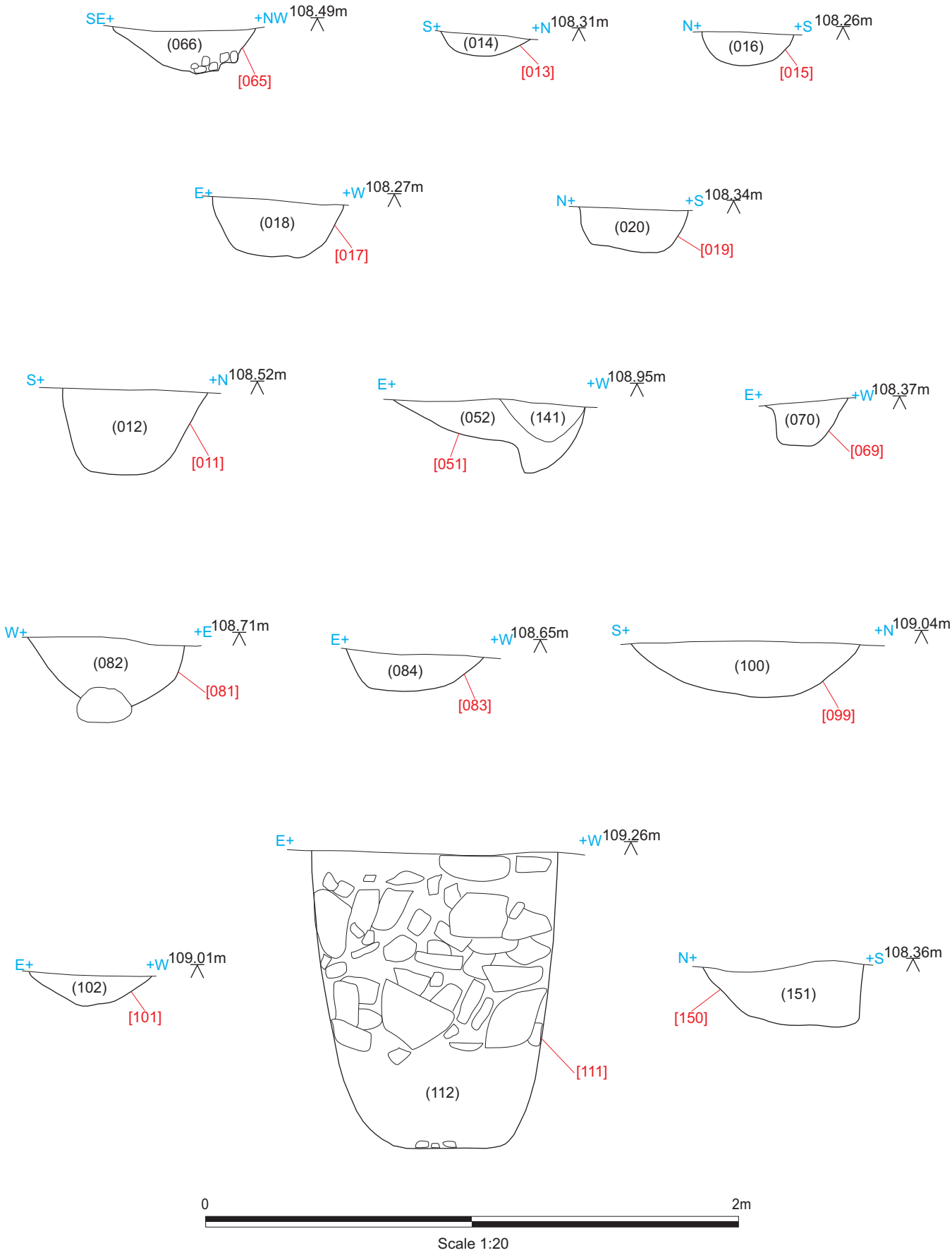
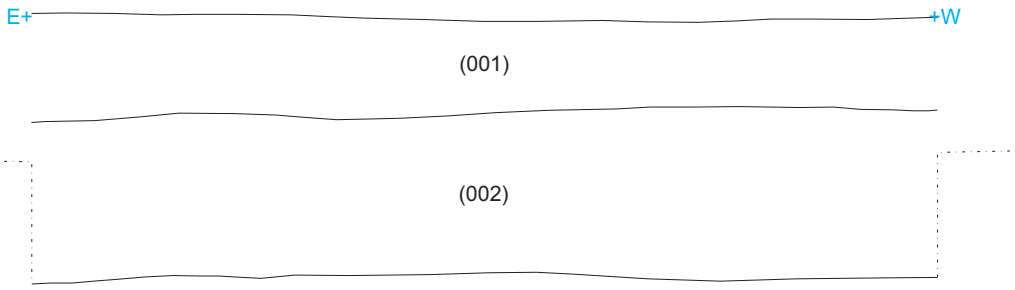
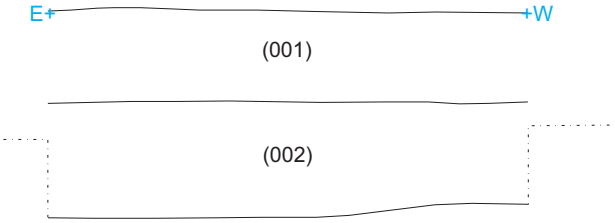


Figure 18: Undated sections at scale 1:20



Slot 1

Slot 2



Slot 3

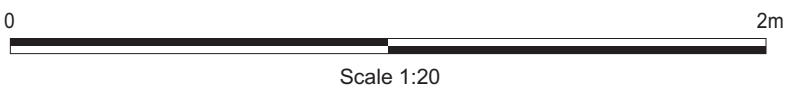


Figure 19: Access Road sections at scale 1:20, see Figure 2 for slot locations